

Permanent Rulemaking Hearings

2 CCR 601-22

**“Rules Governing Statewide Transportation
Planning Process and
Transportation Planning Regions”**



Exhibits

**Rulemaking Hearings on 2 CCR 601-22
Index of Exhibits**

Exhibit	Description
1	Resolution No. TC-2021-07-08 dated July 15, 2021, from the Transportation Commission opening the rule-making process and delegating authority to an administrative hearing officer.
2	<ul style="list-style-type: none"> A. SOS Notice of Rulemaking Confirmation dated August 13, 2021. B. Proposed rule changes filed with the SOS to open rule making. C. Notice of Rulemaking Hearing published in Colorado Register on August 25, 2021. D. Notice required to be posted at least five days prior to the hearing. E. Miscellaneous Rulemaking Public Notice filed on August 31, 2021. F. Confirmation that the Miscellaneous Rulemaking Public Notice was filed with SOS on August 31, 2021. G. Miscellaneous Rulemaking Public Notice was published in Colorado Register on September 10, 2021.
3	<ul style="list-style-type: none"> A. DORA Notice of Rulemaking Confirmation on August 13, 2021. B. Verification of DORA's Publication of Hearing Date. C. DORA Notice to Stakeholders re: Cost-Benefit Analysis. D. Requests Received by DORA for a Cost-Benefit Analysis. E. DORA Notice that a Cost-Benefit Analysis is required. F. DORA Notice to Stakeholder re: New Hearing and Hearing Location, Date, and Time Changes. G. Cost-Benefit Analysis H. DORA Confirmation that the Cost-Benefit Analysis was uploaded on September 7, 2021. I. DORA Notice that DORA reviewed the Cost-Benefit Analysis on September 7, 2021. J. Screenshot of CDOT Website that the Cost-Benefit Analysis was posted on September 7, 2021. K. DORA Notice to Stakeholders with the Cost-Benefit Analysis.
4	<ul style="list-style-type: none"> A. Request for Regulatory Analysis B. Regulatory Analysis C. Screenshot of CDOT Website that the Regulatory Analysis was posted on September 9, 2021.
5	<ul style="list-style-type: none"> A. Statement of Basis and Purpose. B. Updated Statement of Basis and Purpose on August 31, 2021, to fix a typographical error.
6	<ul style="list-style-type: none"> A. Screenshot of CDOT's website indicating that CDOT posted rulemaking hearing date, time, and location on CDOT website on August 16, 2021. B. Screenshot of CDOT's website indicating that CDOT posted the Miscellaneous Rulemaking Public Notice and Updated Statement of Basis and Purpose on September 6, 2021. C. Screenshot of CDOT's website indicating that CDOT posted the Cost-Benefit Analysis on September 7, 2021 (10 days before the first hearing). D. Screenshot of CDOT's website indicating that CDOT posted the Regulatory Analysis on September 9, 2021 (five days before the first hearing).
7	CDOT's Transportation Greenhouse Gas Roadmap Briefing paper that provides framework and context for the proposed rule changes.
8	<p>Exhibit 8 contains the early stakeholder engagement regarding the proposed rules.</p> <ul style="list-style-type: none"> A. List of Representative Group Members and meetings. B. Meetings with the Colorado Contractor Association. C. Meetings with Statewide Transportation Advisory Committee D. Meetings with Colorado Communities for Climate Action. E. Meetings with the Metropolitan Planning Organizations.

Exhibit 1

Resolution #TC-2021-07-08

Commence Permanent Rulemaking and Delegate Authority to an Administrative Hearing Officer to Conduct a Public Rulemaking Hearing for the Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (“the Planning Rules”), 2 CCR 601-22.

Approved by the Transportation Commission on July 15, 2021.

WHEREAS, transportation is a complex sector involving thousands of Coloradoans individual choices about how they travel on Colorado roads; and

WHEREAS, the 10-year Plan for the Colorado Department of Transportation (“CDOT”) and Metropolitan Planning Organizations (“MPOs”) Regional Transportation Plans have the ability to affect the transportation decisions of the traveling public in Colorado; and

WHEREAS, Senate Bill 21-260 directs the Transportation Commission of Colorado (“the Commission”) to adopt procedures and guidelines requiring CDOT and MPOs to take additional steps in the planning process for regionally significant transportation projects to account for the impacts on the amount of statewide GHG pollution and statewide vehicle miles traveled that are expected to result from those projects; and

WHEREAS, Senate Bill 21-260 also specifies implementing relevant measures pursuant to § 25-7-105, C.R.S.; reducing GHG emissions to help achieve statewide GHG pollution reduction targets established in House Bill 19-1261 (now codified in § 25-7-102(2)(g) and 105(1)(e), C.R.S.); and considering the role of land use in the transportation planning process; and

WHEREAS, § 43-1-106(8)(k), C.R.S. authorizes the Commission to make all necessary and reasonable orders, rules, and regulation to carry out its authority and duties; and

WHEREAS, pursuant to § 43-1-106(8)(b), C.R.S., one of the Commission’s duties is to assure the preservation and enhancement of Colorado’s environment in the planning, selection, construction, and operation of all transportation projects in Colorado; and

WHEREAS, § 43-1-1103(5), C.R.S. authorizes the Commission to promulgate rules regarding the formation of the state plan through a statewide planning process; and

WHEREAS, the Commission proposes to amend the Planning Rules to integrate the establishment of a GHG pollution-reduction standard, including compliance and enforcement requirements, in accordance with House Bill 19-1261 and Senate Bill 21-260; and

WHEREAS, the proposed amendments will consist of the following elements; including provisions outlining CDOT and MPO applicability, new definitions, emissions reduction tables, compliance, reporting and enforcement requirements; and

WHEREAS, the Commission recognizes the need for ample public comment and notes this Resolution begins the process but does not set the timeline for the formal review process; and

WHEREAS, the Commission also recognizes that the publication of the proposed amendments provide an important opportunity for the public to review and comment on the rule changes and fully participate in the rulemaking process; and

WHEREAS, the Commission has the authority to conduct a rulemaking hearing or to delegate the authority to an Administrative Hearing Officer for the purposes of conducting the rulemaking hearing, making a complete procedural record of the hearing, and submitting that record and any recommendations to the Commission for its review and action concerning amendments to the Planning Rules; and

WHEREAS, the Commission established the Ad Hoc Agency Coordination Committee (“ACC”) chaired by Commissioner Hickey to act as liaison for the Commission throughout the rulemaking process, work with staff to amend the Planning Rules and ensure affected and interested parties are provided with notice and opportunity to comment under the requirements of the State Administrative Procedure Act.

NOW THEREFORE BE IT RESOLVED, the Commission authorizes staff and the ACC to take all necessary actions in accordance with the State Administrative Procedure Act to initiate rulemaking for the purpose of amending the Planning Rules, 2 CCR 601-22.

NOW THEREFORE BE IT FURTHER RESOLVED, the Commission delegates the ACC the responsibility to review and approve the draft rule prior to the Department’s filing of the proposed rules with the Secretary of State.

NOW THEREFORE BE IT FURTHER RESOLVED, the Commission delegates its authority to conduct the permanent rulemaking hearing to a CDOT Administrative Hearing Officer to prepare a complete record of the hearing in collaboration with the ACC and forward said record and proposed rules to the Commission for consideration and adoption.

NOW THEREFORE BE IT FURTHER RESOLVED, the formal rulemaking filing shall include a list of public hearings that shall be held across the state.

Herman F. Stockinger III

Herman Stockinger, Secretary
Transportation Commission of Colorado

7-15-2021

Date

Exhibit 2



Agency Rulemaking Home

eDocket

Log out

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Notice of Rulemaking Confirmation

Official Publication of the State Administrative Rules (24-4-103(11) C.R.S.)

Date Filed: August 13, 2021 20:03:51

Please print this page for your records

REMEMBER: You must submit your proposed rules to DORA's Office of Policy, Research and Regulatory Reform at the time of filing this notice with the Secretary of State, as required by section 24-4-103(2.5) C.R.S.

Link: <https://www.dora.state.co.us/pls/real/SB121.Logon>

Your notice of rulemaking has been submitted to the Secretary of State.
Your tracking number is 2021-00508.

Department	600 - Department of Transportation
Type of Filing	Permanent
Agency	601 - Transportation Commission and Office of Transportation Safety
CCR Number	2 CCR 601-22
CCR Title	RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS
Hearing Date	09/14/2021
Hearing Time	03:00 PM
Hearing Location	CDOT Regional Office, US160 Maintenance Training Facility, 20581 Highway 160, Durango, CO 81301
Description	The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. This will be accomplished by requiring CDOT and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., and the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Please see the attachment for the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".
Statutory Authority	The specific authority under which the Commission shall establish these proposed rule revisions is set forth in §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.
Proposed Rule	ProposedRuleAttach2021-00508.pdf
Additional Information	AddInfoAttach2021-00508.pdf
Comments	The Commission plans to hold eight (8) hearings across the State as listed in the table within the attachment to hear testimony and receive comments. The public hearings will be conducted in a hybrid format, both in-person and virtually. If you plan to attend any of the scheduled hearings virtually, please register through the registration links provided either on the attachment or CDOT's website at https://www.codot.gov/business/rules/proposed-rules.html so we can provide instructions on how you can join the hearings of your choice virtually and provide testimony if you wish. Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. Please see the attachment for the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".
Contacts for Public	
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DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation

STATEMENT OF BASIS AND PURPOSE, ~~AND STATUTORY AUTHORITY~~ AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or~~ CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation commission~~Commission~~ of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per pursuant to~~ 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning~~regionsRegions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~ Multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~ State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~ STAC pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2015, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

~~Copies of the referenced United States Code may be obtained from the following address:~~

~~Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411~~

~~Copies of the referenced Code of Federal Regulations may be obtained from the following address:~~

~~U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800~~

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

~~The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.~~

Preamble for 2021 Rulemaking

Overview

Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. see § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." see § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation

are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must

address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

1.00 — Definitions.

- 1.01 — Accessible — ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with limited English proficiency. Accessible opportunities to on planning related matters include those provided on the internet and through such methods as telephone town halls.
comment
- 1.02 — Attainment Area — any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).
- 1.03 — Commission — the transportation commission of Colorado created by § 43-1-106, C.R.S.
- 1.04 — Corridor — a transportation system that includes all modes and facilities within a described geographic area.
- 1.05 — Corridor Vision — a comprehensive examination of a specific transportation corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes transportation modes and facilities over a planning period.
- 1.06 — Department — the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.07 — Division — the Division of Transportation Development within the Colorado Department of Transportation.
- 1.08 — Division Director — the Director of the Division of Transportation Development.
- 1.09 — Fiscally Constrained — the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) programming periods.
- 1.10 — Intergovernmental Agreement — an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.11 — Intermodal Facility — A site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.12 — Land Use — the type, size, arrangement, and use of parcels of land.
- 1.13 — Limited English Proficiency (LEP) — individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.14 — Long-range Planning — a reference to a planning period with a minimum 20-year planning horizon.
- 1.15 — Maintenance Area — any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended in 1990.
- 1.16 — Memorandum of Agreement (MOA) — a written agreement between two or more parties on an intended plan of action.

- 1.17 — Metropolitan Planning Agreement (MPA) — a written agreement between the MPO, the State, and the providers of public transportation serving the metropolitan planning area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.18 — Metropolitan Planning Area — a geographic area determined by agreement between the Metropolitan Planning Organization for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.19 — Metropolitan Planning Organization (MPO) — an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the regional transportation plans and programs in a metropolitan planning area pursuant to 23 U.S.C. § 134.
- 1.20 — Mobility — the ability to move people, goods, services, and information among various origins and destinations.
- 1.21 — Multimodal — an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.22 — National Ambient Air Quality Standards (NAAQS) — are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.23 — Nonattainment Area — any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which an NAAQS exists.
- 1.24 — Non-metropolitan Area — a rural geographic area outside a designated metropolitan planning area.
- 1.25 — Plan Integration — Plan integration is a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.26 — Planning Partners — local and tribal governments, the rural Transportation Planning Regions and MPOs.
- 1.27 — Project Priority Programming Process (“4P”) — the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the statewide transportation improvement program (STIP).
- 1.28 — Regional Planning Commission (RPC) — a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural Transportation Planning Region.
- 1.29 — Regional Transportation Plan (RTP) — a long-range plan designed to address the future transportation needs for a Transportation Planning Region including, but not limited to, anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban Transportation Planning Regions in the state produce RTPs.
- 1.30 — State Transportation System — refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.

- ~~1.31 — Statewide Transportation Advisory Committee (STAC) — the committee created by § 43-1-1104, C.R.S., comprising one representative from each Transportation Planning Region and one representative from each tribal government to review and comment on Regional Transportation Plans, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.~~
- ~~1.32 — Statewide Transportation Improvement Program (STIP) — a staged, fiscally constrained, multi-year, statewide, multimodal program of transportation projects which is consistent with the statewide transportation plan and planning processes, with metropolitan planning area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.~~
- ~~1.33 — Statewide Transportation Plan — the long-range, comprehensive, multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.~~
- ~~1.34 — System Continuity — includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring Regional Transportation Plans, and, to the extent practicable, other neighboring states' transportation plans.~~
- ~~1.35 — Traditionally Underserved — refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.~~
- ~~1.36 — Transit and Rail Advisory Committee (TRAC) — an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.~~
- ~~1.37 — Transportation Commonality — the basis on which Transportation Planning Regions are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, travelsheds, watersheds, geographic unity, existing intergovernmental agreements, and socioeconomic unity.~~
- ~~1.38 — Transportation Improvement Program (TIP) — a staged, fiscally constrained, multi-year, multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.~~
- ~~1.39 — Transportation Mode — a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.~~
- ~~1.40 — Transportation Planning and Programming Process — all collaborative planning-related activities including the development of regional and statewide transportation plans, the Department's Project Priority Programming Process, and development of the Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).~~
- ~~1.41 — Transportation Planning Region (TPR) — a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for transportation commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO Transportation Planning Regions, MPO Transportation Planning Regions, and Transportation Planning Regions with both MPO and non-MPO areas.~~

- ~~1.42 — Transportation Systems Planning — provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.~~
- ~~1.43 — Travelshed — the region or area generally served by a major transportation facility, system, or corridor.~~
- ~~1.44 — Tribal Transportation Improvement Program (TTIP) — a multi-year fiscally constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.~~
- ~~1.45 — Urbanized Area — an area with a population of 50,000 or more designated by the Bureau of the Census.~~
- ~~1.46 — Watershed — a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.~~

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- ~~1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
- ~~1.02 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.~~
- ~~1.03 Approved Air Quality Model - the most recent Environmental Protection Agency issued model that quantifies GHG emissions from transportation.~~
- ~~1.04 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- ~~1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.~~

- 1.06 Carbon Dioxide Equivalent (CO₂e) - a metric measure used to compare the emissions from various GHG based upon the 100-year global warming potential (GWP). CO₂e is multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO₂e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different time periods.
- 1.07 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.08 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated program established in 23 U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.09 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- 1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO₂e reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and help meet the GHG Reduction Levels.
- 1.20 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.

- 1.21 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.22 Land Use - the type, size, arrangement, and use of parcels of land.
- 1.23 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.24 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.25 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.26 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.27 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.28 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.29 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.30 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.31 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.32 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.33 Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.34 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.
- 1.35 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and

- environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.36 Nonattainment Area - any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.37 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning Area.
- 1.38 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.39 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.40 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.41 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.42 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.43 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.44 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.45 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.46 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.47 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide

- Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.48 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.49 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.50 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.51 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.52 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.53 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.54 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.55 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.56 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.57 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.58 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.

- 1.59 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.60 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.
- 1.61 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.62 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.63 Vehicle Miles Traveled (VMT) - the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.64 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.65 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
- 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
- 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
- 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
- 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
- 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
- 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
- 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.

- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
- 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
- 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.
- 2.01.11 The Intermountain ~~Transportation Planning Region~~TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
- 2.01.12 The Northwest ~~Transportation Planning Region~~TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
- 2.01.13 The Upper Front Range ~~Transportation Planning Region~~TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
- 2.01.14 The Central Front Range ~~Transportation Planning Region~~TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
- 2.01.15 The South Central ~~Transportation Planning Region~~TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
- 2.02.1.1 A geographical description of the proposed boundary change.
- 2.02.1.2 A statement of justification for the change considering transportation commonalities.
- 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~RPC.
- 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
- 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~non~~Non-metropolitan-Metropolitan area-Area TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State~~Colorado Administrative Procedure Act, § 24-4-103, C.R.S. to consider a

boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.

2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~Intergovernmental agreement Agreement governing the RPC as specified in these Rules.

2.03 Transportation Planning Coordination with MPOs.

2.03.1 The Department and the MPOs shall coordinate activities related to the development of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~Planning partners-Partners affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

3.01 Duties of the ~~Statewide Transportation Advisory Committee (STAC)~~. Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

- 3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.
- 3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.
- 3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.
- 3.01.4 Colorado's ~~mobility~~Mobility requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.
- 3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~System ~~continuity~~Continuity.
- 3.01.6 Proposed TPR boundary revisions.
- 3.02 Notification of Membership
 - 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~STAC
 - 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
 - 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
 - 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
 - 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.**
- 4.01 ~~Regional Planning Commission~~RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all

applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.

4.02 Public Participation

4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. The objectives of public participation in the transportation planning process include: providing a mechanism for public perspectives, needs, and ideas to be considered in the planning process; developing the public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.

4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying out public participation for developing, amending, and updating the ~~statewide Statewide transportation plan Plan~~, the ~~Statewide Transportation Improvement Program (STIP)~~, and other statewide transportation planning activities.

4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation plan RTPs~~, ~~transportation improvement programs TIPs~~ and other related regional transportation planning activities for their respective ~~metropolitan Metropolitan planning Planning areas Areas~~. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.

4.02.4 Non-MPO TPR Plans and Programs. ~~Regional Planning Commission RPCs~~ for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional Planning Commission RPC~~ and the Department.

4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:

4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, and those with ~~limited Limited~~ English ~~proficiency Proficiency~~; and members of the general public expressing such interest in the transportation planning process.

- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings.
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 Seeking out those persons or groups ~~traditionally-Traditionally underserved-Underserved~~ by existing transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low-income, and those with ~~limited-Limited~~ English ~~proficiency~~~~Proficiency~~, for the purposes of exchanging information, increasing their involvement, and considering their transportation needs in the transportation planning process. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional Planning Commission~~~~RPCs~~, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP-Limited English Proficiency~~ services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional Planning Commissions~~~~RPCs~~ and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional Planning Commission~~~~RPCs~~, and the Department, shall use an integrated ~~multimodal-Multimodal transportation-Transportation systems-Systems planning-Planning~~ approach in developing and updating the long-range ~~Regional Transportation Plans~~~~RTPs~~ and the long-range Statewide Transportation Plan for a minimum 20-year forecasting

- period. ~~Regional Planning Commission~~RPCs shall have flexibility in the methods selected for ~~transportation-Transportation systems-Systems planning-Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~RPCs regarding the selection of appropriate methods.
- 4.03.1 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~RPCs and the Department may also identify any ~~corridor~~Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.
- 4.03.2 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall consider ~~corridor vision~~needs and desired state of the transportation system including existing and future land use and infrastructure, major activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.
- 4.03.3 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~Mobility of people goods, and services.
- 4.03.4 Transportation ~~systems-Systems planning-Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state~~State ~~transportation-Transportation system~~System.
- 4.03.5 Transportation ~~systems-Systems P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the ~~Transit and Rail Advisory Committee~~(TRAC).
- 4.03.6 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.
- 4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.
- 4.04.1 Content of ~~Regional Transportation Plan~~RTPs. Each RTP shall include, at a minimum, the following elements:
- 4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.

- 4.04.1.2 State and federal transportation system planning factors to be considered by ~~Regional Planning Commission~~RPCs and the Department during their respective ~~transportation~~~~Transportation systems~~~~Systems planning~~~~Planning~~ shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor~~~~Corridor~~ studies, or ~~corridor~~~~Corridor~~ ~~visions~~Visions, including a discussion of impacts to minority and low-income communities.
- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 For rural RTPs, the integrated performance-based ~~multimodal~~ Multimodal transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally~~~~Fiscally~~ ~~constrained~~Constrained financial plan.
- 4.04.1.6 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~long~~Long-range Range planning-Planning purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.7 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.8 A resolution of adoption by the responsible ~~Metropolitan Planning Organization~~MPO or the ~~Regional Planning Commission~~RPC.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning Region~~TPRs shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation plan~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation ~~plan~~Plan.
- 4.04.2.3 Final Plan. ~~Transportation Planning Region~~TPRs shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these

Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range-Range ~~planning~~Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance areaArea for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment areaArea to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range-Range ~~planning~~Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment areaArea for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.

- 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~ Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.
- 4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.
- 4.06.1.9 Includes the 10-Year Plan as an appendix.
- 4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.
- 4.06.3 Review and Adoption of the Statewide Transportation Plan.
- 4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. The Statewide Transportation Plan and appendices~~The publication~~ will be available in physical form upon request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and made available on the internet.
- 4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.
- 5.00 Updates to Regional and Statewide Transportation Plans.**
- 5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~ RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal

and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.

- 5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

- 7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

- 7.02 The Department will work with its ~~planning~~Planning partners-Partners to coordinate a schedule for development and adoption of TIPs and the STIP.

- 7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

- 7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally constrainedConstrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportation-Transportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Baseline Projections (MMT)</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Baseline Projections (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Baseline Projections (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Baseline Projections (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>14.9</u>	<u>0.27</u>	<u>11.8</u>	<u>0.82</u>	<u>10.9</u>	<u>0.63</u>	<u>12.8</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>2.3</u>	<u>0.04</u>	<u>1.8</u>	<u>0.12</u>	<u>1.9</u>	<u>0.11</u>	<u>2.2</u>	<u>0.07</u>
<u>PPACG</u>	<u>2.7</u>	<u>N/A</u>	<u>2.2</u>	<u>0.15</u>	<u>2.0</u>	<u>0.12</u>	<u>2.3</u>	<u>0.07</u>
<u>GVMPO</u>	<u>0.38</u>	<u>N/A</u>	<u>0.30</u>	<u>0.02</u>	<u>0.30</u>	<u>0.02</u>	<u>0.36</u>	<u>0.01</u>
<u>PACOG</u>	<u>0.50</u>	<u>N/A</u>	<u>0.40</u>	<u>0.03</u>	<u>0.30</u>	<u>0.02</u>	<u>0.4</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>6.7</u>	<u>0.12</u>	<u>5.3</u>	<u>0.37</u>	<u>5.2</u>	<u>0.30</u>	<u>6.1</u>	<u>0.18</u>
<u>TOTAL</u>	<u>27.4</u>	<u>0.5</u>	<u>21.8</u>	<u>1.5</u>	<u>20.6</u>	<u>1.2</u>	<u>24.2</u>	<u>0.7</u>

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	<u>2025 Projections (MMT)</u>	<u>2030 Projections (MMT)</u>	<u>2040 Projections (MMT)</u>	<u>2050 Projections (MMT)</u>
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions. Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects. The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each year in Table 1 and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO

responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.

8.02.4 Timing for Determining Compliance

8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.

8.02.4.2 After October 1, 2022

8.02.4.2.1 CDOT must for each Applicable Planning Document, meet either the reduction levels within Table 1 for Non-MPO areas or the requirements as set forth in Rule 8.05.

8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 for each Applicable Planning Document, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8.05.

8.02.5 Demonstrating Compliance. At least thirty (30) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:

8.02.5.1 GHG emissions analysis demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO₂e for each compliance year in Table 1 or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2., as applicable, have been met.

8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions.

8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes those funds on projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions.

8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures.

8.02.5.3.3 Quantification of specific co-benefits including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities.

8.02.6 Reporting on Compliance- Annually by April 1, CDOT and MPOs must provide a status report to the Commission on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:

8.02.6.1 The implementation timeline;

8.02.6.2 The current status;

8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and

8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.

8.03 GHG Mitigation Measures. When assessing compliance with the GHG Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:

8.03.1 The addition of transit resources in a manner that can displace VMT.

8.03.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.

8.03.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.

8.03.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.

8.03.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.

- 8.03.6 Adopting locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.
- 8.03.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure -- as well as upgrading commensurate grid improvements -- into the design of key freight routes to accelerate truck electrification.
- 8.03.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.
- 8.03.9 Adoption of transportation demand management practices that reduce VMT.
- 8.04 Air Pollution Control Division (APCD) Confirmation and Verification
- 8.04.1 At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.
- 8.04.2 At least thirty (30) days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within forty-five (45) days, the document shall be considered acceptable.
- 8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.
- 8.05.1 If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.
- 8.05.2 If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG. Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non-MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:
- 8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions. The Commission may waive the restrictions on specific projects on the following basis:
- 8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions; and
- 8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions when compared to the required reduction levels in this Rule.

8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met.

8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be denied.

8.05.3 Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.

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8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG reduction accomplishments.

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, et. seq., in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.0.5.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

Colorado Energy Office
1600 Broadway, Suite 1960
Denver, CO 80202
(303) 866-2100
energyoffice.colorado.gov

9.0.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

U.S. Environmental Protection Agency
The Office of Transportation and Air Quality
1200 Pennsylvania Ave, N.W.
Washington, DC 20460
(734) 214-4574 or (202) 566-0495
mobile@epa.gov
<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

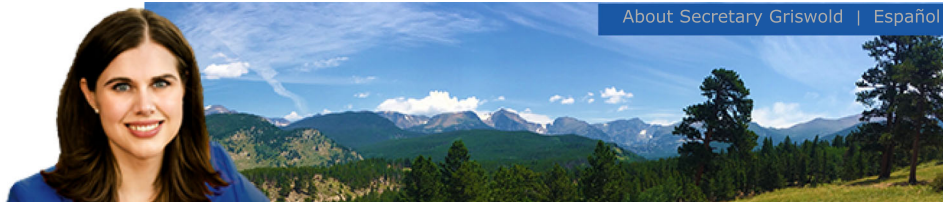
Entire rule eff. 12/15/2012.

Section SB&P eff. 05/30/2013.

Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.



Colorado Register

Official Publication of the State Administrative Rules (24-4-103(11) C.R.S.)

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Notices of proposed rulemaking

Department	Agency	Proposed rules	Hearing
Department of Revenue	Division of Motor Vehicles	DRIVER'S LICENSE-DRIVER CONTROL	09/15/2021 02:00 PM
Department of Transportation	Transportation Commission and Office of Transportation Safety	RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS	09/14/2021 03:00 PM
Department of Regulatory Agencies	Division of Professions and Occupations - Board of Accountancy	ACCOUNTANCY RULES AND REGULATIONS	09/22/2021 09:00 AM
Department of Regulatory Agencies	Division of Professions and Occupations - State Electrical Board	STATE ELECTRICAL BOARD RULES AND REGULATIONS	09/29/2021 09:30 AM
Department of Regulatory Agencies	Division of Professions and Occupations - State Board of Examiners of Nursing Home Administrators	RULES AND REGULATIONS FOR NURSING HOME ADMINISTRATORS	09/15/2021 09:00 AM
Department of Regulatory Agencies	Division of Professions and Occupations - State Board of Social Work Examiners	SOCIAL WORK EXAMINERS RULES AND REGULATIONS	09/17/2021 09:30 AM
Department of Law	Peace Officer Standards and Training Board	PEACE OFFICER TRAINING PROGRAMS AND PEACE OFFICER CERTIFICATION	09/24/2021 10:00 AM
Department of Law	Attorney General-Consumer Protection Unit	Investigative Hearing Rules	09/15/2021 02:00 PM
Department of Public Health and Environment	Water And Wastewater Facility Operators Certification Board (1003 Series)	REGULATION NO. 100 - WATER AND WASTEWATER FACILITY OPERATORS CERTIFICATION REQUIREMENTS	09/28/2021 09:00 AM
Public Employees' Retirement Board	Public Employees' Retirement Association	COLORADO PERA RULES	09/17/2021 09:10 AM

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Department	Agency	Rules adopted	AG opinion	Effective date
Department of Regulatory Agencies	Division of Professions and Occupations - Colorado Dental Board	3 CCR 709-1 DENTISTS & DENTAL HYGIENISTS RULES AND REGULATIONS (DOC)	08/03/2021	09/14/2021
Department of Public Health and Environment	Air Quality Control Commission	5 CCR 1001-1 PROCEDURAL RULES (DOC)	08/04/2021	09/14/2021

Department of Public Health and Environment	Air Quality Control Commission	5 CCR 1001-9 REGULATION NUMBER 7 CONTROL OF OZONE VIA OZONE PRECURSORS AND CONTROL OF HYDROCARBONS VIA OIL AND GAS EMISSIONS (DOC)	08/04/2021	09/14/2021
Department of Local Affairs	Division of Housing	8 CCR 1302-14 NON-RESIDENTIAL AND RESIDENTIAL FACTORY-BUILT STRUCTURES; SELLERS OF MANUFACTURED HOMES; MANUFACTURED HOME INSTALLATIONS; AND HOTELS, MOTELS, AND MULTI-FAMILY DWELLINGS IN THOSE AREAS OF THE STATE WHERE NO STANDARDS EXIST (DOC)	08/02/2021	09/14/2021

Emergency Rules Adopted[Top](#)

Department	Agency	Rules adopted	Justification	AG opinion	Effective date	Expiration date
Department of Regulatory Agencies	Division of Insurance	3 CCR 702-4 Series 4-2 LIFE, ACCIDENT AND HEALTH, Series 4-2 Accident and Health (General) (DOCX)	EmergencyJustificationPathAttach2021-00444.doc	08/09/2021	07/22/2021	11/19/2021
Department of Law	Administrator-Uniform Consumer Credit Code and Commission on Consumer Credit	4 CCR 902-3 COLORADO STUDENT LOAN EQUITY ACT RULES (DOC)	EmergencyJustificationPathAttach2021-00469.pdf	08/05/2021	07/30/2021	11/27/2021
Department of Local Affairs	Division of Housing	8 CCR 1302-14 NON-RESIDENTIAL AND RESIDENTIAL FACTORY-BUILT STRUCTURES; SELLERS OF MANUFACTURED HOMES; MANUFACTURED HOME INSTALLATIONS; AND HOTELS, MOTELS, AND MULTI-FAMILY DWELLINGS IN THOSE AREAS OF THE STATE WHERE NO STANDARDS EXIST (DOC)	EmergencyJustificationPathAttach2021-00427.rtf	08/02/2021	07/13/2021	11/10/2021
Department of Higher Education	Higher Education Commission	8 CCR 1504-9 RULES FOR THE ADMINISTRATION OF THE COLORADO OPPORTUNITY SCHOLARSHIP INITIATIVE (DOCX)	EmergencyJustificationPathAttach2021-00438.docx	08/02/2021	07/14/2021	11/11/2021

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Department / Agency	Filed date	Notice
Department of Health Care Policy and Financing	08/09/2021	Home and Community-Based Services (HCBS) Waiver Amendments
Department of Regulatory Agencies	08/12/2021	IN THE MATTER OF THE PROPOSED AMENDMENTS TO AGE OF MOTOR VEHICLE RULES, 4 CODE OF COLORADO REGULATIONS 723-6.
Department of Public Health and Environment	08/13/2021	2021 Integrated Water Quality Monitoring and Assessment Report Administrative Action Hearing
Department of	08/13/2021	FY2022 Intended Use Plans Administrative Action Hearing

Public Health and Environment		
Department of Public Health and Environment	08/13/2021	Annual Public Comment Informational Hearing
Department of Revenue	08/13/2021	DMV DL Virtual Workshop 1 CCR 204-30 Rule 4
Department of Revenue	08/16/2021	Date change for Gaming rulemaking hearing
Department of Regulatory Agencies	08/23/2021	Colorado Real Estate Commission Meeting - Commission Approved Contract Forms
Department of Health Care Policy and Financing	08/24/2021	Implementation of Colorado House Bill 21-1275

Calendar of Hearings

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Agency	Rule	Hearing
Division of Motor Vehicles	DRIVER'S LICENSE-DRIVER CONTROL	09/15/2021 02:00 PM
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Division of Professions and Occupations - State Board of Examiners of Nursing Home Administrators	RULES AND REGULATIONS FOR NURSING HOME ADMINISTRATORS	09/15/2021 09:00 AM
Division of Professions and Occupations - State Board of Social Work Examiners	SOCIAL WORK EXAMINERS RULES AND REGULATIONS	09/17/2021 09:30 AM
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Public Employees' Retirement Association	COLORADO PERA RULES	09/17/2021 09:10 AM

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COLORADO

Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

Notice of Proposed Rulemaking

Transportation Commission of Colorado

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

I. Notice

As required by the Colorado Administrative Procedure Act found at section 24-4-103, C.R.S., the Transportation Commission of Colorado (Commission) gives notice of proposed rulemaking.

II. Subject

The Commission is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

A detailed Statement of Basis, Purpose, and Specific Statutory Authority follows this notice and is incorporated by reference.



III. Rulemaking Hearings

The Commission plans to hold eight (8) hearings across the State as listed in the below table to hear testimony and receive comments on the proposed rule revisions. The public hearings will be conducted in a hybrid format, both in-person and virtually. All interested and affected parties may choose to attend one (1) or all eight (8) scheduled hearings either in-person or virtually.

Please note that the Commission may hold additional hearings, which will be posted on CDOT's website: <https://www.codot.gov/business/rules/proposed-rules.html>

Date	Location	Time	Virtual Hearing Registration Links
9/14/2021	CDOT Regional Office US160 Maintenance Training Facility 20581 Highway 160 Durango, CO 81301	3-7 p.m.	Virtual Registration Form
9/17/2021	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction CO 81505	3-7 p.m.	Virtual Registration Form
9/23/2021	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	3-7 p.m.	Virtual Registration Form
9/24/2021	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906	3-7 p.m.	Virtual Registration Link
9/27/2021	South Suburban Sports Complex 4810 E. County Line Rd. Littleton, CO 80126	3-7 p.m.	Virtual Registration Link
9/29/2021	CDOT Regional Office Big Sandy Conference Room 2738 Victory Highway Limon, CO 80828	3-7 p.m.	Virtual Registration Form
9/30/2021	Christ United Methodist Church 301 East Drake Road Fort Collins, CO 80525	3-7 p.m.	Virtual Registration Form
10/4/2021	City Hall City Council Chambers 101 West 8th Street Glenwood Springs, CO 81601	3-7 p.m.	Virtual Registration Form

How to Register to Attend Hearings Virtually

If you plan to attend any of the scheduled hearings virtually, you must click on the registration link in the above table for each hearing that you wish to attend virtually. The registration links for each hearing are also available on the CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. When you register, you must provide your full name and email address. You may also provide your telephone number and the organization that you are representing. Lastly, please indicate whether you plan to testify during the hearing and/or submit written comments. You will receive instructions the day before the scheduled hearing on how to join, listen, and provide testimony if you wish.



IV. Statutory Authority

The specific authority under which the Commission shall establish these proposed rule revisions is set forth in §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

V. Copies of the Notice, Proposed Rule Revisions, and the Statement of Basis, Purpose & Authority

The notice of hearing, the proposed rule revisions, and the proposed statement of basis, purpose and authority are available for review at CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>.

If there are changes made to the proposed rule revisions before the first scheduled hearing on September 14, 2021, the updated proposed rule revisions will be available to the public and posted on CDOT's website by September 9, 2021.

Please note that the proposed rule revisions being considered are subject to further changes and modifications after the public hearings and the deadline for the submission of written comments.

VI. Opportunity to testify and submit written comments

The Commission and CDOT strive to make the rulemaking process inclusive to all. Everyone will have the opportunity to testify and provide written comments concerning the proposed rule revisions. Interested and affected parties are welcome to testify and submit written comments.

Each hearing will have an identical format. The Hearing Officer opens the hearing and provides a brief introduction of the hearing procedures. CDOT will review exhibits to establish that the CDOT on behalf of the Commission met all the procedural requirements of the Administrative Procedure Act. A summary of the proposed rule revisions will be presented by CDOT staff. Interested and affected parties will then have the opportunity to give testimony either in-person or virtually.

Testimony

The testimony phase of each hearing will proceed as follows:

- The Hearing Officer will identify the participants who indicated that they plan to testify during the hearing based on the registration records.
- When the Hearing Officer exhausts the list, they will ask whether any additional participants wish to testify.

To ensure that the hearing is prompt and efficient, oral testimony may be time-limited.

Written Comments

You may submit written comments to dot_rules@state.co.us during the comment period between August 13, 2021, and October 15, 2021. **All written comments must be received on or before Friday, October 15, 2021, at 5 pm.**



Additionally, we will post all written comments to CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. However, please note that we will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

All written comments will be added to the official rulemaking record.

VII. Recording of the Hearings

Each hearing will be recorded. After each hearing concludes, the recording will be available on CDOT's YouTube Channel at <https://www.youtube.com/channel/UC0WFfiQ-SE4kV07saKZdueA/videos>.

VIII. Special Accommodations

If you need special accommodations, please contact CDOT's Rules Administrator at 303.757.9441 or dot_rules@state.co.us at least one (1) week prior to the scheduled hearing date.

IX. Contact Information

Please contact CDOT's Rules Administrator, at 303.757.9441 or dot_rules@state.co.us if you have any questions.





COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

August 31, 2021

MISCELLANEOUS RULEMAKING PUBLIC NOTICE

**Transportation Commission of Colorado
Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
2 CCR 601-22**

Code of Colorado Regulations eDocket Tracking Number: [2021-00508](#)

On August 13, 2021, the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State and the Department of Regulatory Agencies.

The Commission initially planned to hold eight public hearings across the state to hear testimony and receive comments on the proposed pollution reduction planning standards for transportation. The dates, times, and locations of the eight public hearings were provided in the Notice of Proposed Rulemaking that was published in the Colorado Register on August 25, 2021.

Requests for a cost-benefit analysis have been received by the Department of Regulatory Agencies regarding the proposed pollution reduction planning standards for transportation.

Pursuant to section 24-4-103(2.5), C.R.S., this is an additional notice to postpone the first hearing originally scheduled for September 14, 2021, to comply with the requirement to complete the cost-benefit analysis at least ten (10) before the public hearing. The first public hearing will now commence at 2 p.m. on Friday, September 17, 2021, at CDOT Regional Office, Bookcliff Conference Room, 2328 G Road, Grand Junction, CO 81505.

This Notice also adds a ninth public hearing in Firestone, CO, and adjusts the start and end times for certain hearings. A complete list of the dates, times, and locations of the nine public hearings can be found in the updated Notice of Proposed Rulemaking, which is attached and incorporated by reference to this Notice.

Finally, this Notice corrects a typographical error in the Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble. Under the Statutory Authority section, the proposed statement incorrectly referenced 2020 as the year for Senate Bill 260 rather than 2021. The proposed statement now correctly reads Senate Bill 21-2601. The updated Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble is attached and incorporated by reference to this Notice.

This Notice, the updated Notice of Proposed Rulemaking, and the updated Proposed Statement of Basis and Purpose, Statutory Authority and Preamble will be posted on CDOT's website at <https://www.codot.gov/business/rules/proposed-rules>.





COLORADO

Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

August 31, 2021

Updated Notice of Proposed Rulemaking

Transportation Commission of Colorado Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

I. Notice

As required by the Colorado Administrative Procedure Act found at section 24-4-103, C.R.S., the Transportation Commission of Colorado (Commission) gives notice of proposed rulemaking.

II. Subject

The Commission is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

A detailed Statement of Basis, Purpose, and Specific Statutory Authority follows this notice and is incorporated by reference.



III. Rulemaking Hearings

The Commission plans to hold nine (9) hearings across the State as listed in the below table to hear testimony and receive comments on the proposed rule revisions. The public hearings will be conducted in a hybrid format, both in-person and virtually. All interested and affected parties may choose to attend one (1) or all nine (9) scheduled hearings either in-person or virtually.

Please note that the Commission may hold additional hearings, which will be posted on CDOT's website: <https://www.codot.gov/business/rules/proposed-rules.html>

Date	Location	Time	Virtual Hearing Registration Links
9/17/2021	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction, CO 81505	2-5 p.m.	Virtual Registration Form
9/23/2021	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	3-7 p.m.	Virtual Registration Form
9/24/2021	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906	3-6 p.m.	Virtual Registration Link
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9/30/2021	Christ United Methodist Church 301 East Drake Road Fort Collins, CO 80525	2-5 p.m.	Virtual Registration Form
10/4/2021	City Hall City Council Chambers 101 West 8th Street Glenwood Springs, CO 81601	2-5 p.m.	Virtual Registration Form
10/5/2021	Weld County Southwest Service Complex 4209 County Road 24 1/2 Firestone, CO 80504 <i>*Note: This address may show up in some map applications as a Longmont address.</i>	2-5 p.m.	Virtual Registration Form
10/7/2021	CDOT Regional Office US160 Maintenance Training Facility 20581 Highway 160 Durango, CO 81301	2-5 p.m.	Virtual Registration Form



How to Register to Attend Hearings Virtually

If you plan to attend any of the scheduled hearings virtually, you must click on the registration link in the above table for each hearing that you wish to attend virtually. The registration links for each hearing are also available on the CDOT's website at <https://www.codot.gov/business/rules/proposed-rules>.

When you register, you must provide your full name and email address. You may also provide your telephone number and the organization that you are representing. Lastly, please indicate whether you plan to testify during the hearing and/or submit written comments. You will receive instructions the day before the scheduled hearing on how to join, listen, and provide testimony if you wish.

IV. Statutory Authority

The specific authority under which the Commission shall establish these proposed rule revisions is set forth in §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

V. Copies of the Notice, Proposed Rule Revisions, and the Statement of Basis, Purpose & Authority

The notice of hearing, the proposed rule revisions, and the proposed statement of basis, purpose and authority are available for review at CDOT's website at <https://www.codot.gov/business/rules/proposed-rules>.

If there are changes made to the proposed rule revisions before the first scheduled hearing on September 17, 2021, the updated proposed rule revisions will be available to the public and posted on CDOT's website by September 10, 2021.

Please note that the proposed rule revisions being considered are subject to further changes and modifications after the public hearings and the deadline for the submission of written comments.

VI. Opportunity to testify and submit written comments

The Commission and CDOT strive to make the rulemaking process inclusive to all. Everyone will have the opportunity to testify and provide written comments concerning the proposed rule revisions. Interested and affected parties are welcome to testify and submit written comments.

Each hearing will have an identical format. The Hearing Officer opens the hearing and provides a brief introduction of the hearing procedures. CDOT will review exhibits to establish that CDOT on behalf of the Commission met all the procedural requirements of the Administrative Procedure Act. A summary of the proposed rule revisions will be presented by CDOT staff. Interested and affected parties will then have the opportunity to give testimony either in-person or virtually.

Testimony

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- When the Hearing Officer exhausts the list, they will ask whether any additional participants wish to testify.



To ensure that the hearing is prompt and efficient, oral testimony may be time-limited.

Written Comments

You may submit written comments to dot_rules@state.co.us during the comment period between August 13, 2021, and October 15, 2021. **All written comments must be received on or before Friday, October 15, 2021, at 5 pm.**

Additionally, we will post all written comments to CDOT's website at <https://www.codot.gov/business/rules/proposed-rules>. However, please note that we will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

All written comments will be added to the official rulemaking record.

VII. Recording of the Hearings

Each hearing will be recorded. After each hearing concludes, the recording will be available on CDOT's YouTube Channel at <https://www.youtube.com/channel/UC0WFfiQ-SE4kV07saKZdueA/videos>.

VIII. Special Accommodations

If you need special accommodations, please contact CDOT's Rules Administrator at 303.757.9441 or dot_rules@state.co.us at least one (1) week prior to the scheduled hearing date.

IX. Contact Information

Please contact CDOT's Rules Administrator, at 303.757.9441 or dot_rules@state.co.us if you have any questions.





COLORADO

Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

08/31/2021

Transportation Commission of Colorado Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

Updated Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble

Statement of Basis and Purpose and Preamble

Overview

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range multimodal, comprehensive Statewide Transportation Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department or CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the Transportation Commission of Colorado ("Commission"), as a basis for developing the Statewide Transportation Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO Transportation Planning Regions. In addition, the purpose of the Rules is to describe the organization and function of the Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those



best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The specific purpose of this rulemaking is to establish Greenhouse Gas (GHG) pollution reduction planning levels for transportation within Section 8 of these Rules that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[,]" acknowledged that "Colorado is already experiencing harmful climate impacts[,]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. *see* § 25-7-102(2), C.R.S. The General Assembly also



recognized that “[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment.” *see* § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). Available at: <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>. The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” *see* Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. *see* Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. *see* § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. *see* § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” *see* § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” *see* § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” *see* 23 U.S.C. § 134; *see also* 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” *see* 23 U.S.C. § 134(h)(1)(E); *see also* 23 C.F.R.



Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. *see* 23 U.S.C. § 135(d)(1)(E); *see also* 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” *see* 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. *see* § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” *see* § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” *see* § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” *see* § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.



Of note, many types of infrastructure have been demonstrated not to generate significant induced demand or increased emissions. For example, the state of California conducted a study of project types that should be considered “neutral” from the perspective of GHG pollution -- due to their use being related primarily to issues like safety and utility for emergency services. See here: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

Statutory Authority

The statutory authority is as follows:

- House Bill 19-1261 enacted into law on May 30, 2019.
- Senate Bill 21-260 enacted into law on June 17, 2021.
- § 25-7-102(2), C.R.S., which sets forth the legislative declaration to reduce statewide GHG pollution and establishes statewide GHG pollution targets.
- § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling, and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and vehicle miles traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.
- § 43-1-1101, C.R.S., which authorizes CDOT to develop and maintain the state transportation planning process and the State Transportation Plan in cooperation with Regional Planning Commissions and local government.
- § 43-1-1103(5), C.R.S., which authorizes the Commission to promulgate rules to establish the formation of the Statewide Transportation Plan and the statewide planning process. Also requires the consideration of environmental stewardship and reducing GHG emissions as part of transportation planning.
- § 43-1-106(8), C.R.S, which authorizes the Commission to formulate policy with respect to transportation systems in the State and promulgate and adopt all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs.
- § 43-1-106(8)(b), C.R.S., which requires the Commission to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.
- § 43-1-106(8)(k), C.R.S., which authorizes the Commission to make all necessary and reasonable order, rules and regulations.





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Department	Agency	CCR #	Tracking #	Termination date	Reason for termination
Department of Revenue	Taxation Division	1 CCR 201-13	2021-00165	08/19/2021	After consideration of questions raised at the hearing, we determined it was necessary to make further revisions to the proposed rule and recommence the rulemaking process.

Non-Rulemaking Public Notices and Other Miscellaneous Rulemaking Notices[Top](#)

Department / Agency	Filed date	Notice
Department of Transportation	08/31/2021	Transportation Commission of Colorado- Rescheduled Permanent Rulemaking Hearing (eDocket No. 2021-00508)

Calendar of Hearings[Top](#)

Agency	Rule	Hearing
Division of Motor Vehicles	VEHICLE SERVICES SECTION	09/30/2021 02:00 PM
Division of Motor Vehicles	DRIVER'S LICENSE-DRIVER CONTROL	09/30/2021 11:00 AM
Colorado State Board of Education	RULES FOR THE ADMINISTRATION OF THE PUBLIC SCHOOL TRANSPORTATION FUND	10/13/2021 09:00 AM
Colorado State Board of Education	COLORADO RULES FOR THE OPERATION, MAINTENANCE AND INSPECTION OF SCHOOL TRANSPORTATION VEHICLES	10/13/2021 09:00 AM
Colorado State Board of Education	RULES FOR INDIVIDUALIZED MEDICAL SEIZURE ACTION PLANS	10/13/2021 09:00 AM
Transportation Commission and Office of Transportation Safety	RULES GOVERNING OUTDOOR ADVERTISING IN COLORADO	10/01/2021 10:00 AM
Division of Insurance	LIFE, ACCIDENT AND HEALTH, Series 4-2 Accident and Health (General)	10/05/2021 11:00 AM
Division of Insurance	LIFE, ACCIDENT AND HEALTH, Series 4-2 Accident and Health (General)	10/05/2021 11:00 AM
Division of Insurance	LIFE, ACCIDENT AND HEALTH, Series 4-2 Accident and Health (General)	10/05/2021 11:00 AM
Division of Professions and Occupations - State Board of Pharmacy	STATE BOARD OF PHARMACY RULES AND REGULATIONS	09/30/2021 08:45 AM
Division of Professions and Occupations - Board of Psychologists Examiners	PSYCHOLOGIST EXAMINERS RULES AND REGULATIONS	10/01/2021 09:30 AM
Public Utilities Commission	RULES REGULATING TELECOMMUNICATIONS SERVICES AND PROVIDERS OF TELECOMMUNICATIONS SERVICES	10/05/2021 09:00 AM
Division of Real Estate	RULES REGARDING REAL ESTATE BROKERS	10/05/2021 09:00 AM
Division of Real Estate	SUBDIVISIONS AND TIMESHARES	10/05/2021 09:00 AM
Division of Professions and Occupations - Board of Veterinary Medicine	VETERINARY MEDICINE RULES AND REGULATIONS	10/14/2021 09:00 AM
Division of Professions and Occupations - Colorado Office of Combative Sports	COMBATIVE SPORTS RULES AND REGULATIONS	10/12/2021 10:15 AM
Division of Professions and Occupations - Board of Addiction Counselor Examiners	BOARD OF ADDICTION COUNSELOR EXAMINERS RULES	10/05/2021 09:30 AM
Air Quality Control Commission	REGULATION NUMBER 19 THE CONTROL OF LEAD HAZARDS	11/18/2021 09:00 AM
Air Quality Control Commission	REGULATION NUMBER 23 REGIONAL HAZE LIMITS	11/17/2021 04:30 PM
Health Facilities and Emergency Medical Services Division (1011, 1015 Series)	CHAPTER 2 - GENERAL LICENSURE STANDARDS	10/21/2021 12:00 PM
Prevention Services Division (1009, 1015, 1016 Series)	PREVENTION, INTERVENTION, AND TREATMENT PROGRAMS FOR CHILDREN AND YOUTH	10/21/2021 12:00 PM
Division of Housing	MOBILE HOME PARK ACT DISPUTE RESOLUTION & ENFORCEMENT PROGRAM	10/05/2021 01:00 PM

Register Details

Income Maintenance (Volume 3)	COLORADO CHILD CARE ASSISTANCE PROGRAM	10/08/2021 08:30 AM
Child Support Services (Volume 6)	RULE MANUAL VOLUME 6, CHILD SUPPORT SERVICES RULES	10/08/2021 08:30 AM
Medical Services Board (Volume 8; Medical Assistance, Children's Health Plan)	MEDICAL ASSISTANCE - STATEMENTS OF BASIS AND PURPOSE AND RULE HISTORY	10/08/2021 09:00 AM
Food Assistance Program (Volume 4B)	RULE MANUAL VOLUME 4B, FOOD ASSISTANCE	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	OVERVIEW OF CHILD WELFARE SERVICES	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	REFERRAL AND ASSESSMENT	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	REFERRAL AND ASSESSMENT	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	PROGRAM AREAS, CASE CONTACTS, AND ONGOING CASE REQUIREMENTS	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	CHILD WELFARE SERVICES	10/08/2021 08:30 AM
Social Services Rules (Volume 7; Child Welfare, Child Care Facilities)	RESOURCES, REIMBURSEMENT, REPORTING, AND PROVIDER REQUIREMENTS	10/08/2021 08:30 AM
Adult Protective Services	ADULT PROTECTIVE SERVICES	10/08/2021 08:30 AM
Adult Protective Services	ADULT PROTECTIVE SERVICES	10/08/2021 08:30 AM

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Exhibit 3

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Submission Accepted

Rule Submitted

Your proposed rules or amendments to rules have been successfully submitted to the Department of Regulatory Agencies.

After your submission has been checked for completeness, it will be made available to the general public on DORA's website and email notifications will be sent to interested stakeholders. You will be copied on all stakeholder requests for a cost-benefit analysis and DORA staff will contact you to discuss any public requests.

You may log back in to this system at any time to check on the current status of this rule. An email notification containing further instructions will be sent if a cost-benefit analysis is required as a result of your submission.

Colorado Department of Regulatory Agencies

August 13, 2021 08:47 pm
Calling Procedure:
SB121_Submit_Rule.
Rule_Submitted
Version: 1.0

STATE OF
COLORADO

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Proposed Rule Submitted - Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>

Fri, Aug 13, 2021 at 8:47 PM

To: natalie.lutz@state.co.us

The following Proposed Rule has been submitted to the Colorado Office of Policy, Research and Regulatory Reform:

Department: Department of Transportation
Rulemaking Agency: Transportation Commission of Colorado
Rule ID: 8981
Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
Submitted by: Natalie E Lutz
Date Submitted: 08/13/2021

After your submission has been checked for completeness, it will be made available to the general public on DORA's website and email notifications will be sent to interested stakeholders.

In accordance with SB13-158, the public will have until Monday, August 30th, 2021 at midnight to request that the Department of Regulatory Agencies require your agency to prepare a cost-benefit analysis of these rules or amendments. You will be copied on all stakeholder requests for a cost-benefit analysis and DORA staff will contact you to discuss the requests. A second email notification will be sent if you are required to submit a cost-benefit analysis as a result of a public request.

Please contact us at DORA_OPR_Website@state.co.us if you have further questions regarding this e-mail message.



COLORADO

Department of
Regulatory Agencies

Colorado Office of Policy, Research &
Regulatory Reform



Detailed Rulemaking Information

Department/Agency

Department: Department of Transportation
Rulemaking Agency: Transportation Commission of Colorado

Proposed Rule Changes

Rule Type: New, Amended and Repealed Rules

Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Short Description: Pollution Reduction Planning Standards.

CCR Number: 2 CCR 601-22

Statutory Authority: §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

Website for Current Agency Rules: <https://www.codot.gov/business/rules/proposed-rules.html>

Subject Matter/Purpose: The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms. Please see the attachment for the proposed rule revisions, the notice of proposed rulemaking, the

proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Colorado Register Publish Date: 08/25/2021

Text of Proposed Changes: [Notice Statement Fact Sheet Proposed Rules.pdf](#) (887K, Adobe Acrobat)

Submitted for Review: 08/13/2021

Rulemaking Hearing

Hearing Date: Tuesday, September 14, 2021 03:00 pm

Hearing Covers: Multiple Rules

Hearing Location: CDOT Regional Office, US160 Maintenance Training Facility
20581 Highway 160
Durango, CO, CO 81301

Hearing Notes: The Transportation Commission of Colorado plans to hold eight (8) hearings across the State as listed in the table within the attachment to hear testimony and receive comments. The public hearings will be conducted in a hybrid format, both in-person and virtually. If you plan to attend any of the scheduled hearings virtually, please register through the registration links provided either on the attachment or CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html> so we can provide instructions on how you can join the hearings of your choice virtually and provide testimony if you wish. Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. Please see the attachment for the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Contact Information

Public Contact Name: Natalie Lutz

Title: Rules, Policies and Procedures Administrator

Email: Natalie.Lutz@state.co.us

Phone: 303-757-9441

Subject Information

Related Subject Area(s): Environment
Government
Health
Motor Vehicles & Traffic Regulation
Transportation

Review

**Deadline for Public Cost-Benefit
Analysis Request:**

Monday, August 30th, 2021

[Click here to request a cost-benefit analysis for a new or amended rule](#)



[Back to Calendar](#)

1560 Broadway, Suite 1550, Denver, CO 80202 [Email](#)

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Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

DORA Regulatory Notice: Transportation Commission of Colorado - Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Mon, Aug 16, 2021 at 5:30 PM

Dear Stakeholder:

The Department of Transportation - Transportation Commission of Colorado will be holding a rulemaking hearing on Tuesday, September 14th, 2021, 3:00 pm on rules regarding [Pollution Reduction Planning Standards](#). The hearing will be held at: CDOT Regional Office, US160 Maintenance Training Facility, 20581 Highway 160, Durango, CO CO 81301.

The purpose of this rulemaking is:

The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms. Please see the attachment for the proposed rule revisions, the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

If you believe there will be a significant negative impact on small business, job creation or economic competitiveness, you may [request that the Department of Regulatory Agencies require the rulemaking agency to prepare a cost-benefit analysis](#) of a proposed rule or amendment. This request must be made to the Department of Regulatory Agencies by Monday, August 30th, 2021.

You may also [submit comments directly to the rulemaking agency](#) for the agency's consideration during the upcoming rulemaking hearing.

We hope this information is helpful to you. Thank you for taking the time to participate in the rulemaking process.

Brian Tobias
Director
Colorado Office of Policy, Research and Regulatory Reform

8/21/2021

State.co.us Executive Branch Mail - DORA Regulatory Notice: Transportation Commission of Colorado - Pollution Reduction Planning St...

You have received this e-mail bulletin because you previously signed up for this service provided by the Department of Regulatory Agencies. If you do not want to receive further e-mails regarding the review of proposed rules, please visit https://www.dora.state.co.us/pls/real/SB121_Web.SignIn_Form and update your personal profile.



STATE OF COLORADO

3D

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Received Public CBA Request for Rule: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Tue, Aug 17, 2021 at 4:13 PM

Rulemaking Agency: Department of Transportation - Transportation Commission of Colorado
Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
[View Rule Details](#) (opens a new browser window)

Received Public CBA Request for Rule: Pollution Reduction Planning Standards.

Submission Date: Tuesday, August 17, 2021 4:13 pm
Rule Number: Pollution Reduction Planning Standards.

Negative Impact Resulting from the Proposed Rule:

significant costs will be encountered. CBA should show that they are scientifically justified by improved air quality and health.

Additional information:

Name: [Redacted]
Organization: [Redacted]
Phone Number: [Redacted]
Email Address: [Redacted]

Submission ID: 219



STATE OF COLORADO

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Received Public CBA Request for Rule: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Wed, Aug 18, 2021 at 11:59 PM

Rulemaking Agency: Department of Transportation - Transportation Commission of Colorado
Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
[View Rule Details](#) (opens a new browser window)

Received Public CBA Request for Rule: Pollution Reduction Planning Standards.

Submission Date: Wednesday, August 18, 2021 11:59 pm
Rule Number: 2 CCR 601-22

Negative Impact Resulting from the Proposed Rule:

If implemented, the new rule could cause project delays resulting in increased costs to the total project given inherent construction costs inflation thereby reducing the amount of funds available to address transportation needs across the state.

Furthermore, the new rule could serve as a basis to prevent or dramatically hinder regionally significant roadway expansion projects that are necessary to address congestion, population growth and air quality in a region thereby impacting a region's and Colorado's economic competitiveness.

Finally, as representatives of rural regions in the state, we are concerned about negative economic impacts upon disproportionately impacted communities, in particular, increased costs of housing and transportation as a consequence of the requirements of the rule, and specifically the mitigation option to develop "more efficient vertical land use and parking".

Additional information:

CDOT Construction Cost Index: <https://www.codot.gov/business/eema/constructioncostindex>

FHWA Highway Construction Cost / Inflation Issues: <https://www.fhwa.dot.gov/programadmin/contracts/price.cfm>

Name: [Redacted]
Organization: [Redacted]
Phone Number: [Redacted]
Email Address: [Redacted]

Submission ID: 220



STATE OF COLORADO

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Received Public CBA Request for Rule: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Fri, Aug 27, 2021 at 12:38 PM

Rulemaking Agency: Department of Transportation - Transportation Commission of Colorado

Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

[View Rule Details](#) (opens a new browser window)

Received Public CBA Request for Rule: Pollution Reduction Planning Standards.

Submission Date: Friday, August 27, 2021 12:38 pm

Rule Number: 2 CCR 601-22

Negative Impact Resulting from the Proposed Rule:

COPRRR staff entered the request into the system, and OIT attached the letter from the requestor.

Additional information:

Name: [Redacted]
Organization: [Redacted]
Phone Number: [Redacted]
Email Address: [Redacted]

Submission ID: 222



August 26, 2021

Via Electronic Mail

Colorado Department of Transportation
Attn: Shoshana M. Lew, Executive Director
2829 W. Howard Pl.
Denver, CO 80204
shoshana.lew@state.co.us

Department of Regulatory Agencies
Attn: Patty Salazar, Executive Director
1560 Broadway, Suite 1550
Denver, CO 80202
dora_OPR_Website@state.co.us

Re: Request for Cost-Benefit Analysis and Regulatory Analysis Under the Colorado Administrative Procedure Act in the Matter of Proposed Revisions to Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions, 2 CCR 601-22

Executive Director Lew and Executive Director Salazar:

The Board of County Commissioners of Weld County, Colorado (“Weld County”) submits this request to the Colorado Department of Regulatory Agencies (“DORA”) for a cost-benefit analysis under C.R.S. § 24-4-103(2.5) and a regulatory analysis under C.R.S. § 24-4-103(4.5) regarding the Colorado Department of Transportation’s (“CDOT”) proposed revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22 (the “Proposed Rule”).¹

¹ It is not clear whether CDOT or the Transportation Commission is the proponent of this proposed rule. See, e.g., *Project Fact Sheet Regarding Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards*, Colo. Dep’t of Transp. (stating “CDOT is

I. BACKGROUND

On August 13, 2021, CDOT filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the Proposed Rule. Among other things, the Proposed Rule aims to reduce greenhouse gas (“GHG”) emissions from the transportation sector. If finalized, the rule would require CDOT and the state’s five Metropolitan Planning Organizations (“MPOs”) to determine the total GHG emissions expected from future transportation projects and take steps to ensure that emissions do not exceed set GHG reduction amounts.

The transportation sector is one of the largest contributors to GHG and ozone precursor emissions, and Weld County generally supports efforts to reduce air pollution, including GHG emissions, from this sector. The Proposed Rule will impact individuals living in Weld County, as well as transportation projects planned throughout the county. As an interested stakeholder, Weld County must be able to assess the impacts of the Proposed Rule. However, CDOT has not yet provided any documentation or analysis to explain the rule or how it calculated the baseline emissions or reduction levels. Accordingly, Weld County submits this request for a cost-benefit analysis and regulatory analysis to provide this missing information.

II. LEGAL STANDARD

Under two separate provisions of the APA, “any person” may request additional economic and regulatory impact analyses. C.R.S. §§ 24-4-103(2.5), (4.5). Given the lack of analysis or supporting documentation accompanying the Proposed Rule, Weld County requests both a cost-benefit analysis and regulatory analysis to ensure the Transportation Commission fully considers the economic and regulatory impacts of the Proposed Rule.

A. DORA-Ordered Cost-Benefit Analysis Under C.R.S. § 24-4-103(2.5)

Under C.R.S. § 24-4-103(2.5)(a) “any person may, within five days after publication of the notice of proposed rule-making in the Colorado Register, request that [DORA] require the agency submitting the proposed rule or amendment to prepare a cost-benefit analysis.” Such cost-benefit analysis shall include the following:

1. The reason for the rule or amendment;

proposing a new standard to reduce greenhouse gas emissions from the transportation sector”) (emphasis added); *Press Release Regarding Colorado Developing New Pollution Reduction Planning Standards to Address Climate Change and Air Quality*, Colo. Dep’t of Transp. (stating the “Colorado Transportation Commission today proposed bold new transportation pollution reduction planning standards”) (emphasis added). This request for a cost-benefit analysis and regulatory analysis is directed to CDOT. If this is incorrect, Weld County asks that this request be redirected to the Transportation Commission.

2. The anticipated economic benefits of the rule or amendment, which shall include economic growth, the creation of new jobs, and increased economic competitiveness;
3. The anticipated costs of the rule or amendment, which shall include the direct costs to the government to administer the rule or amendment and the direct and indirect costs to business and other entities required to comply with the rule or amendment;
4. Any adverse effects on the economy, consumers, private markets, small businesses, job creation, and economic competitiveness; and
5. At least two alternatives to the proposed rule or amendment that can be identified by the submitting agency or a member of the public, including the costs and benefits of pursuing each of the alternatives identified.

C.R.S. § 24-4-103(2.5)(a)(I) – (V).

CDOT has not yet provided an economic analysis of the Proposed Rule or otherwise addressed these considerations. To assess the factors set forth above, Weld County requests a complete cost-benefit analysis under C.R.S. § 24-4-103(2.5).

B. Regulatory Impact Analysis Under § 24-4-103(4.5)

Under C.R.S. § 24-4-103(4.5) “upon [the] request of any person, at least fifteen days prior to the hearing, the [Division] shall issue a regulatory analysis of a proposed rule.” Such regulatory analysis must contain:

1. A description of the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
2. To the extent practicable, a description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons;
3. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
4. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction;
5. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule; and

6. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

24-4-103(4.5)(a)(I) – (VI).

To assess the factors set forth above, Weld County requests a complete regulatory analysis under C.R.S. § 24-4-103(4.5).

III. WELD COUNTY REQUESTS BOTH A COST-BENEFIT ANALYSIS AND A REGULATORY IMPACT ANALYSIS UNDER THE STATE APA

Weld County requests that DORA require CDOT to perform both a cost-benefit analysis pursuant to C.R.S. § 24-4-103(2.5) and a regulatory impact analysis under C.R.S. § 24-4-103(4.5) with respect to the Proposed Rule.

As an initial matter, Weld County submits this request in advance of publication of the Proposed Rule in the Colorado Register and well before the first hearing scheduled on September 14, 2021. *See* C.R.S. §§ 24-4-103(2.5), (4.5). Moreover, the DORA website states that requests for a cost benefit analysis for the Proposed Rule are due on August 30, 2021. Rules Governing Statewide Transportation Planning Process and Transportation Planning Region, https://www.dora.state.co.us/pls/real/SB121_Public_Comment_GUI.submission_form?p_rule_id=8981. Because this request is being submitted on August 26, 2021, it is timely.

Importantly, CDOT has not provided any type of analysis or the underlying documentation supporting its Proposed Rule. For instance, Table 1 and Table 2 listed on page 25 of the Proposed Rule set forth the GHG transportation planning reduction levels and baseline emissions, respectively. CDOT has not provided critical information regarding these tables, such as what methodology was used to reach these figures and what inputs and assumptions were used in the modeling. Accordingly, there is no way to evaluate the reasonableness of these figures or the efficacy of the Proposed Rule.

To allow interested stakeholders and the Transportation Commission to adequately evaluate the Proposed Rule, Weld County requests that CDOT provide supporting documentation—such as a technical support document, if available—describing the methods used to conduct the analysis for the GHG estimates in Table 1 and Table 2 of the Proposed Rule. Specifically, Weld County requests the following information be provided to all stakeholders and the Transportation Commission:

- Model inputs and outputs for all models used in the analysis, i.e., Land Use Model(s), EERPAT, MPO Models and Statewide Travel Model, and the Approved Air Quality Model, as applicable;

- Assumptions used in all models;
- Population growth data and assumptions;
- Data, assumptions, or modeling related to electric sector grid mix in future target years;
- Description of different scenarios considered in the modeling, if any, and which scenario was selected to determine GHG estimates shown in Table 1 and Table 2 of the Proposed Rule; and
- Description of any qualitative or off-model adjustments used to determine the GHG estimates in Table 1 and Table 2 of the Proposed Rule.

Weld County has separately requested from CDOT data regarding the Proposed Rule. To ensure that this information is provided to all interested stakeholders, and to enable the Transportation Commission to make an informed decision, Weld County requests that DORA require CDOT to produce this information in connection with its cost-benefit analysis and its regulatory impact analysis. This is what the Colorado APA requires. *See* C.R.S. §§ 24-4-103(2.5), (4.5).

IV. CONCLUSION

For the above-stated reasons, Weld County respectfully requests that DORA require CDOT to conduct a cost-benefit analysis under C.R.S. § 25-7-103(2.5) and a separate regulatory impact analysis under C.R.S. § 25-7-103(4.5). This information will enable the Transportation Commission to make a better-informed decision on the proposed revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

████████████████████
████████████████████
Weld County Attorney

STATE OF
COLORADO**3E**

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Rule Reviewed: Cost-Benefit Analysis Required - Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Tue, Aug 31, 2021 at 9:48 AM

The deadline for public cost-benefit analysis requests has passed for the following proposed rule(s):

Department: Department of Transportation**Rulemaking Agency:** Transportation Commission of Colorado**Rule ID:** 8981**Title or Subject:** Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Three public requests were received by the deadline.

After consultation with the requestor(s) and staff of your agency, a cost-benefit analysis is required for the following:

Cost-benefit analysis required as requested.

This analysis must be completed and submitted to the Colorado Office of Policy, Research and Regulatory Reform by 09/04/2021 and posted on your web site.

Thank you.
Brian Tobias, Director
Colorado Office of Policy, Research and Regulatory Reform

Instructions for Completing the Cost-Benefit Analysis:

1. Download the blank cost-benefit analysis form from http://www.dora.state.co.us/pls/opr/blank_cba.doc.
2. Fill out the cost-benefit analysis form and save it to a safe location on your local network.
3. Log into the Review of Agency Rules Online System at <https://www.dora.state.co.us/pls/real/sb121.logon>.
4. Find your proposed rule under the "Rules missing required Cost-Benefit Analysis" section and click the "Submit CBA for Rule..." link.
5. Click on the Submit CBA Form button.
6. Follow the online instructions to upload your completed cost-benefit analysis form.

Please contact us at DORA_OPR_Website@state.co.us if you have further questions regarding this e-mail message.

STATE OF
COLORADO**3F**

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

DORA Regulatory Notice: Transportation Commission of Colorado - NEW HEARING DATE & RULE DOCUMENT: Pollution Reduction PI -

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>

Wed, Sep 1, 2021 at 2:20 PM

To: natalie.lutz@state.co.us

Dear Stakeholder:

The Department of Transportation - Transportation Commission of Colorado will be holding a rulemaking hearing on Friday, September 17th, 2021, 2:00 pm on rules regarding [NEW HEARING DATE & RULE DOCUMENT: Pollution Reduction Planning Standards..](#) The hearing will be held at: CDOT Regional Office, Bookcliff Conference Room, [2328 G Road, Grand Junction CO 81505](#).

The purpose of this rulemaking is:

The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms. Please see the attachment for the proposed rule revisions, the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

If you believe there will be a significant negative impact on small business, job creation or economic competitiveness, you may [request that the Department of Regulatory Agencies require the rulemaking agency to prepare a cost-benefit analysis](#) of a proposed rule or amendment. This request must be made to the Department of Regulatory Agencies by Monday, August 30th, 2021.

You may also [submit comments directly to the rulemaking agency](#) for the agency's consideration during the upcoming rulemaking hearing.

We hope this information is helpful to you. Thank you for taking the time to participate in the rulemaking process.

Brian Tobias
Director
Colorado Office of Policy, Research and Regulatory Reform

You have received this e-mail bulletin because you previously signed up for this service provided by the Department of Regulatory Agencies. If you do not want to receive further e-mails regarding the review of proposed rules, please visit https://www.dora.state.co.us/pls/real/SB121_Web.SignIn_Form and update your personal profile.

STATE OF
COLORADO

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

DORA Regulatory Notice: Transportation Commission of Colorado - REVISED NOTICE: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Wed, Sep 1, 2021 at 4:50 PM

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We hope this information is helpful to you. Thank you for taking the time to participate in the rulemaking process.

Brian Tobias
Director
Colorado Office of Policy, Research and Regulatory Reform

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COLORADO

Department of
Regulatory Agencies

Colorado Office of Policy, Research &
Regulatory Reform



Detailed Rulemaking Information

Department/Agency

Department: Department of Transportation
Rulemaking Agency: Transportation Commission of Colorado

Proposed Rule Changes

Rule Type: New, Amended and Repealed Rules

Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Short Description: REVISED NOTICE: Pollution Reduction Planning Standards.

CCR Number: 2 CCR 601-22

Statutory Authority: §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

Website for Current Agency Rules: <https://www.codot.gov/business/rules/proposed-rules.html>

Subject Matter/Purpose: The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms. Please see the attachment for the proposed rule revisions, the notice of proposed rulemaking, the

proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Colorado Register Publish Date: 08/25/2021
Text of Proposed Changes: [Revised Rule Docs.pdf](#) (698K, Adobe Acrobat)
Submitted for Review: 08/13/2021

Rulemaking Hearing

Hearing Date: Friday, September 17, 2021 02:00 pm
Hearing Covers: Multiple Rules
Hearing Location: CDOT Regional Office, Bookcliff Conference Room
 2328 G Road
 Grand Junction, CO 81505
Hearing Notes: The Transportation Commission of Colorado plans to hold eight (8) hearings across the State as listed in the table within the attachment to hear testimony and receive comments. The public hearings will be conducted in a hybrid format, both in-person and virtually. If you plan to attend any of the scheduled hearings virtually, please register through the registration links provided either on the attachment or CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html> so we can provide instructions on how you can join the hearings of your choice virtually and provide testimony if you wish. Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. Please see the attachment for the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Contact Information

Public Contact Name: Natalie Lutz
Title: Rules, Policies and Procedures Administrator
Email: Natalie.Lutz@state.co.us
Phone: 303-757-9441

Subject Information

Related Subject Area(s): Environment
 Government
 Health
 Motor Vehicles & Traffic Regulation
 Transportation

Review

Review Date: 08/31/2021
Review Outcome: Cost-Benefit Analysis Required
Review Findings: Cost-benefit analysis required as requested.
Deadline for Public Cost-Benefit Analysis Request: Monday, August 30th, 2021
 The deadline for public cost-benefit analysis requests has passed.

Cost-Benefit Analysis

Cost-Benefit Analysis Pending

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1560 Broadway, Suite 1550, Denver, CO 80202 [Email](#)

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COLORADO

Department of Transportation

COST-BENEFIT ANALYSIS FOR RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING

In performing a cost-benefit analysis, each rulemaking entity must provide the information requested for the cost-benefit analysis to be considered a good faith effort. The cost-benefit analysis must be submitted to the Office of Policy, Research and Regulatory Reform at least ten (10) days before the administrative hearing on the proposed rule and posted on your agency's web site. For all questions, please attach all underlying data that supports the statements or figures stated in this cost-benefit analysis.

DEPARTMENT:	Colorado Department of Transportation	AGENCY:	Transportation Commission
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CCR:		DATE:	August 31, 2021
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RULE TITLE OR SUBJECT:

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

1. The reason for the rule or amendment;

The proposed "RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS" will set a greenhouse gas standard for state and regional transportation plans. The purpose of the Proposal is to ensure ongoing greenhouse gas emissions reductions from Colorado's transportation sector, which helps achieve the reduction goals set by HB19-1261. This rule also responds to a requirement in SB21-260, directing CDOT and the Transportation Commission to address GHGs through transportation planning.

Analysis Background

This analysis assumes that capital dollars for transportation will always be finite -- based on available federal, state, and local resources -- and that the parameters and modeling requirements established in the rule will help transportation planning agencies to prioritize those dollars in ways that better balance air pollution reduction needs with other factors such as improving safety and reducing congestion, and ideally selecting a portfolio of projects that achieve all of those ends. All of these factors, and others, tend to increase economic competitiveness, and render transportation investments of all modes good economic investments.

In terms of the overall economic and societal benefits of the rule, which are described in more detail below, it assumes that the public sector budget for transportation investment is relatively fixed and that this rule will likely result in some meaningful yet nuanced and regionally tailored shifts in the nature of which projects are prioritized.

The baseline for this analysis assumes a status quo that tallies the sum of regional transportation plans (RTPs) across all five metropolitan planning areas. These RTPs include state projects that are within the Metropolitan Planning Organization (MPO) boundaries. For example: all CDOT projects within the Denver metropolitan area are also included in the RTP for the Denver Regional Council of Governments (DRCOG). These long range plans typically extend out for about 30 years, so unlike the more proximate plans established at both the state and MPO levels, many of the projects included in these plans are notional and far away from delivery. Generally speaking, these RTPs are inclusive of capital investments but do not include maintenance budgets, which are typically paid for separately by the state and local governments respectively, without engagement by the MPOs.

As these plans are not fully fiscally constrained, meaning that in actuality they contain more projects than can be paid for with resource constraints, they typically fluctuate significantly before projects are transferred to nearer term, fiscally constrained plans (e.g. the first four years of the state’s “ten year plan” and the MPO transportation improvement plans or TIPs). The current sum of the long range RTPs for all five MPO areas is approximately \$28 billion of projects, many of which are not fully funded or planned. Notably, this baseline does not include the state’s many planned projects in rural Colorado, outside of the boundaries of the MPO areas and represented by rural transportation planning regions (TPRs). Virtually none of these rural projects would trigger the need for GHG Mitigation Measures under this rule because, with rare exception, they do not add capacity or change land use patterns. Rather, they are generally focused on state of good repair (e.g. repaving projects), safety and resiliency improvements like adding shoulders and passing lanes, and increasingly, supporting the economic vitality of communities by investing in revitalizing main streets across the state.

Using the sum of the RTPs as the baseline for the size of the transportation capital program that could be subject to mode shift, the analysis below assumes that, over several periods of performance, it is estimated that between a quarter and a third of resources would need to be shifted towards transportation project types that have air quality mitigation benefits -- as well as many societal co-benefits -- in order to achieve the targets set in the rule (and notably, if total spending shifted either higher or lower than in the scenario described here, it is likely that the proportions would be fairly similar). As explained in the table below, which assumes that spending is roughly consistent across the periods of time identified, this number is significantly lower in the immediate years and increases in the outyears. This, in large part, is because the early year projects are assumed to add significant transit service, which carry operating costs that aggregate. However, while the modeling assumes that about 20% of transit costs are paid back by farebox revenue, it does not factor in other revenue sources that often become available as a transit system grows. For example, federal formula funds for transit are allocated partially on the basis of existing ridership, so more ridership tends to result in more federal funding.

Table 1
Net Neutral Investment Levels and Dollars Shifted to Multimodal Transportation and other Environmentally Beneficial Transportation Investments
 (net present value, millions of 2021 dollars)

Years	Total RTPs + 10-Year Plan	Total Shift to Mitigation	Percent Shift
2022-2025	\$3,842.07	\$417.90	11%
2026-2030	\$4,802.59	\$974.90	21%
2031-2040	\$9,605.17	\$2,655.80	28%

2041-2050	\$9,605.17	\$2,691.50	28%
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Importantly, the scenario described above means that important capacity projects remain, but that these are balanced out with other types of projects with offsetting impacts, like adding bus infrastructure to highway projects, improving crosswalks to make them safer for pedestrians, opening up main streets for communities to utilize downtowns with less car travel, improving first-and-last-mile connections to transit facilities, and more. There is already precedent for adding these types of complementary features to highway projects. For example, construction of a managed lane on US36 included bus infrastructure for the flatiron flyer service. In a similar vein building on that model, CDOT is currently constructing a series of “mobility hubs” as part of capacity expansion along I-25 North in preparation to run bus rapid transit service in those managed lanes. In another example, design for the Floyd Hill expansion project includes plans to build out both a new microtransit service operated by CDOT, as well as park-and-ride facilities to facilitate operation of that service.

Incorporating mitigation features into high priority capacity expansion projects is expected to complement investment in project types that do not require mitigation measures -- such as repaving broken roads and fixing bridges that are in poor or fair condition before they become worse and more expensive to fix. Thus, all dollars shifted away from certain capacity projects are assumed to fund worthy transportation investments that improve competitiveness, quality of place and life, safety, economic vitality, public health, air quality, and more. A breakdown of these specific benefits is tabulated below.

An important aspect of this rule is that it does not require a specific set of measures to be implemented by the State and its MPOs to achieve the rule’s targets. Those decisions are left to the implementing agencies who will also have ongoing opportunity to propose new mitigation measures for modeling to ensure that they result in emission reductions. Thus, in order to conduct this analysis, CDOT developed illustrative policy choice packages that assume implementation of three broad categories of VMT reduction measures: (1) expansion of transit service; (2) policies to encourage compact land use that reduces the need to drive by making it possible for travelers to access more of their preferred destinations easily within denser areas, in a manner that also facilitates strong and economically vibrant downtowns; and (3) various programs that expand travel choices through a variety of different approaches that could include investing in bicycle and pedestrian infrastructure and micro mobility services that assist with “first and last mile” connections to transit facilities; investments (e.g. in digital infrastructure) that help support tele-travel as an alternative to physical travel and also offer more workplace flexibility to employees in many work environments; or programs that encourage non-work travel by modes other than a single occupancy vehicle (e.g. a jurisdiction that provides transit passes to its residents).

The projected cost of these policy choice packages is assumed to be absorbed into current transportation plan budgets (a net neutral approach).

Per the provisions of 24-4-103(2.5)(a), Colorado Revised Statutes, the cost-benefit analysis must include the following:

2. The anticipated economic benefits of the rule or amendment, which shall include economic growth, the creation of new jobs, and increased economic competitiveness;

Anticipated Economic Benefits

Full implementation of this rule is expected to result in significant economic benefits in the form of cost savings to travelers and to the general public. Travelers will benefit from reductions in vehicle operating costs as a

result of expanded travel options (e.g., transit service, tele-travel, walking and bicycling), travel time savings, and the need to use personal vehicles less because of being provided with more options through state and regional transportation planning. Implementation of the rule will also reduce economic costs associated with carbon emissions, air pollution, motor vehicle crashes (road safety), and the health consequences of physical inactivity.

Businesses are also expected to receive a share of the economic benefits. Examples include congestion reduction that saves travel time for “on-the-clock” business travel, and reduced health care costs for employees as a result of reduced air pollution, motor vehicle crashes, and physical inactivity. They may also experience increased worker retention and satisfaction as a result of employees having expanded commute or work from home options.

Additionally, policies that facilitate and reward downtown density tend to have a markedly positive impact on “main street” small businesses such as restaurants and locally-owned retail. While these benefits can be somewhat difficult to quantify in the aggregate and are thus not fully accounted for in this analysis, results from the Colorado Department of Transportation’s “Revitalizing Main Street” program indicate that they are significant and widespread across the state. Well over 100 grants awarded to more than 70 communities have largely supported projects including downtown street repurposing and parklets, sidewalks and crosswalks, park and street improvements, shared streets between cars and pedestrians, and wayfinding and signage improvements. Many recipients have affirmed to CDOT that these grants significantly improved business and saved jobs during the COVID-19 pandemic, and, when surveyed, 67 percent of respondents said they would not have implemented these innovations without the program. Though grants supported many projects on a pilot basis, survey results showed that 81 percent of projects are likely to be maintained or repeated on a seasonal basis given their success. This data provides qualitative indication of the economic development benefits associated with many of the project types that this policy would encourage.

Table 2 shows the projected change in social costs through 2025, 2030, 2040, and 2050 respectively, for full implementation of the proposed rule using the illustrative mix of strategies. The net benefits reflect the effects of reduced highway investment as well as increased investment in GHG-reducing projects. Negative values (shown in parentheses) represent a net cost savings. Future savings are discounted at a rate of 2.5 percent, consistent with Colorado Senate Bill (SB) 21-260 which requires use of the social cost of carbon dioxide (CO₂) and other pollutants using a discount rate of 2.5 percent or less. The most substantial benefits are from reduced crashes and reduced vehicle operating costs, resulting from reduced VMT. The net present value of total social benefits is roughly \$8 billion in the 2026-2030 timeframe and \$17 billion between 2031 and 2040.

Table 2
Economic Benefits (Cost Savings)
(Net Neutral Investment Levels after Mode Shift)
(net present value, millions of 2021 dollars)

Timeframe	Vehicle Operating Cost	Social Cost of Carbon	Air Pollution	Safety (Crashes)	Traffic Delay	Physical Inactivity	Total Social Cost Savings
2022 - 2025	\$(372)	\$(60)	\$(21)	\$(481)	\$(774)	\$(17)	\$(1,724)

2026 - 2030	\$(1,781)	\$(258)	\$(82)	\$(2,332)	\$(3,098)	\$(75)	\$(7,626)
2031 - 2040	\$(4,670)	\$(589)	\$(125)	\$(7,183)	\$(4,693)	\$(237)	\$(17,497)
2041 - 2050	\$(4,210)	\$(323)	\$(42)	\$(9,027)	\$397	\$(289)	\$(13,494)

A brief description of each of these economic benefits and how they were quantified is provided below. With the exception of physical inactivity, which is related to increased bicycling and walking, all of these economic benefits are derived from reductions in VMT and/or traffic delay. As described earlier, many of these benefits accrue to businesses as they do to individuals (e.g. a reduction in crashes leads to less lost work time). Additional detail on the assumptions underlying these estimates of economic benefits is provided in Appendix A.

- Vehicle operating cost – Fuel and maintenance costs per mile driven. Costs per mile change over time consistent with projected changes in fuel prices and the mix of the vehicle fleet including conventional fuels (e.g. gasoline and diesel) versus zero emission vehicles (e.g. electric and hydrogen). Vehicle cost savings provide travelers with more out-of-pocket money that they can spend on other goods and services of higher value to them. Businesses also save money for work travel and goods movement expenses. These savings benefit the state’s economy.
- Social cost of carbon – Global climate change is expected to result in a variety of negative economic effects to the world and national economy, including Colorado. Examples include costs of flood prevention and mitigation, health care costs associated with excessive heat, and fire prevention, control, and damages. Carbon emissions are valued based on guidance issued by the Biden Administration¹ at a discount rate of 2.5 percent, consistent with Colorado Senate Bill (SB) 21-260. The social cost increases over time, from \$83 per metric ton of CO₂ emissions for emissions occurring in 2025 to \$116 per metric ton of CO₂ for emissions occurring in 2050.
- Air pollution – Costs associated with air pollution include higher health care costs, as well as damage to structures and natural systems. Values per ton of particulate matter (PM) and oxides of nitrogen (NOx) reduced are based on modeling conducted in support of Federal rulemakings on vehicle tailpipe emission standards.
- Safety (crashes) – Costs associated with crashes resulting in fatalities or injuries include higher medical costs, insurance costs, vehicle property damage, and lost workplace productivity. These costs impact Colorado’s economy. Motor vehicle crash reductions are estimated based on national average fatality and injury crash rates per VMT, and are valued based on federal guidance on the value of a statistical life and average value of injury crashes.
- Traffic delay -- Traffic delay results in increased travel time for “on-the-clock” business travel and freight movement, as well as more time spent traveling for commuting, errands, and other personal travel. These time losses negatively impact Colorado’s economy. To estimate delay reduction associated with

¹ “A Return to Science: Evidence-Based Estimates of the Benefits of Reducing Climate Pollution.” The White House, 2021. <https://www.whitehouse.gov/briefing-room/blog/2021/02/26/a-return-to-science-evidence-based-estimates-of-the-benefits-of-reducing-climate-pollution/>

emissions-reducing transportation investments, hours of traffic delay reduced (per VMT reduced) are derived from Texas Transportation Institute studies of national traffic congestion and mitigation measures including transit expansion. For highway capacity expansion projects, which reduce delay, hours of delay reduced are based on modeled relationships between volume, capacity, and travel time. Capacity expansion projects consider the effects of “induced demand”, or increased traffic that is observed to result over time after roads are expanded. This increased traffic may lead to net increases in greenhouse gas emissions as a result of the project, and may offset to some degree the delay reduction benefits.

- Physical inactivity -- A lack of physical activity is associated with increased mortality and other negative health outcomes, increasing health care costs. Investments in walking and bicycling infrastructure and transit services increase physical activity, reducing those associated costs. Physical inactivity in this analysis is valued based on health care cost savings per mile of walking and bicycling activity.²

Additionally, there are several categories of benefits from mitigation measures that are real, and may be quite large, but are difficult to quantify and therefore are not reflected in the chart above. These include:

- Reduced vehicle ownership costs - to the extent that areas comply with the GHG requirements by making land use decisions that reduce the need to travel long distances, make areas more walkable and bikeable, and add transit service, it is likely that this will enable more households to reduce their vehicle ownership, for example going from from a 2 car to a 1 car family. This is particularly true for land use changes, where there is a strong correlation between average number of vehicles per household and land use types. While the analysis above captures reduced vehicle operating costs, it does not capture the reduced costs from lower levels of vehicle ownership, including depreciation of vehicle value due to reduced use per vehicle owned, lower cost due to owning fewer vehicles, etc.. Nationwide, researchers have found that households within 1/2 mile of transit stations own on average 0.9 cars, while households in the rest of the metropolitan regions owned, on average, 1.6 vehicles.³ According to AAA, the annual fixed cost to own a vehicle - including depreciation, insurance, license and registration fees, and finance charges - was on average \$6,200 in 2019, though these costs can range based on the cost and type of the vehicle, and household size.⁴
- Downtown/main street economic revitalization - policies that support dense, walkable downtowns and main streets tend to spark significant economic vitality in those areas, providing customers for restaurants and small businesses. Investments in transit also spur economic benefits such as

² An alternative estimate of physical activity benefits was conducted using estimates of deaths prevented and the value of a statistical life based on U.S. Department of Transportation guidance. This method showed a much higher value of benefits -- nearly \$23 billion in the 2031-2040 timeframe in addition to benefits shown above. This alone is greater than the value of all other social benefits combined and could be considered as a consistent approach relative to other transportation modeling, since the cost benefit analysis for highway projects including capacity expansion projects typically incorporates the value of a statistical life on the benefits side when considering the safety impact of that project, for example safety improvements resulting from adding improved level of safety service at a chokepoint with an accident history. However, in the cases presented in the tables above, the value of benefits is based only on health care cost savings deriving from active transportation, and therefore represents a very conservative estimate of benefits.

³ Dorn, J. (2004). Hidden in plain sight: capturing the demand for housing near transit. Oakland, CA: Center for Transit-Oriented Development. <https://ctod.org/pdfs/2004HiddenPlainSight.pdf>

⁴ Average Cost of Owning and Operating an Automobile, Bureau of Transportation Statistics.

<https://www.bts.gov/content/average-cost-owning-and-operating-automobilea-assuming-15000-vehicle-miles-year>

Polzin, S. E., Chu, X., & Raman, V. S. (2008). Exploration of a shift in household transportation spending from vehicles to public transportation (No. NCTR 576-02). <https://www.nctr.usf.edu/pdf/77722.pdf>

increased property values and agglomeration benefits from more efficient land use. These benefits are real⁵, but difficult to quantify and are not included in this analysis.

- Increased access to jobs - Because Colorado already has a very complete roadway network, households that have access to cars have the ability to access employment by driving. By contrast, for residents who do not own cars or have disabilities that preclude driving, many jobs are essentially inaccessible. A more robust transit network will increase access to jobs for these residents, and will provide a larger pool of potential employees for businesses. As an example, within the DRCOG region 6% of households do not have cars and 9% of residents have mobility disabilities⁶. While it is not quantified in this analysis, greater access to employment for these individuals could bring significant economic and equity benefits.

3. The anticipated costs of the rule or amendment, which shall include the direct costs to the government to administer the rule or amendment and the direct and indirect costs to business and other entities required to comply with the rule or amendment;

Direct costs to the government to administer the rule

In terms of regulatory implementation, one reason why the Transportation Commission, rather than the Air Quality Control Commission, is pursuing this rule is in order to optimize overhead and streamline implementation resources within the organizations that already house transportation planning functions and expertise.

However, there will be some administrative costs associated with implementing this policy change, especially within the initial years of implementation. Within the state, the Colorado Department of Transportation (CDOT) is largely relying on existing staff positions to support the Transportation Commission's rulemaking, however, CDOT expects to hire three new positions to focus on functions related to implementation. This likely amounts to a cost of up to \$350,000 per year including employee benefits and other costs. Over time, it is possible that the Colorado Department of Public Health and the Environment's Air Pollution Control Division could hire an additional staff modeler to support confirmation and verification of pollution reduction analytics. This cost would amount to roughly another \$125,000-\$150,000 (including benefits).

Moreover, it is expected that some metropolitan planning organizations (MPOs) may require additional staff members dedicated to emissions modeling, as well as additional modeling software. CDOT is exploring options to streamline these overhead expenses and achieve economies of scale, especially as relates to centralizing certain modeling and software capabilities for use as shared services between the state and MPOs. The recently passed state legislation, SB 260, updates the Multimodal and Mitigation Options Fund (MMOF) to allow funds directed into this program to be used for modeling support.

⁵ See for example, Liu and Shi, Understanding Economic and Business Impacts of Street Improvements for Bicycle and Pedestrian Mobility: A Multi-City, Multi-Approach Exploration, National Institute for Transportation and Communities, April, 2020, available at https://ppms.trec.pdx.edu/media/project_files/NITC-RR-1031-1161_Understanding_Economic_and_Business_Impacts_of_Street_Improvements_for_Bicycle_and_Pedestrian_Mobility.pdf, which found significant increases in retail and food service income and employment associated with bicycle and pedestrian access improvements.

⁶ Denver Regional Active Transportation Plan, DRCOG, 2019, available at https://drcog.org/sites/default/files/resources/DRCOG_ATP.pdf

Costs to business and other entities required to comply with the rule

As described in detail in the background section above, it is assumed that costs to implementing agencies are net neutral -- representing some shift in how dollars are prioritized rather than an overall change in the amount of spending on transportation. For example, some, but by no means all, dollars would shift from highway capacity expansion projects to other types of transportation investment including but not limited to bus rapid transit lanes or queue jumps as part of road projects; walking and bicycling facilities; additional transportation services, including expanded transit service and ridesharing options; and/or consumer incentives to reduce travel or encourage travel by more efficient, lower-emissions modes (such as ridesharing or telecommuting incentives). Importantly, it is anticipated that all costs shifted towards these types of investments will themselves result in mobility benefits and economic development, as well as improvements to air quality and pollution reduction.

Importantly, as described above, it is assumed that only a portion -- roughly a third -- of capital program dollars are shifted towards projects that also serve as mitigation, in addition to providing mobility benefits of their own. This means that the most critical capacity projects are assumed to advance, likely paired with mitigation and significant investment in achieving and maintaining a state of good repair for roads, bridges, tunnels, and other transportation infrastructure assets across Colorado.

It is worthy of note that additional federal investment could augment overall resources, and especially those resources geared towards transit and multimodal investments. For example, the Senate-passed Infrastructure Investment and Jobs Act would expand transit formula funds over the next five years by about \$39.5 billion, a 43% increase over the FAST Act. Under current FTA funding formulas, Colorado could receive more than \$900 million over the course of 5 years, an increase of approximately \$40 million a year. The Act also contains \$66 billion for Amtrak while Colorado continues to work towards passenger rail along the front range.

Businesses are not expected to incur significant direct costs to comply with the rule under the proposed implementation of the rule. As noted previously, there are a variety of social benefits (cost savings) that will be realized by the rule, some of which will accrue to Colorado's businesses. Importantly, this rule does **not** require that businesses implement trip reduction strategies that would have been required in a separate rulemaking recently withdrawn by the Air Quality Control Commission (AQCC). While businesses are encouraged to pursue employee trip reduction on a voluntary basis, and MPO's and CDOT through their Travel Demand Management (TDM) programs are able to help and encourage businesses in this effort, nothing in this rule requires it.

Lastly, both the benefit and cost assumptions within the rule assume that implementing agencies come into full compliance with the rule over the period of performance. However, the way that the rule is structured, the enforcement mechanism for non-compliance requires that a portion of an agency's capital funds -- which for MPOs are only those funds sub-allocated via the state as well as those specifically noted in Senate Bill 260 as being conditioned in this manner -- become restricted to projects that are demonstrated to reduce pollution and improve mobility. The recipient retains discretion over what pollution reducing investments are made, so long as those investments are approved as mitigations pursuant to the process set forth in the proposed rule. No entity would lose funds as a result of the enforcement provisions becoming effectuated by not hitting the targets in totality. The goal of this policy is to perpetuate serious conversation and planning for how the choices that planning entities make can provide consumers with the choices that are needed to reduce pollution and

improve quality of life, not to diminish the ability of any entity to invest these dollars in mobility solutions for Coloradans.

4. Any adverse effects on the economy, consumers, private markets, small businesses, job creation, and economic competitiveness; and

The proposed measures will affect Colorado industries in varying ways depending upon how spending increases or decreases for different types of vehicles, fuels, and equipment. Multipliers from the IMPLAN model were used to translate changes in spending for two industries directly affected by reductions in VMT -- gasoline and diesel sales and automotive maintenance and repairs -- into changes in direct gross state product (GSP) for those industries. IMPLAN is an economic input-output model that contains data on how spending in any one particular industry will directly and indirectly affect output, jobs, and other metrics in that industry and other industries. The IMPLAN multipliers used are \$0.18 million GSP change per \$million spending change on gasoline, and \$0.67 million GSP change per \$million spending change on automotive maintenance and repairs. The different impacts reflect the fact that more of the money spent on maintenance and repairs stays within the state of Colorado than money spent on gasoline and diesel fuel.

Table 3 shows the anticipated GSP effects for the combined VMT reduction measures for those directly affected industries, compared to baseline projected GSP levels for each industry in each year. The estimated effects are similar for both Comparison A and Comparison B since they reduce VMT to similar degrees to meet the same GHG reduction targets.

Table 3
Impacts on Directly Affected Industries
(Gross State Product, 2021 \$millions)

Spending Category	2022 - 2025	2026 - 2030	2031 - 2040	2041 - 2050
Gasoline and diesel sales	(\$54)	(\$231)	(\$479)	(\$288)
Automotive maintenance and repairs	(\$133)	(\$589)	(\$1,380)	(\$1,177)

These impacts should not be taken as a bottom line impact to Colorado’s economy as a whole. The changes in costs and benefits described above will impact Colorado's economy in a variety of different ways. As shown in Table 2, Colorado’s residents will save on vehicle operating costs as a result of increased travel options and the need to travel less by personal vehicle. The other social benefits resulting from the rule are also expected to result in economic impacts that may affect different sectors of the economy in a variety of ways. For example, reduced traffic crashes and air pollution will reduce spending in the health care sector, but provide consumers with correspondingly more money to spend on other goods and services that are of greater value to them. These various indirect effects are not quantified in this analysis.

Jobs Impact

Generally speaking, research shows that state and local infrastructure investment, along with other forms of government purchase of goods and services, rank⁷ amongst the highest categories of spending in terms of yielding a “fiscal multiplier” -- with that multiplier ranging between 0.4 and 2.5. The macroeconomic impact of

⁷ https://www.brookings.edu/wp-content/uploads/2019/05/AutoStabilizers_framingchapter_web_20190506.pdf

infrastructure spending, particularly when considering its impact as part of fiscal stimulus, does not tend to differentiate between the mode of transportation investment, largely because these impacts tend to be measured in terms of jobs created through fields like construction, engineering, and trucking which have more to do with the amount of work done than the substance of the end product. To that end, a rule that results in some shifting between project types should not have a significant net impact on jobs or the fiscal multiplier.

To the extent that there could be some shift in terms of how the modality of transportation spending impacts jobs, this might reflect in the breakdown between capital and operating expenses. For instance, if some portion of programmed transportation dollars shift to transit spending, that would likely entail a larger percentage of dollars spent on operating expenses relative to capital expenses -- as the analysis below shows. This might entail some shift in job type or classification, but should not result in a significant net change in jobs because, much like capital expenses, operating expenses translate directly into jobs in fields such as equipment operation (e.g. bus drivers), repair of both infrastructure and rolling stock (e.g. construction and mechanical work), technology operations (e.g. software and logistics and mapping systems, etc). Notably, there is significant overlap between the job types associated with capital versus operations. In sum, job impacts, much like the fiscal multiplier, are assumed to be strong and consistent so long as they are invested in transportation and irrespective of the specific type of transportation project that they support.

Table 4
NAICS Job Classifications for Transportation

NAICS Job Classifications ⁸	NAICS CODE
Heavy and Civil Engineering Construction	237
The Heavy and Civil Engineering Construction subsector comprises establishments whose primary activity is the construction of entire engineering projects (e.g., highways and dams), and specialty trade contractors, whose primary activity is the production of a specific component for such projects. Specialty trade contractors in Heavy and Civil Engineering Construction generally are performing activities that are specific to heavy and civil engineering construction projects and are not normally performed on buildings. The work performed may include new work, additions, alterations, or maintenance and repairs.	
Highway, Street, and Bridge Construction	2373
Other Heavy and Civil Engineering Construction	2375
Transit and Ground Passenger Transportation	485
Industries in the Transit and Ground Passenger Transportation subsector include a variety of passenger transportation activities, such as urban transit systems; chartered bus, school bus, and interurban bus transportation; and taxis. These activities are distinguished based primarily on such production process factors as vehicle types, routes, and schedules.	
Urban Transit Systems	4851
Other Transit and Ground Passenger Transportation	4859
Interurban and Rural Bus Transportation	4852

5. At least two alternatives to the proposed rule or amendment that can be identified by the submitting agency or a member of the public, including the costs and benefits of pursuing each of the alternatives identified.

Two alternative implementation scenarios for the rule were considered, including:

⁸ https://www.bls.gov/iag/tgs/iag_index_naics.htm

Alternative 1: A lower level of pollution savings based on modeling assumptions that only factored in savings associated with travel choices: Programs to encourage non-work travel by non-single occupancy vehicle modes; programs to support and encourage tele-travel (e.g., on-line health care, education, and shopping) as a substitute for physical travel; investment in bicycle and pedestrian infrastructure and micromobility services; and reduction of transit fares. Essentially, this regulatory alternative achieves the lowest cumulative pollution reduction targets and assumes fewer illustrative choices by agencies to meet them.

Alternative 2: A pollution reduction scenario at a level where the model assumed an illustrative set of actions including travel choices and expanded transit service. Notably, since most of the costs assumed in the rule relate to the ongoing cost of transit operations, this scenario would reflect most of the costs associated with the current proposal.

In contrast to the illustrative package of policy choices used to evaluate the proposed rule, these alternatives do not include additional land use policies to reduce vehicle travel. As a result, they are less likely to achieve the required greenhouse gas reduction targets and therefore to support overall state goals for GHG reduction and climate change.

The economic benefits (reductions in social costs) from these alternatives are presented in Table 5. The “travel choices” alternative (Alternative 1) achieves the lowest greenhouse gas emission reductions. The “travel choices + transit” alternative (Alternative 2) results in additional social cost savings and greenhouse gas reductions. The proposed alternative for this rule (which includes travel choices, transit, and land use policies) results in a further increase in greenhouse gas benefits. These considerations resulted in proposing this alternative to analyze the effects of the final rule. As with the base alternative, the net costs of implementing the rule to the public sector would assume similar levels of overhead (staffing) at implementing agencies but would otherwise assume that topline funding remains the same with some portion shifted from planned highway expansion into other, emissions-reducing modes and services.

Table 5
Net Present Value of Economic Benefits (Cost Savings) for Alternatives (\$millions)

Scenario	Alternative 1: Travel Choices	Alternative 2: Travel Choices + Transit
2022 - 2025	\$(1,527)	\$(1,644)
2026 - 2030	\$(6,776)	\$(7,268)
2031 - 2040	\$(14,852)	\$(16,102)
2041 - 2050	\$(10,603)	\$(11,397)

Appendix A. Detailed Analysis of Economic Benefits and Costs

This appendix provides detailed information and assumptions supporting the estimates of economic benefits and costs for the proposed Colorado transportation greenhouse gas (GHG) reduction rule. Information is presented for each of the illustrative measures that are assumed to be implemented to achieve the targets set forth in the rule. This information includes a description of the measure and how it is expected to affect economic benefits and costs; a table showing the various estimated costs and benefits of the measure; and additional details about the key assumptions and data sources.

Some effects of the measures will show up as economic benefits to one party and costs to another party. For example, reduced transit fares are an additional cost to the public sector (lost fare revenue), but a benefit to consumers.

The social benefits were estimated based on the estimated reductions in vehicle-miles traveled (VMT) and GHG emissions from each measure. VMT and GHG reductions, and the associated economic benefits, were estimated cumulatively for the entire set of measures anticipated to be implemented under the proposed rule and its two alternatives, rather than individually for each measure. VMT, GHG, and associated cost changes are discussed in a separate section following the discussion of public sector implementation costs.

Analysis Timeframe

Implementation of measures is assumed to start in 2022 or 2023 depending on the measure. The year in which measures are assumed to be fully implemented varies depending upon the measure.

The analysis considers impacts of the proposed rule in four timeframes: 2022-2025, 2026-2030, 2031-2040, and 2041-2050. Economic benefits and costs were estimated based on a time-stream of costs incurred between 2022 and 2050, expressed as net present values (NPV) for each timeframe. Costs are expressed in 2021 dollars.

Public Sector Costs

Travel Choices: Household-Based Trip Reduction

This set of measures includes programs combining information, incentives, and services to encourage non-work trip reduction and mode shifting away from SOV travel. Trips may include school trips, shopping, personal business, recreation, etc. This set of measures includes what are sometimes called “individualized marketing” programs and incentive-based rideshare or trip reduction apps.

Individualized marketing programs and similar information/incentive-based programs were piloted in a number of cities in the early 2000’s and some continue to be implemented today, with some evolution of the programs (for example, to a focus on app-based incentives). One example is the Portland (OR) SmartTrips program, operated by the Portland Bureau of Transportation since 2003. In recent years this program has pivoted to focus on new households moving to the city and is now known as SmartTrips New Movers. Other agencies implementing programs have included Bellevue and King County, WA; Cambridge, MA; Chicago; Salt Lake City; San Francisco, and the Southern California Association of Governments. Washington State has proposed to create a voluntary “all trips” grant program funded at \$10 million per year that would expand on the success of the state’s Commute Trip Reduction program to address non-work trips.

These types of measures entail public sector investment in the form of staff time and materials for marketing, information, and outreach. The program may also provide consumer cost savings as a result of reduced VMT and associated vehicle operating costs, although consumers may also incur some additional costs for expenditures on transit fares, bikeshare services, etc. All of these examples are illustrative of what implementing agencies might select as part of their implementation strategies. Importantly, as noted above, this rule does **not** require any employer-based trip reduction programs that would have been required by a proposed rule that was recently withdrawn by the Air Quality Control Commission (AQCC).

Table A.1 shows the estimated public sector implementation costs for this measure.

Table A.1
Costs for Household-Based Trip Reduction Programs (millions of 2021 dollars)

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050
Program costs	\$30 per HH per year	\$2.9	\$6.2	\$13	\$13

Basis for cost estimates:

- Programs that have been in operation in the U.S. have typically reported administrative costs of around \$15 to \$30 per year per household targeted. The Portland SmartTrips New Movers program is funded at \$250,000 per year at a cost of just under \$30 per household.⁹
- The total cost is based on the assumed participation of 3.2 percent of Colorado households (77,300 households in 2030) as described in the discussion of VMT reduction estimates for this measure below.

Travel Choices: Tele-Travel

This set of measures includes programs to encourage the substitution of “virtual” travel for commute trips as well as for non-work activities such as shopping, medical appointments, and education. Examples of state and MPO policies and actions to support virtual travel may include but would not be limited to programs to encourage and support employers in developing work from home policies; revision of health care regulations, if needed, to permit or encourage remote services to the degree feasible and appropriate; and directives to publicly funded post-secondary educational institutions to support distance learning.

Tele-travel will also be supported by investments to expand broadband infrastructure to cover all households in the state. The Colorado Broadband Office is already supporting broadband expansion with the aid of Federal grant programs as well as state funds. In the long run to maximize broadband use by all residents of Colorado, support may also be needed for low-income households that cannot afford service even if it is available. For this analysis it is assumed that additional state costs beyond ongoing infrastructure investment measures are minimal and limited to program support to encourage tele-travel and broadband adoption.

Table A.2 shows the estimated public sector implementation costs for this measure.

Table A.2
Costs for Tele-Travel Programs (millions of 2021 dollars)

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050

⁹ Portland Bureau of Transportation, “About Smart Trips”, <https://www.portlandoregon.gov/transportation/>

Program administration costs	\$131,000 / staff person	\$0.7	\$0.8	\$0.6	\$0.5
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Basis for cost estimates:

- Program administration - Two additional full-time staff people through 2030 including fringe and overhead for development and implementation of tele-travel programs, one staff person after 2030.

Travel Choices: Bicycle, Pedestrian, and Micro-Mobility Facilities, Policies, Initiatives

This set of measures includes bicycle and pedestrian infrastructure investment as well as incentives to support micro-mobility services such as shared or privately owned electric bicycles and scooters.

Public sector costs include infrastructure costs for pedestrian and bicycle facilities, and subsidies for low-income households to increase their participation in electrified micromobility options.

The costs for consumers who choose to purchase equipment like bicycles is subtracted from what those consumers might be expected to save by not operating vehicles. Importantly, though, micro-mobility options do not in any way require specific individuals to use those options; they merely expand the universe for personal choice. It is also assumed that the public sector provides an income-targeted subsidy in order to increase participation by low-income households.

Table A.3 shows the estimated public sector implementation costs for this measure.

**Table A.3
Costs for Bicycle, Pedestrian, and Micro-Mobility Facilities, Policies, Initiatives (millions of 2021 dollars)**

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050
Infrastructure costs – sidewalk	\$170,000 / mile	\$100	\$112	\$187	\$32
Infrastructure costs – bicycle	\$25,000 / mile of lane \$250,000 / mile of special facility	\$46	\$50	\$84	\$15
Maintenance	10% of capital	\$46	\$145	\$496	\$566
Electric micromobility equipment subsidy	\$250 / HH / year	\$0.4	\$1.5	\$5.9	\$8.4

Basis for cost estimates:

- Data from the Denver region was used to estimate that there are about 18,800 miles of sidewalk in this region. The DRCOG regional travel demand model includes data on sidewalk density for each traffic analysis zone (TAZ). The model includes six area types, from central business district (CBD) to rural. The number of miles of sidewalk in each area type was estimated by multiplying the sidewalk density in each TAZ by the area of the TAZ, as shown in Table A.9, totalling nearly 19,000 existing miles. For illustrative purposes, it is assumed that 1,900 new or improved miles of sidewalk are added by 2030 and 4,700 new or improved miles of sidewalk are added by 2050 in metro areas and smaller communities across the state. These values represent 10 and 25 percent of the Denver region supply, respectively. It is assumed that this work may include upgrading deficient sidewalks as well as

constructing new sidewalks where none are currently provided. It is further assumed that this work occurs over a 20-year period (2022 – 2041) at a cost of \$170,000 per mile based on Florida DOT data.¹⁰

Table A.4
Existing Sidewalk Estimates, Denver Region

Area Type	Sidewalk Miles
1 = Denver CBD	51
2 = CBD Fringe & Outlying CBD (ex. Boulder CBD)	448
3 = Urban Neighborhood	3,031
4 = Suburban Neighborhood	15,004
5 = Rural Area (Non-Mountainous)	224
6 = Rural Area (Mountainous)	37
Total	18,795

- Bicycle facilities: Construction is assumed of 2,500 linear miles of new bike lanes at \$25,000 per mile and 2,500 linear miles of new separated bike lanes and shared-use paths at an average cost of \$250,000 per mile, over a 20-year period, based on cost estimates from Cambridge Systematics (2020).¹¹ The estimate of the added length of facilities is described in the section on VMT reductions below and would occur in metro areas and smaller communities across the state.
- Sidewalk and bike facility maintenance: 10 percent annually of cumulative construction costs, based on industry estimation rules.
- Cost per e-bike: eBikesHQ.com (2019), assumed to decline from \$2,000 in 2019 declining to \$1,500 by 2025. Bicycle lifetime of 6 years from ITF (2020).¹²
- Number of new e-bikes purchased: Change in annual bike-miles traveled based on e-bike speed increase as described in the section on VMT reductions below, divided by 1,500 miles per bike per year (1 round-trip, 3 days a week, average length 5 miles, or per ITF (2020)).
- To estimate a subsidy value (public sector share of e-bike costs), it is assumed that 11 percent of households purchasing an e-bike are low-income (per statewide model) and receive a purchase voucher from the state.

Transit – Expansion of Service Coverage, Frequency, and/or Hours

This measure includes expansion of transit service, including fixed-route and demand-responsive buses as well as rail transit. It is also assumed that buses are electrified over time. However, the costs and benefits of bus electrification are not considered here, since bus electrification is not a VMT reduction measure. The costs shown in this section represent the incremental costs of adding service using existing technologies.

¹⁰ Florida DOT (n.d.). “Cost Per Mile Models for Long Range Estimating“, <https://www.fdot.gov/programmanagement/estimates/lre/costpermilemodels/cpmsummary.shtm>.

¹¹ Cambridge Systematics, Inc. (2020) “Transportation and Climate Initiative - 2019/2020 TCI Investment Strategy Tool Documentation.” Prepared for Georgetown Climate Center.

¹² International Transport Forum (ITF). (2020). “Good to Go? Assessing the Environmental Performance of New Mobility.”

The public sector costs include additional operating costs for the expanded service, as well as additional capital investment for vehicles to provide the service. These added costs are partially offset by added fare revenue resulting from increased ridership (shown as a negative cost).

Travelers may incur some additional costs in the form of fares paid for new trips taken. These are subtracted from the vehicle operating cost savings for this measure.

Table A.5 shows the estimated annual public sector implementation costs for this measure.

Table A.5
Costs for Transit Service Expansion (millions of 2021 dollars)

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050
Vehicle costs	\$435,000 per bus	\$38	\$136	\$394	\$452
Operating costs	See below	\$200	\$718	\$2,083	\$292
New transit fare revenue	\$0.75 per trip	(\$68)	(\$243)	(\$706)	(\$809)

Basis of cost estimates:

- It is assumed that vehicle revenue-miles (VRM) are increased by 6 percent annually statewide between 2022 and 2030, with an annual increase of 2 percent between 2030 and 2050.
- Vehicle costs – \$435,000 per new bus (NREL, 2017); An average of 3.11 buses are needed per 100,000 VRM of service, the average for the “motor bus” mode for all Colorado operators, from the 2019 National Transit Database (NTD).
- Operating costs – Average operating costs are assumed to be \$5.96 per VRM. This is the average cost for “rapid bus” service operating in Colorado as of 2019 according to reporting for the 2019 NTD. For comparison, the cost per VRM for regular motor bus service is in the range of \$3.89 to \$6.28 for the state’s smaller MPOs and is \$9.20 for the Denver region. It is assumed that funds for additional transit expansion under this rule would be directed into services such as bus rapid transit that are more cost-effective from a GHG reducing perspective.
- New transit fare revenue/expenses – Public agencies recoup some of their operating costs through increased fare revenue. The estimate is based on an average fare per trip of \$0.75 based on 2019 NTD data for all Colorado operators. Transit ridership is assumed to increase in proportion to service levels, meaning that higher quality and frequency service results in more individuals choosing to use transit.

Transportation-Efficient Land Use

This measure includes policy changes and incentives, such as funding for planning and potential changes to transportation project selection criteria, to encourage transit-supportive land use and walkable neighborhoods that reduce vehicle-travel per household.

Land use measures are assumed to be achieved mainly through the operation of market forces responding to market demand for mixed-use neighborhoods that are supported by changes to local plans and zoning regulations. Therefore only minimal costs to the public sector are assumed for making administrative changes to plans and zoning.

Table A.6 shows the estimated annual public sector implementation costs for this measure.

Table A.6
Costs for Land Use Measures (millions of 2021 dollars)

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050
Administrative costs	\$50,000 per municipality	\$7	\$8	\$13	\$11

Basis for cost estimates:

- Administrative costs – 272 municipalities in Colorado at an average of \$50,000 in planning costs per municipality per five-year period for updating and revising plans and zoning.

Reduced Investment in Adding Additional Roadway Capacity

This analysis assumes a reduction, but by no means an elimination, in spending on roadway capacity expansion relative to the “baseline” scenario of what is forecasted in long range regional transportation plans (RTPs) over the next several decades. That investment is anticipated to shift to other public investment in transportation mobility, illustrating a “net revenue neutral” implementation of the rule.

Table A.7 shows the estimated annual public sector implementation costs saved as a result of implementing fewer highway capacity expansion projects. These costs saved are assumed to be re-directed to other investments that reduce GHG and help offset the inclusion of other roadway capacity expansion projects remaining in the plans.

Table A.7
Assumed Cost Reduction for Roadway Capacity Expansion (millions of 2021 dollars)

Description	\$ Value per Unit	2022-2025	2026-2030	2031-2040	2041-2050
Construction costs	\$5 million per lane mile (freeway)	\$418	\$985	\$2,656	\$2,692
	\$1.5 million per lane mile (arterial)				

Key assumptions in this analysis include:

- Freeway and arterial expansion costs average \$5.0 million and \$1.5 million per lane-mile, respectively.
- Mix of investment is 75 percent for freeway capacity and 25 percent for arterial capacity (on a dollar basis).
- There is a lag of 2 years (for freeways) and 1 year (for arterials) between “spending” the funds and realizing the benefits (i.e., roadway open to service).

Economic Benefits (Social Cost Savings)

The various social cost savings estimated in this document rely on estimated changes in vehicle-miles of travel, traffic delay, and person-miles of walking and bicycling as a result of each measure. General modeling

tools used in this analysis are first discussed, followed by a discussion of assumptions specific to each measure. The social cost savings analysis also draws on key assumptions documented above in the assessment of public sector implementation costs.

Modeling Tools

To estimate VMT reductions, the Colorado Department of Transportation statewide travel demand model and the Colorado implementation of the Energy and Emissions Reduction Policy Analysis Tool (EERPAT) were used, along with off-model spreadsheet-based analysis where needed to prepare model inputs and process model outputs.

The Colorado statewide travel demand model is a network-based model that predicts changes in traffic flows by mode and location based on future changes in demographics, job locations, costs, transportation networks, and other factors. At the time of the analysis the statewide model was set up for 2015, 2030, and 2045. Results from 2030 and 2045 runs were interpolated to obtain 2040 estimates. Results from 2045 runs were extrapolated to represent 2050.

EERPAT is a tool developed by the Federal Highway Administration and designed specifically for analysis of greenhouse gas reduction measures. EERPAT models policies at the regional level. In the Colorado application of the model, five regions are defined corresponding to the state's MPOs:

- DRCOG (Denver Regional Council of Governments) – Greater Denver area.
- GVMPO (Grand Valley MPO) – Grand Junction area.
- NFRMPO (North Front Range MPO) – Fort Collins area.
- PACOG (Pueblo Area Council of Governments) – Pueblo area.
- PPACG (Pikes Peak Area Council of Governments) – Colorado Springs area.

The statewide model and EERPAT each have strengths for evaluating different measures, so the best model for each measure was selected and the results then combined. Only personal light-duty vehicle travel within Colorado is considered, along with emissions from bus service that changes as part of the scenarios. To ensure a consistent baseline of VMT, percent VMT reductions from EERPAT for measures modeled in EERPAT were applied to total VMT from the statewide model.

GHG emissions were modeled using the U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES3) emission factor model, based on VMT changes from the statewide model and EERPAT. The GHG modeling was conducted by the Colorado Department of Public Health and Environment – Air Pollution Control Division. The MOVES model accounts for Colorado-specific factors such as the age of the vehicle fleet, the distribution of VMT by different vehicle types and road types, and the speeds at which vehicles travel. MOVES provides GHG emissions in carbon dioxide equivalents (CO₂e) considering tailpipe emissions of CO₂, methane, and nitrous oxide. VMT changes for each measure, estimated as described below, were summed for all measures and used to revise MOVES inputs.

Travel Choices: Tele-Travel

This strategy is evaluated using adjustments to statewide travel demand model inputs and outputs assuming that through incentives and voluntary options, more telework becomes feasible. Note that the model does not assume a policy that requires businesses to limit employee trips.

- Telework is modeled by increasing the fraction of workers choosing to telework compared to the base

year level.

- Tele-school is modeled by adjusting the mode-specific constant for higher education trips so that home schooling meets a target percentage.
- Other tele-travel is modeled by making adjustments to model output VMT to reflect an assumed market size of households reducing their travel and percent reduction in “personal business” travel per household.

The assumed effects of tele-travel policies are as follows:

- Telework (telecommuting): The percentage of workers teleworking at least part-time is increased by a factor of 3, from 6.3 percent to 18.9 percent, compared to baseline levels, reflecting a continuation of trends observed during the COVID pandemic.¹³
- Online participation in postsecondary education: The statewide model includes school trips. It is assumed that higher education students “tele-commute” 40 percent of the time, or on average about 2 days a week for a full-time course load. This is applied as a post-model adjustment to the statewide activity-based model (ABM) trip roster. The model would reflect similar values from an emissions perspective if students walked to class rather than participating virtually.
- Other substitution of travel: Other types of trips (medical, retail, etc.) are not individually modeled but are included as part of a personal business trip type. The number of households reducing their “personal business” travel is estimated using the following assumptions:
 - Expansion of broadband infrastructure – The Colorado Broadband office tracks broadband coverage and supports programs to expand coverage, including tracking Federal grant programs. An overlay of 2021 broadband coverage on household data from the 2019 American Community Survey (ACS) estimates that 1.97 million of 2.39 million households in Colorado (82.6 percent) currently are in broadband service areas.¹⁴ It is assumed that infrastructure expansion by 2030 will reach nearly all (97 percent) of the state’s households with broadband access, or an additional 344,000 households.
 - It is also assumed that an additional 5 percent of Colorado households already served by broadband expand their use of teletravel in the future.
- Newly participating households are estimated to take 10 percent fewer “personal business” trips as a result of tele-travel options.¹⁵ This is applied as a post-model adjustment to the ABM trip roster.

Travel Choices: Bicycle, Pedestrian, and Micro-Mobility Facilities, Policies, Initiatives

This strategy is evaluated using a variety of adjustments to the statewide model, including increasing intersection density to represent expanded/more connected pedestrian networks; increasing walk and bike speeds to represent improved transit access and increased use of e-bikes and e-scooters; and adjusting various model parameters to reflect overall conditions that encourage walking and biking by all demographic

¹³ During the height of the pandemic (May 2020), work-at-home rates were as high as 35 percent. More recently (October 2020 to January 2021), the rate stabilized around 22 percent. Source: Data from Bureau of Labor Statistics, Current Population Survey Supplement, as analyzed by University of Colorado Leeds School of Business and presented to Denver Regional Transit District, April 13, 2021.

¹⁴ Per the Colorado Broadband Office, broadband is defined as a minimum of 25 megabits per second (Mbps) download and 3 Mbps upload. See <https://broadband.co.gov/> for a map of broadband coverage. The overlay was done at the Census block group level, assuming that households are evenly distributed within a block group.

¹⁵ While the statistics will vary for Colorado, the 2017 National Household Travel Survey shows an average annual VMT per U.S. household of 19,642, of which 31.8 percent is for shopping or other personal business (McGuckin and Fucci 2018, Table 6a). A 10 percent reduction in personal business travel would be a 3.2 percent reduction in overall travel for these households or 642 VMT per year. The Colorado statewide model may show different results, as changes in personal business travel may affect other types of travel.

groups. The model was adjusted so that the increase in bicycling matched a target estimate of total bicycle-miles of travel based on increasing bicycle travel related to additional bicycle infrastructure (new annual bike-miles traveled per new lane/path mile) as observed in other U.S. cities.

Pedestrian and Bicycle Improvements

To model improved pedestrian conditions, intersection density was increased 10 percent in 2030 over the baseline, or 25 percent in 2050, in the “suburban” area type, representing the application of policies to increase street network connectivity. Numerically this is equivalent to an increase of 16 four-way intersections in each zone. This was applied only to area types 2 (outlying CBD & fringe), 3 (urban), and 4 (suburban). While the statewide model does not include data on sidewalk density, the relative increase in intersection density is consistent with the increase in sidewalk density assumed for cost estimation above. Intersection density was increased by 5 percent in 2030 and 15 percent in 2050 for the “urban” area type, with the smaller increase reflecting the generally more connected nature of streets in urban areas.

The total miles of bicycle facilities needed to achieve a complete network in all of the urbanized land area of Colorado (census-defined urbanized areas) was estimated by assuming a build-out of separated bike lanes or shared-use paths at one-mile intervals, along with on-street bike lanes every ½ mile in between. Previous research, considering literature and models on the effectiveness of bike investment in the U.S., has estimated the number of new bicycle-miles of travel per year per mile of new facility in urban and suburban neighborhoods of various densities (Cambridge Systematics, 2020). The values used in that analysis are shown in Table A.8. These are applied to the proportion of land in CBD or “CBD fringe”, “urban”, and “suburban” area types as defined in the statewide model. Values from that study are multiplied by the required length of facilities to build out a network.

**Table A.8
New Bicycle Travel per New Facility-Mile**

Area Type:	Core/High Urban	Medium Urban	Suburban	
Statewide Model Area Type:	CBD (1) or CBD Fringe (2)	Urban (3)	Suburban (4)	Average
New annual bike-miles per new facility mile	146,000	82,000	26,000	64,000
% of urban land area in Colorado MPO areas	14%	39%	48%	

To estimate the extent of bike network added, a build-out of bike lanes and paths is assumed at ½ mile spacing for the entire urbanized area within Colorado (1,256 square miles) over a 20-year period between 2022 and 2041. This corresponds to 5,000 new miles of facility or 250 new miles per year. This is assumed to be split equally between on-street bike lanes and specialized facilities including physically separated bike lanes, bike boulevards, and off-street paths. The resulting increase in bicycle-miles of travel (BMT) compared to baseline conditions as estimated by the statewide model for years 2030 and 2045 is shown in Table A.9.

**Table A.9
Bicycle Travel Increase From Facility Investment**

Year	Baseline BMT (millions)	New Facility-Miles	Additional BMT (millions)	Total BMT (millions)	% Over Base

2030	346	2,250	144	474	37%
2045	405	5,000	320	717	77%

Additional statewide model adjustments to estimate the effects of improved walking and bicycling conditions included:

- Gender-specific constants for walking and biking: zeroing out negative terms for females; transferring positive coefficient for males to the bike or walk constant.
- Zeroing out negative terms for under age 20 other tour purposes.
- Reduction of disutility (negative interaction term) equivalent to 1.5 miles for rural area type term for bike to school tours.
- Walking interaction terms related to age 35 and age 50 thresholds changed to age 75 for work walk tours, other walk tours, other bike tours, and walk trip mode.
- Vehicular speed reduction of 2 to 11 mph, typically 6 mph, for access-oriented (versus mobility-oriented) facility types. Only applied in non-rural area types; applied to facility types 3 (principal arterial), 4 (minor arterial), and 5 (collector & local); peak and off-peak input speeds also adjusted if they would exceed the new free-flow speed.
- Walking speed (through perception of walking time) on transit access links increased to 5 mph from a base of 3 mph.
- Biking speed on transit access links increased from 12 to 13 or 14 mph.

Electric Bicycles

It is assumed that with a connected network of infrastructure in place to serve walk and bike trips, electric bicycle (e-bikes) will become more widely used. To represent electrification, the average speed of bicycling in the statewide model was increased by 33 percent.¹⁶ The share of bikes that are e-bikes was assumed to be 25 percent in 2030 and 50 percent in 2050, so the average speed increase across all bicycle trips is modeled as 8 percent in 2030 (from 12 to 13 mph) and 16 percent in 2050 (from 12 to 14 mph).

Transit: Expansion of Service Coverage, Frequency, and/or Hours

The VMT effects of transit expansion are modeled in EERPAT using the following inputs:

- **Transit_growth.csv:** Ratio of future transit revenue miles to base year transit revenue miles, as well as proportion of transit revenue miles that are electrified rail transit.

In 2019, based on data reported by Colorado’s transit operators to the National Transit Database, 81 million vehicle revenue-miles of service were provided by all modes in Colorado’s five metro areas. For this measure it is assumed that transit revenue-miles will increase by 6.0 percent per year between 2022 and 2030 (69 percent total growth between 2019 and 2030), and by 2.0 percent a year between 2030 and 2050 (151 percent total growth between 2019 and 2050) compared to base year (2019) service levels. This compares with a statewide growth in transit VRM of 2.9 percent annually (76 percent) between 2000 and 2019 (3.1 percent for the Regional Transit District, 1.2 percent average for other operators in the state).

¹⁶ On average, e-bikes require 24% less total EE (kcal/kg/min) than conventional bicycles - Langford, B. C., Cherry, C. R., Bassett, D. R., Jr., Fitzhugh, E. C., & Dhakal, N. (2017). Comparing physical activity of pedal-assist electric bikes with walking and conventional bicycles. *Journal of Transport & Health*, 6, 463–473. $1/(1 - 0.24) \approx 1.33$.

The VMT reduction percentage was carried over into the statewide model by reducing the ABM trip roster by the same percentage for trips by residents of MPO zones.

Transportation-Efficient Land Use

This strategy is modeled in EERPAT using the following input:

- **metropolitan_urban_type_proportions.csv**: proportions of households in urban mixed-use areas.

Urban mixed-use areas are defined for this analysis as statewide model TAZs categorized as “urban” or higher area type (*AreaType* = 1, 2, or 3) with a population density of at least 2,000 per square mile and a retail/service job density (*Entertainmentemployment* + *Retailemployment* + *Restaurantemployment*) of at least 500 per square mile. This was the density threshold used in the Carbon-Free Boston study (Cambridge Systematics, 2019) which was based on evaluation of different thresholds and qualitative comparison against community characteristics such as walkability.

The base year (2015) number and percent of households in mixed-use urban areas was estimated using statewide model estimates of households and the mixed-use variable. This calculation was repeated for 2030 and 2045 to estimate the number of households in mixed-use areas under baseline forecast growth conditions in the future. The 2015 and 2030 data were interpolated to estimate 2023 values as the start year for additional land use policy implementation.

The 2023 percent of households in mixed-use areas ranges from 11 percent in the GVMPO region to 33 percent in the Denver region. Between 2023 and 2030, the fraction of growth in mixed-use areas ranges from 10 percent in the NFRMPO region to 43 percent in the Denver region. Under the policy scenario, this is assumed to increase to 75 percent in the Denver region and to 50 percent in other MPO regions between 2023 and 2050.

It is also assumed that some areas of existing households redevelop over time into mixed-use areas, through infill commercial development in neighborhood business districts. It is assumed that 4 percent of existing households per decade are in areas that change from non-mixed use to mixed-use. The resulting values of baseline and scenario projections for the percent of households in mixed-use areas, including new households and redeveloped areas, are shown in Table A.10..

**Table A.10
Households in Mixed-Use Areas**

MPO Region	Households in Mixed-Use Areas					% of 2023-2030 Growth in Mixed-Use Areas		% of 2030-2045 Growth in Mixed-Use Areas	
	2023	2030 Base	2030 Scenario	2045 Base	2045 Scenario	Base	Scenario	Base	Scenario
DRCOG	32.5%	33.5%	38.5%	33.8%	47.1%	42.9%	75.0%	35.7%	75.0%
GVMPO	11.2%	12.4%	18.7%	16.8%	29.9%	20.3%	50.0%	34.7%	50.0%
NFRMPO	18.3%	17.1%	25.5%	16.2%	36.8%	10.0%	50.0%	13.4%	50.0%
PACOG	14.5%	16.0%	20.5%	14.7%	29.6%	28.9%	50.0%	6.1%	50.0%
PPACG	21.6%	20.9%	26.4%	21.9%	34.5%	13.9%	50.0%	27.3%	50.0%

The VMT reduction percentage was carried over into the statewide model by reducing the ABM trip roster by the same percentage for trips by residents of MPO zones.

Reduced Investment in Roadway Capacity

Capacity additions can increase GHG emissions and other social costs related to vehicle-travel in the long term as a result of induced demand effects. Reducing spending on these capacity projects is likely to provide social benefits in the form of reduced GHG emissions, air pollution, vehicle operating costs, and crash costs associated with vehicle-travel. However, it is likely to increase costs related to travel time and delay. It is important to note that the alternative investments provided by funding made available for other projects will help offset the impacts of any roadway travel time increases.

Key assumptions to estimate the social costs and benefits of reduced road capacity investment include:

- Expanded roads have a base VMT of approximately 20,000 VMT per lane-mile for freeways and 10,000 VMT per lane-mile for arterials. This assumes a freeway lane capacity of 2,000 vehicles per lane per hour with 10 percent of daily traffic in the peak hour. Arterial capacities are reduced by half to account for intersection delay. Analysis of modeling conducted by Cambridge Systematics for a hypothetical freeway widening project in Virginia confirms that 20,000 VMT per lane-mile is a reasonable value.
- The long-run demand elasticity is assumed to be 0.67 for freeways and 0.5 for arterials. This elasticity represents the ratio of percent growth in VMT to percent growth in lane-miles. An elasticity of 0.5 means that a 10 percent increase in lane-miles in a given area would result in a 5 percent increase in VMT in that area. The value of 0.67 is consistent with recent modeling of corridor highway expansion projects conducted by Cambridge Systematics and is at the low end of recent values reported in a literature review, which found values ranging from 0.67 to 1.06 in the U.S.¹⁷ That report also estimated that induced demand elasticities for arterials are 75 percent those of freeways. Since some of the induced demand in corridor studies may be due to growth being shifted from other locations in the same state, it is likely that overall induced demand for a statewide program of investments (such as is being evaluated in the Colorado analysis) is lower than levels found in corridor-specific studies.
- It is assumed that it takes five years to reach full response to induced demand, with effects in years 1-4 scaled up linearly between 0 and the final value.
- Delay savings (minutes saved per base VMT) are estimated based on modeling conducted by Cambridge Systematics. The value is 0.20 minutes per VMT at a demand elasticity of 0.67, which corresponds to a 3 mph average speed increase compared with a base speed of 30 mph. The delay savings are scaled to be zero at an induced demand elasticity of 1.0, and to increase in inverse proportion to the elasticity.
- Fuel savings per hour of delay are estimated at 0.44 gal/hour (mixed traffic – autos and trucks) for 2012 vehicles based on data from the 2012 Texas Transportation Institute Urban Mobility Report. These are scaled for 2022 and future vehicles based on actual and projected changes in fuel efficiency (mpg) and levels of fleet electrification. Energy use and GHG emissions from EVs are assumed not to be sensitive to the level of congestion or delay.

¹⁷ Volker, J.M.B., and S. L. Handy (2021). The Induced Travel Calculator and Its Applications. University of California Institute of Transportation Studies, UC-ITS-2021-04.

- Delay reduction from highway expansion is valued at \$16.50 per hour per the 2016 U.S. DOT benefit-cost analysis guidance and is calculated after induced demand effects.

Total VMT and Vehicle Operating Cost Savings

Table A.11 shows baseline forecast VMT emissions for light-duty vehicles and the total projected VMT reductions for the illustrative implementation of the proposed rule and the two alternatives considered.

Table A.11
VMT by Year, Light-Duty Vehicles

Scenario	Vehicle-Miles of Travel (millions)		
	2030	2040	2050
Baseline VMT Estimate	63,551	71,069	78,587
Change from Baseline			
Proposed Rule Implementation: Travel Choices + Transit + Land Use	(6,943)	(8,378)	(9,814)
Alternative 1: Travel Choices	(5,876)	(6,197)	(6,146)
Alternative 2: Travel Choices + Transit	(6,633)	(7,593)	(8,138)

Vehicle operating costs are based on gasoline and electricity consumption rates (miles per gallon equivalent) for conventional and electric vehicles from NREL (2017)¹⁸ and fuel and electricity costs from the U.S. Department of Energy Outlook Annual Energy Outlook (AEO) 2021 Reference Case. For conventional and electric vehicles, a “weighted average” fuel efficiency is estimated based on the split of light duty vehicles and light duty trucks. Vehicle maintenance costs are also sourced from NREL (2017) and weighted by the LDV/LDT split. Table A.12 displays fuel prices, energy efficiency, and fuel and maintenance cost per mile for both conventional and electric vehicles from 2020 through 2050.

Table A.12
Light-Duty Vehicle Operating and Maintenance Costs (2021 \$)

Operating Cost Inputs	2020	2025	2030	2040	2050
Gasoline Price (\$/gge)	2.22	2.37	2.58	2.91	3.06
Electricity Price (\$/gge)	3.91	3.80	3.69	3.60	3.31
Conventional Energy Efficiency (mpgge)	32.9	33.7	33.4	33.6	34.1
EV Energy Efficiency (mpgge)	104.7	109.7	111.6	116.9	125.2
Conventional Vehicle Cost – Fuel (\$/mi)	0.067	0.070	0.077	0.087	0.090
EV Cost – Fuel (\$/mi)	0.037	0.035	0.033	0.031	0.026
Conventional Vehicle Cost – Maintenance (\$/mi)	0.036	0.038	0.040	0.041	0.041
EV Cost – Maintenance (\$/mi)	0.029	0.030	0.032	0.033	0.033

To calculate total per-vehicle operation and maintenance costs, an annual VMT of 10,450 per vehicle is assumed. This is based on the number of vehicles forecast in 2030 (vehicles growing from current levels in

¹⁸ Wood, E., et al. (2017). National Plug-In Electric Vehicle Infrastructure Analysis. National Renewable Energy Laboratory.

proportion to population) multiplied by miles per vehicle to match the VMT estimates provided by the statewide model.

The total electrified light duty fleet each year is estimated based on state targets, including around 940,000 vehicles in 2030 and 100 percent EV sales by 2040. Using projections from the AEO 2021 Reference Case on vehicle stock growth through 2050, as well as a vehicle turnover model, the EV vehicle stock for 2025, 2030, 2040, and 2050 is estimated alongside vehicle sales, as shown in Table A.13.

**Table A.13
Light-Duty Vehicle Electrification Projections**

Vehicle Category	2020	2025	2030	2040	2050
All Light-Duty Vehicle Stock	5,090,968	5,585,484	6,080,000	6,546,667	7,590,000
EV Stock	39,908	221,357	943,318	3,739,278	6,290,115
EV Sales %	5%	17%	50%	100%	100%
EV Sales	17,818	66,858	21,800	458,267	531,300
EV% of Stock	1%	4%	16%	57%	83%

GHG Emission Reductions and Social Cost of Carbon Savings

Table A.14 shows projected total GHG emissions from on-road sources for the rule and alternatives, while Table A.15 shows the expected GHG reductions in 2025, 2030, 2040, and 2050 respectively, for the rule and alternatives. As noted above, the results assume a high level of electrification of the future vehicle fleet. As a result, the absolute GHG reductions from VMT measures are substantially lower in 2050 than in 2030, even though the cumulative effects of the measures on VMT will increase over time and be greatest in 2050.

**Table A.14
GHG Emissions by Year and Alternative, All On-Road Vehicles**

Scenario	GHG Emissions (million metric tons)		
	2030	2040	2050
Proposed Rule Implementation: Travel Choices + Transit + Land Use	18.1	12.5	7.9
Alternative 1: Travel Choices	18.4	12.8	8.1
Alternative 2: Travel Choices + Transit	18.2	12.6	8.0

Table A.15
GHG Emissions Change from Baseline Forecast by Year

Scenario	GHG Emissions Change in Year (million metric tons)		
	2030	2040	2050
Proposed Rule Implementation: Travel Choices + Transit + Land Use	(1.70)	(1.20)	(0.70)
Alternative 1: Travel Choices	(1.43)	(0.88)	(0.44)
Alternative 2: Travel Choices + Transit	(1.62)	(1.09)	(0.59)

To estimate the social cost of carbon savings, greenhouse gas emissions in years between 2030 and 2050 were interpolated, and annual emissions savings before 2030 were ramped up from zero in 2022 to the 2030 level. The social cost of carbon value in each year was then applied to the greenhouse gas emissions in that year. The values used for the social cost of carbon based on the Biden administration guidance are shown in Table A.16 (The White House, 2021).

Table A.16
Social Cost of CO₂, 2020-2050 (in 2020 dollars per metric ton of CO₂)

Emissions Year	2.5% Discount Rate
2020	76
2025	83
2030	89
2035	96
2040	103
2045	110
2050	116

Other Social Benefits

Other social benefits were valued based on the following data sources and key assumptions.

Air Pollution

These costs are associated with human health impacts – including mortality and morbidity – as well as crop and forest damage, ecosystem damage (e.g., from acid deposition, ozone damage, and particulate matter deposition), damage to buildings and materials, and reduced visibility. The costs of air pollution are primarily driven by human health.

Changes in emissions of particulate matter (PM) and oxides of nitrogen (NOx) were estimated based on tailpipe emission rates (grams per mile) in each future year, multiplied by changes in light-duty vehicle VMT. Emission rates for internal combustion engine vehicles were sourced from runs of the U.S. EPA MOVES2014 model conducted by Cambridge Systematics in June 2021 for years 2032 and 2040. Emission rates for years prior to 2032 were interpolated with 2017 rates from analysis for the Carbon Free Boston study (2019) conducted by Cambridge Systematics. Emission rates for 2033-2039 were interpolated between 2022 and 2040 rates, and the 2040 rate was used for years after 2040. Tailpipe emissions from electric vehicles were assumed to be zero.

Damage values (\$/kg) are based on the U.S. EPA regulatory impact analysis for light-duty vehicle fuel economy and GHG standards (U.S. EPA, 2010), as reviewed by CS in 2012 for use in the Federal Transit Administration (FTA) New Starts Environmental Benefits Template. Table A.15 shows the damage values used. The damage values are the same as used by FTA in its most current (FY 2021) version of the New Starts and Small Starts reporting templates, with the exception that 2010 dollars have been converted to 2016 dollars using a consumer price index multiplier of 1.1. The EPA values are based on nationwide modeling using county-scale data on emissions, air pollution, and population exposure. The EPA and FTA sources list different damage values for mobile vs. electricity generation sources; the mobile source values are used here. The values used are an average of those provided by FTA for years 2025 and 2035.

Table A.17
Pollutant Damage Values (\$/kg)

Pollutant	Damage Value (\$/kg)
PM _{2.5}	\$976
NO _x	\$17.69

Safety

Safety costs represent costs associated with crashes resulting in fatalities or injuries. To estimate safety benefits, fatality and injury motor vehicle crashes are assumed to be reduced in proportion to VMT reduced. Average rates of 0.013 fatalities and 0.195 injuries per million vehicle-miles are used, based on Fatality Analysis Reporting System (FARS) fatality data from 2000-2009 and injury rates reported by the Bureau of Transportation Statistics (BTS) in National Transportation Statistics (Table 2-17: “Motor Vehicle Safety Data”). These rates were recommended by Cambridge Systematics for the FTA in 2012 and are still being applied by FTA for use in New Starts and Small Starts project evaluation.¹⁹

Crash reduction benefits are valued at \$9.6 million per fatality based on the latest (2016) U.S. DOT guidance on value of a statistical life. Disabling injuries are valued at \$490,000 based on the value provided in FTA's latest (FY 2021) New Starts and Small Starts reporting templates. The injury value has been inflated by FTA since the original 2012 work (when it was \$323,000) and is applied to the fatality and injury rates stated in the previous paragraph.

Traffic Delay

¹⁹ See: Federal Transit Administration, New Starts Environmental Benefits Template, available at <http://www.fta.dot.gov/12304.html>.

Hours of traffic delay reduced per VMT reduced are derived from data in the Texas A&M Transportation Institute (TTI) 2012 Urban Mobility Report (UMR). This report estimated potential nationwide reductions in VMT due to shifting to transit, and associated savings in travel delay. These values were used to estimate an average delay savings of 0.015 hours per mile of vehicle-travel reduced, representing a weighted average across metro area sizes. Delay savings were valued at \$16.50 per hour based on U.S. DOT 2021 Benefit-Cost Analysis Guidance.

Physical Inactivity

A lack of physical activity is associated with increased mortality and other negative health outcomes. Investments in walking and bicycling infrastructure and transit services increase physical activity, reducing those associated costs. Physical inactivity is valued based on health care cost savings of \$0.21 per mile of walking and bicycling activity based on Gotschi (2011). Gotschi analyzed three investment plans in Portland, Oregon. Bicycle health benefits are estimated using a per-capita health care costs of \$544 annually attributable to inactivity (i.e., less than 30 minutes of activity per day), which he derives from three literature sources, with values adjusted for inflation. New bicyclists are assumed to realize these benefits by increasing physical activity from 15 to 45 minutes daily. Gotschi also cites the World Health Organization's Health Economic Assessment Tool (HEAT) for cycling, which uses a relative risk estimate for all cause mortality of 0.72 for 3 hours of bicycling to work per week, from a large Danish cohort study. Gotschi's resulting estimates of cumulative bike miles and cumulative health care savings between 1991 and 2040 equate to about \$0.18 in benefit per additional bike mile of travel, which was inflated to \$0.21 per mile for this study.²⁰

An alternative estimate of physical activity benefits was conducted using estimates of deaths prevented and the value of a statistical life based on U.S. Department of Transportation guidance. Output from the HEAT developed for a study done by Cambridge Systematics in Massachusetts was used to estimate the benefits of increased bicycling and walking, along with additional analysis by Cambridge Systematics for use of this information in the Transportation and Climate Initiative Investment Strategy Tool.²¹ HEAT provides estimates of benefits in terms of reduced mortality based on the daily increase in walk or bicycle person-kilometers traveled or walk or bicycle person-hours traveled.²² The walk and bike PMT increases and deaths prevented were used to estimate an overall rate of 1.7 deaths prevented per million new walking PMT, and 0.5 deaths prevented per million new bicycling PMT. These factors were applied to the estimated increases in walking and bicycling due to active transportation and public transportation investments. (Due to data limitations the current analysis only includes new bicycle travel, as shown in Table A.7). Deaths prevented by physical activity were valued at the same \$9.6 million value of a statistical life used in the safety analysis.

²⁰ Gotschi, T. (2011). "Costs and Benefits of Bicycling Investments in Portland, Oregon." *Journal of Physical Activity and Health*, 2011, 8(Suppl 1).

²¹ Cambridge Systematics, Inc. (2020), *ibid*.

²² The HEAT tool and documentation are available at: https://www.who.int/gho/health_equity/assessment_toolkit/en/



STATE OF
COLORADO

3H

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Cost-Benefit Analysis Submitted - REVISED NOTICE: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Tue, Sep 7, 2021 at 12:02 PM

The Cost-Benefit Analysis has been uploaded for the following proposed rule(s):

Department: Department of Transportation





Rulemaking Agency: Transportation Commission of Colorado

Rule ID: 8981

Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

A final e-mail notification will be sent after the Cost-Benefit Analysis has been reviewed.

Please contact us at DORA_OPR_Website@state.co.us if you have further questions regarding this e-mail message.

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Draft Proposed Rule

Detailed Rule Information

Department/Agency

Department: Department of Transportation
Rulemaking Agency: Transportation Commission of Colorado

Proposed Rule Changes

Rule Type: New, Amended and Repealed Rules
Title or Subject: Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
Short Description: REVISED NOTICE: Pollution Reduction Planning Standards.
CCR Number: 2 CCR 601-22
Statutory Authority: §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.
Website for Current Agency Rules: <https://www.codot.gov/business/rules/proposed-rules.html>
Subject Matter/Purpose: The Transportation Commission of Colorado (Commission) is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms. Please see the attachment for the proposed rule revisions, the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Colorado Register Publish Date: 08/25/2021
Text of Proposed Changes: [Revised Rule Docs.pdf](#) (698K, Adobe Acrobat)
Submitted for Review: 08/13/2021

Rulemaking Hearing

Hearing Date: Friday, September 17, 2021 02:00 pm
Hearing Covers: Multiple Rules
Hearing Location: CDOT Regional Office, Bookcliff Conference Room
 2328 G Road
 Grand Junction, CO 81505
Hearing Notes: The Transportation Commission of Colorado plans to hold eight (8) hearings across the State as listed in the table within the attachment to

hear testimony and receive comments. The public hearings will be conducted in a hybrid format, both in-person and virtually. If you plan to attend any of the scheduled hearings virtually, please register through the registration links provided either on the attachment or CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html> so we can provide instructions on how you can join the hearings of your choice virtually and provide testimony if you wish. Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. Please see the attachment for the notice of proposed rulemaking, the proposed statement of basis & purpose, and a fact sheet titled "Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards".

Contact Information

Public Contact Name: Natalie Lutz
Title: Rules, Policies and Procedures Administrator
Email: Natalie.Lutz@state.co.us
Phone: 303-757-9441
Private Contact Name: Natalie E Lutz
Title: Rules, Policies, and Procedures Administrator
Email: natalie.lutz@state.co.us
Phone: 303-757-9441

Subject Information

Related Subject Area(s): Environment
Government
Health
Motor Vehicles & Traffic Regulation
Transportation

Review

Review Date: 08/31/2021
Review Outcome: Cost-Benefit Analysis Required
Review Findings: Cost-benefit analysis required as requested.
Deadline for Public Cost-Benefit Analysis Request: Monday, August 30th, 2021
The deadline for public cost-benefit analysis requests has passed.

Cost-Benefit Analysis

[Submit CBA Form](#)

Text of Cost-Benefit: [CDOT Cost Benefit Analysis for GHG Rule.pdf](#) (332K, Adobe Acrobat)
Cost-Benefit Submitted: 09/07/2021
Review of Cost-Benefit Analysis Pending

Rule Status

Current Status: Cost-Benefit Analysis Submitted
Submitted: 08/13/2021 08:47 pm by: Natalie E Lutz
DORA Regulatory Notice Sent: 09/01/2021 04:50 pm count: 1236
Public CBA Request: Closed to public requests
Public CBA Requests: [3](#)
Reviewed: 08/31/2021 09:48 am by: Vivienne Belmont
CBA Submitted: 09/07/2021 12:02 pm by: Natalie E Lutz
CBA Review: pending

Colorado Department of Regulatory Agencies

September 07, 2021 12:02 pm
Calling Procedure:
SB121_Submit_Rule.
Main_Form_Page
Version: 1.0

STATE OF
COLORADO

31

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Cost-Benefit Analysis Reviewed - REVISED NOTICE: Pollution Reduction Planning Standards. -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Tue, Sep 7, 2021 at 1:41 PM

The Cost-Benefit Analysis has been reviewed for the following proposed rule(s):

Department: Department of Transportation**Rulemaking Agency:** Transportation Commission of Colorado**Rule ID:** 8981**Title or Subject:** Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions**The review findings for the cost-benefit analysis are as follows:**

Cost-benefit analysis required as requested.

The cost-benefit analysis and specifics regarding the upcoming rulemaking hearing may be viewed at https://www.dora.state.co.us/pls/real/SB121_Web.Show_Rule?p_rule_id=8981.

Please contact us at DORA_OPR_Website@state.co.us if you have further questions regarding this e-mail message.

The following rules are in the process of being revised by CDOT staff and set for a public rulemaking hearing. Proposed revisions are required by statute to be available five days prior to the hearing date. Please check this site 5 days prior to hearing for the final proposed rule that will be discussed at the Hearing.

Please submit all comments or questions regarding proposed rules to dot_rules@state.co.us.

CDOT maintains a list of individuals and entities who are interested in being notified of CDOT rulemaking activities. If you would like to be added to this list, please email DOT_Rules@state.co.us.

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Number	2 CCR 601-22
Contact	Theresa Takushi Rebecca White Natalie Lutz
Hearing Notice	Updated Hearing Notice
Additional Notice	Additional Notice
Statement of Basis & Purpose	Updated Statement
Proposed Rule	Redline
Supplemental Documents	Press Release and Fact Sheet and Frequently Asked Questions
Additional Online Information	CDOT Greenhouse Gas Emissions Reduction Opportunities Website
Cost-Benefit Analysis	Cost-Benefit Analysis
Please submit written comments or questions to:	dot_rules@state.co.us
Written Comments Due October 15, 2021	Redacted Written Comments

Public Hearings			
Date	Time	Place	Virtual Registration
9/17/2021	2-5 p.m.	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction, CO 81505	Sept. 17 Virtual Registration Form
9/23/2021	3-7 p.m.	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	Sept. 23 Virtual Registration Form
9/24/2021	3-6 p.m.	CDOT Regional Office	

Public Hearings Location:

unless otherwise noted
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Questions on Rules:

Email the "Rule Contact" person listed.

[State Agency Listing of Rules](#)

The Department of Regulatory Agencies (DORA) provides notice of statewide rule makings by topic.

[Sign up for DORA notices.](#)

[Request a Cost-Benefit Analysis](#)



STATE OF COLORADO

3K

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Cost-Benefit Analysis of Department of Transportation - Transportation Commission of Colorado Proposed Rule -

1 message

DORA_OPR_Website@state.co.us <DORA_OPR_Website@state.co.us>
To: natalie.lutz@state.co.us

Wed, Sep 8, 2021 at 12:00 AM

Dear Stakeholder:

The Department of Transportation - Transportation Commission of Colorado has completed a [cost-benefit analysis](#) of the REVISED NOTICE: Pollution Reduction Planning Standards. rule. The rulemaking hearing is scheduled for Friday, September 17th, 2021.

We hope this information is helpful to you. Thank you for taking the time to participate in the rulemaking process.

Brian Tobias, Director
Colorado Office of Policy, Research and Regulatory Reform

You have received this e-mail bulletin because you previously signed up for this service provided by the Department of Regulatory Agencies. If you do not want to receive further e-mails regarding the review of proposed rules, please visit https://www.dora.state.co.us/pls/real/SB121_Web.SignIn_Form and update your personal profile.

Exhibit 4



August 26, 2021

Via Electronic Mail

Colorado Department of Transportation
Attn: Shoshana M. Lew, Executive Director
2829 W. Howard Pl.
Denver, CO 80204
shoshana.lew@state.co.us

Department of Regulatory Agencies
Attn: Patty Salazar, Executive Director
1560 Broadway, Suite 1550
Denver, CO 80202
dora_OPR_Website@state.co.us

Re: Request for Cost-Benefit Analysis and Regulatory Analysis Under the Colorado Administrative Procedure Act in the Matter of Proposed Revisions to Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions, 2 CCR 601-22

Executive Director Lew and Executive Director Salazar:

The Board of County Commissioners of Weld County, Colorado (“Weld County”) submits this request to the Colorado Department of Regulatory Agencies (“DORA”) for a cost-benefit analysis under C.R.S. § 24-4-103(2.5) and a regulatory analysis under C.R.S. § 24-4-103(4.5) regarding the Colorado Department of Transportation’s (“CDOT”) proposed revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22 (the “Proposed Rule”).¹

¹ It is not clear whether CDOT or the Transportation Commission is the proponent of this proposed rule. See, e.g., *Project Fact Sheet Regarding Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards*, Colo. Dep’t of Transp. (stating “CDOT is

I. BACKGROUND

On August 13, 2021, CDOT filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the Proposed Rule. Among other things, the Proposed Rule aims to reduce greenhouse gas (“GHG”) emissions from the transportation sector. If finalized, the rule would require CDOT and the state’s five Metropolitan Planning Organizations (“MPOs”) to determine the total GHG emissions expected from future transportation projects and take steps to ensure that emissions do not exceed set GHG reduction amounts.

The transportation sector is one of the largest contributors to GHG and ozone precursor emissions, and Weld County generally supports efforts to reduce air pollution, including GHG emissions, from this sector. The Proposed Rule will impact individuals living in Weld County, as well as transportation projects planned throughout the county. As an interested stakeholder, Weld County must be able to assess the impacts of the Proposed Rule. However, CDOT has not yet provided any documentation or analysis to explain the rule or how it calculated the baseline emissions or reduction levels. Accordingly, Weld County submits this request for a cost-benefit analysis and regulatory analysis to provide this missing information.

II. LEGAL STANDARD

Under two separate provisions of the APA, “any person” may request additional economic and regulatory impact analyses. C.R.S. §§ 24-4-103(2.5), (4.5). Given the lack of analysis or supporting documentation accompanying the Proposed Rule, Weld County requests both a cost-benefit analysis and regulatory analysis to ensure the Transportation Commission fully considers the economic and regulatory impacts of the Proposed Rule.

A. DORA-Ordered Cost-Benefit Analysis Under C.R.S. § 24-4-103(2.5)

Under C.R.S. § 24-4-103(2.5)(a) “any person may, within five days after publication of the notice of proposed rule-making in the Colorado Register, request that [DORA] require the agency submitting the proposed rule or amendment to prepare a cost-benefit analysis.” Such cost-benefit analysis shall include the following:

1. The reason for the rule or amendment;

proposing a new standard to reduce greenhouse gas emissions from the transportation sector”) (emphasis added); *Press Release Regarding Colorado Developing New Pollution Reduction Planning Standards to Address Climate Change and Air Quality*, Colo. Dep’t of Transp. (stating the “Colorado Transportation Commission today proposed bold new transportation pollution reduction planning standards”) (emphasis added). This request for a cost-benefit analysis and regulatory analysis is directed to CDOT. If this is incorrect, Weld County asks that this request be redirected to the Transportation Commission.

2. The anticipated economic benefits of the rule or amendment, which shall include economic growth, the creation of new jobs, and increased economic competitiveness;
3. The anticipated costs of the rule or amendment, which shall include the direct costs to the government to administer the rule or amendment and the direct and indirect costs to business and other entities required to comply with the rule or amendment;
4. Any adverse effects on the economy, consumers, private markets, small businesses, job creation, and economic competitiveness; and
5. At least two alternatives to the proposed rule or amendment that can be identified by the submitting agency or a member of the public, including the costs and benefits of pursuing each of the alternatives identified.

C.R.S. § 24-4-103(2.5)(a)(I) – (V).

CDOT has not yet provided an economic analysis of the Proposed Rule or otherwise addressed these considerations. To assess the factors set forth above, Weld County requests a complete cost-benefit analysis under C.R.S. § 24-4-103(2.5).

B. Regulatory Impact Analysis Under § 24-4-103(4.5)

Under C.R.S. § 24-4-103(4.5) “upon [the] request of any person, at least fifteen days prior to the hearing, the [Division] shall issue a regulatory analysis of a proposed rule.” Such regulatory analysis must contain:

1. A description of the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
2. To the extent practicable, a description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons;
3. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
4. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction;
5. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule; and

6. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

24-4-103(4.5)(a)(I) – (VI).

To assess the factors set forth above, Weld County requests a complete regulatory analysis under C.R.S. § 24-4-103(4.5).

III. WELD COUNTY REQUESTS BOTH A COST-BENEFIT ANALYSIS AND A REGULATORY IMPACT ANALYSIS UNDER THE STATE APA

Weld County requests that DORA require CDOT to perform both a cost-benefit analysis pursuant to C.R.S. § 24-4-103(2.5) and a regulatory impact analysis under C.R.S. § 24-4-103(4.5) with respect to the Proposed Rule.

As an initial matter, Weld County submits this request in advance of publication of the Proposed Rule in the Colorado Register and well before the first hearing scheduled on September 14, 2021. *See* C.R.S. §§ 24-4-103(2.5), (4.5). Moreover, the DORA website states that requests for a cost benefit analysis for the Proposed Rule are due on August 30, 2021. Rules Governing Statewide Transportation Planning Process and Transportation Planning Region, https://www.dora.state.co.us/pls/real/SB121_Public_Comment_GUI.submission_form?p_rule_id=8981. Because this request is being submitted on August 26, 2021, it is timely.

Importantly, CDOT has not provided any type of analysis or the underlying documentation supporting its Proposed Rule. For instance, Table 1 and Table 2 listed on page 25 of the Proposed Rule set forth the GHG transportation planning reduction levels and baseline emissions, respectively. CDOT has not provided critical information regarding these tables, such as what methodology was used to reach these figures and what inputs and assumptions were used in the modeling. Accordingly, there is no way to evaluate the reasonableness of these figures or the efficacy of the Proposed Rule.

To allow interested stakeholders and the Transportation Commission to adequately evaluate the Proposed Rule, Weld County requests that CDOT provide supporting documentation—such as a technical support document, if available—describing the methods used to conduct the analysis for the GHG estimates in Table 1 and Table 2 of the Proposed Rule. Specifically, Weld County requests the following information be provided to all stakeholders and the Transportation Commission:

- Model inputs and outputs for all models used in the analysis, i.e., Land Use Model(s), EERPAT, MPO Models and Statewide Travel Model, and the Approved Air Quality Model, as applicable;

- Assumptions used in all models;
- Population growth data and assumptions;
- Data, assumptions, or modeling related to electric sector grid mix in future target years;
- Description of different scenarios considered in the modeling, if any, and which scenario was selected to determine GHG estimates shown in Table 1 and Table 2 of the Proposed Rule; and
- Description of any qualitative or off-model adjustments used to determine the GHG estimates in Table 1 and Table 2 of the Proposed Rule.

Weld County has separately requested from CDOT data regarding the Proposed Rule. To ensure that this information is provided to all interested stakeholders, and to enable the Transportation Commission to make an informed decision, Weld County requests that DORA require CDOT to produce this information in connection with its cost-benefit analysis and its regulatory impact analysis. This is what the Colorado APA requires. *See* C.R.S. §§ 24-4-103(2.5), (4.5).

IV. CONCLUSION

For the above-stated reasons, Weld County respectfully requests that DORA require CDOT to conduct a cost-benefit analysis under C.R.S. § 25-7-103(2.5) and a separate regulatory impact analysis under C.R.S. § 25-7-103(4.5). This information will enable the Transportation Commission to make a better-informed decision on the proposed revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

████████████████████
████████████████████
Weld County Attorney



COLORADO

Department of Transportation

REGULATORY ANALYSIS FOR RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING

September 9, 2021

OVERVIEW

The proposed “Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions” will set a greenhouse gas standard for state and regional transportation plans. The purpose of the Proposal is to ensure ongoing greenhouse gas emissions reductions from Colorado’s transportation sector, which helps achieve the reduction goals set by HB19-1261. This rule also responds to a requirement in SB21-260, directing CDOT and the Transportation Commission to address GHGs through transportation planning.

C.R.S. 24-4-103 (4.5)(a) and (c) states that, “upon request of any person” the agency shall issue a regulatory analysis of the proposed rule, and the analysis “shall be made available to the public at least 5 days prior to the rulemaking hearing.” It requires the regulatory contain the following information:

1. A description of the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
2. To the extent practicable, a description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons;
3. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
4. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction;
5. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule; and
6. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

(b) Each regulatory analysis shall include quantification of the data to the extent practicable and shall take account of both short-term and long-term consequences.

Much of the information required in the Regulatory Analysis of this rule is contained in the more comprehensive Cost Benefit Analysis that CDOT has completed for this rule. The [“Cost-Benefit Analysis for Rules Governing Statewide Transportation Planning”](#) (CBA) may be found through the hyperlink provided.

1. A description of the classes of persons who will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;

The proposed rule is a transportation planning rule, and the implementers of the rule include the Colorado Department of Transportation (CDOT) and the five Metropolitan Planning Organizations (MPOs) in Colorado. This rule will positively impact the way transportation projects are planned for and selected in the state.

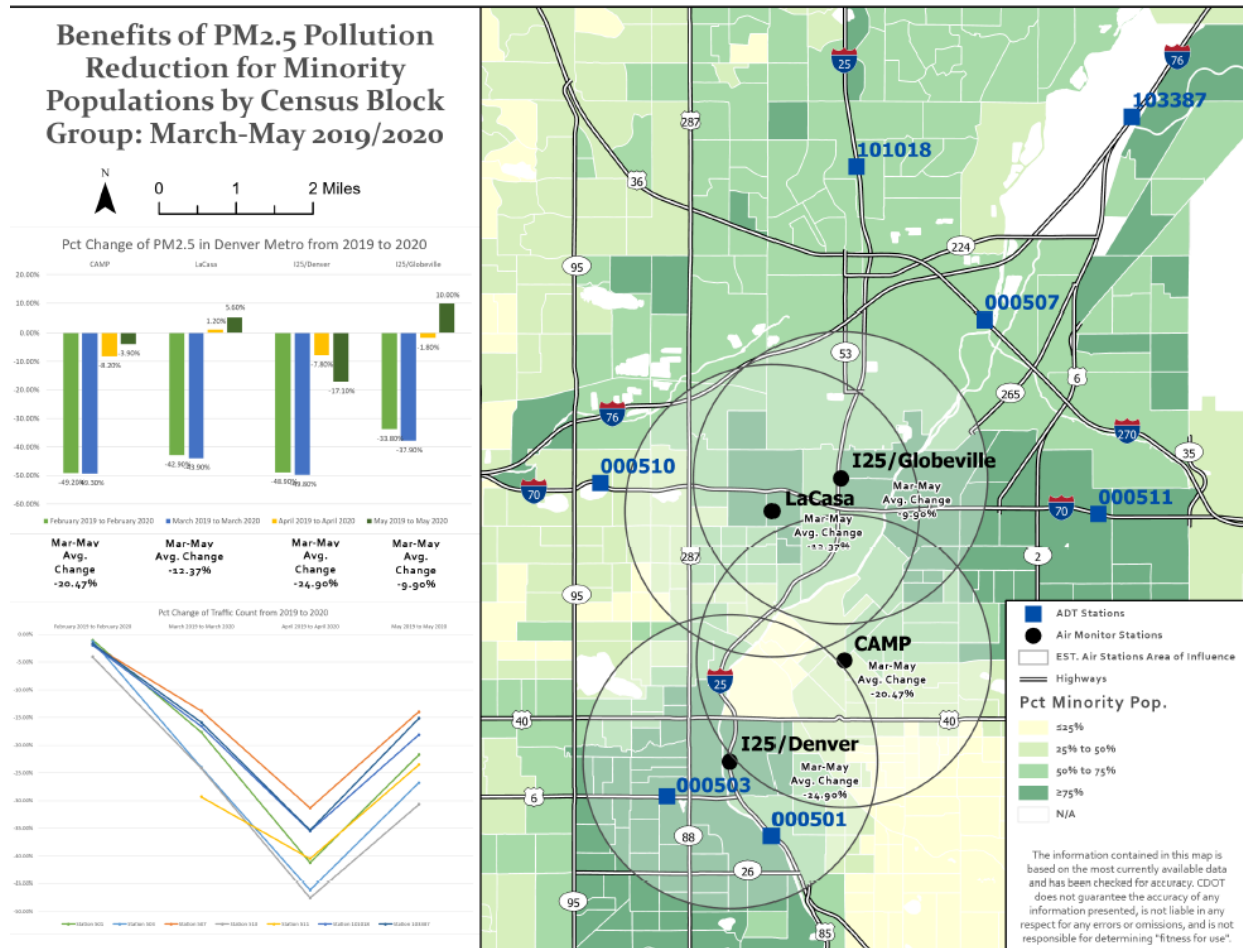
But more broadly, this is a statewide rule that will have an impact on transportation for virtually every class of individual in Colorado in some way, and the environmental benefits of the rule have a further benefit to persons living in Colorado. Because the rule is expected to shift some amount of funds to multimodal options, the rule has a particular benefit to individuals that must rely on a well constructed and maintained transit system. This includes disproportionately impacted communities.

Further, by reducing Greenhouse Gas (GHG) emissions and abating climate change, the rule will have an even greater positive impact on Disproportionately Impacted (DI) communities as those communities generally face a greater impact from climate change. This is well documented in studies and reports, including the following:

- “Populations including older adults, children, low-income communities, and some communities of color are often disproportionately affected by, and less resilient to, the health impacts of climate change.” Source: [The Fourth National Climate Assessment](#).
- “Minorities are most likely to currently live in areas where the analyses project the highest levels of climate change impacts with 2°C of global warming or 50 cm of global sea level rise.” “Those with low income or no high school diploma are approximately 25% more likely than non-low income individuals and those with a high school diploma to currently live in areas with the highest projected losses of labor hours due to increases in high-temperature days with 2°C of global warming.” Source: [EPA’s Climate Change and Social Vulnerability in the United States](#).

Work in Colorado also has demonstrated the local, disproportionate impacts on communities due to climate change. The Colorado Department of Public Health and Environment has developed a [climate equity data viewer](#) that uses population and environmental factors to calculate a climate equity score for every census block group in Colorado. A higher value indicates a worse score.

Another way to consider this question is to consider the co-benefits of this rule to air quality. Efforts that reduce GHGs from transportation also directly reduce other emissions, including particulate matter and ozone precursors. The map below shows the proximity of minority neighborhoods in the Denver metro area to interstate highways. This graphic also shows the reductions in fine particulate matter as measured by air quality monitors during the height of the Covid outbreak (a period of less vehicle travel) as compared to a pre-Covid time period.



Source: CDOT GIS Analysis

Additionally, this rule will provide additional benefits to multiple groups of transit-dependent individuals. According to the 2010 Census, 41.8 million Americans over age 18 were persons with disabilities, 40 million were over the age of 65, and 32 million were living below the poverty level (poverty level for people above age 18). Currently, DI communities are more likely to have limited access to high quality and efficient transportation either through transit or in a personal vehicle. Many of the individuals cited in the above census data are also totally dependent on transit due to physical abilities or age. The study [“Transit Deserts: The Gap Between Supply and Demand.”](#) reflected that these populations are often marginalized and are especially vulnerable if their access to jobs, goods, and services is restricted. High quality and easily

accessible modes of transportation- frequently transit- are especially important to protect and elevate these populations.

A [2015 study](#) from Harvard found that Individuals who do not have reliable access to any type of transportation mode struggle to reach jobs and services and as a result their opportunity for upward economic mobility is limited. DI individuals who lack reliable transportation are more likely to be unemployed or underemployed with more chronic health issues. The Colorado Health Institute [examined](#) transportation disparities and its negative impact on individuals trying to access preventative as well as acute care. 5.5% of Coloradoans reported difficulty getting to doctor's appointments because they were not able to find transportation. According to the [American Hospital Association \(AHA\)](#), transportation challenges prevent more than 3.6 million Americans from receiving medical care each year. Increasing access to more modes of travel will improve community equity and health through cleaner air, higher wages, and better access to healthcare services.

2. To the extent practicable, a description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons;

There are a number of expected impacts of the rule, both quantitative and qualitative. Many of these impacts are benefits that accrue to businesses and individuals alike (e.g. a reduction in crashes leads to less lost work time). Listed below, and detailed further in answer #4, is a description of some of those impacts. Additional detail on the assumptions underlying these estimates of economic impacts is provided in Appendix A of the Cost Benefit Analysis.

Table 1 shows the projected change in social costs through 2025, 2030, 2040, and 2050 respectively, for full implementation of the proposed rule using the illustrative mix of strategies. The net benefits reflect the effects of reduced highway investment as well as increased investment in GHG-reducing projects. Negative values (shown in parentheses) represent a net cost savings. Future savings are discounted at a rate of 2.5 percent, consistent with Colorado Senate Bill (SB) 21-260 which requires use of the social cost of carbon dioxide (CO₂) and other pollutants using a discount rate of 2.5 percent or less. The most substantial benefits are from reduced crashes and reduced vehicle operating costs, resulting from reduced VMT. The net present value of total social benefits is roughly \$8 billion in the 2026-2030 timeframe and \$17 billion between 2031 and 2040.

Table 1
Economic Benefits (Cost Savings)
(Net Neutral Investment Levels after Mode Shift)
(net present value, millions of 2021 dollars)

Timeframe	Vehicle Operating Cost	Social Cost of Carbon	Air Pollution	Safety (Crashes)	Traffic Delay	Physical Inactivity	Total Social Cost Savings
2022 - 2025	\$(372)	\$(60)	\$(21)	\$(481)	\$(774)	\$(17)	\$(1,724)
2026 - 2030	\$(1,781)	\$(258)	\$(82)	\$(2,332)	\$(3,098)	\$(75)	\$(7,626)
2031 - 2040	\$(4,670)	\$(589)	\$(125)	\$(7,183)	\$(4,693)	\$(237)	\$(17,497)
2041 - 2050	\$(4,210)	\$(323)	\$(42)	\$(9,027)	\$397	\$(289)	\$(13,494)

A brief description of each of these economic benefits and how they were quantified is provided below. With the exception of physical inactivity, which is related to increased bicycling and walking, all of these economic benefits are derived from reductions in VMT and/or traffic delay.

- Vehicle operating cost – Fuel and maintenance costs per mile driven. Costs per mile change over time consistent with projected changes in fuel prices and the mix of the vehicle fleet including conventional fuels (e.g. gasoline and diesel) versus zero emission vehicles (e.g. electric and hydrogen). Vehicle cost savings provide travelers with more out-of-pocket money that they can spend on other goods and services of higher value to them. Businesses also save money for work travel and goods movement expenses. These savings benefit the state’s economy.
- Social cost of carbon – Global climate change is expected to result in a variety of negative economic effects to the world and national economy, including Colorado. Examples include costs of flood prevention and mitigation, health care costs associated with excessive heat, and fire prevention, control, and damages. Carbon emissions are valued based on guidance issued by the Biden Administration at a discount rate of 2.5 percent, consistent with Colorado Senate Bill (SB) 21-260. The social cost increases over time, from \$83 per metric ton of CO₂ emissions for emissions occurring in 2025 to \$116 per metric ton of CO₂ for emissions occurring in 2050.
- Air pollution – Costs associated with air pollution include higher health care costs, as well as damage to structures and natural systems. Values per ton of particulate matter

(PM) and oxides of nitrogen (NOx) reduced are based on modeling conducted in support of Federal rulemakings on vehicle tailpipe emission standards.

- Safety (crashes) – Costs associated with crashes resulting in fatalities or injuries include higher medical costs, insurance costs, vehicle property damage, and lost workplace productivity. These costs impact Colorado’s economy. Motor vehicle crash reductions are estimated based on national average fatality and injury crash rates per VMT, and are valued based on federal guidance on the value of a statistical life and average value of injury crashes.
- Traffic delay -- Traffic delay results in increased travel time for “on-the-clock” business travel and freight movement, as well as more time spent traveling for commuting, errands, and other personal travel. These time losses negatively impact Colorado’s economy. To estimate delay reduction associated with emissions-reducing transportation investments, hours of traffic delay reduced (per VMT reduced) are derived from Texas Transportation Institute studies of national traffic congestion and mitigation measures including transit expansion. For highway capacity expansion projects, which reduce delay, hours of delay reduced are based on modeled relationships between volume, capacity, and travel time. Capacity expansion projects consider the effects of “induced demand”, or increased traffic that is observed to result over time after roads are expanded. This increased traffic may lead to net increases in greenhouse gas emissions as a result of the project, and may offset to some degree the delay reduction benefits.
- Physical inactivity -- A lack of physical activity is associated with increased mortality and other negative health outcomes, increasing health care costs. Investments in walking and bicycling infrastructure and transit services increase physical activity, reducing those associated costs. Physical inactivity in this analysis is valued based on health care cost savings per mile of walking and bicycling activity.

Additionally, there are several categories of benefits from mitigation measures that are real, and may be quite large, but are difficult to quantify and therefore are not reflected in the Cost Benefit Analysis. These include:

- Reduced vehicle ownership costs - to the extent that areas comply with the GHG requirements by making land use decisions that reduce the need to travel long distances, make areas more walkable and bikeable, and add transit service, it is likely that this will enable more households to reduce their vehicle ownership, for example going from from a 2 car to a 1 car family. This is particularly true for land use changes, where there is a strong correlation between average number of vehicles per household and land use types. While the analysis above captures reduced vehicle operating costs, it does not capture the reduced costs from lower levels of vehicle ownership, including depreciation of vehicle value due to reduced use per vehicle owned, lower cost due to owning fewer vehicles, etc.. Nationwide, researchers have found that households within 1/2 mile of transit stations own on average 0.9 cars, while households in the rest of the metropolitan regions owned, on average, 1.6 vehicles. According to AAA, the annual fixed cost to own a vehicle - including depreciation, insurance, license and registration

fees, and finance charges - was on average \$6,200 in 2019, though these costs can range based on the cost and type of the vehicle, and household size.

- Downtown/main street economic revitalization - policies that support dense, walkable downtowns and main streets tend to spark significant economic vitality in those areas, providing customers for restaurants and small businesses. Investments in transit also spur economic benefits such as increased property values and agglomeration benefits from more efficient land use. These benefits are real, but difficult to quantify and are not included in this analysis.
- Increased access to jobs - Because Colorado already has a very complete roadway network, households that have access to cars have the ability to access employment by driving. By contrast, for residents who do not own cars or have disabilities that preclude driving, many jobs are essentially inaccessible. A more robust transit network will increase access to jobs for these residents, and will provide a larger pool of potential employees for businesses. As an example, within the DRCOG region 6% of households do not have cars and 9% of residents have mobility disabilities. While it is not quantified in this analysis, greater access to employment for these individuals could bring significant economic and equity benefits.

3. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

In terms of regulatory implementation, one reason why the Transportation Commission, rather than the Air Quality Control Commission, is pursuing this rule is in order to optimize overhead and streamline implementation resources within the organizations that already house transportation planning functions and expertise.

However, there will be some administrative costs associated with implementing this policy change, especially within the initial years of implementation. Within the state, the Colorado Department of Transportation (CDOT) is largely relying on existing staff positions to support the Transportation Commission's rulemaking, however, CDOT expects to hire three new positions to focus on functions related to implementation. This likely amounts to a cost of up to \$350,000 per year including employee benefits and other costs. Over time, it is possible that the Colorado Department of Public Health and the Environment's Air Pollution Control Division could hire an additional staff modeler to support confirmation and verification of pollution reduction analytics. This cost would amount to roughly another \$125,000-\$150,000 (including benefits).

Moreover, it is expected that some metropolitan planning organizations (MPOs) may require additional staff members dedicated to emissions modeling, as well as additional modeling software. CDOT is exploring options to streamline these overhead expenses and achieve economies of scale, especially as relates to centralizing certain modeling and software capabilities for use as shared services between the state and MPOs. The recently passed state legislation, SB 260, updates the Multimodal and Mitigation Options Fund (MMOF) to allow funds directed into this program to be used for modeling support.

4. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction.

The following sections summarize a cost/benefit analysis assuming full implementation of this rule. This complete work is provided in the rule [docket](#). As described in this analysis, because changes in transportation investments are assumed to be absorbed into current transportation plan budgets, the projected costs of the rule are limited to agency administrative costs (new staff) and some costs to the two industries directly affected by reductions in VMT -- gasoline and diesel sales and automotive maintenance and repairs. Logically then, these costs, if assumed to be avoided, become the “benefits” of inaction. Likewise, the costs of inaction are best represented by the benefits if the rule is not implemented. The dollar value of these benefits is summarized in Table 1 above.

Summary of the Costs and Benefits of Rule Implementation

Full implementation of this rule is expected to result in significant economic benefits in the form of cost savings to travelers and to the general public. Travelers will benefit from reductions in vehicle operating costs as a result of expanded travel options (e.g., transit service, tele-travel, walking and bicycling), travel time savings, and the need to use personal vehicles less because of being provided with more options through state and regional transportation planning. Implementation of the rule will also reduce economic costs associated with carbon emissions, air pollution, motor vehicle crashes (road safety), and the health consequences of physical inactivity.

Businesses are also expected to receive a share of the economic benefits. Examples include congestion reduction that saves travel time for “on-the-clock” business travel, and reduced health care costs for employees as a result of reduced air pollution, motor vehicle crashes, and physical inactivity. They may also experience increased worker retention and satisfaction as a result of employees having expanded commute or work from home options.

Additionally, policies that facilitate and reward downtown density tend to have a markedly positive impact on “main street” small businesses such as restaurants and locally-owned retail. While these benefits can be somewhat difficult to quantify in the aggregate and are thus not fully accounted for in this analysis, results from the Colorado Department of Transportation’s “Revitalizing Main Street” program indicate that they are significant and widespread across the state. Well over 100 grants awarded to more than 70 communities have largely supported projects including downtown street repurposing and parklets, sidewalks and crosswalks, park and street improvements, shared streets between cars and pedestrians, and wayfinding and signage improvements. Many recipients have affirmed to CDOT that these grants significantly improved business and saved jobs during the COVID-19 pandemic, and, when surveyed, 67 percent of respondents said they would not have implemented these innovations without the program. Though grants supported many projects on a pilot basis, survey results showed that 81 percent of projects are likely to be maintained or repeated on a seasonal basis given their success. This data provides qualitative indication of the economic development benefits associated with many of the project types that this policy would encourage.

As indicated above, Table 1 shows the projected change in social costs through 2025, 2030, 2040, and 2050 respectively, for full implementation of the proposed rule using the illustrative mix of strategies. The net benefits reflect the effects of reduced highway investment as well as increased investment in GHG-reducing projects. Negative values (shown in parentheses) represent a net cost savings. Future savings are discounted at a rate of 2.5 percent, consistent with Colorado Senate Bill (SB) 21-260 which requires use of the social cost of carbon dioxide (CO₂) and other pollutants using a discount rate of 2.5 percent or less. The most substantial benefits are from reduced crashes and reduced vehicle operating costs, resulting from reduced VMT. The net present value of total social benefits is roughly \$8 billion in the 2026-2030 timeframe and \$17 billion between 2031 and 2040.

Anticipated Costs

The answer contained in item #3, above provides an analysis of agency implementation costs, which reflect additional FTE that will be necessary to comply with the rule. The resulting transportation planning changes are net neutral -- representing some shift in how dollars are prioritized rather than an overall change in the amount of spending on transportation. For example, some, but by no means all, dollars would shift from highway capacity expansion projects to other types of transportation investment including but not limited to bus rapid transit lanes or queue jumps as part of road projects; walking and bicycling facilities; additional transportation services, including expanded transit service and ridesharing options; and/or consumer incentives to reduce travel or encourage travel by more efficient, lower-emissions modes (such as ridesharing or telecommuting incentives). Importantly, it is anticipated that all costs shifted towards these types of investments will themselves result in mobility benefits and economic development, as well as improvements to air quality and pollution reduction.

Importantly, as detailed in Table 2, it is assumed that only a portion -- roughly a quarter to a third -- of capital program dollars are shifted towards projects that also serve as mitigation, in addition to providing mobility benefits of their own. This means that the most critical capacity projects are assumed to advance, likely paired with mitigation and significant investment in achieving and maintaining a state of good repair for roads, bridges, tunnels, and other transportation infrastructure assets across Colorado.

Table 2
Net Neutral Investment Levels and Dollars Shifted to Multimodal Transportation and other Environmentally Beneficial Transportation Investments
 (net present value, millions of 2021 dollars)

Years	Total RTPs + 10-Year Plan	Total Shift to Mitigation	Percent Shift
2022-2025	\$3,842.07	\$417.90	11%
2026-2030	\$4,802.59	\$974.90	21%
2031-2040	\$9,605.17	\$2,655.80	28%
2041-2050	\$9,605.17	\$2,691.50	28%

It is worthy of note that additional federal investment could augment overall resources, and especially those resources geared towards transit and multimodal investments. For example, the Senate-passed Infrastructure Investment and Jobs Act would expand transit formula funds over the next five years by about \$39.5 billion, a 43% increase over the FAST Act. Under current FTA funding formulas, Colorado could receive more than \$900 million over the course of 5 years, an increase of approximately \$40 million a year. The Act also contains \$66 billion for Amtrak while Colorado continues to work towards passenger rail along the front range.

Businesses are not expected to incur significant direct costs to comply with the rule under the proposed implementation of the rule. As noted previously, there are a variety of social benefits (cost savings) that will be realized by the rule, some of which will accrue to Colorado's businesses. Importantly, this rule does **not** require that businesses implement trip reduction strategies that would have been required in a separate rulemaking recently withdrawn by the Air Quality Control Commission (AQCC). While businesses are encouraged to pursue employee trip reduction on a voluntary basis, and MPO's and CDOT through their Travel Demand Management (TDM) programs are able to help and encourage businesses in this effort, nothing in this rule requires it.

Lastly, both the benefit and cost assumptions within the rule assume that implementing agencies come into full compliance with the rule over the period of performance. However, the way that the rule is structured, the enforcement mechanism for non-compliance requires that a portion of an agency's capital funds -- which for MPOs are only those funds sub-allocated via the state as well as those specifically noted in Senate Bill 260 as being conditioned in this manner -- become restricted to projects that are demonstrated to reduce pollution and improve mobility. The recipient retains discretion over what pollution reducing investments are made, so long as those investments are approved as mitigations pursuant to the process set forth in the proposed rule. No entity would lose funds as a result of the enforcement provisions becoming effectuated by not hitting the targets in totality. The goal of this policy is to perpetuate serious conversation and planning for how the choices that planning entities make can provide consumers with the choices that are needed to reduce pollution and improve quality of life, not to diminish the ability of any entity to invest these dollars in mobility solutions for Coloradans.

5. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.

Earlier this year, Colorado released its [Greenhouse Gas Pollution Reduction Roadmap](#), which provides multiple strategies to meet the state's climate targets in 2025, 2030 and 2050. The Roadmap, which found that transportation is now Colorado's largest source of GHG emissions, listed multiple measures within the transportation sector to reduce emissions. One of those actions is to make transportation planning, investment and land use planning changes that provide more travel choices for Coloradans. That is what this rule attempts to do. It works to accomplish a share of the overall pollution reduction target for transportation with a new planning standard that refines the roles of the state and regional governmental agencies that are already in charge of transportation planning, making the implementation of the rule

unobtrusive to everyone that does not already have a governmental role in overall transportation planning.

Further, the rule does not place requirements on individuals, the traveling public, or businesses. The rule is expected to reduce GHG by utilizing existing transportation funds programmed by government entities to expand multimodal transportation options such as transit and bicycle commuting for consumers to choose from, while still increasing road capacity for the most critical corridors where it makes the most sense.

Lastly, it is worth noting that this rule complies with a direct requirement in SB260 directing CDOT to implement GHG requirements for transportation planning.

6. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

An important aspect of this rule is that it does not require a specific set of measures to be implemented by the State and its MPOs to achieve the rule's targets. Those decisions are left to the implementing agencies who will also have ongoing opportunity to propose new mitigation measures for modeling to ensure that they result in emission reductions. Thus, in order to conduct this analysis, CDOT developed illustrative policy choice packages that assume implementation of three broad categories of VMT reduction measures: (1) expansion of transit service; (2) policies to encourage compact land use that reduces the need to drive by making it possible for travelers to access more of their preferred destinations easily within denser areas, in a manner that also facilitates strong and economically vibrant downtowns; and (3) various programs that expand travel choices through a variety of different approaches that could include investing in bicycle and pedestrian infrastructure and micro mobility services that assist with "first and last mile" connections to transit facilities; investments (e.g. in digital infrastructure) that help support tele-travel as an alternative to physical travel and also offer more workplace flexibility to employees in many work environments; or programs that encourage non-work travel by modes other than a single occupancy vehicle (e.g. a jurisdiction that provides transit passes to its residents).

Two specific alternative methods for achieving the purpose of the proposed rule were considered, including:

Alternative 1: A lower level of pollution savings based on modeling assumptions that only factored in savings associated with travel choices: Programs to encourage non-work travel by non-single occupancy vehicle modes; programs to support and encourage tele-travel (e.g., on-line health care, education, and shopping) as a substitute for physical travel; investment in bicycle and pedestrian infrastructure and micromobility services; and reduction of transit fares. Essentially, this regulatory alternative achieves the lowest cumulative pollution reduction targets and assumes fewer illustrative choices by agencies to meet them.

Alternative 2: A pollution reduction scenario at a level where the model assumed an illustrative set of actions including travel choices and expanded transit service. Notably, since most of the costs assumed in the rule relate to the ongoing cost of transit operations, this scenario would reflect most of the costs associated with the current proposal.

In contrast to the illustrative package of policy choices used to evaluate the proposed rule, these alternatives do not include additional land use policies to reduce vehicle travel. As a result, they are less likely to achieve the required greenhouse gas reduction targets and therefore to support overall state goals for GHG reduction and climate change. Once again, none of these scenarios prescribe specific choices for regulated entities, rather they establish stringency levels based on illustrative modeling options that contemplate various orders of magnitude.

The economic benefits (reductions in social costs) from these alternatives are presented in Table 3. The “travel choices” alternative (Alternative 1) achieves the lowest greenhouse gas emission reductions. The “travel choices + transit” alternative (Alternative 2) results in additional social cost savings and greenhouse gas reductions. The proposed alternative for this rule (which includes travel choices, transit, and land use policies) results in a further increase in greenhouse gas benefits. These considerations resulted in proposing this alternative to analyze the effects of the final rule. As with the base alternative, the net costs of implementing the rule to the public sector would assume similar levels of overhead (staffing) at implementing agencies but would otherwise assume that topline funding remains the same with some portion shifted from planned highway expansion into other, emissions-reducing modes and services.

Table 3
Net Present Value of Economic Benefits (Cost Savings) for Alternatives (\$millions)

Scenario	Alternative 1: Travel Choices	Alternative 2: Travel Choices + Transit
2022 - 2025	\$(1,527)	\$(1,644)
2026 - 2030	\$(6,776)	\$(7,268)
2031 - 2040	\$(14,852)	\$(16,102)
2041 - 2050	\$(10,603)	\$(11,397)

Business Center

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Proposed Rules and Public Hearing Dates

The following rules are in the process of being revised by CDOT staff and set for a public rulemaking hearing. Proposed revisions are required by statute to be available five days prior to the hearing date. Please check this site 5 days prior to the hearing for the final proposed rule that will be discussed at the Hearing.

Please submit all comments or questions regarding the proposed rules to dot_rules@state.co.us.

CDOT maintains a list of individuals and entities who are interested in being notified of CDOT rulemaking activities. If you would like to be added to this list, please email DOT_Rules@state.co.us.

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Number	2 CCR 601-22
Contact	Theresa Takushi Rebecca White Natalie Lutz
Hearing Notice	Updated Hearing Notice
Additional Notice	Additional Notice
Statement of Basis & Purpose	Updated Statement
Proposed Rule	Redline
Supplemental Documents	Press Release and Fact Sheet and Frequently Asked Questions
Additional Online Information	CDOT Greenhouse Gas Emissions Reduction Opportunities Website
Cost-Benefit Analysis	Cost-Benefit Analysis
Regulatory Analysis	Regulatory Analysis
Please submit written comments or questions to:	dot_rules@state.co.us
Written Comments Due October 15, 2021	Redacted Written Comments

Hybrid Public Hearings (In-Person and Virtual)

Date	Time	In-Person Meeting Location	Virtual Registration
9/17/2021	2-5 p.m.	CDOT Regional Office Bookcliff Conference Room	

More Information

Public Hearings Location:

unless otherwise noted
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Questions on Rules:

Email the "Rule Contact" person listed.

[State Agency Listing of Rules](#)

The Department of Regulatory Agencies (DORA) provides notice of statewide rule makings by topic.

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[Request a Cost-Benefit Analysis](#)

Exhibit 5



COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

**Transportation Commission of Colorado
Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
2 CCR 601-22**

Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble

Statement of Basis and Purpose and Preamble

Overview

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range multimodal, comprehensive Statewide Transportation Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department or CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the Transportation Commission of Colorado (“Commission”), as a basis for developing the Statewide Transportation Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO Transportation Planning Regions. In addition, the purpose of the Rules is to describe the organization and function of the Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado’s continually greater integration of multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission’s and the Department’s focus on multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.



The specific purpose of this rulemaking is to establish Greenhouse Gas (GHG) pollution reduction planning levels for transportation within Section 8 of these Rules that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. *see* § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." *see* § 25-7-102(2)(d), C.R.S.



Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). Available at:

<https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>. The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in



consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Of note, many types of infrastructure have been demonstrated not to generate significant induced demand or increased emissions. For example, the state of California conducted a study of project types that should be considered “neutral” from the perspective of GHG pollution -- due to their use being related primarily to issues like safety and utility for emergency services. See here:



<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

Statutory Authority

The statutory authority is as follows:

- House Bill 19-1261 enacted into law on May 30, 2019.
- Senate Bill 20-260 enacted into law on June 17, 2021.
- § 25-7-102(2), C.R.S., which sets forth the legislative declaration to reduce statewide GHG pollution and establishes statewide GHG pollution targets.
- § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling, and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and vehicle miles traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.
- § 43-1-1101, C.R.S., which authorizes CDOT to develop and maintain the state transportation planning process and the State Transportation Plan in cooperation with Regional Planning Commissions and local government.
- § 43-1-1103(5), C.R.S., which authorizes the Commission to promulgate rules to establish the formation of the Statewide Transportation Plan and the statewide planning process. Also requires the consideration of environmental stewardship and reducing GHG emissions as part of transportation planning.
- § 43-1-106(8), C.R.S, which authorizes the Commission to formulate policy with respect to transportation systems in the State and promulgate and adopt all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs.
- § 43-1-106(8)(b), C.R.S., which requires the Commission to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.
- § 43-1-106(8)(k), C.R.S., which authorizes the Commission to make all necessary and reasonable order, rules and regulations.





COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

08/31/2021

**Transportation Commission of Colorado
Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
2 CCR 601-22**

Updated Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble

Statement of Basis and Purpose and Preamble

Overview

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range multimodal, comprehensive Statewide Transportation Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department or CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the Transportation Commission of Colorado (“Commission”), as a basis for developing the Statewide Transportation Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO Transportation Planning Regions. In addition, the purpose of the Rules is to describe the organization and function of the Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado’s continually greater integration of multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission’s and the Department’s focus on multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those



best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The specific purpose of this rulemaking is to establish Greenhouse Gas (GHG) pollution reduction planning levels for transportation within Section 8 of these Rules that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[,]" acknowledged that "Colorado is already experiencing harmful climate impacts[,]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. *see* § 25-7-102(2), C.R.S. The General Assembly also



recognized that “[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment.” *see* § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). Available at: <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>. The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” *see* Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. *see* Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. *see* § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. *see* § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” *see* § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” *see* § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” *see* 23 U.S.C. § 134; *see also* 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” *see* 23 U.S.C. § 134(h)(1)(E); *see also* 23 C.F.R.



Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. *see* 23 U.S.C. § 135(d)(1)(E); *see also* 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” *see* 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. *see* § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” *see* § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” *see* § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” *see* § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.



Of note, many types of infrastructure have been demonstrated not to generate significant induced demand or increased emissions. For example, the state of California conducted a study of project types that should be considered “neutral” from the perspective of GHG pollution -- due to their use being related primarily to issues like safety and utility for emergency services. See here: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

Statutory Authority

The statutory authority is as follows:

- House Bill 19-1261 enacted into law on May 30, 2019.
- Senate Bill 21-260 enacted into law on June 17, 2021.
- § 25-7-102(2), C.R.S., which sets forth the legislative declaration to reduce statewide GHG pollution and establishes statewide GHG pollution targets.
- § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling, and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and vehicle miles traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.
- § 43-1-1101, C.R.S., which authorizes CDOT to develop and maintain the state transportation planning process and the State Transportation Plan in cooperation with Regional Planning Commissions and local government.
- § 43-1-1103(5), C.R.S., which authorizes the Commission to promulgate rules to establish the formation of the Statewide Transportation Plan and the statewide planning process. Also requires the consideration of environmental stewardship and reducing GHG emissions as part of transportation planning.
- § 43-1-106(8), C.R.S, which authorizes the Commission to formulate policy with respect to transportation systems in the State and promulgate and adopt all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs.
- § 43-1-106(8)(b), C.R.S., which requires the Commission to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.
- § 43-1-106(8)(k), C.R.S., which authorizes the Commission to make all necessary and reasonable order, rules and regulations.



Exhibit 6

Business Center

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Proposed Rule Revisions and Public Hearing Dates

The following rules are in the process of being revised by CDOT staff and set for a public rulemaking hearing. Proposed revisions are required by statute to be available five days prior to the hearing date. Please check this site 5 days prior to hearing for the final proposed rule that will be discussed at the hearing.

CDOT maintains a list of individuals and entities who are interested in being notified of CDOT rulemaking activities. If you would like to be added to this list, please email DOT_Rules@state.co.us.

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Number	2 CCR 601-22
Contact	Theresa Takushi and Natalie Lutz
Hearing Notice	Notice
Statement of Basis & Purpose	Statement
Proposed Rule	Redline
Additional Information	Fact Sheet
Written Comments Due October 15, 2021	N/A

Public Hearings				
Date	Time	Place	Virtual Registration	
9/14/2021	3-7 p.m.	CDOT Regional Office US160 Maintenance Training Facility 20581 Highway 160 Durango, CO 81301		Link
9/17/2021	3-7 p.m.	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction CO 81505		Link
9/23/2021	3-7 p.m.	Swanses Recreation Center 2650 E. 49th Ave. Denver, CO 80216		Link
9/24/2021	3-7 p.m.	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906		Link
9/27/2021	3-7 p.m.	South Suburban Sports Complex 4810 E. County Line Rd. Littleton, CO 80126		Link
9/29/2021	3-7 p.m.	CDOT Regional Office Big Sandy Conference Room 2738 Victory Highway Limon, CO 80828		Link
9/30/2021	3-7 p.m.	Christ United Methodist Church 301 East Drake Road Fort Collins, CO 80525		Link
10/04/2021	3-7 p.m.	City Hall City Council Chambers 101 West 8th Street Glenwood Springs, CO 81601		Link

Rule Title

More Information

Public Hearings Location:
unless otherwise noted
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Questions on Rules:
Email the "Rule Contact" person listed.

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Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

Number	2 CCR 601-22
Contact	Theresa Takushi Rebecca White Natalie Lutz
Hearing Notice	Updated Hearing Notice
Additional Notice	Additional Notice
Statement of Basis & Purpose	Updated Statement
Proposed Rule	Redline
Supplemental Documents	Press Release and Fact Sheet and Frequently Asked Questions
Additional Online Information	CDOT Greenhouse Gas Emissions Reduction Opportunities Website
Please submit written comments or questions to:	dot_rules@state.co.us
Written Comments Due October 15, 2021	Redacted Written Comments

Public Hearings

Date	Time	Place	Virtual Registration
9/17/2021	2-5 p.m.	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction, CO 81505	Sept. 17 Virtual Registration Form
9/23/2021	3-7 p.m.	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	Sept. 23 Virtual Registration Form
9/24/2021	3-6 p.m.	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906	Sept. 24 Virtual Registration Form
9/27/2021	3-7 p.m.	South Suburban Sports Complex 4810 E. County Line Rd. Littleton, CO 80126	Sept. 27 Virtual Registration Form
9/29/2021	2-5 p.m.	CDOT Regional Office	

Email the rule contact person listed.

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6B

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9/23/2021	3-7 p.m.	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	Sept. 23 Virtual Registration Form
9/24/2021	3-6 p.m.	CDOT Regional Office	

Public Hearings Location:

unless otherwise noted
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Questions on Rules:

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Proposed Rules and Public Hearing Dates

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Cost-Benefit Analysis	Cost-Benefit Analysis
Regulatory Analysis	Regulatory Analysis
Please submit written comments or questions to:	dot_rules@state.co.us
Written Comments Due October 15, 2021	Redacted Written Comments

Hybrid Public Hearings (In-Person and Virtual)

Date	Time	In-Person Meeting Location	Virtual Registration
9/17/2021	2-5 p.m.	CDOT Regional Office Bookcliff Conference Room	

More Information

Public Hearings Location:

unless otherwise noted
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Questions on Rules:

Email the "Rule Contact" person listed.

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Exhibit 7



DATE: July 13, 2021

TO: GHG Pollution Standard Stakeholders

FROM: Colorado Department of Transportation

RE: Transportation GHG Roadmap Briefing Update

Executive Summary

The passage of HB-1261 set Colorado on a course to dramatically reduce greenhouse gas emissions across all sectors of the economy. As the leading source of Greenhouse Gas (GHG) emissions in Colorado (and nationwide), transportation has a critical role to play in helping achieve these goals. The state's 2020 Greenhouse Gas Pollution Reduction Roadmap (Roadmap) identified nine different strategies for transportation. Of these, two are underway now--the Employee Trip Reduction Rule proposed in May by the Air Quality Control Commission (AQCC) and a rulemaking on pollution reduction planning for transportation discussed in this memo; one has been accomplished through SB 260 - securing new revenue to fund infrastructure and incentives for electric cars, trucks and buses; and one has begun through HB 1117 and HB 1271 - offering incentives for land use decisions by local governments that reduce vehicle miles traveled (VMT) and GHG emissions. Collectively, these strategies, as they are implemented over the next several years, combined with the effects of low and zero emission vehicle rules, are designed to achieve the 2030 target of reducing GHG pollution from transportation by 12.7 million tons per year below 2005 levels. Importantly, the pollution reduction planning rule that this memo describes, while an essential and important element of this strategy, is only one element of a comprehensive strategy and is not intended to achieve the targets in isolation.

This paper focuses on the intricacies of establishing a pollution-reduction framework that is among the first of its kind in the U.S. The thinking shared here reflects months of still-ongoing conversations with transportation planners, elected officials, industry, environmental groups, other state transportation departments and thought leaders across the country. In particular, the state's five metropolitan planning organizations (MPOs) - CDOT's partners in transportation planning - have provided countless hours of input. Our intent here is to describe the collective and draft work and thinking to date and elevate those issues that merit particular focus in the coming weeks and months as these rules and policies move forward. For that reason, the

adopted, final rule should be viewed as the official outcome of this process.

This paper also discusses the broader context for this effort. Making progress towards the transportation targets will also require actions by other agencies and across a number of areas, such as ongoing focus on the medium and heavy duty truck sector, and contributing to the development of post-2025 light duty vehicle standards. This sector encompasses the millions of individual choices people make every day that have an impact on climate, and the variety of strategies outlined below are all collectively necessary to achieve the state’s ambitious and necessary climate goals. The policies contemplated by CDOT and the Transportation Commission are neither the first nor the last steps needed to achieve the totality of Roadmap goals for the transportation sector, and should be viewed as one step among many.

<p><u>TABLE OF CONTENTS</u></p> <p><u>I. Overview</u></p> <p><u>II. Embracing the challenge of addressing greenhouse gas pollution at CDOT</u></p> <p><u>II.A. Staffing and Governance</u></p> <p><u>II.B. Electrification and Clean Vehicles</u></p> <p><u>II.C. Expanding Transportation Choice and Multimodal Options</u></p> <p><u>II.D. Improving Modeling and Planning Conventions within CDOT</u></p> <p><u>II.E. Bringing more voices into the transportation conversation</u></p> <p><u>III. Pollution Reduction Planning Approach</u></p> <p><u>III.A. Tackling outstanding questions</u></p> <p><u>IV. Conclusion</u></p>

I. Overview

In response to the new legislative language in SB260¹ and months of stakeholder discussions on this concept, CDOT proposed in July of 2021 that the Transportation Commission (TC) undertake a formal rulemaking process for pollution reduction planning, which would amend the current state planning rules in order to reduce greenhouse gas pollution from transportation. This would separate targets for CDOT and MPO transportation plans. This rule will include establishment of processes to demonstrate and enforce compliance.

From a broader standpoint, this proposal helps the state make progress towards its legislatively adopted GHG reduction goals² and fulfill a key recommendation from the [Greenhouse Gas Pollution Reduction Roadmap](#) to reduce vehicle miles traveled by “Integrat(ing) State GHG Pollution Standards and Analysis in Regional, and Statewide Plans.” Altogether, the Roadmap

¹ SB260 spells out statutory requirements for the TC to adopt procedures and guidelines requiring the Department and Metropolitan Planning Organizations (MPOs) to “[i]mplement relevant rules and regulations issued pursuant to [Section 25-7-105](#)” (CRS) and “[o]therwise reduce greenhouse gas emissions to “help achieve the statewide greenhouse gas pollution reduction targets established in [Section 25-7-102 \(2\)\(g\)](#).”

² The 2019 Climate Action Plan to Reduce Pollution (HB 19-1261) set a series of statewide greenhouse gas reduction goals (at least 26% in 2025, 50% in 2030 and 90% in 2050).

includes nine recommendations for the transportation sector, including improving the performance of light, medium, and heavy duty vehicles, transportation demand management, and incentivizing smart local land use, electrification infrastructure and fleet turnover. The sum of emissions reductions from all of these strategies, once fully developed, would be designed to add up to the 2030 transportation sector targets set in the Roadmap and to align with the 2050 goals adopted in HB 19-1261.

The 9 recommendations put forth in the Greenhouse Gas Roadmap are:

- 1. State GHG pollution standards for transportation plans.**
- 2. Trip reduction/Transportation Demand Management (TDM) requirements and encouraging telecommuting for large employers.**
- 3. Clean trucking strategy with multiple components including infrastructure investments, incentives for fleet turnover, and evaluation of regulatory options.**
- 4. Secure new revenue to fund infrastructure and incentives to transition to electric cars, trucks, and buses.**
- 5. Offer incentives for land use decisions by local governments that reduce vehicles miles traveled, reduce GHG and other pollutants, and support greater access to housing near jobs.**
- 6. Indirect source standards for some types of new development.**
- 7. Expand public transit, including front range rail and RTD completing the statutorily required Fastracks system that voters passed in 2004.**
- 8. Develop an EV Equity study to ensure access to EV's for all Coloradans.**
- 9. Provide input into development of new clean car standards by both the federal government and for state-based standards.**

The Transportation Commission rule would focus on the connection between public sector-funded transportation projects and vehicle travel; namely that what we build, combined with the emissions of vehicles themselves, influences driving patterns and commensurate GHG pollution. As this briefing paper will discuss, this connection is exceedingly complex in practice, particularly given the number of independent actors -- namely every traveler and vehicle owner-- who have discretion over their personal travel choices and will not be governed by this rule and policy. Thus, the rules must isolate what role state and regional governments play in affecting travel through decisions about where and how to build infrastructure. Upon completion of this rule, Colorado will become only the second state in the nation to establish GHG-related reduction requirements on transportation planning--and the first in the Intermountain West. Colorado's policy would be unique in structure, leveraging the competencies and authorities of specific institutions that govern transportation planning within the state.

Given the intricacies involved with establishing this largely unprecedented rule and the importance of doing so in a manner that reflects the Colorado Way, there are a number of key details of particular importance in this rule: what the pollution standards should be for the state and regions; the precise mechanics of how the compliance and enforcement cycle should

operate and the underlying dynamics between the two relevant agencies (CDOT and CDPHE) and commissions (TC and AQCC); initial implementation timelines; and -- importantly -- the accounting for specific policy choices and mitigations within project plans.

This document seeks to address all of these key details and other related considerations as this process moves forward.

II. Embracing the Challenge of Addressing Greenhouse Gas Pollution at CDOT

In 2020, transportation surpassed electricity as the leading source of GHG pollution in Colorado. In recognition of the importance of this issue, the Colorado Department of Transportation (CDOT) and the Transportation Commission have embarked on a massive undertaking over the last two years to reimagine the Department's approach to clean transportation, working in tandem with the Colorado Energy Office (CEO), the Colorado Department of Public Health and the Environment (CDPHE), local partners, and stakeholders across the transportation sector. These changes are reflected in areas including **staffing and governance, enhanced focus on electrification and clean vehicles, expanding transportation choice and multimodal options, and undertaking significant improvements to modeling and planning conventions within the Division of Transportation Development**. Importantly, these efforts go hand in hand with an enhanced focus on improving community outreach across the state, and in disproportionately impacted communities, to ensure that Coloradans voices are represented in the choices that we make and the priorities that we establish as a Department.

II.A. Staffing and Governance:

In order for CDOT to equip itself as an organization to address today's challenges, we must prioritize them within the organization. Within the Department, the last few years have brought significant improvements towards integrating air quality and climate considerations throughout the organization--as we strive to improve the quality and efficiency of departmental output overall and across disciplines.

Two years ago, CDOT established the Office of Innovative Mobility (OIM), which integrates the Department's multimodal efforts through the Division of Transit and Rail with an emerging focus on incorporating electrification and other zero emissions vehicles into our system and equipping our infrastructure to accommodate them. This office reports directly to the executive director. OIM has recruited new leadership to elevate the role of DTR, along with expanding expertise on electrification and mobility choices.

The Division of Transportation Development (DTD), which houses CDOT's planning and modeling functions as well as its research arm, has also strengthened its institutional capacity, both overall and with particular respect to the environmental impacts within CDOT's influence. New leadership within the research division has made air quality a priority, including instituting a new air quality monitoring program to test state of the art technology for measuring pollution in communities living adjacent to the highways. Moreover, DTD has hired the Department's first ever GHG specialist, and an expert to focus on partnering with local communities to more fully

contemplate land use implications when designing infrastructure projects across the state.

Importantly, most of CDOT’s work “on the ground” takes place in our five planning regions, all of which have strengthened their capacity to integrate multimodal factors into project plans -- with several regions bringing on specialists in areas like transit and multimodal planning. Indeed, improving our air is an all-of-CDOT effort that requires technical capacity and collaboration across the organization.

MPO Staffing

Just as CDOT needs to equip itself to meet the GHG challenge, the MPOs may need to make adjustments in their planning process. Each MPO is different and each has their own unique challenges based on the land area they serve, funding and staffing levels and the industries that make up their region’s overall economic base. CDOT will continue to be a good partner to the MPOs and provide technical assistance, data and partnering opportunities that is appropriate in the context of that region’s unique needs. Denver will have different needs than Pueblo and CDOT will continue to be nimble to provide the appropriate assistance to each region.

II.B. Electrification and clean vehicles:

Colorado has a lot to gain from electrifying the transportation sector because of the rapid gains we are making with decarbonizing our electrical generation systems, which results in vehicles that are both cleaner today and will become cleaner over time as more renewable sources are added to the grid. Electrification of vehicles can also provide reliability benefits to the grid by spreading peak loads over a longer period of the day, making use of excess renewable energy resources that are currently curtailed, and potentially - as technology develops - serving as flexible and resilient energy storage by sending electricity from vehicles back to the grid at times when it is most needed.

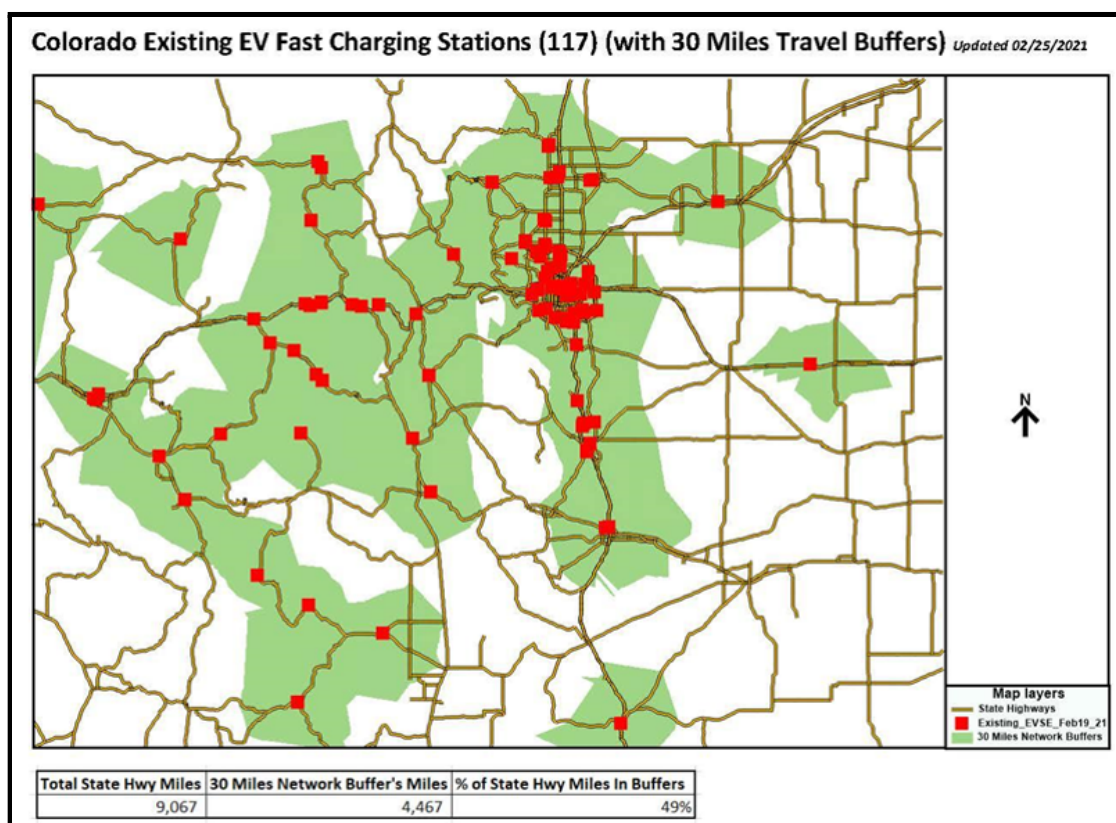
One key advancement in 2019 was the exploration and eventual adoption of a ZEV standard, through AQCC’s Colorado Low Emission Automobile Regulation³, with Colorado becoming the first state in more than a decade and the first non-coastal state to do so and the first ever to do so with support from the auto manufacturing industry. The rule, which included incentives for early action, has helped motivate manufacturers to focus on making ZEV stock available to Colorado consumers faster. CDOT played a key role in securing the negotiated agreement of the auto industry for our ZEV rule.

In addition to supporting greater vehicle choice for Coloradans via the ZEV standard, CDOT is also collaborating with its partners to invest in charging infrastructure that fills geographic gaps that exist in the charging network. Some areas of particular focus include the electrification of the state’s 26 Scenic & Historic Byways as well as other rural and recreational destinations such

³ 5 C.C.R. § 1001-24, Part C.

as state parks, ski resorts, trailheads, and the like. These investments play multiple roles: providing “range confidence” for drivers to support greater EV adoption, fostering local economic development for smaller communities [seeking EV tourism](#) and bringing charging options to areas less likely to see private investment in the short-term. On a regional scale, CDOT also actively participates in planning coordination with our 7 neighboring states via the REV West Partnership as a means of fostering more seamless EV charging for interstate travel across the Intermountain West.

Separate from the passenger vehicle market, CDOT also works closely with transit agencies across the state to support the electrification of their fleets, from planning and education to vehicle purchases, charging equipment installation, and sharing of data and best practices. Since 2019 CDOT has awarded more than \$21 million in Volkswagen Settlement funds to 10 agencies for the purchase of 39 electric buses statewide while providing training and support to many other fleets beginning their transition process. Senate Bill 260 adds ongoing funding for this purpose through a new clean transit enterprise housed at CDOT. CDOT’s goal is to deploy at least 1,000 transit ZEVs statewide by 2030.



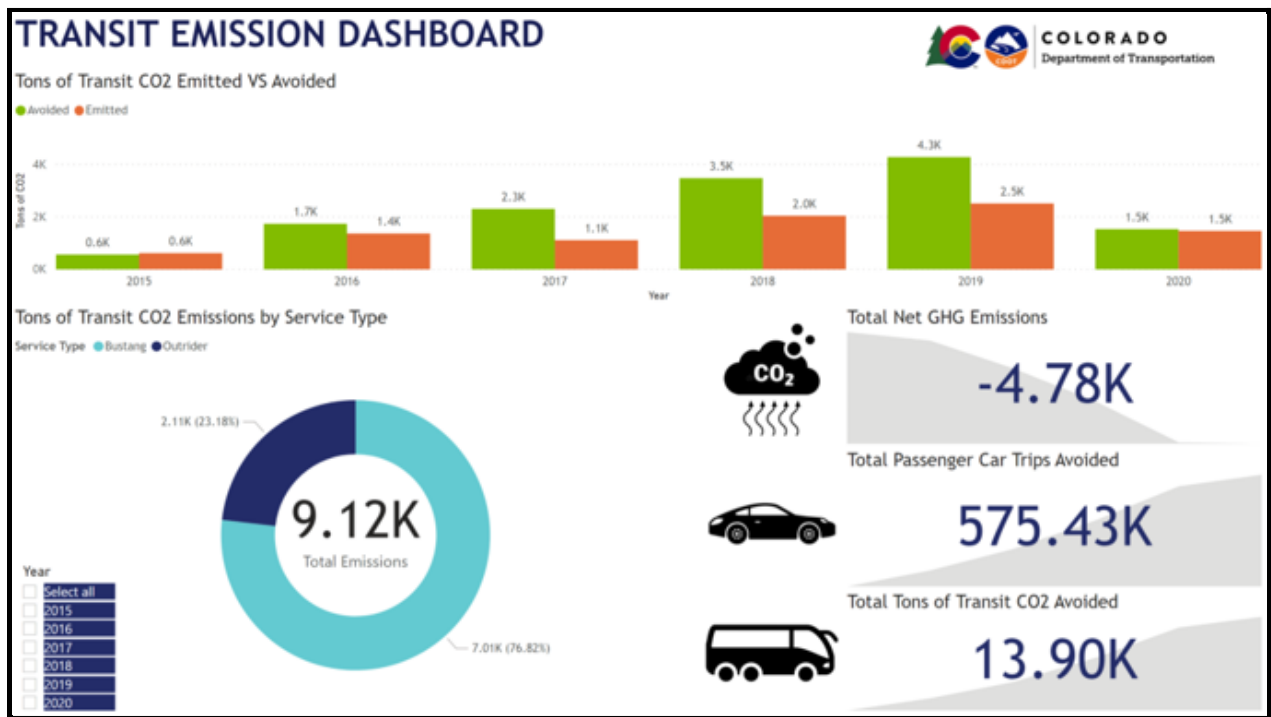
Additionally, CDOT staff is collaborating with CEO, CDPHE, the Colorado Motor Carriers Association (CMCA), and stakeholders across the state to develop a Clean Trucking Strategy that will reduce the GHG and air quality impacts of medium and heavy duty (MHD) freight and delivery vehicles while maintaining the important economic benefits that this sector provides. As part of that effort, Colorado signed an MOU with 14 other states and the District of Columbia to target a 30% MHD ZEV market share by 2030 and a full 100% MHD ZEV market share by

Finally, it is important that CDOT leads by example in the realm of transportation electrification. The percentage of new alternative fuel vehicles ordered by CDOT for our own fleet has continually increased from FY18 to today, with more than 90% of the 61 FY20 vehicles ordered being alternative fuel or electric, and many of them replacing half ton pickup trucks. With the FY21 vehicle order, 41% of the CDOT light duty fleet will be compressed natural gas (CNG), Hybrid, plug-in hybrid electric vehicles (PHEV), or EV. In terms of medium and heavy-duty vehicles, CDOT Maintenance & Operations has purchased 9 plug-in hybrid electric aerial/lift trucks that reduce idling when the vehicles are working on signs, bridges, lights and other structures. CDOT is also in the process of procuring and piloting 2 electric street sweepers partially funded through VW Settlement grants, as well as exploring opportunities for acquiring all-electric pickups as they begin to enter the market.

II.C. Expanding transportation choice and multimodal options:

As in the electrification sphere, there has been a significant transformation in how CDOT supports multimodal options throughout the state. At a leadership level, CDOT created the Office of Innovative Mobility and brought the existing transit division under senior leadership. A primary focus area has been building upon the existing success of the Bustang network, and there is a real strategy behind the development of this transit option that is only growing its appeal for possible users; it is not an accident that Bustang's farebox recovery and popularity are so strong.

CDOT is not only maintaining its existing high-quality transit service, but also going further with expanded Bustang-Outrider service to four new routes. This effort complements the buildout of new and expanded mobility hubs along I-25 that will foster multimodal connections between Bustang routes and local transit services while laying the groundwork for future Front Range Passenger Rail service. From a data and performance tracking standpoint, CDOT is also currently developing a "transit emissions dashboard" to track GHG emissions from our Bustang and Outrider commuter services and how emissions decrease with increased ridership and eventual electrification of the vehicles. CDOT expects to expand the dashboard to include non-CDOT transit services over time.



Over the last year, CDOT also launched multiple efforts supporting main streets throughout the state, through a first of its kind effort to bolster active transportation and outdoor commerce on state and local roads that anchor communities. The [Safer Main Street program](#), focused on the Denver metropolitan area, awarded about \$60 million to more than 30 capital infrastructure projects focused on improving the safety of urban arterial roads. Statewide, the [Revitalizing Main Streets Program](#) has awarded close to \$6 million to more than 100 projects statewide that range from fixing sidewalks, to improving lighting for pedestrians, to helping cities and towns implement safety barriers for outdoor commercial space on roadways. This successful program received an initial \$30 million as part of state stimulus, and CDOT is evaluating applications for forthcoming awards. Moreover, SB260 included future funding to ensure that this important program continues.

CDOT is also one of several agencies focused on reducing emissions through Transportation Demand Management (TDM) — by providing incentives, supporting strategic planning, and leading by example. This past year, the new CanDo Telework Grant awarding \$234,000 for 41 projects to local governments and non-profit organizations to support teleworking both during the pandemic and over the longer-term.

CDOT has taken a variety of planning measures including completed Phase 1 and Phase 2 of the State TDM Plan, which assessed various strategies for their return on investment and found telework and vanpools to be the best performance. Staff have also updated the State TDM website, developed a new Healthy Communities Coordinator position to support TDM projects and programs, and implemented many of these strategies during the construction phases of the Grand Avenue Bridge replacement in Glenwood Springs and I-25 Gap project in Douglas

County, among others.

Finally, CDOT is committed to GHG emissions reductions within our own operations and to the extent possible for our contractors. The new Flexible Work Arrangement Policy Directive makes working from home for our staff 2 to 3 days a week the “norm” instead of the exception. For days when employees are working in CDOT offices, internal employee TDM-Transportation Demand Management efforts including the “Reboot Your Commute” program encourage biking, walking, carpool, vanpool, and transit for the return to work this summer.

II.D. Improving modeling and planning conventions within the department:

The Department has embarked on, and continues to advance, significant improvements in planning and modeling conventions. These continue to evolve and will be complemented by further improvements and steps to codify best practices.

Planning elements including NEPA and 1601: SB260 established new requirements for environmental studies on large projects. Many of these requirements, including additional modeling and monitoring for air quality, are already being implemented on CDOT’s largest projects. CDOT is modeling additional metrics such as fine particulate matter (PM2.5) and induced demand for major projects currently underway, and such analysis will become a consistent expectation in project reviews moving forward. CDOT is also exploring advanced mitigation to proactively identify ways to offset negative impacts of projects, as well as include elements that yield positive benefits for the community during construction and beyond. In the spirit of these efforts, CDOT is also improving internal policies, such as requiring for the first time that communities follow the Department’s process for approving new interchanges, which includes consideration and incorporation of transportation demand management strategies. This may be an area for future consideration given Colorado’s rapid growth and the impact of new interchanges on VMT and GHG emissions.

Improving Travel Modeling: For the last several years, CDOT has worked to develop Colorado’s first-ever statewide travel model, which has included building out a travel forecasting team. A key point in this process was the choice between available travel model structures and software, selecting the newer “activity-based model” (ABM) form over the older and more traditional “trip-based model” form; CDOT adapted the ABM used at DRCOG, expanding it to statewide scale. While the ABM form is becoming common in large metropolitan areas across the US, very few statewide models have yet been built using this structure, which is important for evaluating factors like induced demand and the benefits of active transportation. The advantage of the ABM form is that it includes a much more detailed depiction of both land use and person/household characteristics than does the trip-based form, permitting ABMs to be sensitive to numerous factors that are known to have significant effects on travel choice. This will become a powerful tool for CDOT’s future analysis of its efforts to reduce GHG emissions. CDOT recognizes that each MPO has different modeling capabilities and we are working with MPO staff to determine how CDOT can support access to CDOT’s model or upgrades to the MPO’s

own tools.

CDOT's ABM provides capabilities that are crucial to the GHG analysis now on-going, including:

- Induced demand analysis: CDOT's model permits a thorough evaluation of the effects of roadway capacity expansion on the amount motorists choose to drive, and thus the subsequent impact on GHG emissions.
- Explicit inclusion of walking and biking in the set of modes available for any given trip (older trip-based models as a rule do not include these modes).
- Direct estimates of whether employees work from home or at another location.
- Depiction of household and employment locations at a high level of detail, greatly enhancing CDOT's ability to evaluate the effect on travel demand of various development patterns.
- Depiction of Colorado residents at a level of detail similar to that provided by the US Census, permitting sensitivity to demographic characteristics that affect people's travel choices (e.g., student and worker status, age, income, etc.)

II.E. Bringing more voices into the transportation conversation:

Transportation planning should be a conversation with our neighbors about the real needs that affect their daily lives. To that end, one of CDOT's first efforts during the Polis Administration was to undertake an unprecedented outreach process that took Department leadership and staff to all 64 Colorado counties, to discuss a wide range of transportation needs and priorities that should guide the Department's capital program.

Out of this process, the Department developed a [ten year plan](#) responsive to community needs -- focused on key priorities like fixing roads and bridges across the state ("fix it first"), addressing strategic choke points on the interstate system like Floyd Hill and I-270, and placing a new focus on the safety and vitality of our main streets which carry multiple modes of transportation. The plan also focuses on better integrating transit into critical corridors like I-70 and I-25 to recognize that we can't build our way out of congestion and must take a multifaceted approach to accommodate Colorado's ongoing growth. This includes increasing CDOT's Bustang transit service and investing in new mobility hubs that increase access to transit and carpooling.

As we move to project implementation, and leveraging the relationships built out of the ten year plan process, CDOT is endeavoring to use new approaches to improve our communication with (and involvement of) communities around project planning and execution. This means coordinating early while projects are being designed, and remaining available for community input and dialogue as we manage tactical details such as construction schedules.

CDOT is piloting improvements to our community outreach processes in designing the I-270

process. Out of the necessity created by COVID-19, CDOT adapted public meetings to a virtual format and found that pre-recorded “virtual open houses” — available in both English and Spanish — significantly expanded participation beyond traditional public meetings. By incorporating holistic virtual opportunities in our public outreach portfolio, community members who may not have the ability to join live events have an opportunity to thoroughly engage with the project team. CDOT established a standing advisory group for the I-270 project that includes key local government partners as well as neighboring jurisdictions, community leaders, business owners, environmental justice advocates, and others. The goal of this “steering committee” is to preview ongoing analysis, identify project concerns, and establish a communication network with local communities. Early mitigation implementation is running parallel to these outreach efforts — a dozen air quality monitors will be installed along the I-270 corridor before the project even begins construction.

As these types of improvements are refined, they must become part of CDOT’s standard operating procedure, to ensure predictable and streamlined processes as well as consistent best practice. A key requirement in SB260 will help make this happen. The legislation requires the establishment of a new Environmental Justice and Equity Office within CDOT in order to “work directly with disproportionately impacted communities in the project planning, environmental study and project delivery phases of transportation capacity projects.” CDOT is currently in the process of establishing this Office.

Working with Disproportionately Impacted Communities

Specific to the transportation planning rule, CDOT is looking at ways to involve disproportionately impacted communities, not only as part of the rulemaking process, but also through the mitigation of GHGs during project delivery, construction, and ongoing maintenance. This includes both targeted, small group discussions and open public meetings.

III. Pollution Reduction Planning Approach

The purpose of establishing greenhouse gas pollution standards for transportation plans is to determine and limit the GHG emissions which would result from the transportation system if the plan was implemented. Models (as described above) are used to assess the expected impacts that a project (or collection of projects) will have on consumer driving behavior. The goal is for planning level decisions to consider these impacts, among other considerations, and ensure that as state and MPO plans are updated and developed, projects within them fit within a fixed target when measuring cumulative emissions impacts.

From an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a nonattainment area are consistent with

(“conform to”) a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and DRCOG MPOs to demonstrate conformity with each plan adoption and amendment.

III.A. Major policy issues and outstanding questions:

The following section provides CDOT’s thinking to date--as informed by stakeholder discussions--on the major policy issues integral to this rule. Specific elements, including definitions, compliance and enforcement will be established in the formal rulemaking. The following sections outline CDOT’s current thinking based on pre-rulemaking stakeholder engagement.

How the pollution reduction planning levels will be determined: Unlike most air quality regulations, this rule cannot rely on known technological improvements (e.g. a scrubber or industrial process change) to determine reduction levels. Instead, we must estimate (i.e. model) the long-term change in travel decisions resulting from a series of potential infrastructure changes and investment decisions. A further challenge is selecting those decisions under the control of CDOT and the MPOs in order to align the reduction levels with the actions of those entities subject to the regulation and further to align the reduction levels to correspond to the upcoming planning cycles and corresponding modeling that is done as part of the plans. This timing is a key consideration that will be further discussed as part of the rulemaking.

To make this determination, CDOT modeled a series of scenarios to evaluate the impact of different measures or investments that CDOT or the MPOs could use to comply with the GHG reduction limits. These scenarios also will be used to calculate the potential costs and benefits of this rulemaking; a required component of the rule.

CDOT selected a number of scenarios to model and determine their impact on VMT and GHGs.

1. Travel Choices
 - Additional sidewalk and bike lanes, increased work from home
2. Travel Choices + Transit
 - Increase in transit service and decrease in fares
3. Travel Choices + Transit + Land Use
 - Change in development patterns
4. Acceleration of Vehicle Electrification

As noted above, it is important to select scenarios that are under the control or influence of MPOs and CDOT. Land use is an area that merits particular consideration. MPOs and CDOT can play a role in incentivizing land use decisions that will be more efficient to accommodate

integrated transportation flows, reducing overall costs and increasing environmental and economic benefits and, perhaps more importantly, partner with local governments interested in transit-oriented development or infill. For example, as cities pursue downtown revitalization and housing, they also seek to add pedestrian features and calm traffic on state highways (which in many cases function as main streets). The traditional role of state highways are as corridors for freight and through-traffic; however more pedestrian-oriented state highways can attract infill housing development that could ultimately reduce greenfield development and the resulting congestion. For this reason, the impact of changes in land use is considered in these scenarios, and in the GHG reduction ranges in the proposed rule. However, it is important to note that land use changes occur slowly as new development or redevelopment occurs. Thus, the potential GHG reductions achieved by land use are best attributed to later target years (e.g. 2040) in the rulemaking.

Magnitude of the GHG Reductions: Based on the scenario development outlined above, CDOT envisions that this rule could reduce emissions by 0.5-1.5 million metric tons in 2030. CDOT anticipates providing a range of reductions for each compliance year in the rulemaking and soliciting input on these ranges. Ultimately, the rulemaking should ensure that the statewide and sub-regional emission reduction targets reflect a realistic upper range of feasible emissions reductions that CDOT and its partner MPOs can achieve. No one solution alone can address these issues - be it electrification or multimodal expansion - but a market basket of best practices and compliance options that can be suited to the project at hand can do so successfully. By working towards realistic but ambitious reduction totals, we can determine the realm of the possible and address the challenge before us.

Offset Measures: In order to maintain a stable and efficient transportation planning process, CDOT believes it is necessary to provide for the use of Offset Measures should a plan be unable to demonstrate compliance. Offset Measures (OMs) reduce GHG but are not “regionally significant” and are thus not included in the set of projects modeled for compliance. For example, offsets could include:

- Measures that reduce vehicle miles traveled, including new segments of sidewalk, or a connection to multi-use resources (e.g. neighborhood retail) that could decrease driving in that neighborhood.
- Operational measures that reduce emissions due to improvements to vehicles traveling through the system in the most emissions-efficient way (e.g. ramp metering).
- Features to facilitate clean vehicle turnover above and beyond what could be assumed to occur without the rule given other incentives for electrification. For example, a highway project along a key freight corridor might include targeted investments in heavy-duty charging to accelerate turnover of the rolling stock within that corridor, specifically. While it will be important to avoid “double counting” with other policies, this readiness for zero emission vehicles, especially

in the medium and heavy duty truck space, will be a critical need in future highway planning that this rule can and should accelerate.

Because these Offset Measures are expected to change over time, the draft rule will outline a process (likely a subsequent policy directive) for establishing an Offset Measure regime. This directive will include a list of approved Offset Measures, a “score” in terms of GHG reductions for different types of projects, as well as a clear evaluation process for how modeling/estimating for OMs should be conducted and approved -- including transparency measures -- to ensure a public conversation about that process as well as a resulting policy that can be nimble and iterative. This evaluation rubric could include metrics for assessing impact “hotspots” within residential neighborhoods, including potentially providing a higher level of credit to interventions based on community impact and health equity. .

The Role of the Transportation Commission: As noted elsewhere in this paper, the approach contemplated in this paper responds to two recent pieces of legislation (HB19-1261 and SB21-260). Specifically, the passage of SB 260 establishes additional requirements on the TC in this space, which is reflected in the approach that is being developed.

In HB19-1261, now codified in part at §§25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that “climate change adversely affects Colorado’s economy, air quality and public health, ecosystems, natural resources, and quality of life[,]” and that “many of these impacts disproportionately affect” certain disadvantaged communities.” §25-7-102(2)(d), C.R.S. The Colorado General Assembly’s updated GHG reduction goals are outlined in a footnote on Page 1. Section 25-7-105(1)(e), C.R.S., sets forth the framework for developing GHG abatement rules consistent with the statewide GHG pollution reduction goals in §25-7-102(2)(g), C.R.S. It is expected that the TC rule will, at the outset, set an ambitious target for the pollution reduction planning, under the assumption that this policy will account for a meaningful portion of sector-wide progress in total GHG reductions., but nonetheless be one of many policies contributing towards that goal. Colorado’s transportation planning process is a cooperative process designed to coordinate regional transportation planning and is guided by statewide transportation policies set by CDOT and the TC and by the TC’s Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions, 2 CCR 601-22 (“Statewide Planning Rules”). The TC’s authority to promulgate and adopt the Statewide Planning Rules can be found in §43-1-1103(5), C.R.S., which requires the TC to promulgate rules and regulations governing state transportation planning. The TC also has broad rulemaking authority pursuant to §43-1-106(8)(k), which grants the TC the power to make all necessary and reasonable orders, rules and regulations in order to carry out its authority and duties.

The Role of MPOs: MPOs are necessary entities in this rulemaking given their federally-required role in transportation planning. Colorado’s 5 MPOs have been close partners in developing this policy approach, providing CDOT regular and constructive feedback. CDOT will continue to work with the MPOs as the final details of the draft rulemaking are developed.

Listed below are several issues MPOs have raised to date:

- How to set statewide and regional GHG reduction levels without double-counting projects that appear in both CDOT and MPO plans.
- How to account for Colorado’s rapidly growing population in setting GHG reduction levels.
- Differences in modeling capabilities across MPOs.
- Concerns about MPO ability to influence or change land use patterns.
- Importance of aligning analysis timing requirements with federal air quality staging periods (to prevent onerous, near continuous modeling burden).
- Applying enforcement provisions equally to MPOs and CDOT.

MPO Planning Factors

CDOT has a close working relationship with the State’s Metropolitan Planning Organizations (MPOs). The MPOs are required to implement a performance-driven planning process that:

- (1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- (2) Increase the safety of the transportation system for motorized and non-motorized users;
- (3) Increase the security of the transportation system for motorized and non-motorized users;
- (4) Increase accessibility and mobility of people and freight;
- (5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
- (6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- (7) Promote efficient system management and operation;
- (8) Emphasize the preservation of the existing transportation system;
- (9) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- (10) Enhance travel and tourism.

Personal Choice: The Department recognizes that even the best model is imperfect, especially when modeling human behavior. Despite the efforts of CDOT, MPOs and transit agencies to build projects in ways that incorporate new technologies or offer additional travel and mode choice, individual Coloradans are ultimately in charge of how they get from point A to point B, and they may not behave precisely as the models predict. There is a rich and growing body of research on how humans interact with the transportation system including how travel decisions are made and the factors that influence the uptake of emerging and potential future mobility options. In general, people make travel choices based on travel time to their destination, cost and convenience, but different people assign different weights to these factors

and can also bring in additional preferences that reflect unique lifestyle choices, personal values and goals. Once travel preferences are established, they become ingrained habits that can be difficult to change. However, changes in life circumstances such as changing jobs, moving to a new home, having children, changes in health status or improvements to the transportation choices offered can trigger individuals to reassess travel habits. By expanding travel options, and designing projects in a way that incentivizes more efficient behavior including through a connection to sustainable land use, and by providing a wider variety of safe and convenient travel options in addition to driving an individual car, planners provide the opportunity for individuals to make different choices, but whether travelers actually shift into new modes of travel depends on which factors appeal to each unique traveler. This policy is focused on expanding options available to consumers.

Over time, as the state of the modeling practice improves in evaluating the many measures under consideration to reduce GHG emissions, CDOT's modeling tools will also improve in their ability to evaluate the effects of such measures. This is an important reason to include requirements in the rule to re-evaluate reduction levels-and adjust as necessary.

VMT as a Strategy: It is important to note that although VMT reduction is one strategy that can help to reduce GHG in the short-term, as more vehicles convert to electric technology, VMT is less of a factor in the creation of GHG emissions in the longer term. However, some stakeholders have suggested basing the emissions budget around a 10% reduction in VMT, a percentage discussed in the GHG Roadmap, or specifically making VMT the compliance mechanism of this rule. It's important to note that the metric of VMT, which was intended as a 10% reduction relative to business as usual in 2030, was included in a scenario as part of the GHG Roadmap to help achieve a future budget year emissions goals, but the percentage was never intended to be a required strategy for CDOT or the MPOs to achieve the GHG reduction levels. In fact, the proposed rule will show the combined impact of electric vehicles and reduced travel so that stakeholders can understand the varying influence these measures have over time. It's also important to note that this rule is not the only policy relevant to reducing VMT. Other measures such as the ETRP (trip reduction) rule, for example, are more relevant to the user side relative to the infrastructure itself.

Enforcement: Understanding how CDOT and MPOs comply with the pollution reduction planning standards will be complex and will require coordination over many years to come in order to ensure the modeling is reflecting the changes that are occurring in Colorado with respect to population, land use, and transportation electrification. Also, considering how CDOT and the MPOs factor in the cost of pollution reduction will be an important consideration. With significant public input, CDOT intends to recommend that the Transportation Commission (TC) develop an enforcement mechanism, likely related to the conditions and flexibility of federal funds that the TC approves for use by CDOT as well as those typically sub-allocated to MPO areas. There is significant precedent for tying the flexibility of federal aid highway funds to whether certain targets (such as road and bridge condition) are met. Many of the details around enforcement will be developed through the

rulemaking process.

IV. Conclusion and Next Steps

It is important to stress again that the Pollution Reduction Planning rule alone is not intended to achieve all of the emissions reductions identified in the Greenhouse Gas Roadmap for the transportation sector, and the Administration will concurrently advance policy dialogue in other areas, such as clean trucking, future car standards beyond 2025, additional incentives for compact land use and electric vehicle use, and major multimodal investments like Front Range rail, simultaneously with development of this policy. These efforts will require collaboration across multiple governing bodies with their respective expertise and authorities in order to achieve total Roadmap savings for the transportation sector. Each of these and additional policy tools will require rigorous review in assessing the impacts and efficacy observed over the years to come. Invariably, questions will require ongoing dialogue following this proposition and the creation of parallel CDOT policies, and the Department readily makes itself available for such conversations.

It is also important to note that this memo does not address the Air Quality Control Commission's role in measuring and confirming progress in the transportation sector, but is focused on briefing the TC ahead of their initiation of rulemaking specifically applicable to CDOT and sub recipients of transportation dollars. However, CDOT anticipates that the Air Pollution Control Division (APCD) will be responsible for verifying emission reductions and reporting along with CDOT to the AQCC on the determinations of the verification. Following the formal introduction of the TC rule, APCD staff will develop a proposed approach, in coordination with CDOT staff, for accomplishing verification. This verification process will be brought to the AQCC for consideration and will be memorialized in the form of a resolution adopted by the AQCC. The verification resolution will draw from the approach the APCD utilizes for verifying emission reductions from Clean Energy Plans overseen by the PUC.

CDOT staff will seek approval from the TC to officially commence a rulemaking to incorporate the new GHG standards into the statewide planning rules at their July meeting. If approved, the rulemaking could begin with a notice as soon as July 30, 2021. CDOT has updated its [Stakeholder Engagement](#) webpage, where stakeholders can sign up to be part of the rulemaking.

Exhibit 8

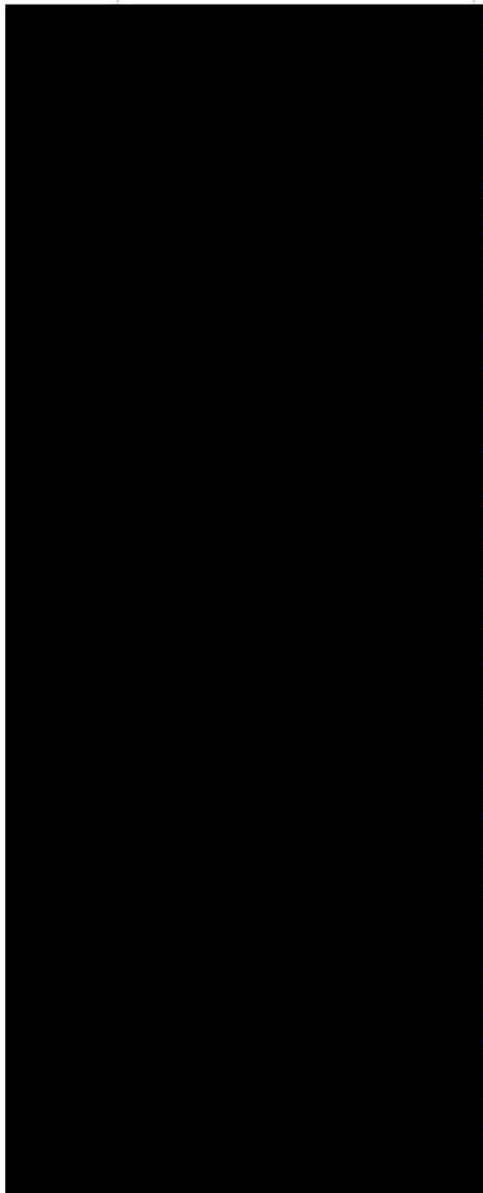


Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Advisory Group

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Advisory Group		
Name	Organization	Email



CDOT
 Denver Region Council of Governments
 Boulder County
 Club 20
 Colorado Energy Office CEO
 Colorado Department of Public Health and Environment- CDPHE
 Arapahoe County
 GVMPO-Grand Valley Metropolitan Planning Organization
 Alliance for Automotive Innovation
 Climate Action, Sustainability & Resiliency, Denver
 CDOT
 Colorado Forum
 City of Denver
 Colorado Motor Carriers Association
 CDOT
 Fikes Peak Area Council of Governments, Transportation Commission
 CDOT
 CDOT
 Colorado Department of Public Health and Environment- CDPHE
 Fikes Peak Area Council of Governments
 Pueblo Area Council of Governments
 Smart Commute-Metro North, Transportation Commission
 Transportation Commission
 CDOT



CDOT
Colorado Department of Public Health and Environment- CDPHE
Summit Strategies
North Front Range Metropolitan Planning Organizatio
South West Energy Efficiency Project
Regional Air Quality Council
CDOT
Colorado Contractors Association
CDOT
CDOT
Denver Region Council of Governments
Denver Region Council of Governments
CDOT
CDOT
North Front Range Metropolitan Planning Organization
Larimer County
Phillips County
CDOT
CDOT
Colorado Contractors Association
Colorado Energy Office CEO

**Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions
Advisory Group**

Advisory Group Meetings

Date	Time	Location
1/26/21	2:30-3:30pm	Virtual
2/19/21	12-1pm	Virtual
3/9/21	1-2pm	Virtual
3/23/21	11am-12pm	Virtual
4/6/21	1-2pm	Virtual
4/13/21	2:30-3:30pm	Virtual
4/20/21	1-2pm	Virtual
4/27/21	3-4pm	Virtual
6/21/21	1-2pm	Virtual
6/25/21	2-3pm	Virtual
7/13/21	4-4:30pm	Virtual
7/22/21	9:30-11am	Virtual
8/12/21	12:00-1:00pm	Virtual

STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

GHG Advisory Group Reconvening

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Wed, Jun 16, 2021 at 1:12 PM

Good afternoon GHG Advisory Group Members,

Thank you for your patience the past few weeks as we turned our attention to SB260. As many of you know the Bill passed, and is currently awaiting the Governor's signature. This legislation has important connections to the work this Advisory Group is undertaking, that we are looking forward to discussing more with you.

Also, in the interim the Transportation Commission (TC) has been very interested in taking an active role in this effort. CDOT is holding a workshop with the TC this afternoon to discuss the attached draft GHG Policy Paper, which staff just completed last night. We also want to discuss this paper with you all. Recognizing your busy calendars, we'd like to offer this group two meeting options to discuss the Policy Paper and next steps. (We will cover the same content at both meetings and will send an electronic calendar invite.)

The two options are the following:

Monday, June 21st 1-2pm

Friday, June 25th, 2-3pm

Thanks again for your continued involvement and patience as we chart new waters here with this policy. We look forward to speaking with you all next week. Please let us know if you have any questions.

Aloha,

Theresa

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Final-Transportation GHG Briefing Memo June 16 2021.pdf

275K



STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

GHG Advisory Group This Afternoon - Same Information as Monday

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Jun 25, 2021 at 11:25 AM

Good morning GHG Advisory Group Members,

We just wanted to remind everyone that the meeting this afternoon at 2pm will cover the same information we discussed on Monday.

Please join us if you were not able to join the discussion on Monday.

Thank you,

Theresa

2pm This Afternoon

Join Zoom Meeting

<https://cdot.zoom.us/j/93105519480?pwd=dIh6aTJhbGpQQk9tZkNRWUQwMHdwdz09>

Meeting ID: 931 0551 9480

Passcode: 605143

One tap mobile

+12532158782,,93105519480#,,,,*605143# US (Tacoma)

+13462487799,,93105519480#,,,,*605143# US (Houston)

Dial by your location

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

+1 646 558 8656 US (New York)

Meeting ID: 931 0551 9480

Passcode: 605143

Find your local number: <https://cdot.zoom.us/j/93105519480?pwd=dIh6aTJhbGpQQk9tZkNRWUQwMHdwdz09>

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Final-Transportation GHG Briefing Memo June 16 2021 (2).pdf
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Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

GHG Advisory Group - Request for Comments on GHG Briefing Memo by Friday, July 2nd

1 message

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Mon, Jun 28, 2021 at 4:40 PM

Dear GHG Advisory Group Members,

Thank you for your continued engagement and participation, we value your thoughts and feedback.

As we mentioned at our meetings last week, we encourage your comments and clarifications to the [GHG Briefing Memo](#) which we discussed last week. If you can send any comments to us by this Friday, July 2nd we would really appreciate it.

On Friday a question came up regarding the rulemaking schedule that CDOT follows - we have attached a pdf to this email describing that process. We can discuss more specifics of the timeline at our next meeting - which I hope to get on your calendars for next week.

Please reach out if you have any questions.

Thank you again - we value your time in this group.

Aloha,

Theresa

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STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

GHG Briefing Memo

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Wed, Jul 14, 2021 at 9:49 AM

Good morning,

Attached is the updated GHG Briefing Memo that will be discussed by the Transportation Commission later today.

Thank you.

Aloha,

Theresa

--

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GHG Briefing Memo July 2021.pdf

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STATE OF COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

GHG Advisory Group - Rulemaking Schedule

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Mon, Jul 26, 2021 at 5:55 PM

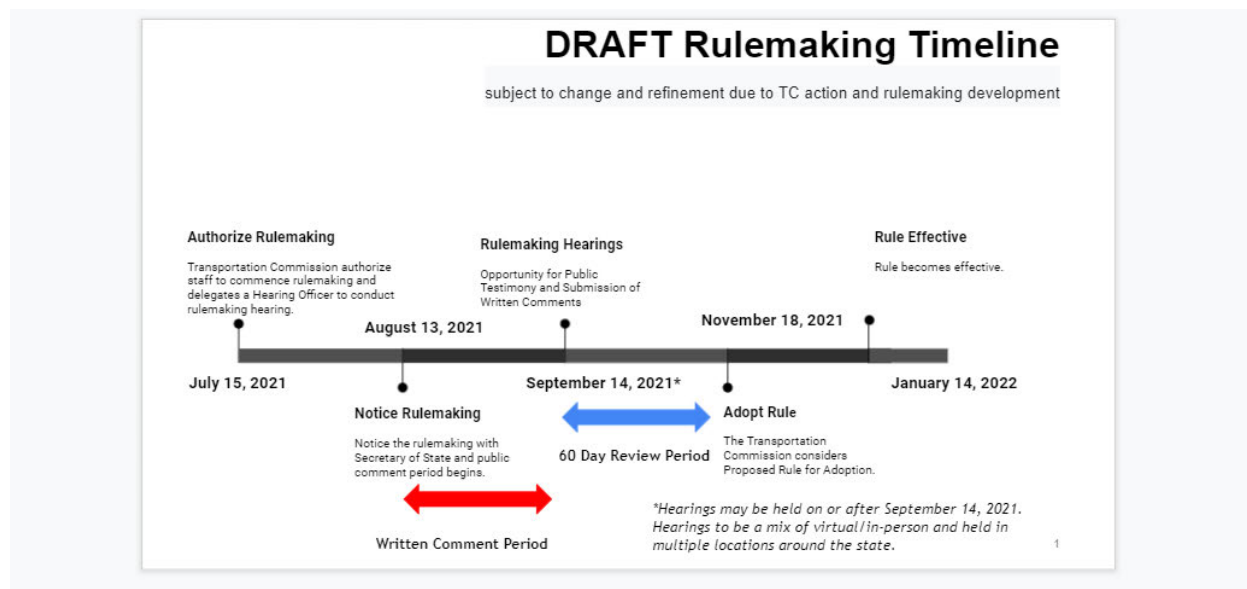
Dear GHG Advisory Group Members,

We wanted to inform you of a slight change in schedule - in order to have more time for discussion with our stakeholders on this important rule. Please note the revised date to publish the proposed GHG Rule with the Secretary of State will now be August 13th.

Thank you for your continued participation and engagement.

Aloha,

Theresa



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COLORADO

Department of Transportation

Transportation Greenhouse Gas Advisory Group January 26, 2021



Today's Focus

1. Overview of Colorado's climate legislation/policy framework
2. Proposed rules and policy for transportation sector
3. Outreach Approach
4. Role of Advisory Group



Colorado's Efforts To Address Climate Change

HB-1261

- In 2019, the Colorado General Assembly passed House Bill-1261, the *Climate Action Plan to Reduce Pollution*.
- HB 1261 established the following GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- To ensure that Colorado continues to reduce emissions to meet greenhouse gas targets, reduce local air pollution, and realize the full economic benefits of the transition to a clean energy economy.
- Draft document released in Sept 2020; final in Jan 2021.
- <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>



Largest GHG Emissions Sources

2005 Largest Emission Source:

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

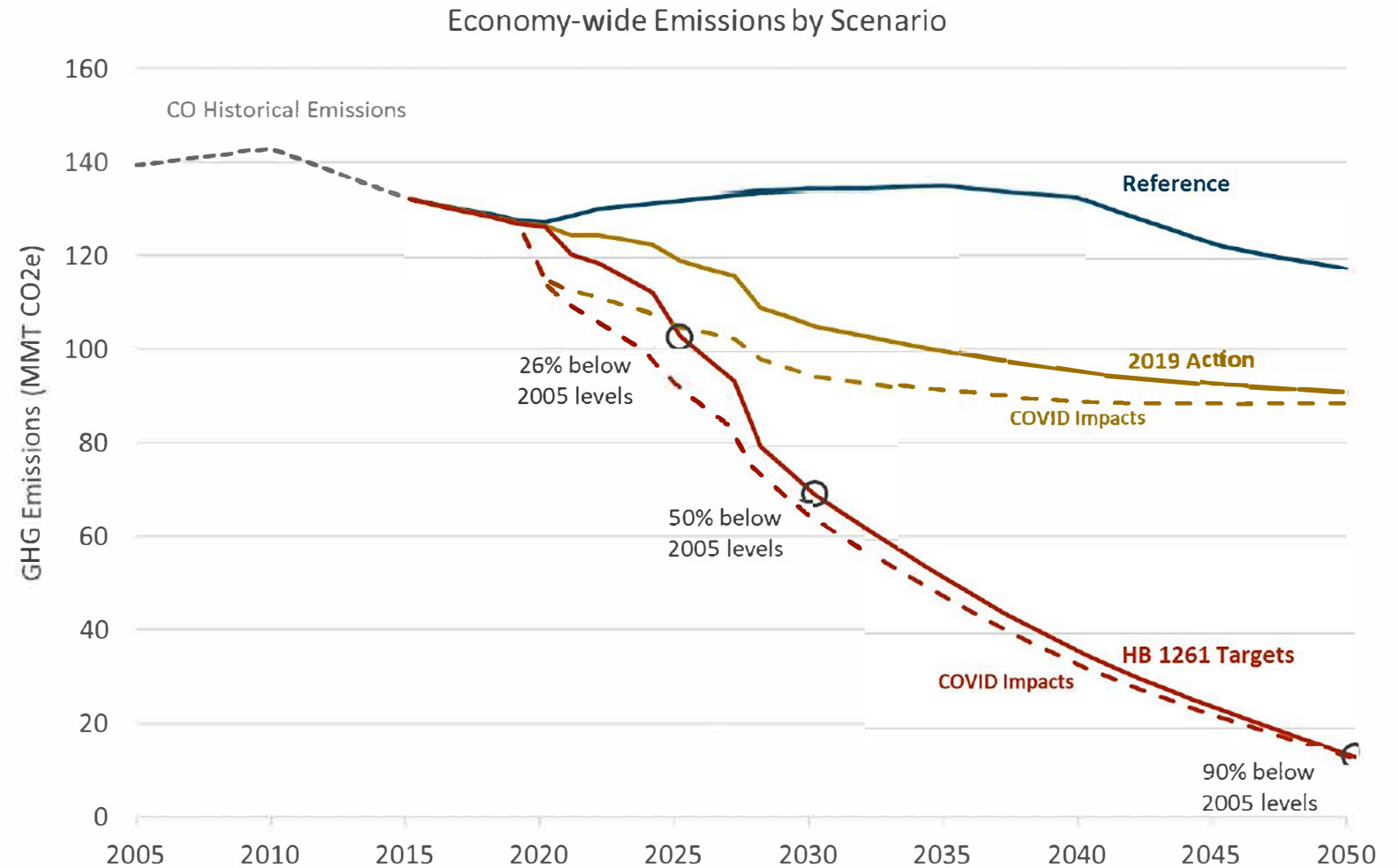




Colorado GHG Pollution Over Time

SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, we are on a trajectory to achieving approximately half the level of emission reductions to meet the 2025 and 2030 goals.
- Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.





Near-Term Transportation Actions included in the CO GHG Roadmap

Infrastructure (Planning & Projects)

- GHG pollution standards for transportation plans
- Indirect source standards for some types of new development.
- Trip reduction/TDM requirements and encouraging telecommuting for large employers

Human Factors (Behavior Change)

- Expansion of public transit, including setting the stage for Front Range Rail
- Incentives for land use decisions by local governments that reduce pollution and support greater access to housing near jobs.

Mobile Sources (Vehicles)

- Clean trucking strategy including evaluation of Advanced Clean Truck ZEV standards
- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses



Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- Integrate GHG pollution standards and analysis in regional and statewide transportation plans: GHG Pollution Standard
- Reduce SOV commuter trips: Large Employer Trip Reduction
- Both included in single rulemaking via the CDPHE/Air Quality Control Commission process
 - May draft; August final

CDOT Policy

- In parallel, CDOT will develop implementation guidance via a policy directive specific to GHG Pollution Standard



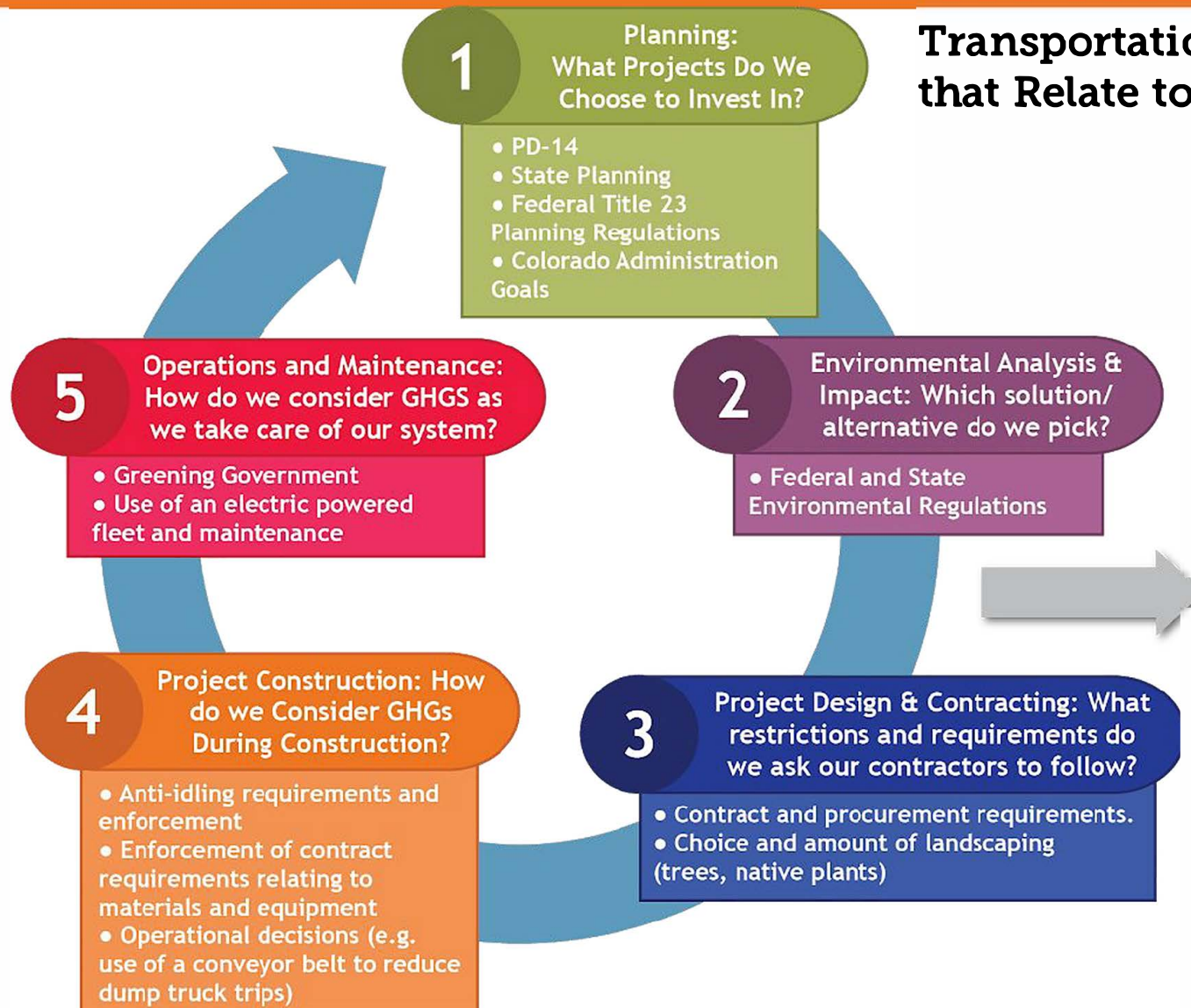
GHG Pollution Standard (GPS) Rule Approach

Initial Thinking

- Set a GHG “budget” for transportation plans (statewide and regional).
- Phased implementation with initial focus on state and certain MPO plans.
- Exempt state of good repair/maintenance projects.
- CDOT guidance will focus on the practicalities of how the policy translates into specific project-based requirements.
- Inclusion of other measures to meet budget.



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions



- Federal Environmental Laws/Regs**
- National Environmental Policy Act**
- CEQ and FHWA Guidance on Implementing NEPA
 - CDOT NEPA Manual
 - Clean Air Act
 - Transportation Conformity
 - Clean Water Act
 - Endangered Species Act
 - Title VI
 - Environmental Justice
- State Environmental Laws/Regs**
- HB 1261 and implementing regulations (TBD)
 - CDOT Environmental Stewardship Guide
 - Air Quality Project-Level Analysis Guidance (AQ-PLAG)



Stakeholder Involvement and Public Outreach

- Extensive and grassroots; modeled on CDOT's development of 10-year plan. *Except...during a pandemic*
 - Series of virtual, regional discussions around the state at at least two junctures (now/pre-rule and prior to draft)
 - Localized discussions to ensure they are small and familiar enough venues for candid dialogue rather than having the feel of overly formal public meetings
- Multiple-agency involvement with virtual public meetings and focused equity conversations
 - First meeting; January 28th at 6pm
 - <https://zoom.us/j/96574649811?pwd=ZTN6Qzcxd2NTYnFxTnhiek9ZODBWUT09>



Role of Advisory Group

Help CDOT reach--and receive input from-- a broad range of stakeholders across the state

Advise on rule and policy directive; providing:

- Input on will might work and what won't
- Regional perspective
- Scope out “what ifs”



Two Transportation Rules Air Quality Control Commission Rulemaking in 2021

Transportation GHG Pollution Standard & Large Employer Trip Reduction

- What are your questions?
- What concerns do you have?
- What challenges do you see as important to address when developing these rules and policies?
- Who should we reach out to for regional discussions?



January 28: Public Meeting

February 1-15: Regional Meetings

Feb 15-19: Next Advisory Group Meeting



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Extra Slides (if needed)



Trip reduction/TDM requirements and encouraging telecommuting for large employers

- Utilizing incentives, marketing, and other creative tools to encourage non-SOV travel, is a core strategy to reducing VMT.
- In light of COVID-19, a specialized focus on making teleworking more permanent will be essential in promoting a longer-term shift towards alternatives to driving.
- One recommended strategy is a trip reduction requirement for large employers, which would require employers over a size threshold to develop TDM programs for their employees



CDOT's Tools to Achieve GHG Goals

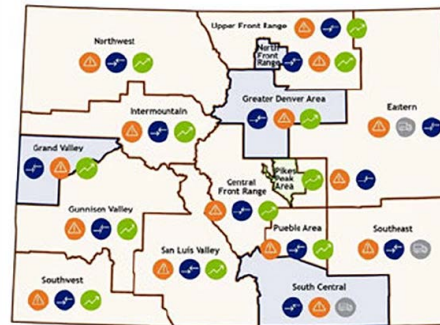
Mobile sources (vehicles)



Potential action steps include:

- New regulatory actions
- Charging infrastructure
- Consumer education
- Fleet replacements

Infrastructure (planning and projects)



Potential action steps include:

- GHG budgets
- NEPA processes
- Green construction
- Multimodal funding
- Land use

Human factors (behavior change)



Potential action steps include:

- Managed lanes/pricing strategies
- Voluntary/mandatory TDM (marketing and tools to support mobility options)



Transportation Greenhouse Gas Advisory Group - Meeting 2 February 19, 2021



Today's Focus

1. Welcome
2. Developments since last meeting
3. Feedback from Regional Meetings
4. Proposed rule - How do we set a statewide budget?
5. Next Steps



Recap: Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- CDPHE/Air Quality Control Commission process
 - May draft; August final

CDOT Policy

- Policy directive specific to GHG Pollution Standard



Developments Since Last Meeting

Regional Listening Sessions - 4 of 5 completed

Several smaller, requested presentations to stakeholder groups

- RAQC, February 5, 2021
- E-470/Colorado Motor Carriers, February 10, 2021
- Environmental Groups - Sierra Club, Conservation Colorado, SWEEP, Western Resource Advocates, February 9, 2021
- STAC, February 12, 2021
- Transportation Commission, February 18, 2021
- PPACG TAC, February 18, 2021

Focusing this process on planning rule only.

- Giving the complexity, different stakeholders, and different lead agency, CDOT and this process will focus on the planning part of the rulemaking while CDPHE will take the lead with the RAQC on the large employer trip reduction rule.



Regional Meeting Feedback

- Feb 16 10:30-11:30 (Region 1 - Denver Metro Area)
- Feb 16 1-2pm (Region 4 - Northeast)
- Feb 18 3-4pm (Region 2 - South/SouthEast)
- Feb 19, 9-10am (Region 3 - Northwest)

Main areas of comment include the following:

- Rural and regional differences
- Incentives vs. penalties (carrots vs. sticks)
- Equity considerations
- Enforcement
- MPO roles and responsibilities
- Clarification on capacity projects
- How this impacts the 10 year plan
- Cost concerns



Setting the GHG Budget

- The concept for this policy is based on comparing projected emissions from a set of projects within a transportation plan against a numeric “budget”.
- The first step is to figure out what this budget needs to be at the statewide level; balancing our GHG goals and achievability.

NEAR TERM ACTIONS TO REDUCE POLLUTION			
Sector	Revised 2005 Baseline (MMT CO2e)	2025 Target (MMT CO2e)	2030 Target (MMT CO2e)
Electricity	40.28	21	8
Oil and Gas	20.17	13	8
Transportation	30.71	23	18
Residential, Commercial, Industrial Energy Use	24.65	26	20
Other	23.42	19.9	15.6
Total	139.22	102.9	69.6
Percent Reduction	--	26%	50%



Using Emissions Models to Project GHG Emissions

- Technical Team meeting weekly (CDOT/CDPHE/RAQC)
 - Statewide Travel Model (CDOT)
 - VMT per roadway
 - MOVES Model (CDPHE)
 - Takes VMT and calculates GHG emissions using the following information
 - Types of vehicles
 - Number of electric vehicles in the fleet(CEO)
 - Speeds
 - E3 Model Used for the roadmap

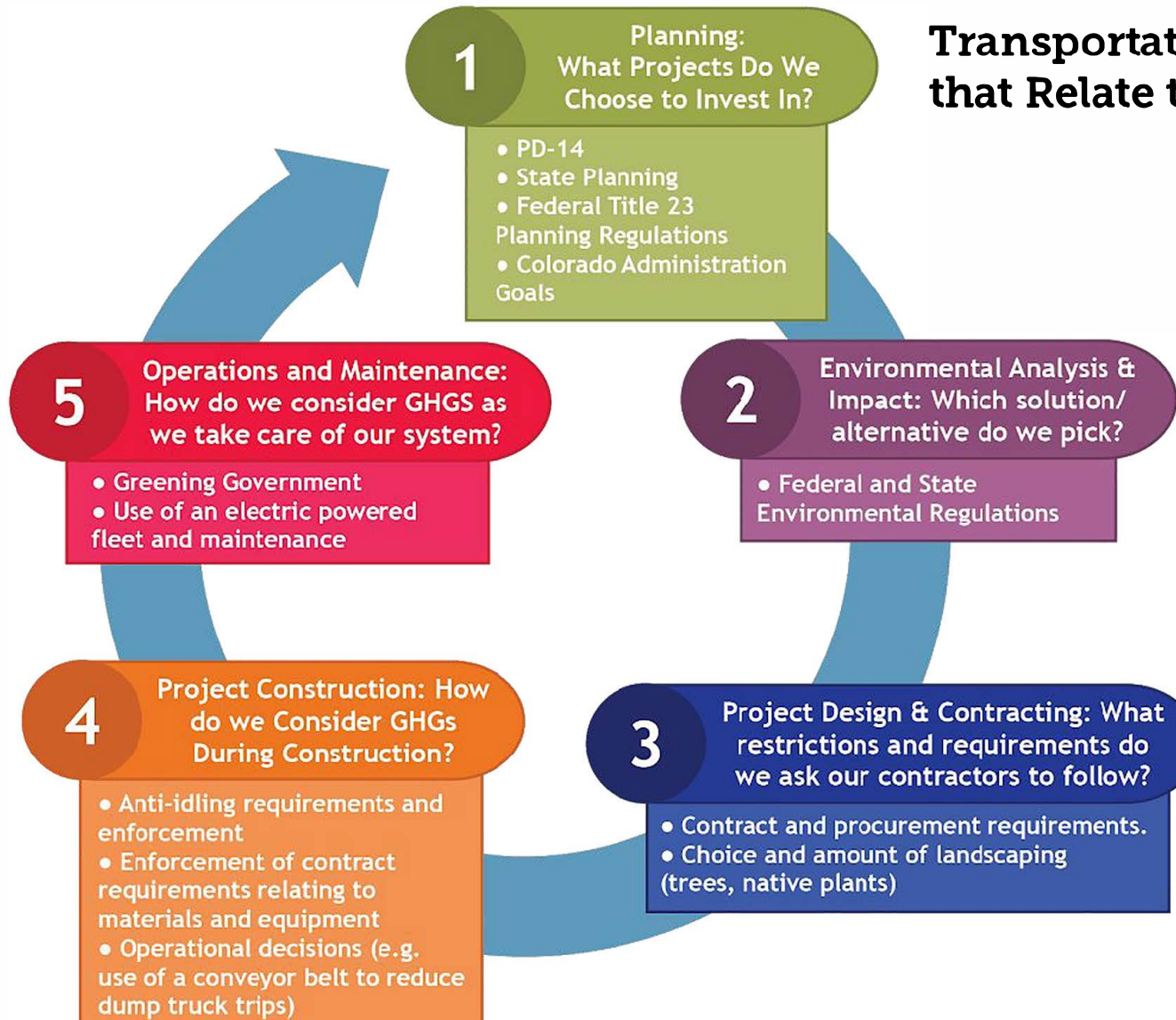


GHG Pollution Standard - Proposed Rule Cont.

- Projections - Run scenarios to show what types of measures will get us GHG reductions
 - More EV penetration in the market
 - Decrease VMT due to work from home, multimodal options
- Draft rule and policy by end of March
 - Rule:
 - Outline Budget
 - Policy:
 - Offer menu of options to reduce emissions across the transportation lifecycle
 - Calculate GHG reductions



Opportunities for GHG offsets in the Lifecycle of Projects



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions

GHG Mitigation Opportunities can be outlined in the Policy and quantified.

These may include:

- Anti-idling measures during construction
- Green construction opportunities
- Electric fleet/maintenance equipment



Upcoming Meetings

Complete first round of regional meetings

- Feb 22, 1:30-2:30 (Region 5 - Southwest)
- Feb 26, 1-2pm (PPACG area)

Individually Requested Meetings/Presentations

- DRCOG Work Session, March 3, 2021
- DRCOG Special TAC, March 22, 2021
- Colorado Contractors Association

CDPHE Public Listening Session - February 25, 2021



Other Stakeholder groups

- Environmental Groups
- Technical Group (once we have the budget/numbers)
- Others?

April - another opportunity for Regional meetings

Interested stakeholders? Please direct them to our website:

<https://www.codot.gov/programs/environmental/greenhouse-gas/ghg-transportation-policy-rulemaking-process>

Next Advisory Group

- March 9, 1-2PM



Contact Information

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Transportation Greenhouse Gas Advisory Group - Meeting 3 March 9, 2021



Today's Agenda

1. Updates on Regional and other Stakeholder Meetings
2. GHG advisory group survey results/feedback
3. Proposed rule outline/structure
4. Economic Impact Analysis Discussion
5. Upcoming Stakeholder Opportunities



Updates on Regional and other Stakeholder Meetings

- We've already engaged 125+ Stakeholders
 - Developing a Q&A Document
 - Developing a One Pager on the Rule/Policy objectives
- Region 5 and Region 2 (2nd meeting)
- NFRMPO Technical Workgroup
- DRCOG Board
- Equity Priorities for Upcoming State Transportation GHG Rulemaking



Responses we received were limited....We still want to hear from you!

Questions

- How can or should MPOs and the State balance statewide needs and regional needs?
- Where should GHG emissions reductions fall in terms of priority outcomes for regional transportation planning decision-making?
- If GHG emissions reductions is the top state priority, should transportation resources be made available to regions based on the region's contributions to state GHG emissions?
- Can the timeline for action be accelerated? Colorado is not on track to meet its 2030 goals and has been slow to respond to the mandate in HB-1261. We need to account for the time value of carbon. Because CO2 stays in the atmosphere for so long, we need rapid, early reductions to reduce harm.
- Can you consider tying state transportation funding to requirements that reduce GHG emissions and co-pollutants, rather than only incentives?
- How will you account for the GHG benefits of good land use planning and multi-modal projects? The GHG reductions may be harder to measure than EV adoption or reducing congestion, but are critical to our ability to meet our climate, land use and transportation goals, as well as equity.
- How can we ever be 100% Organic Crude Oil Free??
- How can we actively engage community leaders and the public to buy into the GHG roadmap?



Concerns

- MPOs being required to demonstrate progress toward targets without authority over tools that will be necessary to achieve them (land use, EVs, tax policy, etc.).
- Lack of adequate resources for investments to reach targets.
- New responsibilities for MPOs (planning, oversight, etc.) without resources for that work.
- Not making an arbitrary budget that will be gamed with assumptions about share of EVs.
- Transit is a critical piece of the equation to get the 90% reduction. RTD is experiencing significant challenges and many lack confidence in the agency. All regional partners will need to work together and with RTD to address these issues to grow public support for additional resources.
- We are concerned about the worsening ozone challenge in the Denver Metro Front Range area. With vehicles accounting for a third of the ozone precursors in the region, CDOT could play a key role not just in climate action, but also reducing other pollutants that are harming our health.
- We are concerned that there aren't enough policy ideas on the table to meet the goals.
- If we shut down every refinery where will we get all of the byproducts that we get from Organic crude oil?
- That there will be additional requirements without funding to complete those requirements



Challenges

- Adequately addressing social equity in the process.
- MDVs and HDVs and Aviation are significant components of transportation GHG emissions, particularly in the Denver Metro area. Need to ensure the two specific rule-makings discussed by this group take those into account (in terms of targets, strategies, allowances, etc.).
- A focus on CDOT's 10-Year list of projects and new funding for those, when the majority of projects (transit, bike/ped, etc.) necessary to make progress are in regional transportation plans.*
- Need to make substantial progress in the short term to stay on track.
- Increasing state funding participation in urban transit facilities and services to help region's achieve GHG emissions targets.
- Including consideration of supply chains and supply chain regulation, not just make trucking all EV (lean supply chain, circular economies).
- Including consideration of the carbon impact of construction materials selected for transportation projects.
- Ensuring the resources are sufficient to move quickly to take the necessary action to rapidly reduce emissions and transform our transportation system.
- Overcoming barriers in how transportation funding is distributed in order to ensure prioritization on multi-modal, low-carbon, equitable and safe projects.
- You can take baby steps but not aggressive steps
- Buy-in from leaders



CDPHE's Rulemaking Process General Overview

- Request for Hearing before AQCC (May 2021)
 - Petition for Party Status
 - Prehearing Conference
 - Rebuttal
 - Public Comment Deadline
- Hearing(August 2021)



Components of the Draft Regulation

Air Quality Control Regulation 22 -

Colorado Greenhouse Gas Reporting and Emission Reduction Requirements

- Purpose and Applicability - WHO
 - Who the regulation applies to - (e.g. CDOT & MPOs)
- Definitions
- Requirements - WHAT
 - Statewide Budget
 - MPO Sub-budgets
- Monitoring & Reporting - HOW



Economic Impact Analysis Discussion

- EIA Consultant has notice to proceed (Cambridge Systematics)
- Scope includes three scenarios of VMT-management measures
- Details of the scenarios under discussion. Possibilities:
 - DRCOG's "Travel Choices" scenario (work-from-home, bike/ped, etc.)
 - DRCOG's "Transit" scenario (added rail, BRT, better bus headway, etc.)
 - Combine one of the above with a land use scenario (infill or development around transit centers)
- EIA also includes cost/effectiveness analysis of EV conversion
- And review of social cost of carbon



Upcoming Stakeholder Opportunities

1. PPACG Board Meeting, March 10, 2021
2. Colorado Contractors Association, March 15, 2021
3. Technical Working Group - March 19, 2021
4. DRCOG Special TAC, March 22, 2021
5. CDPHE -virtual listening sessions - focus on Equity (available in Spanish)
 - March 11 from 10:30am-12:00pm
 - March 18th from 6:00pm - 8:00pm
6. Next set of Regional Meetings
 - Friday April 9 - 1-2:30pm (Region 1 - Denver Metro Area)
 - Monday April 12 - 10:30-12pm (Region 2 - South/Southeast)
 - Monday April 12 - 1-2pm (Region 3 - Northwest)
 - Friday April 16 - 10:30-12pm (Region 4 - Northeast)
 - Friday April 16 - 1-2pm (Region 5 - Southwest)



Interested stakeholders? Please direct them to our website:

<https://www.codot.gov/programs/environmental/greenhouse-gas/ghg-transportation-policy-rulemaking-process>

Next Advisory Group

- March 23, 11am-12 noon
 - Draft Regulation for your review



Contact Information

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Transportation Greenhouse Gas Advisory Group - Meeting 4 March 23, 2021



Today's Agenda

1. Updates on Stakeholder Meetings
2. Preliminary Data
3. Proposed rule
4. Upcoming Stakeholder Opportunities



Updates on Stakeholder Meetings

- FAQ Document
- One Pager on the Rule/Policy objectives

- PPACG Board Meeting, March 10, 2021
- Colorado Contractors Association, March 15, 2021
- Technical Working Group - March 19, 2021
- DRCOG Special TAC, March 22, 2021
- CDPHE -virtual listening sessions - focus on Equity (available in Spanish)
 - March 11 from 10:30am-12:00pm
 - March 18th from 6:00pm - 8:00pm



CDPHE's Rulemaking Process General Overview

- Request for Hearing before AQCC (May 2021)
 - Petition for Party Status
 - Prehearing Conference
 - Rebuttal
 - Public Comment Deadline
- Hearing(August 2021)



Air Quality Control Regulation 22 - Colorado Greenhouse Gas Reporting and Emission Reduction Requirements



Upcoming Stakeholder Opportunities

1. Next set of Regional Meetings

- Friday April 9 - 1-2:30pm (Region 1 - Denver Metro Area)
- Monday April 12 - 10:30-12pm (Region 2 - South/Southeast)
- Monday April 12 - 1-2pm (Region 3 - Northwest)
- Friday April 16 - 10:30-12pm (Region 4 - Northeast)
- Friday April 16 - 1-2pm (Region 5 - Southwest)



Interested stakeholders? Please direct them to our website:

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Next Advisory Group

- March 23, 11am-12 noon
 - Draft Regulation for your review



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GHG Transportation Planning Rule

Advisory Group - April 6, 2021



Agenda

- Review and Discuss Major Regulatory Concepts Currently Under Consideration
- Overview of Fee Proposal (pending legislation)
- Relevant Federal Developments



GHG Transportation Planning Rule Concepts

Purpose

The purpose of the regulation is to address the greenhouse gas (GHG) Reduction goals outlined in HB 19-1261, to reduce GHG emissions from the transportation sector by requiring the Colorado Department of Transportation (CDOT) and Metropolitan Planning Organizations (MPOs) to demonstrate through travel demand modeling and approved air quality modeling that [statewide/regional] aggregate emissions resulting from its fiscally constrained transportation plan do not exceed a declining GHG emissions budget.

Discussion Question: Does this make sense? Do we need more clarity?



GHG Transportation Planning Rule Concepts

Main Elements of the Draft RULE

Statewide budget for future years -2025, 2030, 2040 & 2050

- Budget based on MMT CO₂e

Sub-budgets for MPOs

- Phased as outlined in slide 6

Discussion Question: Should the budget apply to the STIP and TIP or to longer term 10yr plan (state) and Regional Transportation Plans (MPO).



GHG Transportation Planning Rule Concepts

10 Year Plan = CDOT's 10 year list of projects based on current and reasonably anticipated funding. Developed via statewide outreach process.

Regional Transportation Plans = minimum 20 year time horizon developed/updated by the Metropolitan Planning Organizations (MPOs) of each of the five metropolitan areas. MPOs develop their plans in cooperation with CDOT. RTPs identify a vision for the region, priorities for needs, programs, or projects, and strategies for achieving the vision. The development of RTPs includes significant stakeholder and public outreach.

STIP = The Statewide Transportation Improvement Program (STIP) is a federally required, four-year program of planned transportation projects. Per the requirements included in the most recent federal transportation authorization bill, Fixing America's Surface Transportation Act (FAST Act, 23 CFR 450), a new STIP should be developed at least every four years, containing a minimum four-year listing of transportation project.

- Currently CDOT has a FY20-FY24 STIP; new year to be added this spring

TIP = Transportation Improvement Program - A federally required, fiscally constrained prioritized listing/program of transportation projects covering a period of four years that is developed and formally adopted by an MPO, consistent with the metropolitan transportation plan, and required for projects to be eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53.

-



GHG Transportation Planning Rule Concepts

The MPO subject to the sub-budgets in Phase I: **Meet in 2025**

Denver Regional Council of Governments (DRCOG)

North Front Range Metropolitan Planning Organization (NFRMPO)

The MPO subject to the sub-budget in Phase II: **Meet in 2030**

Pikes Peak Area Council of Governments (PPACG)

The MPO subject to the sub-budgets in Phase III: **Meet in 2040**

Grand Valley MPO (GVMPO)

Pueblo Area Council of Governments (PACOG)

Discussion Question: Do the phases and timing make sense?



GHG Transportation Planning Rule Concepts

MODELING

- The state/each MPO must demonstrate that their plans meet the future budget by using transportation network models and CDPHE's approved air quality model by comparing projected transportation-related GHG emissions to baseline GHG emissions.
- Projects that are strictly state of good repair or safety features that do not add capacity do not get modeled as having a VMT impact.
- The state/MPO must submit the travel model output including VMT to the Division to run through their approved air quality model to determine GHG emissions.
- The Air Quality Control Division must provide the GHG output data in MMTCO₂e back to the MPO.
- MPO will schedule an interagency meeting with CDOT and the Division for their respective sub-budgets and modeling results.

Discussion Question: Does this framework make sense?



GHG Transportation Planning Rule Concepts

Mitigation Ideas

Project Analysis

- Additional GHG analysis as part of Alternative Evaluation
- Additional monitoring and evaluation of GHG
- Multimodal options considered
- Reduce the number of vehicles to improve level of service

Final Design/Construction

- Reuse or upcycle deconstructed materials
- Source materials locally
- Consider low-carbon materials or mixes
- Ensure contractors have access to recyclable materials
- Ensure that reuse agreements are followed
- Use fuel efficient or electric equipment and reduce idling.
- Encourage responsive bidding

Operation and Maintenance

- Consider construction fuels and materials' carbon footprint and reuse/ recycle materials
- Consider carbon sequestration strategies such as revegetation/ reforestation
- Recycle materials
- Increase operational efficiencies
- Develop a Congestion Management Plan
- Traffic light synchronization
- Meter ramps
- Create HOV and toll lanes

Discussion Question:

What types of mitigation strategies should we include and are quantifiable?



GHG Transportation Planning Rule Concepts

Reporting the Certification of the State & MPO sub-budgets

In order to be deemed complete the certification must include the following:

- Modeling inputs
- Modeling output in approved format.
- Years of the modeling runs included in the analysis
- Offset/Mitigation measures utilized in the model (if needed to meet the budget)

Project-level mitigation measures must be tracked on a Division approved form including date, project name, implementation schedule, and quantity of GHG being reduced.

Discussion Question: Are there other elements we should consider?



Is the Advisory Group available to meet soon to discuss additional regulatory concepts?

Upcoming Regional GHG Stakeholder Meetings

Friday, April 9 - 1-2:30pm (Region 1 - Denver Metro Area)

Monday, April 12 - 10:30-12pm (Region 2 - South/Southeast)

Monday, April 12 - 1-2pm (Region 3 - Northwest)

Friday, April 16 - 10:30-12pm (Region 4 - Northeast)

Friday, April 16 - 1-2pm (Region 5 - Southwest)



GHG Transportation Planning Rule/Policy

Advisory Group - April 20, 2021



1. Status Update
2. Review revised 2005 baseline
3. Overview of Modeling Next Steps
 - Setting GHG Budgets
 - Cost/Benefit Analysis
4. State legislation overview



Stakeholder Outreach

- Second “series” of regional meetings happening now
 - **Region 1 Denver Metro Area - Friday, April 23 - 9:30-11:00 a.m.**
 - **Region 2 South/Southeast - Friday, April 23 - 11:30-1:00 p.m.**
 - **Region 3 Northwest - Friday, April 23 - 1:30-2:30 p.m.**
- CDPHE public meeting
 - Wed, April 21 6-8pm
 - April 28 from 12:00 p.m. to 2:00 p.m.
 - Registration Link
https://docs.google.com/forms/d/e/1FAIpQLSegXeOLYE5gORL6pOW2xakewHWVs08RGQdH_NpXKpfP423EMw/viewform

Reg and Policy Development

- Significant policy concepts are coming together
- Next big issues are refining the baseline and setting the budget
- Would like to meet next week to review proposed budget #s
- Request for Rulemaking Hearing in front of the AQCC is May 20th



Current Focus: The Numbers

- 1) Getting the baseline right
- 2) Setting the proposed budget levels for the state and MPOs
- 3) Determining C/B



Getting the 2005 Baseline Right

GHG Roadmap Was Starting Point

- Based on E3 (consultant) “sketch model”
 - Can cover all sectors of economy but can’t capture complexities of transportation
- Need to transition to CDOT statewide model + MOVES
- More comprehensive model
- “Apples to apples” between 2005 and future years (2025, 2030, 2050)

GHG Roadmap Baseline

Sector	Revised 2005 Baseline (MMT CO2e)
Electricity	40.28
Oil and Gas	20.17
Transportation	30.71
Residential, Commercial, Industrial Energy Use	24.65
Other	23.42
Total	139.22
Percent Reduction	--



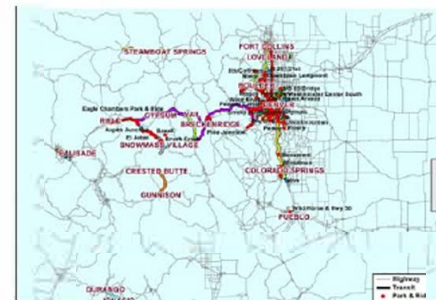
2005 Baseline: Refined

CDOT travel model + APCD Moves (instead of E3 Pathways)

- Initial results show that baseline (with aviation) is pretty close to E3 analysis
- Confirming emissions rates for 2005 versus 2025, VMT totals for both years, etc.

Timing: Should have Q/A complete by week's end

CDOT TRAVEL MODEL



Outputs: VMT,
congestion/speed

CDPHE MOVES MODEL



Fleet Mix/Age & Fuel Type



Setting the proposed budget levels for the state and MPOs

- Based on examining a series of scenarios (actions) that should reduce GHG emissions and seeing what results we get in terms of reductions and costs.
- Looking at a range of scenarios helps us consider the scope of what is possible; however feasibility will be an important driver budget levels
- Timing: Model runs due to be complete on 4/26

Input Area: How should the penetration of electric cars be considered for purposes of setting the budget?



Determining C/B

- Required component of regulation
 - Based on same scenarios discussed in earlier meetings
 - “Travel Choices”
 - plus Transit
 - Plus Land Use
- Will give us a range of costs and benefits
- Can be refined before final rulemaking in August
- Social cost of carbon included as separate analysis





Fee Proposal



GHG Transportation Planning Rule/Policy

Advisory Group - April 27, 2021



Agenda

1. Status Update
2. Revised Regulation Concepts
3. Sub-budget Approach
4. Next Steps



Stakeholder Outreach

- Second “series” of regional meetings completed
 - **Region 1 Denver Metro Area - Friday, April 23 - 9:30-11:00 a.m.**
 - **Region 2 South/Southeast - Friday, April 23 - 11:30-1:00 p.m.**
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Reg and Policy Development

- Request for Rulemaking Hearing in front of the AQCC is May 20th
- Significant policy concepts are coming together



Regulation Concepts - Applicability

Applicability

Applies to the State of Colorado Department of Transportation (CDOT) 10-Year Plan.

Applies to MPOs within the State of Colorado and their Regional Transportation Plan.

MPOs subject to the sub-budgets in Table 2 as of October 1, 2021:

- Denver Regional Council of Governments (DRCOG)
- North Front Range Metropolitan Planning Organization (NFRMPO)

MPOs subject to the sub-budget in Table 3 as of January 1, **TBD**:

- Pikes Peak Area Council of Governments (PPACG)
- Grand Valley MPO (GVMPO)
- Pueblo Area Council of Governments (PACOG)



Regulation Concepts - Statewide GHG Program Submittal

Starting October 1, 2021, 60 days prior to a Resolution approving the 10 Year Plan by the Transportation Commission, CDOT must submit a Statewide GHG Transportation Report that meets the budget requirements for Division approval.

60 days prior to a formal amendment of the 10-Year Plan, CDOT must submit an updated Statewide GHG Report for Division approval.

The Statewide GHG Transportation Report must include in the following elements:

- Statewide Model outputs demonstrating that the effects of regionally significant projects are in compliance with the budgets
- Identification and documentation of the model used to project GHG MMT
- The MMT of CO₂e projected for each budget year (i.e. 2030, 2040, 2050)
- List of any GHG mitigation measures needed to meet the budgets and the anticipated start and completion date of each project
- An estimate of the GHG reductions achieved by any GHG mitigation measures
- For plan amendments, the annual mitigation reports, since the last plan was submitted
- An analysis of potential GHG impacts and benefits to disproportionately impacted communities including the public comment/outreach that was done for these impacted communities



Regulation Concepts - Regional GHG Program Submittal

60 days prior to final adoption by the MPO governing board of the Regional Transportation Plan (RTP), subject MPOs must submit a Regional GHG Transportation Report that meets the regional GHG transportation budget requirements for Division approval.

60 days prior to formal amendment of the RTP, the MPO must submit an updated Regional GHG Transportation Report for Division approval.

The Regional GHG Transportation Program must include in the following elements:

- Statewide Model outputs demonstrating that the effects of regionally significant projects are in compliance with the budgets
- Identification and documentation of the model used to project GHG MMT
- The MMT of CO₂e projected for each budget year (i.e. 2030, 2040, 2050)
- List of any GHG mitigation measures needed to meet the budgets and the anticipated start and completion date of each project
- An estimate of the GHG reductions achieved by any GHG mitigation measures
- For plan amendments, the annual mitigation reports, since the last plan was submitted
- An analysis of potential GHG impacts and benefits to disproportionately impacted communities including the public comment/outreach that was done for these impacted communities



Regulation Concepts - CDOT & MPO Reporting

. Reporting of Mitigation Measures

Annually by April 1, CDOT/MPO must report on a Division-approved form the following:

The list of mitigation measures identified in the most recent GHG Transportation Report

For each mitigation measure:

- the anticipated start and end date;
- the current status;
- projected GHG reductions in metric tons of CO₂e as identified in the Statewide GHG Transportation Plan;
- for measures that are in progress or completed, quantification of realized reductions, and;
- for measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.



Sub Budget Approach

F21

- | fx |

	A	B	C	D	E	F	G	H	I	J	K	L
1	All figures 2030		DRCOG	PPACG	NFRMPO	PACOG	Mesa	OTHER	ALL	Total GHG reduction budget		
2		<i>Population</i>	4,058,025	892,270	573,146	200,731	202,337	1,047,956	6,974,465			
3	<i>Some statistics</i>	<i>VMT (weekday millio</i>	104	19	19	4.3	3.9	29.8	180	100		
4		<i>VMT/capita</i>	25.66	21.53	24.72	21.59	19.13	29.9	25.78			
5												
6	The idea	Calculation	results (metric tons/year)----->									
7	It is people who drive	proportional to pop	58.18	12.79	8.22	2.88	2.90	15.03				
8	it's the amount of driving that ma	proportional to VMT	57.78	10.56	10.56	2.39	2.17	16.56	100			
9	driving is bad	adjusted for VMT/ca	57.51	8.82	10.12	2.00	1.61	19.94	100.00			
10	driving is necessary	inverse VMT/cap	58.05	12.64	11.01	2.85	2.92	12.53	100.00			
11												
12												

Illustrative Only



Next Steps

Next Advisory Group Meeting - May 4, 1-2PM



COLORADO

Department of Transportation

GHG Advisory Group - June 21 & 25, 2021



GHG Transportation Planning Rule

- For much of the last month, CDOT and CDPHE have paused on rule development and stakeholder outreach in order to allow the legislative process on SB260 to play out.
- During this time, CDOT also has been preparing a framing paper that explains the major policy issues inherent in this approach and provides the fuller context for how this rulemaking fits into the Department's broader effort to address GHGs.



SB260 Provisions

- **By July 1, 2022 develop and implement procedures and guidelines requiring CDOT and MPOs to:**
 - Implement relevant rules issued per 25-7-105
 - Otherwise reduce GHGs to help achieve progress toward HB1261 goals
 - Apply the same level of analytical scrutiny to GHGs as to other pollutants of concern and consider the impact of induced demand
 - Consider the role of land use and develop strategies to encourage land use decisions that reduce VMT and GHGs
- While these new policies and procedures must be in place for the next 10-Year Plan adoption (and all future planning cycles), **SB260 also establishes a loss of flexibility in MMOF expenditures if CDOT, DRCOG and NFRMPO do not update their plans to comply with these new policies by October 1, 2022.**



- SB260 clarifies the regulatory landscape in some key ways; including the role of the Transportation Commission and CDOT.
- CDOT/TC action now focused on conducting a formal rulemaking VS policy directive only.
 - Likely by amending existing planning rules
 - A policy and/or procedural directive will likely still be required but would follow after rulemaking



Next Steps

- Increased Stakeholder Engagement over the coming weeks
 - MPOs
 - Advisory Group
- CDOT will discuss with TC the next steps for officially beginning the rulemaking process
- Development of Procedures including:
 - Reporting Documentation (CDOT/MPOs)
 - GHG Mitigation Measures



Open Discussion on Framing Memo and Rule



COLORADO
Department of Transportation

GHG Pollution Standard GHG Reduction Targets & GHG Policy Paper

GHG Advisory Group- July 13, 2021



CDOT developed modeling scenarios for two reasons:

- 1) To determine the range of feasible GHG reductions possible through planning-related changes and investments (in short, to determine the GHG reduction levels).

- 1) To prepare the cost benefit analysis required as part of the rulemaking.
 - Section 24-4-103(2.5)(a) of the Administrative Procedures Act (APA)



Tools used for analysis:

- Statewide Travel Model
 - Run using “no build” scenario
- FHWA Energy and Emissions Reduction Policy Analysis Tool (EERPAT)
 - Models policies at the regional level
- MOVES3
 - Conducted by CDPHE
 - Accounts for Colorado-specific factors such as the age of the vehicle fleet, the distribution of VMT by different vehicle types and road types, and the speeds at which vehicles travel.
 - Accounts for EVs displacing relatively more efficient vehicles than the average vehicle in the on-road fleet



Statewide analysis examines bundles of measures that might be implemented to achieve the targets.

3 scenarios (layer cake - building on each level)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use

Additional analysis on light-duty vehicle and bus electrification (separately). Trucks not considered.



3 scenarios (layer cake)

- **Travel choices: measures to reduce SOV commuting by workers, programs that encourage non-work trip reduction, infrastructure investments, and reduced transit fares.**
 - Commuter trip reduction
 - Non-work trip reduction (40% for university, 10% personal business for new broadband households)
 - More sidewalk (1,900 miles new/upgrade by 2030, 4,700 by 2050)
 - More bike (2,500 new lane-miles between 2022-2042, 2,500 protected lane/path)
 - Speed limit reduction on urban arterials (avg 6 mph reduction)
 - Reduce transit fare by 50%*
- Travel choices + Transit
- Travel choices + Transit + Land Use



3 scenarios (layer cake)

- Travel choices
- Travel choices + **Transit: Expansion of transit service and bus electrification over time.**
 - 6% annual increase, 2022 - 2030
 - 2% annual increase, 2030 - 2050
 - Total increase by factor of 2.3 by 2050 (more than doubling)
 - Comparison: Vehicle Revenue Miles increased by factor of 1.75 between 2000 and 2019
- Travel choices + Transit + Land Use



Travel choices + Transit + Land Use

3 scenarios (layer cake)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use: Policy changes and incentives (changes to transportation project selection criteria) to encourage transit-supportive land use and walkable neighborhoods.
 - Based on growth of urban mixed use areas defined as areas with a population density of at least 2,000 per square mile and a retail/service job density of at least 500 per square mile.
 - Baseline forecast of growth in mixed-use areas ranges from
 - (between 2023-2030):
 - 10% in NFRMPO to
 - 42% in DRCOG
 - Action assumes (between 2023-2050):
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 - 50% in other MPOs



DRAFT GHG Reduction Target Ranges

	Million Metric Tons/Year				
Statewide	2005 Baseline	2025	2030	2040	2050
base GHG	23.4	27.4	21.8	20.6	24.2
with EV	23.4	27.0	20.0	14.0	8.9
with EV and VMT	23.4	26.5	18.3	12.8	8.2
Range		0.4 - 0.9	0.5 - 1.5	0.17 - 1.2	0.1 - 0.7



Key Comment Areas Based on TC and Stakeholder Feedback

- **Timeline of rule & how stakeholders can engage**
 - How equity will be addressed
- **Clarity on Language - regionally significant projects, mitigation/offset**
- **How the scenarios relate to the rule itself and the range**
 - Help establish the GHG target levels
 - For use in the cost benefit analysis
- **More clarification around vehicle miles traveled (VMT)**
- **MPO Role/relationship to CDOT/authority**



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

Authorize Rulemaking

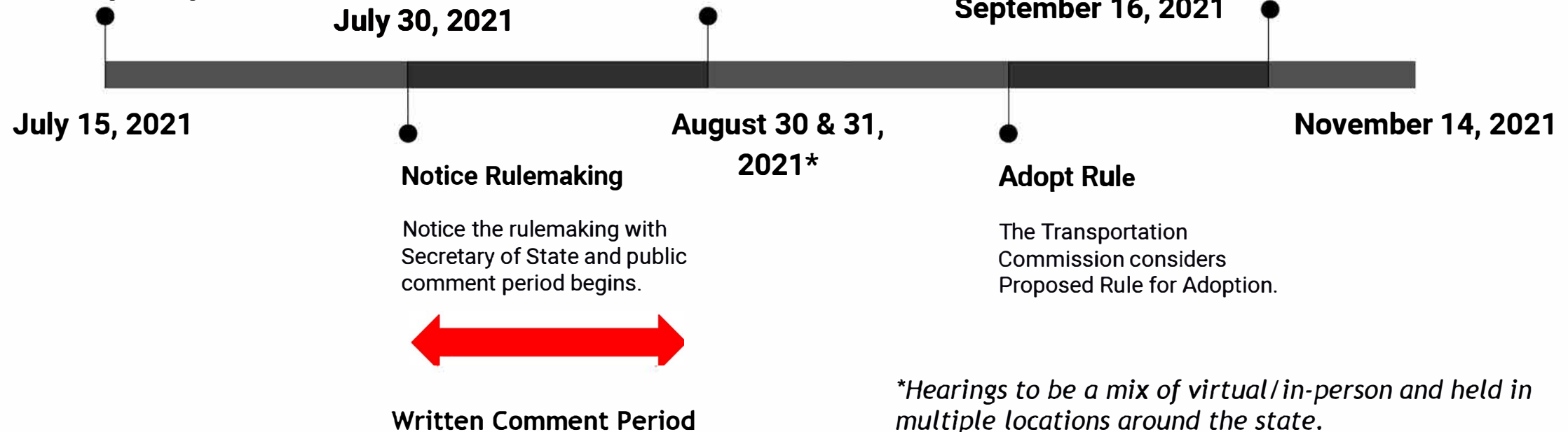
Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



Next Steps on GHG Rulemaking

Proposed resolution to commence rulemaking process.

- This step would officially begin both the timeline and process steps under the APA.

Statewide public meeting on July 22 (tentative).

Continued engagement with key stakeholder groups.



THANK YOU for your continued engagement

Next Steps

- Continue conversation around the details of the modeling
 - Discuss MPO sub budget amounts
- Look at the regulation text itself



COLORADO
Department of Transportation

GHG Pollution Standard Modeling Discussion

GHG Advisory Group- July 22, 2021



Agenda

1. Update on Transportation Commission Action and discussion
2. Update on timing and Public Hearing process
3. Modeling topics and questions- Cambridge Systematics staff will be available to answer questions
 - a. Modeling scenarios - more detail on assumptions, what specific changes were made to the model
 - b. EERPAT overview - including inputs, scope of strategies by area, reasonableness of efficacy and timeline for implementation, etc.
 - c. Modeling platforms and consistency - EERPAT, Statewide ABM, MOVES, how they interact and will be used moving forward
 - d. Sub-budgets - will require continued coordination with MPOs to see how to best implement
 - e. Questions



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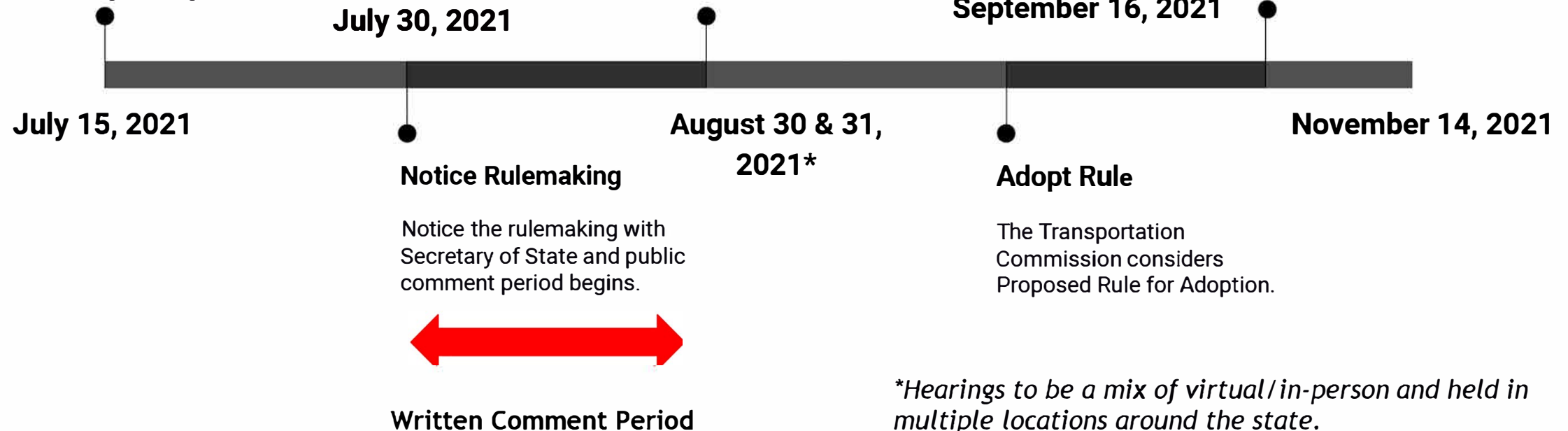
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Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





Public Engagement in Rulemaking Process

Public Hearings

- Multiple Opportunities for Public Comment
 - Direction from TC to include multiple Public Hearing sessions
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing
- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>



Modeling topics and questions

1. Modeling scenarios - more detail on assumptions, what specific changes were made to the model
2. EERPAT overview - including inputs, scope of strategies by area, reasonableness of efficacy and timeline for implementation, etc.
3. Modeling platforms and consistency - EERPAT, Statewide ABM, MOVES, how they interact and will be used moving forward
4. Sub-budgets - will require continued coordination with MPOs to see how to best implement
5. Questions



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 - Reduce transit fare by 50%*
- Travel choices + Transit
- Travel choices + Transit + Land Use



Travel Choices: Commute Trip Reduction

- Telework (telecommuting): The percentage of workers teleworking at least part-time is increased by a factor of 3, from 6.3 percent to 18.9 percent, compared to baseline levels, reflecting a continuation of trends observed during the COVID pandemic.
- Broadband access grows from 82.6% to 97% of households
- 10% of households in mixed use areas participate in a household based trip reduction program and that these households reduce VMT by 5%



Travel Choices: Bike Improvements

- Build out of bike lanes and paths at ½ mile spacing for the entire urbanized area within Colorado (1,256 square miles) over a 20 year period (2022-2041)
- Corresponds to 5,000 new miles of facility or 250 new miles per year.
 - We maintain a system of state and US highways that spans 9,100 centerline miles
- Split equally between on-street bike lanes and specialized facilities
- Average bike speed increased by 33% to represent electrification

Bicycle Travel Increase From Facility Investment

Year	Baseline BMT (millions)	New Facility- Miles	Additional BMT (millions)	Total BMT (millions)	% Over Base
2030	346	2,250	144	474	37%
2045	405	5,000	320	717	77%



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 - Total increase by factor of 2.3 by 2050 (more than doubling)
 - Comparison: Vehicle Revenue Miles increased by factor of 1.75 between 2000 and 2019
- Travel choices + Transit + Land Use



In 2019, based on data reported by Colorado's transit operators to the National Transit Database, 81 million vehicle revenue-miles of service were provided by all modes in Colorado's five metro areas.

Assumed transit revenue-miles will increase by 6.0 percent per year between 2022 and 2030 (69 percent total growth between 2019 and 2030), and by 2.0 percent a year between 2030 and 2050 (151 percent total growth between 2019 and 2050) compared to base year (2019) service levels.

This compares with a statewide growth in transit VRM of 2.9 percent annually (76 percent) between 2000 and 2019 (3.1 percent for the Regional Transit District, 1.2 percent average for other operators in the state).



Travel choices + Transit + Land Use

3 scenarios (layer cake)

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Range		0.4 - 0.9	0.5 - 1.5	0.17 - 1.2	0.1 - 0.7



Scenario VMT Reductions

Scenario	2030 (millions of vehicle miles)	2040 (millions of vehicle miles)	2050 (millions of vehicle miles)
Baseline	63,551	71,069	78,587
Reduction Range from Modelled Scenarios	5,800-6900	6,100-8,300	6,100-9800



THANK YOU
for your continued engagement
and participation



COLORADO

Department of Transportation

Update: Greenhouse Gas Pollution Standard For Transportation Planning Rulemaking

GHG Advisory Group - August 12, 2021



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

Authorize Rulemaking

Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

July 15, 2021

Rulemaking Hearings

Opportunity for Public Testimony

August 13, 2021

September 14, 2021*

November 18, 2021

Rule Effective

Rule becomes effective.

January 14, 2022

Notice Rulemaking

Notice the rulemaking with Secretary of State and public comment period begins.

Adopt Rule

The Transportation Commission considers Proposed Rule for Adoption.



60 Day Written Comment Period Starts 8/13 and Ends 10/12

**Hearings may be held on or after September 14, 2021. Hearings to be a mix of virtual/in-person and held in multiple locations around the state.*



Rulemaking Hearings

At least 6 public Rulemaking Hearings across the state in September:

- Virtual and in-person option
 - 9/14: Durango
 - 9/17: Grand Junction
 - 9/23: Denver
 - 9/24: Colorado Springs
 - 9/29: Limon
 - 9/30: Fort Collins
- Overview of rule concepts
- Opportunity for public testimony
- Spanish interpretation offered

→ 60-Day Written
Comment Period:
8/13- 10/12



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: DOT_Rules@state.co.us or at link above
- Multiple Opportunities for Public Comment (6 public hearings planned)
- Current schedule: Draft rule published in mid-August; hearings must be scheduled no earlier than 20 days later.



Planning Rule

- Housed in CDOT's existing Rules Governing Statewide Transportation Planning which outline planning process requirements for CDOT and MPOs
- No significant changes to other planning rules (e.g. fixing acronyms)
- The GHG Pollution Reduction Standard will require CDOT and MPOs to amend applicable planning documents, perform additional modeling and meet GHG Reduction Levels within this process to comply

Preamble/ Statement of Basis and Purpose

- Frames rule, states goals



Key Definitions:

- **Applicable Planning Documents** - MPO RTPs, TIPs for NAA MPOs, CDOT 10-year plan and 4-Year Prioritized Plan in non-MPO areas, amendmendments to Regionally Significant Projects
- **Baseline** - Modeled estimates of GHG emissions for MPOs and non-MPO areas resulting from existing transportation network & most recent plans
- **Disproportionately Impacted Communities** - SB-260 definition.
- **GHG Mitigation Measures** - non-Regionally Significant strategies to reduce GHG emissions that provide option for alternative compliance
- **Regionally Significant Project** - Federal EPA definition. Referenced in SB-260, determines what projects are included in modeling



DRAFT GHG Reduction Level

Table 1: GHG Transportation Planning Reduction Levels

Regional Areas	2025 Baseline Projections (MMT)	2025 Reduction Level (MMT)	2030 Baseline Projections (MMT)	2030 Reduction Level (MMT)	2040 Baseline Projections (MMT)	2040 Reduction Level (MMT)	2050 Baseline Projections (MMT)	2050 Reduction Level (MMT)
DRCOG	14.9	0.27	11.8	0.82	10.9	0.63	12.8	0.37
NFRMPO	2.3	0.04	1.8	0.12	1.9	0.11	2.2	0.07
PPACG	2.7	N/A	2.2	0.15	2.0	0.12	2.3	0.07
<u>GVMPO</u>	0.38	N/A	0.30	0.02	0.30	0.02	0.36	0.01
PACOG	0.50	N/A	0.40	0.03	0.30	0.02	0.4	0.01
CDOT/Non MPO	6.7	0.12	5.3	0.37	5.2	0.30	6.1	0.18
TOTAL	27.4	0.5	21.8	1.5	20.6	1.2	24.2	0.7



Analysis Requirements

- MPOs and CDOT use Approved Air Quality Model
- Intergovernmental Agreements to allow for modeling coordination
- GHG Mitigation Measure process - determined by April 1, 2022 by CDOT

Timing

- By October 1, 2022, CDOT, DRCOG, NFRMPO will update their plans (per SB-260).
- PPACG, PACOG and GVMPO will update plans to comply with 2030 targets according to plan cycle



Demonstrating Compliance

CDOT and MPOs provide to the Commission a GHG Transportation Report:

- **GHG emissions analysis** - demonstrates that plans meet Reduction Level
- **Documentation of model used** - Statewide Travel Model or Approved Air Quality Model
- **A Mitigation Action Plan if Reduction Level is not met** - including dates, estimates of reductions, and co-benefits of each GHG Mitigation Measure



GHG Mitigation Measures

- Process outlined in regulation, and further developed in future CDOT Policy Directive (April, 2022) to select and verify measures
 - Measure and consider ways to prioritize impacts to DI Communities
 - Quantification of co-benefits

May include, not limited to:

- Addition of transit resources (infrastructure/service/ funding)
- Improving pedestrian and bike access/ resources
- Increased construction efficiency particularly in DI Communities
- Encouraging equitable transit oriented development
- Improving first and final mile connections to transit



APCD Confirmation and Verification

- CDOT and MPOs will submit their GHG Transportation Report drafts to the APCD 45 days prior to Plan adoption for verification
- APCD has 30 days to respond
- Will not delay the adoption of planning document



- If the GHG Reduction Level is not met in **non-MPO areas/ MPO areas that do not receive federal suballocations**, CDOT will use 10-Year Plan funds on projects that reduce GHG emissions
- If the GHG Reduction Level is not met in **MPO areas** receiving CMAQ and STBG, the MPO will use those funds on projects that reduce GHG emissions
- The Commission, informed by APCD review, makes determination
- Waiver Clause



- Rulemaking Hearings (hybrid in-person/ virtual)
 - 9/14: Durango
 - 9/17: Grand Junction
 - 9/23: Denver
 - 9/24: Colorado Springs
 - 9/29: Limon
 - 9/30: Fort Collins
- Consideration of Feedback
 - **60-Day Written Comment Period: 8/13-10/12**
 - Posted on website → Public can see all written comments



COLORADO
Department of Transportation

Thank you!



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Colorado Contractors Association

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions							
Colorado Contractors Association							
Colorado Contractors Association Meetings							
	Date	Time	Location				
	3/15/21	2-3pm	Virtual				
	7/13/21	11am-12pm	Virtual				

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Colorado Contractors Association

Meeting: March 15, 2021 from 2-3pm, Virtual

Name	Organization	Email
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	American Concrete Pavement Associaton- Colorado/Wyoming Chapter	[REDACTED]
[REDACTED]	Hamon Infrastructure Inc.	[REDACTED]
[REDACTED]	Colorado Contractors Association	[REDACTED]
[REDACTED]	Hot Shot Supply Company	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	United Companies	[REDACTED]
[REDACTED]	Chatos Concrete LLC	[REDACTED]
[REDACTED]	American West Construction	[REDACTED]
[REDACTED]	Colorado Contractors Association	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	Western Colorado Contractors Association	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	Colorado Barricade Company	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	Kraemer North America	[REDACTED]
[REDACTED]	Colorado Contractors Association	[REDACTED]
[REDACTED]	Colorado Asphalt Pavement Association	[REDACTED]
[REDACTED]	Ames Construction Company	[REDACTED]
[REDACTED]	Wagner Equipment Co	[REDACTED]

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Colorado Contractors Association

Meeting: July 13, 2021 from 11am-12pm, Virtual

Name	Organization	Email
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
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[REDACTED]	CDOT	[REDACTED]
[REDACTED] hi	CDOT	[REDACTED]
[REDACTED]	Colorado Contractors Association	[REDACTED]



STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - GHG Stakeholder Meeting w CCA

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Wed, Mar 17, 2021 at 9:40 AM

Good morning,

Thank you for the opportunity to present to you earlier this week.

I have attached the slide presentation, as you requested.

Please let me know if you have any questions.

Aloha,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



COLORADO
Department of Transportation
Division of Transportation Development

P 303.757.9977

2829 W. Howard Pl., Denver, CO 80204

theresa.takushi@state.co.us | www.codot.gov



Regional Transportation Meetings - Updated for March .pdf
1158K



STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

CCA - GHG Meeting

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Jul 2, 2021 at 1:58 PM

To: [REDACTED]
Cc: "Shishido - CDOT, Natalie" <natalie.shishido@state.co.us>

Good afternoon [REDACTED]

I wanted to offer a few days/times to meet with CCA - whoever you think would be the best audience - to discuss the GHG Planning Rule.

Or, as an alternative, please let me know if you think it would be better to do this update at one of your weekly meetings with leadership.

7/13 11-12
7/15 12-5
7/21 9-10
7/21 230-4
7/22 11-1

Thanks, and I hope you have a wonderful 4th of July weekend.

Aloha,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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COLORADO

Department of Transportation

Incorporating Greenhouse Gas Emissions Reductions into Transportation Planning

February, 2021



Colorado's Efforts To Address Climate Change

HB-1261

- In 2019, the Colorado General Assembly passed House Bill-1261, the *Climate Action Plan to Reduce Pollution*.
- HB 1261 established the following GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- Lays out near/long term actions in every sector to meet the established targets
- To ensure that Colorado continues to reduce emissions to meet greenhouse gas targets, reduce local air pollution, and realize the full economic benefits of the transition to a clean energy economy.
- Draft document released in Sept 2020; final in Jan 2021.
- <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>



Largest GHG Emissions Sources

2005 Largest Emission Source:

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

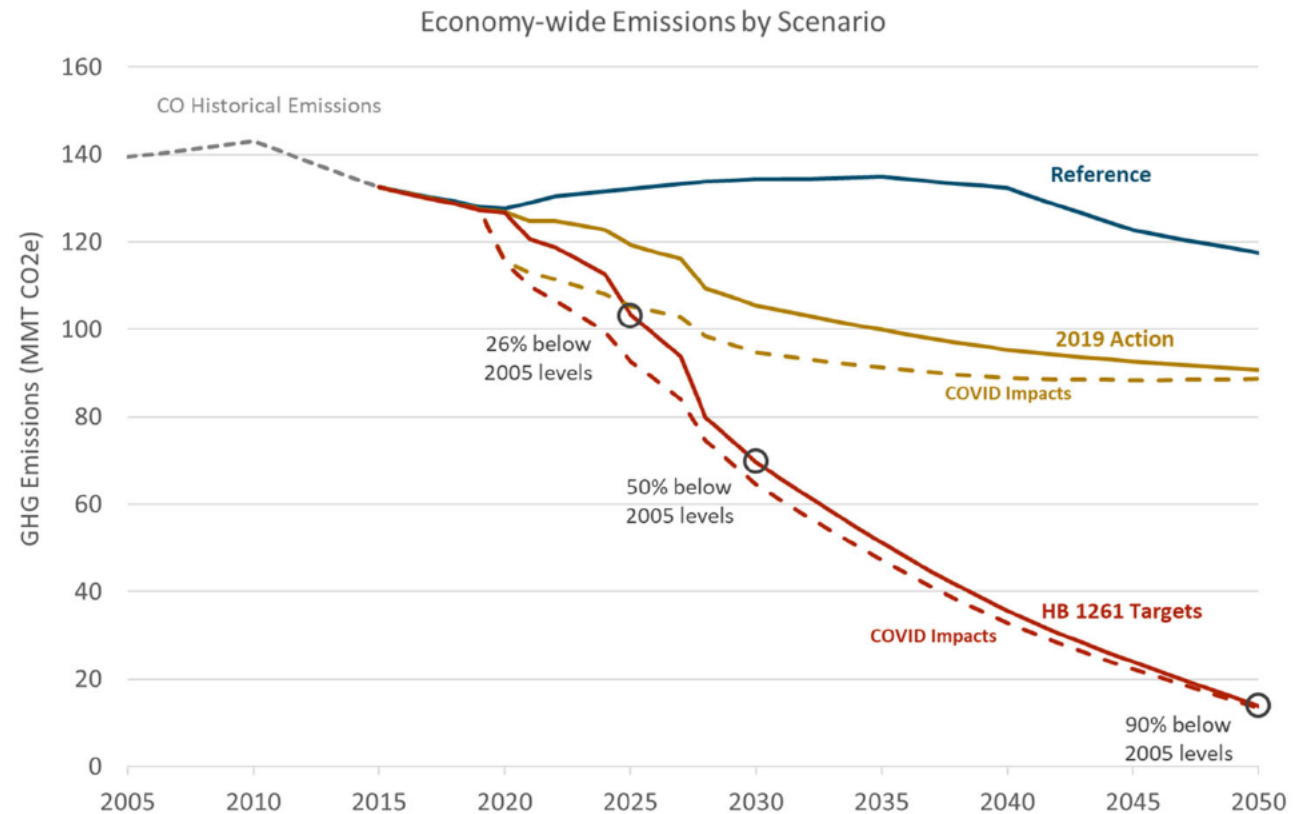




Colorado GHG Pollution Over Time

SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, we are on a trajectory to achieving approximately half the level of emission reductions to meet the 2025 and 2030 goals.
- Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.





Near-Term Transportation Actions included in the CO GHG Roadmap

Infrastructure (Planning & Projects)

- GHG pollution standards for transportation plans [FOCUS of MTG]
- Indirect source standards for some types of new development.
- Trip reduction/TDM requirements and encouraging telecommuting for large employers [Separate process]

Human Factors (Behavior Change)

- Expansion of public transit, including setting the stage for Front Range Rail
- Incentives for land use decisions by local governments that reduce pollution and support greater access to housing near jobs.

Mobile Sources (Vehicles)

- Clean trucking strategy including evaluation of Advanced Clean Truck ZEV standards
- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses



Regulatory Approach

- The Colorado Air Quality Control Commission (AQCC) is appointed by the governor and authorized by the Colorado General Assembly. The AQCC develops air pollution control policy and regulates pollution sources.
- The AQCC is taking up a series of rulemakings across all sectors to address GHG emissions and implement recommendations in the Roadmap. One of these rulemakings will focus on the transportation sector.
- The Colorado Department of Transportation, and its Governor-appointed Transportation Commission has statutory authority over the transportation planning process. This process is guided by a series of Policy Directives issued by the Transportation Commission.
- The GHG Pollution Standard will therefore include actions by both bodies.



Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- Integrate GHG pollution standards and analysis in regional and statewide transportation plans: GHG Pollution Standard
- Reduce SOV commuter trips: Large Employer Trip Reduction
- Both included in single rulemaking via the CDPHE/Air Quality Control Commission process
 - May draft; August final

CDOT Policy

- In parallel, CDOT will develop implementation guidance via a policy directive specific to GHG Pollution Standard



GHG Pollution Standard (GPS) Rule Approach

Initial Thinking

- Set a numeric GHG “budget” for transportation plans (statewide and regional).
- Phased implementation with initial focus on state and certain MPO plans.
- Focus on projects that increase capacity
- CDOT guidance will focus on the practicalities of how the policy translates into specific project-based requirements.
- Inclusion of other measures to meet budget.



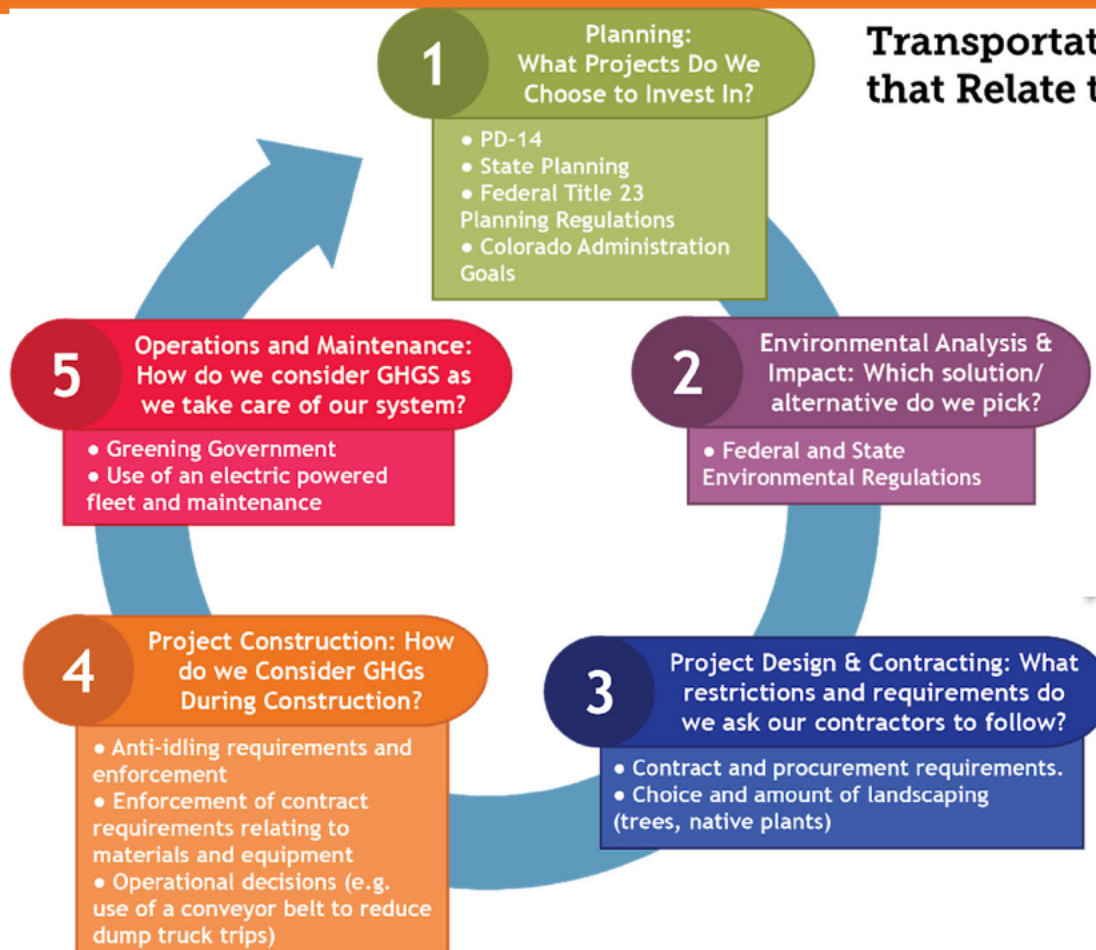
Setting the GHG Budget

- The concept for this policy is based on comparing projected emissions from a set of projects within a transportation plan against a numeric “budget”.
- The first step is to figure out what this budget needs to be at the statewide level; balancing our GHG goals and achievability.

NEAR TERM ACTIONS TO REDUCE POLLUTION			
Sector	Revised 2005 Baseline (MMT CO2e)	2025 Target (MMT CO2e)	2030 Target (MMT CO2e)
Electricity	40.28	21	8
Oil and Gas	20.17	13	8
Transportation	30.71	23	18
Residential, Commercial, Industrial Energy Use	24.65	26	20
Other	23.42	19.9	15.6
Total	139.22	102.9	69.6
Percent Reduction	--	26%	50%



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions





Outreach Approach

- Regional Meetings Across the State
 - Feb 16 10:30-11:30 (Region 1 - Denver Metro Area)
 - Feb 16 1-2pm (Region 4 - Northeast)
 - Feb 18 3-4pm (Region 2 - South/SouthEast)
 - Feb 19, 9-10am (Region 3 - Northwest)
 - Feb 22, 1:30-2:30 (Region 5 - Southwest)
- Standing CDOT Advisory Group
- CDPHE Public Listening Sessions
- 1-1 Meetings and Presentations



Regional Meeting Feedback

- Feb 16 10:30-11:30 (Region 1 - Denver Metro Area)
- Feb 16 1-2pm (Region 4 - Northeast)
- Feb 18 3-4pm (Region 2 - South/SouthEast)
- Feb 19, 9-10am (Region 3 - Northwest)

Main areas of comment include the following:

- Rural and regional differences
- Incentives vs. penalties (carrots vs. sticks)
- Equity considerations
- Enforcement
- MPO roles and responsibilities
- Clarification on capacity projects
- How this impacts the 10 year plan
- Cost concerns



Contact Information

Theresa Takushi
GHG Climate Action Specialist
theresa.takushi@state.co.us
303.757.9977



COLORADO
Department of Transportation

Draft Greenhouse Gas Pollution Standard For Transportation Planning

CCA - July 2021



Outline

- SB 260 - elements
- Planning Rule Approach
- GHG Policy Paper
- Stakeholder Engagement & Public Listening Session
- TC Rulemaking Process



GHG Transportation Planning Rule

- For much of the last month, CDOT and CDPHE have paused on rule development and stakeholder outreach in order to allow the legislative process on SB260 to play out.
- During this time, CDOT also has been preparing a framing paper that explains the major policy issues inherent in this approach and provides the fuller context for how this rulemaking fits into the Department's broader effort to address GHGs.



- SB260 clarifies the regulatory landscape in some key ways; including the role of the Transportation Commission and CDOT.
- CDOT/TC action now focused on conducting a formal rulemaking vs policy directive only.
 - Plan to amend existing planning rules
 - A policy and/or procedural directive will likely still be required but would follow after rulemaking



SB260 Provisions

- **By July 1, 2022 develop and implement procedures and guidelines requiring CDOT and MPOs to:**
 - Implement relevant rules issued per 25-7-105
 - Otherwise reduce GHGs to help achieve progress toward HB1261 goals
 - Apply the same level of analytical scrutiny to GHGs as to other pollutants of concern and consider the impact of induced demand
 - Consider the role of land use and develop strategies to encourage land use decisions that reduce VMT and GHGs
- While these new policies and procedures must be in place for the next 10-Year Plan adoption (and all future planning cycles), SB260 also **establishes a loss of flexibility in MMOF expenditures** if CDOT, DRCOG and NFRMPO do not update their plans to comply with these new policies **by October 1, 2022.**



CDOT GHG Policy Paper

- Explains intent of rule and key policy issues
- Builds understanding around concept and its intricacies
 - Magnitude of reduction
 - Enforcement
 - Timeline
- Provides initial drafting for rulemaking and format to advance regulatory concepts in a more plain-english format



Key Comment Areas Based on TC and Stakeholder Feedback

- **Timeline of rule & how stakeholders can engage**
 - How equity will be addressed
- **Clarity on Language - regionally significant projects, mitigation/offset**
- **How the scenarios relate to the rule itself and the range**
 - Help establish the GHG target levels
 - For use in the cost benefit analysis
- **More clarification around vehicle miles traveled (VMT)**
- **MPO Role/relationship to CDOT/authority**



Public Meeting

Virtual Public Meeting: Transportation GHG Pollution Reduction Planning Rule

- Thursday, July 22, 2021 , 5:30-7:30PM (**TENTATIVE**)

At this meeting we'll discuss:

1. Senate Bill 21-260 and what it means for this rulemaking
2. What CDOT's rulemaking process looks like, including a timeline and how to engage
3. Elements of the rule, including who and what it will affect

Public comments

- We will dedicate much of the time to listening to our stakeholders and community members.



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

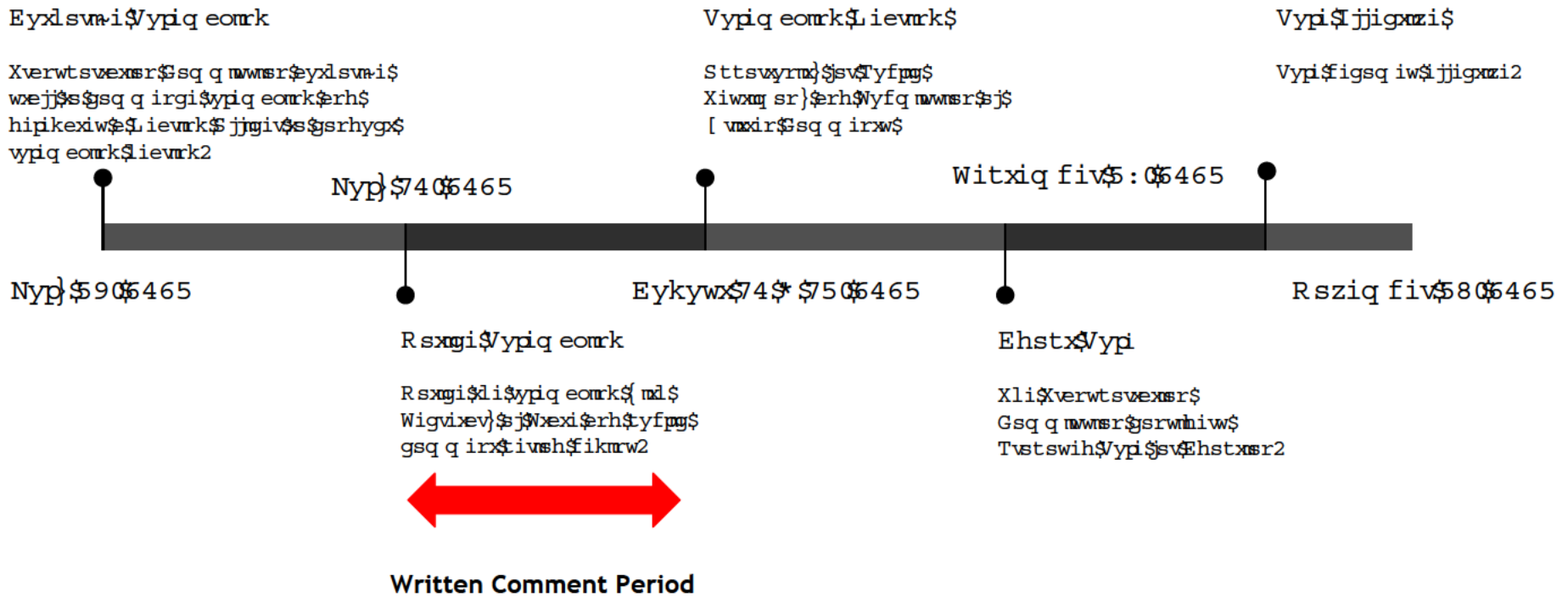
- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and as rulemaking is developed

DRAFT





Near Term Next Steps

TC to determine in July whether to commence rulemaking.

Statewide public meeting (July 22nd).

Continued engagement with key stakeholder groups and advisory group.



COLORADO

Department of Transportation

THANK YOU!

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions					
STAC Meetings					
STAC Meetings					
Date	Location				
2/12/21	Virtual				
4/9/21	Virtual				
5/14/21	Virtual				
6/11/21	Virtual				
7/14/21	Virtual				
8/13/21	2829 W Howard Pl, Denver, CO, and Virtual				

STAC Member Email List

Name	Primary Role	Region	E-Mail
	STAC Rep	Central Front Range	
	STAC Alt	Central Front Range	
	TPR Contact	Central Front Range	
	STAC Rep	Eastern	
	STAC Alt	Eastern	
	TPR Contact	Eastern	
	MPO Chair	Grand Valley MPO	
	STAC Rep	Grand Valley MPO	
	STAC Alt	Grand Valley MPO	
	STAC Alt	Grand Valley MPO	
		Denver	
	STAC Rep	Denver	
	TPR Contact	Denver	
	STAC Rep, TPR Chair	Gunnison Valley	
	STAC Alt	Gunnison Valley	
	TPR Contact	Gunnison Valley	
	STAC Rep	Intermountain	
	STAC Alt	Intermountain	
	TPR Contact	Intermountain	
	STAC Alt	North Front Range	
	STAC Rep	North Front Range	
	TPR Contact	North Front Range	
	TPR Contact	North Front Range	
	STAC Rep	Northwest	

STAC Alt	Northwest
STAC Alt	Northwest
MPO Chair	Pikes Peak
STAC Rep	Pikes Peak
TPR Contact	Pikes Peak
STAC Alt	Pikes Peak
TPR Contact	Pikes Peak
STAC Alt 2	Pikes Peak
TPR Contact	Pikes Peak
STAC Alt 3	Pikes Peak
MPO Chair	PACOG
STAC Rep	PACOG
STAC Alt	PACOG
STAC Rep	San Luis Valley
STAC Alt	San Luis Valley
TPR Contact	San Luis Valley
STAC Rep	South Central
STAC Alt	South Central
STAC Rep	Southeast
STAC Alt	Southeast
STAC Rep	SUIT
TPR Chair	South Central
STAC Rep	Southwest
STAC Alt	Southwest
TPR Contact	Southwest
STAC Rep	UFR
STAC Alt	UFR



COLORADO
Department of Transportation

Draft Greenhouse Gas Pollution Standard For Transportation Planning

STAC - July 2021



Outline

- SB 260 - elements
- Planning Rule Approach
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- Stakeholder Engagement
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CDOT GHG Policy Paper

- Explains intent of rule and key policy issues
- Builds understanding around concept and its intricacies
- Provides initial drafting for rulemaking and format to advance regulatory concepts in a more plain-english format



Stakeholder Outreach Continues

GHG Advisory Group

Meeting with key stakeholder groups to discuss elements of the Rule

Planning public meetings

Email Blast to our Stakeholder Group



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

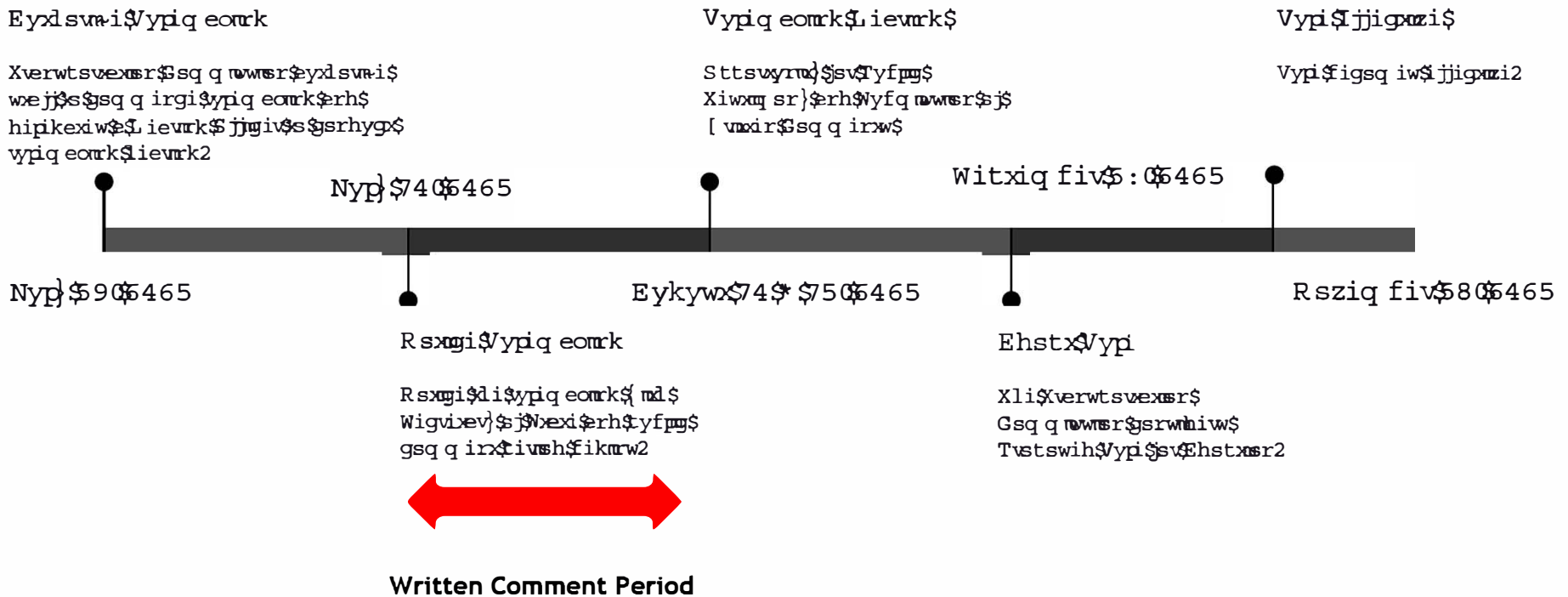
- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
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 - Oral testimony and submission of written comments at Rulemaking Hearing



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and as rulemaking is developed

DRAFT





Near Term Next Steps

TC to determine in July whether to commence rulemaking.

Statewide public meeting (July).

Continued engagement with key stakeholder groups and advisory group.



COLORADO
Department of Transportation

Update: Greenhouse Gas Pollution Standard For Transportation Planning

STAC - August 2021



GHG Transportation Planning Rule

[Home](#) [Travel Center](#) [News](#) [Safety](#) [Performance](#) [Business Center](#) [Programs](#) [Projects](#) [About CDOT](#) [Library](#)

[A-Z](#) -

Rulemaking Update | Greenhouse Gas Pollution Reduction Planning:

CDOT strives to make the rulemaking process user-friendly and inclusive to all. Our goal is to provide easy and early notification and the opportunity to submit comments or questions for meaningful consideration and discussion on proposed rules. Learn about the Transportation Commission's Greenhouse Gas Pollution Reduction Planning rulemaking process and sign up to receive updates at codot.gov/business/rules.



COLORADO
Department of Transportation



Travel

Colorado Road & Traffic Conditions/Data



Programs

[CDOT Programs & Services](#)

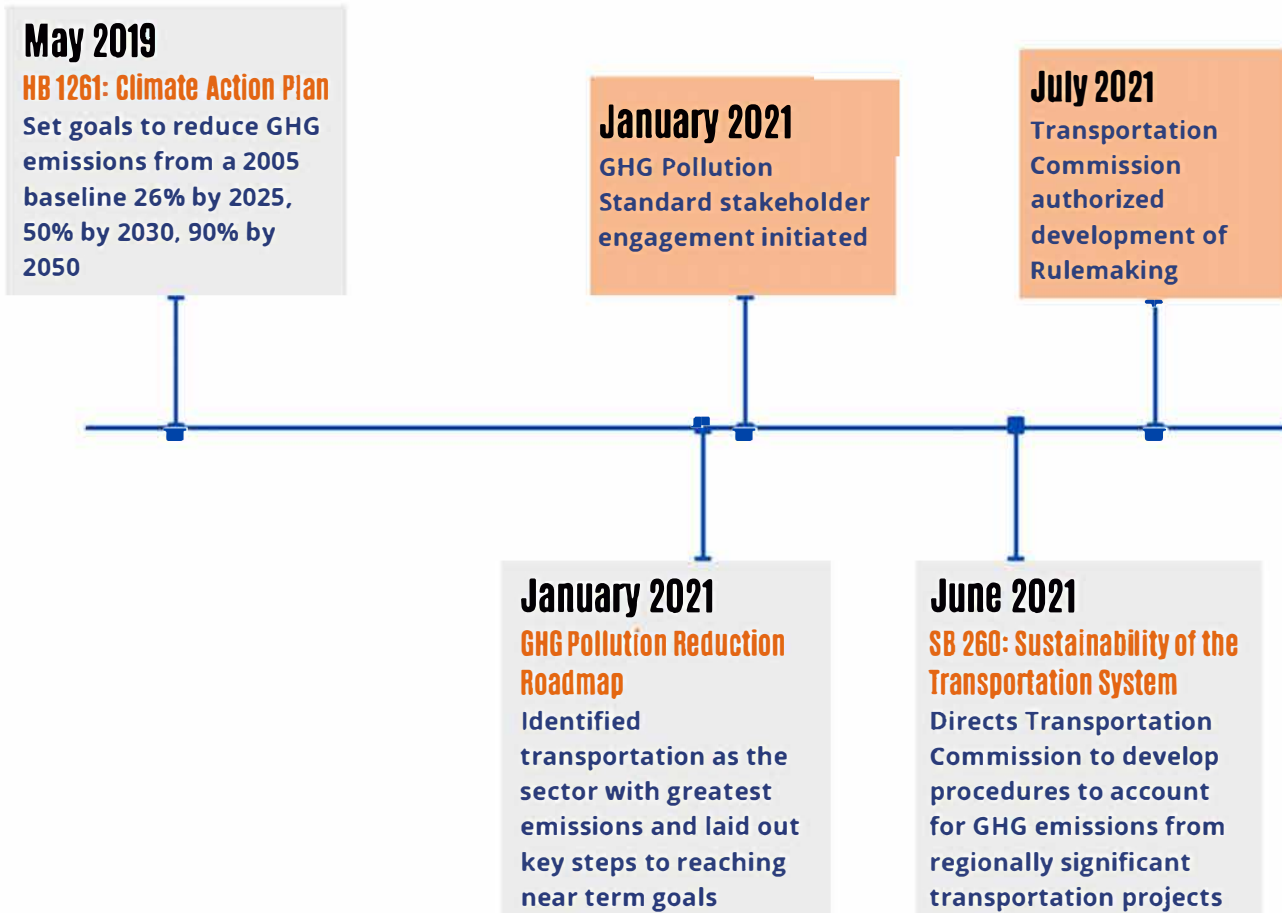


Safety

Moving Toward Zero Deaths



Timeline of GHG Reduction Discussion in CO





GHG Planning Rule: Concept Development

Began working with stakeholders in January 2021.

- Convened a statewide GHG Advisory Group that has met continuously over the last 7 months.
- Held 11 Regional Meetings and 5 joint State Listening Sessions with CDPHE from January to April, reaching nearly 800 people
- Individual stakeholder meetings with MPO staff and boards, contractors, enviro NGOs, CCAT, CC4CA, etc

Issued white paper to describe overall approach and key policy issues.

<https://www.codot.gov/programs/environmental/greenhouse-gas>

Developed Modeling Scenarios to “test” feasible reduction levels

- Work based on DRCOG scenarios; adjusted for feasibility
- Examined combinations of travel choice, transit and land use



GHG Advisory Group Membership

Ashley Stolzman - DRCOG Louisville
Christian Willis - Club 20
Christine Berg - CEO
Cindy Copeland - Boulder County
Clay Clarke - CDPHE
Commissioner Cody Davis - Mesa County
Commissioner Holly Williams - PAACG local govt
representative
Transp Commissioner Karen Stuart
Commissioner Terry Hofmeister - Philliips County
Dana Brosig - GVMPO
David Schwietert - Alliance for Automotive Innovation
Elizabeth Babcock - Denver, CASR
Gail Klapper - Colorado Forum
Grace Rink -City of Denver
Greg Fulton - CMCA

John Adams - PACOG
John Liosatos - PPACG
Transportation Commissioner Kathy Hall
Commissioner Kristin Stephens - Larimer
County
Lauren McDonnell - CDPHE
Matt Frommer - SWEEP
Matt Hopper - Summit Strategies
Medora Bornhoft - NFRMPO
Mike Silverstein - RAQC
Randy Drennen - CCA
Robert Spotts - DRCOG
Ron Papsdorf - DRCOG
Suzette Mallette - NFRMPO
Tony Milo - CCA



Public Stakeholder Meetings

Regional - GHG Stakeholder Meetings (open to the public and virtual):

1. Feb 16, 10:30-11:30am (Region 1 - Denver Metro Area)
2. Feb 16, 1-2pm (Region 4 - Northeast)
3. Feb 18, 3-4pm (Region 2 - South/Southeast)
4. Feb 19, 9-10am (Region 3 - Northwest)
5. Feb 22, 1:30-2:30pm (Region 5 - Southwest)
6. Mar 1, 4-5pm (Region 2 - South/Southeast)
7. Apr 16, 10:30am-12pm (Region 4 - Northeast, second round)
8. Apr 16, 1-2pm (Region 5 - Southwest, second round)
9. Apr 23, 9:30-11am (Region 1 - Denver Metro Area, second round)
10. Apr 23, 11:30am-1pm (Region 2 - South/Southeast, second round)
11. Apr 23, 1:30-2:30pm (Region 3 - Northwest, second round)

CDOT/CDPHE State Listening Sessions (open to the public and virtual):

1. Jan 28, 6-8pm
2. Mar 11, 10:30am-12pm
3. Mar 18, 6-8pm
4. Apr 21, 6-8pm
5. Apr 28, 12-2pm

- 12 meetings with GHG Advisory Group
- 20+ meetings with MPO staff and boards
- Many stakeholder meetings with industry, enviro groups



GHG Planning Rulemaking: Concept & Approach

- Set a GHG “pollution reduction level” in million metric tons of CO₂e for transportation plans.
- Basic premise similar to conformity and crafted to align with federal conformity regulations analysis requirements.
- Requirements apply to CDOT and MPOs (the state’s primary transportation planning agencies).
- Set reduction levels for same timeframe as GHG Roadmap



Implementation

- Emissions calculated by modeling a set of transportation projects (included in transportation plans) and determining the total emissions from vehicles traveling across the transportation system.
- Limited to projects that are “regionally significant” - projects that increase capacity. Not to basic safety and repaving projects.
- Alternative compliance achieved through mitigation measures that achieve emission reductions in other areas related to transportation.



GHG Mitigation Measures

- If CDOT and MPO plans are determined to be out of compliance with established GHG pollution reduction planning targets, they will have the opportunity to utilize approved mitigations to offset emissions and achieve progress towards compliance.
- CDOT and MPOs would “select” strategies from a pre-approved list. The approved mitigations list will quantify approximate emissions offsets (possibly in the form of a score). Those emissions credits, pursuant to the pre-approved list, may then be applied to reduce the balance of GHG in modeling a transportation plan.
- Prior to each planning cycle, CDOT shall provide updating scoring methodology for the mitigation list, which shall be applicable during the subsequent planning cycle.
- **The specifics of these measures, including the list and the GHG reductions will achieve will be established through a separate policy to come after the rulemaking.**



Significant Areas of Feedback

- Applicability and impacts to rural areas → only applies to Regionally Significant Projects, which is being defined in to rule to capture larger projects
- Enforcement → how applies to MPOs and CDOT
- Equity considerations → Opportunities within mitigation measures for DI Communities, focused outreach
- MPO roles and responsibilities → feasibility for MPOs, particularly with modeling resources
- Impacts to the 10-Year Plan and Regional Transportation Plans → DRCOG, NRF and CDOT will amend plans by 10/1/22 (per SB260), other MPOs will address in next plan
- Cost Benefit Analysis → will be provided as part of the rulemaking process
- GHG reductions feasible through this rule → 2025 feasibility, progress toward Roadmap goals



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

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gsq q in\$ivsh\$fikrw2

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Gsq q rwwsr\$srwliw\$
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60 Day Written Comment Period
Starts 8/13 and Ends 10/12

**Hearings may be held on or after September 14, 2021.
Hearings to be a mix of virtual/in-person and held in
multiple locations around the state.*



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: [DOT Rules@state.co.us](mailto:DOT_Rules@state.co.us) or at link above
- Multiple Opportunities for Public Comment (5 public hearings planned)
- Current schedule: Draft rule published in mid-August; hearings must be scheduled no earlier than 20 days later.



Rulemaking Hearings

At least 5 public Rulemaking Hearings across the state in September:

- Virtual and in-person option
 - Denver
 - Fort Collins
 - Colorado Springs
 - Durango
 - Glenwood Springs
- Overview of rule concepts
- Opportunity for public testimony
- Spanish interpretation offered



COLORADO
Department of Transportation

Thank you!



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Colorado Communities for Climate Action

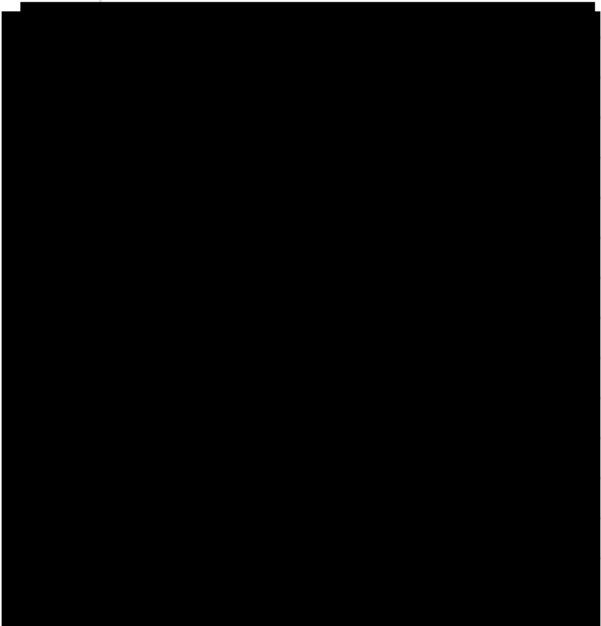
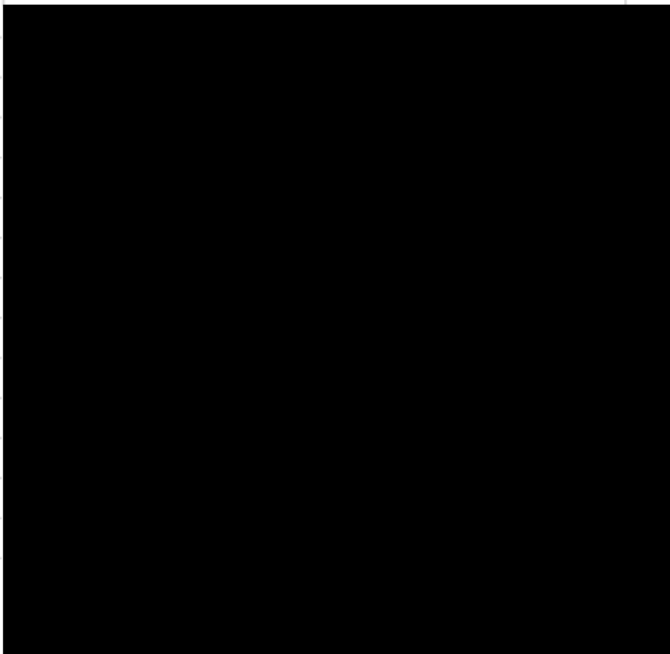
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions					
Stakeholder Groups	Date	Time	Location		
Colorado Communities for Climate Action	3/18/21	4-5pm	Virtual		
Colorado Communities for Climate Action	7/13/21	1:30-2:30pm	Virtual		

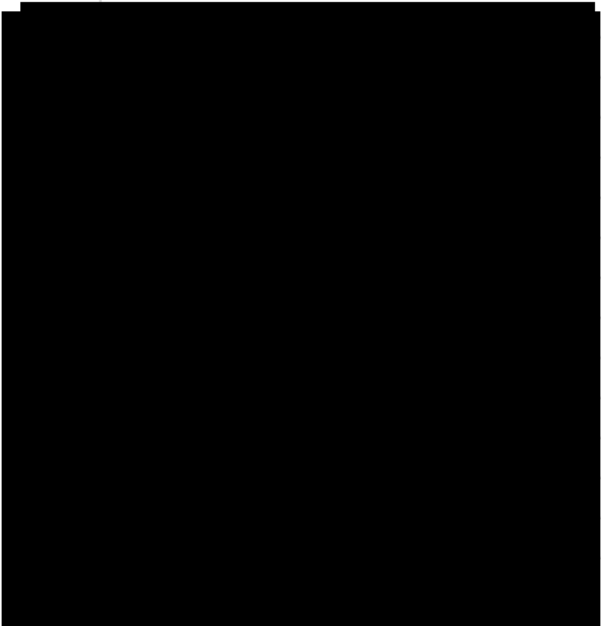
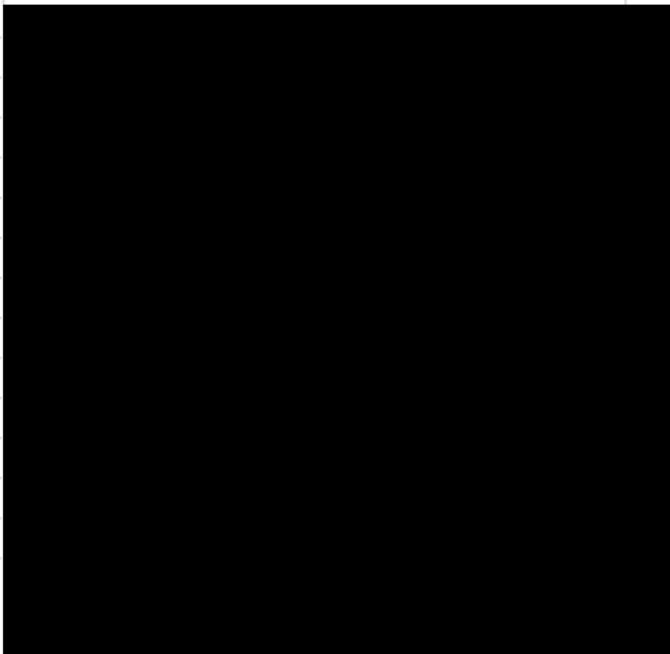
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

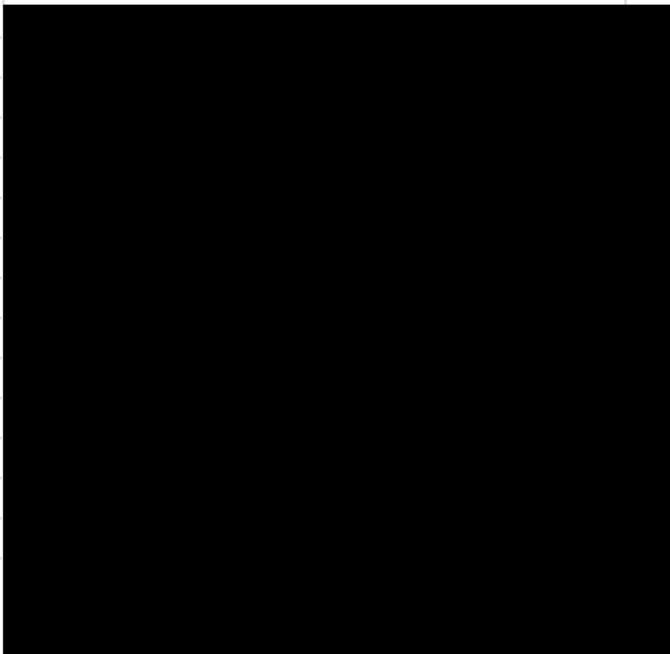
Colorado Communities for Climate Action

Meeting: March 18, 2021

Name	Organization	Email
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	Boulder County	
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	City and County of Denver	
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	Boulder County	
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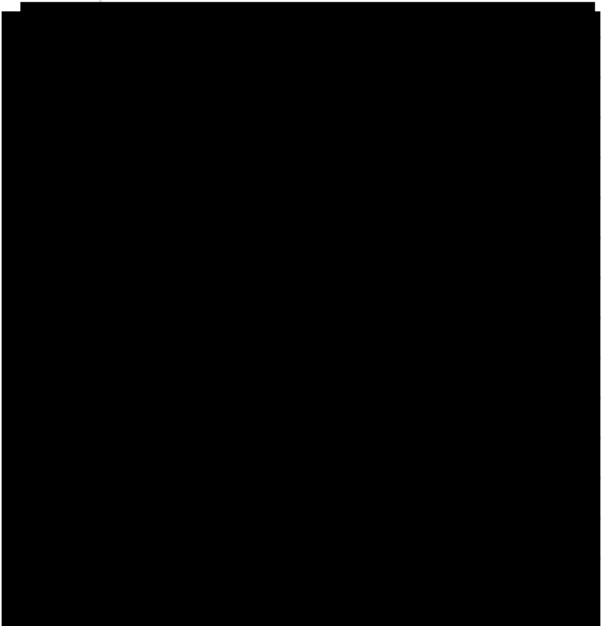
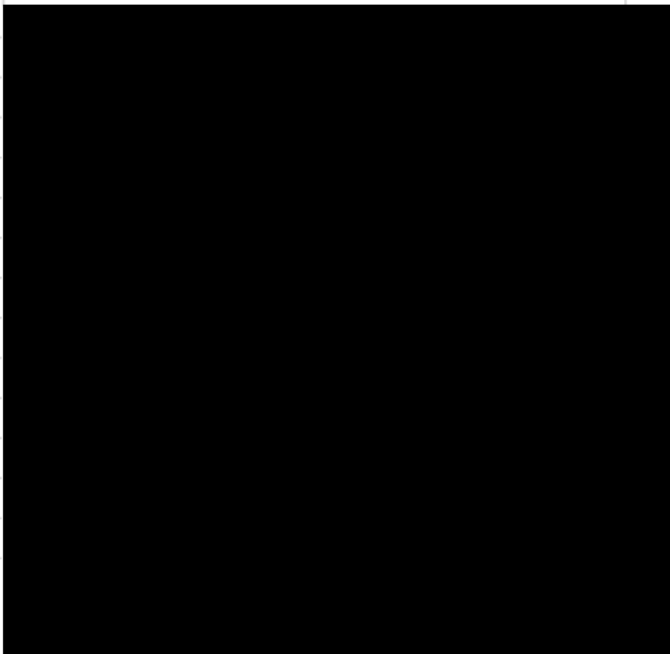
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Colorado Communities for Climate Action

Meeting: July 13, 2021

Name	Organization	Email
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Boulder County	
Boulder County	
City of Aspen	
Colorado Department of Public Health and Environment	
City of Broomfield	
Boulder County	
City and County of Denver	
CDOT	
CC4A	
City of Aspen	
Jefferson County	
CC4A	
CDOT	
Boulder County, Transportation Commission	
Tri-County Health Department	
Colorado Department of Public Health and Environment	
Boulder County	
CDOT	
City of Aspen	
CDOT	
CC4A	
CDOT	
City and County of Denver	



COLORADO
Department of Transportation

Draft Greenhouse Gas Pollution Standard For Transportation Planning

CC4CA- July 2021



- SB 260 - elements
- Planning Rule Approach
- GHG Policy Paper
- Stakeholder Engagement & Public Listening Session
- TC Rulemaking Process



GHG Transportation Planning Rule

- For much of the last month, CDOT and CDPHE have paused on rule development and stakeholder outreach in order to allow the legislative process on SB260 to play out.
- During this time, CDOT also has been preparing a framing paper that explains the major policy issues inherent in this approach and provides the fuller context for how this rulemaking fits into the Department's broader effort to address GHGs.



- SB260 clarifies the regulatory landscape in some key ways; including the role of the Transportation Commission and CDOT.
- CDOT/TC action now focused on conducting a formal rulemaking vs policy directive only.
 - Plan to amend existing planning rules
 - A policy and/or procedural directive will likely still be required but would follow after rulemaking



SB260 Provisions

- **By July 1, 2022 develop and implement procedures and guidelines requiring CDOT and MPOs to:**
 - Implement relevant rules issued per 25-7-105
 - Otherwise reduce GHGs to help achieve progress toward HB1261 goals
 - Apply the same level of analytical scrutiny to GHGs as to other pollutants of concern and consider the impact of induced demand
 - Consider the role of land use and develop strategies to encourage land use decisions that reduce VMT and GHGs
- While these new policies and procedures must be in place for the next 10-Year Plan adoption (and all future planning cycles), **SB260 also establishes a loss of flexibility in MMOF expenditures if CDOT, DRCOG and NFRMPO do not update their plans to comply with these new policies by October 1, 2022.**



CDOT GHG Policy Paper

- Explains intent of rule and key policy issues
- Builds understanding around concept and its intricacies
 - Magnitude of reduction
 - Enforcement
 - Timeline
- Provides initial drafting for rulemaking and format to advance regulatory concepts in a more plain-english format



Key Comment Areas Based on TC and Stakeholder Feedback

- **Timeline of rule & how stakeholders can engage**
 - How equity will be addressed
- **Clarity on Language - regionally significant projects, mitigation/offset**
- **How the scenarios relate to the rule itself and the range**
 - Help establish the GHG target levels
 - For use in the cost benefit analysis
- **More clarification around vehicle miles traveled (VMT)**
- **MPO Role/relationship to CDOT/authority**



Stakeholder Outreach Continues

GHG Advisory Group

Meeting with key stakeholder groups to discuss elements of the Rule

Planning public meetings



Virtual Public Meeting: Transportation GHG Pollution Reduction Planning Rule

- Thursday, July 22, 2021 , 5:30-7:30PM (TENTATIVE)

At this meeting we'll discuss:

1. Senate Bill 21-260 and what it means for this rulemaking
2. What CDOT's rulemaking process looks like, including a timeline and how to engage
3. Elements of the rule, including who and what it will affect

Public comments

- We will dedicate much of the time to listening to our stakeholders and community members.



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and as rulemaking is developed

DRAFT

Authorize Rulemaking

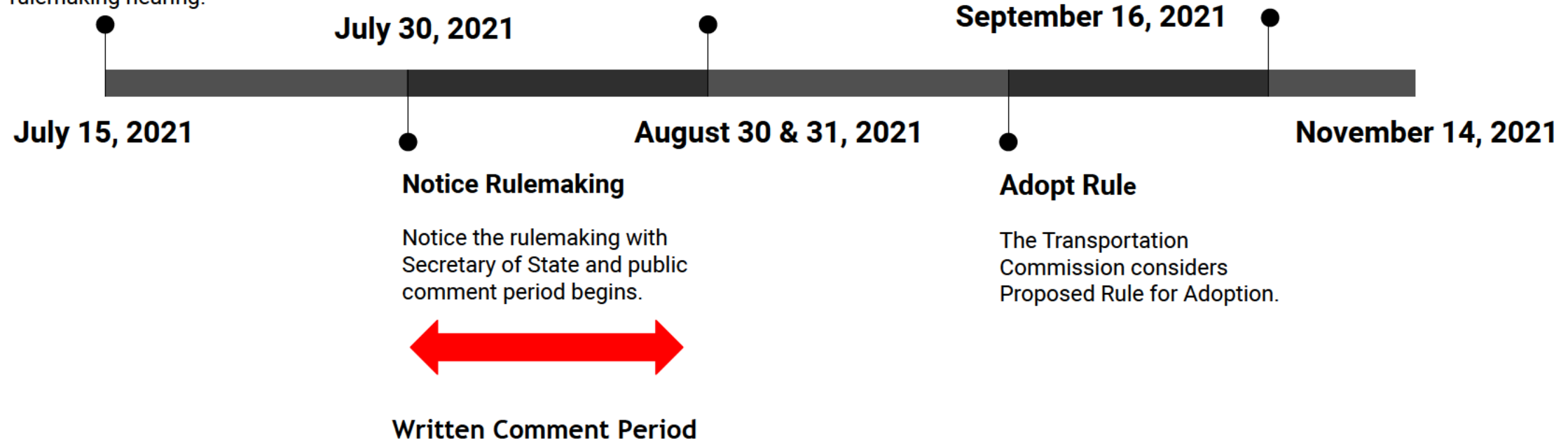
Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





Near Term Next Steps

TC to determine in July whether to commence rulemaking.

Statewide public meeting (July 22nd--tentative).

Continued engagement with key stakeholder groups and advisory group.



COLORADO

Department of Transportation

THANK YOU!



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Groups

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group Meetings

Stakeholder Groups	Date	Time	Location
NFRMPO Modeling Discussion	2/26/21	12:30-1:30pm	Virtual
MPO Staff Deep Dive Meeting	3/30/21	3-4pm	Virtual
NFRMPO Meeting	4/8/21	3-4pm	Virtual
DRCOG Meeting	4/12/21	2:30-3:15pm	Virtual
NFRMPO Meeting	4/12/21	3:15-4pm	Virtual
PPACG Meeting	4/13/21	12-12:45pm	Virtual
PACOG Meeting	5/6/21	1:30-2pm	Virtual
GVMPO Meeting	5/18/21	2-3pm	Virtual
CDOT/ MPOs GHG Discussion	6/29/21	11am-12pm	Virtual
CDOT/ MPOs GHG Discussion	7/6/21	8:30-9:30am	Virtual
CDOT/ MPOs GHG Discussion	7/8/21	3-4pm	Virtual
CDOT/ MPOs GHG Discussion	7/15/21	2-3pm	Virtual
CDOT/ MPOs GHG Discussion	7/21/21	9-10am	Virtual
CDOT/ MPOs/ Cambridge Sytematics EERPAT Deep Dive	7/22/21	11am-12pm	Virtual
CDOT/ MPOs GHG Discussion	7/27/21	1-2pm	Virtual
CDOT/ MPOs GHG Discussion	8/2/21	1-1:30pm	Virtual
CDOT/ MPOs GHG Discussion	8/3/21	2-3pm	Virtual
CDOT/ MPOs GHG Discussion	8/4/21	2-3:30pm	Virtual
CDOT/ GVMPO	8/6/21	3-3:30pm	Virtual
CDOT/ MPOs GHG Discussion	8/10/21	12-1pm	Virtual
CDOT/ MPOs GHG Discussion	8/11/21	8-9am	Virtual

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

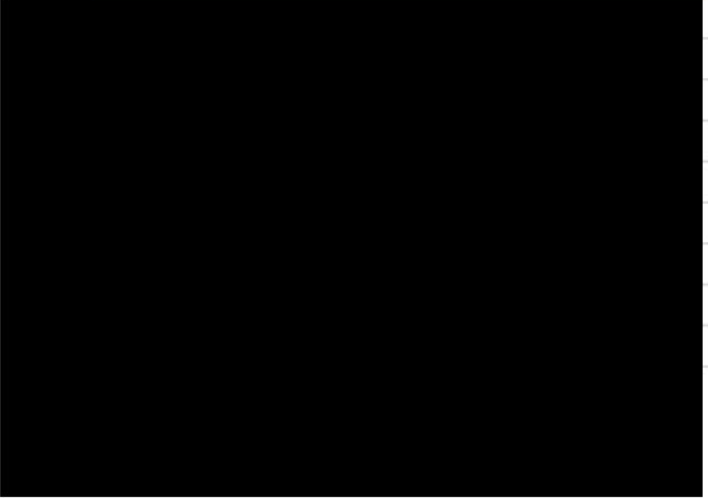
Meeting: NFRMPO Modeling Discussion, February 26, 2021 from 12:30-1:30pm, Virtual

Name	Organization	Email
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

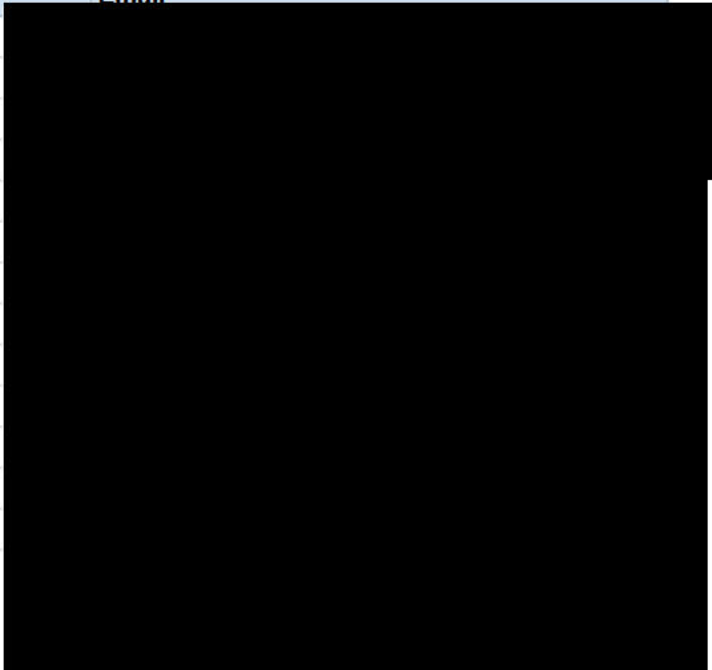
Meeting: MPO Staff Deep Dive Meeting, 3/30/21, from 3-4pm, Virtual

Name

Organization

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CDOT
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PPACG
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PPACG



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

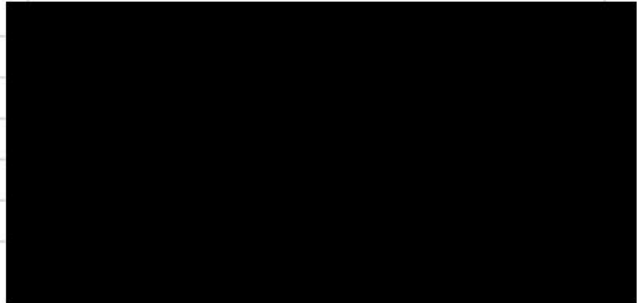
MPO Staff Group

Meeting: NFRMPO Meeting, 4/8/21 from 3-4pm, Virtual

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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: DRCOG Meeting, 4/12/21, from 2:30-3:15pm, Virtual

Name	Organization	Email
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

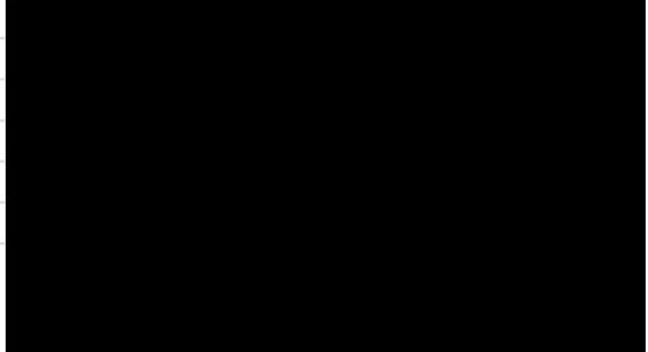
MPO Staff Group

Meeting: NFRMPO Meeting, 4/12/21, from 3:15-4pm, Virtual

Name	Organization	Email
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: PPACG Meeting, 4/13/21 from 12-12:45pm, Virtual

Name	Organization	Email
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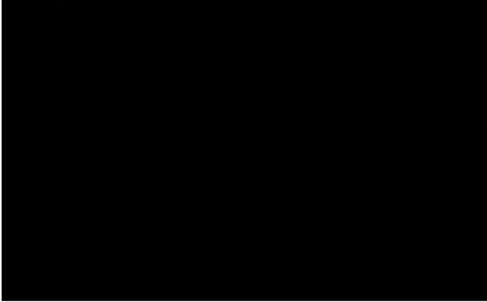
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

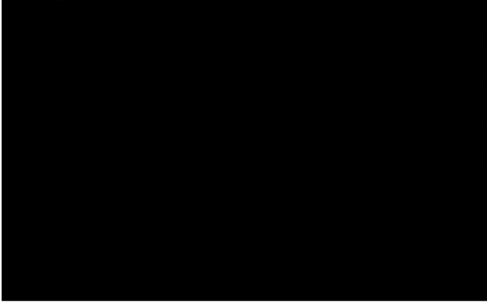
MPO Staff Group

Meeting: PACOG Meeting, 5/6/21 from 1:30-2pm, Virtual

Name	Organization	Email
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: GVMPO Meeting, 5/18/21 from 2-3pm, Virtual

Name	Organization	Email
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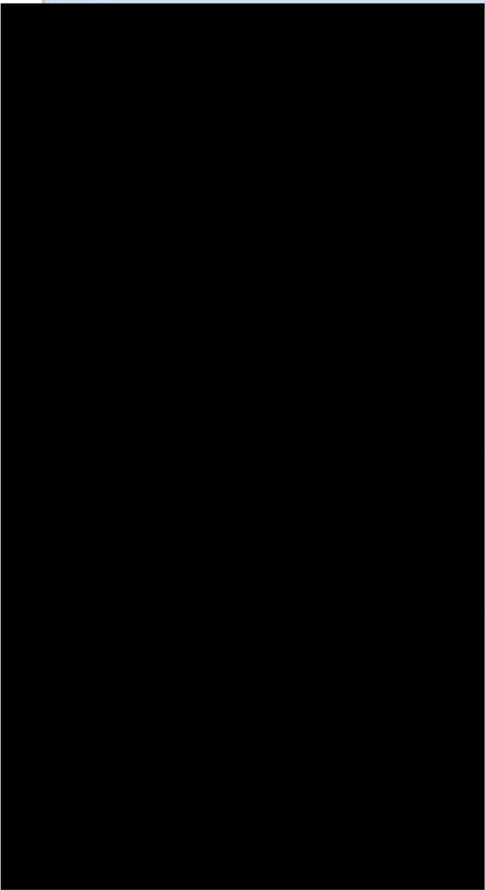
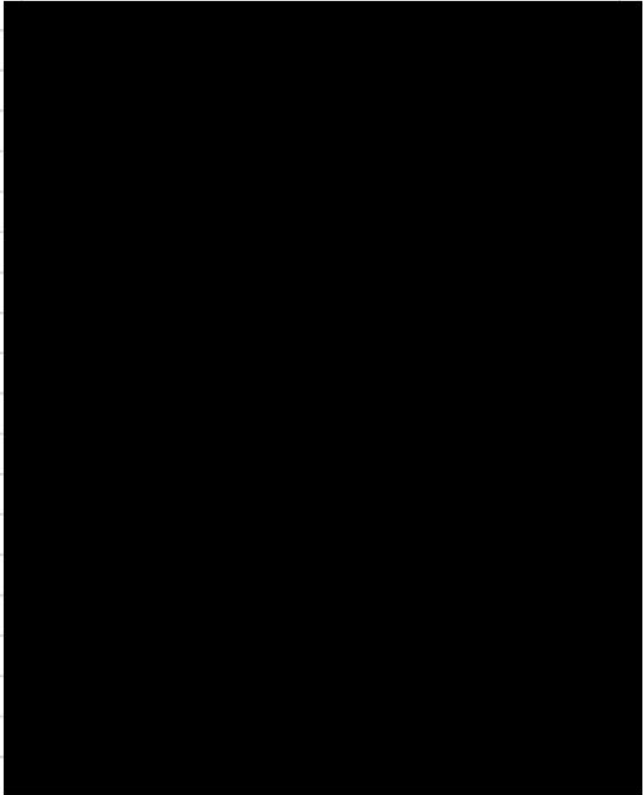
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 6/29/21 from 11am-12pm, Virtual

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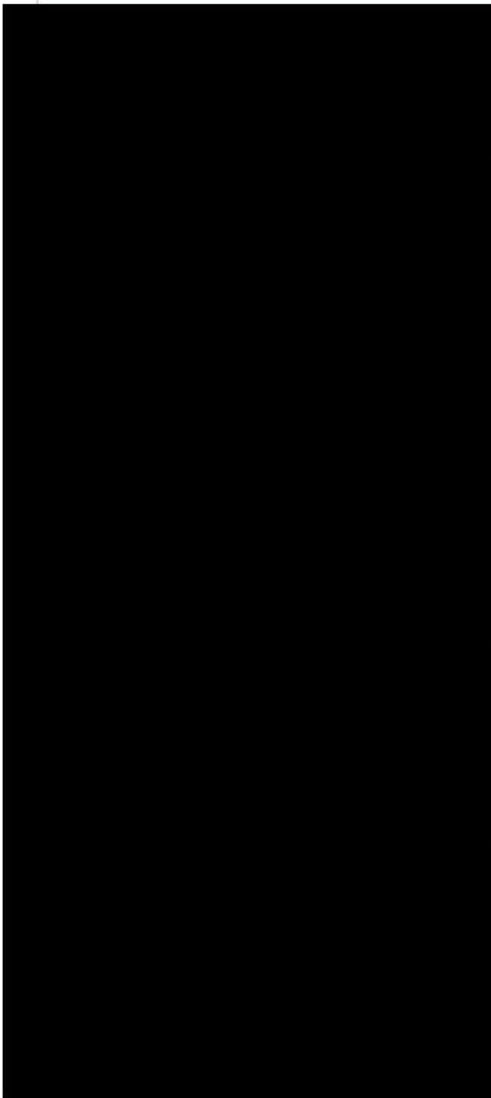
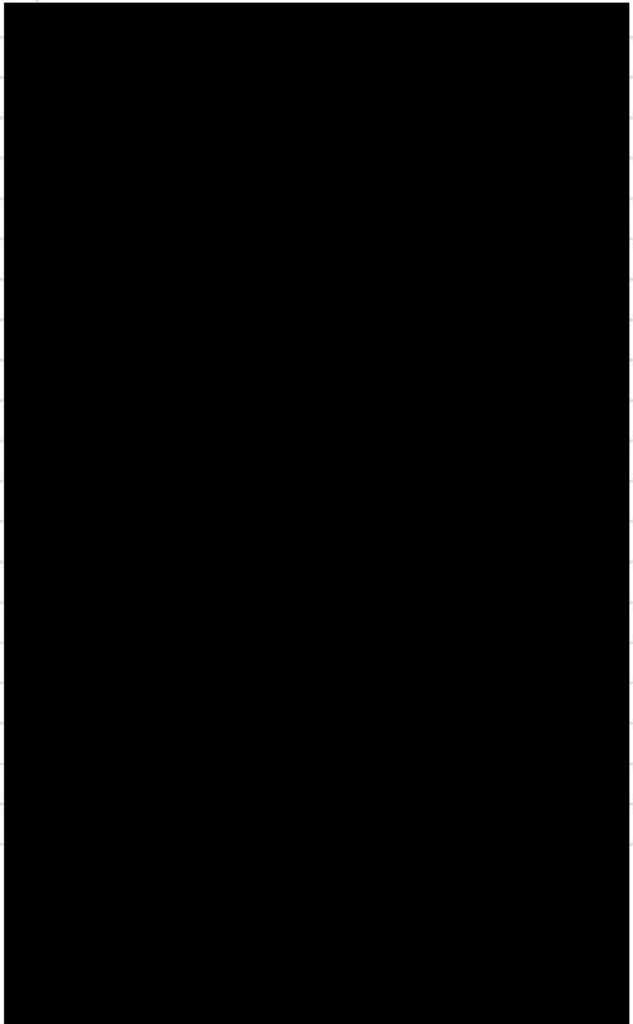
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	CDOT	
PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 7/6/21 from 8:30-9:30am,Virtual

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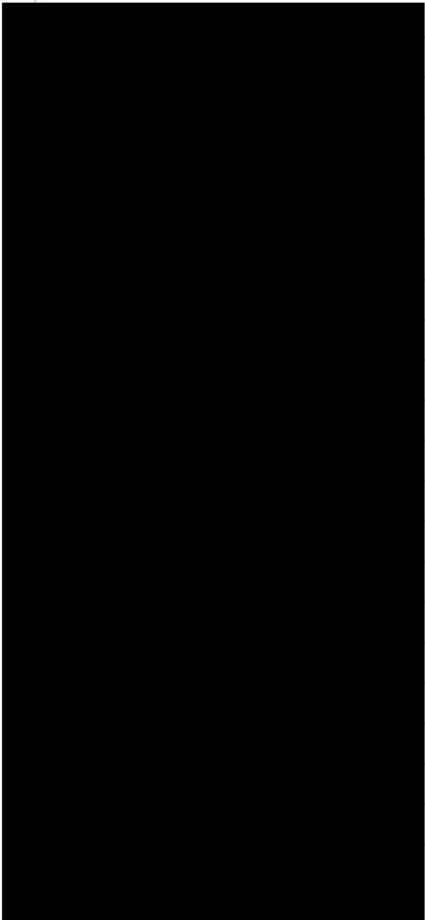

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PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 7/8/21 from 3-4pm, Virtual

Name	Organization	Email
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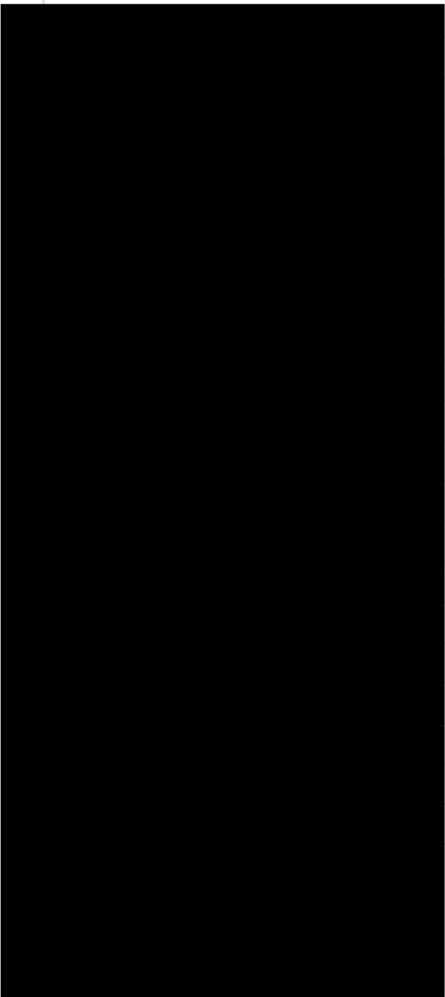
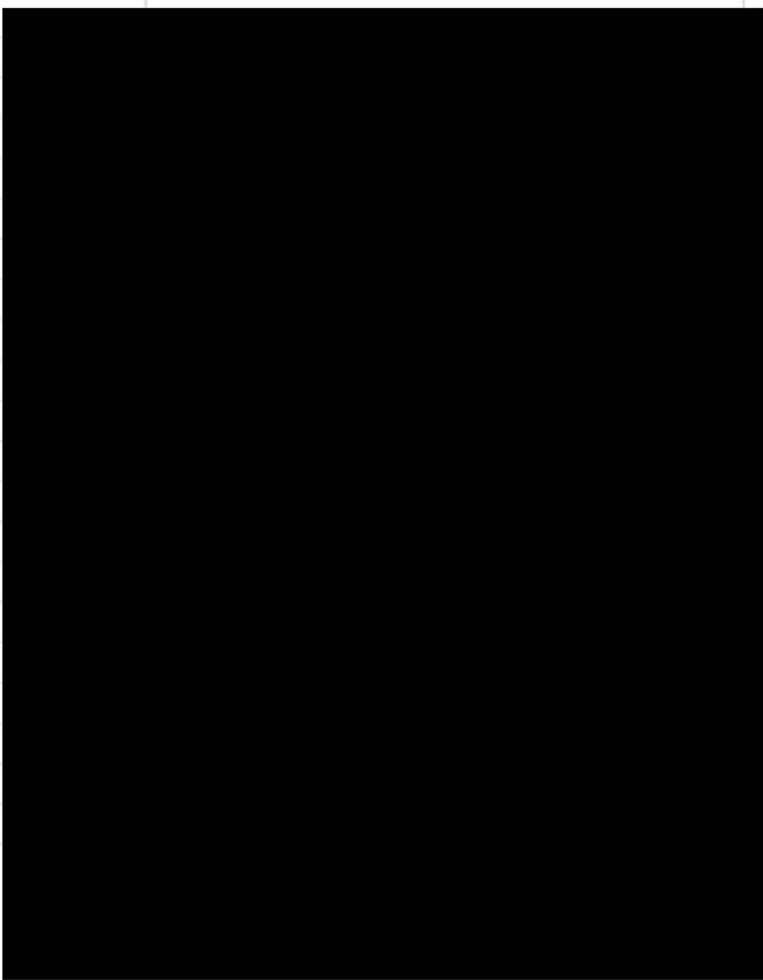
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PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 7/15/21 from 2-3pm, Virtual

Name	Organization	Email
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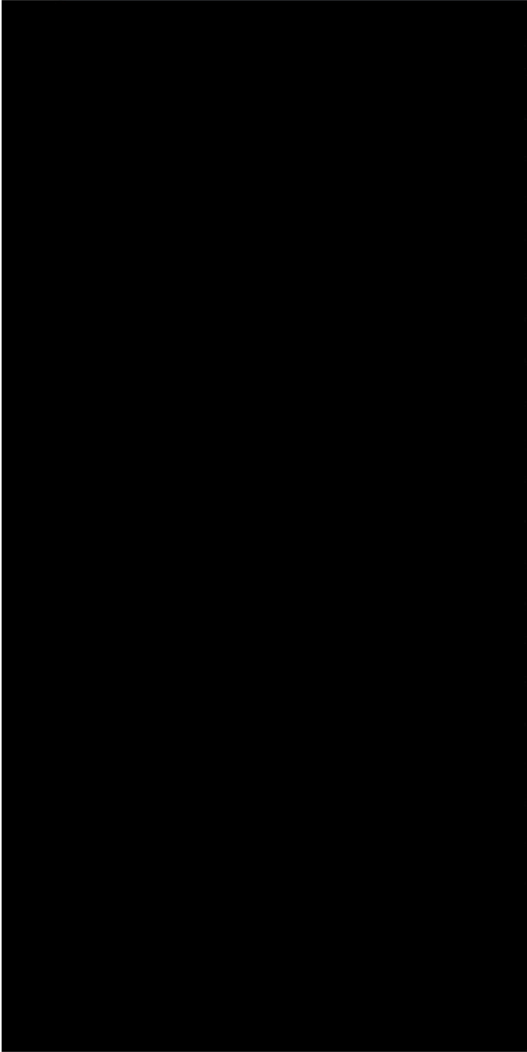
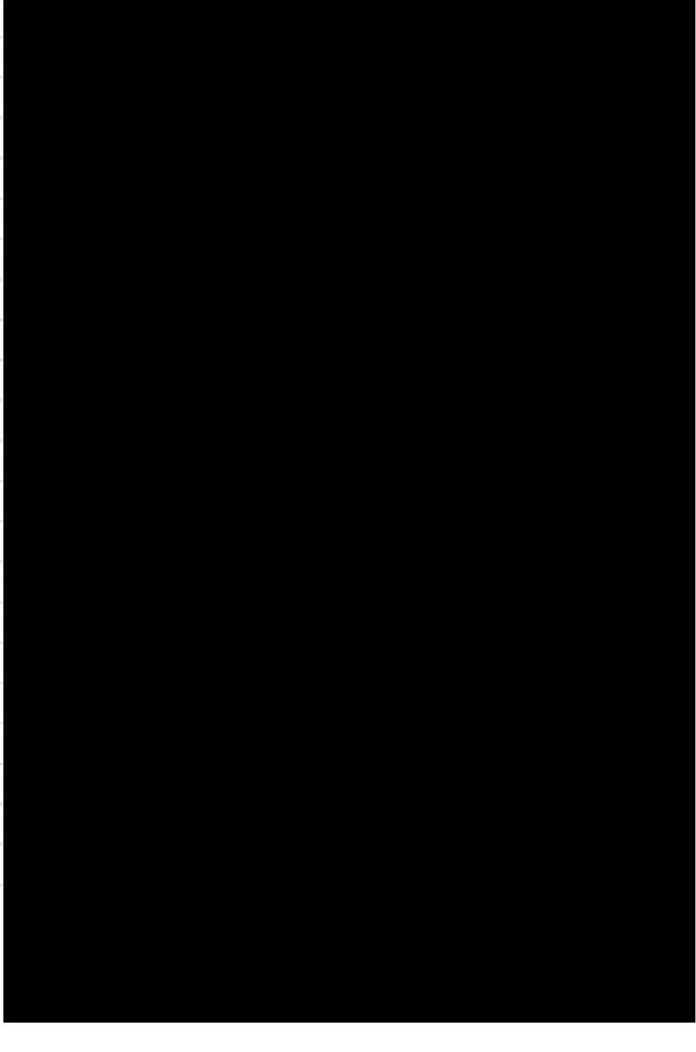
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PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 7/21/21 from 9-10am, Virtual

Name	Organization	Email
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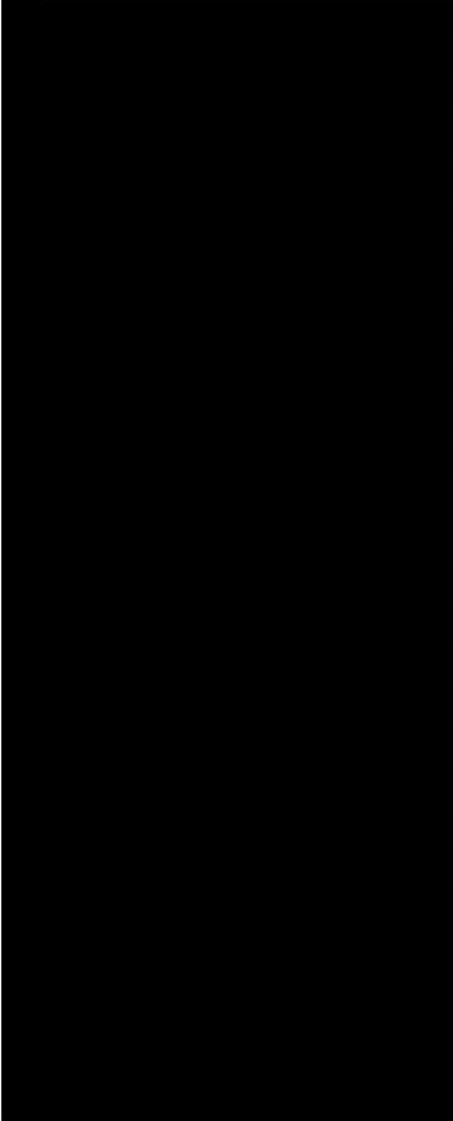
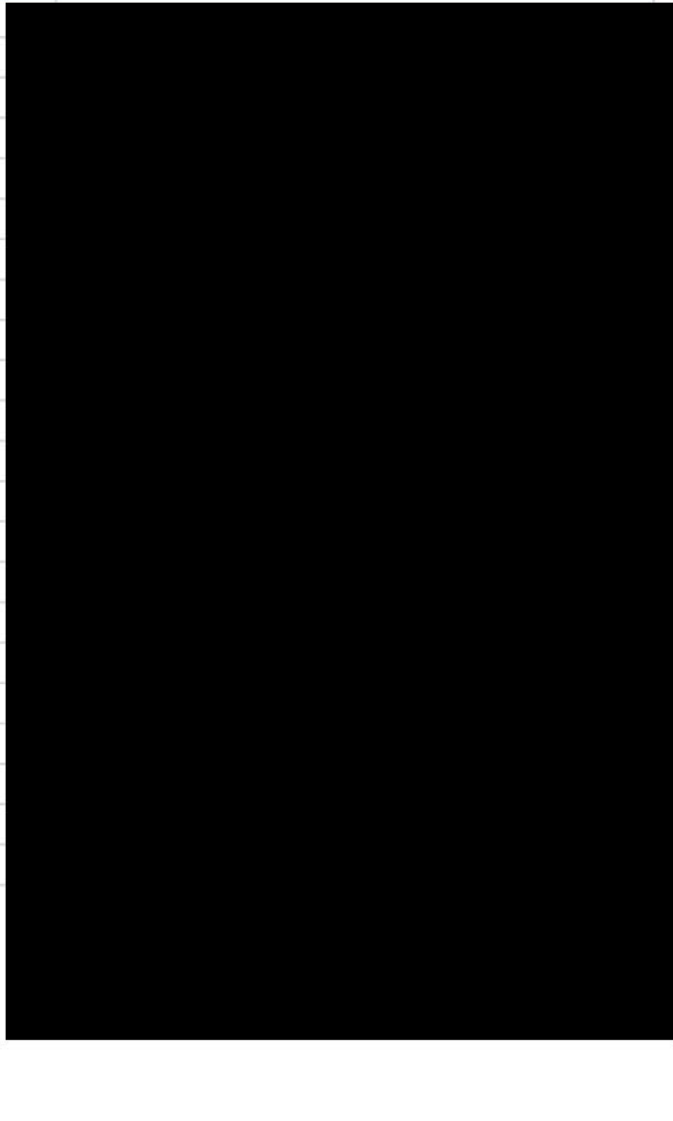
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PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs/ Cambridge Sytematics EERPAT Deep Dive, 7/22/21 from 11am-12pm, Virtual

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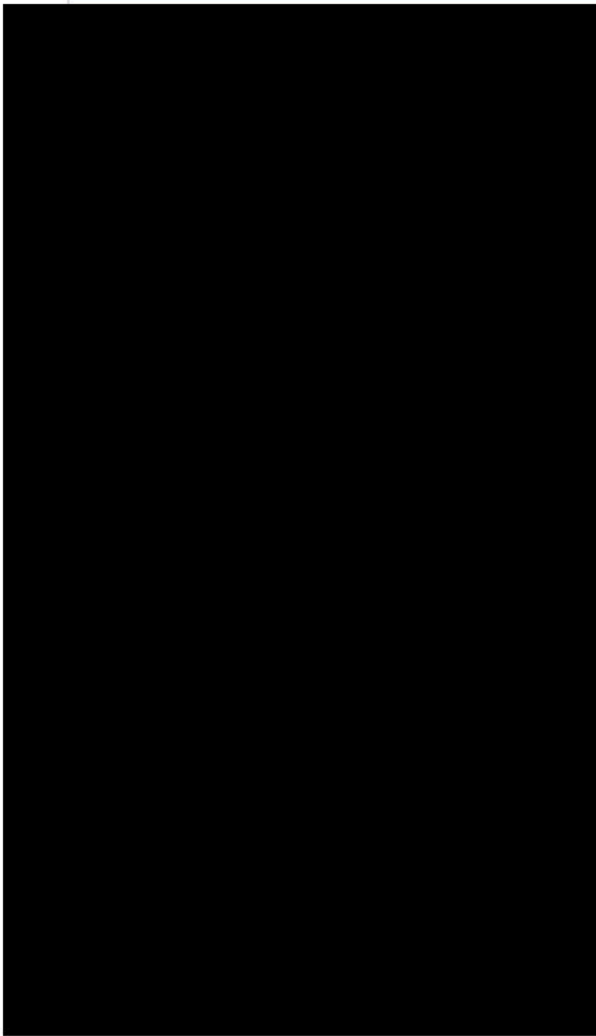
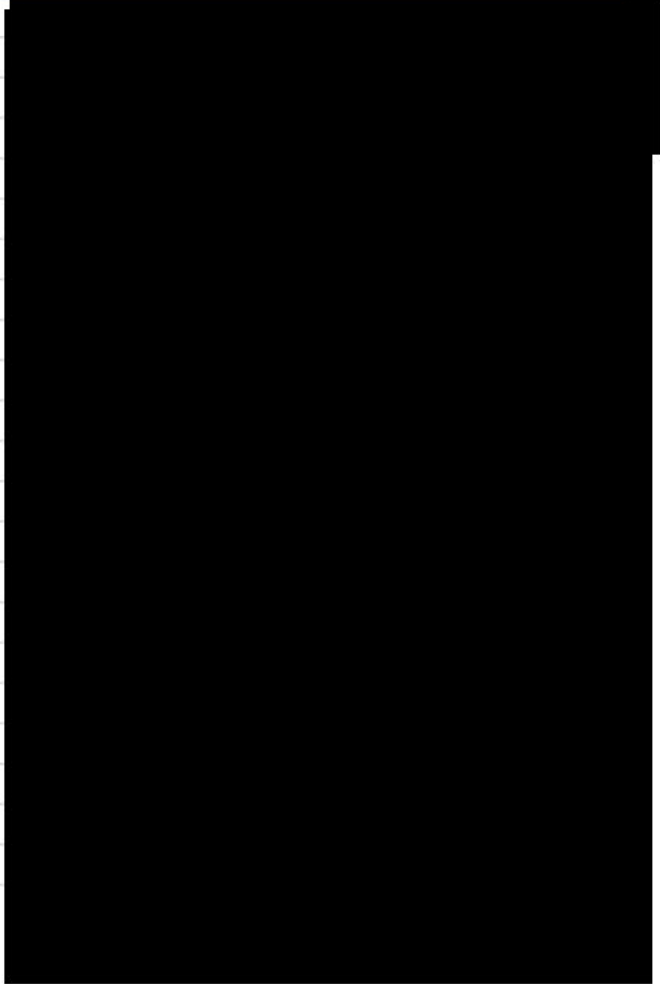
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PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 7/27/21 from 1-2pm, Virtual

Name	Organization	Email
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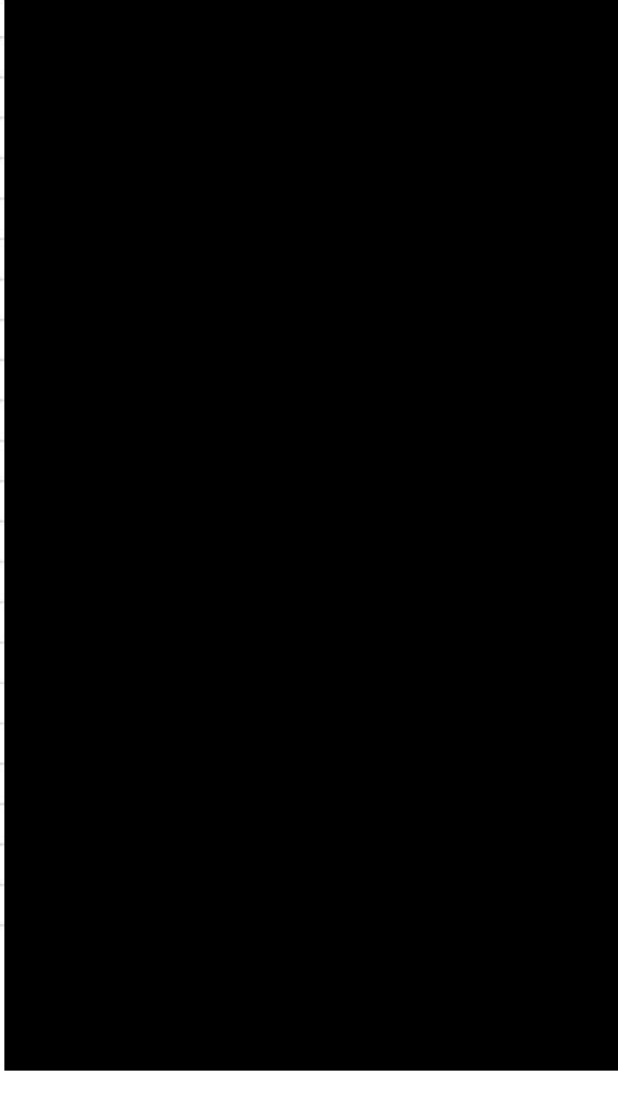
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CDOT		
PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/2/21 from 1-1:30pm, Virtual

Name	Organization	Email
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	CDOT	
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	PPACG	
	Transportation Commissioner	
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	NFRMPO	
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	DRCOG	
	CDOT	
	DRCOG	
NFRMPO		
CDOT		
PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/3/21 from 2-3pm, Virtual

Name	Organization	Email
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[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	GVMPO	[REDACTED]
[REDACTED]	GVMPO	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	DRCOG	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	PACOG	[REDACTED]
[REDACTED]	PPACG	[REDACTED]
[REDACTED]	Transportation Commissioner	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	NFRMPO	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	DRCOG	[REDACTED]
[REDACTED]	DRCOG	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	DRCOG	[REDACTED]
[REDACTED]	NFRMPO	[REDACTED]
[REDACTED]	CDOT	[REDACTED]
[REDACTED]	PPACG	[REDACTED]

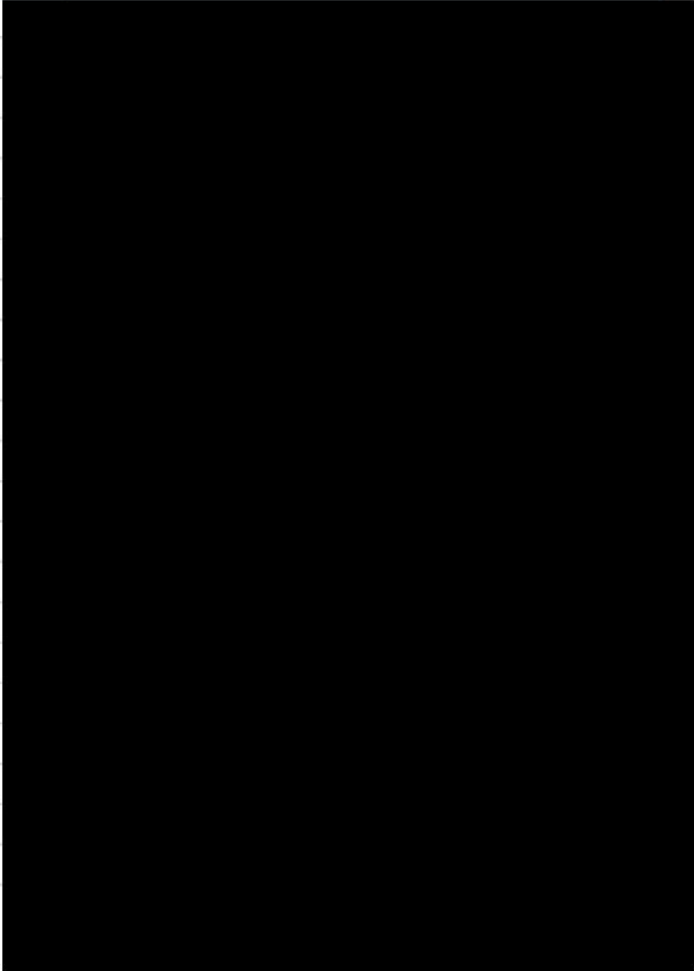
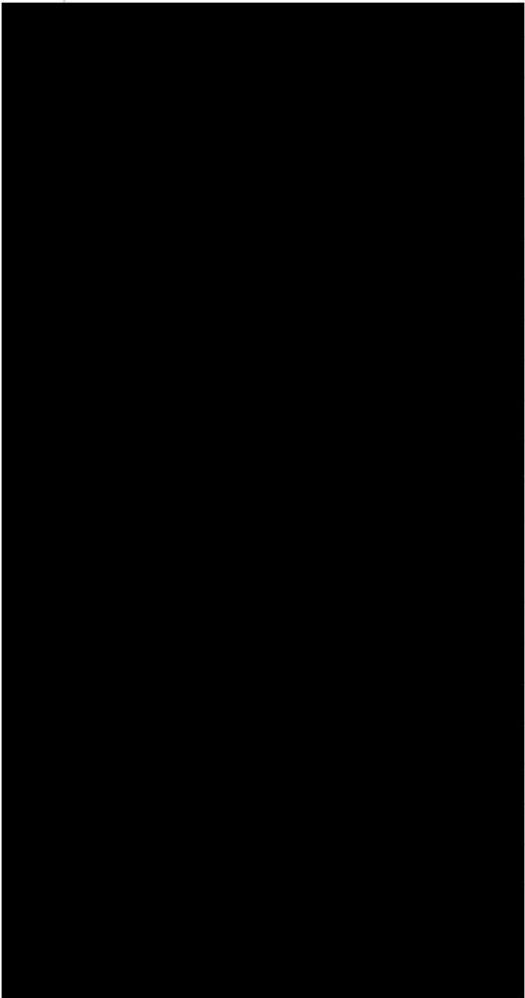
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/4/21 from 2-3:30pm, Virtual

Name	Organization	Email
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CDOT
CDOT
GVMPO
GVMPO
CDOT
CDOT
CDOT
PACOG
PPACG
Transportation Commissioner
CDOT
NFRMPO
CDOT
CDOT
CDOT
DRCOG
DRCOG
CDOT
DRCOG
NFRMPO
CDOT
PPACG



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/6/21 from 3:30-4:30pm, Virtual

Name	Organization	Email
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	GVMPO	
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	GVMPO	
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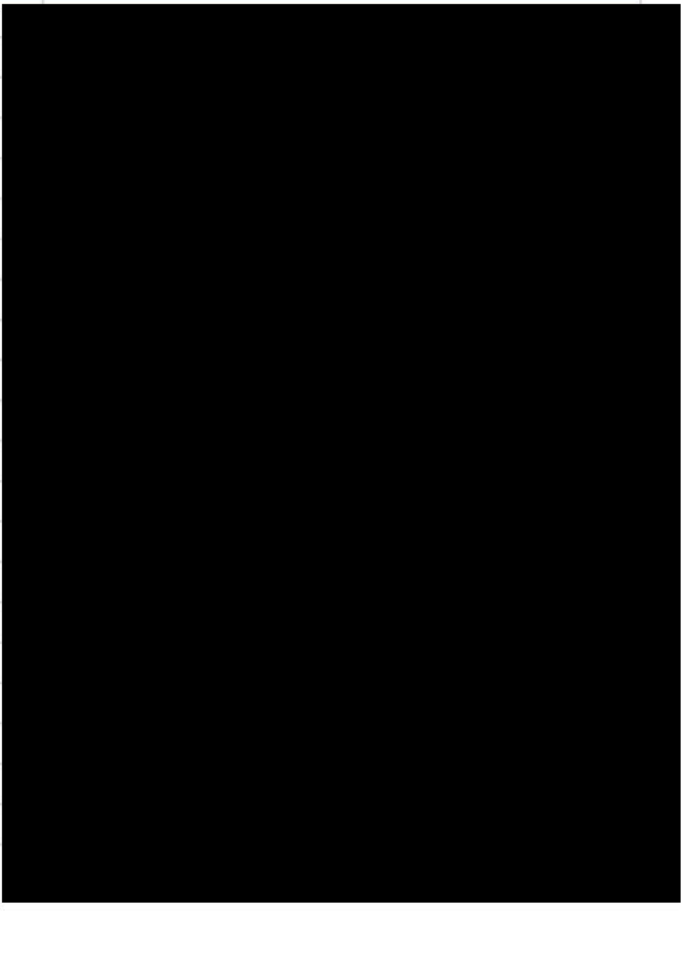
	CDOT	
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/10/21 from 12-1pm, Virtual

Name	Organization	Email
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	CDOT	
	GVMPO	
	GVMPO	
	CDOT	
	CDOT	
	CDOT	
	PACOG	
	PPACG	
	Transportation Commissioner	
	CDOT	
	NFRMPO	
	CDOT	
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	CDOT	
	DRCOG	
	DRCOG	
	CDOT	
	DRCOG	
	NFRMPO	
	CDOT	
PPACG		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

MPO Staff Group

Meeting: CDOT/ MPOs GHG Discussion, 8/11/21 from 8-9am, Virtual

Name	Organization	Email
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CDOT	
GVMPO	
GVMPO	
CDOT	
CDOT	
DRCOG	
CDOT	
PACOG	
PPACG	
Transportation Commissioner	
CDOT	
NFRMPO	
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DRCOG	
DRCOG	
CDOT	
DRCOG	
NFRMPO	
CDOT	
PPACG	



COLORADO

Department of Transportation

Pollution Reduction Planning for Transportation

MPO Briefing - June 29, 2021



CDOT Rulemaking Process

GHG Policy Paper

Major Policy Issues and Outstanding Questions



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: DOT_Rules@state.co.us or at link above
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



Tentative Rulemaking Timeline

Authorize Rulemaking

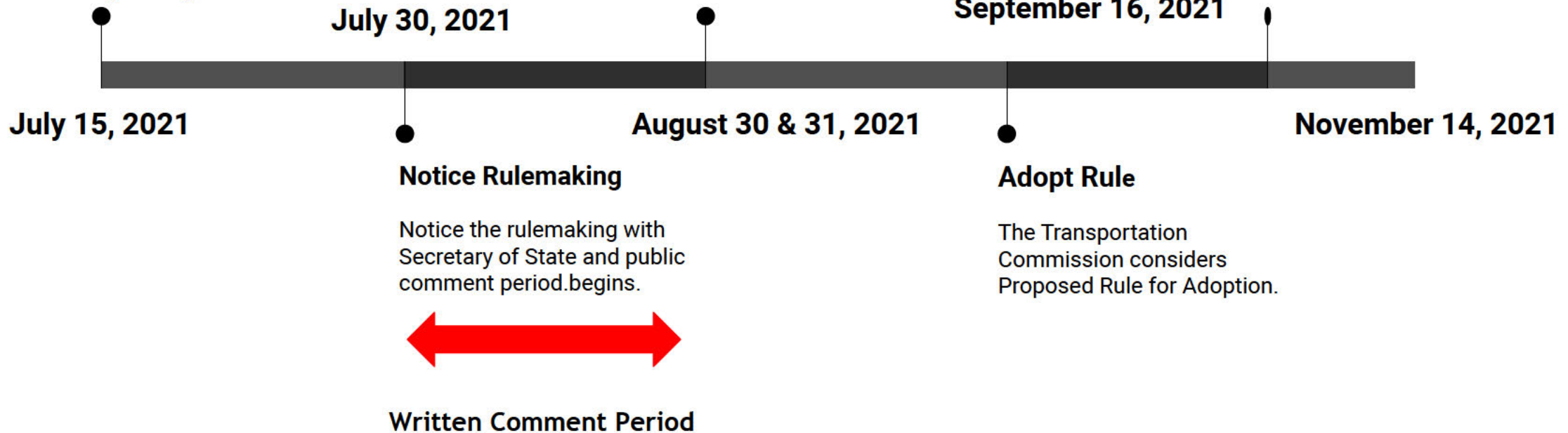
Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





CDOT GHG Policy Paper

- Explains intent of rule and key policy issues
- Builds TC understanding around concept and its intricacies
- Provides initial drafting for rulemaking and format to advance regulatory concepts in a more plain-english format



Major Policy Issues and Outstanding Questions

Practical Implementation

- Role of modeling and mitigations
- How mitigation measures are conducted and approved

Primary Policy Issues

- Determining reduction levels
 - The role of personal choice
 - Magnitude of the reductions
 - VMT
 - Technology
- Enforcement



Future Discussion Topics

- Modeling
 - MPO and Statewide Model consistency
 - Modelling input assumptions
 - Platforms
 - Baseline analysis
 - Modelling outputs and methods for setting budgets
- Changes in vehicle fleet
- Quantifying impact of VMT reductions vs. operational improvements
- Process for public review of mitigation measures
- Enforcement



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GHG Pollution Standard Scenario Discussion

July, 2021



CDOT developed modeling scenarios for two reasons:

- 1) To determine the range of feasible GHG reductions possible through planning-related changes and investments (in short, to determine the GHG reduction levels).

- 1) To prepare the cost benefit analysis required as part of the rulemaking.
 - Section 24-4-103(2.5)(a) of the Administrative Procedures Act (APA)



Tools used for analysis:

- Statewide Travel Model
 - Run using “no build” scenario
- FHWA Energy and Emissions Reduction Policy Analysis Tool (EERPAT)
 - Models policies at the regional level
- MOVES3
 - Conducted by CDPHE
 - Accounts for Colorado-specific factors such as the age of the vehicle fleet, the distribution of VMT by different vehicle types and road types, and the speeds at which vehicles travel.
 - Accounts for EVs displacing relatively more efficient vehicles than the average vehicle in the on-road fleet



Statewide analysis examines bundles of measures that might be implemented to achieve the targets.

3 scenarios (layer cake - building on each level)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use

Additional analysis on light-duty vehicle and bus electrification (separately). Trucks not considered.



3 scenarios (layer cake)

- **Travel choices: measures to reduce SOV commuting by workers, programs that encourage non-work trip reduction, infrastructure investments, and reduced transit fares.**
 - Commuter trip reduction
 - Non-work trip reduction (40% for university, 10% personal business for new broadband households)
 - More sidewalk (1,900 miles new/upgrade by 2030, 4,700 by 2050)
 - More bike (2,500 new lane-miles between 2022-2042, 2,500 protected lane/path)
 - Speed limit reduction on urban arterials (avg 6 mph reduction)
 - Reduce transit fare by 50%*
- Travel choices + Transit
- Travel choices + Transit + Land Use



Travel Choices: Commute Trip Reduction

- Telework (telecommuting): The percentage of workers teleworking at least part-time is increased by a factor of 3, from 6.3 percent to 18.9 percent, compared to baseline levels, reflecting a continuation of trends observed during the COVID pandemic.
- Broadband access grows from 82.6% to 97% of households
- 10% of households in mixed use areas participate in a household based trip reduction program and that these households reduce VMT by 5%



Travel Choices: Bike Improvements

- Build out of bike lanes and paths at ½ mile spacing for the entire urbanized area within Colorado (1,256 square miles) over a 20 year period (2022-2041)
- Corresponds to 5,000 new miles of facility or 250 new miles per year.
 - We maintain a system of state and US highways that spans 9,100 centerline miles
- Split equally between on-street bike lanes and specialized facilities
- Average bike speed increased by 33% to represent electrification

Bicycle Travel Increase From Facility Investment

Year	Baseline BMT (millions)	New Facility- Miles	Additional BMT (millions)	Total BMT (millions)	% Over Base
2030	346	2,250	144	474	37%
2045	405	5,000	320	717	77%



3 scenarios (layer cake)

- Travel choices
- Travel choices + **Transit: Expansion of transit service and bus electrification over time.**
 - 6% annual increase, 2022 - 2030
 - 2% annual increase, 2030 - 2050
 - Total increase by factor of 2.3 by 2050 (more than doubling)
 - Comparison: Vehicle Revenue Miles increased by factor of 1.75 between 2000 and 2019
- Travel choices + Transit + Land Use



In 2019, based on data reported by Colorado's transit operators to the National Transit Database, 81 million vehicle revenue-miles of service were provided by all modes in Colorado's five metro areas.

Assumed transit revenue-miles will increase by 6.0 percent per year between 2022 and 2030 (69 percent total growth between 2019 and 2030), and by 2.0 percent a year between 2030 and 2050 (151 percent total growth between 2019 and 2050) compared to base year (2019) service levels.

This compares with a statewide growth in transit VRM of 2.9 percent annually (76 percent) between 2000 and 2019 (3.1 percent for the Regional Transit District, 1.2 percent average for other operators in the state).



Travel choices + Transit + Land Use

3 scenarios (layer cake)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use: Policy changes and incentives (changes to transportation project selection criteria) to encourage transit-supportive land use and walkable neighborhoods.



- Based on growth of urban mixed use areas defined as areas with a population density of at least 2,000 per square mile and a retail/service job density of at least 500 per square mile.
 - Baseline forecast of growth in mixed-use areas ranges from (between 2023-2030):
 - 10% in NFRMPO to
 - 42% in DRCOG
 - Action assumes (between 2023-2050):
 - 75% in DRCOG
 - 50% in other MPOs



GHG Pollution Reduction Roadmap Re:VMT

“Impacts of COVID-19 on pollution may be large in the near term, but long term effects are unknown..... And while the state is not relying on COVID-19 sensitivity assumptions for purposes of achieving emission reduction targets, it will continue to evaluate how they impact actual emissions trajectories over time and update relevant modeling accordingly.”

“For 2030, the HB 1261 Targets Scenario models a 10% VMT reduction below the levels in the Reference Scenario...The state has embedded this 10% reduction in its projections based on the assumption that shifts in behavior over a meaningful period of time may make this reduced level of VMT sustainable, especially when coupled with supportive policies to help manage driving demand such as affordable housing close to job locations and ensuring that Colorado’s economy remains in the top tier of the nation. This will likely require a suite of policy solutions...(page 63)”



Scenario VMT Reductions

Scenario	2030 (millions of vehicle miles)	2040 (millions of vehicle miles)	2050 (millions of vehicle miles)
Baseline	63,551	71,069	78,587
Reduction Range from Modelled Scenarios	5,800-6900	6,100-8,300	6,100-9800



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

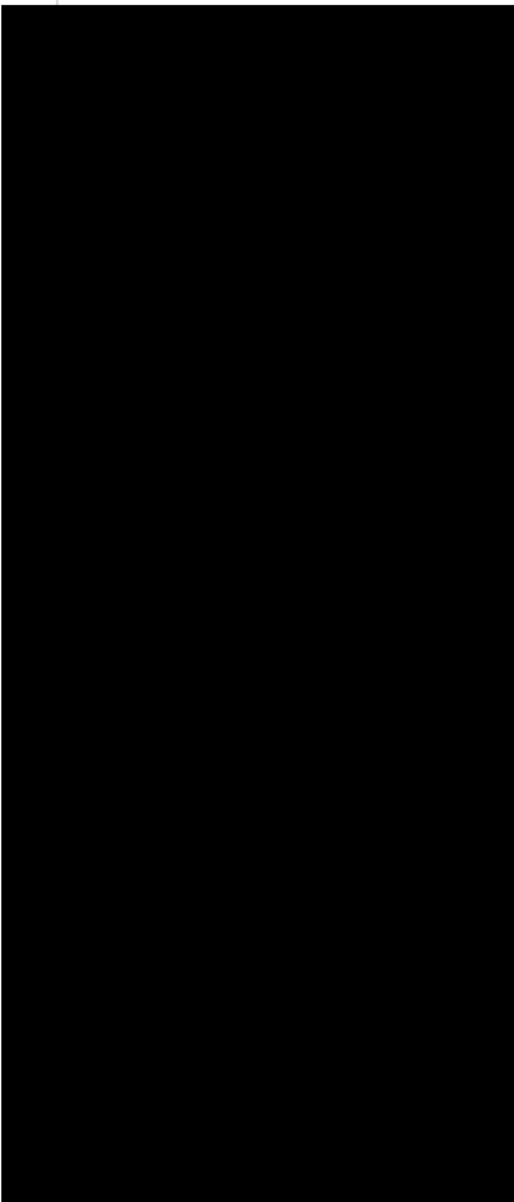
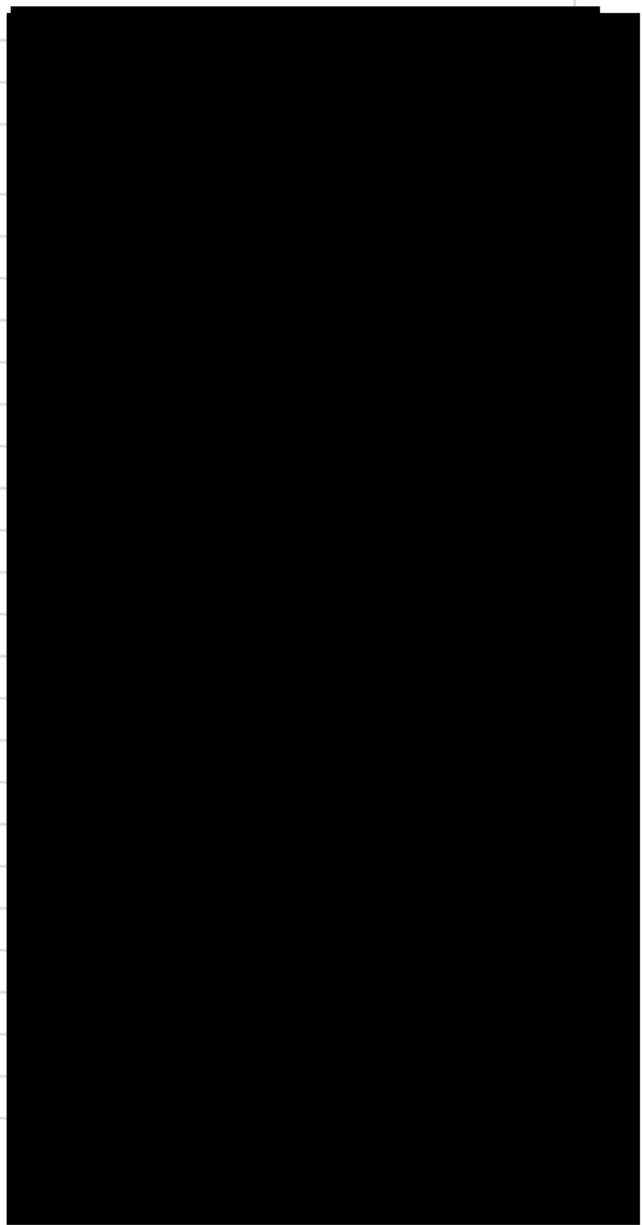
Equity Group Meetings

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions							
Equity Group							
Equity Group Meetings							
Date	Time	Location					
3/5/21	12:30-2pm	Virtual					
4/14/21	1-2:30pm	Virtual					
8/5/21	10-11:30am	Virtual					

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Equity Groups

Meeting: March 5, 2021 from 12:30-2pm, Virtual

Name	Organization	Email
	Western Colorado University	
	GRID Alternatives Colorado	
	Natural Resource Defense Council	
	Colorado Latino Leadership, Advocacy, and Research Organization	
	Colorado Department of Public Health and Environment	
	Globeville Elyria-Swansea Coalition	
	Wilderness Workshop	
	RTD Denver	
	City of Longmont	
	Ground Work Colorado	
	Colorado Department of Public Health and Environment	
	Boulder County (OSCAR)	
	EPA Region 8	
	Mile High Connects	
	Green Latios	
	Northeast Transportation Connections	
	City of Longmont	
	The Wilderness Society	
	Colorado Fiscal Institute	
	Sierra Club Colorado	
Ground Work Colorado		
Western Plains District Church of the Brethran		
Conservation Colorado		
Regional Air Quality Council		
Cappelli Consulting		
Colorado School of Public Health		

	Commerce City
	Colorado Department of Public Health and Environment
	Energy Outreach Colorado
	Colorado People's Alliance
	Colorado Energy Office
	Colorado Dept. of Natural Resources
	Southwest Energy
	Spirit of the Sun
	Colorado Department of Public Health and Environment
	Mi Familia Vota
	Boulder County
	Moms Clean Air Force
	City and County of Denver
	Healthier Colorado
	State Conference National Association for the Advancement of Colored People
	Colorado Department of Public Health and Environment
	Colorado Department of Labor and Employment
	Govenor's Office

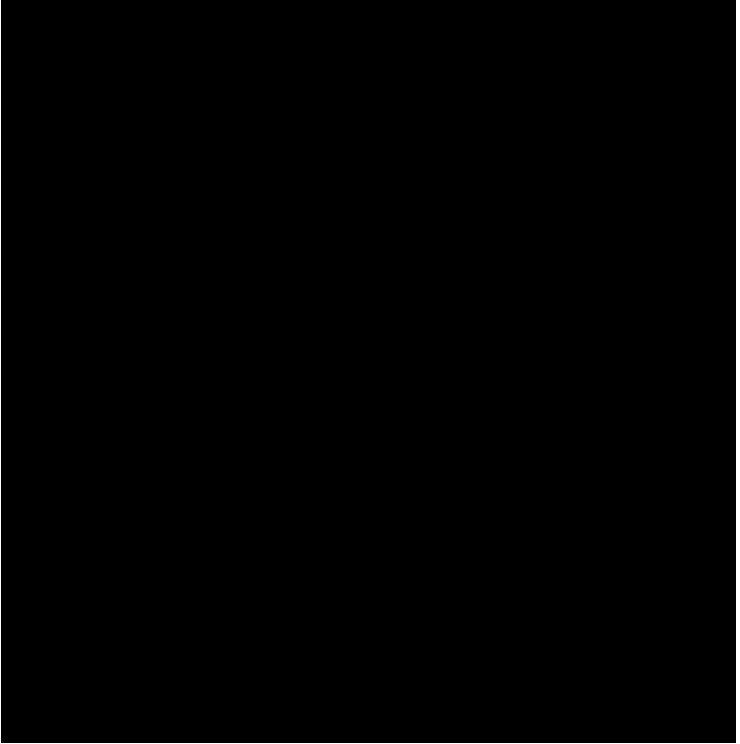
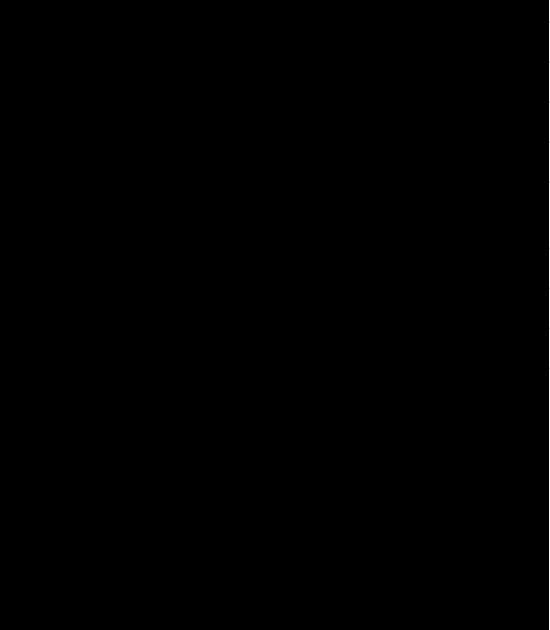
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Equity Groups

Meeting: April 14, 2021 from 1-2:30pm, Virtual

Name	Organization	Email
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	Western Colorado University	
	CDOT	
	GRID Alternatives Colorado	
	Natural Resource Defense Council	
	Colorado Latino Leadership, Advocacy, and Research Organization	
	Globeville Elyria-Swansea Coalition	
	Wilderness Workshop	
	City of Longmont	
	Ground Work Colorado	
	Colorado Department of Public Health and Environment	
	EPA Region 8	
	Mile High Connects	
	Green Latios	
	The Wilderness Society	
	Colorado Fiscal Institute	
	Sierra Club Colorado	
	Cappelli Consulting	
	Colorado School of Public Health	
	CDOT	
	Commerce City	
	Colorado Department of Public Health and Environment	
	Colorado People's Alliance	
	Southwest Energy	
	CDOT	
	Spirit of the Sun	
Colorado Department of Public Health and Environment		
Mi Familia Vota		



Boulder County
Moms Clean Air Force
City and County of Denver
Healthier Colorado
State Conference National Association for the Advancement of Colored People
Colorado Department of Public Health and Environment
CDOT
Colorado Department of Public Health and Environment

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Equity Groups

Meeting: August 5, 2021 from 10-11:30, Virtual

Name	Organization	Email
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	Western Colorado University	
	GRID Alternatives Colorado	
	Natural Resource Defense Council	
	Colorado Latino Leadership, Advocacy, and Research Organization	
	Globeville Elyria-Swansea Coalition	
	CDPHE	
	Wilderness Workshop	
	RTD	
	City of Longmont	
	Ground Work Colorado	
	Colorado Department of Public Health and Environment	
	Boulder County	
	EPA Region 8	
	Mile High Connects	
	Green Latios	
	Northeast Transportation Connections	
	City of Longmont	
	The Wilderness Society	
	Colorado Fiscal Institute	
	Sierra Club Colorado	
	Conservation Colorado	
	Groundwork Colorado	
	Conservation Colorado	
	RAQC	
CDPHE		
Cappelli Consulting		

Colorado School of Public Health
Conservation Colorado
Columbia University
Commerce City
Colorado Department of Public Health and Environment
Energy Outreach Colorado
Colorado People's Alliance
CEO
DNR
Southwest Energy
Conejos Clean Water
CDOT
Spirit of the Sun
RMI
Mi Familia Vota
Boulder County
Moms Clean Air Force
Healthier Colorado
State Conference National Association for the Advancement of Colored People
CDOT
Colorado Department of Labor and Employment



STATE OF COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Response Needed: Equity Priorities for State Transportation GHG Rulemaking (meeting #2)

Fri, Mar 19, 2021 at 4:00 PM

TO: [Redacted email recipient list]

Hi Everyone,

Thank you again to those of you who were able to participate in the first brainstorming session on equity considerations of upcoming state transportation greenhouse gas reduction rules. You all had some wonderful ideas to share and we're so grateful for your input! The notes from that meeting are attached (let me know if you have any corrections/additions). Thank you to Natalie Shishido with CDOT for taking notes and summarizing the great Jam Board ideas.

Please complete this Doodle poll by Wednesday, March 24th to help us schedule the second discussion and we'll be in touch soon with more details.

Have a wonderful weekend!
Lauren

Lauren McDonell
Climate Change Outreach Planner



COLORADO
Air Pollution Control Division
Department of Public Health & Environment

Phone: (303) 692-6461
lauren.mcdonell@state.co.us



COLORADO

Department of Transportation

Equity Discussion:
GHG Pollution Standard For Transportation
Planning
Equity Organizations- August 2021



1. Update on SB260 Implementation
1. Review equity priorities that we heard voiced in our March and April meetings (held jointly with CDPHE)
1. Provide an update on the timeline, Transportation Commission rulemaking process, and upcoming public Rulemaking Hearings
1. Listen to your ideas and feedback



SB260 Background and Update

SB260 is transformative legislation for Colorado and our transportation system for reasons beyond providing new, stable transportation funding.

- Requires creation of an Environmental Justice Branch within CDOT.
- Creates a dedicated funding source “to serve the primary business purpose of mitigating the environmental and health impacts of increased air pollution from motor vehicle emissions in nonattainment areas.” Allocates \$183M over next 10 years.
- Requires CDOT to review, update and improve its public engagement program for transportation projects to “promote transparency and increase public participation and public confidence in project selection, planning and implementation”
- Establishes new requirements for how transportation projects are selected, studied and constructed with the intent to “minimize the adverse environmental and health impacts and address inequitable distribution of the burdens of such projects.”



SB260 Background and Update

- Requires establishment of a Environmental Justice Branch within CDOT.
 - CDOT will post position to hire executive-level head of this office later this month.
- Creates a dedicated funding source “to serve the primary business purpose of mitigating the environmental and health impacts of increased air pollution from motor vehicle emissions in nonattainment areas.” Allocates \$183M over next 10 years.
 - Legislation requires governing board to be established by October 2021. First year of funding becomes available in FY23.
- Requires CDOT to review, update and improve its public engagement program for transportation projects to “promote transparency and increase public participation and public confidence in project selection, planning and implementation”
 - Initial focus of EJ Branch to review current engagement strategies and recommend improvements.
- Establishes new requirements for both how transportation projects are selected, studied and constructed with the intent to “minimize the adverse environmental and health impacts and address inequitable distribution of the burdens of such projects.”
 - GHG Rulemaking (today’s focus) is one requirement within this section of the legislation.
 - CDOT has begun work to amend our policies to incorporate these requirements and is immediately implementing these changes on I-270 environmental study.



I-270 Air Quality Monitoring

CURRENTLY

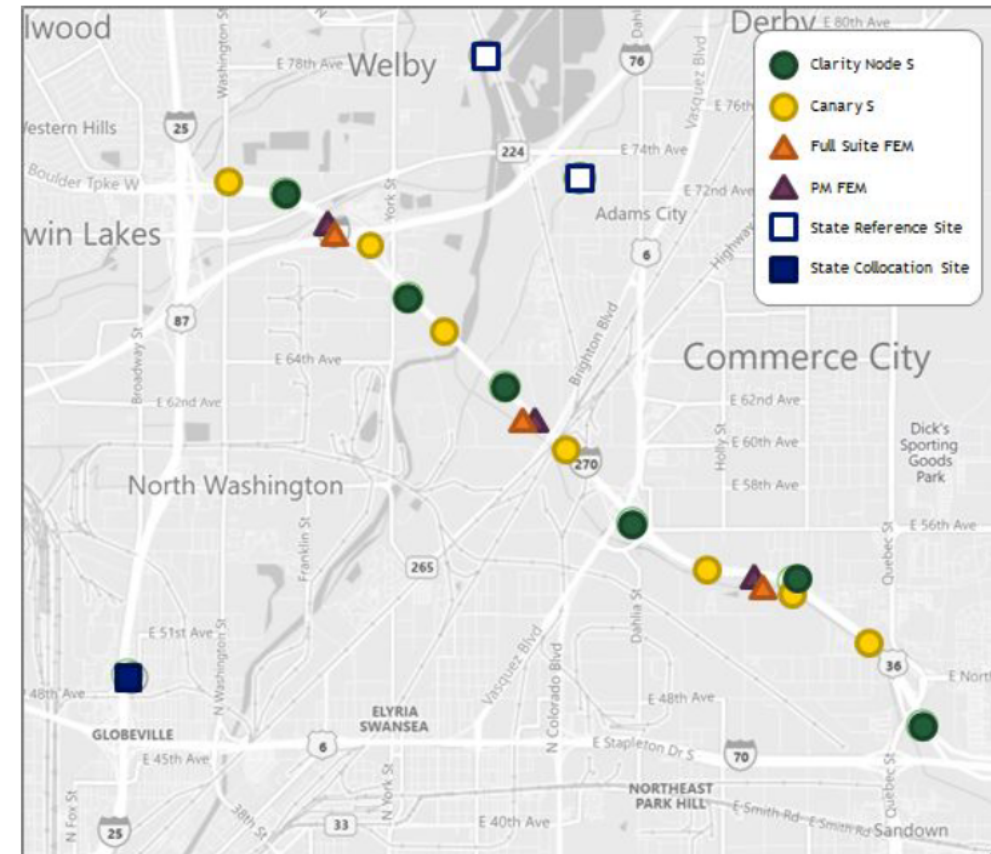
- 12 monitors in place and being calibrated

NEAR FUTURE ADD

- 3 additional stations to be deployed along I-270 next month. Including TSI DustTrak (PM 1, PM2.5, PM10) and Met.

COMMUNITY ACCESSIBILITY TO DATA

- Monitoring results will be posted on the “Love My Air” app/website-- a citywide air quality (AQ) monitoring network that provides real-time air quality data



notional setup during construction phase



Equity Requirements Beyond SB260

CDOT realizes that there are requirements and state commitments beyond SB260, including HB1266 and the Climate Equity Framework.

We also realize that today's meeting (and earlier meetings held by CDPHE) are just a part of what is needed to meet the full intent of these requirements.



GHG Rulemaking

Greenhouse Gas Roadmap

Reduce pollution ~12.7 million tons (MMT) by 2030

**6 MMT
reduction**


Low and Zero Emission Vehicle rules

**2 MMT
reduction**

Utility and public investment in fleet turnover and infrastructure for light-duty zero emission vehicles (SB19-077, electrification investments from SB21-260)

Collectively, the other strategies will target remaining 4.7 million tons

**4.7 MMT
reduction**

GHG Pollution Standards for transportation plans 	In progress - CDOT TC Rulemaking - Summer 2021
Incentivize land use to increase housing near jobs and reduce VMT and pollution	Under evaluation
Clean trucking strategy - infrastructure, fleet incentives, consider regulatory tools such as advanced clean trucks and fleet rules	In progress - Study to be Completed - Summer 2021 Stakeholder Engagement - Summer/Fall 2021; plus fleet investments from SB21-260
Participate in developing post 2025 vehicle standards (state and federal)	Federal and CARB processes
AQCC evaluation of indirect source rules	Pending - AQCC Rulemaking
Expansion of public transit, including setting the stage for Front Range Rail	In progress - SB21-238, on-going multimodal emphasis



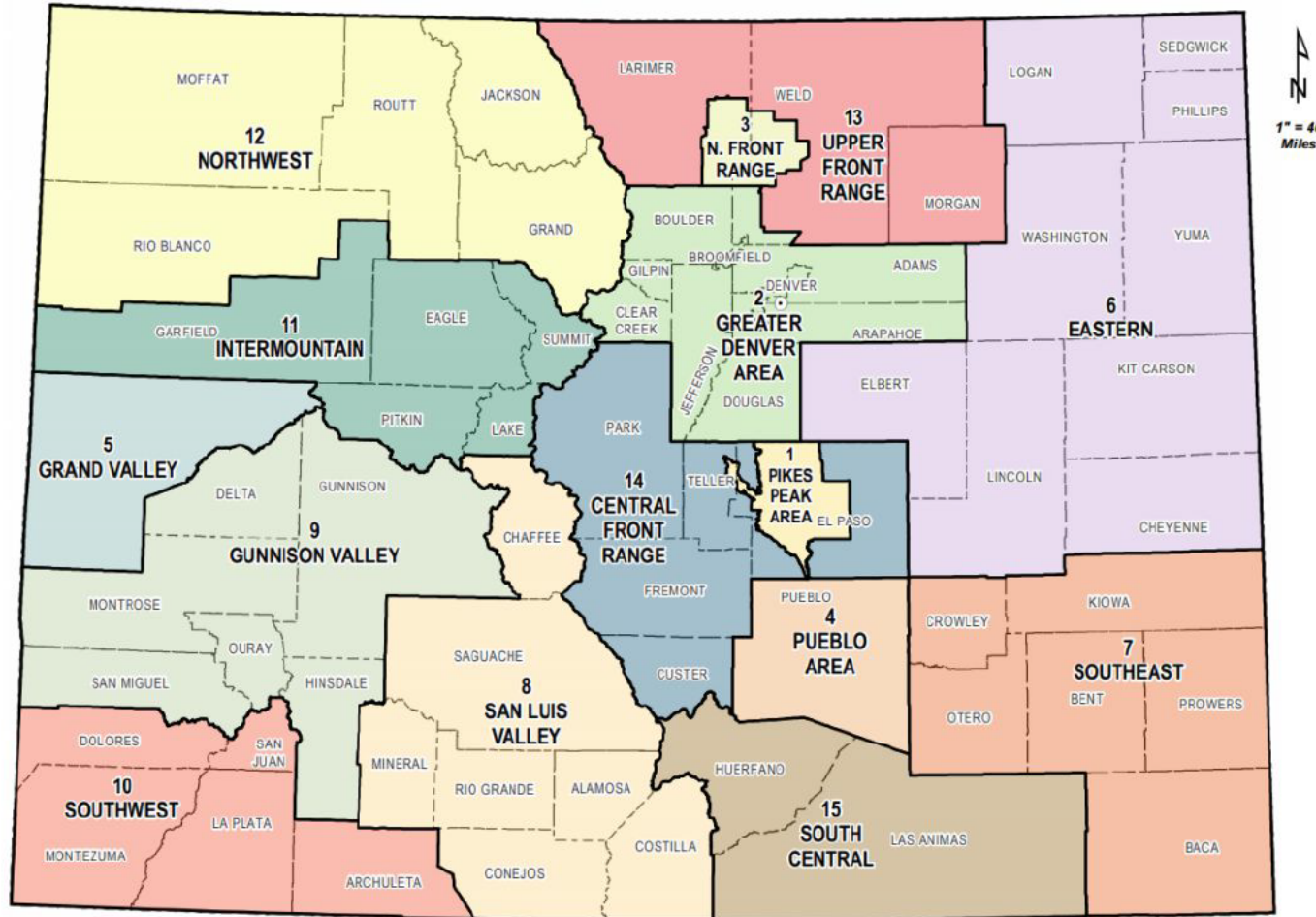


GHG Planning Rulemaking: Concept & Approach

- Rulemaking responds to both the GHG Roadmap and SB260
- Overall premise is that the transportation projects we build, combined with the emissions of vehicles themselves, influences driving patterns and ultimately GHG pollution
- Rule would set a GHG “pollution reduction level” for transportation plans
- Basic premise similar to Clean Air Act “conformity” for ozone in Colorado
- Requirements would apply to CDOT and Metropolitan Planning Organizations (the state’s primary transportation planning agencies)



MPO Areas



There are five metropolitan areas in Colorado:

- Denver Regional Council of Governments
- North Front Range Metropolitan Planning Organization
- Pikes Peak Area Council of Governments
- Pueblo Area Council of Governments
- Grand Valley Metropolitan Planning Organization



GHG Mitigation Measures

- If CDOT and MPO plans are determined to be out of compliance with established GHG pollution reduction planning targets, they will have the opportunity to utilize approved mitigations to offset emissions and achieve progress towards compliance.
- CDOT and MPOs would “select” strategies from a pre-approved list. The approved mitigations list will quantify approximate emissions offsets (possibly in the form of a score). Those emissions credits, pursuant to the pre-approved list, may then be applied to reduce the balance of GHG in modeling a transportation plan.
- Prior to each planning cycle, CDOT shall provide updating scoring methodology for the mitigation list, which shall be applicable during the subsequent planning cycle.
- **The specifics of these measures, including the list and the GHG reductions will achieve will be established through a separate policy to come after the rulemaking.**



Recent Progress

- Rulemaking transitioned to CDOT and its Transportation Commission. Will be conducted under the Administrative Procedures Act guidelines
- The Transportation Commission authorized rulemaking to proceed at July 2021 meeting
- Conducted scenario analysis of aggressive but feasible GHG reductions possible through transportation planning decisions
- CDOT team is working to draft rule language within the context of a complicated transportation planning process with long standing state and federal requirements



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

Authorize Rulemaking

Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.



Notice Rulemaking

Notice the rulemaking with Secretary of State and public comment period begins.

Rulemaking Hearings

Opportunity for Public Testimony

November 18, 2021

Adopt Rule

The Transportation Commission considers Proposed Rule for Adoption.

Rule Effective

Rule becomes effective.



60 Day Written Comment Period Starts 8/13 and Ends 10/12

**Hearings may be held on or after September 14, 2021. Hearings to be a mix of virtual/in-person and held in multiple locations around the state.*



Previous Meetings: Input

CDPHE led meetings with equity groups

- March 5, 2021
- April 14, 2021

Equity Considerations: GHG Pollution Standards

Analyze high idling zones and vehicles in DI communities and create policy and plans to shift idling vehicles away from high emission communities

What does it mean for this policy to be "equitable"?

Promote equitable TOD (transit oriented development)

Creating an authentic community mobility needs assessment for each DI community to voice transportation needs

Focus on the highest polluting sources, not JUST GHGs but also other pollutants where they impact people locally. Focus on

nonattainment fund

Induced demand modeling in other states has been unreliable in predicting unintended consequences from latent demand

Education, education, education and meeting people where they are.

How do we work with local governments AND DI communities together on land use incentives to support transit-oriented development and more walkable communities?

Will the equity screening tool and rule be used to not only not cause more harm but also advance equity in pollution reductions?

Minimize or eliminate framing roadway or intersection expansion to be considered a mitigation.

Vertical green walls (vines and other native species) along major roads to help filter vehicle emission near trails and neighborhoods

using watering trucks to water vegetation along median of major roads IF watering infrastructure is "impossible" or not feasible, can also use grey water

Unclear how budgets will require traffic reductions in already affected DI areas

Better understand the current stressors & how climate will interact with them long term

Where does the emphasis on equitable access in multi-modal projects in the CDOT and MPO planning process come in? It's not apparent in either GHG standard or ERTTP topic.

Insurance and risk, great to get folks out of cars but if they fall off a scooter what happens then.

electric bikes, electric car sharing

nonattainment fund

Nonattainment Fund

Trees for shade along major roads like Federal Blvd

2nd the tree-incorporate more permeable surfaces

How can we we apply an lens to the project-level evaluation? What form of accountability to individual communities there be?

Study Process

Consider intersectionality of the impacts of climate change that might fall outside of greenhouse gas and air quality but are impacting communities in different ways (e.g. access to water)

There are concerns that lack of "compliance" will lead to funding cuts, which could reduce programs and benefits to disproportionately impacted communities.

Going beyond GHGs - how can CDOT incorporate the co-benefits of transportation projects like air quality, affordability, mobility access, public health, into their project selection process?

Indigenous knowledge of the biosphere is and can be key here with mycelium for water retention in soil and so many ways to clean and protect the land for sustainable transportation efforts with community.

How do we apply a climate equity lens to the transportation planning process? Do we require a certain percentage of projects to provide direct benefits for disproportionately impacted communities, like Denver 2A's 50%?

plans to encourage walking and biking (like investing in bike lanes, sidewalks, beautifying streets, etc.)

How do we make sure projects in the 10 Year Plan actually decrease GHGs, so more investment in projects that generate multimodal trips and less in traffic signal improvements that reduce idling, but increase VMT?



Examples of GHG Mitigation Measures

Mitigation measures will include projects or strategies that are not “regionally significant” and thus would not be modeled as part of the plan.

The addition of transit resources in a manner that can displace vehicle miles traveled.

Improving pedestrian and bike access, particularly in areas that allow citizens to shift multiple daily trips for everything from work to dining to retail.

Encouraging transportation projects that facilitate or incentivize more efficient forms of vertical development that integrate mixed use facilities in an equitable manner.

Incorporating local zoning plans into the plan that will increase density of housing proximate to transit and multi-use facilities.

Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.

Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the Americans with Disabilities Act.

Adopting locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.

Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure -- as well as upgrading commensurate grid improvements -- into the design of key freight routes to accelerate truck electrification.

Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction, especially in disproportionately impacted neighborhoods.



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: DOT_Rules@state.co.us or at link above
- Multiple Opportunities for Public Comment (5 public hearings planned)
- Current schedule: Draft rule published in mid-August; hearings must be scheduled no earlier than 20 days later.



Rulemaking Hearings

At least 5 public Rulemaking Hearings across the state in September:

- Virtual and in-person option
 - Denver
 - Fort Collins
 - Colorado Springs
 - Durango
 - Glenwood Springs
- Overview of rule concepts
- Opportunity for public testimony
- Spanish interpretation offered

Community Engagement Ideas

Engage with CDOT and prepare to apply for funding and drive opportunities for paid participation into DI communities to support this work

Community translators - See East Colfax Community Collective

Nonattainment Fund

Hearings or opportunities to meaningfully participate *not during traditional working hours.

Start with some loose categories of strategies to seed the conversation so people have some place to start providing input.

I've received feedback locally saying that some folks don't know how to use many online tools like Zoom and therefore, they find giving feedback/input difficult or impossible. Maybe we need to provide some basic tech training to encourage more participation.

give them what they want- comfortable place (with shade) to wait for the bus, safe bike lanes protected/divided from streets, cleaner air quality through increased vegetation

Nonattainment Fund

second the tech training- maybe provide small tech training & honorarium grants to orgs/nonprofits rooted in & working with community

Translation of materials as well as interpretation

Spanish translation for full hearings, not just translation for testimony

Give examples and options for what CDOT, CDPHE, AQCC can do legally so that people know what's possible to get done. Don't assume that people have any background in the subject.

Create a 'road show' with materials like flyers, yard signs and have a hotline people can call. That can help our organizations do more outreach

Leverage existing mailers that municipalities/other stakeholders are already sending to residents & partner with them to spread the word and get to scale

Start with some loose categories of strategies to seed the conversation so people have some place to start providing input.

an educational webinar on how to engage, how the rulemaking process works, what authorities CDOT, CDPHE, AQCC has how to request for rulemaking, ...

Rural communities - how are we engaging them?

ally/ accomplices training and intercultural training

Use Facebook, What's App!



Questions?

How Can We Do This Better?

Concerns?

How will feedback be incorporated into final rule?



COLORADO

Department of Transportation

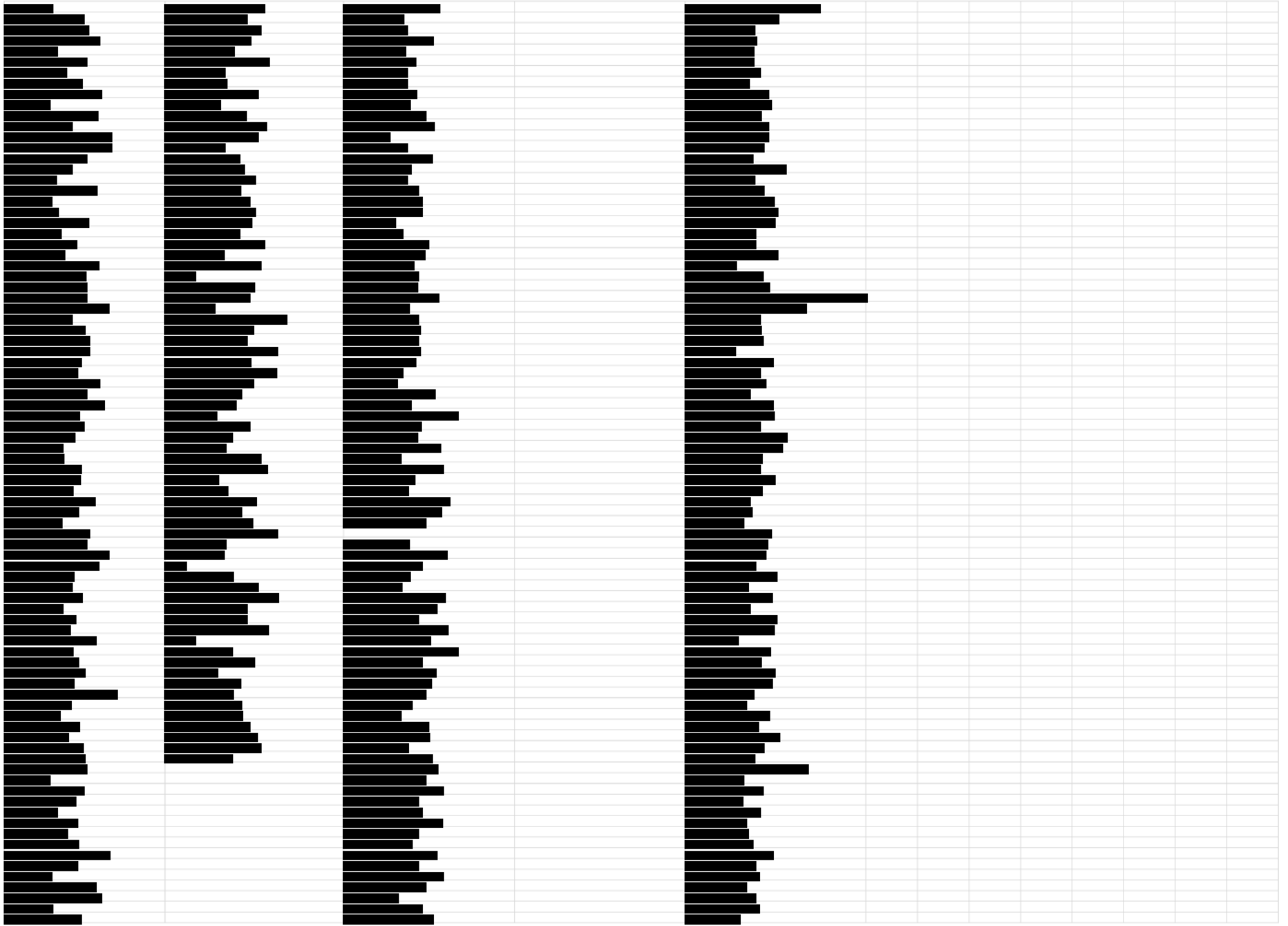
THANK YOU!



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

CDPHE/CDOT State Listening Sessions

	Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions								
	State Listening Sessions								
	CDPHE/CDOT State Listening Sessions								
		Date	Time	Location					
		1/28/21	6-8pm	Virtual					
		3/11/21	10:30am-12pm	Virtual					
		3/18/21	6-8pm	Virtual					
		4/21/21	6-8pm	Virtual					
		4/28/21	12-2pm	Virtual					



[REDACTED]

[REDACTED]

[REDACTED]

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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

State Listening Session: Reducing Greenhouse Gas Emissions from Transportation

McDonnell - CDPHE, Lauren <lauren.mcdonell@state.co.us>

Tue, Jan 19, 2021 at 2:34 PM

To:

[REDACTED]

FYI

**COLORADO**

Air Pollution Control Division

Department of Public Health & Environment

Colorado state government is seeking public input on an upcoming rule to reduce greenhouse gas emissions from transportation in Colorado. This rule is part of an ambitious effort to address climate change and meet the [state's science-based climate targets](#) of 26% by 2025, 50% by 2030% and 90% by 2050 from 2005 levels.

During the meeting, staff will give a brief overview of key concepts being considered and the majority of the time will be dedicated to hearing your ideas and concerns. The state is committed to promoting racial equity and economic justice through its greenhouse gas reduction strategies, so we especially would like to hear from community members and organizations about ideas on how to best achieve greenhouse gas reductions in the transportation sector.

This Listening Session will be Thursday, January 28, 2012 from 6:00-8:00pm via Zoom

Participants will be able to participate in either English or Spanish.

Please register below in order to attend and/or provide public comment.

[REGISTRATION \(CLICK HERE\)](#)

Comments may also be submitted any time to cdphe.commentsapcd@state.co.us
Subject: GHG Transportation Comment.

Sign up to receive email notifications from the Division on greenhouse gas, climate equity, and other air quality issues [HERE](#).

Contact:
Lauren McDonnell

303-692-6461

climatechange@state.co.us**Sesión de conversación pública del estado: Reducción de las emisiones de gases de efecto invernadero del transporte**

El gobierno del estado de Colorado está buscando el aporte del público respecto a una próxima normativa para reducir las emisiones de gases de efecto invernadero del transporte en Colorado. Esta norma forma parte de una ambiciosa iniciativa para abordar el cambio climático y cumplir con los [objetivos climáticos del estado, con base científica](#), del 26 % para 2025, del 50 % para 2030 y del 90 % para 2050 respecto a los niveles de 2005.

Durante la reunión, el personal hará una breve exposición de los conceptos clave que se están considerando y la mayor parte del tiempo se dedicará a escuchar sus ideas e inquietudes. El estado está comprometido a promover la equidad racial y la justicia económica mediante sus estrategias de reducción de gases de efecto invernadero. Es por ello que nos gustaría escuchar especialmente a los integrantes y las organizaciones de las comunidades respecto a sus ideas sobre la mejor forma de lograr las reducciones de gases de efecto invernadero en el sector del transporte.

La sesión de conversación pública será el jueves 28 de enero de 2021, de 6:00 a 8:00 p. m. vía Zoom.

Los asistentes podrán participar en inglés y en español.

Inscríbase a continuación para concurrir o hacer un comentario público.

[INSCRIPCIÓN\(CLIC AQUÍ\)](#)

Los comentarios también se pueden enviar en cualquier momento a

cdphe.commentsapcd@state.co.us

Asunto: Comentario sobre gases de efecto invernadero del transporte

Para recibir notificaciones por correo electrónico de la División sobre gases de efecto invernadero, equidad climática y otros temas de calidad del aire, suscríbese [AQUÍ](#).

Contacto:

Lauren McDonell

303-692-6461

climatechange@state.co.us

Colorado Air Pollution Control Division | [4300 Cherry Creek Drive South, Denver, CO 80246](#)

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Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Employee Traffic Reduction Program (ETRP) Stakeholder Updates

McDonell - CDPHE, Lauren <lauren.mcdonell@state.co.us>

Thu, Apr 1, 2021 at 10:34 AM

To: CDPHE Climate Change - CDPHE <cdphe_climatechange@state.co.us>

Dear Stakeholders,

The state of Colorado has held several listening sessions on the upcoming transportation greenhouse gas (GHG) reduction rule concepts, and we've heard valuable input from a diverse range of stakeholders. Thanks to all of you who participated and shared your thoughts, questions, and concerns with us. Here's where we are headed as we move into drafting the Employee Traffic Reduction Program (ETRP) rule:

- Focus on large employers (those that employ 100 or more employees at a single worksite).
- Focus on the **Ozone Nonattainment Area** (NAA), building on significant work performed by the Regional Air Quality Council to develop an ETRP framework for the NAA.
- Achieve significant climate and air quality benefits with equity in mind.
 - Recognize NAA has resources available through Transportation Management Associations (TMAs) and other support to assist in a successful and fair implementation of an ETRP rule.
 - Recognize some Colorado communities currently lack transit access and have a different mix of economic, social, health and environmental benefits.
- Support operational success through partnerships with Planning Organizations, TMAs and other partners to allow large businesses to plan, implement, assess and adjust.

We look forward to building upon a great foundation and sharing the work with other businesses that may want to implement ETRP strategies.

The presentation slides from the recent listening sessions are attached. We are planning to hold additional stakeholder meetings in April 2021 and you can register [HERE](#) or see more details are available on our website at: <https://cdphe.colorado.gov/reducing-greenhouse-gas-emissions-from-transportation>. As a reminder, you can still submit written comments to us through the comment form here: <https://bit.ly/3sEdljd> (please let us know which rule component your comment addresses).

Sincerely,
Lauren McDonell

Lauren McDonell

Climate Change Outreach Planner

**COLORADO****Air Pollution Control Division**

Department of Public Health & Environment

Phone: (303) 692-6461
lauren.mcdonell@state.co.us

STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

REMINDER: Upcoming Stakeholder Meetings for State Greenhouse Gas Transportation Rule

McDonell - CDPHE, Lauren <lauren.mcdonell@state.co.us>

Fri, Apr 16, 2021 at 1:31 PM

To: CDPHE Climate Change - CDPHE <cdphe_climatechange@state.co.us>



Colorado state government is seeking public input on an upcoming rule to reduce greenhouse gas (GHG) emissions and other air pollutants from transportation. The rule will include a GHG Pollution Standard for transportation planning, an Employee Traffic Reduction Program requirement for employers with 100+ employees in the [ozone nonattainment area](#), and improvements to the state vehicle emission inspection program. More information is available at [our webpage](#).

Upcoming Stakeholder Engagement Opportunities

State Transportation Rule Informational and Listening Sessions #4 and #5

These two identical events will provide an overview of all rule concepts and welcome public comments and questions.

Wednesday, April 21, 6:00 p.m. - 8:00 p.m.

Wednesday, April 28, 12:00 p.m. - 2:00 p.m.

[REGISTER HERE](#)

Sesiones informativas y de escucha de la regla estatal de transporte

Estos dos eventos idénticos proporcionarán una descripción general de todos los conceptos de las reglas y recibirán comentarios y preguntas del público.

Miércoles 21 de abril, 6:00 p.m. - 8:00 p.m.

Miércoles 28 de abril, 12:00 p.m. - 2:00 p.m.

[REGISTRARSE AQUÍ](#)

Employee Traffic Reduction Program (ETRP) Listening Session

This last listening session will provide more details on the Employee Traffic Reduction Program rule component and welcome questions and comments.

Tuesday, April 20 10:00 am - 11:00 am

[REGISTER HERE](#)

The Air Pollution Control Division will request a Rulemaking Hearing before the Air Quality Control Commission May 20-21, 2021, with an anticipated Rulemaking Hearing on August 19-20, 2021.

You can submit written comments to us through the comment form [HERE](#) (please select which rule component your comment addresses).

We hope you can participate! Please share this notice with your networks,

Colorado Air Pollution Control Division | [4300 Cherry Creek Drive South, Denver, CO 80246](#)

STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Employee Traffic Reduction Program (ETRP) slides and additional info

McDonnell - CDPHE, Lauren <lauren.mcdonell@state.co.us>

Tue, Apr 20, 2021 at 2:25 PM

To: CDPHE Climate Change - CDPHE <cdphe_climatechange@state.co.us>

Thank you for your interest in the state's Employee Traffic Reduction Program (ETRP). The presentation from the April ETRP listening sessions is attached.

You can find more information on ETRP and the rest of the state's Transportation Greenhouse Gas (GHG) Reduction rule package [HERE](#). Written comments on any part of the rule package can be submitted [HERE](#). In order to be able to consider comments for the draft rule, we ask that written comments be submitted by May 1.

Our final two public listening sessions on the state Transportation GHG Reduction rule will be on Wednesday, April 21 from 6:00 p.m. to 8:00 p.m. and Wednesday, April 28 from 12:00 p.m. to 2:00 p.m. ([REGISTER](#))

On May 20-21, the Air Pollution Control Division will request a rulemaking hearing before the Air Quality Control Commission (AQCC). If approved, the hearing will be held August 19-20, 2021. **To stay updated about the AQCC rulemaking process, visit the AQCC website at: <https://cdphe.colorado.gov/aqcc> and make sure you're signed up for AQCC notices by emailing your contact information to cdphe.aqcc-comments@state.co.us Subject: Email Distribution List.**

We sincerely appreciate your participation and input!

Lauren

Lauren McDonnell

Climate Change Outreach Planner

**COLORADO****Air Pollution Control Division**

Department of Public Health & Environment

Phone: (303) 692-6461

lauren.mcdonell@state.co.us

April 2021 ETRP Stakeholder Meeting Pres.pdf
200K



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

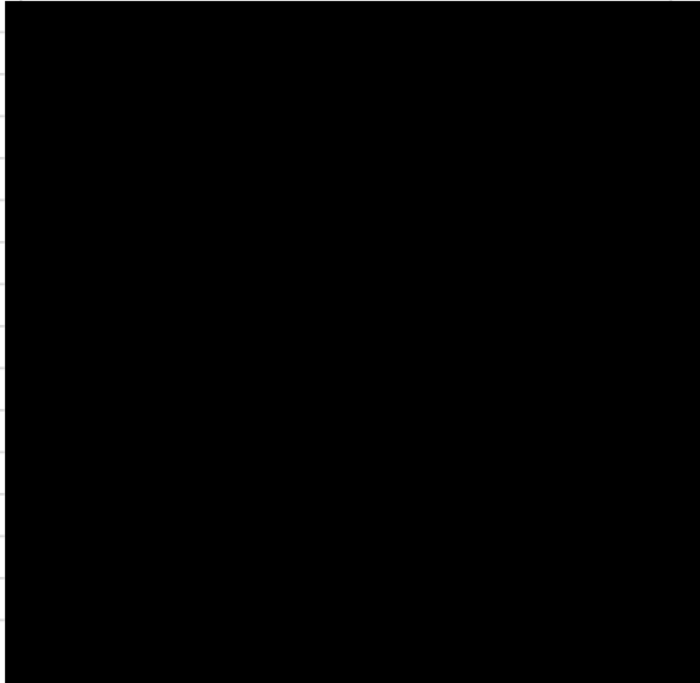
Environmental Groups

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions						
	Environmental Group Meetings					
	Stakeholder Groups	Date	Time	Location		
	Environmental Groups	2/9/21	12-1pm	Virtual		
	Environmental Groups	3/10/21	12-1pm	Virtual		
	GHG Modeling with Environmental Groups	7/1/21	11:30am-12:30pm	Virtual		
	Environmental Groups	7/7/21	3pm-4pm	Virtual		
	Environmental Groups	7/13/21	9-10:30am	2829 W Howard Pl, Denver, CO, and Virtual		
	Environmental Groups	7/22/21	12-1:30	Virtual		
	Environmental Groups	8/6/21	2:30-3:30	2829 W Howard Pl, Denver, CO, and Virtual		
	Environmental Groups	8/11/21	4:00-5:00pm	2830 W Howard Pl, Denver, CO, and Virtual		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

Meeting: February 9, 2021, from 12:00-1:00 pm, Virtual

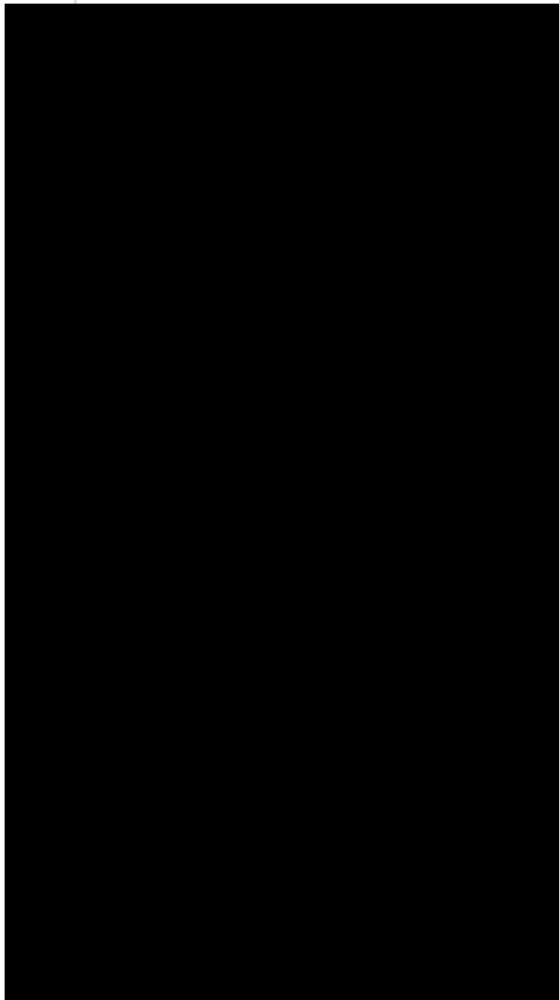
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	Western Resources Advocates	
	Colorado Energy Office	
	COPIRG	
	Sierra Club	
	Conservation Colorado	
	Western Resources Advocates	
	Conservation Colorado	
	CDOT	
	CDPHE	
	Southwest Energy Efficiency Project	
	CDOT	
	Western Resources Advocates	
	CDOT	
	Southwest Energy Efficiency Project	
CDOT		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

Meeting: July 1, 2021 from 11:30 am-12:30 pm, Virtual

Name	Organization	Email
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	CDOT	
	Natural Resource Defense Council	
	CDOT	
	Earth justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Southwest Energy Efficiency Office	
	CDOT	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Further Strategies	
	Law Office of Matthew Sura	
	Southwest Energy Efficiency Office	
	Natural Resource Defense Council	
	CDOT	
	CDOT	
	CDOT	
	CDOT	
Southwest Energy Efficiency Office		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

Meeting: July 7, 2021, from 3pm-4pm, Virtual

Name	Organization	Email
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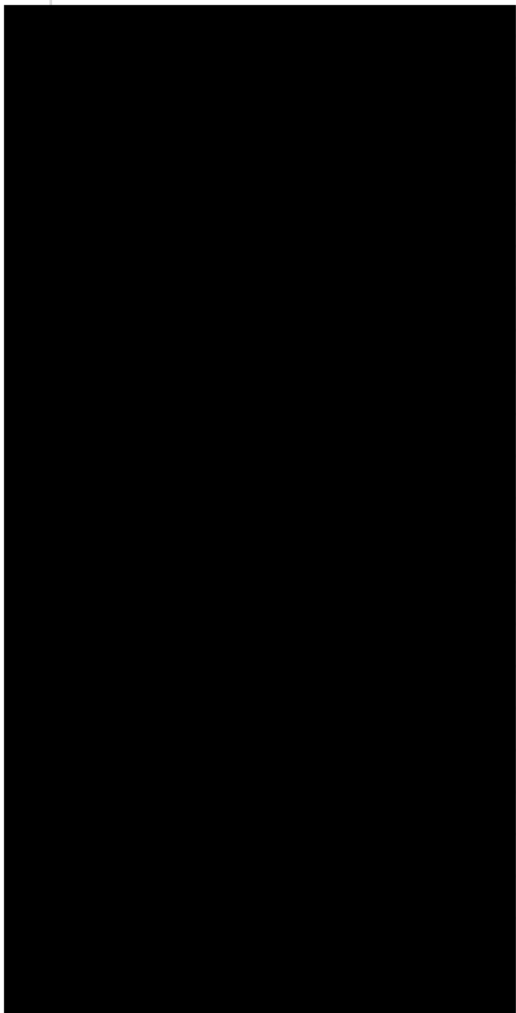
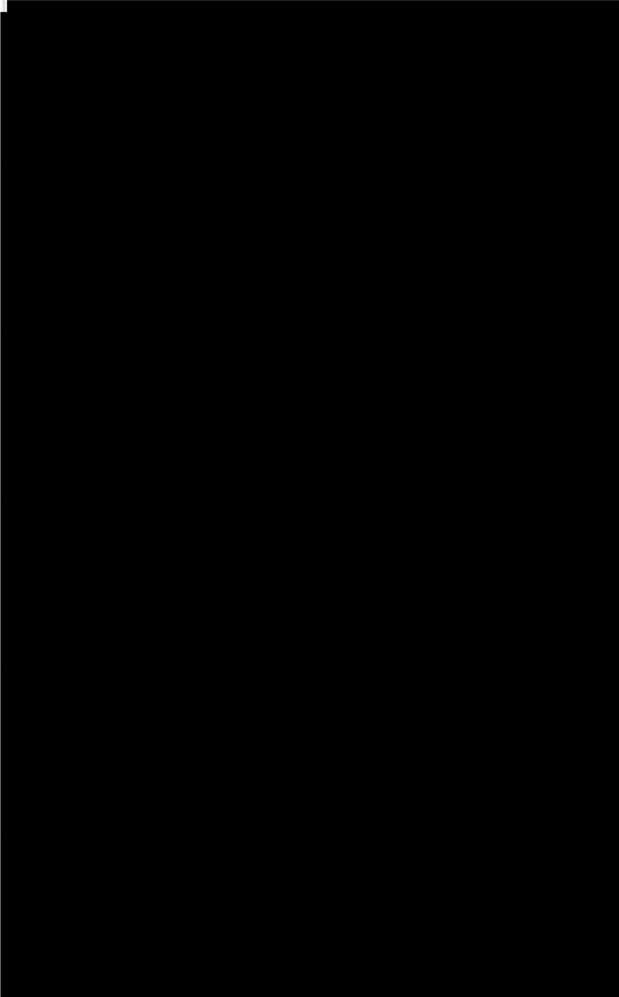
	CDOT	
	Natural Resource Defense Council	
	CDOT	
	Earth Justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Green Latinos	
	CDOT	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Further Strategies	
	Law Office of Matthew Sura	
	Southwest Energy Efficiency Office	
	Natural Resource Defense Council	
	CDOT	
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	CDOT	
Southwest Energy Efficiency Office		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

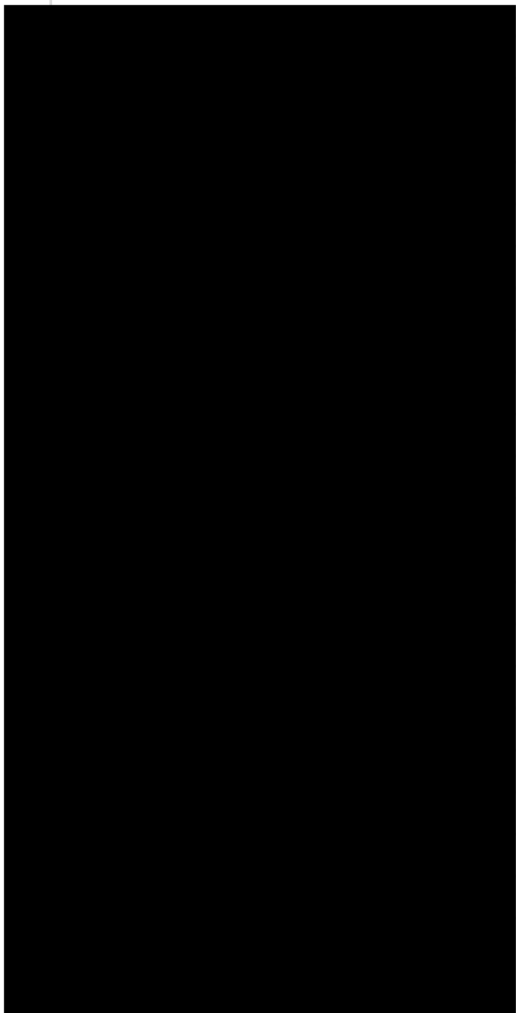
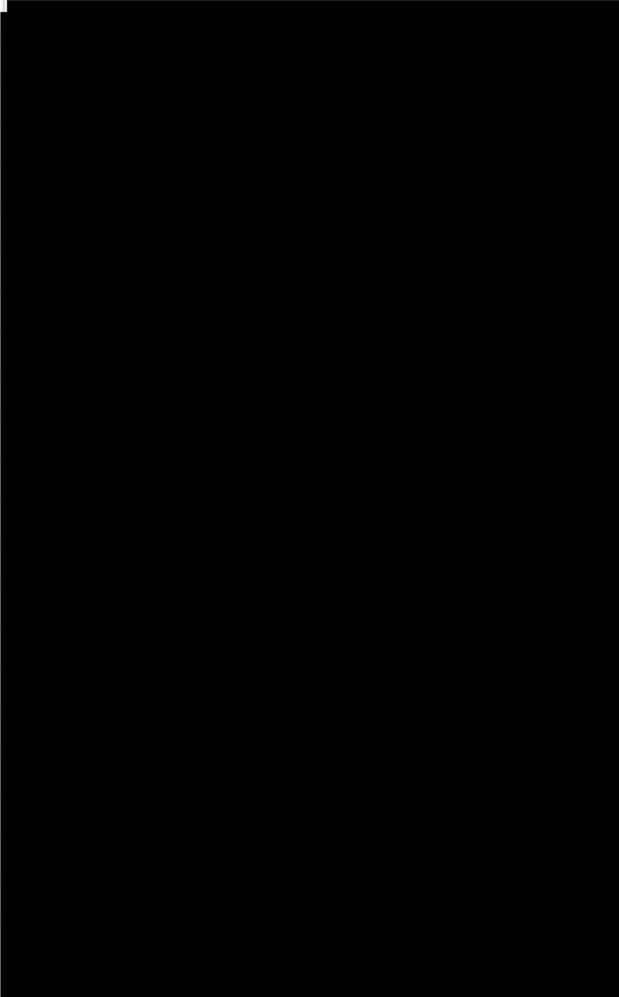
Environmental Groups

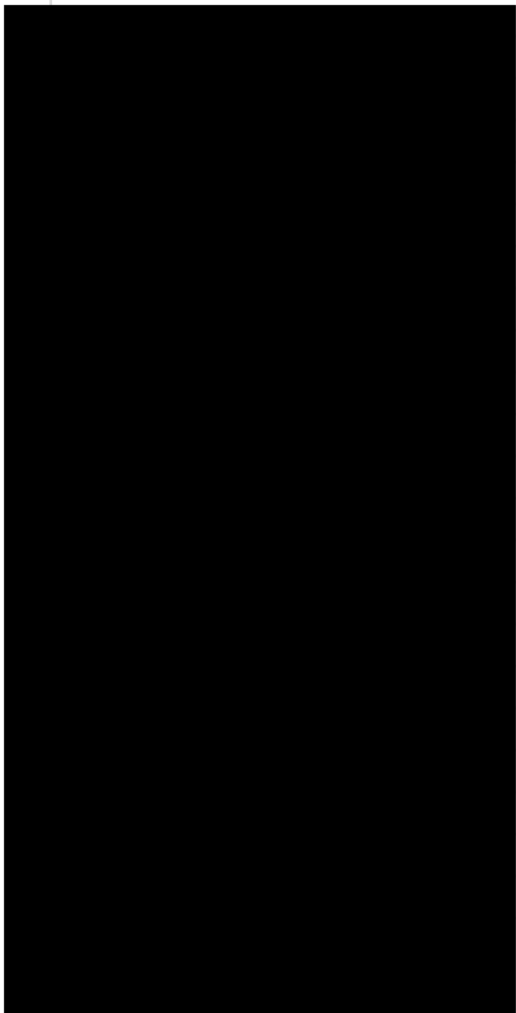
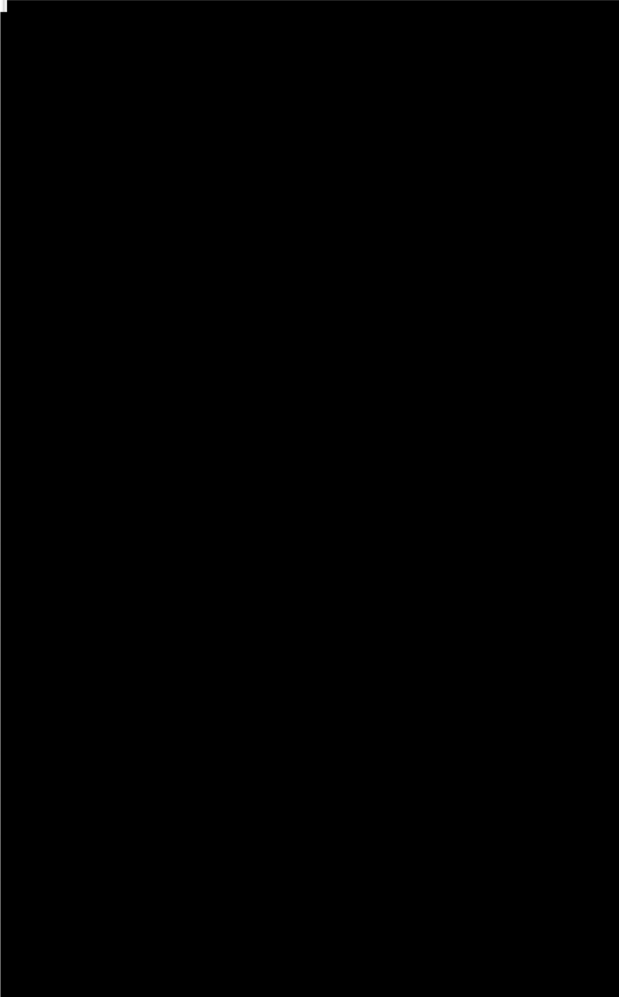
Meeting: July 13, 2021, from 9:00-10:30 am, at 2829 W Howard Pl, Denver, CO (CDOT Headquarters) and Virtual

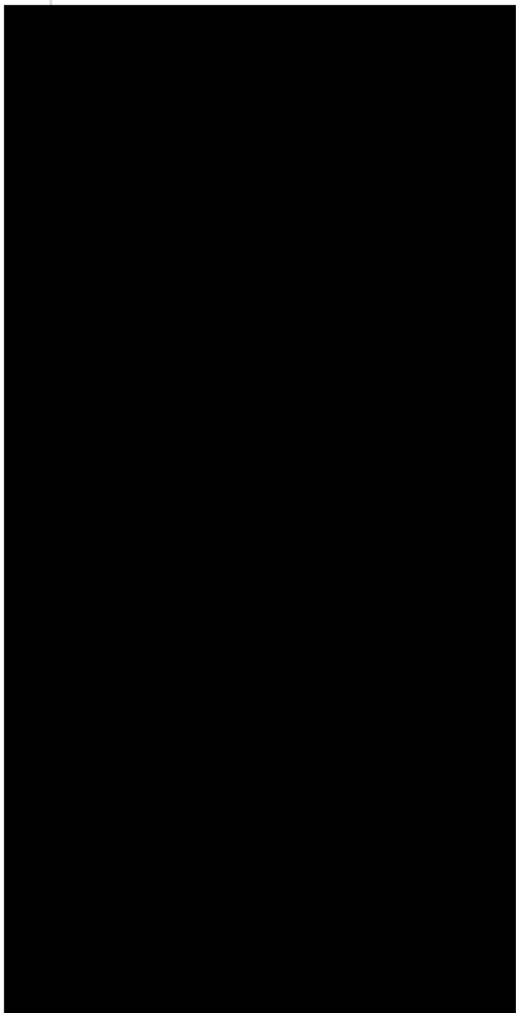
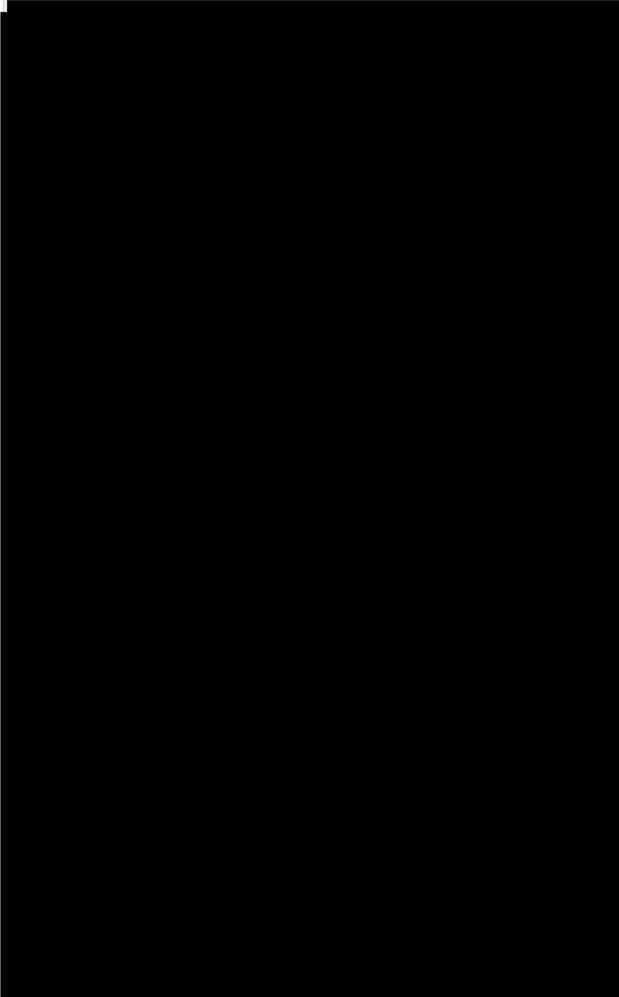
Name	Organization	Email
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	Natural Resource Defense Council	
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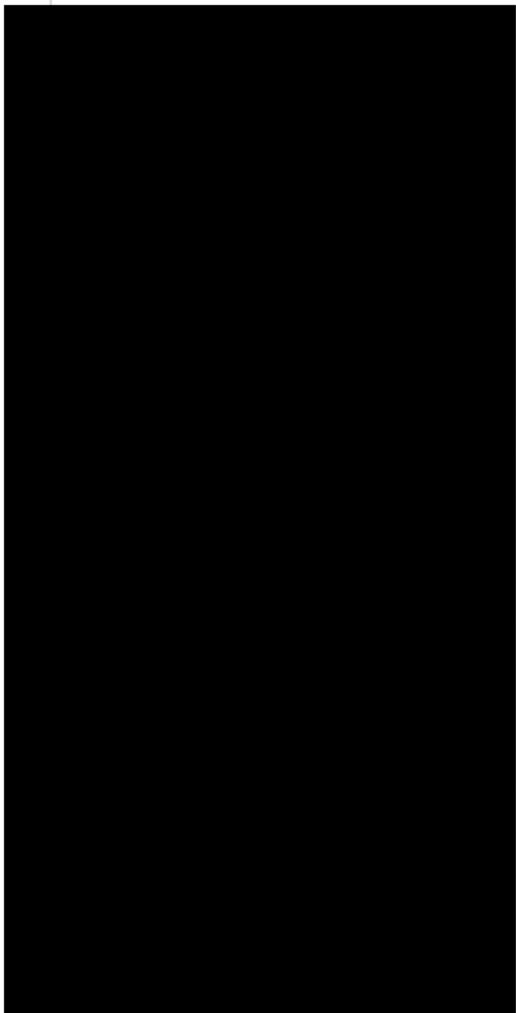
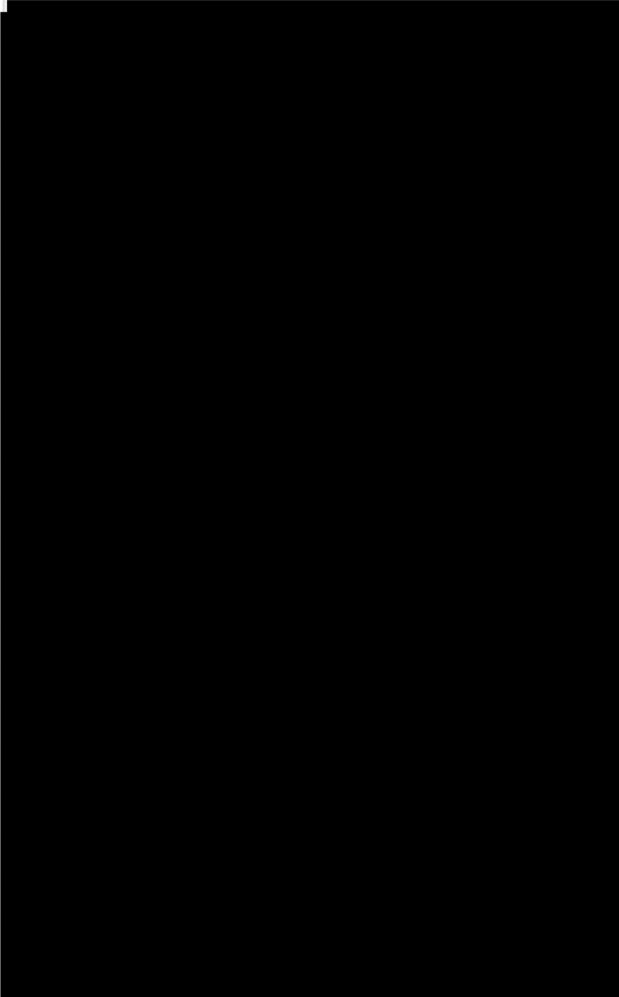
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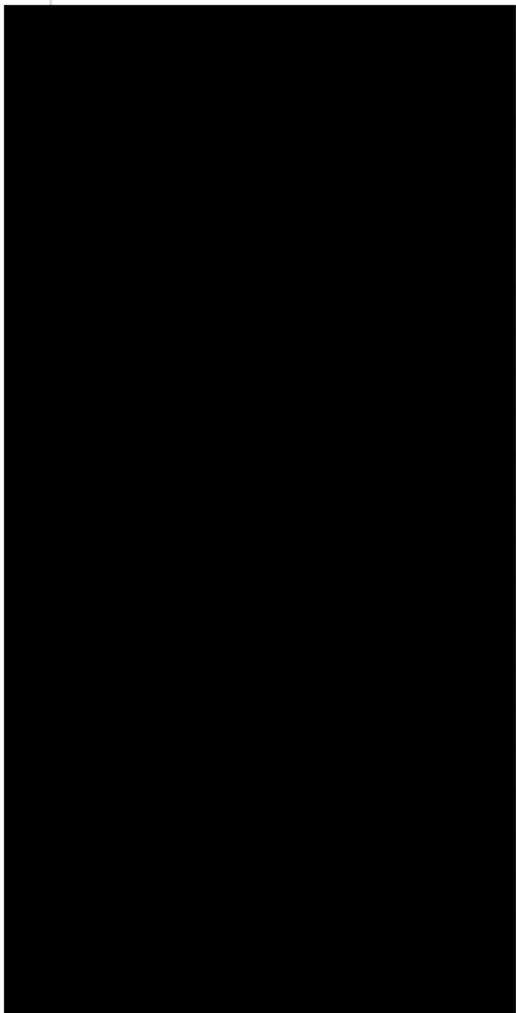
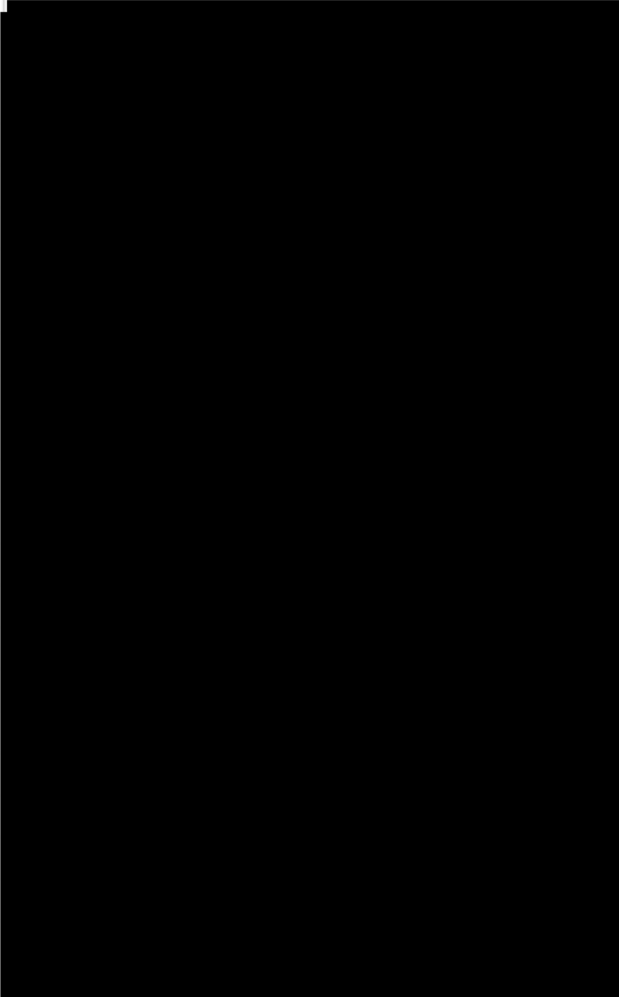
	Earth Justice	
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	Cambridge Systematics	
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	Natural Resource Defense Council	
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	Colorado Public Interest Research Group	
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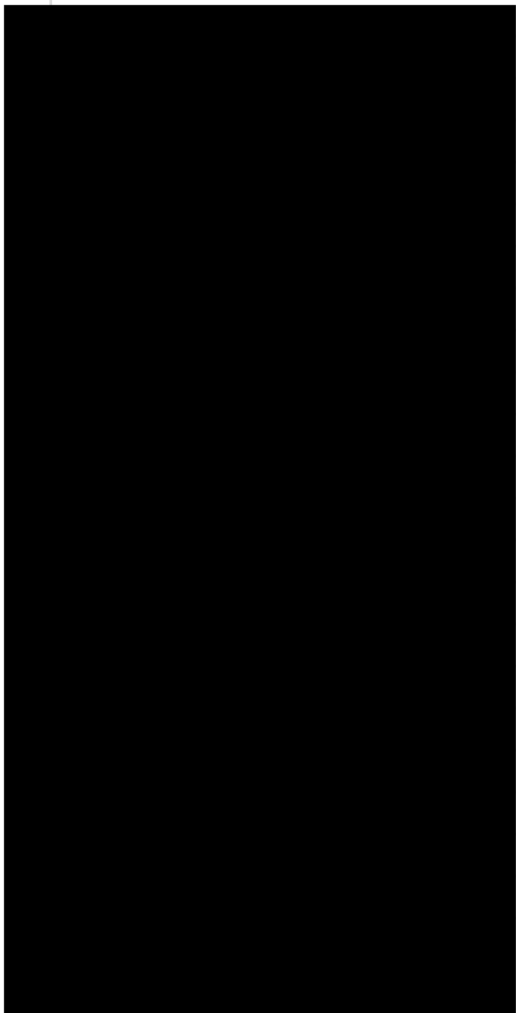
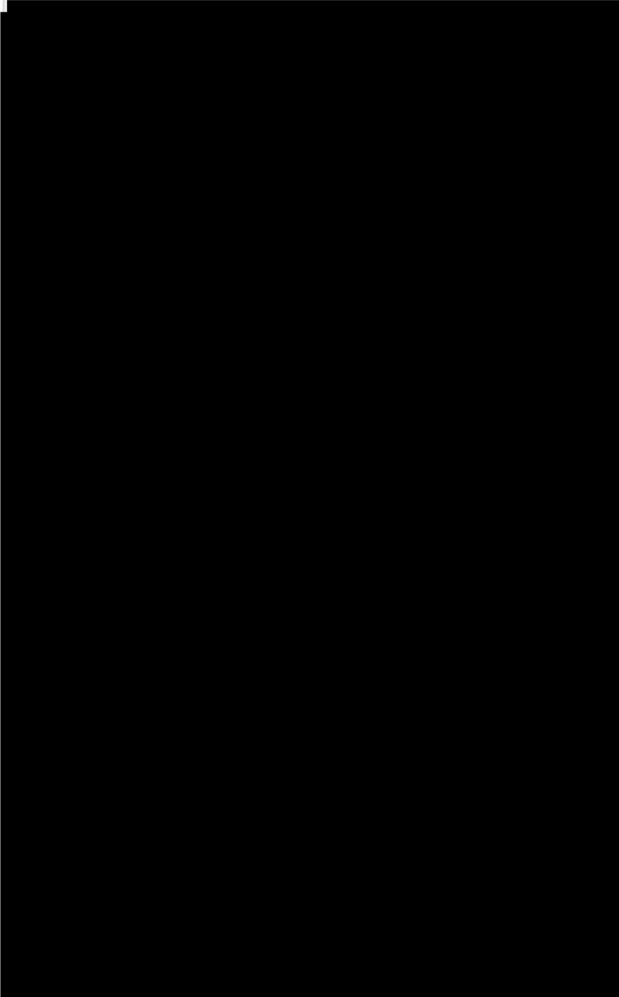
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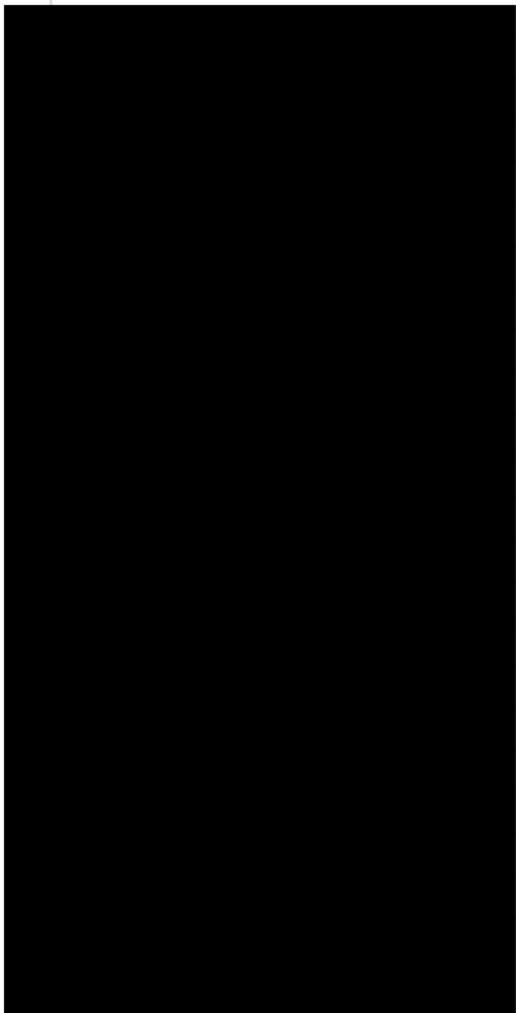
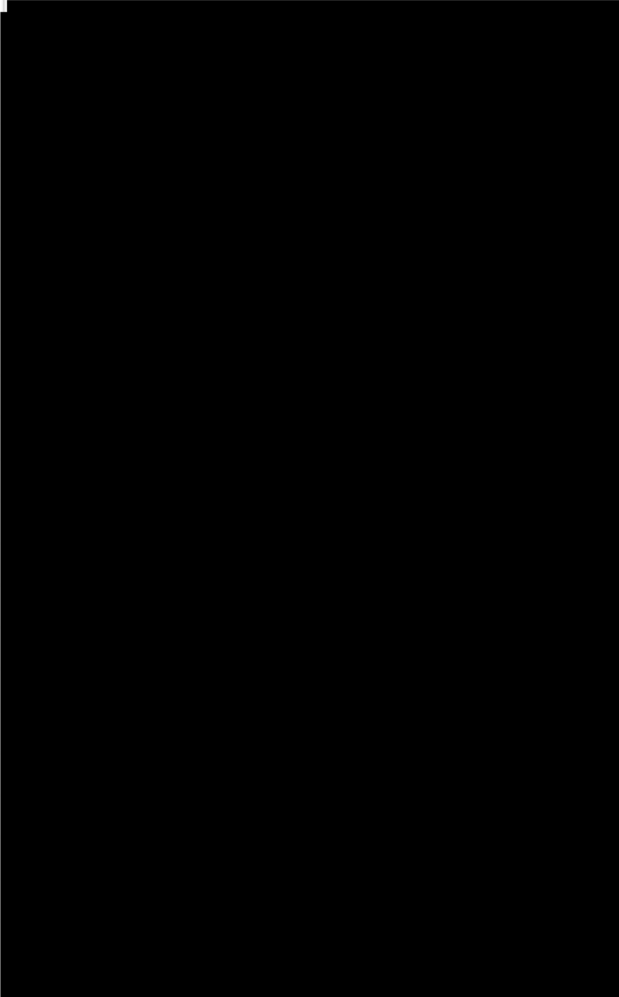
	Southwest Energy Efficiency Office	
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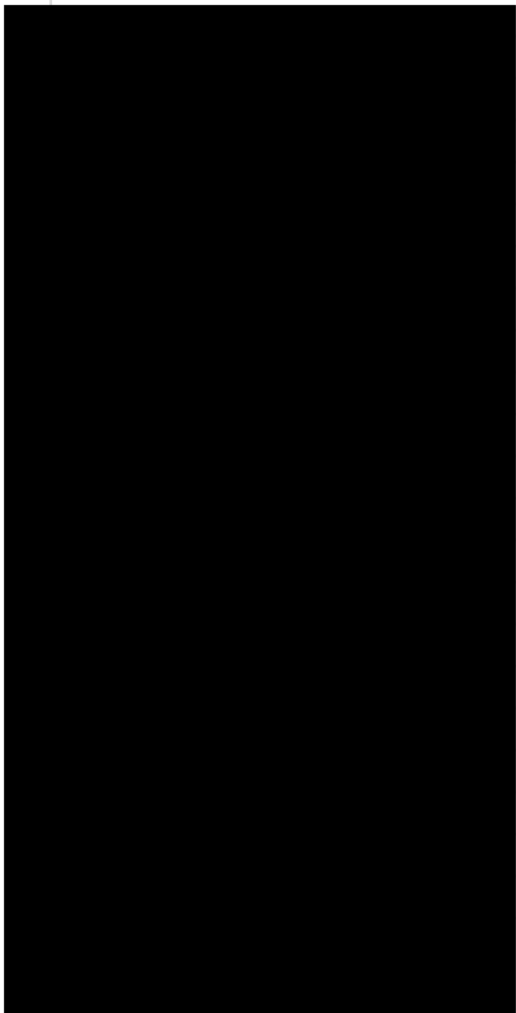
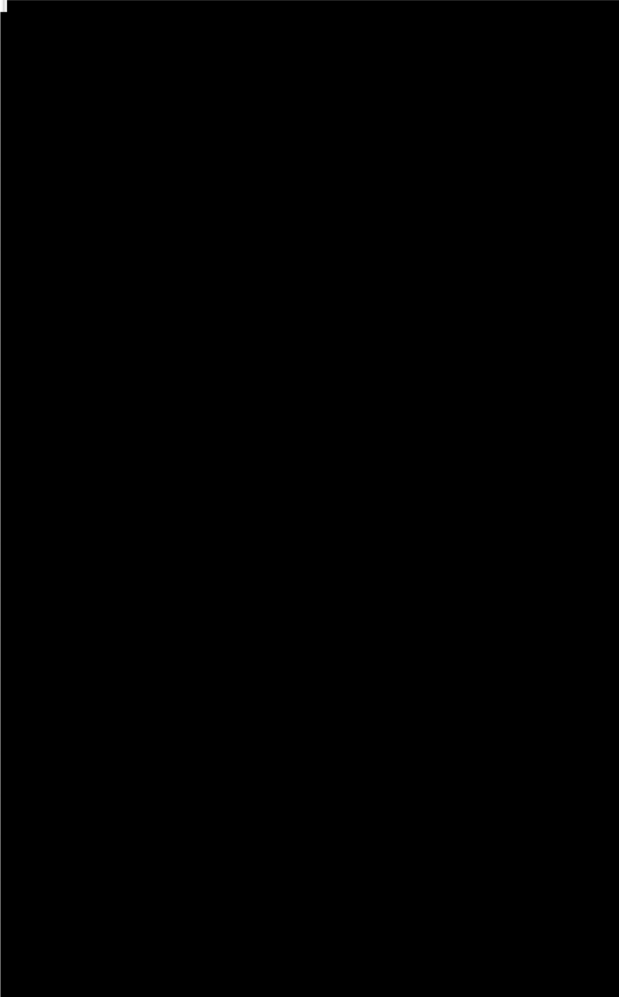
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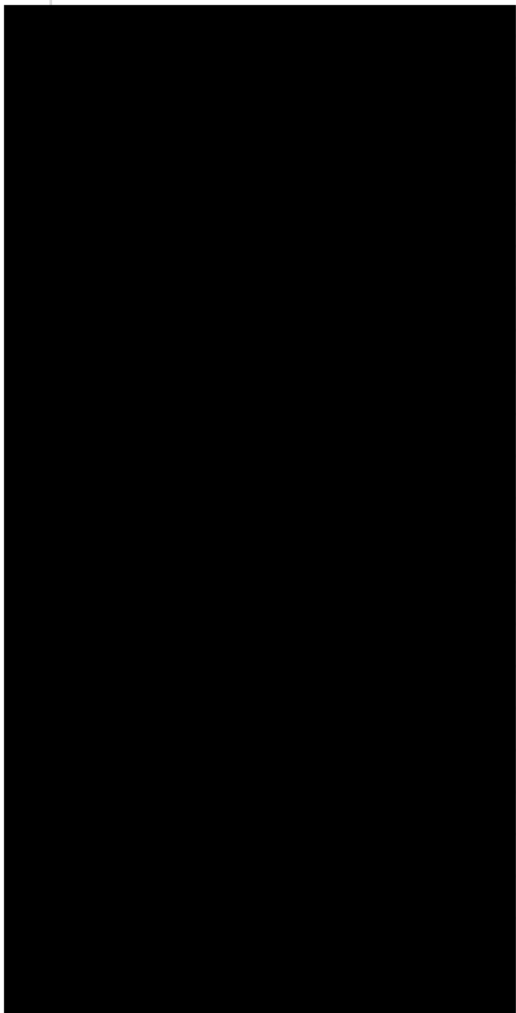
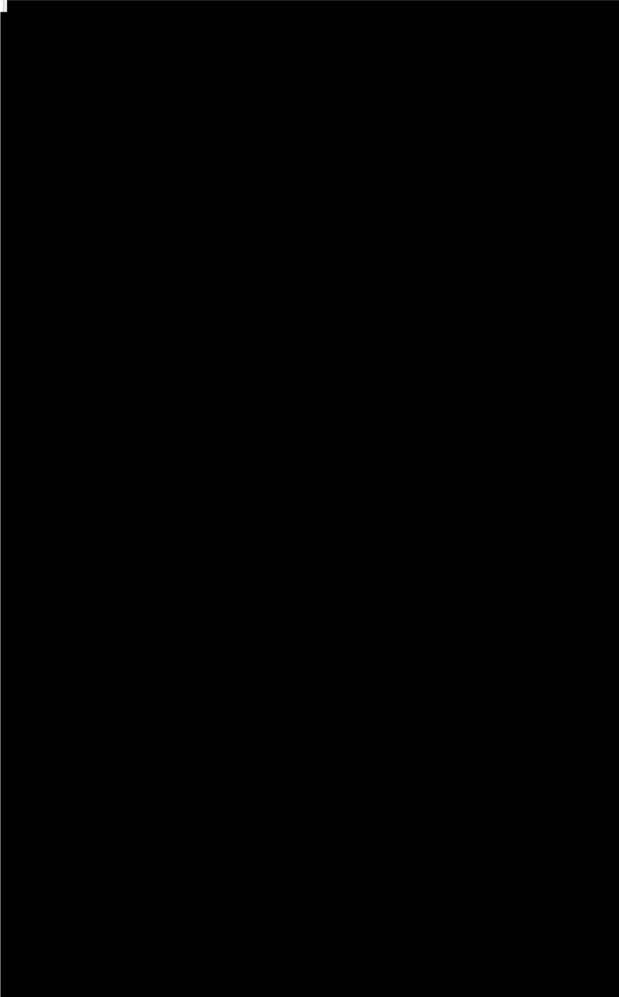
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	Conservation Colorado	
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	Conservation Colorado	
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	Further Strategies	
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	Law Office of Matthew Sura	
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	Southwest Energy Efficiency Office	
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	Natural Resource Defense Council	
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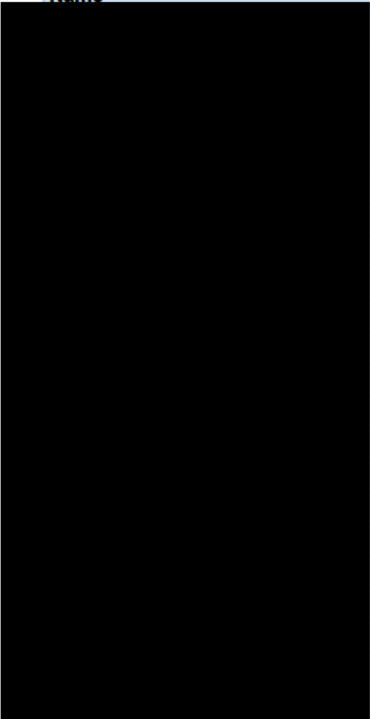

	CDOT	
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	Southwest Energy Efficiency Office	
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Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

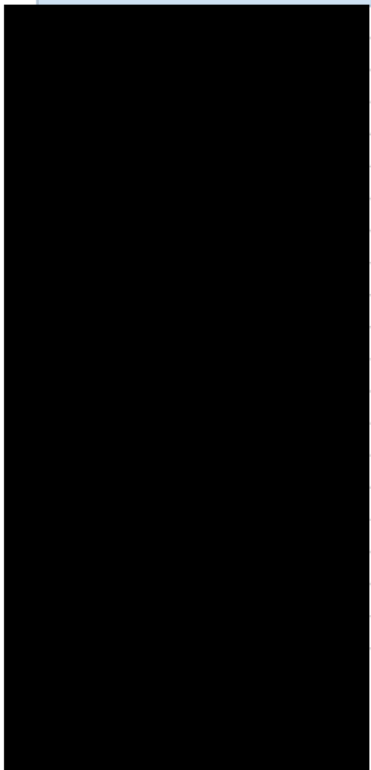
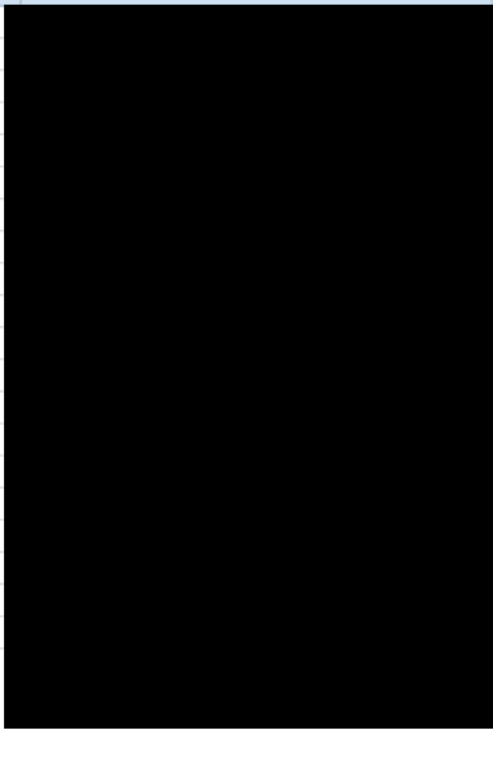
Meeting: July 22, 2021 from 12-1:30pm, Virtual

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	Natural Resource Defense Council	
	CDOT	
	Earth Justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Green Latinos	
	Southwest Energy Efficiency Office	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Transportation Commission	
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	Natural Resource Defense Council	
	CDOT	
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CDOT		
Southwest Energy Efficiency Office		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

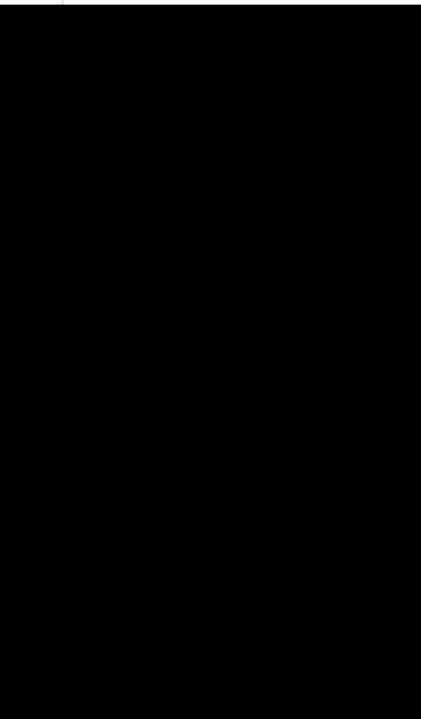
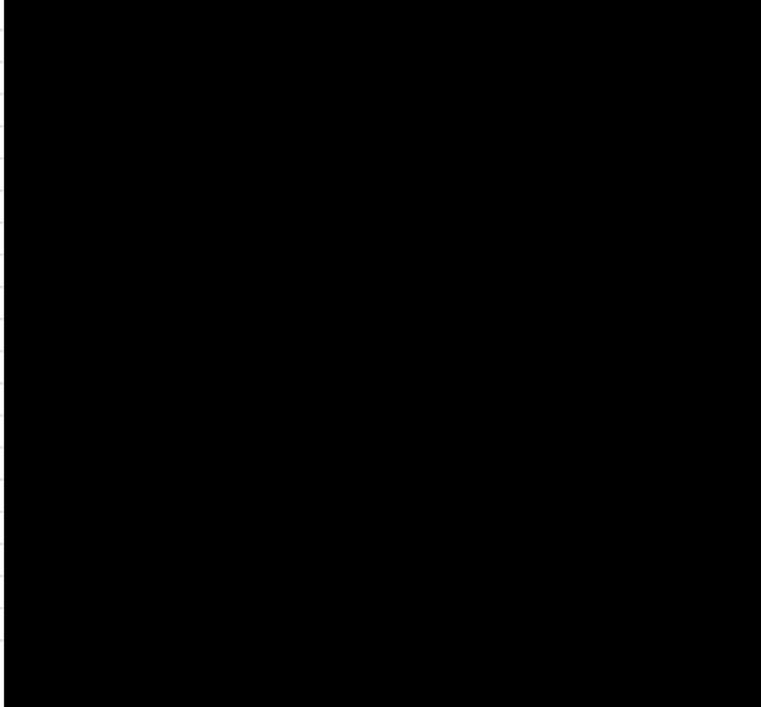
Meeting: July 29, 2021 from 9-10:30am, at 2829 W Howard Pl, Denver, CO (CDOT Headquarters) and Virtual

Name	Organization	Email
	Natural Resource Defense Council	
	CDOT	
	Earth Justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Green Latinos	
	Southwest Energy Efficiency Office	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Transportation Commission	
	Further Strategies	
	Law Office of Matthew Sura	
	Southwest Energy Efficiency Office	
	Natural Resource Defense Council	
	CDOT	
	CDOT	
CDOT		
Southwest Energy Efficiency Office		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

Meeting: August 6, 2021 from 2:30-3pm, at 2829 W Howard Pl, Denver, CO (CDOT Headquarters) and Virtual

Name	Organization	Email
	Natural Resource Defense Council	
	CDOT	
	Earth Justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Green Latinos	
	Southwest Energy Efficiency Office	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Transportation Commission	
	Further Strategies	
	Law Office of Matthew Sura	
	Southwest Energy Efficiency Office	
	Natural Resource Defense Council	
	CDOT	
	CDOT	
CDOT		
Southwest Energy Efficiency Office		

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Environmental Groups

Meeting: August 11, 2021 from 3-4pm, at 2829 W Howard Pl, Denver, CO (CDOT Headquarters) and Virtual

Name	Organization	Email
	Natural Resource Defense Council	
	CDOT	
	Earth Justice	
	Natural Resource Defense Council	
	Colorado Public Interest Research Group	
	Green Latinos	
	Southwest Energy Efficiency Office	
	CDOT	
	CDOT	
	Conservation Colorado	
	Conservation Colorado	
	Transportation Commission	
	Further Strategies	
	Law Office of Matthew Sura	
	Southwest Energy Efficiency Office	
	Natural Resource Defense Council	
	CDOT	
	CDOT	
	CDOT	
	Southwest Energy Efficiency Office	



STATE OF COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Presentation From Today's Meeting

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Tue, Feb 9, 2021 at 3:33 PM

Cc: [Redacted]

Good afternoon,

I have attached the powerpoint presentation from today's meeting, as you requested.

Please let me know if you have any further questions.

Thank you!

Aloha,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



COLORADO
Department of Transportation
Division of Transportation Development

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2829 W. Howard Pl., Denver, CO 80204
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Update - Meeting Feb 9, 2021.pptx
1296K



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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

CDOT/Environmental Groups GHG discussion - MOVING TO VIRTUAL

Wed, Jul 7, 2021 at 12:22 PM

TO: [REDACTED]

Hi everyone,

We were hoping to do these meetings in person, but it sounds like 2/3 of the group will be calling in remotely because of July 4th travel. So unless there are any objections, we're going to move today's meeting to 100% virtual and shoot for in-person next week. My apologies for the last minute notice!

Theresa and I put together a draft agenda for today:

- Introductions and Meeting Guidelines and Format
- Conservation Community Input on GHG Paper
 - Particular issues to highlight
- Intent of Rule: GHG vs VMT
- Enforcement Provisions

I've attached the comments a few of our groups submitted last Friday on the [CDOT's draft GHG white paper](#).

Thanks,



From: theresa.takushi@state.co.us

When: 3:00 PM - 4:00 PM July 7, 2021

Subject: CDOT/Environmental Groups GHG discussion - Alliance Center/Virtual

Location: The Alliance Center, [1536 Wynkoop St, Denver, CO 80202, USA](#)

This event has been changed with this note:
"Now in person at the Alliance Center or via Google Meet"

Changed: CDOT/Environmental Groups GHG discussion - Alliance Center/Virtual

When Wed Jul 7, 2021 3pm – 4pm Mountain Time - Denver

Where **Changed:** The Alliance Center, [1536 Wynkoop St, Denver, CO 80202, USA \(map\)](#)

Joining info Join with Google Meet

meet.google.com/avb-gmms-uai

Join by phone

(US) [+1 832-521-1264](tel:+18325211264) (PIN: 780350780)

[More phone numbers](#)

Calendar



Who

• - organizer

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- █ [REDACTED]
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- █ [REDACTED]
- █ [REDACTED]
- █ [REDACTED]

[more details »](#)

Changed: In Person or Virtual Option - Please Note - we'll be meeting in person at the Alliance Center


Going (mfrommer@swenergy.org)? **Yes - Maybe - No** [more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account mfrommer@swenergy.org because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://calendar.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to send a response to the organizer and be added to the guest list, or invite others regardless of their own invitation status, or to modify your RSVP. [Learn More](#).

 **CDOT Breifing Memo Comments_7.2.21.pdf**
174K



Transportation Greenhouse Gas Rule & Policy Directive

COLORADO

Department of Transportation

February 9, 2021



Today's Focus

1. Overview of Colorado's climate legislation/policy framework
2. Proposed rules and policy for transportation sector
3. Outreach Approach
4. Questions



Colorado's Efforts To Address Climate Change

HB-1261

- In 2019, the Colorado General Assembly passed House Bill-1261, the *Climate Action Plan to Reduce Pollution*.
- HB 1261 established the following GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- To ensure that Colorado continues to reduce emissions to meet greenhouse gas targets, reduce local air pollution, and realize the full economic benefits of the transition to a clean energy economy.
- Draft document released in Sept 2020; final in Jan 2021.
- <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>



Largest GHG Emissions Sources

2005 Largest Emission Source:

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

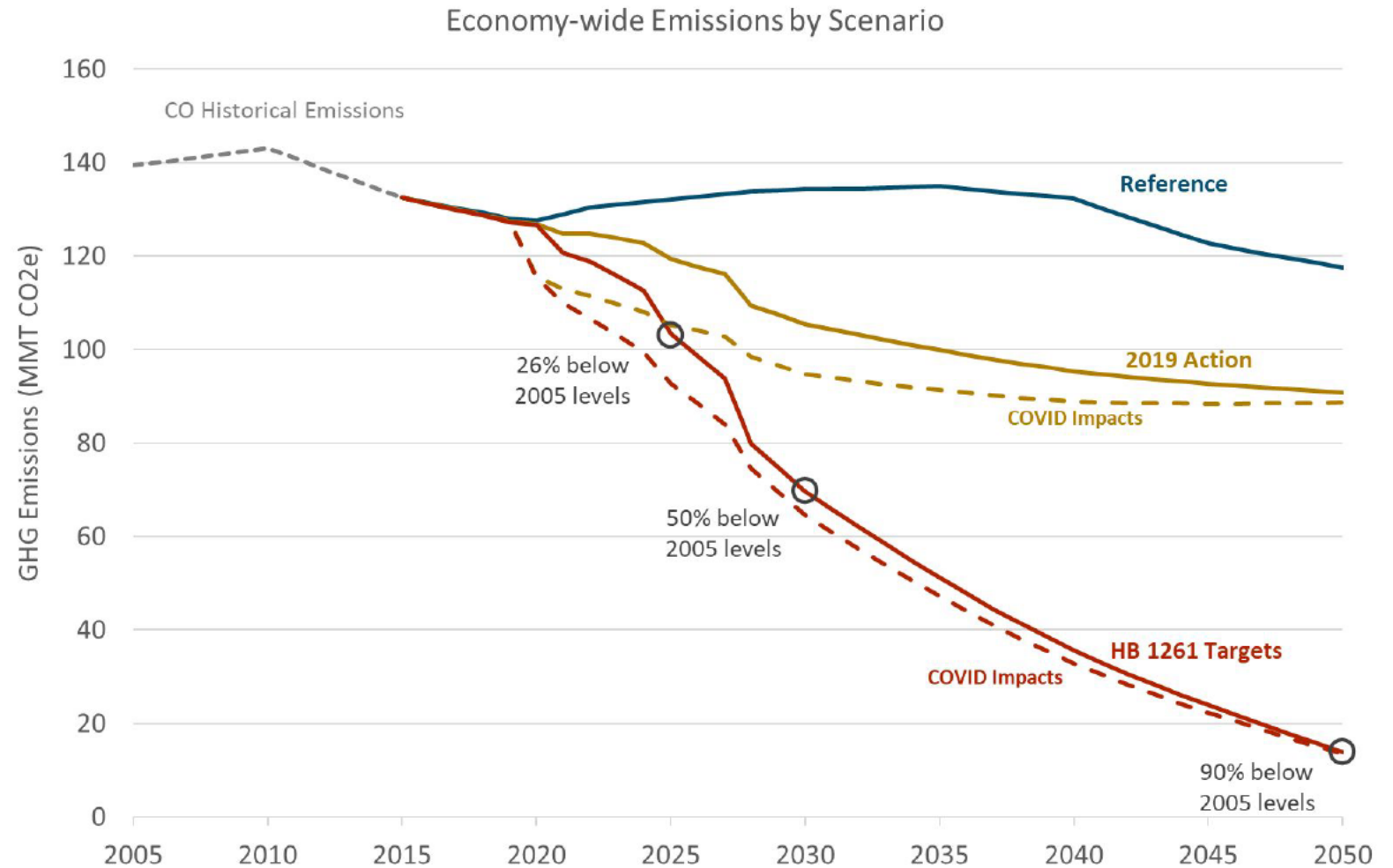




Colorado GHG Pollution Over Time

SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, we are on a trajectory to achieving approximately half the level of emission reductions to meet the 2025 and 2030 goals.
- Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.





Near-Term Transportation Actions included in the CO GHG Roadmap

Infrastructure
(Planning &
Projects)

- GHG pollution standards for transportation plans
- Indirect source standards for some types of new development.
- Trip reduction/TDM requirements and encouraging telecommuting for large employers

Human
Factors
(Behavior
Change)

- Expansion of public transit, including setting the stage for Front Range Rail
- Incentives for land use decisions by local governments that reduce pollution and support greater access to housing near jobs.
- Clean trucking strategy including evaluation of Advanced Clean Truck ZEV standards

Mobile
Sources
(Vehicles)

- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses



Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- Integrate GHG pollution standards and analysis in regional and statewide transportation plans: GHG Pollution Standard
- Reduce SOV commuter trips: Large Employer Trip Reduction
- Both included in single rulemaking via the CDPHE/Air Quality Control Commission process
 - May draft; August final

CDOT Policy

- In parallel, CDOT will develop implementation guidance via a policy directive specific to GHG Pollution Standard



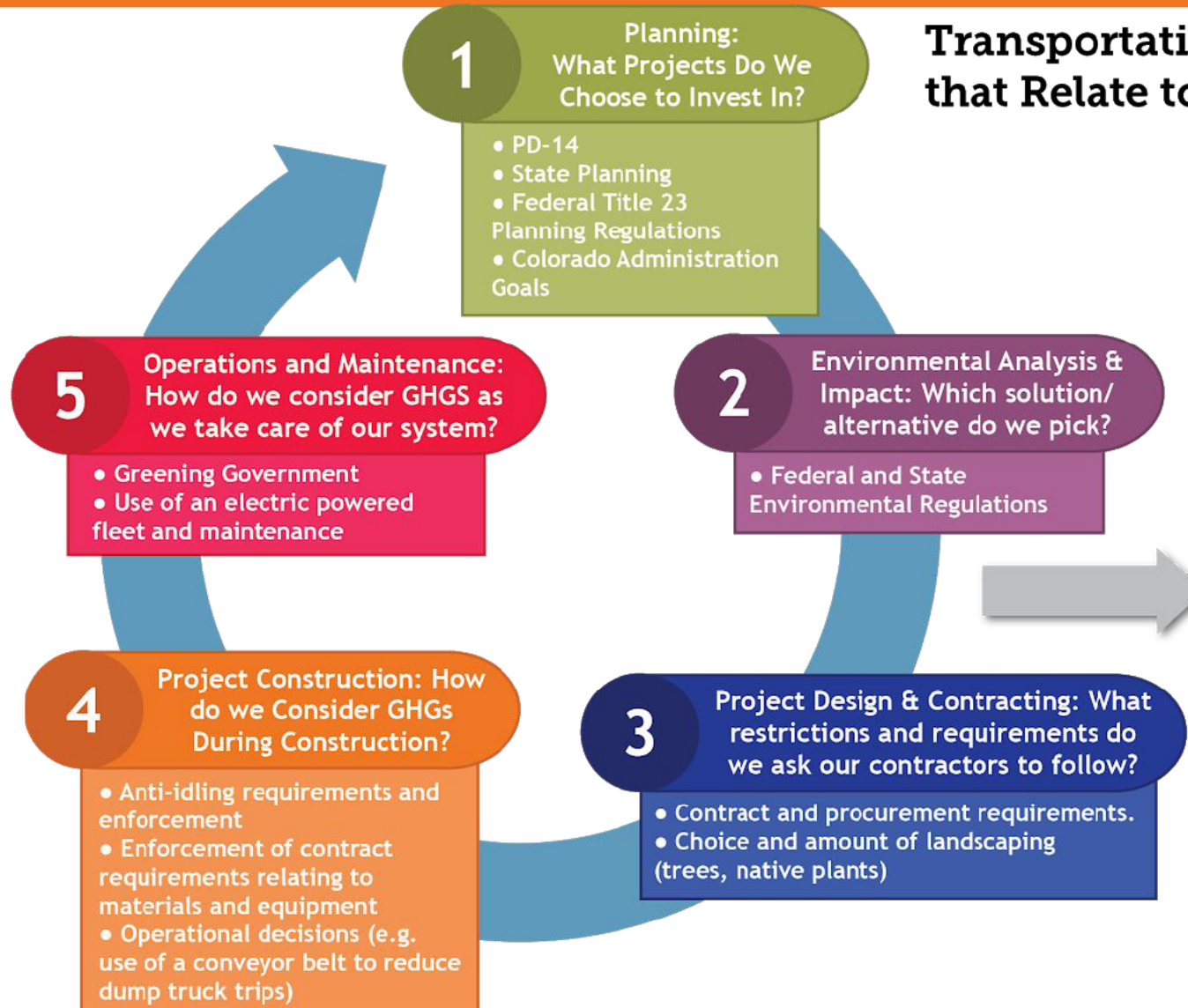
GHG Pollution Standard (GPS) Rule Approach

Initial Thinking

- Set a GHG “budget” for transportation plans (statewide and regional).
- Phased implementation with initial focus on state and certain MPO plans.
- Exempt state of good repair/maintenance projects.
- CDOT guidance will focus on the practicalities of how the policy translates into specific project-based requirements.
- Inclusion of other measures to meet budget.



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions



- Federal Environmental Laws/Regs**
- National Environmental Policy Act**
- CEQ and FHWA Guidance on Implementing NEPA
 - CDOT NEPA Manual
 - Clean Air Act
 - Transportation Conformity
 - Clean Water Act
 - Endangered Species Act
 - Title VI
 - Environmental Justice
- State Environmental Laws/Regs**
- HB 1261 and implementing regulations (TBD)
 - CDOT Environmental Stewardship Guide
 - Air Quality Project-Level Analysis Guidance (AQ-PLAG)



Outreach Approach

Stakeholder Involvement and Public Outreach

- Multiple agency involvement (CDOT/CDPHE/CEO)
 - Virtual public meetings and focused equity conversations
 - First meeting; January 28th at 6pm,
 - Next meeting: February 25th at 6pm
- CDOT Advisory Group
- CDOT Regional Meetings
- Environmental & Technical Meetings



Two Transportation Rules Air Quality Control Commission Rulemaking in 2021

Transportation GHG Pollution Standard & Large Employer Trip Reduction

- What are your questions?
- What concerns do you have?
- What challenges do you see as important to address when developing these rules and policies?
- Who should we reach out to for regional discussions?



Contact Information

Theresa Takushi

GHG Climate Action Specialist

theresa.takushi@state.co.us

303.757.9977



COLORADO

Department of Transportation

GHG Pollution Standard GHG Reduction Targets & Enforcement Discussion

Environmental Groups/CDOT - July 13, 2021



Agenda for 7/13/21

1. GHG reduction ranges
2. Enforcement
3. SB260/267 project proposals



CDOT developed modeling scenarios for two reasons:

- 1) To determine the range of feasible GHG reductions possible through planning-related changes and investments (in short, to determine the GHG reduction levels).

- 1) To prepare the cost benefit analysis required as part of the rulemaking.
 - Section 24-4-103(2.5)(a) of the Administrative Procedures Act (APA)



Tools used for analysis:

- Statewide Travel Model
 - Run using “no build” scenario
- FHWA Energy and Emissions Reduction Policy Analysis Tool (EERPAT)
 - Models policies at the regional level
- MOVES3
 - Conducted by CDPHE
 - Accounts for Colorado-specific factors such as the age of the vehicle fleet, the distribution of VMT by different vehicle types and road types, and the speeds at which vehicles travel.
 - Accounts for EVs displacing relatively more efficient vehicles than the average vehicle in the on-road fleet



Statewide analysis examines bundles of measures that might be implemented to achieve the targets.

3 scenarios (layer cake - building on each level)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use

Additional analysis on light-duty vehicle and bus electrification (separately). Trucks not considered.



3 scenarios (layer cake)

- **Travel choices: measures to reduce SOV commuting by workers, programs that encourage non-work trip reduction, infrastructure investments, and reduced transit fares.**
 - Commuter trip reduction
 - Non-work trip reduction (40% for university, 10% personal business for new broadband households)
 - More sidewalk (1,900 miles new/upgrade by 2030, 4,700 by 2050)
 - More bike (2,500 new lane-miles between 2022-2042, 2,500 protected lane/path)
 - Speed limit reduction on urban arterials (avg 6 mph reduction)
 - Reduce transit fare by 50%*
- Travel choices + Transit
- Travel choices + Transit + Land Use



3 scenarios (layer cake)

- Travel choices
- Travel choices + **Transit: Expansion of transit service and bus electrification over time.**
 - 6% annual increase, 2022 - 2030
 - 2% annual increase, 2030 - 2050
 - Total increase by factor of 2.3 by 2050 (more than doubling)
 - Comparison: Vehicle Revenue Miles increased by factor of 1.75 between 2000 and 2019
- Travel choices + Transit + Land Use



Travel choices + Transit + Land Use

3 scenarios (layer cake)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use: Policy changes and incentives (changes to transportation project selection criteria) to encourage transit-supportive land use and walkable neighborhoods.
 - Based on growth of urban mixed use areas defined as areas with a population density of at least 2,000 per square mile and a retail/service job density of at least 500 per square mile.
 - Baseline forecast of growth in mixed-use areas ranges from
 - (between 2023-2030):
 - 10% in NFRMPO to
 - 42% in DRCOG
 - Action assumes (between 2023-2050):
 - 75% in DRCOG
 - 50% in other MPOs



DRAFT GHG Reduction Target Ranges

	Million Metric Tons/Year				
Statewide	2005 Baseline	2025	2030	2040	2050
base GHG	23.4	27.4	21.8	20.6	24.2
with EV	23.4	27.0	20.0	14.0	8.9
with EV and VMT	23.4	26.5	18.3	12.8	8.2
Range		0.4 - 0.9	0.5 - 1.5	0.17 - 1.2	0.1 - 0.7



Scenario VMT Reductions

Scenario	2030 (millions of vehicle miles)	2040 (millions of vehicle miles)	2050 (millions of vehicle miles)
Baseline	63,551	71,069	78,587
Reduction Range from Modelled Scenarios	5,800-6900	6,100-8,300	6,100-9800



Regulatory Language Discussion: Enforcement



DRAFT Regulatory Language

8.05 Enforcement

8.05.1 The Commission shall assess compliance with the requirements concurrent with State and MPO planning processes, as described in section XX.

8.05.1.1 With respect to the Statewide Transportation Plan and 10-Year Plan, compliance shall be measured prior to Commission approval of a Four Year Funded Plan of the 10-Year Plan, and in the event of an Amendment.

8.05.1.2 With respect to MPO planning, compliance shall be measured as part of the plan approval or in the event of an amendment.

8.05.2 If CDOT or any of the MPOs subject to the requirements in this section fail to comply with the requirements outlined in 8.03., the Commission shall require the following:

8.05.2.1 For MPOs in receipt of federal suballocations pursuant to the CMAQ and STBG programs, this section shall apply to those sub-allocated dollars.

8.05.2.1.1 In the event that the Commission determines an MPO plan to be out of compliance with this rule, the Commission shall require the MPO to utilize all suballocated CMAQ and STBG dollars programmed within that plan on approved mitigations, as defined by section XXX, that meet federal eligibility for those programs.

8.05.2.1.2 In an MPO noncompliance event, the Commission shall require, as a condition of any CMAQ or STBG capital funding suballocation, an annual report documenting expenditure of funds on approved mitigations.

8.05.2.1.3 In the event that mitigations, plan amendments or other circumstances are determined sufficient to achieve compliance, pursuant to the methodology outlined in this rule, the flexibility for the balance of suballocated funds may be restored at the discretion of the Commission.



8.05.2.2 For CDOT, this section shall apply to federal and state dollars allocated to capital projects as part of the funded four year subset of the Department's 10-Year Plan.

8.05.2.2.1 In the event that the Commission determines the 10-Year Plan to be out of compliance with this rule, the Commission shall require that the Department revise its plan in a manner that utilizes funds programmed within that plan on approved mitigations, as defined by section XXX.

8.05.2.2.2 In a Department noncompliance event, the Commission shall require, as a condition of approval of expenditure of funds within the 10-Year Plan, an annual report documenting expenditure of funds on approved mitigations.

8.05.2.2.3 In the event that mitigations, plan amendments or other circumstances are determined sufficient to achieve compliance, pursuant to the methodology outlined in this rule, the flexibility for the balance of the funded four year subset of the Department's 10-Year Plan may be restored at the discretion of the Commission.

8.05.2.3 Pursuant to Section 43-4-1103, C.R.S., in the event of a noncompliance event at CDOT or an MPO, the organization in noncompliance shall be restricted in its use of funds allocated through the MMOF to project types approved as greenhouse gas pollution mitigations, pursuant to the process outlined in this rule.

8.05.2.3.1 In any noncompliance event, the Commission shall require, as a condition of any MMOF funding suballocation, an annual report documenting expenditure of funds on approved mitigation.

8.05.2.3.2 In the event the mitigations are determined to achieve compliance, pursuant to the methodology outlined in this rule, the flexibility for the balance of the MMOF funds shall be restored by the Commission.



THANK YOU & Next Steps



Extra Slides



NEAR TERM ACTIONS TO REDUCE POLLUTION

Sector	Revised 2005 Baseline (MMT CO2e)	2025 Target (MMT CO2e)	2030 Target (MMT CO2e)
Electricity	40.28	21	8
Oil and Gas	20.17	13	8
Transportation	30.71	23	18
Residential, Commercial, Industrial Energy Use	24.65	26	20
Other	23.42	19.9	15.6
Total	139.22	102.9	69.6
Percent Reduction	--	26%	50%



AQCC Resolution

A. The Commission hereby adopts the following sector-specific emission targets in Table 1 (using AR5, 100 yr global warming potential) to demonstrate that Colorado is on track to achieve the GHG reduction goals:

Table 1: Sector GHG Emissions Targets

Sector	Revised 2005 Baseline (MMT CO ₂ e)	2025 Target (MMT CO ₂ e)	2030 Target (MMT CO ₂ e)
Electricity	40.28	21	8
Oil and Gas	20.17	13	8
Transportation	30.71	23	18
Residential, Commercial, Industrial Energy Use	24.65	26	20
Other	23.42	19.9	15.6
Total	139.22	102.9	69.6
Percent Reduction	--	26%	50%

B. The Air Pollution Control Division (Division) will issue a draft GHG Inventory by December 31, 2020 that includes: a revised 2005 baseline; and updated projections based on current and future state actions to reduce GHGs.

C. The Division will issue a final GHG Inventory, including the revised 2005 baseline and updated projections, in August 2021.

D. The Commission will hold a public meeting in September 2021 and at that



Technical Appendix to the GHG Roadmap

Colorado Agency GHG Reductions Spreadsheet.xlsx										
A	B	C	D	E	F	G	H	I	J	
1	2005 Revised Baseline (AR5-100 yr):	139.22								
2	Reduction Needed to Meet HB 19-1261 Targets:			36.20 for 2025			69.61 for 2030			
3		2025 Reductions Low End	2025 Reductions High End	2025 Target Reduction	2030 Reductions Low End	2030 Reductions High End	2030 Target Reduction	Regulatory Actions (AQCC actions in BOLD)	Legislative Action(s)	
4	Economic Effects of COVID	0.00	5.00	0.00	0.00	2.00	0.00			
5	Recent, Ongoing and Near Term Actions									
6	Electric Generation Sector Transition	Ongoing / Near Term	17.96	19.85	18.90	30.59	33.81	32.20	AQCC 2020 Rulemaking: Regional Haze Phase 1 (Tri State, Colorado Springs, PRPA); AQCC 2020 Guidance Approval: Clean Energy Plan Guidance; AQCC 2021 Rulemaking: Regional Haze Phase 2 (Xcel); 2021 and 2022 PUC and AQCC Coordination: Utility Clean Energy Plan and Electric Resource Plan Approvals	n/a
7	Ongoing SB19-181 Rulemakings	Priority / Near Term	4.00	8.00	7.00	10.00	15.00	12.00	AQCC 2020 and Beyond Rulemakings; COGCC 2020 Mission Change Rulemaking	n/a
8	Coal Mine Methane	Ongoing	5.04	6.16	5.60	6.30	7.70	7.00	AQCC 2020/2021 Rulemakings: Regional Haze; APCD permitting	n/a
9	Transportation: Business As Usual including CAFE and LEV	Ongoing	4.50	5.50	5.00	5.40	6.60	6.00	None - Long term trend modeled by E3 reference scenario in Roadmap process shows ~26 MMT in 2025 and ~25 MMT in 2030. 2005 Baseline was ~31 MMT.	n/a
10	Comprehensive Transportation Efforts: GHG Planning and Pollution Standard; Vehicle Miles Travelled Reduction; Medium-and Heavy-Duty Strategy; Additional Light Duty Vehicle Standards and Incentives; Indirect Source Rules	Priority / Near Term	1.80	2.20	2.00	4.14	5.06	4.60	AQCC 2021 Rulemaking: GHG Planning and MDV/HDV Rules; AQCC 2022 Rulemaking: Possible New CA LEV/ZEV Rules; AQCC 2022-23 Rulemaking: Indirect Source Rules; Transportation Commission Implementation; Implementation of investment strategy (agency TBD); PUC Tariff and Distribution Network Actions	Potential transportation funding and authority bills; resources needed for APCD staffing and investment programs
11	Local Action Programs (Denver, Boulder, Ft. Collins, and others)	Ongoing	0.90	1.10	1.00	2.25	2.75	2.50	Local actions to implement climate and energy plans; APCD/AQCC Inventory Efforts to accurately capture and avoid double counting	n/a
12	Reg 22 Hydrofluorocarbon Phase-Out (May 2020)	Ongoing	0.50	0.62	0.56	1.04	1.27	1.15	AQCC May 2020 Rulemaking [COMPLETE]	n/a
13	Waste Diversion Programs – Front Range Waste Diversion Enterprise	Ongoing	0.50	0.61	0.55	0.50	0.61	0.55	Front Range Waste Diversion Enterprise Implementation	n/a
14	ZEV Regulations and Utility Transportation Electrification Plans	Ongoing / Near Term	0.36	0.44	0.40	1.35	1.65	1.50	AQCC August 2019 Rulemaking: ZEV [COMPLETE]; PUC Approval of Plans; CEO/CDPHE Engagement in PUC Process	n/a
15	Focus Areas under Comprehensive Economy Wide Program									
16	Renewable Natural Gas Standard for gas utilities	Priority	0.56	0.68	0.62	1.00	4.50	1.55	Potential legislation, PUC rulemaking; could be AQCC role	Need legislative authority and budget action
17	Landfill and Wastewater Methane Rulemaking and Investment		0.47	0.57	0.52	0.95	1.16	1.05	AQCC 2021 or 2022 Rulemaking(s)	Legislative renewable natural gas action would support
18	Refrigerant Management Program	Medium Term	TBD	TBD	TBD	0.45	0.55	0.50	AQCC 2021 or 2022 Rulemaking(s)	n/a
19	Residential Hydrofluorocarbon High Global Warming Potential Phase-out								AQCC 2021 or 2022 Rulemaking(s)	n/a
20	Beneficial electrification requirements					0.90	1.10	1.00	AQCC 2021 or 2022 Rulemaking(s); potential legislation and PUC action on utility investments	
21	Expanded natural gas demand side management requirements	Priority	TBD	TBD	TBD				Potential legislation, PUC rulemaking	
22	Building Benchmarking and Performance Standards					2.11	2.57	2.34	AQCC 2021 or 2022 Rulemaking(s)	Potential building benchmarking and standards bill; potential bill on natural gas DSM; potential legislation on beneficial electrification. Resources needed for transition programs and APCD staffing and PUC action
23	Industrial Energy and Emissions Audits and Efficiency Rulemakings								AQCC 2021 or 2022 Rulemaking(s)	
24	TOTAL Reductions		36.58	50.73	42.15	66.97	86.32	73.95		
25	Estimated GHG Growth (R-C-I Fuel, Ag, Waste, Industrial Use)		3.26	3.26	3.26	5.09	5.09	5.09	Growth determined by difference between 2015 and target years using the 2019 Action Scenario. Value reported is the cumulative total from categories listed.	
26	Overall Change		33.32	47.47	38.89	61.88	81.23	68.86		
27	CO2e MMT Reduction Needed for 1261 Targets				36.20			69.61		



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Regional Meetings/Invitees

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Regional Meetings

Region	Date	Time	Location
R1	2/16/21	10:30-11:30am	Virtual
R4	2/16/21	1-2pm	Virtual
R2	2/18/21	3-4pm	Virtual
R3	2/19/21	9-10am	Virtual
R5	2/22/21	1:30-2:30pm	Virtual
R2	3/1/21	4-5pm	Virtual
R4	4/16/21	10:30am-12pm	Virtual
R5	4/16/21	1-2pm	Virtual
R1	4/23/21	9:30-11am	Virtual
R2	4/23/21	11:30am-1pm	Virtual
R3	4/23/21	1:30-2:30pm	Virtual



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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 4 Stakeholders - GHG Transportation Planning

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Feb 19, 2021 at 4:12 PM

Good afternoon Stakeholders,

Thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

We will reach back out to you when our next Regional discussions are scheduled (likely in April), and any additional public meetings on this topic (CDPHE). Or, you can also check out our [GHG Webpage](#).

You will find the slide presentation attached, including NFRMPO's presentation. You can also find the recorded Regional presentations [here](#) (Public Meeting Notice - bottom of the page).

Please email me if you would like to discuss any specific items prior to that time.

Thank you again,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



P 303.757.9977
2829 W. Howard Pl., Denver, CO 80204
theresa.takushi@state.co.us | www.codot.gov

2 attachments

NFR GHG Trends.pdf
829K

Regional Transportation Meetings (1).pdf
1158K



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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 1 - GHG Transportation Planning Stakeholders

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Feb 19, 2021 at 4:20 PM

Good afternoon Stakeholders,

Thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

We will reach back out to you when our next Regional discussions are scheduled (likely in April), and any additional public meetings on this topic (CDPHE). Or, you can also check out our [GHG Webpage](#).

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Thank you again,

Theresa

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Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



COLORADO
Department of Transportation
Division of Transportation Development

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Regional Transportation Meetings (1) (3).pdf

1158K



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Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 2 - GHG Transportation Planning Stakeholders

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Feb 19, 2021 at 4:26 PM

Good afternoon Stakeholders,

Thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

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Thank you again,

Theresa

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Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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Regional Transportation Meetings (1) (3).pdf

1158K



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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 3 - GHG Transportation Planning Stakeholders

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Feb 19, 2021 at 4:30 PM

Good afternoon Stakeholders,

Thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

We will reach back out to you when our next Regional discussions are scheduled (likely in April), and any additional public meetings on this topic (CDPHE). Or, you can also check out our [GHG Webpage](#).

You will find the slide presentation attached. You can also find the recorded Regional presentations [here](#) (Public Meeting Notice - bottom of the page).

Please email me if you would like to discuss any specific items prior to that time.

Thank you again,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



COLORADO
Department of Transportation
Division of Transportation Development

P 303.757.9977

2829 W. Howard Pl., Denver, CO 80204

theresa.takushi@state.co.us | www.codot.gov

Regional Transportation Meetings (1) (3).pdf
1158K

STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 5 - GHG Transportation Planning Stakeholders

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Thu, Feb 25, 2021 at 8:28 AM

Good morning Stakeholders,

Thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

We will reach back out to you when our next Regional discussions are scheduled (likely in April), and any additional public meetings on this topic. Or, you can also check out our [GHG Webpage](#).

You will find the slide presentation attached. You can also find the recorded Region 5 presentation [here](#) (Public Meeting Notice - bottom of the page).

Please note CDPHE's Listening Sessions are now scheduled for **March 11 from 10:30am-12:00pm & March 18th from 6:00pm - 8:00pm**. See more details [here](#).

Please email me if you would like to discuss any specific items prior to the April meetings.

Thank you again,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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Regional Transportation Meetings (1) (1).pdf
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STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You - Region 2 Stakeholders

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Wed, Mar 17, 2021 at 2:56 PM

Good afternoon Stakeholders,

I apologize for the delay in sending this email.

We want to thank you for your participation in the GHG Transportation Planning Regional Meeting.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

We have set up our next Regional meetings for early April. Please check out our [GHG Webpage](#).

You will find the slide presentation attached. You can also find the recorded Regional presentations [here](#)

Please email CDOT_transportationghg@state.co.us if you would like to discuss any specific items prior to that time.

Thank you again,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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Regional Transportation Meetings (1) (1).pdf

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COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You for Your Participation - Regional GHG Transportation Planning Meeting

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Thu, Apr 22, 2021 at 3:15 PM

Cc: "CDOT_transportationghg@state.co.us" <CDOT_transportationghg@state.co.us>

Good afternoon Stakeholders,

Thank you for your participation in the Regional Meeting on GHG Transportation Planning.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

You will find the slide presentation attached. You can also find the recorded Regional Meetings on [CDOT's Youtube Page](#). Please check out our [GHG Webpage](#) for more information.

Our next steps will be to take your feedback into consideration prior to the rule package submission to the Air Quality Control Commission. If you have additional feedback or questions, please share them with us through this [comment form](#).

Additionally, CDPHE is hosting another Listening Session which is scheduled for **April 28th from 12pm-2pm**. See more details [here](#).

Please contact us at CDOT_transportationghg@state.co.us with any questions.

Thank you again.

Aloha,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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Regional Transportation Meetings - April 2021 (3).pdf

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STATE OF
COLORADO

Shishido - CDOT, Natalie <natalie.shishido@state.co.us>

Thank You for Your Participation - Regional GHG Transportation Planning Meeting

Takushi - CDOT, Theresa <theresa.takushi@state.co.us>

Fri, Apr 23, 2021 at 3:35 PM

Cc: "CDOT_transportationghg@state.co.us" <cdot_transportationghg@state.co.us>

Good afternoon Stakeholders,

Thank you for your participation in the Regional Meeting on GHG Transportation Planning.

We appreciate the discussion, and look forward to continued collaboration as we develop this rule/policy.

You will find the slide presentation attached. You can also find the recorded Regional Meetings on [CDOT's Youtube Page](#). Please check out our [GHG Webpage](#) for more information.

Our next steps will be to take your feedback into consideration prior to the rule package submission to the Air Quality Control Commission. If you have additional feedback or questions, please share them with us through this [comment form](#).

Additionally, CDPHE is hosting another Listening Session which is scheduled for **April 28th from 12pm-2pm**. See more details [here](#).

Thank you again.

Aloha,

Theresa

--

Theresa Takushi (she/her/hers)
Greenhouse Gas Climate Action Specialist



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Regional Transportation Meetings - April 2021 (4).pdf
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COLORADO

Department of Transportation

Draft Greenhouse Gas Pollution Standard For Transportation Planning

Regional Meetings - April, 2021



Agenda

1. **Background - Colorado's Climate Legislation & GHG Goals**
2. **Proposed rule and policy for transportation sector**
3. **GHG Modeling for Transportation in Colorado**
4. **Next Steps**



Colorado's Efforts To Address Climate Change

HB-1261

- Colorado General Assembly passed House Bill-1261 in 2019
The Climate Action Plan to Reduce Pollution
- GHG reduction targets:
26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- Lays out near/long term actions in every sector to meet the established targets



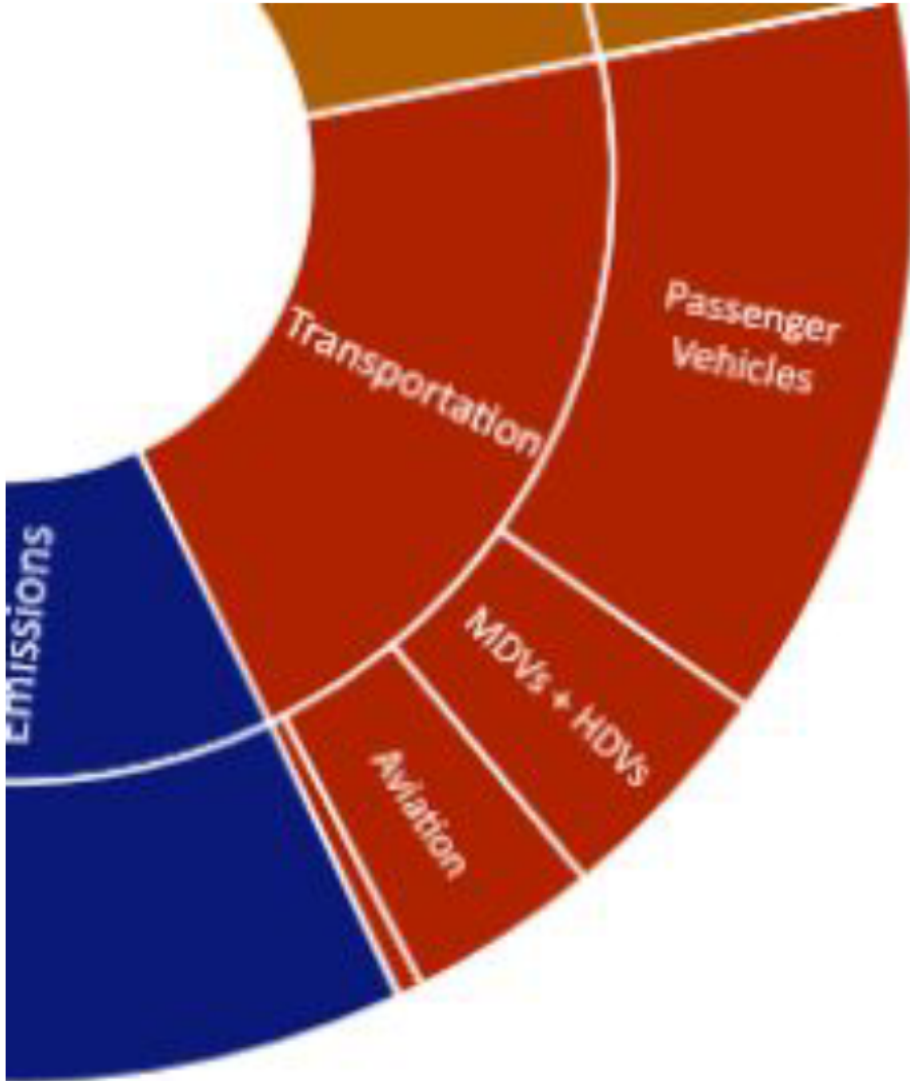
CO GHG Emissions from the GHG Roadmap

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)





Transportation GHG Emissions



- Transportation is a large and complex sector that involves several different emissions sources--from passenger cars, to semi-trucks, and airplanes.
- Reducing emissions within this sector will require a range of actions, including new technologies.
- This proposed Rule/Policy focuses on the transportation planning process, recognizing that the projects we invest in are an important factor in how people travel.
- This proposed Rule/Policy would apply to CDOT and Metropolitan Planning Organizations (MPOs) and the long range transportation plans these organizations are charged with developing.



Regulatory Approach

This framework includes two components: 1) A rulemaking promulgated by the Air Quality Control Commission and 2) Policy Directives issued by the Colorado Department of Transportation.

GHG Transportation Rule

Sets overall framework and GHG reduction goals

Draft Rule Concepts development led by CDOT

Informed by Stakeholders, Advisory Group

Rulemaking Process led by CDPHE & supported by CDOT

Approved by the Air Quality Control Commission (AQCC)

GHG Transportation Policy

Describes specific requirements as it relates to the planning process

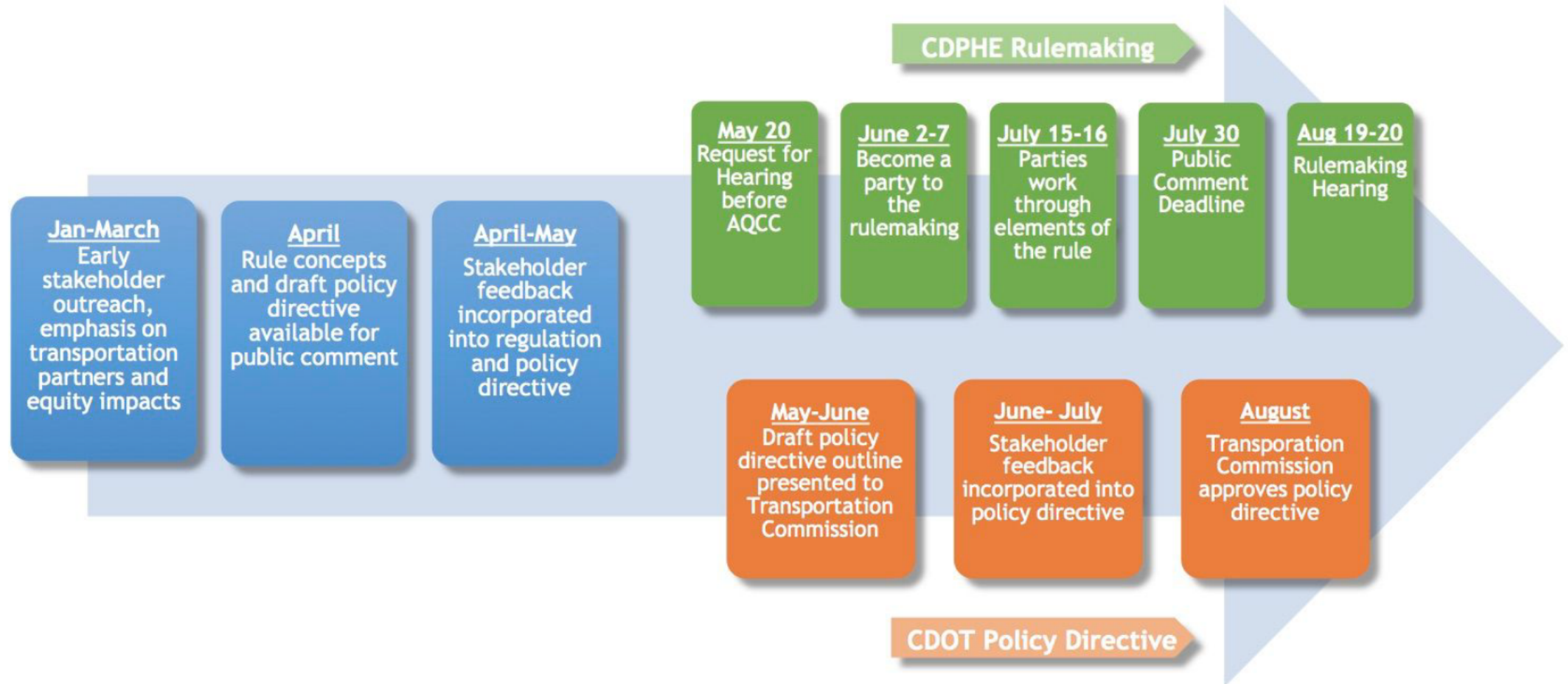
Led by CDOT

Informed by Stakeholders, Advisory Group

Approved by the Transportation Commission



Timeline: GHG Transportation Planning Rule and Policy





Overall Concept & Approach

Set a GHG “budget” in MMT CO₂e for transportation plans.

Emissions calculated by modeling a set of transportation projects (included in transportation plans) and determining the total emissions from vehicles traveling across the transportation system.

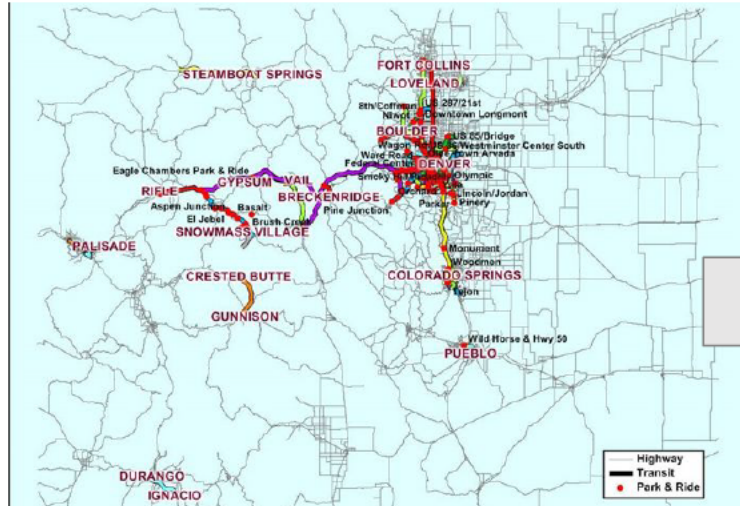
Limited to projects that are “regionally significant” - projects that increase capacity. Not to basic safety and repaving projects.

Alternative compliance through mitigation measures that achieve emission reductions in other areas related to transportation



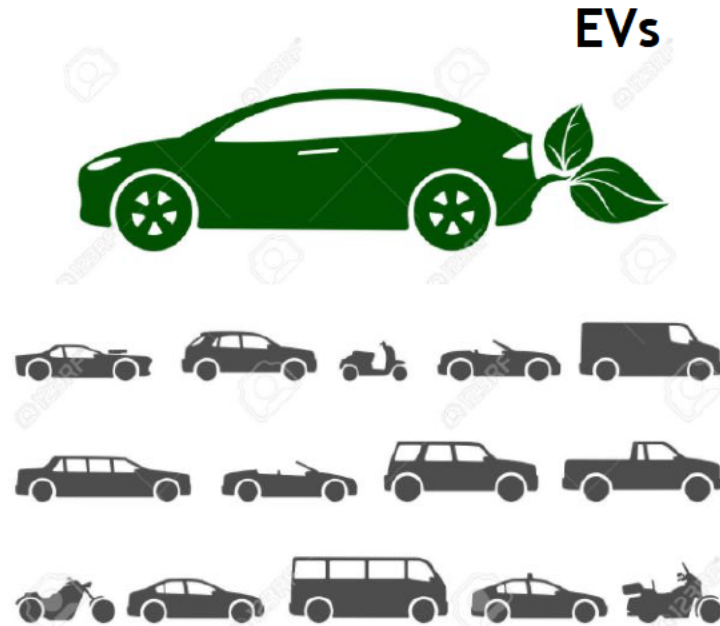
How Are Emissions Calculated?

CDOT TRAVEL MODEL



**Outputs: VMT,
congestion/speed**

CDPHE MOVES MODEL



Fleet Mix/Age & Fuel Type

**TOGETHER
these models show**

**TRANSPORTATION
GHG
EMISSIONS**



Incorporating Stakeholder Feedback

Over 30 Meetings Held, Over 250 Participating Stakeholders

- Statewide Advisory Group
- Regional Stakeholder Meetings
- Meetings with MPOs, Planners and Transportation Partners
- CDPHE/CDOT Listening Sessions
- Other Smaller Stakeholder Meetings



Areas of Feedback

- Rural and regional differences
- Incentives vs. penalties/unfunded mandate (carrots vs. sticks)
- Equity considerations
- Enforcement
- MPO roles and responsibilities
- Clarification on which projects included/excluded
- How the rule impacts the 10 year plan and adopted regional plans
- Cost and interest in Cost Benefit Analysis
- Concern about feasibility of 2025 GHG sub-budgets
- Importance of a clearly separating ozone conformity process and this rule
- GHG reductions feasible through this rule



Incorporating Stakeholder Feedback

MPOs concern about workload and achievable budgets. Land use is a huge determinant and not directly controlled by CDOT/MPOs



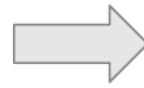
Apply the regulation to a current process - Regional Transportation Plans. Budget needs to align with CDOT/MPO responsibilities

Environmental groups want quantifiable GHG reductions



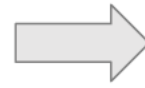
Budgets and alternative mitigations are quantifiable and rule/policy will include a methodology for calculating emissions

What will this mean for how construction projects are delivered?



This is an area to consider as an alternative compliance, however ideas need to be developed with industry/stakeholder input

Rural areas concerned about how the rule would apply to them



Focus is on urban areas and projects that add capacity.



GHG Transportation Planning Rule

Primary Draft **RULE** CONCEPTS

Statewide GHG “Budget” and Regional “Sub-budgets” for MPOs.

- Budget applies to total, projected emissions from vehicles

Budgets set at 10 year intervals (2030, 2040, 2050)

Phased implementation that starts with next planning cycles

Reporting requirements to CDPHE



Reporting Requirements

Reporting the Certification of the State & MPO sub-budgets

In order to be deemed complete the certification must include the following:

- Modeling inputs
- Modeling output in approved format.
- Years of the modeling runs included in the analysis
- Offset/Mitigation measures utilized in the model (if needed to meet the budget)

Project-level mitigation measures must be tracked on a standardized form including date, project name, implementation schedule, and quantity of GHG being reduced.



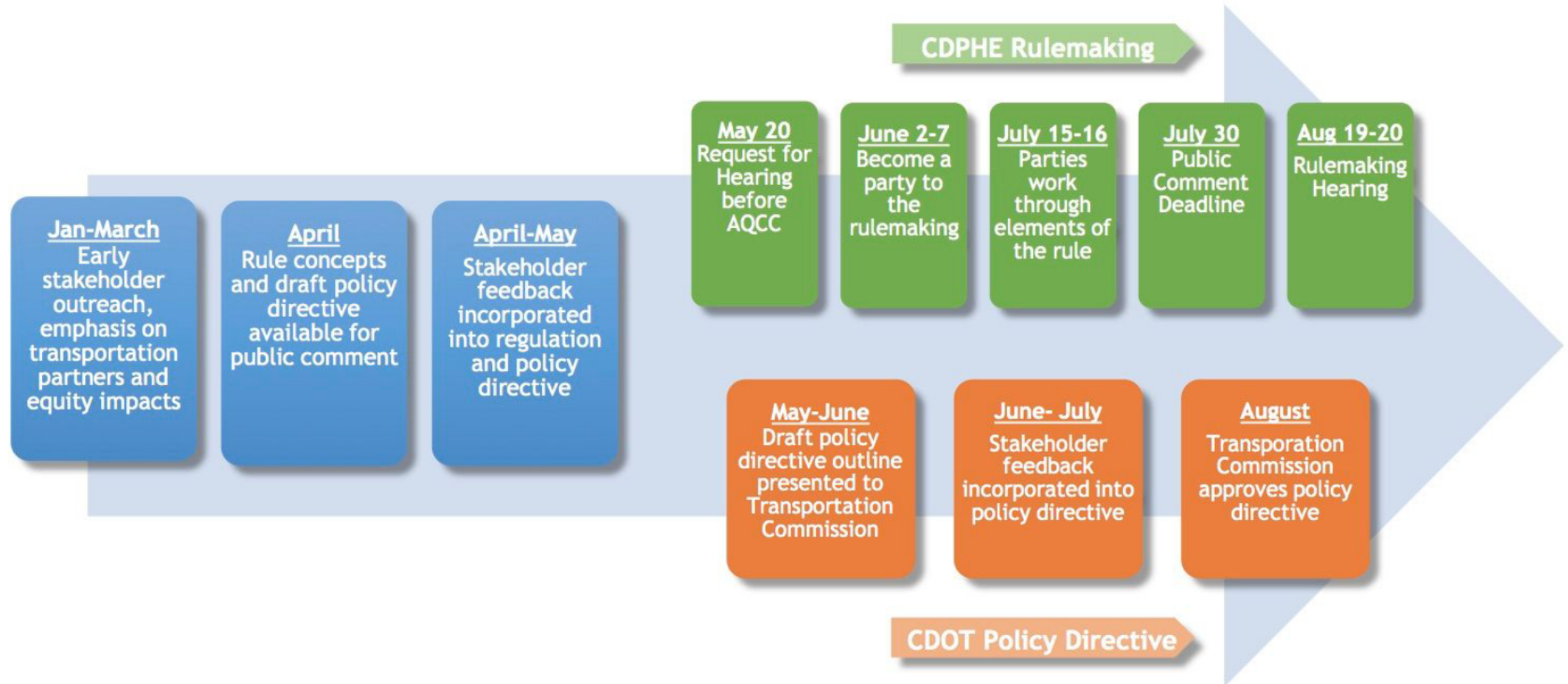
GHG Transportation Planning Rule Concepts

Rule Concepts Discussion Questions

- Do the proposed rule concepts and approach incorporate and balance the stakeholder input?
- Is it clear to you how the proposed concepts will be **implemented**?
- Are there other **reporting** requirements that should be considered in the rule?



Timeline: GHG Transportation Planning Rule and Policy





Main Elements of the Draft [POLICY](#)

Describes the GHG reduction requirements in HB19-1261 & the GHG Pollution Reduction Roadmap

Outlines the Transportation Commission's role

Includes a schedule for incorporation of GHG in transportation plans

Describes opportunities for GHG reductions in project analysis (NEPA), delivery and maintenance

Explains equity consideration of GHG reductions in areas where mitigation occurs



Possible Mitigation Areas--CDOT

Construction Practices

- Reuse or upcycle deconstructed materials
- Ensure contractors have access to recyclable materials
- Use fuel efficient, Tier IV, or electric equipment and reduce idling

Operation and Maintenance

- Zero emission vehicles (e.g. electric sweepers)
- Carbon sequestration strategies such as revegetation/ reforestation
- Recycle materials
- Traffic light synchronization
- Ramp metering

Specific investments in GHG reducing activities:

- Fleet conversions to electric, Tier IV
- Transit
- Bike and micro-mobility programs
- TDM

Efforts Thru Clean Trucking Strategy

- In July 2020, CDOT, CDPHE, and CEO announced an all-of-the-above strategy to reduce pollution from medium and heavy duty transportation.
- The draft strategy includes a suite of ideas that will be evaluated comprehensively to determine the most impactful and reasonable actions
 - Accelerating fleet turnover in the conventional truck fleet
 - Incorporating clean technology and developing ZEV infrastructure, especially for critical freight corridors
 - Encouraging participation in programs like SmartWay
 - Exploring adoption of Advanced Clean Truck standard
 - Supporting workforce development
 - Leading by example through green procurement



Possible Mitigation Areas--MPOs

Project Selection: Evaluation metrics that reward projects that include GHG reduction measures:

- Inclusion of electric charging stations
- New/expanded transit service
- Consider complete streets
- Operational improvements

Specific investments in GHG reducing activities:

- Fleet conversions to electric, Tier IV
- Transit
- Bike and micro-mobility programs
- TDM



Discussion Question

- What additional mitigation strategies should be included in the transportation planning policy?



Rule

- CDPHE Rulemaking Process will begin with a
 - Request for Hearing - May 20, 2021
 - Petition for Party Status
 - Formal Public Comment process

Policy Directive

- CDOT will continue meeting with the Advisory Group and stakeholders to inform the PD and mitigation measures through project delivery
- Transportation Commission will approve



Contact Information

Theresa Takushi

GHG Climate Action Specialist

CDOT_transportationghg@state.co.us

303.757.9977

Comment Form

<https://www.codot.gov/programs/environmental/greenhouse-gas/ghg-transportation-policy-rulemaking-process>



COLORADO

Department of Transportation

THANK YOU!



COLORADO

Department of Transportation

Incorporating Greenhouse Gas Emissions Reductions into Transportation Planning Regional Meetings - February, 2021



Today's Focus

1. Overview of Colorado's climate legislation/policy framework
2. Proposed rules and policy for transportation sector
3. Stakeholder Input



Colorado's Efforts To Address Climate Change

HB-1261

- In 2019, the Colorado General Assembly passed House Bill-1261, the *Climate Action Plan to Reduce Pollution*.
- HB 1261 established the following GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- Lays out near/long term actions in every sector to meet the established targets
- To ensure that Colorado continues to reduce emissions to meet greenhouse gas targets, reduce local air pollution, and realize the full economic benefits of the transition to a clean energy economy.
- Draft document released in Sept 2020; final in Jan 2021.
- <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>



Largest GHG Emissions Sources

2005 Largest Emission Source:

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

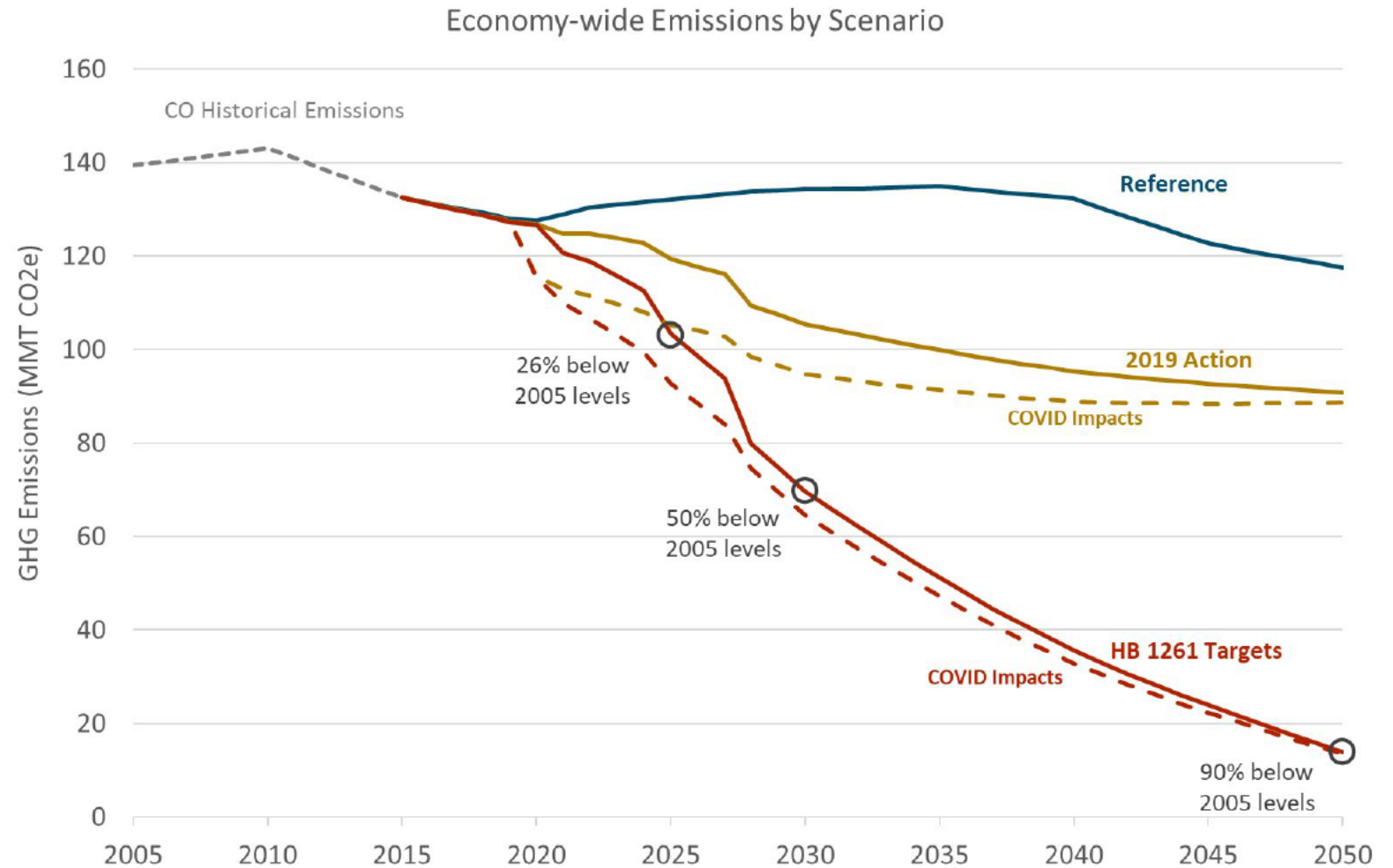




Colorado GHG Pollution Over Time

SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, we are on a trajectory to achieving approximately half the level of emission reductions to meet the 2025 and 2030 goals.
- Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.





Near-Term Transportation Actions included in the CO GHG Roadmap

Infrastructure (Planning & Projects)

- GHG pollution standards for transportation plans [FOCUS of MTG]

- Indirect source standards for some types of new development.

- Trip reduction/TDM requirements and encouraging telecommuting for large employers [Separate process]

- Expansion of public transit, including setting the stage for Front Range Rail

- Incentives for land use decisions by local governments that reduce pollution and support greater access to housing near jobs.

- Clean trucking strategy including evaluation of Advanced Clean Truck ZEV standards

- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses

Human Factors (Behavior Change)

Mobile Sources (Vehicles)



Regulatory Approach

- The Colorado Air Quality Control Commission (AQCC) is appointed by the governor and authorized by the Colorado General Assembly. The AQCC develops air pollution control policy and regulates pollution sources.
- The AQCC is taking up a series of rulemakings across all sectors to address GHG emissions and implement recommendations in the Roadmap. One of these rulemakings will focus on the transportation sector.
- The Colorado Department of Transportation, and its Governor-appointed Transportation Commission has statutory authority over the transportation planning process. This process is guided by a series of Policy Directives issued by the Transportation Commission.
- The GHG Pollution Standard will therefore include actions by both bodies.



Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- Integrate GHG pollution standards and analysis in regional and statewide transportation plans: GHG Pollution Standard
- Reduce SOV commuter trips: Large Employer Trip Reduction
- Both included in single rulemaking via the CDPHE/Air Quality Control Commission process
 - May draft; August final

CDOT Policy

- In parallel, CDOT will develop implementation guidance via a policy directive specific to GHG Pollution Standard



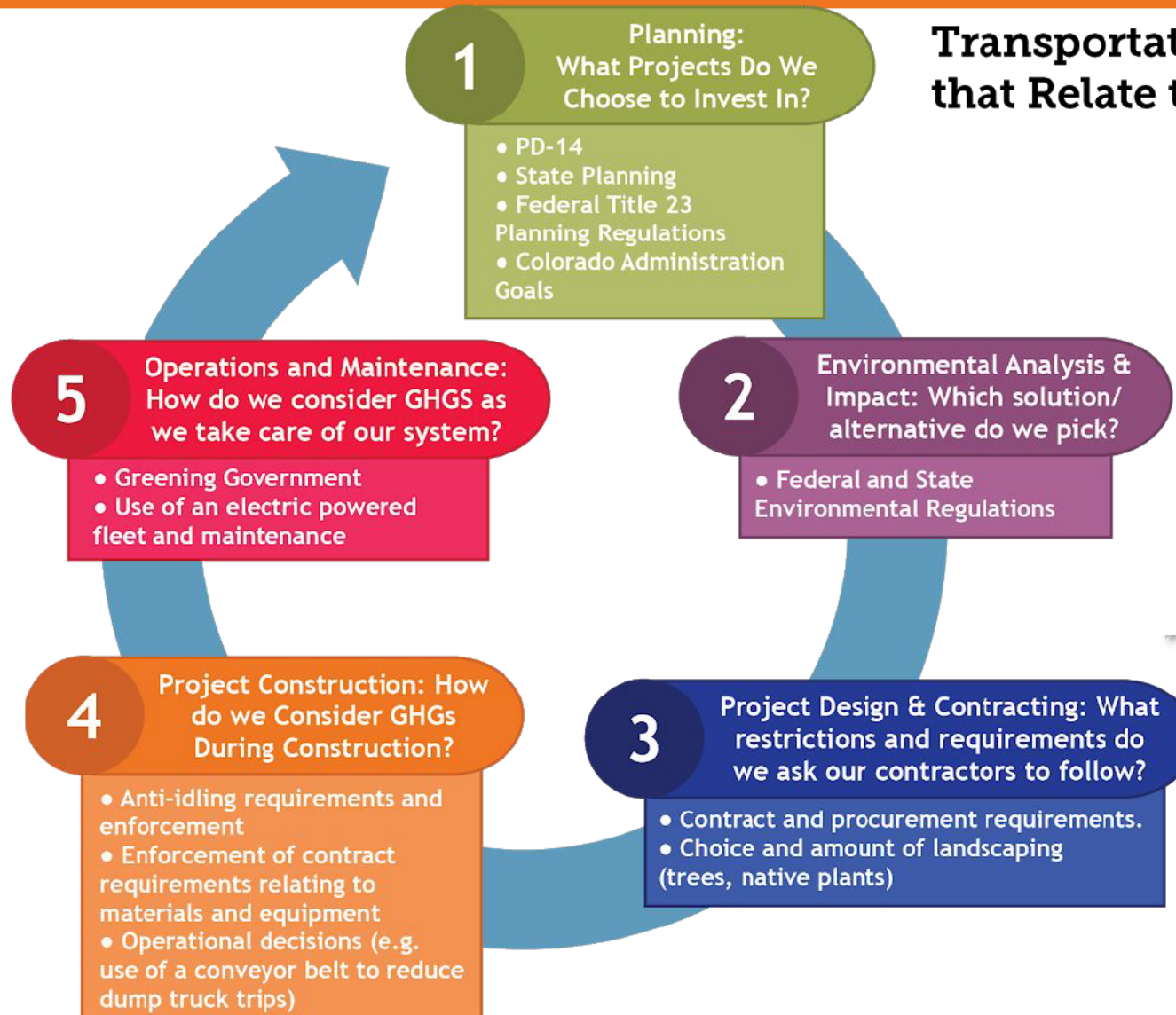
GHG Pollution Standard (GPS) Rule Approach

Initial Thinking

- Set a numeric GHG “budget” for transportation plans (statewide and regional).
- Phased implementation with initial focus on state and certain MPO plans.
- Focus on projects that increase capacity
- CDOT guidance will focus on the practicalities of how the policy translates into specific project-based requirements.
- Inclusion of other measures to meet budget.



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions





Transportation GHG Pollution Standard

- What are your questions?
- What concerns do you have?
- What challenges do you see as important to address when developing these rules and policies?
- Who else should we reach out to for future regional discussions?



Regional Meetings

- Feb 16 10:30-11:30 (Region 1 - Denver Metro Area)
- Feb 16 1-2pm (Region 4 - Northeast)
- Feb 18 3-4pm (Region 2 - South/SouthEast)
- Feb 19, 9-10am (Region 3 - Northwest)
- Feb 22, 1:30-2:30 (Region 5 - Southwest)

CDOT Advisory Group

Feb 25 - CDPHE Listening Session

April - another opportunity to hear from Regional Stakeholders

Other ideas?



Contact Information

Theresa Takushi

GHG Climate Action Specialist

theresa.takushi@state.co.us

303.757.9977

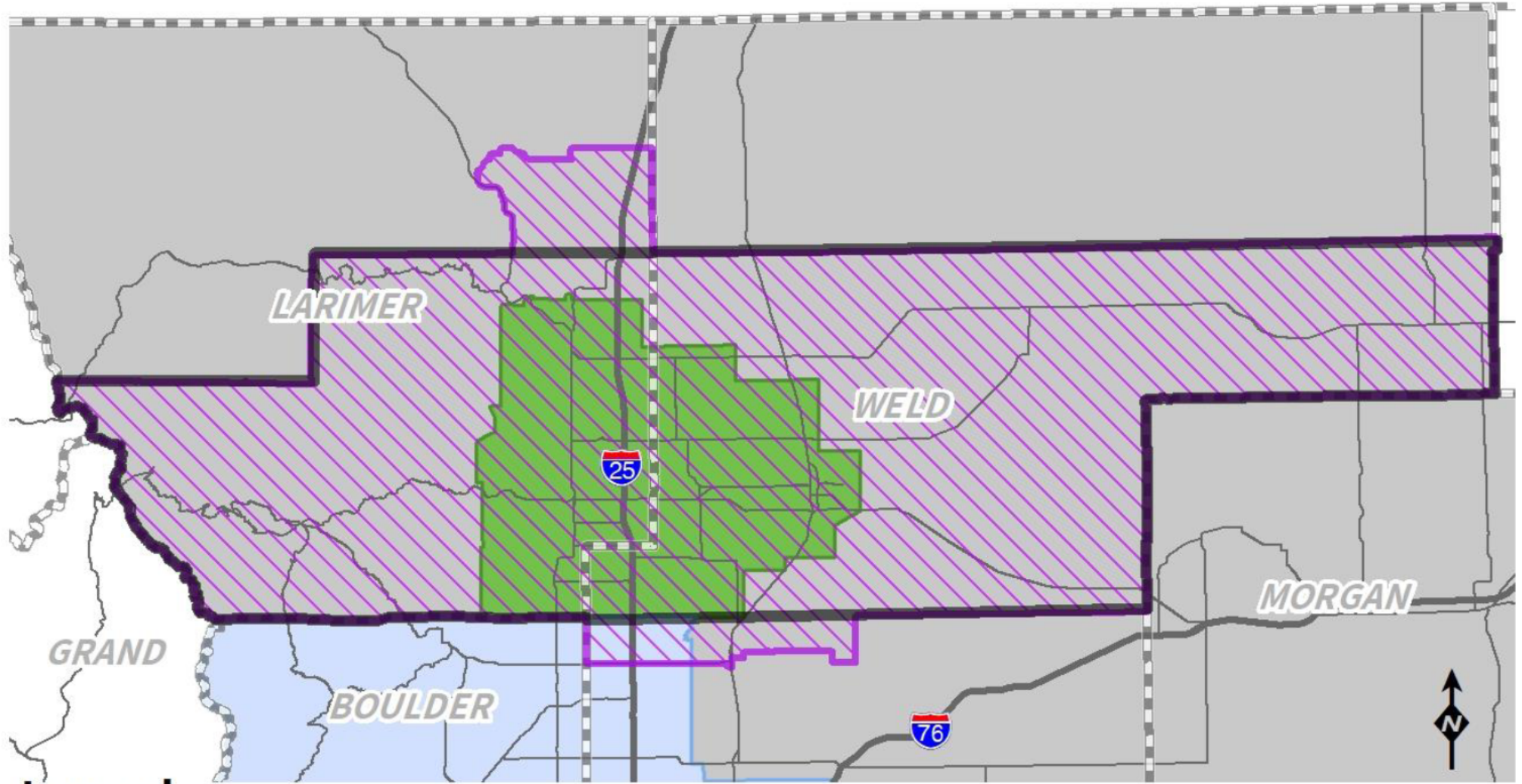
NFRMPO Transportation GHG Trends

CDOT's Region 4 GHG Transportation Stakeholder Meeting



North Front Range
Metropolitan
Planning
Organization

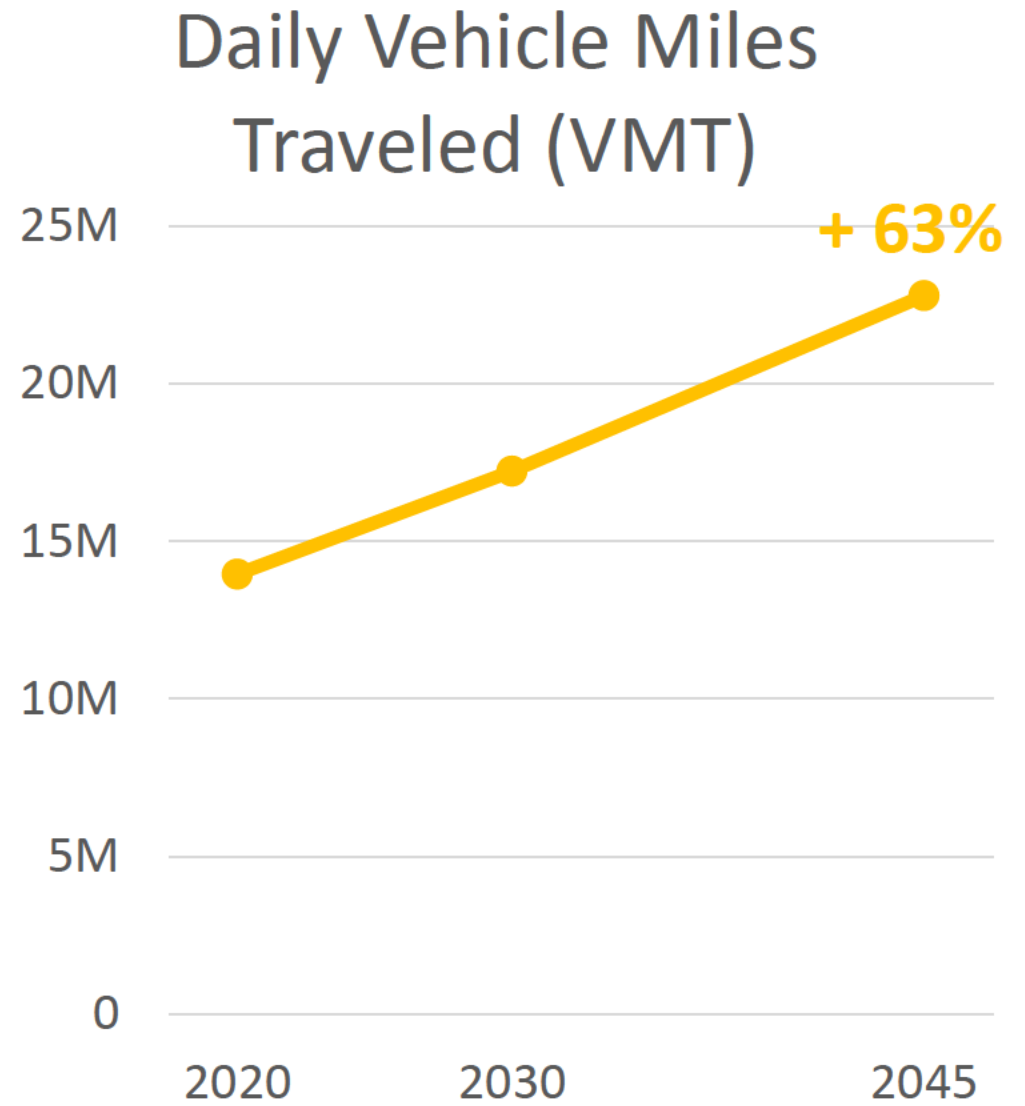
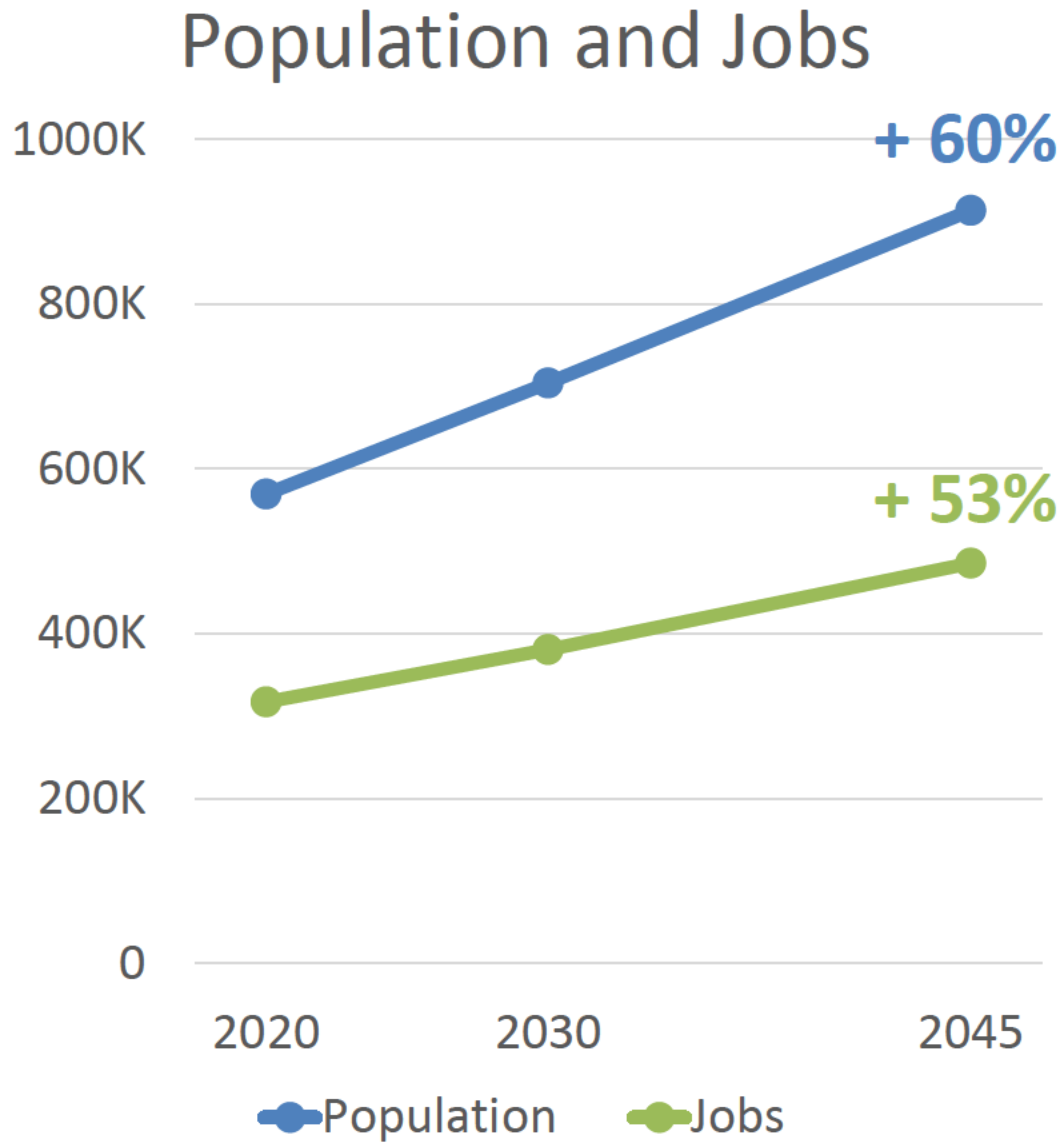
February 16, 2021



Legend

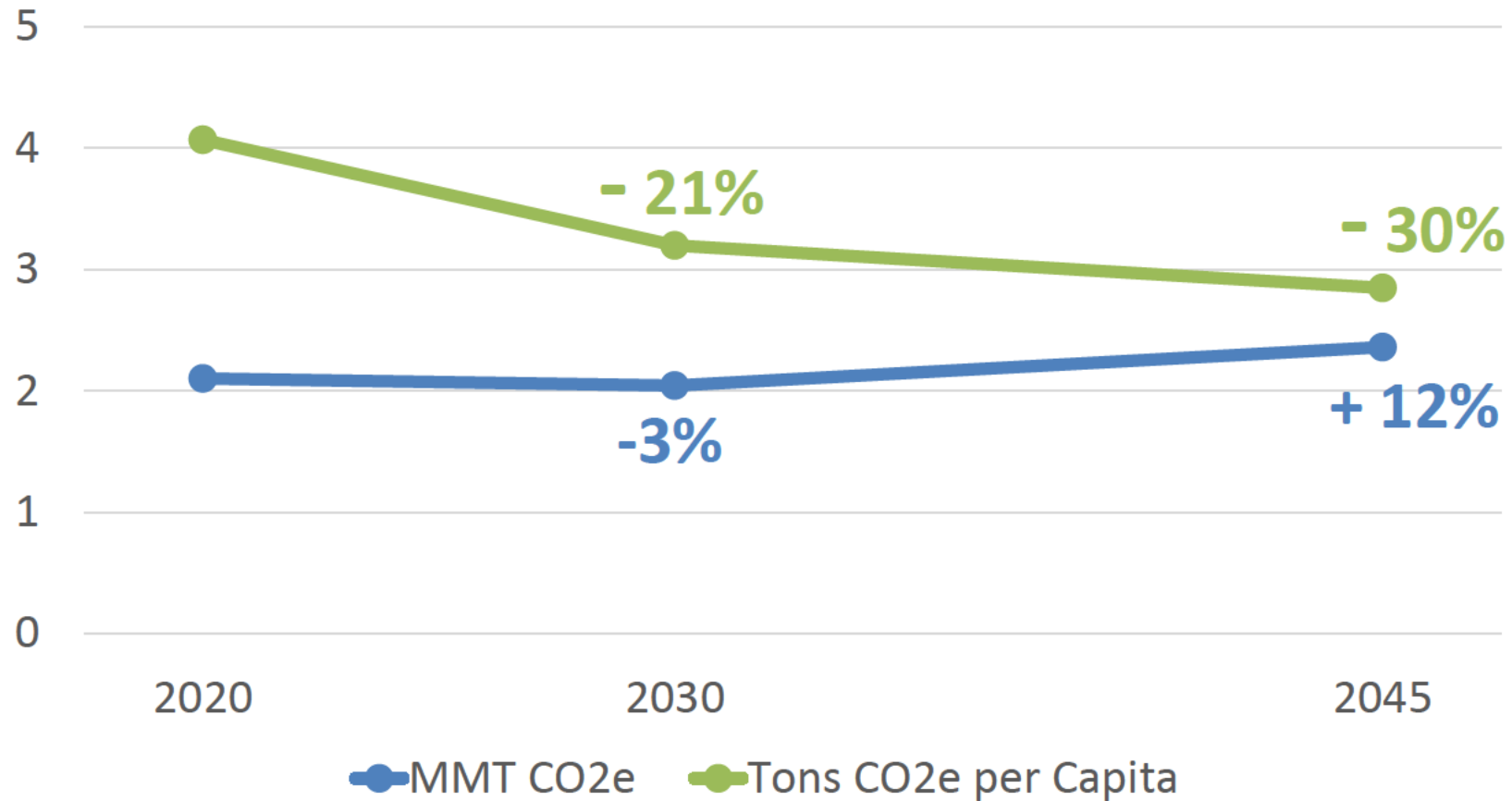
- Northern Subarea
- Counties
- NFRMPO
- UFRTPR
- DRCOG
- NFRMPO Modeling Area

November 2020
Sources: NFRMPO, DRCOG



Sources: NFRMPO 2010 Land Use Allocation Model (LUAM) and NFRMPO 2015 Regional Travel Demand Model (RTDM)

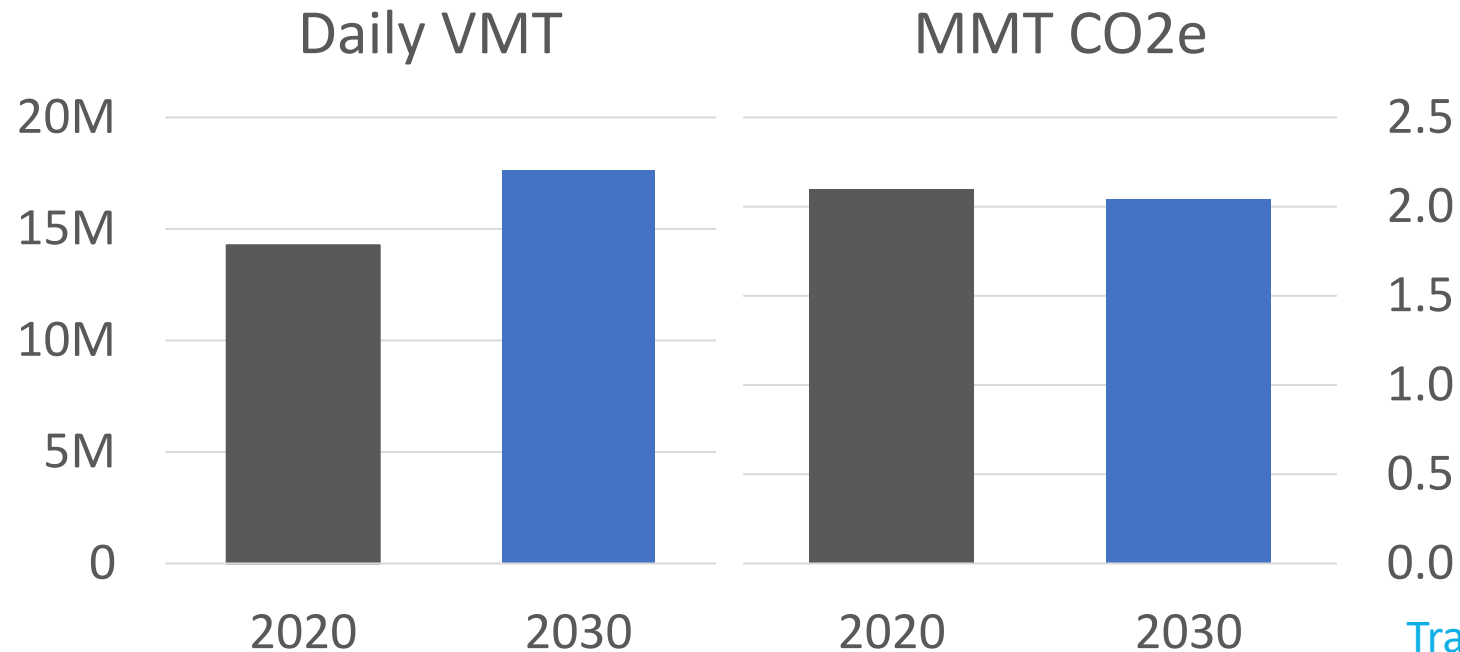
Annual On-Road Transportation GHG Emissions



Note: **Preliminary** results from EPA MOVES 2014b;
does not account for current or forecasted EV share

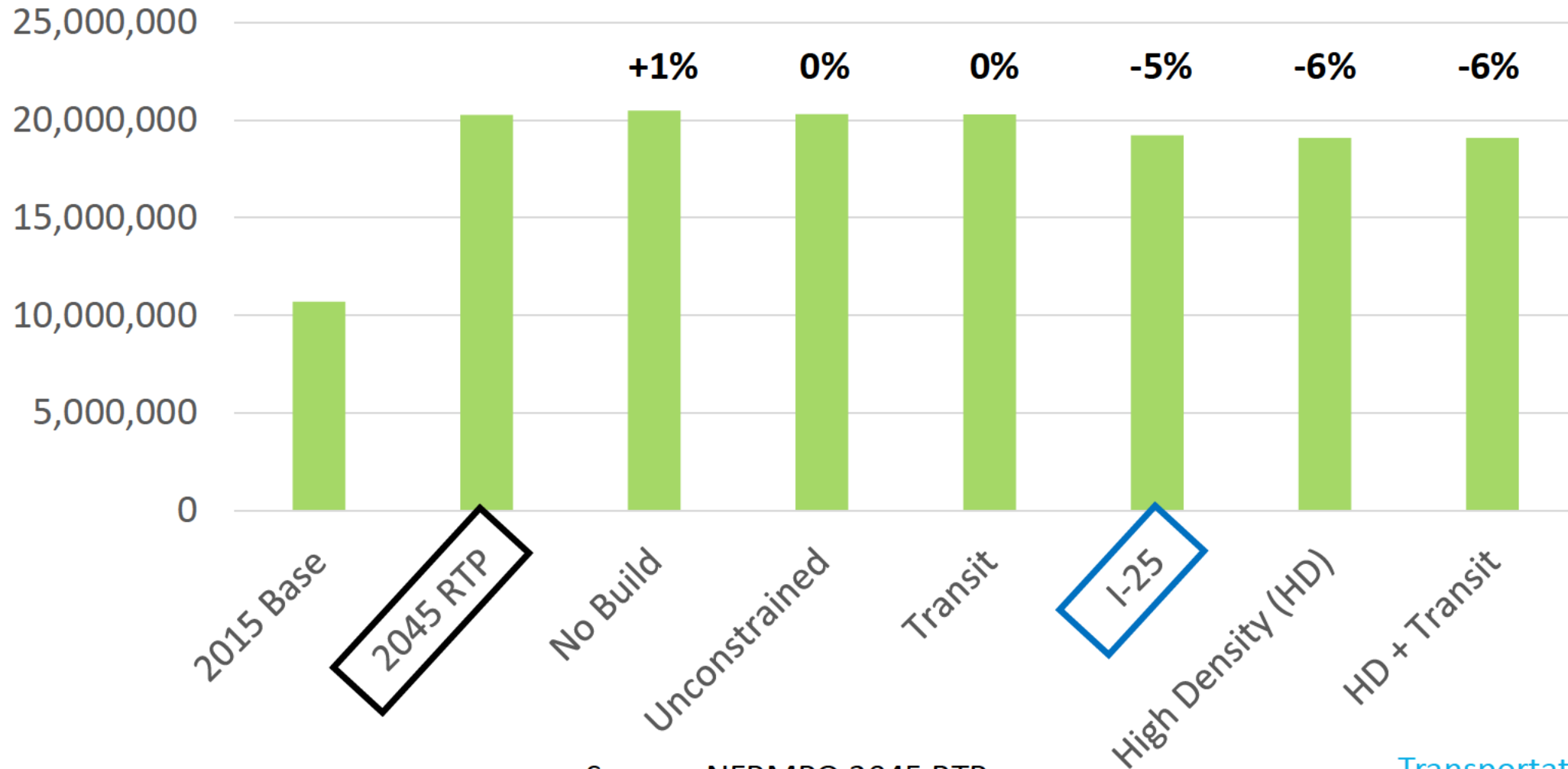
VMT \neq GHG

- Based on MOVES2014b, GHG emissions are forecasted to decline from 2020 to 2030 despite an increase in VMT
- Some GHG emissions tools use VMT and fleet mix to estimate GHG
- More accurate tools consider additional factors, such as speed, idling, ambient temperature, and fuel type



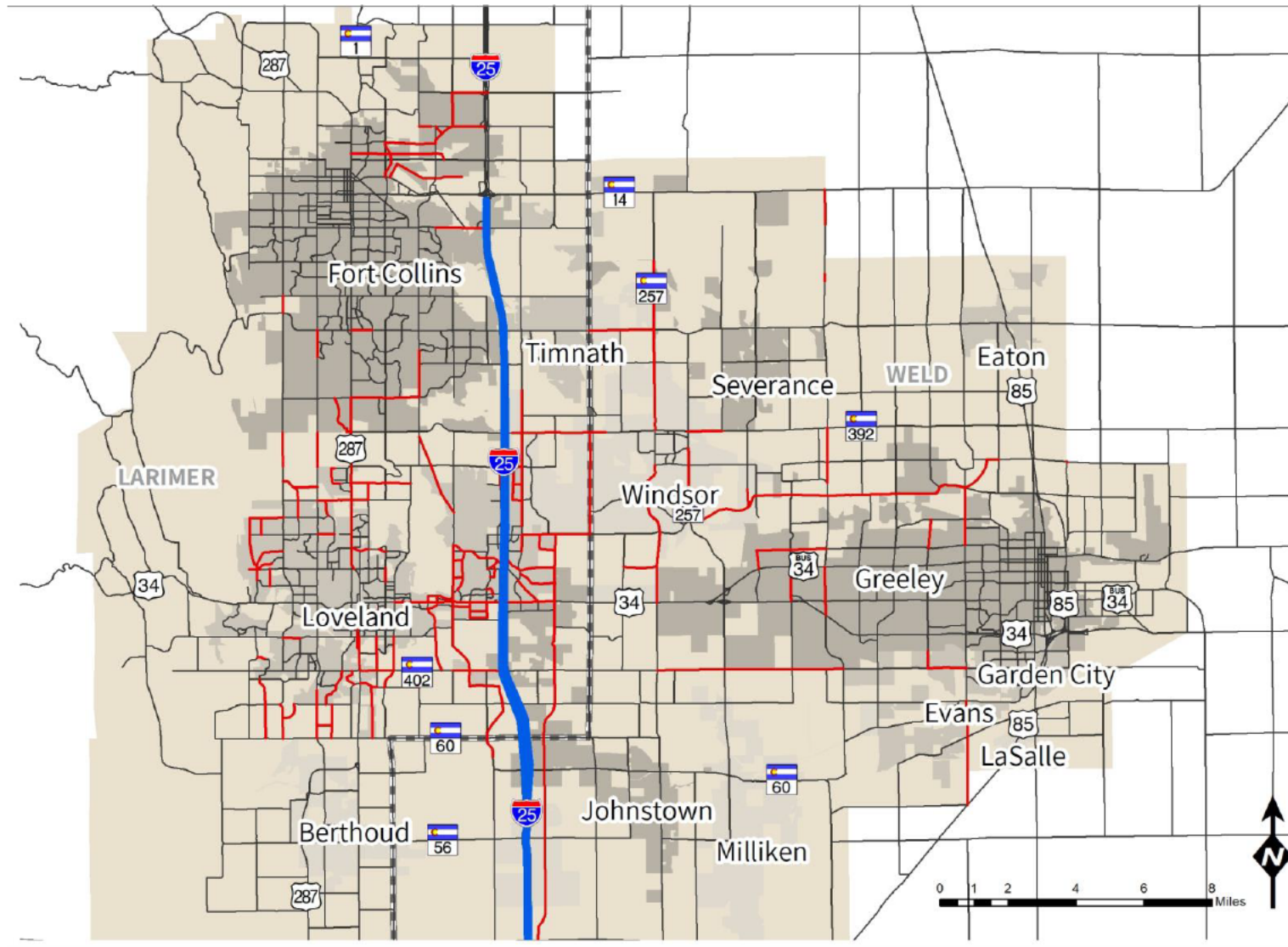
VMT by Scenario

Daily VMT



Source: NFRMPO 2045 RTP

I-25 Scenario



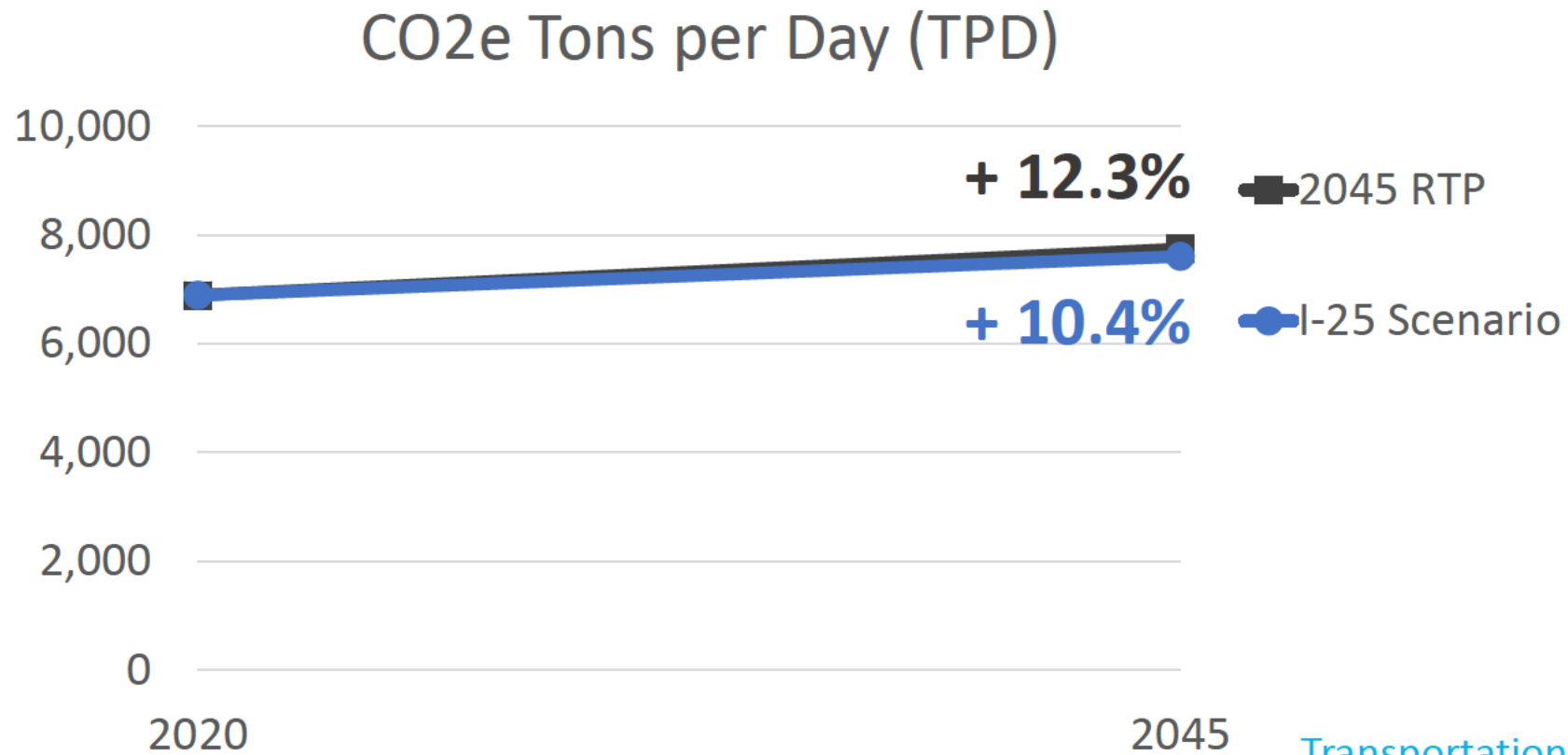
Legend

- Added Project (3 General Purpose + 1 Express Lane in each direction)
- Removed Projects
- Roadway Network
- County Boundary
- NFRMPO Boundary

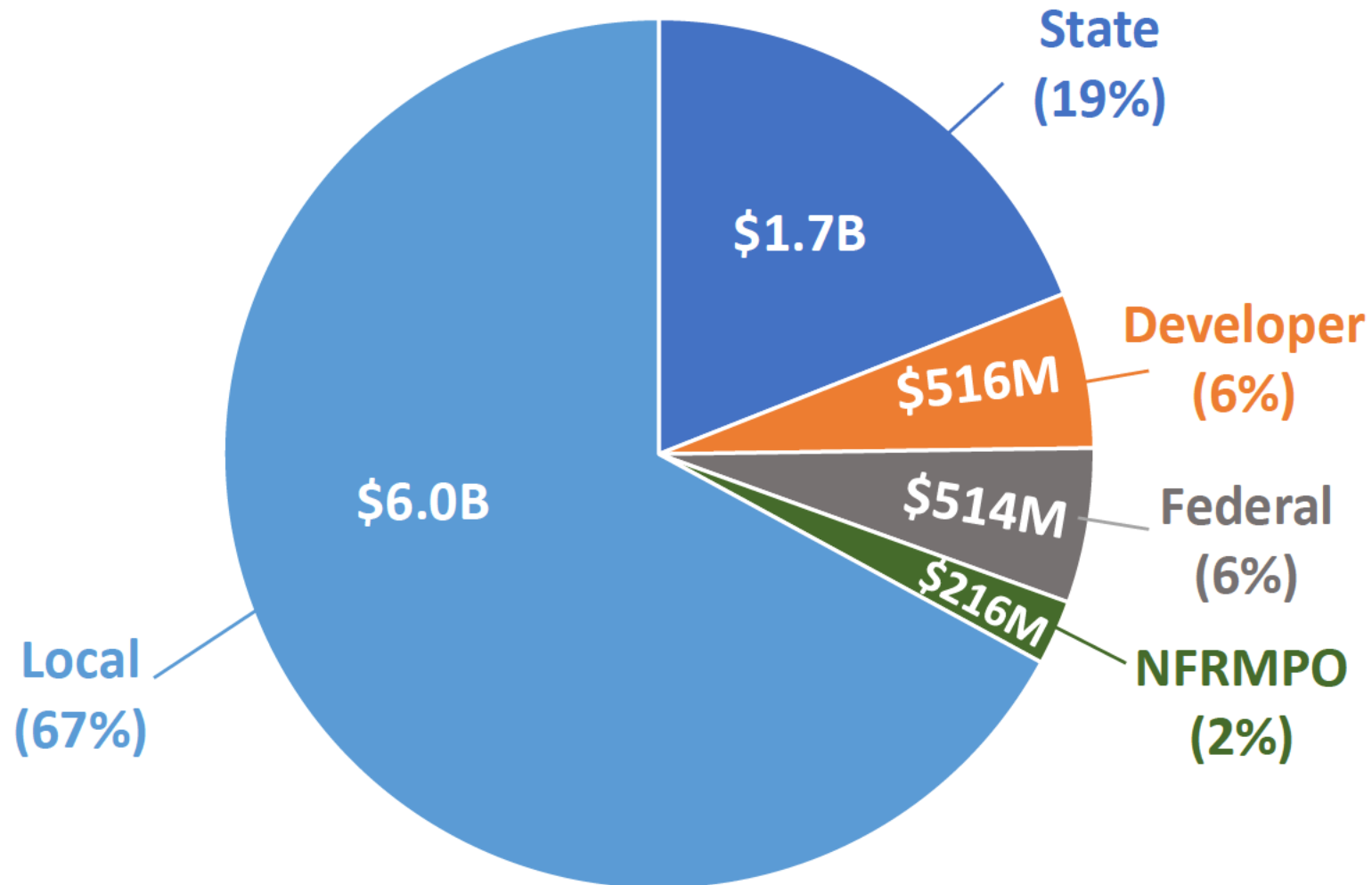
July 2019
Sources: CDOT, NFRMPO



	2045 RTP	2045 I-25 Scenario	Change
Daily VMT	23.3M	22.2M	-5.0%
CO2e TPD	7,743	7,606	-1.8%



Revenue Forecast by Controlling Entity, 2020-2045



Source: NFRMPO 2045 RTP

GHG Drivers and MPO Authorities

Transportation Sector GHG Driver	MPO Authority
Forecasted demographics	None
Land use	None (Information sharing)
Cost of travel by mode	None (Information sharing)
Operations	None (Information sharing)
Fleet mix / emissions standards	None (Information sharing)
Fuel type	None (Information sharing)
Project selection	2% (Information sharing)

GHG Budget Recommendations

- GHG budgets should be required statewide to provide a comprehensive approach to addressing on road GHG emissions
- GHG budgets should account for anticipated population growth (e.g. GHG per capita)
- Due to federal requirements to forecast land use based on latest assumptions, budgets should be voluntary and/or should allow for an alternative demonstration
- GHG budgets should not be set based on VMT reductions, as this fails to consider non-VMT-based reductions (e.g. operations improvements, alternative work schedules, anti-idling programs, etc.)
- Resources are needed for additional modeling work

Questions?





Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Other Meetings

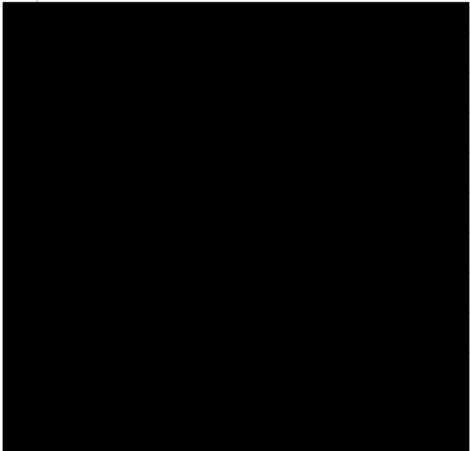
Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions							
Other Groups							
Other Meetings							
Meeting	Date						
RAQC	2/5/21						
E-470/Colorado Motor Carriers	2/10/21						
PPACG Technical Advisory Committee	2/18/21						
DRCOG Work Session	3/3/21						
PPACG Board Meeting	3/10/21						
DRCOG Special TAC	3/22/21						
NFRMPO Council Meeting	4/1/21						
Commuting Solutions Membership Me	4/6/21						
350 Colorado	7/16/21						
Workshop GHG Measures (Denver)	7/29/21						
DRCOG Work Session	8/4/21						
JeffCo LCC	8/5/21						
NWTC Workshop	8/5/21						

Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

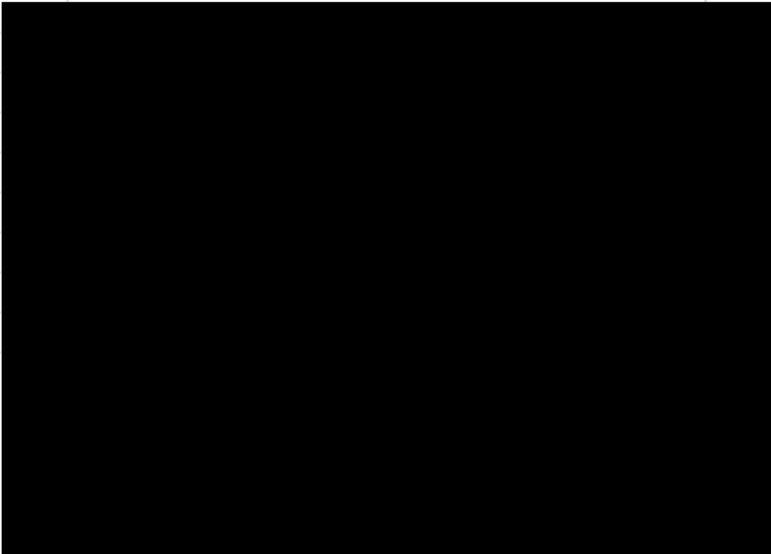
Other Groups

Meeting: 350 Colorado, 7/16/21 from 12-12:30pm, Virtual

Name	Organization	Email
------	--------------	-------



350 Colorado
350 Colorado
350 Colorado
350 Colorado
350 Colorado
CDOT
350 Colorado
CDOT
CDOT



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Other Groups

Meeting: Workshop GHG Measures (Denver), 7/29/21 from 2:30-4:30pm, CDOT HQ and Virtual

Organization

Email

CDOT

CDOT

City and County of Denver

CDOT

CDOT

City and County of Denver

CDOT

CDOT

CDOT

CDOT



Rulemaking for 2 CCR 601-22, Statewide Transportation Planning Process and Transportation Planning Regions

Other Groups

Meeting: Workshop GHG Measures (Denver), 7/29/21 from 2:30-4:30pm, CDOT HQ and Virtual

Email

[Redacted email list containing approximately 25 entries]



COLORADO

Department of Transportation

Transportation Greenhouse Gas Rule & Policy Directive Regional Air Quality Council Board Meeting

February 5, 2021



Today's Focus

1. Overview of Colorado's climate legislation/policy framework
2. Proposed rules and policy for transportation sector
3. Outreach Approach
4. Questions



Colorado's Efforts To Address Climate Change

HB-1261

- In 2019, the Colorado General Assembly passed House Bill-1261, the *Climate Action Plan to Reduce Pollution*.
- HB 1261 established the following GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- To ensure that Colorado continues to reduce emissions to meet greenhouse gas targets, reduce local air pollution, and realize the full economic benefits of the transition to a clean energy economy.
- Draft document released in Sept 2020; final in Jan 2021.
- <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>



Largest GHG Emissions Sources

2005 Largest Emission Source:

1. Electric power
2. Transportation
3. Oil & Gas
4. Buildings

2020 Largest Emissions Sources

1. Transportation
2. Electric power
3. Oil & Gas
4. Buildings

2020 CO GHG Emissions (MMT CO₂e, AR5 100-yr GWP)

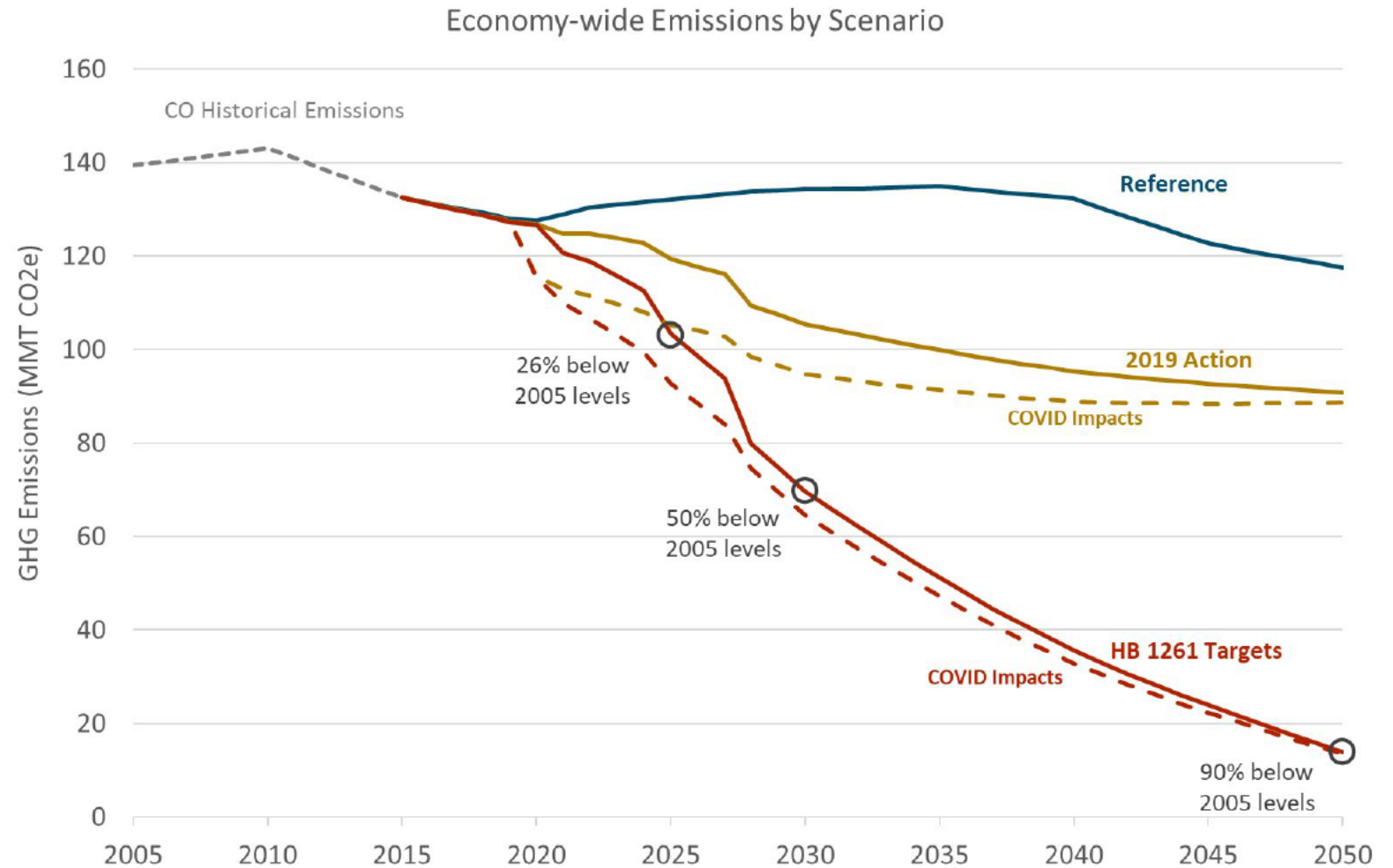




Colorado GHG Pollution Over Time

SIGNIFICANT PROGRESS UNDERWAY & MORE ACTION NECESSARY

- As a result of the state's actions to date, we are on a trajectory to achieving approximately half the level of emission reductions to meet the 2025 and 2030 goals.
- Additional strategies can advance co-benefits such as reducing local air pollution, generating economic growth, advancing environmental justice and equity.





Near-Term Transportation Actions included in the CO GHG Roadmap

Infrastructure (Planning & Projects)

- GHG pollution standards for transportation plans
- Indirect source standards for some types of new development.
- Trip reduction/TDM requirements and encouraging telecommuting for large employers

Human Factors (Behavior Change)

- Expansion of public transit, including setting the stage for Front Range Rail
- Incentives for land use decisions by local governments that reduce pollution and support greater access to housing near jobs.
- Clean trucking strategy including evaluation of Advanced Clean Truck ZEV standards

Mobile Sources (Vehicles)

- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses



Proposed Transportation Rule & Policy Directive

AQCC Rulemaking

- Integrate GHG pollution standards and analysis in regional and statewide transportation plans: GHG Pollution Standard
- Reduce SOV commuter trips: Large Employer Trip Reduction
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- In parallel, CDOT will develop implementation guidance via a policy directive specific to GHG Pollution Standard



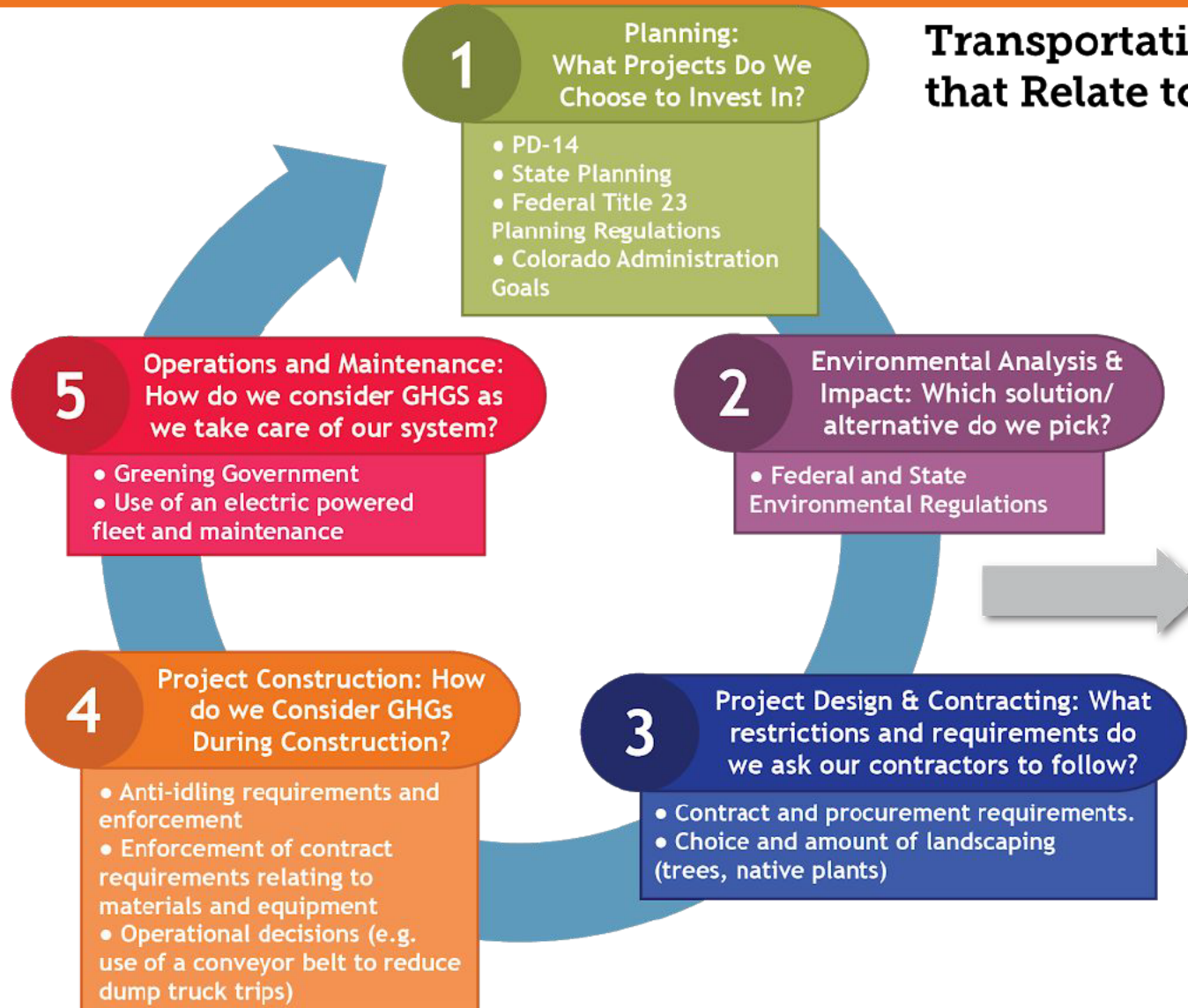
GHG Pollution Standard (GPS) Rule Approach

Initial Thinking

- Set a GHG “budget” for transportation plans (statewide and regional).
- Phased implementation with initial focus on state and certain MPO plans.
- Exempt state of good repair/maintenance projects.
- CDOT guidance will focus on the practicalities of how the policy translates into specific project-based requirements.
- Inclusion of other measures to meet budget.



Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions



- Federal Environmental Laws/Regs**
- National Environmental Policy Act**
- CEQ and FHWA Guidance on Implementing NEPA
 - CDOT NEPA Manual
 - Clean Air Act
 - Transportation Conformity
 - Clean Water Act
 - Endangered Species Act
 - Title VI
 - Environmental Justice
- State Environmental Laws/Regs**
- HB 1261 and implementing regulations (TBD)
 - CDOT Environmental Stewardship Guide
 - Air Quality Project-Level Analysis Guidance (AQ-PLAG)



Outreach Approach

Stakeholder Involvement and Public Outreach

- Multiple agency involvement (CDOT/CDPHE/CEO)
 - Virtual public meetings and focused equity conversations
 - First meeting; January 28th at 6pm,
 - Next meeting: February 25th at 6pm
- CDOT Advisory Group
- CDOT Regional Meetings
 - Region 1 (Denver Metro Area) - February 16, 10:30am
 - Region 4 (Northeast) - February 16, 1pm



Two Transportation Rules Air Quality Control Commission Rulemaking in 2021

Transportation GHG Pollution Standard & Large Employer Trip Reduction

- What are your questions?
- What concerns do you have?
- What challenges do you see as important to address when developing these rules and policies?
- Who should we reach out to for regional discussions?



Contact Information

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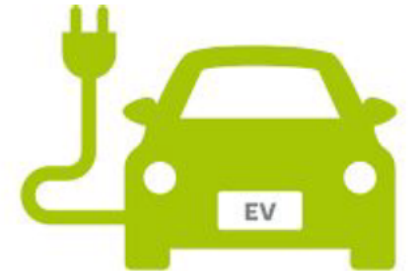
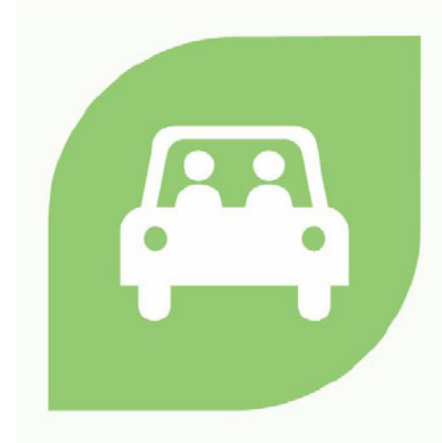


Extra Slides (if needed)



Trip reduction/TDM requirements and encouraging telecommuting for large employers

- Utilizing incentives, marketing, and other creative tools to encourage non-SOV travel, is a core strategy to reducing VMT.
- In light of COVID-19, a specialized focus on making teleworking more permanent will be essential in promoting a longer-term shift towards alternatives to driving.
- One recommended strategy is a trip reduction requirement for large employers, which would require employers over a size threshold to develop TDM programs for their employees



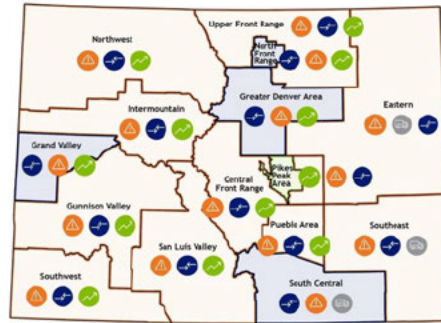
Mobile sources (vehicles)



Potential action steps include:

- New regulatory actions
- Charging infrastructure
- Consumer education
- Fleet replacements

Infrastructure (planning and projects)



Potential action steps include:

- GHG budgets
- NEPA processes
- Green construction
- Multimodal funding
- Land use

Human factors (behavior change)



Potential action steps include:

- Managed lanes/pricing strategies
- Voluntary/mandatory TDM (marketing and tools to support mobility options)



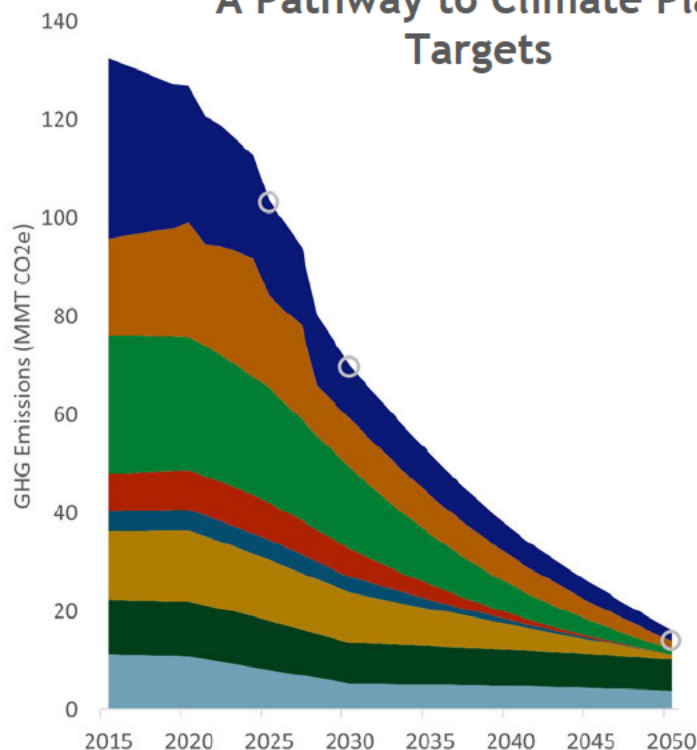
GHG Rulemaking Update

NWTPR
Aug 5, 2021

Getting to Colorado's 2050 Climate Goals

Will require efforts and policy adoption across many agencies including CDPHE, CDOT and work by CEO

A Pathway to Climate Plan Targets



Reduction by sector (vs. 2015)

- 94% Electricity
- 91% Oil & Gas
- 96% Transportation
- 100% Buildings
- 94% Industry
- 43% Agriculture
- 65% HFC, Waste, CH₄



GHG Roadmap: Transportation

Reduce pollution ~12.7 million tons (MMT) by 2030

6 MMT
reduction

Low and Zero Emission Vehicle rules

2 MMT
reduction

Utility and public investment in fleet turnover and infrastructure for light-duty zero emission vehicles (SB19-077, electrification investments from SB21-260)

Collectively, the other strategies will target remaining 4.7 million tons

~4.7 MMT
reduction

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Incentivize land use to increase housing near jobs and reduce VMT and pollution	Under evaluation
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SB-260 Requirements

For Regionally Significant Projects:

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GHG Planning Rulemaking: Concept & Approach

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- Basic premise similar to conformity and crafted to align with federal conformity regulations analysis requirements.
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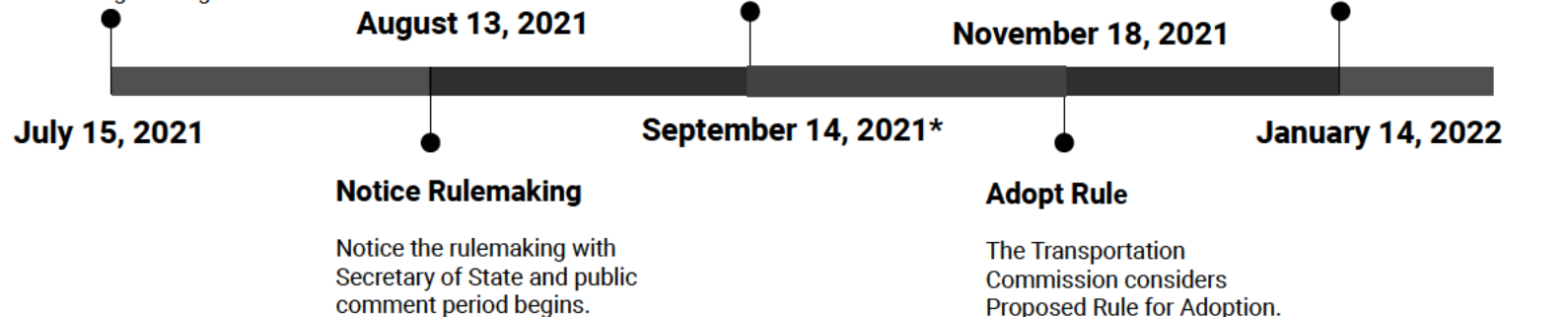


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 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: DOT_Rules@state.co.us or at link above
- Multiple Opportunities for Public Comment (5 public hearings planned)
- Current schedule: Draft rule published in mid-August; hearings must be scheduled no earlier than 20 days later.



QUESTIONS?



COLORADO

Department of Transportation

Incorporating Greenhouse Gas Emissions Reductions into Transportation Planning

NFRMPO Council Meeting - April 1, 2021



Today's Focus

1. Overview of Colorado's climate legislation/policy framework
2. Proposed rules and policy for transportation sector
3. Stakeholder Input



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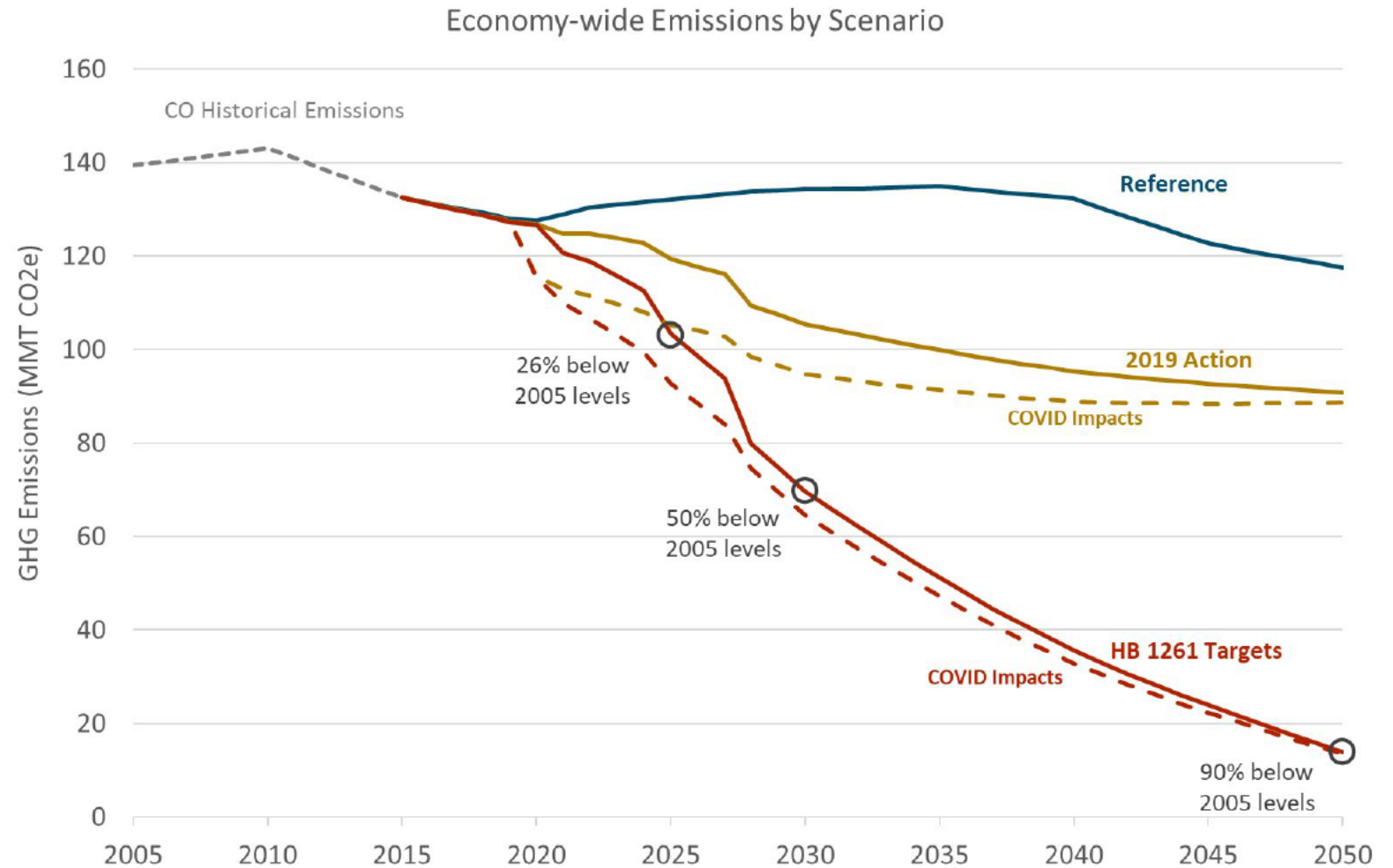




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Mobile Sources (Vehicles)

- ZEV standards
- New revenue mechanism to fund infrastructure and incentives to transition to low and zero emissions cars, trucks and buses



Regulatory Approach

- The Colorado Air Quality Control Commission (AQCC) is appointed by the governor and authorized by the Colorado General Assembly. The AQCC develops air pollution control policy and regulates pollution sources.
- The AQCC is taking up a series of rulemakings across all sectors to address GHG emissions and implement recommendations in the Roadmap. One of these rulemakings will focus on the transportation sector.
- The Colorado Department of Transportation, and its Governor-appointed Transportation Commission has statutory authority over the transportation planning process. This process is guided by a series of Policy Directives issued by the Transportation Commission.
- The GHG Pollution Standard will therefore include actions by both bodies.



Proposed Transportation Rule & Policy Directive

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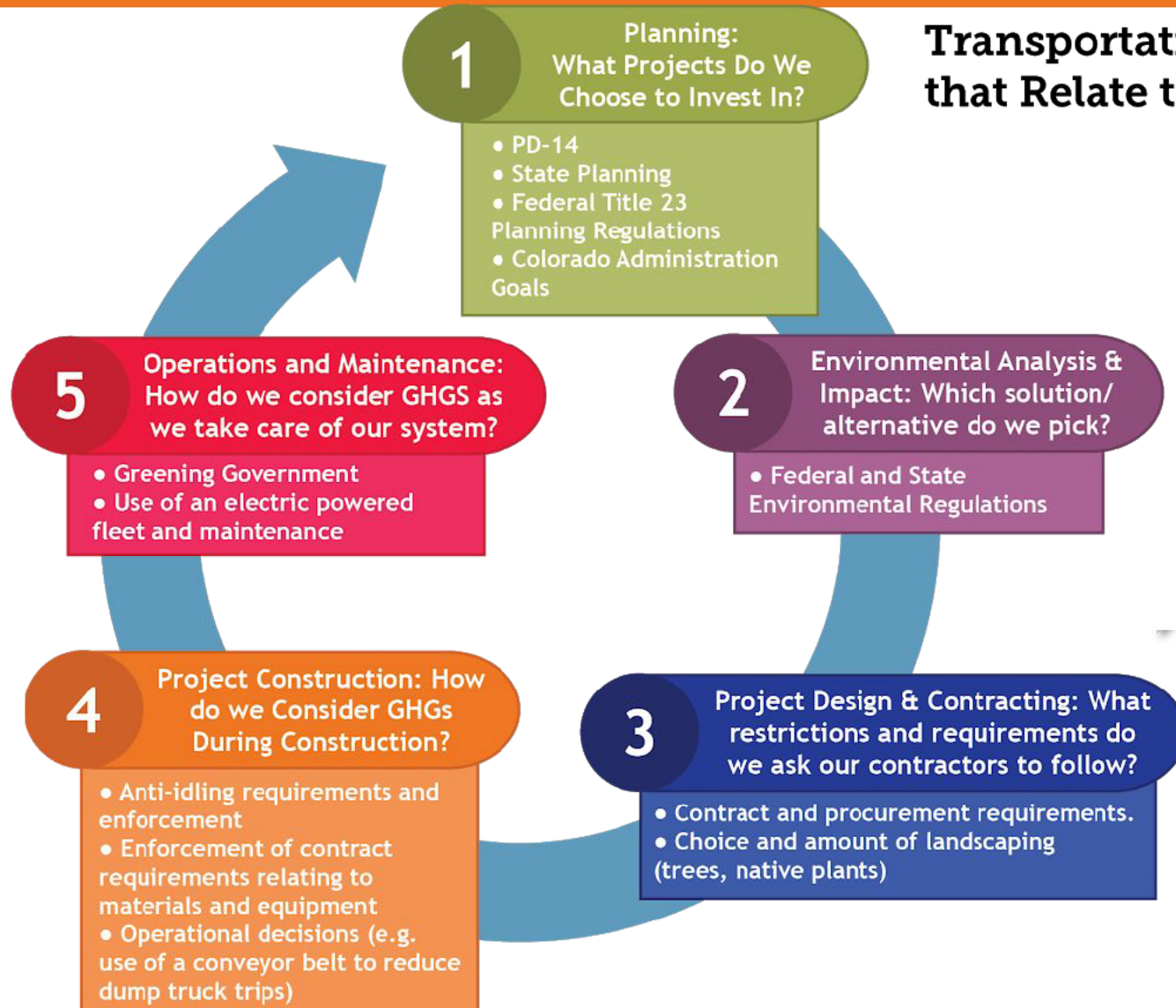
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Transportation Guidance and Regulations that Relate to Greenhouse Gas Emissions





Transportation GHG Pollution Standard

- What are your questions?
- What concerns do you have?
- What challenges do you see as important to address when developing these rules and policies?
- Who else should we reach out to for future regional discussions?



Stakeholder Meetings to Date

Over 24 Meetings Held, Over 125 Participating Stakeholders

CDOT Advisory Group

Regional - GHG Stakeholder Meetings

CDPHE/CDOT Listening Sessions

Other Smaller Stakeholder Meetings as Requested



CDOT Advisory Group

Next Regional - GHG Stakeholder Meetings

- Friday April 9 - 1-2:30pm (Region 1 - Denver Metro Area)
- Monday April 12 - 10:30-12pm (Region 2 - South/Southeast)
- Monday April 12 - 1-2pm (Region 3 - Northwest)
- Friday April 16 - 10:30-12pm (Region 4 - Northeast)
- Friday April 16 - 1-2pm (Region 5 - Southwest)



Contact Information

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<https://www.codot.gov/programs/environmental/greenhouse-gas/ghg-transportation-policy-rulemaking-process>



COLORADO

Department of Transportation

Update: GHG Rule and 10-Year Plan July 2021



GHG Planning: Rulemaking Background

- Policy concept still places us at the forefront nationwide and years ahead of national action.
 - Colorado may be model for future FHWA policy.
- From the beginning, concept relied on strong involvement from CDOT both for drafting and implementation.
- Placing rulemaking within CDOT also allows for enforcement provisions and, importantly, a more permanent embedding of policy into CDOT's culture and administrative structure.



Stakeholder Engagement: CDOT began working with stakeholders in January of '21; soon after GHG Roadmap was finalized.

- Standing statewide Advisory Group: meeting continuously since January
- Virtual public meetings: both regional and statewide
- Dozens of individual stakeholder discussions including, most recently, 1-2hr long weekly meetings with conservation community and MPOs

Transportation Commission: Receiving monthly updates on the GHG rule

- In June the Commission formed an Adhoc Committee (comprised of three commissioners) that is meeting regularly with staff.
- This month the TC will be voting on a resolution to formally commence the rulemaking process (essentially directing staff to proceed with filing a draft rule).



Developing Rulemaking Concepts

Policy Paper (June/July):

- Stakeholder discussions and staff work led to the development of a policy paper that outlined the major issues inherent in the rule
- Provides initial drafting for rulemaking in a more plain-english format
 - How to determine and enforce GHG reduction levels
 - Timing (compliance years) and phasing
 - Which plans (near term/long term) to apply reduction to
 - Role of alternative compliance through offset measures that achieve emission reductions in other areas related to transportation
 - Roles and responsibilities between MPOs and CDOT

Draft Rule (July/Aug): In development now.



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and as rulemaking is developed

DRAFT

Authorize Rulemaking

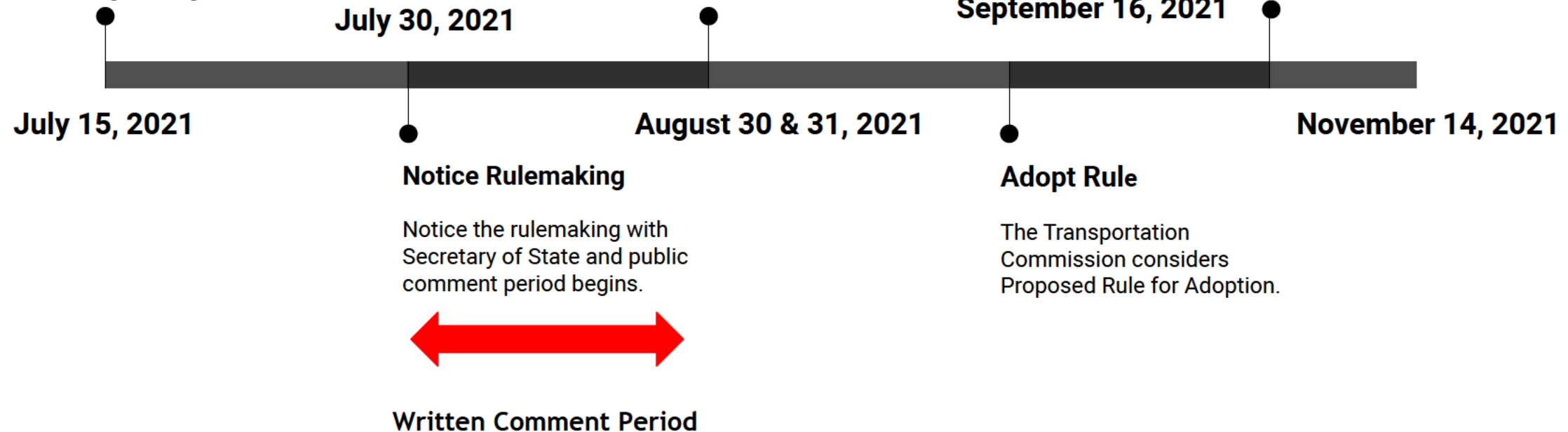
Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



Near Term Next Steps

- July TC Resolution directing staff to commence rulemaking
- Draft rule filed with Secretary of State (July 30 or mid-Aug).
- Statewide public meeting (July 22nd--tentative).
- Continued engagement with key stakeholder groups and advisory group.
- Formal public hearings 30 days after draft filed.



10 Year Plan



Delivering the Plan...and SB 260

- The Transportation Commission was created 100 years ago to help ensure a stable and statewide perspective in project selection.
- By many measures, the 10-Year Plan (and its 4 year “funded/prioritized list”) is the most comprehensive and most consistent planning document CDOT has had in recent history.
- SB 260 established clear requirements on greenhouse gases (and other air pollutants) for our planning process and in the environmental study phase of projects.
- While we are working to fully implement these requirements and meet the Oct 2022 deadline for updating the plan, CDOT has already begun incorporating this focus into planning and studies as well as project selection.



Year “3B”

- 25 projects proposed
- \$238,365,680 amount proposed project allocations
 - Over 20% of this funding is proposed for transit and multimodal projects. This mix of projects will help move vehicles & improve safety while improving access to options beyond the single-occupant trip.
 - The funded rural paving projects in Years 1-3, plus 3B requests, represent a ~\$400 million investment, with over 600 miles of rural Colorado roads on the state highway system improved.



Fixing our Assets

- Critical repairs to the EJMT
- Addressing poor interstate pavement along I-76 (avoiding federal penalty)
- Improving safety and road conditions along SH 13 by adding shoulders, drainage and wildlife underpass.

Providing More Multimodal Options

- Completing mobility hubs along North I-25
- Expanding Bustang service
- Preparing for BRT along SH 7

Improving Safety

- Advancing current work on urban arterials and main streets
- Slowing traffic and increasing bike/ped options along US 160 in Pagosa



Fixing our Assets: EJMT Critical Repairs

Funding will address the most critical “red list” repairs at the EJMT, including:

- Revitalizing the exterior of the tunnel including drainage, guardrail, building repairs, etc.
- Modern, energy efficient heated water circulation for fire hydrants (to prevent water from freezing)
- Tunnel liner and ventilation building water infiltration prevention/repairs
- Upgrades to the aging groundwater collection and treatment system in the tunnel
- Replacement and capacity expansion of emergency generator system





Fixing Our Assets: Repairing Pavement Along I-76 and Avoiding Funding Restrictions

- I-76 includes several major segments of pavement that is classified as “interstate poor” condition.
- These segments are a major contributor to the state’s overall downward trend in interstate pavement condition.
- SB 260 funding, combined with a parallel investment in 24 miles of concrete diamond grind repairs using surface treatment dollars, will provide immediate and long-term repair for I-76.
- These investments on I-76 will bring our total percentage of poor pavement from 3.9% to 2.3%; likely avoiding reaching the 5% poor threshold (which triggers significant federal funding restrictions).

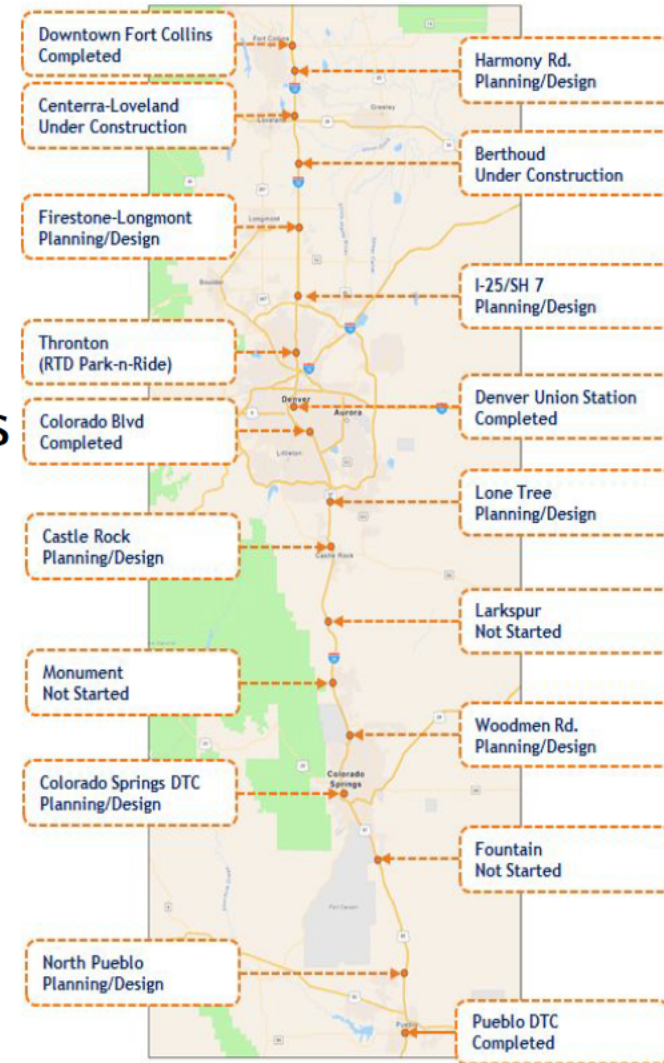


Providing More Multimodal Options: I-25 Mobility Hubs

- 3b funding will make the I-25 North portion of CDOT's Mobility Hub vision operational, achieving a major milestone in this key statewide multimodal effort.
- In parallel, CDOT is working to significantly increase frequency of the popular North I-25 Bustang route over the coming months with the goal of reaching 18 hour/day service.

Current Mobility Hub Status:

- 4 Fully Functional
Future enhancements necessary to achieve vision
- 2 Under Construction
- 8 in Planning/Design





Providing More Multimodal Options: SH 7

- SH 7 is a busy regional connection serving northern Denver communities. The corridor lacks transit and multimodal facilities for walking and bicycling.
- It also has a significantly higher crash rate compared to that of similar highways.
- This project includes intersection improvements at high-priority intersections along SH 7, helping to prepare for future Bus Rapid Transit (BRT), commuter bikeways, and other multimodal improvements.

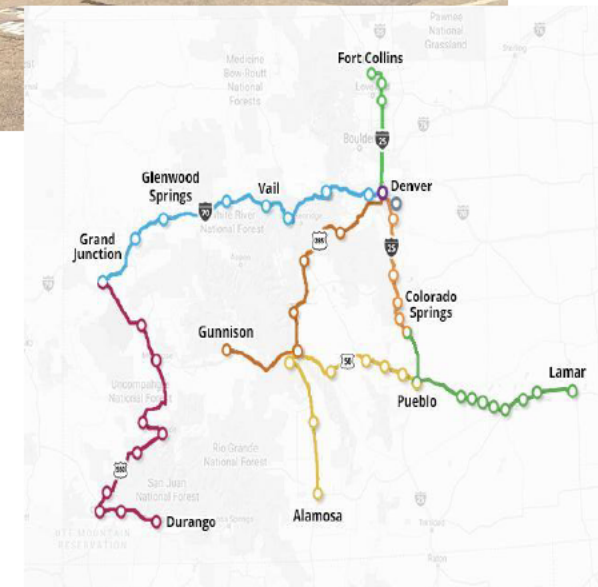
Intersection Crash Patterns (2015 to 2019)





Providing More Multimodal Options: Expansion of Bustang Service

- Bus purchases (4 coaches) enable service expansion to Pueblo and Greeley
- Frequency enhancements to the new mobility hubs (North Line and West Line)
- Service and maintenance facilities (proposed in several locations) provide secure storage and maintenance of vehicle assets along with enabling expansion into new areas of the state





Improving Safety: Holistic Look at Urban Arterials in Denver Metro

- The Safer Main Streets (SMS) grant program provided approximately \$75M in safety improvements along urban arterials in the Denver metro area.
- The response we received to this program suggests this is just the tip of the iceberg.
- Funding would support a comprehensive study and pilot program for 10-15 urban arterials/state highways.
- While this study will close out the 1st phase of the SMS program in the Denver Metro Area, it also serves to identify a longer term pipeline of projects for the area.





Improving Safety: Preparing for Long-Term Statewide Revitalizing Main Streets Funding

- Looking statewide, we have an opportunity to reflect on the rapid investments we made to help communities adapt their infrastructure to respond to COVID-19.
- This second study will take a critical look at some of the complexities of changing street spaces (e.g., parking revenue loss) and help determine which of these changes we should hold on to --and continue to support--in the post-COVID period.
- This second study would be funded with the initial allocation of MMOF (~\$500K).





Improving Safety: Pagosa US 160 Reconstruct

- This project will reconstruct US 160 and provide multimodal improvements in Pagosa Springs. This “Main Street” is active with cars, trucks, pedestrians and cyclists interacting along the highway, which can create stressful and unsafe conditions for travelers.
- Project will add a center median, bike lanes and wider sidewalks; effectively narrowing the road and slowing traffic through downtown while improving the streetscape to make it safer and more attractive for residents and visitors to navigate on foot or bike.





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Department of Transportation

THANK YOU!



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GHG Pollution Standard For Transportation Planning

JeffCO LCC, August 2021

Greenhouse Gas Pollution Reduction Roadmap

Reduce pollution ~12.7 million tons (MMT) by 2030

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- Provide more sustainable options for travelers across Colorado.



Implementation

- Emissions calculated by modeling a set of transportation projects (included in transportation plans) and determining the total emissions from vehicles traveling across the transportation system.
- Limited to projects that are “regionally significant” - projects that increase capacity. Not to basic safety and repaving projects.
- Alternative compliance could be achieved through offset measures that achieve emission reductions in other areas related to transportation.



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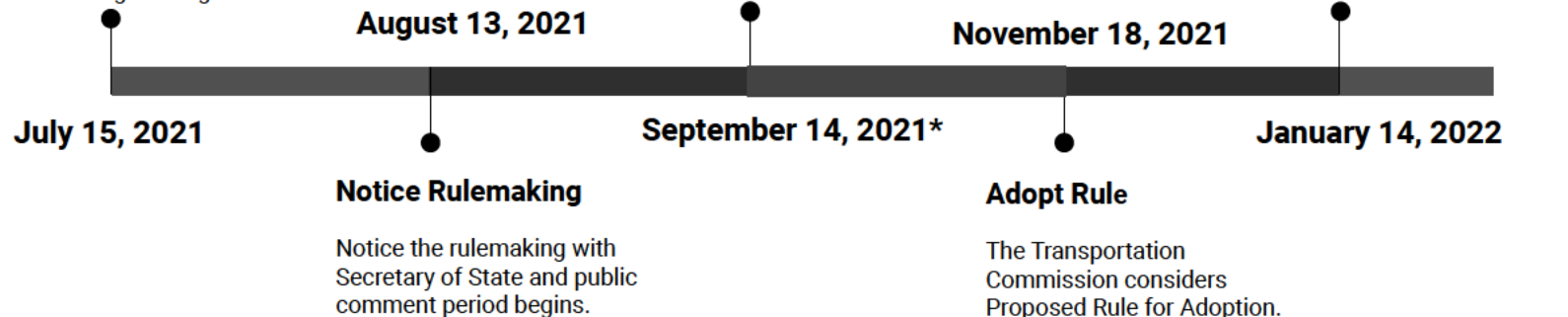


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GHG Rulemaking

DRCOG Work Session
August 4 2021

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GHG Pollution Standards for transportation plans	In progress - CDOT TC Rulemaking - Summer 2021
Incentivize land use to increase housing near jobs and reduce VMT and pollution	Under evaluation
Clean trucking strategy - infrastructure, fleet incentives, consider regulatory tools such as advanced clean trucks and fleet rules	In progress - Study to be Completed - Summer 2021 Stakeholder Engagement - Summer/Fall 2021; plus fleet investments from SB21-260
Participate in developing post 2025 vehicle standards (state and federal)	Federal and CARB processes
AQCC evaluation of indirect source rules	Pending - AQCC Rulemaking
Expansion of public transit, including setting the stage for Front Range Rail	In progress - SB21-238, on-going multimodal emphasis





What Do These Numbers Mean?

Rule is still in development however DRCOG board has seen possible target of 1.5 MMT for 2030.

What does this amount signify?

- 1.5 MMT is 25% of the 6 MMT reduction projected in the Roadmap by 2030
- Taking 326,220 passenger vehicles off the road for a year
- Removing over 3.7 billion passenger vehicle miles traveled (3,769,796,806)
- Removing the emissions from 168,785,867 gallons of gasoline (nearly 20,000 tanker trucks worth of gas)



GHG Planning Rule: Concept Development

Began working with stakeholders in January 2021.

- Convened a statewide GHG Advisory Group that has met continuously over the last 7 months.
- Held 11 Regional Meetings and 5 joint State Listening Sessions with CDPHE from January to April, reaching nearly 800 people
- Individual stakeholder meetings with MPO staff and boards, contractors, enviro NGOs, CCAT, CC4CA, etc

Issued white paper to describe overall approach and key policy issues.

<https://www.codot.gov/programs/environmental/greenhouse-gas>

Developed Modeling Scenarios to “test” feasible reduction levels

- Work based on DRCOG scenarios; adjusted for feasibility
- Examined combinations of travel choice, transit and land use

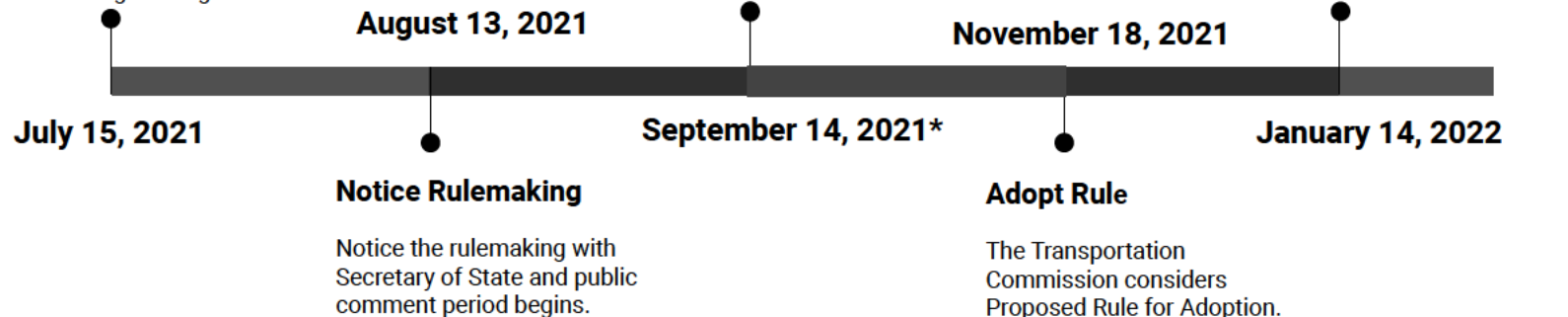


DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

Authorize Rulemaking

Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.



**60 Day Written Comment Period
Starts 8/13 and Ends 10/12**

**Hearings may be held on or after September 14, 2021.
Hearings to be a mix of virtual/in-person and held in multiple locations around the state.*



Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Sign up to receive rulemaking updates: DOT_Rules@state.co.us or at link above
- Multiple Opportunities for Public Comment (5 public hearings planned)
- Current schedule: Draft rule published in mid-August; hearings must be scheduled no earlier than 20 days later.



GHG Planning Rulemaking: Concept & Approach

- Set a GHG “pollution reduction level” in million metric tons of CO₂e for transportation plans.
- Basic premise similar to conformity and crafted to align with federal conformity regulations analysis requirements.
- Requirements apply to CDOT and MPOs (the state’s primary transportation planning agencies).
- Set reduction levels for same timeframe as GHG Roadmap



Implementation

- Emissions calculated by modeling a set of transportation projects (included in transportation plans) and determining the total emissions from vehicles traveling across the transportation system.
- Limited to projects that are “regionally significant” - projects that increase capacity. Not to basic safety and repaving projects.
- Alternative compliance could be achieved through offset measures that achieve emission reductions in other areas related to transportation.
- Apply same “enforcement” approach as SB260; directing MMOF dollars to GHG reduction projects/strategies



COLORADO

Department of Transportation

Overview of GHG Pollution Standard for Transportation Planning

July, 2021



EFFECTIVE AS OF JULY 1, 2022, THE DEPARTMENT SHALL ESTABLISH AND PROPOSE TO THE COMMISSION FOR ITS REVIEW IMPLEMENTING PROCEDURES AND GUIDELINES THAT REQUIRE THE DEPARTMENT AND METROPOLITAN PLANNING ORGANIZATIONS TO TAKE ADDITIONAL STEPS IN THE PLANNING PROCESS FOR REGIONALLY SIGNIFICANT TRANSPORTATION CAPACITY PROJECTS TO ACCOUNT FOR THE IMPACTS ON THE AMOUNT OF STATEWIDE GREENHOUSE GAS POLLUTION AND STATEWIDE VEHICLE MILES TRAVELED THAT ARE EXPECTED TO RESULT FROM SUCH PROJECTS. SUCH GUIDELINES AND PROCEDURES SHALL APPLY TO ADOPTION OF THE NEXT TEN-YEAR PLAN AND SUBSEQUENT PLANNING CYCLES AND SHALL FULLY EVALUATE THE POTENTIAL ENVIRONMENTAL AND HEALTH IMPACTS ON DISPROPORTIONATELY IMPACTED COMMUNITIES.



Rulemaking Concept & Approach

- Set a GHG “pollution reduction level” in million metric tons of CO₂e for transportation plans. Applies to CDOT and MPOs.
- Emissions calculated by modeling a set of transportation projects (included in transportation plans) and determining the total emissions from vehicles traveling across the transportation system.
- Limited to projects that are “regionally significant” - projects that increase capacity. Not to basic safety and repaving projects.
- Alternative compliance could be achieved through mitigation measures that achieve emission reductions in other areas related to transportation



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Rulemaking Hearings

Opportunity for Public Testimony

Rule Effective

becomes effective.

Rule



60 Day Written Comment Period Starts 8/13 and Ends 10/12

**Hearings may be held on or after September 14, 2021. Hearings to be a mix of virtual/in-person and held in multiple locations around the state.*



GHG Reduction Measures

- If CDOT and MPO plans are determined to be out of compliance with established GHG pollution reduction planning targets, they will have the opportunity to utilize approved mitigations to offset emissions and achieve progress towards compliance.
- CDOT and MPOs can “select” strategies from a pre-approved list. The approved mitigations list will quantify approximate emissions offsets (possibly in the form of a score). Those emissions credits, pursuant to the pre-approved list, may then be applied to reduce the balance of GHG in modeling a transportation plan.
- Prior to each planning cycle, CDOT shall provide updating scoring methodology for the mitigation list, which shall be applicable during the subsequent planning cycle.



Other Thinking on This Topic...

“Caltrans may ultimately develop or participate in a VMT credit or banking and exchange system operated by Caltrans, an MPO, RTPA, or another entity. Under a banking system, Caltrans could purchase mitigation credits to reduce project impacts related to VMT. In exchange for implementing a project that induces VMT, Caltrans would invest in a project identified by a local or regional transportation partner that reduces VMT. One example of a system that relies on VMT reduction as a nexus is the City of Los Angeles Westside Mobility Plan Transportation Impact Fee Program.”

<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Table 2. Project-Level Measures to Reduce VMT on the SHS

Description
1. Include detours for bicycles and pedestrians in all areas potentially affected by project construction.
2. Incorporate Complete Streets Elements
3. Consider and accommodate alternate modes of transportation consistent with the purpose and need of the project: <ul style="list-style-type: none"><li data-bbox="394 299 788 327">• Bicycle paths and facilities<li data-bbox="394 331 1593 393">• Pedestrian infrastructure and pedestrian-friendly features (wide sidewalks, overpasses on busy roads, signalized intersections with appropriate signal timing, etc.)<li data-bbox="394 397 1004 425">• Routes connecting to public transportation
4. Include measures to support multi modal transportation that will offset project impacts: additional Park & Ride lots
5. Social marketing efforts and incentives promoting mass transportation and carpooling. (Possible use of Cap and Trade Funds)
6. Social marketing and public education activities to improve awareness of the impacts of driving habits and opportunities to reduce climate change impacts.
7. Incorporate infrastructure electrification into project design (e.g., charging for electric bikes).
8. Implement intelligent transportation systems and transportation demand management elements to smooth traffic flow and increase system efficiency.
9. Implement Traffic Management Strategies: <ul style="list-style-type: none"><li data-bbox="394 827 1593 921">• Modify roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary. Coordinate improvements on the SHS with arterials roadways.<li data-bbox="394 926 1593 1051">• Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, if determined feasible and applicable by the Lead Agency.



Examples of GHG Mitigation Measures

Mitigation measures will include projects or strategies that are not “regionally significant” and thus would not be modeled as part of the plan.

- The addition of transit resources in a manner that can displace vehicle miles traveled.
- Improving pedestrian and bike access
- Encouraging transportation projects that facilitate or incentivize more efficient forms of vertical development that integrate mixed use facilities.

First/final mile??



Improve first/last mile.

ETRP actions--TDM

Additional EV penetration “above and beyond” (e.g. massive charging center for a project like I-270)

Incentivizing around truck delivery space

Pedestrian-designed infrastructure

Land use...density/parking ratio...planning depts + incentives for developers

HD vehicle replacement

Focus on analysis--multimodal service level analysis

Connecting TOD fully (across the highway for example)

Build into MPO requirements...so that cities have something to turn to/use

Use CDOT MPOF/CMAQ dollars as incentive; possibly state infrastructure bank

TIFIA TOD eligibility

Exhibit 9



STATE OF COLORADO

9A

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:46 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc: [Redacted]

Hello GHG Advisory Group member:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

The Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. I have attached the Notice of Proposed Rulemaking and a PDF copy of the proposed rule revisions for your review. You can also learn more about the Pollution Reduction Planning Standards through the attached Press Release and Fact Sheet.

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Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. All comments received from stakeholders will be posted on [CDOT's Rulemaking Web Page](#) and will be available for review during the public comment period. We will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.





Thanks,
Natalie

Natalie Lutz
Rules, Policies, and Procedures Administrator



P: 303.757.9441
2829 W. Howard Place, Denver, CO 80204
dot_rules@state.co.us | www.codot.gov | www.cotrip.org

4 attachments

-  **Notice and Statement.pdf**
240K
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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:53 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [Redacted]

Hello MPO Representative:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

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Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.

Thanks,
Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22/Aviso de la Propuesta de Reglamentación para las Reglas que Rigen la Planificación del Transporte en todo el Estado y las Regiones de Planificación del Transporte, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc:

Mon, Aug 16, 2021 at 5:16 PM

[Redacted content]

[Redacted]

Hello Stakeholder:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

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Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.

Thanks,

Natalie

Hola Accionistas:

Este correo electrónico informa que el Departamento de Transporte de Colorado (CDOT) en nombre de la Comisión de Transporte de Colorado (Comisión) ha presentado un Aviso de Reglamentación Propuesta ante el Secretario de Estado de Colorado con el propósito de considerar modificaciones a la reglas que rigen el proceso de planificación del transporte en todo el estado y las regiones de planificación del transporte, 2 CCR 601-22.

La Comisión propone establecer niveles de planificación para la reducción de la contaminación por gases de efecto invernadero (GEI) para el transporte que mejorarán la calidad del aire, reducirán el smog y brindarán opciones más sostenibles para las personas que viajan en Colorado. Adjunto el Aviso de Reglamentación Propuesta y una copia en PDF de las revisiones de reglas propuestas para su revisión. También usted puede obtener más información sobre los Patrones de Planificación para la Reducción de la Contaminación en la hoja con datos adjunta.

La Comisión planea llevar a cabo ocho (8) audiencias en todo el estado como se indica en el Aviso de Propuesta de Reglamentación adjunto para escuchar testimonios y recibir comentarios. Las audiencias públicas se llevarán a cabo en un formato híbrido, tanto presencial como virtual. Si usted planea asistir virtualmente a cualquiera de las audiencias programadas, regístrese a través de los enlaces de registro proporcionados en el Aviso de Reglamentación adjunto o en la página de Internet de CDOT en <https://www.codot.gov/business/rules/proposed-rules.html> para que podamos brindarle instrucciones sobre cómo puede unirse virtualmente a las audiencias que usted elija y brindar su testimonio si lo desea.

Por favor envíe todos sus comentarios por escrito a dot_rules@state.co.us antes de las 5:00 de la tarde del 15 de octubre de 2021. Todos los comentarios recibidos de las personas interesadas se publicarán en la Página de Internet de Reglamentación del CDOT y estarán disponibles para que usted puede revisarlas durante el período de comentarios públicos. Nosotros redactaremos la siguiente información para proteger la privacidad de los datos de los envíos antes de publicarlos en Internet: nombre y apellido, información de contacto, incluidas las direcciones comerciales y particulares, direcciones de correo electrónico y números de teléfono.

No dude en ponerse en contacto conmigo a dot_rules@state.co.us si tiene alguna pregunta o le gustaría que su nombre no aparezca en nuestra lista de personas interesadas.

Gracias por participar en el proceso de elaboración de normas.

Próximamente se publicarán los adjuntos en español. Los documentos se están traduciendo en este momento.

Se publicarán en nuestra [página de Internet](#).

Gracias,

Natalie

4 attachments

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22/Aviso de la Propuesta de Reglamentación para las Reglas que Rigen la Planificación del Transporte en todo el Estado y las Regiones de Planificación del Transporte, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc:

Mon, Aug 16, 2021 at 5:20 PM

[Redacted content]

[Redacted]

Hello Stakeholder:

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Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:42 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [Redacted]

Hello CCA Member:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

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Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.

Thanks,
Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <dot_rules@state.co.us> Mon, Aug 16, 2021 at 1:35 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Cc: Herman Stockinger - CDOT <herman.stockinger@state.co.us>, Rebecca White - CDOT <rebecca.white@state.co.us>, Theresa Takushi - CDOT <theresa.takushi@state.co.us>, Erik Sabina - CDOT <Erik.Sabina@state.co.us>, Natalie Shishido - CDOT <natalie.shishido@state.co.us>

Bcc: [Redacted]

Hello STAC Member:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

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Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. All comments received from stakeholders will be posted on [CDOT's Rulemaking Web Page](#) and will be available for review during the public comment period. We will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.

Thanks,
Natalie

4 attachments

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240K
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440K
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237K
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122K



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:51 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [REDACTED]

Hello Stakeholder:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:48 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [Redacted]

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Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us> Mon, Aug 16, 2021 at 1:44 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc: [Redacted]

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Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Mon, Aug 16, 2021 at 2:11 PM

Bcc [REDACTED]

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Thanks,
Natalie

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc: [Redacted]

Mon, Aug 16, 2021 at 2:03 PM

[The main body of the email is almost entirely redacted with black bars.]

[Redacted]

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Natalie

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STATE OF COLORADO

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Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc

Mon, Aug 16, 2021 at 2:03 PM

[REDACTED]

[Redacted content]

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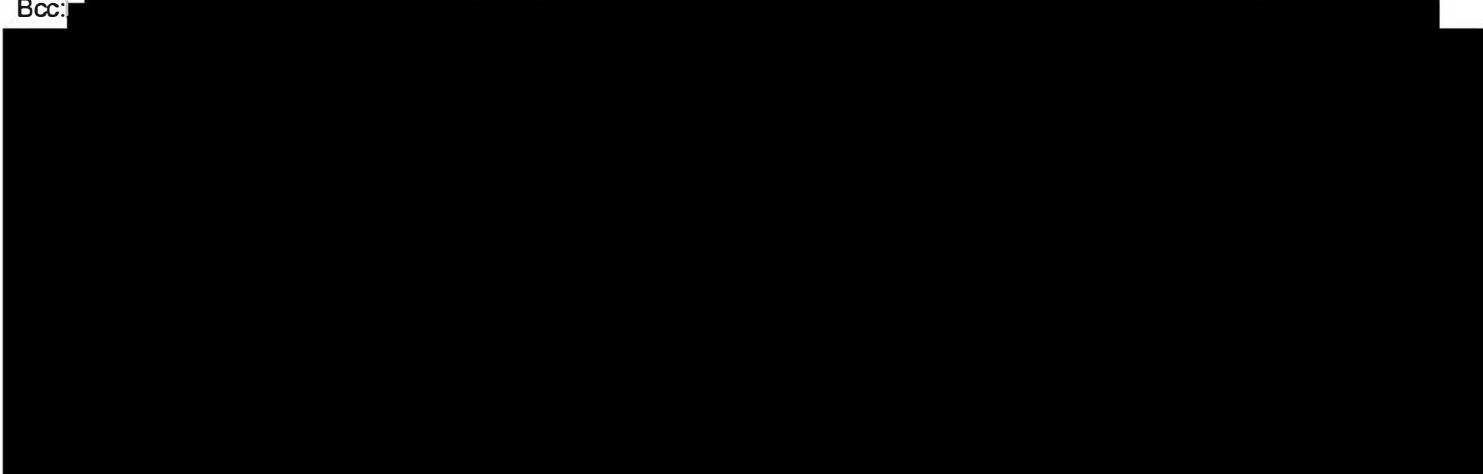
STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

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Bcc:



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COLORADO

Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

Notice of Proposed Rulemaking

Transportation Commission of Colorado

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

I. Notice

As required by the Colorado Administrative Procedure Act found at section 24-4-103, C.R.S., the Transportation Commission of Colorado (Commission) gives notice of proposed rulemaking.

II. Subject

The Commission is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

A detailed Statement of Basis, Purpose, and Specific Statutory Authority follows this notice and is incorporated by reference.



III. Rulemaking Hearings

The Commission plans to hold eight (8) hearings across the State as listed in the below table to hear testimony and receive comments on the proposed rule revisions. The public hearings will be conducted in a hybrid format, both in-person and virtually. All interested and affected parties may choose to attend one (1) or all eight (8) scheduled hearings either in-person or virtually.

Please note that the Commission may hold additional hearings, which will be posted on CDOT's website: <https://www.codot.gov/business/rules/proposed-rules.html>

Date	Location	Time	Virtual Hearing Registration Links
9/14/2021	CDOT Regional Office US160 Maintenance Training Facility 20581 Highway 160 Durango, CO 81301	3-7 p.m.	Virtual Registration Form
9/17/2021	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction CO 81505	3-7 p.m.	Virtual Registration Form
9/23/2021	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	3-7 p.m.	Virtual Registration Form
9/24/2021	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906	3-7 p.m.	Virtual Registration Link
9/27/2021	South Suburban Sports Complex 4810 E. County Line Rd. Littleton, CO 80126	3-7 p.m.	Virtual Registration Link
9/29/2021	CDOT Regional Office Big Sandy Conference Room 2738 Victory Highway Limon, CO 80828	3-7 p.m.	Virtual Registration Form
9/30/2021	Christ United Methodist Church 301 East Drake Road Fort Collins, CO 80525	3-7 p.m.	Virtual Registration Form
10/4/2021	City Hall City Council Chambers 101 West 8th Street Glenwood Springs, CO 81601	3-7 p.m.	Virtual Registration Form

How to Register to Attend Hearings Virtually

If you plan to attend any of the scheduled hearings virtually, you must click on the registration link in the above table for each hearing that you wish to attend virtually. The registration links for each hearing are also available on the CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. When you register, you must provide your full name and email address. You may also provide your telephone number and the organization that you are representing. Lastly, please indicate whether you plan to testify during the hearing and/or submit written comments. You will receive instructions the day before the scheduled hearing on how to join, listen, and provide testimony if you wish.



IV. Statutory Authority

The specific authority under which the Commission shall establish these proposed rule revisions is set forth in §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

V. Copies of the Notice, Proposed Rule Revisions, and the Statement of Basis, Purpose & Authority

The notice of hearing, the proposed rule revisions, and the proposed statement of basis, purpose and authority are available for review at CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>.

If there are changes made to the proposed rule revisions before the first scheduled hearing on September 14, 2021, the updated proposed rule revisions will be available to the public and posted on CDOT's website by September 9, 2021.

Please note that the proposed rule revisions being considered are subject to further changes and modifications after the public hearings and the deadline for the submission of written comments.

VI. Opportunity to testify and submit written comments

The Commission and CDOT strive to make the rulemaking process inclusive to all. Everyone will have the opportunity to testify and provide written comments concerning the proposed rule revisions. Interested and affected parties are welcome to testify and submit written comments.

Each hearing will have an identical format. The Hearing Officer opens the hearing and provides a brief introduction of the hearing procedures. CDOT will review exhibits to establish that the CDOT on behalf of the Commission met all the procedural requirements of the Administrative Procedure Act. A summary of the proposed rule revisions will be presented by CDOT staff. Interested and affected parties will then have the opportunity to give testimony either in-person or virtually.

Testimony

The testimony phase of each hearing will proceed as follows:

- The Hearing Officer will identify the participants who indicated that they plan to testify during the hearing based on the registration records.
- When the Hearing Officer exhausts the list, they will ask whether any additional participants wish to testify.

To ensure that the hearing is prompt and efficient, oral testimony may be time-limited.

Written Comments

You may submit written comments to dot_rules@state.co.us during the comment period between August 13, 2021, and October 15, 2021. **All written comments must be received on or before Friday, October 15, 2021, at 5 pm.**



Additionally, we will post all written comments to CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. However, please note that we will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

All written comments will be added to the official rulemaking record.

VII. Recording of the Hearings

Each hearing will be recorded. After each hearing concludes, the recording will be available on CDOT's YouTube Channel at <https://www.youtube.com/channel/UC0WFfiQ-SE4kV07saKZdueA/videos>.

VIII. Special Accommodations

If you need special accommodations, please contact CDOT's Rules Administrator at 303.757.9441 or dot_rules@state.co.us at least one (1) week prior to the scheduled hearing date.

IX. Contact Information

Please contact CDOT's Rules Administrator, at 303.757.9441 or dot_rules@state.co.us if you have any questions.





COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

**Transportation Commission of Colorado
Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
2 CCR 601-22**

Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble

Statement of Basis and Purpose and Preamble

Overview

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range multimodal, comprehensive Statewide Transportation Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department or CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the Transportation Commission of Colorado (“Commission”), as a basis for developing the Statewide Transportation Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO Transportation Planning Regions. In addition, the purpose of the Rules is to describe the organization and function of the Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado’s continually greater integration of multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission’s and the Department’s focus on multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.



The specific purpose of this rulemaking is to establish Greenhouse Gas (GHG) pollution reduction planning levels for transportation within Section 8 of these Rules that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[,]" acknowledged that "Colorado is already experiencing harmful climate impacts[,]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. *see* § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." *see* § 25-7-102(2)(d), C.R.S.



Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). Available at:

<https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>. The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in



consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Of note, many types of infrastructure have been demonstrated not to generate significant induced demand or increased emissions. For example, the state of California conducted a study of project types that should be considered “neutral” from the perspective of GHG pollution -- due to their use being related primarily to issues like safety and utility for emergency services. See here:



<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

Statutory Authority

The statutory authority is as follows:

- House Bill 19-1261 enacted into law on May 30, 2019.
- Senate Bill 20-260 enacted into law on June 17, 2021.
- § 25-7-102(2), C.R.S., which sets forth the legislative declaration to reduce statewide GHG pollution and establishes statewide GHG pollution targets.
- § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling, and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and vehicle miles traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.
- § 43-1-1101, C.R.S., which authorizes CDOT to develop and maintain the state transportation planning process and the State Transportation Plan in cooperation with Regional Planning Commissions and local government.
- § 43-1-1103(5), C.R.S., which authorizes the Commission to promulgate rules to establish the formation of the Statewide Transportation Plan and the statewide planning process. Also requires the consideration of environmental stewardship and reducing GHG emissions as part of transportation planning.
- § 43-1-106(8), C.R.S, which authorizes the Commission to formulate policy with respect to transportation systems in the State and promulgate and adopt all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs.
- § 43-1-106(8)(b), C.R.S., which requires the Commission to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.
- § 43-1-106(8)(k), C.R.S., which authorizes the Commission to make all necessary and reasonable order, rules and regulations.



DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation

STATEMENT OF BASIS AND PURPOSE, ~~AND~~ STATUTORY AUTHORITY AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or~~ CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation commission~~Commission~~ of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per~~per ~~pursuant to~~ 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning~~regionsRegions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~ Multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~ State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~ STAC pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2015, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

~~Copies of the referenced United States Code may be obtained from the following address:~~

~~Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411~~

~~Copies of the referenced Code of Federal Regulations may be obtained from the following address:~~

~~U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800~~

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

~~The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.~~

Preamble for 2021 Rulemaking

Overview

~~Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.~~

~~Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.~~

~~If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.~~

Context of Section 8 of these Rules Within Statewide Objectives

~~The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. see § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." see § 25-7-102(2)(d), C.R.S.~~

~~Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation~~

are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must

address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

1.00 — Definitions.

- 1.01 — ~~Accessible — ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with limited English proficiency. Accessible opportunities to on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
comment
- 1.02 — ~~Attainment Area — any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- 1.03 — ~~Commission — the transportation commission of Colorado created by § 43-1-106, C.R.S.~~
- 1.04 — ~~Corridor — a transportation system that includes all modes and facilities within a described geographic area.~~
- 1.05 — ~~Corridor Vision — a comprehensive examination of a specific transportation corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes transportation modes and facilities over a planning period.~~
- 1.06 — ~~Department — the Colorado Department of Transportation created by § 43-1-103, C.R.S.~~
- 1.07 — ~~Division — the Division of Transportation Development within the Colorado Department of Transportation.~~
- 1.08 — ~~Division Director — the Director of the Division of Transportation Development.~~
- 1.09 — ~~Fiscally Constrained — the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) programming periods.~~
- 1.10 — ~~Intergovernmental Agreement — an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.~~
- 1.11 — ~~Intermodal Facility — A site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.~~
- 1.12 — ~~Land Use — the type, size, arrangement, and use of parcels of land.~~
- 1.13 — ~~Limited English Proficiency (LEP) — individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.~~
- 1.14 — ~~Long-range Planning — a reference to a planning period with a minimum 20-year planning horizon.~~
- 1.15 — ~~Maintenance Area — any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended in 1990.~~
- 1.16 — ~~Memorandum of Agreement (MOA) — a written agreement between two or more parties on an intended plan of action.~~

- 1.17 — Metropolitan Planning Agreement (MPA) — a written agreement between the MPO, the State, and the providers of public transportation serving the metropolitan planning area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.18 — Metropolitan Planning Area — a geographic area determined by agreement between the Metropolitan Planning Organization for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.19 — Metropolitan Planning Organization (MPO) — an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the regional transportation plans and programs in a metropolitan planning area pursuant to 23 U.S.C. § 134.
- 1.20 — Mobility — the ability to move people, goods, services, and information among various origins and destinations.
- 1.21 — Multimodal — an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.22 — National Ambient Air Quality Standards (NAAQS) — are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.23 — Nonattainment Area — any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which an NAAQS exists.
- 1.24 — Non-metropolitan Area — a rural geographic area outside a designated metropolitan planning area.
- 1.25 — Plan Integration — Plan integration is a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.26 — Planning Partners — local and tribal governments, the rural Transportation Planning Regions and MPOs.
- 1.27 — Project Priority Programming Process (“4P”) — the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the statewide transportation improvement program (STIP).
- 1.28 — Regional Planning Commission (RPC) — a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural Transportation Planning Region.
- 1.29 — Regional Transportation Plan (RTP) — a long-range plan designed to address the future transportation needs for a Transportation Planning Region including, but not limited to, anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban Transportation Planning Regions in the state produce RTPs.
- 1.30 — State Transportation System — refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.

- ~~1.31 — Statewide Transportation Advisory Committee (STAC) — the committee created by § 43-1-1104, C.R.S., comprising one representative from each Transportation Planning Region and one representative from each tribal government to review and comment on Regional Transportation Plans, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.~~
- ~~1.32 — Statewide Transportation Improvement Program (STIP) — a staged, fiscally constrained, multi-year, statewide, multimodal program of transportation projects which is consistent with the statewide transportation plan and planning processes, with metropolitan planning area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.~~
- ~~1.33 — Statewide Transportation Plan — the long-range, comprehensive, multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.~~
- ~~1.34 — System Continuity — includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring Regional Transportation Plans, and, to the extent practicable, other neighboring states' transportation plans.~~
- ~~1.35 — Traditionally Underserved — refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.~~
- ~~1.36 — Transit and Rail Advisory Committee (TRAC) — an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.~~
- ~~1.37 — Transportation Commonality — the basis on which Transportation Planning Regions are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, travelsheds, watersheds, geographic unity, existing intergovernmental agreements, and socioeconomic unity.~~
- ~~1.38 — Transportation Improvement Program (TIP) — a staged, fiscally constrained, multi-year, multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.~~
- ~~1.39 — Transportation Mode — a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.~~
- ~~1.40 — Transportation Planning and Programming Process — all collaborative planning-related activities including the development of regional and statewide transportation plans, the Department's Project Priority Programming Process, and development of the Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).~~
- ~~1.41 — Transportation Planning Region (TPR) — a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for transportation commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO Transportation Planning Regions, MPO Transportation Planning Regions, and Transportation Planning Regions with both MPO and non-MPO areas.~~

- ~~1.42 — Transportation Systems Planning — provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.~~
- ~~1.43 — Travelshed — the region or area generally served by a major transportation facility, system, or corridor.~~
- ~~1.44 — Tribal Transportation Improvement Program (TTIP) — a multi-year fiscally constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.~~
- ~~1.45 — Urbanized Area — an area with a population of 50,000 or more designated by the Bureau of the Census.~~
- ~~1.46 — Watershed — a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.~~

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- ~~1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
- ~~1.02 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.~~
- ~~1.03 Approved Air Quality Model - the most recent Environmental Protection Agency issued model that quantifies GHG emissions from transportation.~~
- ~~1.04 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- ~~1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.~~

- 1.06 Carbon Dioxide Equivalent (CO₂e) - a metric measure used to compare the emissions from various GHG based upon the 100-year global warming potential (GWP). CO₂e is multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO₂e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different time periods.
- 1.07 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.08 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated program established in 23 U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.09 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- 1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO₂e reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and help meet the GHG Reduction Levels.
- 1.20 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.

- 1.21 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.22 Land Use - the type, size, arrangement, and use of parcels of land.
- 1.23 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.24 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.25 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.26 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.27 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.28 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.29 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.30 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.31 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.32 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.33 Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.34 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.
- 1.35 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and

- environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.36 Nonattainment Area - any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.37 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning Area.
- 1.38 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.39 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.40 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.41 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.42 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.43 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.44 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.45 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.46 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.47 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide

- Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.48 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.49 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.50 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.51 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.52 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.53 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.54 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.55 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.56 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.57 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.58 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.

- 1.59 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.60 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.
- 1.61 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.62 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.63 Vehicle Miles Traveled (VMT) - the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.64 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.65 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
- 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
- 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
- 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
- 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
- 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
- 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
- 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.

- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
- 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
- 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.
- 2.01.11 The Intermountain ~~Transportation Planning Region~~TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
- 2.01.12 The Northwest ~~Transportation Planning Region~~TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
- 2.01.13 The Upper Front Range ~~Transportation Planning Region~~TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
- 2.01.14 The Central Front Range ~~Transportation Planning Region~~TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
- 2.01.15 The South Central ~~Transportation Planning Region~~TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
- 2.02.1.1 A geographical description of the proposed boundary change.
- 2.02.1.2 A statement of justification for the change considering transportation commonalities.
- 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~RPC.
- 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
- 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~non~~Non-metropolitan-Metropolitan area-Area TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State~~Colorado Administrative Procedure Act, § 24-4-103, C.R.S. to consider a

boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.

2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~Intergovernmental agreement Agreement governing the RPC as specified in these Rules.

2.03 Transportation Planning Coordination with MPOs.

2.03.1 The Department and the MPOs shall coordinate activities related to the development of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~Planning partners-Partners affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

3.01 Duties of the ~~Statewide Transportation Advisory Committee (STAC)~~. Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

- 3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.
- 3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.
- 3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.
- 3.01.4 Colorado's ~~mobility~~Mobility requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.
- 3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~System ~~continuity~~Continuity.
- 3.01.6 Proposed TPR boundary revisions.
- 3.02 Notification of Membership
 - 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~STAC
 - 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
 - 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
 - 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
 - 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.**
- 4.01 ~~Regional Planning Commission~~RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all

applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.

4.02 Public Participation

4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. The objectives of public participation in the transportation planning process include: providing a mechanism for public perspectives, needs, and ideas to be considered in the planning process; developing the public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.

4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying out public participation for developing, amending, and updating the ~~statewide Statewide transportation-Transportation planPlan~~, the ~~Statewide Transportation Improvement Program (STIP)~~, and other statewide transportation planning activities.

4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation planRTPs~~, ~~transportation improvement programsTIPs~~ and other related regional transportation planning activities for their respective ~~metropolitan-Metropolitan planning-Planning areasAreas~~. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.

4.02.4 Non-MPO TPR Plans and Programs. ~~Regional Planning CommissionRPCs~~ for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional Planning CommissionRPC~~ and the Department.

4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:

4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, and those with ~~limited-Limited~~ English ~~proficiencyProficiency~~; and members of the general public expressing such interest in the transportation planning process.

- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings.
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 Seeking out those persons or groups ~~traditionally-Traditionally underserved-Underserved~~ by existing transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low-income, and those with ~~limited-Limited~~ English ~~proficiencyProficiency~~, for the purposes of exchanging information, increasing their involvement, and considering their transportation needs in the transportation planning process. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional Planning CommissionRPCs~~, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP-Limited English Proficiency~~ services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional Planning CommissionsRPCs~~ and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional Planning CommissionRPCs~~, and the Department, shall use an integrated ~~multimodal-Multimodal transportation-Transportation systems-Systems planning-Planning~~ approach in developing and updating the long-range ~~Regional Transportation PlansRTPs~~ and the long-range Statewide Transportation Plan for a minimum 20-year forecasting

- period. ~~Regional Planning Commission~~RPCs shall have flexibility in the methods selected for ~~transportation-Transportation systems-Systems planning-Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~RPCs regarding the selection of appropriate methods.
- 4.03.1 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~RPCs and the Department may also identify any ~~corridor~~Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.
- 4.03.2 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall consider ~~corridor vision~~needs and desired state of the transportation system including existing and future land use and infrastructure, major activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.
- 4.03.3 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~Mobility of people goods, and services.
- 4.03.4 Transportation ~~systems-Systems planning-Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state~~State ~~transportation-Transportation system~~System.
- 4.03.5 Transportation ~~systems-Systems P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the ~~Transit and Rail Advisory Committee~~(TRAC).
- 4.03.6 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.
- 4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.
- 4.04.1 Content of ~~Regional Transportation Plan~~RTPs. Each RTP shall include, at a minimum, the following elements:
- 4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.

- 4.04.1.2 State and federal transportation system planning factors to be considered by ~~Regional Planning Commission~~RPCs and the Department during their respective ~~transportation~~~~Transportation systems~~~~Systems planning~~~~Planning~~ shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor~~~~Corridor~~ studies, or ~~corridor~~~~Corridor~~ ~~visions~~Visions, including a discussion of impacts to minority and low-income communities.
- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 For rural RTPs, the integrated performance-based ~~multimodal~~ Multimodal transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally~~~~Fiscally~~ ~~constrained~~Constrained financial plan.
- 4.04.1.6 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~long~~Long-range Range planning Planning purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.7 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.8 A resolution of adoption by the responsible ~~Metropolitan Planning Organization~~MPO or the ~~Regional Planning Commission~~RPC.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning Region~~TPRs shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation plan~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation ~~plan~~Plan.
- 4.04.2.3 Final Plan. ~~Transportation Planning Region~~TPRs shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these

Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range-Range planning-Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance area-Area for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment area-Area to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range-Range planning-Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment area-Area for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.

- 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~ Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.
- 4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.
- 4.06.1.9 Includes the 10-Year Plan as an appendix.
- 4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.
- 4.06.3 Review and Adoption of the Statewide Transportation Plan.
- 4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. The Statewide Transportation Plan and appendices~~The publication~~ will be available in physical form upon request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and made available on the internet.
- 4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.
- 5.00 Updates to Regional and Statewide Transportation Plans.**
- 5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~ RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal

and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.

- 5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

- 7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

- 7.02 The Department will work with its ~~planning~~Planning partners-Partners to coordinate a schedule for development and adoption of TIPs and the STIP.

- 7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

- 7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally constrained-Constrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportation-Transportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Baseline Projections (MMT)</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Baseline Projections (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Baseline Projections (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Baseline Projections (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>14.9</u>	<u>0.27</u>	<u>11.8</u>	<u>0.82</u>	<u>10.9</u>	<u>0.63</u>	<u>12.8</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>2.3</u>	<u>0.04</u>	<u>1.8</u>	<u>0.12</u>	<u>1.9</u>	<u>0.11</u>	<u>2.2</u>	<u>0.07</u>
<u>PPACG</u>	<u>2.7</u>	<u>N/A</u>	<u>2.2</u>	<u>0.15</u>	<u>2.0</u>	<u>0.12</u>	<u>2.3</u>	<u>0.07</u>
<u>GVMPO</u>	<u>0.38</u>	<u>N/A</u>	<u>0.30</u>	<u>0.02</u>	<u>0.30</u>	<u>0.02</u>	<u>0.36</u>	<u>0.01</u>
<u>PACOG</u>	<u>0.50</u>	<u>N/A</u>	<u>0.40</u>	<u>0.03</u>	<u>0.30</u>	<u>0.02</u>	<u>0.4</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>6.7</u>	<u>0.12</u>	<u>5.3</u>	<u>0.37</u>	<u>5.2</u>	<u>0.30</u>	<u>6.1</u>	<u>0.18</u>
<u>TOTAL</u>	<u>27.4</u>	<u>0.5</u>	<u>21.8</u>	<u>1.5</u>	<u>20.6</u>	<u>1.2</u>	<u>24.2</u>	<u>0.7</u>

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	<u>2025 Projections (MMT)</u>	<u>2030 Projections (MMT)</u>	<u>2040 Projections (MMT)</u>	<u>2050 Projections (MMT)</u>
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions. Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects. The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each year in Table 1 and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO

responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.

8.02.4 Timing for Determining Compliance

8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.

8.02.4.2 After October 1, 2022

8.02.4.2.1 CDOT must for each Applicable Planning Document, meet either the reduction levels within Table 1 for Non-MPO areas or the requirements as set forth in Rule 8.05.

8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 for each Applicable Planning Document, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8.05.

8.02.5 Demonstrating Compliance. At least thirty (30) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:

8.02.5.1 GHG emissions analysis demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO₂e for each compliance year in Table 1 or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2., as applicable, have been met.

8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions.

8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes those funds on projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions.

8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures.

8.02.5.3.3 Quantification of specific co-benefits including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities.

8.02.6 Reporting on Compliance- Annually by April 1, CDOT and MPOs must provide a status report to the Commission on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:

8.02.6.1 The implementation timeline;

8.02.6.2 The current status;

8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and

8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.

8.03 GHG Mitigation Measures. When assessing compliance with the GHG Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:

8.03.1 The addition of transit resources in a manner that can displace VMT.

8.03.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.

8.03.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.

8.03.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.

8.03.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.

- 8.03.6 Adopting locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.
- 8.03.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure -- as well as upgrading commensurate grid improvements -- into the design of key freight routes to accelerate truck electrification.
- 8.03.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.
- 8.03.9 Adoption of transportation demand management practices that reduce VMT.
- 8.04 Air Pollution Control Division (APCD) Confirmation and Verification
- 8.04.1 At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.
- 8.04.2 At least thirty (30) days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within forty-five (45) days, the document shall be considered acceptable.
- 8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.
- 8.05.1 If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.
- 8.05.2 If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG. Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non-MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:
- 8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions. The Commission may waive the restrictions on specific projects on the following basis:
- 8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions; and
- 8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions when compared to the required reduction levels in this Rule.

8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met.

8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be denied.

8.05.3 Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.

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8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG reduction accomplishments.

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, et. seq., in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.0.5.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

Colorado Energy Office
1600 Broadway, Suite 1960
Denver, CO 80202
(303) 866-2100
energyoffice.colorado.gov

9.0.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

U.S. Environmental Protection Agency
The Office of Transportation and Air Quality
1200 Pennsylvania Ave, N.W.
Washington, DC 20460
(734) 214-4574 or (202) 566-0495
mobile@epa.gov
<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

Entire rule eff. 12/15/2012.

Section SB&P eff. 05/30/2013.

Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.

NEWS FROM:



COLORADO

Department of Transportation

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Tim Hoover
Communications Integration Lead
303.619.2674 | timothy.hoover@state.co.us

Aug. 16, 2021

Colorado Developing New Pollution Reduction Planning Standards to Address Climate Change and Air Quality

DENVER - The Colorado Transportation Commission today proposed bold new transportation pollution reduction planning standards that will reduce pollution and greenhouse gas emissions from the transportation sector, improve air quality, reduce smog and provide more travel options for Coloradans.

This proposal will shape how state and local governments will make plans for future projects to make sure Coloradans have more travel options and that the infrastructure we build supports cleaner air and helps us fight climate change.

The [proposed rule](#) focuses on transportation planning – the process for how CDOT and the state’s largest metropolitan regions select future transportation projects. Long before a transportation project is built, it is first identified in plans developed with local public input. These plans often include a decade or more of projects and thus represent a short- and medium-term vision for coming changes. CDOT’s current 10-year plan [can be found here](#).

The draft standard would require CDOT and the state’s five Metropolitan Planning Organizations to determine the total pollution and greenhouse gas emission increase or decrease expected from future transportation projects and take steps to ensure that greenhouse gas emission levels do not exceed set reduction amounts. This approach will also streamline the planning and delivery of innovations that have proven successful in improving quality of life and air quality, like adding sidewalks, improving downtowns for active transportation with “complete streets,” improving local and intercity transit and first-and-last-mile connectivity to transit facilities, and adding bike-shares. This policy recognizes that the transportation projects we build have an impact on how Coloradans travel and encourages choices for travelers across the state.

“Between the recent smoke-filled air and the extreme weather that caused devastating mudslides in Glenwood Canyon, Colorado has received powerful reminders of the importance of taking bold climate action as it continues to threaten our economy and Colorado way of life,” said Gov. Jared Polis. “Transportation is our largest source of air pollutants, and this standard will help ensure that Coloradans have every possible ability to make a difference.”

The proposed Greenhouse Gas Pollution Reduction Planning Standard builds on the state’s efforts to rapidly expand electric vehicles by also addressing the transportation infrastructure itself to better support clean transportation. This two-pronged strategy delivers on a commitment in the [Greenhouse Gas Roadmap](#) and implements a key provision of the state’s landmark transportation legislation, SB-260, which requires a number of steps to embed air quality and equity analysis and goals into transportation planning.

“What we build matters. It matters for safety, for our economy, for resiliency and for our ability to reduce air pollution and improve the quality of places where Coloradans across the state live and thrive,” said Shoshana Lew, executive director of the Colorado Department of Transportation. “From smoke-filled air to a confluence of fire and 500-year flooding in Glenwood Canyon, we are reminded that we have no time to waste in fighting climate change in the transportation sector, and this policy will be an important step. This draft standard wouldn’t be possible without the hundreds of hours of input we’ve received over the last few months, and I look forward to hearing from all stakeholders on this draft.”

CDOT has been reaching out to Coloradans across the state for their feedback for months and has worked continuously with groups including metropolitan planning organization staff and board members, environmental groups, contractors, equity organizations that represent disproportionately impacted communities, local governments, members of the Transportation Commission and other key stakeholders. The department convened a Greenhouse Gas Advisory Group consisting of transportation stakeholders from across the state to inform this standard and has held 11 public regional meetings and five joint state listening sessions with the Colorado Department of Public Health and Environment and has held or presented at over 60 smaller meetings with stakeholders.

“The Transportation Commission is pleased to take this important step today to lead Colorado’s transition to a more sustainable transportation system, which will promote efficiency, equity and economic vitality while preserving our Colorado way of life,” said Transportation Commission Chair Kathy Hall.

Publication of the draft standard begins a 60-day public review period. During this time, CDOT will host public hearings in Grand Junction, Glenwood Springs, Fort Collins, the Denver metropolitan area, Colorado Springs, Durango and Limon. The hearings will have a virtual option so that any interested stakeholders can participate without attending in person. You may also submit a written comment during the 60-day comment period from Aug. 13 to Oct. 15. Sign up to become a stakeholder and receive updates [here](#).

The Transportation Commission is expected to consider the proposed standard in November, and if adopted at that time, the standard will take effect in January of next year.

For more information, read CDOT's [fact sheet](#) on the greenhouse gas standard process.

ADDITIONAL QUOTES FROM ORGANIZATIONS AND COMMUNITY LEADERS

“As the Mayor of Westminster, and a long-time Colorado resident, I am excited to see the Colorado Department of Transportation move forward with a new rulemaking to reduce Greenhouse Gas (GHG) Emissions from the transportation sector. The outcome of the rulemaking should help address the largest source of GHG pollution in Colorado by encouraging a future transportation system that improves transit, biking and walking options which could make a fundamental change to our transportation system. With the release of the rulemaking, CDOT begins the 60-day statewide public outreach and comment period to shape the final recommendations of the rule. The City of Westminster looks forward to being one of many voices helping to shape the final GHG rule, committing CDOT and others to the steps necessary for dramatic reductions in climate pollution.”

- **Mayor Anita Seitz, City of Westminster**

“While we believe the draft rule has several issues that need to be addressed during the Transportation Commission rulemaking process, CDOT staff did a yeoman’s job of conducting an inclusive process with a diverse group of stakeholders to develop a draft to start the conversation.”

- **Andrew Gunning, Executive Director, Pikes Peak Area Council of Governments (PPACG)**

“The need to take urgent action to reduce greenhouse gas emissions from the transportation sector could not be clearer. Just last week, the Northern Front Range broke records for the number of ozone action alerts issued in a single year. Transportation is the single largest emitter of greenhouse gases in Colorado and CDOT’s proposed greenhouse gas reduction rule is a necessary step in the right direction. We look forward to reviewing the proposed rule closely to ensure it protects the health of our residents and reduces climate impacts.” -

-**Claire Levy, Boulder County Commissioner**

"Local governments and local communities across the state appreciate CDOT's proposal. From Salida to Superior and Gilpin County to Glenwood Springs, the impacts of climate change have become intensely and dangerously real. We look forward to this rulemaking process and are hopeful that the Transportation Commission will adopt a forward-leaning, enforceable plan that substantially and urgently reduces climate pollution across Colorado."

- **Jacob Smith, Executive Director, Colorado Communities for Climate Action, a coalition of 38 counties, cities and towns across the state advocating for stronger statewide climate policy.**

"It isn't possible to tackle an issue like this without hearing from different voices. CDOT not only took the time to listen to a range of viewpoints in crafting this rule, they reached out and made sure we were at the table."

- Phillips County Commissioner Terry Hofmeister

"Glenwood Springs is the poster child community for climate change. We have had three major fires over the last 25 years, the latest being the Grizzly Creek Fire last year. These fires have destroyed major infrastructure, homes, and cost lives. We are also seeing other effects of climate change with the recent 500-year rain event two weeks ago that shut down I-70 and paralyzed the region's transportation network. While we have switched our electrical grid over to 100% renewable energy, changed building codes and fortified our domestic water, we need partners throughout the state, country, and planet to join us in addressing this crisis at its source. Doing anything less is simply treating the symptoms instead of the disease. That's why I'm excited to see CDOT take this step to reduce greenhouse gas emissions from transportation. I encourage residents across the western slope to engage with CDOT and provide input on this important work."

- Glenwood Springs Mayor Jonathan Godes

"Recently, Denver residents experienced first-hand the direct impact of a changing climate as wildfire smoke clouded our skyline and created some of the most polluted air in the world at the time. Now, more than ever, we need bold policies like those CDOT is proposing with the Greenhouse Gas Pollution Reduction Planning rule. Denver applauds CDOT for taking these steps and is committed to continuing to do our part to create a sustainable transportation system."

**- Grace Rink, Executive Director, City and County of Denver
Office of Climate Action, Sustainability and Resiliency**

###



Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards

OVERVIEW

CDOT is proposing a new standard to reduce greenhouse gas emissions from the transportation sector, improve air quality and reduce smog, and provide more travel options. The standard would require CDOT and the state's five Metropolitan Planning Organizations (MPOs) to determine the total GHG emissions expected from future transportation projects and take steps to ensure that greenhouse gas (GHG) emission levels do not exceed set GHG reduction amounts. This proposed standard recognizes that the projects we build have an impact on how Coloradans travel and will help bring about a transportation system that provides more choices for travelers across the state.

PROPOSED RULE SCHEDULE

Engagement and Rule Concept Development

Winter-Summer 2021

Early outreach on purpose of rule and overall framework. Input sought through dozens of meetings with a broad range of stakeholders.

Formal Processes Begin

Summer 2021

Transportation Commission authorizes rulemaking development and rule is noticed with Secretary of State.

Public Rulemaking Hearings

Fall 2021: 60-Day Review Period

Eight virtual and in-person hearings held across the state with opportunity for public testimony and submission of written comment.

Adopt Rules

Fall 2021

The Transportation Commission considers the proposed rule for adoption.

Rules Take Effect and Implementation

Winter 2022

If adopted by the Transportation Commission, the rule becomes effective with ongoing implementation.

BENEFITS AND BACKGROUND

The GHG Pollution Reduction Planning Standard is one of several transportation strategies identified in the state's [Greenhouse Gas \(GHG\) Pollution Reduction Roadmap](#) and is a key requirement established in the 2021 state transportation funding bill (SB260). The standard builds on the state's effort to rapidly deploy electric vehicles by encouraging a future transportation system that improves transit, biking and walking options. The focus is on large transportation projects that make a fundamental change to our transportation system. The basic repair and maintenance of our roads and bridges is not impacted.

The benefits made possible by this standard are meaningful; equivalent to burning 169 million fewer gallons of gasoline or taking approximately 300,000 cars off the road for a year. These benefits directly improve air quality by also reducing the harmful pollutants that cause ozone and smog.

GET INVOLVED

CDOT will hold eight public hearings across the state to provide opportunities for public comment on the standard. These meetings will have options to participate either in-person or virtually and offer Spanish interpretation. Comments also are accepted in writing via dot_rules@state.co.us. We welcome your feedback.

Visit our website for more information on public meetings and the rulemaking:
<https://www.codot.gov/programs/environmental/greenhouse-gas>

Questions? Contact: CDOT_transportationghg@state.co.us





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Stakeholders/Accionistas de GEI

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc [redacted]

Wed, Sep 1, 2021 at 9:30 AM

[Large redacted email body]

GHG Stakeholders,

Please note that we have changed the dates/times of hearings at multiple locations to comply with the requirement to complete the cost-benefit analysis at least ten (10) days before the first public hearing. We have also added a new 9th hearing in Weld County. For reference, we have posted the Miscellaneous Rulemaking Public Notice, the updated Notice

of Proposed Rulemaking, and the updated Proposed Statement of Basis & Purpose on [CDOT's Proposed Rules and Public Hearing Dates website](#).

We are still offering all of the meetings in a hybrid format: you may attend a hearing in person, or call in through Zoom to give testimony. You do not need to attend the specific hearing location in your area - you can attend or call in to any of the hearings.

If you are attending virtually, you will need to register through the registration links on [CDOT's Proposed Rules and Public Hearing Dates website](#) so we can provide instructions to you on how to join, listen, and provide testimony if you wish.

We have also posted a Frequently Asked Questions document on [CDOT's Greenhouse Gas Emissions Reduction Opportunities website](#).

Thank you,
Natalie

Accionistas de GEI,

Tenga en cuenta que hemos cambiado las fechas / horas de las audiencias en varios lugares para cumplir con el requisito de completar el análisis de costo-beneficio al menos diez (10) días antes de la primera audiencia pública. También hemos agregado una novena audiencia en el condado de Weld. Como referencia, hemos publicado el Aviso Público de Reglamentación Diverso, el Aviso Público de Reglamentación Propuesta actualizado y la Declaración de Base y Propósito Propuesta actualizada en la página de Internet de [Fechas de Audiencia Pública y Reglas Propuestas del CDOT](#).

Seguimos ofreciendo todas las reuniones en un formato híbrido: usted puede asistir a una audiencia en persona o llamar a través del Zoom para dar su testimonio. No es necesario que asista al lugar específico de la audiencia en su área; usted puede asistir o llamar a cualquiera de las audiencias.

Si usted asiste virtualmente, deberá registrarse a través de los enlaces de registro en la página de Internet de [Reglas Propuestas y Fechas de Audiencia Pública del CDOT](#) para que podamos brindarle instrucciones sobre cómo unirse, escuchar y brindar testimonio si lo desea.

También hemos publicado un documento de Preguntas Frecuentes sobre [Oportunidades de Reducción de Emisiones de Gases de Efecto Invernadero del CDOT](#) en la página de Internet.

Gracias.
Natalie

—
Natalie Lutz
Rules, Policies, and Procedures Administrator



COLORADO
Department of Transportation
Office of Policy and Government Relations

P: 303.757.9441
2829 W. Howard Place, Denver, CO 80204
dot_rules@state.co.us | www.codot.gov | www.cotrip.org

[REDACTED]

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Natalie Lutz
Rules, Policies, and Procedures Administrator



P: 303.757.9441
2829 W. Howard Place, Denver, CO 80204
dot_rules@state.co.us | www.codot.gov | www.cotrip.org



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Stakeholders/Accionistas de GEI

1 message

CDOT Rules <cdot_rules@state.co.us>

Wed, Sep 1, 2021 at 9:32 AM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc [Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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Gracias.
Natalie

—
Natalie Lutz
Rules, Policies, and Procedures Administrator



P: 303.757.9441
2829 W. Howard Place, Denver, CO 80204

The Colorado Department of Transportation (CDOT) has completed the cost-benefit analysis for the proposed pollution reduction planning standards. I have attached a copy of the cost-benefit analysis for your reference. You can also find it on [CDOT's Proposed Rules and Public Hearing Dates website](#).

Thank you,


Natalie

Hola Accionista,

El Departamento de Transporte de Colorado (CDOT) ha finalizado el análisis de costo-beneficio para las normas de planificación de reducción de la contaminación propuestos. Adjunto una copia del análisis de costo-beneficio para su referencia. También usted puede encontrarlo en [la página de Internet de Reglas Propuestas y Fechas de Audiencias Públicas del CDOT](#).

Gracias.

Natalie

 **CDOT Cost Benefit Analysis for GHG Rule Sept 2021.pdf**
332K

[Redacted content]

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Gracias.

Natalie

 **CDOT Cost Benefit Analysis for GHG Rule Sept 2021.pdf**
332K



Cost Benefit Analysis for Proposed Pollution Reduction Planning Standards/ Análisis de Costo-Beneficio para Normas de Planificación de Reducción de la Contaminación Propuestos

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bcc

Tue, Sep 7, 2021 at 3:18 PM

[Redacted email body content]

[REDACTED]

[Redacted]

Hello Stakeholder,

The Colorado Department of Transportation (CDOT) has completed the cost-benefit analysis for the proposed pollution reduction planning standards. I have attached a copy of the cost-benefit analysis for your reference. You can also find it on [CDOT's Proposed Rules and Public Hearing Dates website](#).

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Gracias.

Natalie

 **CDOT Cost Benefit Analysis for GHG Rule Sept 2021.pdf**
332K



STATE OF COLORADO

9D

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Regulatory Analysis for Proposed Pollution Reduction Planning Standards/ Análisis Regulatorio para Normas de Planificación de Reducción de la Contaminación Propuestas

1 message

CDOT Rules <cdot_rules@state.co.us>

Thu, Sep 9, 2021 at 6:03 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [REDACTED]

Hello Stakeholder,

The Colorado Department of Transportation (CDOT) has completed the regulatory analysis for the proposed pollution reduction planning standards. I have attached a copy of the regulatory analysis for your reference. You can also find it on [CDOT's Proposed Rules and Public Hearing Dates website](#).

Thank you,

Natalie

Hola Accionista,

El Departamento de Transporte de Colorado (CDOT) ha finalizado el análisis regulatorio para las normas de planificación de reducción de la contaminación propuestos. Adjunto una copia del análisis regulatorio para su referencia. También usted puede encontrarlo en [la página de Internet de Reglas Propuestas y Fechas de Audiencias Públicas del CDOT](#).

Gracias.

Natalie

 **Regulatory Analysis For Pollution Reduction Standard.pdf**
408K



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Regulatory Analysis for Proposed Pollution Reduction Planning Standards/ Análisis Regulatorio para Normas de Planificación de Reducción de la Contaminación Propuestas

1 message

CDOT Rules <cdot_rules@state.co.us>

Thu, Sep 9, 2021 at 6:06 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc [REDACTED]

[REDACTED]

[REDACTED]

[Redacted]

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Natalie

 **Regulatory Analysis For Pollution Reduction Standard.pdf**
408K



Regulatory Analysis for Proposed Pollution Reduction Planning Standards/ Análisis Regulatorio para Normas de Planificación de Reducción de la Contaminación Propuestos

1 message

CDOT Rules <cdot_rules@state.co.us>

Thu, Sep 9, 2021 at 6:09 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc [Redacted]

[Redacted email body content]

[Redacted content]

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Gracias.

Natalie

 **Regulatory Analysis For Pollution Reduction Standard.pdf**
408K

Exhibit 10



STATE OF COLORADO

10A

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Notice of Proposed Rulemaking for Rules Governing Statewide Transportation Planning Processes and Transportation Planning Regions, 2 CCR 601-22

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bc

Mon, Aug 16, 2021 at 1:58 PM



Hello Stakeholder:

This email serves as notification that the Colorado Department of Transportation (CDOT) on behalf of the Transportation Commission of Colorado (Commission) filed a Notice of Proposed Rulemaking with the Colorado Secretary of State to consider revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22.

The Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. I have attached the Notice of Proposed Rulemaking and a PDF copy of the proposed rule revisions for your review. You can also learn more about the Pollution Reduction Planning Standards through the attached Press Release and Fact Sheet.

The Commission plans to hold eight (8) hearings across the State as listed in the attached Notice of Proposed Rulemaking to hear testimony and receive comments. The public hearings will be conducted in a hybrid format, both in-person and virtually. If you plan to attend any of the scheduled hearings virtually, please register through the registration links provided either on the attached Notice of Proposed Rulemaking or CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html> so we can provide instructions on how you can join the hearings of your choice virtually and provide testimony if you wish.





Please submit all written comments to dot_rules@state.co.us on or before 5:00 p.m. on October 15, 2021. All comments received from stakeholders will be posted on [CDOT's Rulemaking Web Page](#) and will be available for review during the public comment period. We will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

Please feel free to contact me at dot_rules@state.co.us if you have any questions or would like to be removed from our stakeholder list.

Thank you for participating in the rulemaking process.

Thanks,
Natalie

4 attachments

-  **Notice and Statement.pdf**
240K
-  **2 CCR 601-22_Redline_8.13.21.pdf**
440K
-  **GHG Pollution Standard Fact Sheet.pdf**
237K
-  **GHG rule press release final CDOT.pdf**
122K



COLORADO

Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

Notice of Proposed Rulemaking

Transportation Commission of Colorado

Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

I. Notice

As required by the Colorado Administrative Procedure Act found at section 24-4-103, C.R.S., the Transportation Commission of Colorado (Commission) gives notice of proposed rulemaking.

II. Subject

The Commission is considering revisions to the rules governing the statewide transportation planning process and transportation planning regions, 2 CCR 601-22. Specifically, the Commission proposes to establish greenhouse gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of the Pollution Reduction Planning Standards is to limit the pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This will be accomplished by requiring the Colorado Department of Transportation (CDOT) and the Metropolitan Planning Organizations (MPOs) to establish plans that meet GHG transportation reduction targets through a mix of transportation projects that limit and mitigate air pollution and improve quality of life and multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. These standards address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

A detailed Statement of Basis, Purpose, and Specific Statutory Authority follows this notice and is incorporated by reference.



III. Rulemaking Hearings

The Commission plans to hold eight (8) hearings across the State as listed in the below table to hear testimony and receive comments on the proposed rule revisions. The public hearings will be conducted in a hybrid format, both in-person and virtually. All interested and affected parties may choose to attend one (1) or all eight (8) scheduled hearings either in-person or virtually.

Please note that the Commission may hold additional hearings, which will be posted on CDOT's website: <https://www.codot.gov/business/rules/proposed-rules.html>

Date	Location	Time	Virtual Hearing Registration Links
9/14/2021	CDOT Regional Office US160 Maintenance Training Facility 20581 Highway 160 Durango, CO 81301	3-7 p.m.	Virtual Registration Form
9/17/2021	CDOT Regional Office Bookcliff Conference Room 2328 G Road Grand Junction CO 81505	3-7 p.m.	Virtual Registration Form
9/23/2021	Swansea Recreation Center 2650 E. 49th Ave. Denver, CO 80216	3-7 p.m.	Virtual Registration Form
9/24/2021	CDOT Regional Office 1480 Quail Lake Loop #A Colorado Springs, CO 80906	3-7 p.m.	Virtual Registration Link
9/27/2021	South Suburban Sports Complex 4810 E. County Line Rd. Littleton, CO 80126	3-7 p.m.	Virtual Registration Link
9/29/2021	CDOT Regional Office Big Sandy Conference Room 2738 Victory Highway Limon, CO 80828	3-7 p.m.	Virtual Registration Form
9/30/2021	Christ United Methodist Church 301 East Drake Road Fort Collins, CO 80525	3-7 p.m.	Virtual Registration Form
10/4/2021	City Hall City Council Chambers 101 West 8th Street Glenwood Springs, CO 81601	3-7 p.m.	Virtual Registration Form

How to Register to Attend Hearings Virtually

If you plan to attend any of the scheduled hearings virtually, you must click on the registration link in the above table for each hearing that you wish to attend virtually. The registration links for each hearing are also available on the CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. When you register, you must provide your full name and email address. You may also provide your telephone number and the organization that you are representing. Lastly, please indicate whether you plan to testify during the hearing and/or submit written comments. You will receive instructions the day before the scheduled hearing on how to join, listen, and provide testimony if you wish.



IV. Statutory Authority

The specific authority under which the Commission shall establish these proposed rule revisions is set forth in §§ 43-1-106(8)(k) and 43-1-1103(5), C.R.S.

V. Copies of the Notice, Proposed Rule Revisions, and the Statement of Basis, Purpose & Authority

The notice of hearing, the proposed rule revisions, and the proposed statement of basis, purpose and authority are available for review at CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>.

If there are changes made to the proposed rule revisions before the first scheduled hearing on September 14, 2021, the updated proposed rule revisions will be available to the public and posted on CDOT's website by September 9, 2021.

Please note that the proposed rule revisions being considered are subject to further changes and modifications after the public hearings and the deadline for the submission of written comments.

VI. Opportunity to testify and submit written comments

The Commission and CDOT strive to make the rulemaking process inclusive to all. Everyone will have the opportunity to testify and provide written comments concerning the proposed rule revisions. Interested and affected parties are welcome to testify and submit written comments.

Each hearing will have an identical format. The Hearing Officer opens the hearing and provides a brief introduction of the hearing procedures. CDOT will review exhibits to establish that the CDOT on behalf of the Commission met all the procedural requirements of the Administrative Procedure Act. A summary of the proposed rule revisions will be presented by CDOT staff. Interested and affected parties will then have the opportunity to give testimony either in-person or virtually.

Testimony

The testimony phase of each hearing will proceed as follows:

- The Hearing Officer will identify the participants who indicated that they plan to testify during the hearing based on the registration records.
- When the Hearing Officer exhausts the list, they will ask whether any additional participants wish to testify.

To ensure that the hearing is prompt and efficient, oral testimony may be time-limited.

Written Comments

You may submit written comments to dot_rules@state.co.us during the comment period between August 13, 2021, and October 15, 2021. **All written comments must be received on or before Friday, October 15, 2021, at 5 pm.**



Additionally, we will post all written comments to CDOT's website at <https://www.codot.gov/business/rules/proposed-rules.html>. However, please note that we will redact the following information for data privacy from the submissions prior to posting online: first and last names, contact information, including business and home addresses, email addresses, and telephone numbers.

All written comments will be added to the official rulemaking record.

VII. Recording of the Hearings

Each hearing will be recorded. After each hearing concludes, the recording will be available on CDOT's YouTube Channel at <https://www.youtube.com/channel/UC0WFfiQ-SE4kV07saKZdueA/videos>.

VIII. Special Accommodations

If you need special accommodations, please contact CDOT's Rules Administrator at 303.757.9441 or dot_rules@state.co.us at least one (1) week prior to the scheduled hearing date.

IX. Contact Information

Please contact CDOT's Rules Administrator, at 303.757.9441 or dot_rules@state.co.us if you have any questions.





COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

**Transportation Commission of Colorado
Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions
2 CCR 601-22**

Proposed Statement of Basis and Purpose, Statutory Authority, and Preamble

Statement of Basis and Purpose and Preamble

Overview

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range multimodal, comprehensive Statewide Transportation Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department or CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the Transportation Commission of Colorado (“Commission”), as a basis for developing the Statewide Transportation Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO Transportation Planning Regions. In addition, the purpose of the Rules is to describe the organization and function of the Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado’s continually greater integration of multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission’s and the Department’s focus on multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.



The specific purpose of this rulemaking is to establish Greenhouse Gas (GHG) pollution reduction planning levels for transportation within Section 8 of these Rules that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Additionally, the Commission proposes to clarify that the Statewide Transportation Plan will include an analysis of how it aligns with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. The Commission proposes to include the 10-Year Plan as a required appendix of the Statewide Transportation Plan. The Commission also proposes to establish a State Interagency Consultation Team, consisting of CDOT's Director of the Division of Transportation Development, the Colorado Department of Public Health and Environment's Director of Air Pollution Control Division, and the Director of each MPO. The Commission proposes to add nineteen (19) new defined terms relating to the establishment of the GHG pollution reduction planning levels for transportation and to reformat the defined terms into alphabetical order. Finally, the Commission proposes to make other minor changes or updates, such as capitalizing defined terms.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. *see* § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." *see* § 25-7-102(2)(d), C.R.S.



Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). Available at:

<https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>. The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in



consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Of note, many types of infrastructure have been demonstrated not to generate significant induced demand or increased emissions. For example, the state of California conducted a study of project types that should be considered “neutral” from the perspective of GHG pollution -- due to their use being related primarily to issues like safety and utility for emergency services. See here:



<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

Statutory Authority

The statutory authority is as follows:

- House Bill 19-1261 enacted into law on May 30, 2019.
- Senate Bill 20-260 enacted into law on June 17, 2021.
- § 25-7-102(2), C.R.S., which sets forth the legislative declaration to reduce statewide GHG pollution and establishes statewide GHG pollution targets.
- § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling, and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and vehicle miles traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.
- § 43-1-1101, C.R.S., which authorizes CDOT to develop and maintain the state transportation planning process and the State Transportation Plan in cooperation with Regional Planning Commissions and local government.
- § 43-1-1103(5), C.R.S., which authorizes the Commission to promulgate rules to establish the formation of the Statewide Transportation Plan and the statewide planning process. Also requires the consideration of environmental stewardship and reducing GHG emissions as part of transportation planning.
- § 43-1-106(8), C.R.S, which authorizes the Commission to formulate policy with respect to transportation systems in the State and promulgate and adopt all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs.
- § 43-1-106(8)(b), C.R.S., which requires the Commission to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.
- § 43-1-106(8)(k), C.R.S., which authorizes the Commission to make all necessary and reasonable order, rules and regulations.



DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation

STATEMENT OF BASIS AND PURPOSE, ~~AND~~ STATUTORY AUTHORITY AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or~~ CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation commission~~Commission~~ of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado that will reduce traffic and smog.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per~~per ~~pursuant to~~ 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning~~regionsRegions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~ Multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~ State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~ STAC pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2015, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

~~Copies of the referenced United States Code may be obtained from the following address:~~

~~Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411~~

~~Copies of the referenced Code of Federal Regulations may be obtained from the following address:~~

~~U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800~~

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

~~The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.~~

Preamble for 2021 Rulemaking

Overview

Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. see § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." see § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation

are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must

address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

1.00 — Definitions.

- 1.01 — ~~Accessible — ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA) , and also accessible to persons with limited English proficiency. Accessible opportunities to on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
comment
- 1.02 — ~~Attainment Area — any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- 1.03 — ~~Commission — the transportation commission of Colorado created by § 43-1-106, C.R.S.~~
- 1.04 — ~~Corridor — a transportation system that includes all modes and facilities within a described geographic area.~~
- 1.05 — ~~Corridor Vision — a comprehensive examination of a specific transportation corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes transportation modes and facilities over a planning period.~~
- 1.06 — ~~Department — the Colorado Department of Transportation created by § 43-1-103, C.R.S.~~
- 1.07 — ~~Division — the Division of Transportation Development within the Colorado Department of Transportation.~~
- 1.08 — ~~Division Director — the Director of the Division of Transportation Development.~~
- 1.09 — ~~Fiscally Constrained — the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) programming periods.~~
- 1.10 — ~~Intergovernmental Agreement — an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.~~
- 1.11 — ~~Intermodal Facility — A site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.~~
- 1.12 — ~~Land Use — the type, size, arrangement, and use of parcels of land.~~
- 1.13 — ~~Limited English Proficiency (LEP) — individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.~~
- 1.14 — ~~Long-range Planning — a reference to a planning period with a minimum 20-year planning horizon.~~
- 1.15 — ~~Maintenance Area — any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended in 1990.~~
- 1.16 — ~~Memorandum of Agreement (MOA) — a written agreement between two or more parties on an intended plan of action.~~

- 1.17 — Metropolitan Planning Agreement (MPA) — a written agreement between the MPO, the State, and the providers of public transportation serving the metropolitan planning area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.18 — Metropolitan Planning Area — a geographic area determined by agreement between the Metropolitan Planning Organization for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.19 — Metropolitan Planning Organization (MPO) — an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the regional transportation plans and programs in a metropolitan planning area pursuant to 23 U.S.C. § 134.
- 1.20 — Mobility — the ability to move people, goods, services, and information among various origins and destinations.
- 1.21 — Multimodal — an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.22 — National Ambient Air Quality Standards (NAAQS) — are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.23 — Nonattainment Area — any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which an NAAQS exists.
- 1.24 — Non-metropolitan Area — a rural geographic area outside a designated metropolitan planning area.
- 1.25 — Plan Integration — Plan integration is a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.26 — Planning Partners — local and tribal governments, the rural Transportation Planning Regions and MPOs.
- 1.27 — Project Priority Programming Process (“4P”) — the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the statewide transportation improvement program (STIP).
- 1.28 — Regional Planning Commission (RPC) — a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural Transportation Planning Region.
- 1.29 — Regional Transportation Plan (RTP) — a long-range plan designed to address the future transportation needs for a Transportation Planning Region including, but not limited to, anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban Transportation Planning Regions in the state produce RTPs.
- 1.30 — State Transportation System — refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.

- ~~1.31 — Statewide Transportation Advisory Committee (STAC) — the committee created by § 43-1-1104, C.R.S., comprising one representative from each Transportation Planning Region and one representative from each tribal government to review and comment on Regional Transportation Plans, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.~~
- ~~1.32 — Statewide Transportation Improvement Program (STIP) — a staged, fiscally constrained, multi-year, statewide, multimodal program of transportation projects which is consistent with the statewide transportation plan and planning processes, with metropolitan planning area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.~~
- ~~1.33 — Statewide Transportation Plan — the long-range, comprehensive, multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.~~
- ~~1.34 — System Continuity — includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring Regional Transportation Plans, and, to the extent practicable, other neighboring states' transportation plans.~~
- ~~1.35 — Traditionally Underserved — refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.~~
- ~~1.36 — Transit and Rail Advisory Committee (TRAC) — an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.~~
- ~~1.37 — Transportation Commonality — the basis on which Transportation Planning Regions are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, travelsheds, watersheds, geographic unity, existing intergovernmental agreements, and socioeconomic unity.~~
- ~~1.38 — Transportation Improvement Program (TIP) — a staged, fiscally constrained, multi-year, multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.~~
- ~~1.39 — Transportation Mode — a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.~~
- ~~1.40 — Transportation Planning and Programming Process — all collaborative planning-related activities including the development of regional and statewide transportation plans, the Department's Project Priority Programming Process, and development of the Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).~~
- ~~1.41 — Transportation Planning Region (TPR) — a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for transportation commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO Transportation Planning Regions, MPO Transportation Planning Regions, and Transportation Planning Regions with both MPO and non-MPO areas.~~

- ~~1.42 — Transportation Systems Planning — provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.~~
- ~~1.43 — Travelshed — the region or area generally served by a major transportation facility, system, or corridor.~~
- ~~1.44 — Tribal Transportation Improvement Program (TTIP) — a multi-year fiscally constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.~~
- ~~1.45 — Urbanized Area — an area with a population of 50,000 or more designated by the Bureau of the Census.~~
- ~~1.46 — Watershed — a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.~~

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- ~~1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
- ~~1.02 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.~~
- ~~1.03 Approved Air Quality Model - the most recent Environmental Protection Agency issued model that quantifies GHG emissions from transportation.~~
- ~~1.04 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- ~~1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.~~

- 1.06 Carbon Dioxide Equivalent (CO₂e) - a metric measure used to compare the emissions from various GHG based upon the 100-year global warming potential (GWP). CO₂e is multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO₂e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different time periods.
- 1.07 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.08 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated program established in 23 U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.09 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- 1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO₂e reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and help meet the GHG Reduction Levels.
- 1.20 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.

- 1.21 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.22 Land Use - the type, size, arrangement, and use of parcels of land.
- 1.23 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.24 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.25 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.26 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.27 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.28 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.29 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.30 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.31 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.32 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.33 Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.34 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.
- 1.35 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and

- environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.36 Nonattainment Area - any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.37 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning Area.
- 1.38 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.39 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.40 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.41 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.42 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.43 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.44 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.45 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.46 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.47 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide

- Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.48 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.49 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.50 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.51 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.52 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.53 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.54 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.55 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.56 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.57 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.58 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.

- 1.59 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.60 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.
- 1.61 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.62 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.63 Vehicle Miles Traveled (VMT) - the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.64 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.65 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
- 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
- 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
- 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
- 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
- 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
- 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
- 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.

- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
- 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
- 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.
- 2.01.11 The Intermountain ~~Transportation Planning Region~~TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
- 2.01.12 The Northwest ~~Transportation Planning Region~~TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
- 2.01.13 The Upper Front Range ~~Transportation Planning Region~~TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
- 2.01.14 The Central Front Range ~~Transportation Planning Region~~TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
- 2.01.15 The South Central ~~Transportation Planning Region~~TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
- 2.02.1.1 A geographical description of the proposed boundary change.
- 2.02.1.2 A statement of justification for the change considering transportation commonalities.
- 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~RPC.
- 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
- 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~non~~Non-metropolitan-Metropolitan area-Area TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State~~Colorado Administrative Procedure Act, § 24-4-103, C.R.S. to consider a

boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.

2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~Intergovernmental agreement Agreement governing the RPC as specified in these Rules.

2.03 Transportation Planning Coordination with MPOs.

2.03.1 The Department and the MPOs shall coordinate activities related to the development of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~Planning partners-Partners affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

3.01 Duties of the ~~Statewide Transportation Advisory Committee (STAC)~~. Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

- 3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.
- 3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.
- 3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.
- 3.01.4 Colorado's ~~mobility~~-Mobility requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.
- 3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~-System ~~continuity~~Continuity.
- 3.01.6 Proposed TPR boundary revisions.
- 3.02 Notification of Membership
 - 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~STAC
 - 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
 - 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
 - 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
 - 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.**
 - 4.01 ~~Regional Planning Commission~~RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all

applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.

4.02 Public Participation

4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. The objectives of public participation in the transportation planning process include: providing a mechanism for public perspectives, needs, and ideas to be considered in the planning process; developing the public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.

4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying out public participation for developing, amending, and updating the ~~statewide Statewide transportation plan Plan~~, the ~~Statewide Transportation Improvement Program (STIP)~~, and other statewide transportation planning activities.

4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation plan RTPs~~, ~~transportation improvement programs TIPs~~ and other related regional transportation planning activities for their respective ~~metropolitan Metropolitan planning Planning areas Areas~~. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.

4.02.4 Non-MPO TPR Plans and Programs. ~~Regional Planning Commission RPCs~~ for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional Planning Commission RPC~~ and the Department.

4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:

4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, and those with ~~limited Limited~~ English ~~proficiency Proficiency~~; and members of the general public expressing such interest in the transportation planning process.

- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings.
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 Seeking out those persons or groups ~~traditionally-Traditionally underserved-Underserved~~ by existing transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low-income, and those with ~~limited-Limited~~ English ~~proficiency~~~~Proficiency~~, for the purposes of exchanging information, increasing their involvement, and considering their transportation needs in the transportation planning process. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional Planning Commission~~~~RPCs~~, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP-Limited English Proficiency~~ services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional Planning Commissions~~~~RPCs~~ and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional Planning Commission~~~~RPCs~~, and the Department, shall use an integrated ~~multimodal-Multimodal transportation-Transportation systems-Systems planning-Planning~~ approach in developing and updating the long-range ~~Regional Transportation Plans~~~~RTPs~~ and the long-range Statewide Transportation Plan for a minimum 20-year forecasting

- period. ~~Regional Planning Commission~~RPCs shall have flexibility in the methods selected for ~~transportation-Transportation systems-Systems planning-Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~RPCs regarding the selection of appropriate methods.
- 4.03.1 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~RPCs and the Department may also identify any ~~corridor~~Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.
- 4.03.2 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall consider ~~corridor vision~~needs and desired state of the transportation system including existing and future land use and infrastructure, major activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.
- 4.03.3 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~Mobility of people goods, and services.
- 4.03.4 Transportation ~~systems-Systems planning-Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state~~State ~~transportation-Transportation system~~System.
- 4.03.5 Transportation ~~systems-Systems P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the ~~Transit and Rail Advisory Committee~~(TRAC).
- 4.03.6 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.
- 4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.
- 4.04.1 Content of ~~Regional Transportation Plan~~RTPs. Each RTP shall include, at a minimum, the following elements:
- 4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.

- 4.04.1.2 State and federal transportation system planning factors to be considered by ~~Regional Planning Commission~~RPCs and the Department during their respective ~~transportation-Transportation systems-Systems planning-Planning~~ shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor-Corridor~~ studies, or ~~corridor-Corridor visions~~Visions, including a discussion of impacts to minority and low-income communities.
- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 For rural RTPs, the integrated performance-based ~~multimodal Multimodal~~ transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally-Fiscally constrained-Constrained~~ financial plan.
- 4.04.1.6 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~longLong-range-Range planning-Planning~~ purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.7 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.8 A resolution of adoption by the responsible ~~Metropolitan Planning Organization~~MPO or the ~~Regional Planning Commission~~RPC.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning Region~~TPRs shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation plan~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide-Statewide transportation-Transportation plan~~Plan.
- 4.04.2.3 Final Plan. ~~Transportation Planning Region~~TPRs shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these

Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range-Range planning-Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance area-Area for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment area-Area to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range-Range planning-Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment area-Area for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.

- 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~ Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.
- 4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.
- 4.06.1.9 Includes the 10-Year Plan as an appendix.
- 4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.
- 4.06.3 Review and Adoption of the Statewide Transportation Plan.
- 4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. The Statewide Transportation Plan and appendices~~The publication~~ will be available in physical form upon request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and made available on the internet.
- 4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.
- 5.00 Updates to Regional and Statewide Transportation Plans.**
- 5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~ RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal

and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.

- 5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

- 7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

- 7.02 The Department will work with its ~~planning~~Planning partners-Partners to coordinate a schedule for development and adoption of TIPs and the STIP.

- 7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

- 7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally constrainedConstrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportation-Transportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Baseline Projections (MMT)</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Baseline Projections (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Baseline Projections (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Baseline Projections (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>14.9</u>	<u>0.27</u>	<u>11.8</u>	<u>0.82</u>	<u>10.9</u>	<u>0.63</u>	<u>12.8</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>2.3</u>	<u>0.04</u>	<u>1.8</u>	<u>0.12</u>	<u>1.9</u>	<u>0.11</u>	<u>2.2</u>	<u>0.07</u>
<u>PPACG</u>	<u>2.7</u>	<u>N/A</u>	<u>2.2</u>	<u>0.15</u>	<u>2.0</u>	<u>0.12</u>	<u>2.3</u>	<u>0.07</u>
<u>GVMPO</u>	<u>0.38</u>	<u>N/A</u>	<u>0.30</u>	<u>0.02</u>	<u>0.30</u>	<u>0.02</u>	<u>0.36</u>	<u>0.01</u>
<u>PACOG</u>	<u>0.50</u>	<u>N/A</u>	<u>0.40</u>	<u>0.03</u>	<u>0.30</u>	<u>0.02</u>	<u>0.4</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>6.7</u>	<u>0.12</u>	<u>5.3</u>	<u>0.37</u>	<u>5.2</u>	<u>0.30</u>	<u>6.1</u>	<u>0.18</u>
<u>TOTAL</u>	<u>27.4</u>	<u>0.5</u>	<u>21.8</u>	<u>1.5</u>	<u>20.6</u>	<u>1.2</u>	<u>24.2</u>	<u>0.7</u>

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	<u>2025 Projections (MMT)</u>	<u>2030 Projections (MMT)</u>	<u>2040 Projections (MMT)</u>	<u>2050 Projections (MMT)</u>
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions. Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects. The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each year in Table 1 and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO

responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.

8.02.4 Timing for Determining Compliance

8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.

8.02.4.2 After October 1, 2022

8.02.4.2.1 CDOT must for each Applicable Planning Document, meet either the reduction levels within Table 1 for Non-MPO areas or the requirements as set forth in Rule 8.05.

8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 for each Applicable Planning Document, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8.05.

8.02.5 Demonstrating Compliance. At least thirty (30) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:

8.02.5.1 GHG emissions analysis demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO₂e for each compliance year in Table 1 or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2., as applicable, have been met.

8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions.

8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes those funds on projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions.

8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures.

8.02.5.3.3 Quantification of specific co-benefits including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities.

8.02.6 Reporting on Compliance- Annually by April 1, CDOT and MPOs must provide a status report to the Commission on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:

8.02.6.1 The implementation timeline;

8.02.6.2 The current status;

8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and

8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.

8.03 GHG Mitigation Measures. When assessing compliance with the GHG Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:

8.03.1 The addition of transit resources in a manner that can displace VMT.

8.03.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.

8.03.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.

8.03.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.

8.03.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.

- 8.03.6 Adopting locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.
- 8.03.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure -- as well as upgrading commensurate grid improvements -- into the design of key freight routes to accelerate truck electrification.
- 8.03.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.
- 8.03.9 Adoption of transportation demand management practices that reduce VMT.
- 8.04 Air Pollution Control Division (APCD) Confirmation and Verification
- 8.04.1 At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.
- 8.04.2 At least thirty (30) days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within forty-five (45) days, the document shall be considered acceptable.
- 8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.
- 8.05.1 If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.
- 8.05.2 If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG. Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non-MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:
- 8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions. The Commission may waive the restrictions on specific projects on the following basis:
- 8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions; and
- 8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions when compared to the required reduction levels in this Rule.

8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met.

8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be denied.

8.05.3 Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.

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8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG reduction accomplishments.

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, et. seq., in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.0.5.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

Colorado Energy Office
1600 Broadway, Suite 1960
Denver, CO 80202
(303) 866-2100
energyoffice.colorado.gov

9.0.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

U.S. Environmental Protection Agency
The Office of Transportation and Air Quality
1200 Pennsylvania Ave, N.W.
Washington, DC 20460
(734) 214-4574 or (202) 566-0495
mobile@epa.gov
<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

Entire rule eff. 12/15/2012.

Section SB&P eff. 05/30/2013.

Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.

NEWS FROM:



COLORADO

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Tim Hoover
Communications Integration Lead
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Aug. 16, 2021

Colorado Developing New Pollution Reduction Planning Standards to Address Climate Change and Air Quality

DENVER - The Colorado Transportation Commission today proposed bold new transportation pollution reduction planning standards that will reduce pollution and greenhouse gas emissions from the transportation sector, improve air quality, reduce smog and provide more travel options for Coloradans.

This proposal will shape how state and local governments will make plans for future projects to make sure Coloradans have more travel options and that the infrastructure we build supports cleaner air and helps us fight climate change.

The [proposed rule](#) focuses on transportation planning – the process for how CDOT and the state’s largest metropolitan regions select future transportation projects. Long before a transportation project is built, it is first identified in plans developed with local public input. These plans often include a decade or more of projects and thus represent a short- and medium-term vision for coming changes. CDOT’s current 10-year plan [can be found here](#).

The draft standard would require CDOT and the state’s five Metropolitan Planning Organizations to determine the total pollution and greenhouse gas emission increase or decrease expected from future transportation projects and take steps to ensure that greenhouse gas emission levels do not exceed set reduction amounts. This approach will also streamline the planning and delivery of innovations that have proven successful in improving quality of life and air quality, like adding sidewalks, improving downtowns for active transportation with “complete streets,” improving local and intercity transit and first-and-last-mile connectivity to transit facilities, and adding bike-shares. This policy recognizes that the transportation projects we build have an impact on how Coloradans travel and encourages choices for travelers across the state.

“Between the recent smoke-filled air and the extreme weather that caused devastating mudslides in Glenwood Canyon, Colorado has received powerful reminders of the importance of taking bold climate action as it continues to threaten our economy and Colorado way of life,” said Gov. Jared Polis. “Transportation is our largest source of air pollutants, and this standard will help ensure that Coloradans have every possible ability to make a difference.”

The proposed Greenhouse Gas Pollution Reduction Planning Standard builds on the state’s efforts to rapidly expand electric vehicles by also addressing the transportation infrastructure itself to better support clean transportation. This two-pronged strategy delivers on a commitment in the [Greenhouse Gas Roadmap](#) and implements a key provision of the state’s landmark transportation legislation, SB-260, which requires a number of steps to embed air quality and equity analysis and goals into transportation planning.

“What we build matters. It matters for safety, for our economy, for resiliency and for our ability to reduce air pollution and improve the quality of places where Coloradans across the state live and thrive,” said Shoshana Lew, executive director of the Colorado Department of Transportation. “From smoke-filled air to a confluence of fire and 500-year flooding in Glenwood Canyon, we are reminded that we have no time to waste in fighting climate change in the transportation sector, and this policy will be an important step. This draft standard wouldn’t be possible without the hundreds of hours of input we’ve received over the last few months, and I look forward to hearing from all stakeholders on this draft.”

CDOT has been reaching out to Coloradans across the state for their feedback for months and has worked continuously with groups including metropolitan planning organization staff and board members, environmental groups, contractors, equity organizations that represent disproportionately impacted communities, local governments, members of the Transportation Commission and other key stakeholders. The department convened a Greenhouse Gas Advisory Group consisting of transportation stakeholders from across the state to inform this standard and has held 11 public regional meetings and five joint state listening sessions with the Colorado Department of Public Health and Environment and has held or presented at over 60 smaller meetings with stakeholders.

“The Transportation Commission is pleased to take this important step today to lead Colorado’s transition to a more sustainable transportation system, which will promote efficiency, equity and economic vitality while preserving our Colorado way of life,” said Transportation Commission Chair Kathy Hall.

Publication of the draft standard begins a 60-day public review period. During this time, CDOT will host public hearings in Grand Junction, Glenwood Springs, Fort Collins, the Denver metropolitan area, Colorado Springs, Durango and Limon. The hearings will have a virtual option so that any interested stakeholders can participate without attending in person. You may also submit a written comment during the 60-day comment period from Aug. 13 to Oct. 15. Sign up to become a stakeholder and receive updates [here](#).

The Transportation Commission is expected to consider the proposed standard in November, and if adopted at that time, the standard will take effect in January of next year.

For more information, read CDOT's [fact sheet](#) on the greenhouse gas standard process.

ADDITIONAL QUOTES FROM ORGANIZATIONS AND COMMUNITY LEADERS

“As the Mayor of Westminster, and a long-time Colorado resident, I am excited to see the Colorado Department of Transportation move forward with a new rulemaking to reduce Greenhouse Gas (GHG) Emissions from the transportation sector. The outcome of the rulemaking should help address the largest source of GHG pollution in Colorado by encouraging a future transportation system that improves transit, biking and walking options which could make a fundamental change to our transportation system. With the release of the rulemaking, CDOT begins the 60-day statewide public outreach and comment period to shape the final recommendations of the rule. The City of Westminster looks forward to being one of many voices helping to shape the final GHG rule, committing CDOT and others to the steps necessary for dramatic reductions in climate pollution.”

- **Mayor Anita Seitz, City of Westminster**

“While we believe the draft rule has several issues that need to be addressed during the Transportation Commission rulemaking process, CDOT staff did a yeoman’s job of conducting an inclusive process with a diverse group of stakeholders to develop a draft to start the conversation.”

- **Andrew Gunning, Executive Director, Pikes Peak Area Council of Governments (PPACG)**

“The need to take urgent action to reduce greenhouse gas emissions from the transportation sector could not be clearer. Just last week, the Northern Front Range broke records for the number of ozone action alerts issued in a single year. Transportation is the single largest emitter of greenhouse gases in Colorado and CDOT’s proposed greenhouse gas reduction rule is a necessary step in the right direction. We look forward to reviewing the proposed rule closely to ensure it protects the health of our residents and reduces climate impacts.” -

-**Claire Levy, Boulder County Commissioner**

“Local governments and local communities across the state appreciate CDOT’s proposal. From Salida to Superior and Gilpin County to Glenwood Springs, the impacts of climate change have become intensely and dangerously real. We look forward to this rulemaking process and are hopeful that the Transportation Commission will adopt a forward-leaning, enforceable plan that substantially and urgently reduces climate pollution across Colorado.”

- **Jacob Smith, Executive Director, Colorado Communities for Climate Action, a coalition of 38 counties, cities and towns across the state advocating for stronger statewide climate policy.**

"It isn't possible to tackle an issue like this without hearing from different voices. CDOT not only took the time to listen to a range of viewpoints in crafting this rule, they reached out and made sure we were at the table."

- Phillips County Commissioner Terry Hofmeister

"Glenwood Springs is the poster child community for climate change. We have had three major fires over the last 25 years, the latest being the Grizzly Creek Fire last year. These fires have destroyed major infrastructure, homes, and cost lives. We are also seeing other effects of climate change with the recent 500-year rain event two weeks ago that shut down I-70 and paralyzed the region's transportation network. While we have switched our electrical grid over to 100% renewable energy, changed building codes and fortified our domestic water, we need partners throughout the state, country, and planet to join us in addressing this crisis at its source. Doing anything less is simply treating the symptoms instead of the disease. That's why I'm excited to see CDOT take this step to reduce greenhouse gas emissions from transportation. I encourage residents across the western slope to engage with CDOT and provide input on this important work."

- Glenwood Springs Mayor Jonathan Godes

"Recently, Denver residents experienced first-hand the direct impact of a changing climate as wildfire smoke clouded our skyline and created some of the most polluted air in the world at the time. Now, more than ever, we need bold policies like those CDOT is proposing with the Greenhouse Gas Pollution Reduction Planning rule. Denver applauds CDOT for taking these steps and is committed to continuing to do our part to create a sustainable transportation system."

**- Grace Rink, Executive Director, City and County of Denver
Office of Climate Action, Sustainability and Resiliency**

###



Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards

OVERVIEW

CDOT is proposing a new standard to reduce greenhouse gas emissions from the transportation sector, improve air quality and reduce smog, and provide more travel options. The standard would require CDOT and the state's five Metropolitan Planning Organizations (MPOs) to determine the total GHG emissions expected from future transportation projects and take steps to ensure that greenhouse gas (GHG) emission levels do not exceed set GHG reduction amounts. This proposed standard recognizes that the projects we build have an impact on how Coloradans travel and will help bring about a transportation system that provides more choices for travelers across the state.

PROPOSED RULE SCHEDULE

Engagement and Rule Concept Development

Winter-Summer 2021

Early outreach on purpose of rule and overall framework. Input sought through dozens of meetings with a broad range of stakeholders.

Formal Processes Begin

Summer 2021

Transportation Commission authorizes rulemaking development and rule is noticed with Secretary of State.

Public Rulemaking Hearings

Fall 2021: 60-Day Review Period

Eight virtual and in-person hearings held across the state with opportunity for public testimony and submission of written comment.

Adopt Rules

Fall 2021

The Transportation Commission considers the proposed rule for adoption.

Rules Take Effect and Implementation

Winter 2022

If adopted by the Transportation Commission, the rule becomes effective with ongoing implementation.

BENEFITS AND BACKGROUND

The GHG Pollution Reduction Planning Standard is one of several transportation strategies identified in the state's [Greenhouse Gas \(GHG\) Pollution Reduction Roadmap](#) and is a key requirement established in the 2021 state transportation funding bill (SB260). The standard builds on the state's effort to rapidly deploy electric vehicles by encouraging a future transportation system that improves transit, biking and walking options. The focus is on large transportation projects that make a fundamental change to our transportation system. The basic repair and maintenance of our roads and bridges is not impacted.

The benefits made possible by this standard are meaningful; equivalent to burning 169 million fewer gallons of gasoline or taking approximately 300,000 cars off the road for a year. These benefits directly improve air quality by also reducing the harmful pollutants that cause ozone and smog.

GET INVOLVED

CDOT will hold eight public hearings across the state to provide opportunities for public comment on the standard. These meetings will have options to participate either in-person or virtually and offer Spanish interpretation. Comments also are accepted in writing via dot_rules@state.co.us. We welcome your feedback.

Visit our website for more information on public meetings and the rulemaking:
<https://www.codot.gov/programs/environmental/greenhouse-gas>

Questions? Contact: CDOT_transportationghg@state.co.us





STATE OF COLORADO

10B

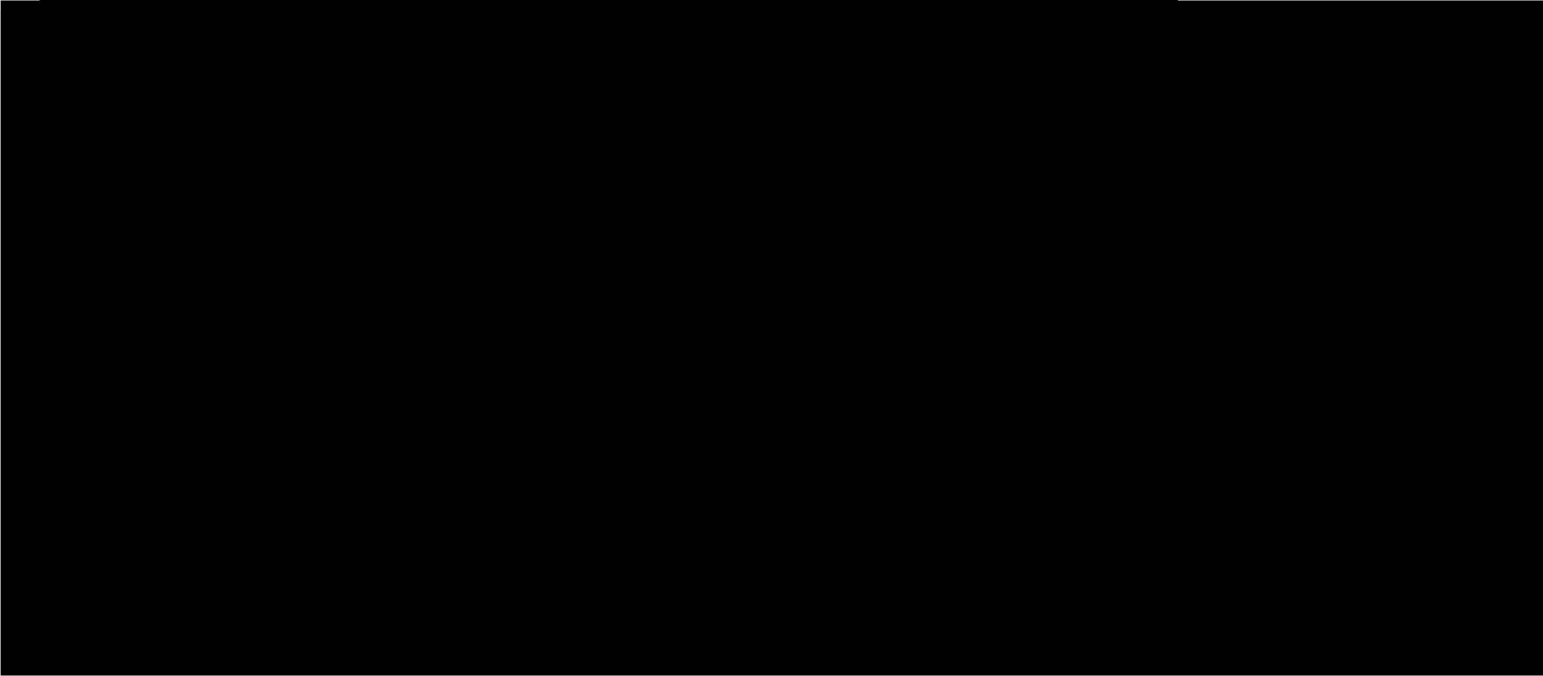
Rules - CDOT, DOT_ <dot_rules@state.co.us>

Rulemaking Update regarding Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions

1 message

CDOT Rules <cdot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bc [REDACTED]

Wed, Sep 1, 2021 at 9:32 AM



Stakeholders,

Please note that we have changed the dates/times of hearings at multiple locations to comply with the requirement to complete the cost-benefit analysis at least ten (10) days before the first public hearing. We have also added a new 9th hearing in Weld County. For reference, we have posted the Miscellaneous Rulemaking Public Notice, the updated Notice of Proposed Rulemaking, and the updated Proposed Statement of Basis & Purpose on [CDOT's Proposed Rules and Public Hearing Dates website](#).

We are still offering all of the meetings in a hybrid format: you may attend a hearing in person, or call in through Zoom to give testimony. You do not need to attend the specific hearing location in your area - you can attend or call in to any of the hearings.

If you are attending virtually, you will need to register through the registration links on [CDOT's Proposed Rules and Public Hearing Dates website](#) so we can provide instructions to you on how to join, listen, and provide testimony if you wish.

We have also posted a Frequently Asked Questions document on [CDOT's Greenhouse Gas Emissions Reduction Opportunities website](#).

Thank you,
Natalie

—
Natalie Lutz

Rules, Policies, and Procedures Administrator



P: 303.757.9441

2829 W. Howard Place, Denver, CO 80204

dot_rules@state.co.us | www.codot.gov | www.cotrip.org



STATE OF COLORADO

10D

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Regulatory Analysis for Proposed Pollution Reduction Planning Standards/ Análisis Regulatorio para Normas de Planificación de Reducción de la Contaminación Propuestos

1 message

CDOT Rules <cdot_rules@state.co.us>

Thu, Sep 9, 2021 at 6:14 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc [REDACTED]

[REDACTED]

Hello Stakeholder,

The Colorado Department of Transportation (CDOT) has completed the regulatory analysis for the proposed pollution reduction planning standards. I have attached a copy of the regulatory analysis for your reference. You can also find it on [CDOT's Proposed Rules and Public Hearing Dates website](#).

Thank you,

Natalie

Hola Accionista,

El Departamento de Transporte de Colorado (CDOT) ha finalizado el análisis regulatorio para las normas de planificación de reducción de la contaminación propuestos. Adjunto una copia del análisis regulatorio para su referencia. También usted puede encontrarlo en [la página de Internet de Reglas Propuestas y Fechas de Audiencias Públicas del CDOT](#).

Gracias.

Natalie



Regulatory Analysis For Pollution Reduction Standard.pdf

408K

Exhibit 11



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Durango Hearing Rescheduled for 10/7/21

1 message

CDOT Rules <dot_rules@state.co.us>

Wed, Sep 1, 2021 at 2:07 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [Redacted]

Hello Stakeholder,

Thank you for registering to attend the Durango Hearing regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has rescheduled the Durango Hearing for Thursday, October 7, 2021, at 2-5 p.m.

We hope that you are still able to join us on October 7, 2021, in which case, we have you marked to attend the hearing virtually. If you are not able to join us on October 7, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie

Natalie Lutz
Rules, Policies, and Procedures Administrator



COLORADO
Department of Transportation
Office of Policy and Government Relations

P: 303.757.9441
2829 W. Howard Place, Denver, CO 80204
dot_rules@state.co.us | www.codot.gov | www.cotrip.org



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Hearing Time Change for Grand Junction Hearing on 9/17/21

1 message

CDOT Rules <dot_rules@state.co.us>
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>
Bc

Wed, Sep 1, 2021 at 2:12 PM

[REDACTED]

Hello Stakeholder,

Thank you for registering to attend the **Grand Junction Hearing on September 17, 2021**, regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has adjusted the start and end times for this hearing. **The hearing will now start at 2 p.m. and end at 5 p.m.**

We hope that you are still able to join us, in which case, we have you marked to attend the hearing virtually. If you are not able to join us, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Hearing End Time Change for Colorado Springs Hearing on 9/24/21

1 message

CDOT Rules <dot_rules@state.co.us>

Wed, Sep 1, 2021 at 2:15 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc: [Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

Hello Stakeholder,

Thank you for registering to attend the **Colorado Springs Hearing on September 24, 2021**, regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has adjusted the end time for this hearing. **The hearing will now end at 6 p.m.**

We hope that you are still able to join us, in which case, we have you marked to attend the hearing virtually. If you are not able to join us, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie

--
Natalie Lutz
Rules, Policies, and Procedures Administrator



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STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Hearing Time Change for Limon Hearing on 9/29/21

1 message

CDOT Rules <cdot_rules@state.co.us>

Wed, Sep 1, 2021 at 2:26 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Hello Stakeholder,

Thank you for registering to attend the **Limon Hearing on September 29, 2021**, regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has adjusted the start and end times for this hearing. **The hearing will now start at 2 p.m. and end at 5 p.m.**

We hope that you are still able to join us, in which case, we have you marked to attend the hearing virtually. If you are not able to join us, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Hearing Time Change for Fort Collins Hearing on 9/30/21

1 message

CDOT Rules <cdot_rules@state.co.us>

Wed, Sep 1, 2021 at 2:32 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bcc: [Redacted]

Hello Stakeholder,

Thank you for registering to attend the **Fort Collins Hearing on September 30, 2021**, regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has adjusted the start and end times for this hearing. **The hearing will now start at 2 p.m. and end at 5 p.m.**

We hope that you are still able to join us, in which case, we have you marked to attend the hearing virtually. If you are not able to join us, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Hearing Time Change for Glenwood Springs Hearing on 10/4/21

1 message

CDOT Rules <cdot_rules@state.co.us>

Wed, Sep 1, 2021 at 2:36 PM

To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Bc

[REDACTED]

Hello Stakeholder,

Thank you for registering to attend the **Glenwood Springs Hearing on October 4, 2021**, regarding the proposed pollution reduction planning standards for transportation virtually. This email serves as notification that the Colorado Department of Transportation has adjusted the start and end times for this hearing. **The hearing will now start at 2 p.m. and end at 5 p.m.**

We hope that you are still able to join us, in which case, we have you marked to attend the hearing virtually. If you are not able to join us, please notify us so we can update our registration records.

You can find a list of all the hearings on [CDOT's website](#).

We apologize for any inconvenience.

Thank you,

Natalie

Exhibit 12

The Transportation Commission (TC) Workshops were held on Wednesday, July 14, 2021, and the Regular Meeting was held on Thursday, July 15, 2021. These meetings were held in a hybrid format with TC and CDOT staff meeting participants invited to participate both in-person and remotely, with members of the public invited to participate via streaming, in an abundance of caution due to the COVID-19 pandemic. The TC Ad Hoc Agency Coordination Committee met on July 13, 2021, and July 27, 2021, to discuss the anticipated amendment to the TC's planning rules to address pollution reduction.

Documents are posted at <https://www.codot.gov/about/transportation-commission/meeting-agenda.html> no less than 24 hours prior to the meeting. The documents are considered to be in draft form and for information only until final action is taken by the Transportation Commission.

Transportation Commission Workshop Wednesday, July 14, 2021, 12:15 pm – 5:00 pm

Call to Order, Roll Call:

All existing seated Commissioners were present: Commissioners Kathy Hall (TC Chair), Donald Stanton (TC Vice Chair), Terry Hart, Gary Beedy, Kathleen Bracke, Karen Stuart, Mark Garcia, Eula Adams, Barbara Vasquez, and Lisa Hickey. District 1 - Yessica Holguin excused, will start next meeting.

Budget Workshop (Jeff Sudmeier and Bethany Nichols)

FY 2022 Budget Amendment

Purpose: The Division of Accounting and Finance (DAF) is requesting TC review and approval of the first amendment to the FY 2021-22 Annual Budget. The first amendment allocates \$639.5 million in new funding from recent legislation to the Department's Annual Budget, reallocates \$395,361 from Agency Operations to Administration to reconcile the Department's Annual Budget to the final legislative budget, reallocates \$5.5 million from the Strategic Safety Program to the Maintenance Program Areas for 6-inch striping, and reallocates \$1.0 million from the Strategic Safety Program to Safety Education for impaired driving programs.

Discussion:

- Commissioners sought clarification on the debt service for the SB267 Certificates of Participation (COP) which, when all four years of COPs have been issued, will be approximately \$141 million annually. Senate Bill 21-260 cancels existing General Fund transfers to CDOT for that debt service and reinstates a larger transfer that won't begin until FY2025. SB 260 also transfers stimulus funds to CDOT to cover debt service until those transfers begin, which CDOT is proposing as an economic defeasance, which allows CDOT to prepay some of that debt service until the transfers begin.

SB 267/ SB 260 Funding Allocation (Rebecca White, Marissa Gaughan, Kay Kelly)

Purpose: The purpose of this workshop is to brief the TC on available funding for the first tranche of SB 260 funds plus remaining premium from the Year 3 SB 267 proceeds, present project proposals for this available funding, what the projects would accomplish for the state, provide an update on the regional equity, and discuss next steps.

Discussion:

- Commissioners commented on the efficacy of making the capital investments in the I-25 mobility hubs while also investing in other intermodal enhancements and the Bustang services that will use those facilities. Beyond the funds proposed for these transit investments, CDOT will continue to receive 15% of the approximate \$10 million of SB 260 funding that will come annually to the Multimodal Transportation and Mitigation Options (MMOF) program in future fiscal years.
- The question was raised as to whether CDOT's transit services can be electrified. Bustang services will continue to be served by clean diesel buses, as there is not currently the technology in electric buses to

sustain the ranges that this service provides. The places CDOT will most likely be able to electrify the

fleet would be in future replacement of vehicles used in the urban areas, and not likely for the rural routes.

- Included in the proposed projects is a Denver Area study that will provide guidance on how and where to utilize future Revitalizing Main Streets (RMS) funding to make permanent some of the temporary traffic calming, pedestrian and bicycle safety modifications made on roadways in previous RMS projects. Commissioners stressed the importance of ensuring permanent modifications are only made where former sidewalk and parking spaces would be utilized long-term, beyond the time of the pandemic, to prioritize safety, to guard against unreasonable freight vehicle impedances, and to ensure the study provides guidance to future rural RMS investments and not just those in the Denver Area.
- Commissioners acknowledged the feedback from STAC, noting that the main reason they recommended TC postpone this week's adoption of the project list was because of a lack of stakeholder engagement in the process and less so the actual projects recommended. Staff was urged to present project lists in context to the whole 10-Year Plan and to continually keep stakeholders engaged to continue the positive momentum of the Plan's development process.
- Staff emphasized that stakeholders and the TC will soon need to begin updating the 10-Year Plan since there are few Years 1-4 projects remaining unfunded in the Plan. That will require an update to revenue forecasts in order to add years to the current Plan.

CDOT Connected Vehicle (CV) Program Overview (Ashley Nysten and Kay Kelly)

Purpose: Informational briefing to the TC on the Connected Vehicles (CV) Program. Staff will provide an overview and update on the CV Program, present on the current Phase 2 progress, and provide the roadmap for Phase 3 and future work.

Discussion:

- Commissioners were interested to know how likely and when CDOT might expect to see enough vehicles on the road that possess the ability to both transmit and use active roadway condition data. Some manufacturers such as Cadillac and General Motors already included these abilities in vehicle models as early as 2016 and the numbers are expected to increase. Meanwhile, CDOT is seeing significant amounts of data being captured by neighboring local and state governments.
- There are significant security protocols in place to protect consumers by removing personally identifiable information from all connected vehicle data. Drivers also have complete control over whether to allow their vehicles to transmit data.
- CDOT's connected vehicle systems engineering analysis document, which portrays the goals, principles, and approach to deploying a CV system, is available publicly should anyone wish to obtain it.
- The Society of Automotive Engineers holds the standards template to guide how agencies and vehicle manufacturers continue to collaboratively develop and implement CV capabilities. CDOT remains directly involved with this, and similar organizations as the technologies evolve and progress.

GHG Pollution Reduction Planning Update and Next Steps (Rebecca White and Theresa Takushi)

Purpose: To provide a status of the GHG Transportation Pollution Reduction Planning Rule and seek approval of the final changes to the GHG Policy Memo.

Discussion:

- While the formal rulemaking process has not yet commenced, CDOT has been engaged with stakeholders and working on it since the GHG Roadmap was published in January 2021.
- The proposed timeline would include a draft Rule being made public July 30 and following requisite public hearings and outreach, may be finalized, and adopted in September and become effective in November. This would support CDOT and MPOs having approximately a year to complete the required Plan updates by October 2022.
- The draft Rule will be reviewed and approved by the Commission's ad hoc committee. Therefore, the formal rulemaking process won't commence until that's released. The language in the Rule will be amended and refined based on ongoing public input. CDOT staff ensured the Commission to support

broad participation in the formal public hearing by holding multiple events in different regions of the state and providing both in-person and virtual accessibility.

- The date of release of the final draft Rule will largely depend on the response and material discourse on its content, but staff urged the TC not to delay the start of the process merely for the sake of slowing it down, but to focus on conducting a solid process of its development. Commissioners expressed that a quality review and input process will occur once a draft document is available, and therefore the process would not benefit from a delayed start.
- The Commission urged CDOT to ensure the Rulemaking website makes it easy for stakeholders to obtain necessary information and that it provides clear information on progress made and the expected events and process ahead. Staff will make available the relevant materials provided in the TC packet today, including the staff summary memo and the memos sent by the Colorado Communities for Climate Action (CCCA).
- Staff will provide the Commission a workshop in August outlining the full details of the proposed process to occur. The Commission will ultimately have the discretion to extend the public hearing period if needed based on the progress and input received in that time.
- Staff provided clarification on the Land Use planning requirements imparted by SB 260, emphasizing that it does not imply or intimate that CDOT would control any local land use decision. Rather, it assumes that entities who are subject to the Rule would consider land use decisions among other strategies that improve GHG reduction outcomes but does not direct them nor the State to do so.

Freight Committee: Truck Parking Public Private Partnerships (Rebecca White, Michelle Scheuerman, & Craig Hurst)

Purpose: The purpose of this workshop is to provide an overview of the Truck Parking Public Private Partnership Project that CDOT's Freight Office/DTD has just initiated.

Discussion:

- Commissioners discussed how CDOT plays a role in addressing truck parking needs, without outright paying for it with public funds, by incentivizing and supporting private and local government solutions. CDOT efforts and work to study and understand the issues and needs seek to provide local governments, freight companies and other stakeholders the technical support to enter into similar public-private initiatives.
- The Commission expressed the need for improvements to our rest areas and their importance to tourism, and their general importance in the state's safety and economy.

Transportation Commission Regular Meeting Thursday, July 15, 2021, 9:00 am to 11:00 am

Call to Order, Roll Call:

Ten of the Commissioners were present: Commissioners Kathy Hall (TC Chair), Don Stanton (TC Vice Chair), Gary Beedy, Kathleen Bracke, Eula Adams, Karen Stuart and Lisa Tormoen Hickey, Barbara Vasquez, Mark Garcia, and Terry Hart. Commissioner Yessica Holguin was excused.

Swearing In of New Commissioners (Herman Stockinger)

- Mark Garcia and Terry Hart were sworn in to represent District 8 and District 10 respectively.

Public Comments (provided to Commissioners in writing before meeting)

- [REDACTED] Clean Energy Advocate and Mayor Pro Tem of Northglenn, commented on the impact of climate change. She supports the general direction that the Department is taking, stressed the importance of moving forward with greenhouse gas (GHG) rulemaking process quickly with a focus on equity with achievable targets aimed at real results.
- [REDACTED] Director of Programs and Services at Clean Energy Economy from Carbondale Colorado, commented on the importance of moving forward with GHG rulemaking. She brought attention to the

devastating wildfires, and another closure of I-70 in Glenwood Canyon. Erica believes Colorado is taking it seriously with electrification, but not doing enough, and is generally enthusiastic with the direction of the rulemaking. The focus on 2030 targets vs. 2025 targets is the main concern. Erica echoed Jenny's request that this rulemaking be pursued as soon as possible.

- [REDACTED] noted that it is estimated that 20-40% of all community populations are nondrivers, and that she, representing the Small Business Alliance, supports the comments of previous speaker. She echoed the previous comments raised. Severe air quality is impacting the climate. Separated and protected lanes for bikes and scooters are needed. Good results are directly linked to good land use projects, and vehicle miles traveled (VMT) reduction strategies, that also address safety, public health, and equity issues.
- [REDACTED] Clean Transportation Policy Analyst with Southwest Energy Efficiency Project (SWEET), commented that electric vehicle (EV) technology, even with optimistic assumptions will only lower GHG emissions to a fraction of what is needed to reach the 2050 air quality goals, so he urged that the Department to focus on policies that direct more investment to TDM, multimodal benefits, and requested that they move ahead quickly with the rulemaking process. He commended the Department for focusing the 3B project list on complete streets as a good first step.
- [REDACTED], a community organizer and environmental justice advocate in the Globeville and Elyria Swansea neighborhoods, asked that the Department do a better job going forward with transparency and engagement, especially with respect to disproportionately impacted communities such as the Globeville and the Elyria Swansea neighborhoods. He pointed out how difficult it has been to get accurate information and pointed out that the website still does not have contact information for the incoming Transportation Commissioners. Despite his previous disappointment with the Department, he is hopeful that the Commission will do better going forward given the new mandates within the SB 260 legislation. Ean indicated that he will continue to stay engaged and will be contacting the Transportation Commission as they work towards implementing the SB 260 legislation.
- [REDACTED], Climate Policy advocate with 350 Colorado welcomed the new TC members and commented on the importance of moving forward with the GHG rulemaking process pointing out that in Pueblo they are already experiencing the impacts of climate change with an average of 3.2 degrees Celsius of warming and record-breaking drought. He pointed out that Colorado is far behind on meeting climate targets and commented on the implementation of the legislation as an opportunity to establish Colorado as a climate champion. He expressed hope that the Commission will adopt rules that align with the greenhouse roadmap and HB19-1261, and hopes to see that they also prioritize communities of color, and use this process as an opportunity to invest in justice.
- [REDACTED], Pueblo Community Organizer for Green Latinos commented on looking forward to working collaboratively with the Department and TC to make sure the investment and new rulemaking process benefits disproportionately impacted communities. He commented on how noticeable the brown cloud over Pueblo has become, and that vehicle emissions are a major contributor. Pueblo is already experiencing climate change being one of 3 cities that consistently experiences record highest temperatures each year with projections for increasingly dire droughts with high risks for wildfires. He urged the Department to make the health and wellbeing of the public the highest priority moving forward.
- [REDACTED], representing the Natural Resources Defense Council (NRDC), expressed appreciation for the work that staff is putting into GHG rulemaking process, and it's exciting and groundbreaking, and really difficult, and thanked CDOT for taking this on and understands that it is hard, and it is also urgent, and we can start thinking about a transportation system that lets people do other things.
- [REDACTED], of Denver, noted it is imperative that make these [GHG] rules now and don't delay because that will make reaching targets even more impossible.
- [REDACTED] Transportation Advocate for Conservation Colorado, thanked CDOT and the TC for taking on climate challenges through efforts to lower GHG emissions. She pointed out the urgency of moving forward quickly given the dire threat to our way life and pointed to the recent mudslides on I-70 as one example. She commented on the importance of following through with the SB21-260 requirements to update transportation plans by 2022, as daunting as it may be. She also expressed excitement in seeing an emphasis on land use and thanked the Department for continuing to work on improving outreach.

- [REDACTED] all submitted written comments on the rulemaking process that were submitted into the record.

Comments of the Chair and Individual Commissioners

New Commissioners:

- Commissioner Mark Garcia indicated that he's excited for the opportunity to represent the state as a TC member and thanked all of those who took the time to submit their comments.
- Commissioner Terry Hart: Thanked everyone for such warm welcomes. Is also excited about the opportunity to serve the state during such an important and exciting time when there is actual funding to plan with and work towards such ambitious goals. Commissioner Hart commented on his previous work with Jamie Valdez, on environmental issues, and acknowledged the big shoes he has to fill. All of those who took the time to participate and submit written and verbal comments were applauded. Understanding was expressed related to how difficult the task ahead is, but it is also exciting to see the opportunity for Colorado to take the lead in this area. Terry heard the message loud and clear that there should be no delay, and he agrees, but is also taking to heart all of the comments urging caution and asking for the TC to go through the process slow enough to get it right. Commissioner Hart also commented on how important it will be to make sure whatever standards that are applied are measurable and that there is broad consensus across the various stakeholder groups. Terry noted his background working at the Pueblo Area Council of Governments (PACOG) on the Southwest Chief and Front Range Rail Commission and expressed excitement to see how that effort links to the current efforts around GHG emission reductions.

Sitting Commissioners:

- Commissioner Hickey commented on how much she appreciated all of the thoughtful public comments, and looks forward to more discussion on the GHG rulemaking process that the TC is already working hard on. She thanked CDOT staff for their work on these rules, and for informing them of all the complexity involved. She expressed concern about climate change, and particularly the potentially large impact it will have on the economy. Effort to combat emissions are just as important for the economy as it is for the air we breathe.
- Commissioner Stanton (Vice Chair) expressed excitement to hear all the public comments and commented on how listening to the public in his view is their primary role, so he will work to listen to perspectives from a broad spectrum of constituents. Remarked on how important this effort is given that Colorado will be one of the first to tackle GHG transportation policy at a statewide level. To illustrate the impacts of climate change that are already visible he shared photo of Greenland from some work he did decades ago measuring levels of ice pack and glaciers, which are now no longer left to be measured.
- Commissioner Adams expressed gratitude for his reappointment to TC and considers it to be the most important and rewarding role that he has ever had the opportunity to serve, as it enables him to serve at both the highest and most grassroots levels. He looks forward to working with all the Commissioners on GHG transportation policy and stressed the importance of approaching it in an equitable manner. Given the complexity, he understands the importance of taking enough time to make sure it is done right, but really does agree that this is an urgent matter that needs to move forward immediately.
- Commissioner Bracke commented on what an exciting and transformative time it is to be working on transportation policy and welcomed the new members to the Commission. She has spent the last month working with the North Front Range Metropolitan Planning Organization (NFRMPO) and the Upper Front Range Transportation Planning Region (UFRTPR). She thanked Andy Karsian who joined her to help inform a community group in the NFRMPO of updates related to SB 260. She thanked Heather Paddock, Region 4 Transportation Director, for updating her on the progress on I-25 and for educating her about all of the innovations that were deployed to save time and money in delivering a sustainable multimodal project. She thanked Nick Farber, HPTD Director, for his work on the I-25 unsolicited proposal. She met with the Town of Wellington in Larimer County and relayed how excited and appreciative they are for the Revitalizing Main Streets grant. She also commented on how important it is to remember that North I-25 goes all the way to the border with the State of Wyoming, and what an

important corridor that is for all of those who commute to Cheyenne from Fort Collins. She expressed appreciation for all of the hard work involved connecting the state through the Bustang service. She remarked on how exciting it is to have the opportunity to work on more multimodal sustainable transportation solutions with the new SB 260 funding.

- Commissioner Beedy thanked all of those who provided public comments. He said that harvest season is underway in his district where they have experienced a challenging year with weather problems. He commented on how impactful all of the supply chain disruptions have been to his region where they have experienced shortages in everything from fuel to equipment, attesting to the importance of a robust distribution system, which highways and railroads are the basis of. So, he believes that the basis of all sustainability and climate efficiency efforts needs to start with maintenance of the system. He pointed out that even with the new funding that SB 260 provides, the 10 Year Plan is still not fully funded. In neighboring States, they are designating US 287 as interstate, he asked that Colorado continue to track this, to avoid falling too out of step with neighboring states.
- Commissioner Stuart welcomed the new Commissioners and commented on how much she missed the ones who left. She pointed out the importance of the memorial designations, which they will be considering later, on in the consent agenda. She thanked the GHG advisory group for all of their work and outreach around the GHG efforts, and she expressed hope that given that so many of Colorado residents are here because of its beauty, that finding common ground in saving it will help to propel the efforts forward.
- Commissioner Vasquez thanked all of those who provided public comments for offering their insights and thoughts on the rulemaking process. She is very excited to be part of this effort, which is really critical for the economic sustainability of the state, and to play our part in the larger global fight against climate change. In her district, Jackson County is currently suffering from wildfire that started Sunday. She thanked all of those who are involved in responding and fighting the wildfire, and she also expressed gratitude to all of those working remotely and understands that such arrangements leave less time for personal life, making it that much more important for CDOT to ensure that personnel have time and resources for personal care.
- Commissioner Hall (Chair) remarked on how excited she is to serve as Chair of the TC and welcomed all of the new Commissioners. She thanked all of those who provided public comments and remarked on how important that level of engagement is in the process going forward.

Executive Director's Management Report (Shoshana Lew)

- Director Lew welcomed the two new Transportation Commissioners and indicated that a formal announcement will soon be forthcoming.
- It has been a busy month, in large part due to the challenges in Glenwood Canyon. She noted that the ongoing resiliency issues in the canyon are absorbing a lot of CDOT time and resources. She thanked Region 3 staff for their efforts and reiterated that the top priority is to keep people safe, so the closures are put in place with any flash flood warning. Clean-up efforts have been more efficient because of the concrete repairs that were just completed last year. Still staff continues to work around the clock. Due to the complexity of overlapping jurisdictions, there has been extensive coordination with the Federal Highway Administration (FHWA). She expressed appreciation for the coordination with the federal agencies and other jurisdictions involved.
- A remark on how exciting it was to move forward with the 3B project list of strategic investments in taking the first step in tackling the immensity of transportation challenges was included. It was indicated that she anticipated the effort would entail a long implementation process with lots of different pieces to get the projects shovel ready to move forward is an important first step.
- Everyone involved in the rulemaking process was thanked for participating and that this rulemaking process puts Colorado at the forefront of a larger global challenge requiring a great deal of creativity and innovation. She thanked Commissioner Hickey and all of the stakeholders who have shared their views and to the ad hoc committee members. She urged the Commission to move forward immediately with the understanding that outreach will be a high priority over the course of the summer.

Chief Engineer's Report (Steve Harelson)

- Chief Engineer Harelson brought attention to how heroic the mudslide team is for the work they are doing around the clock for extended periods over the course of several months to clean up and keep people safe.
- CDOT has been working on resiliency efforts for quite some time with Lizzie Kemp at the helm. The most recent accomplishment arising from her efforts is a tool that will help bring a resiliency benefit cost analysis into decisions on assets, to help CDOT make better decisions about prioritizing assets given the likelihood of various events by quantifying the resiliency benefits and offering an objective way to measure benefits so CDOT can make the best-informed decisions.
- Commissioner Beedy commented on the importance of being able to be flexible as change with regard to climate is inevitable. He pointed to an example in farming of having to adapt to climate changes impacting wheat crops.
- Commissioner Hall gave a shout out to Mike Goolsby and Region 3 staff for how well they are handling the current crisis in Glenwood Canyon.
- Commissioner Vasquez asked about how the models adapt to the accelerating rate of change associated with climate change.
- CDOT Chief Engineer, Steve Harelson, responded that models use data from USGS which employs a number of statistical methods to account for the accelerating rate of change, and they are continually updating their 100-year flows in the models.

High Performance Transportation Enterprise (HPT) Director's Report (Nick Farber)

- Nick welcomed Commissioners Garcia and Hart to the TC.
- The HPT Board appointed Margaret Bowes, from the I-70 Mountain Corridor as Chair, and appointed Transportation Commissioner, Karen Stuart, as Vice Chair.
- HPT is working with a Silicon Valley startup that is developing a new type of tolling service that can be installed every 5,000 feet on a corridor to help correct and enforce toll invasion and weaving to reduce leakage by 1% to 1.5%. They are piloting three devices on the mountain express lanes now and will bring back the results of the pilot to the HPT Board in September.
- Increased tolls on I-25 and on the Eastbound Mountain Express Lane is occurring on weekends. He noted that these changes are within staff's authority, and do not require HPT Board approval.
- In response to a question from Commissioner Hall about expansion, Nick Farber indicated that they are moving from managing 108 lane miles and to 223 lane miles.
- In response to Commissioner Bracke's request for an update on the North I-25 unsolicited proposal, Nick Farber indicated they are still in Phase 1, which entails a check box evaluation.

Federal Highway Administration (FHWA) Colorado Division Administrator's Report (John Cater)

- The House of Representatives just passed the Reauthorization Bill, which was set to expire in September. John is hopeful that it will pass.
- The bipartisan Infrastructure Bill is still in play.
- FHWA and the Federal Transit Administration (FTA) jointly approved the FY22-25 STIP, which rolls in MPO projects, and then the State Planning and Research (SPR) program, and that's \$15.6 million to support planning activities, and that was approved, and moving forward.
- It was called into attention the fact that the I-25 corridor extends beyond Fort Collins and beyond the state line, so the work on North I-25 and front range rail can have far reaching benefits.
- Commissioner Bracke appreciated John's comments highlighting the shared travel shed with Wyoming where many commute from Fort Collins.

Statewide Transportation Advisory Committee (STAC) Report (STAC Chair, Vince Rogalski)

- Vince welcomed the new Commissioners.
- Commented on the difficult position CDOT finds itself in with the inevitability that they will be criticized for moving forward with SB 260 requirements too fast or too slow.
- Read a letter he got from Commissioner Thiebaut, thanking Vince for his service.

- At the STAC meeting last Friday, Herman gave update on personnel changes and introduced Amber Blake as Division of Transit and Rail (DTR) Director.
- There was a discussion about the debris flows on I-70. We seem to focus in on debris flows as part of wildfires, and there is a contributing factor, and that is what climate change has done to put us in extreme draught which makes soil hydrophobic, so soil can't absorb the water fast enough and becomes increasingly prone to mudslides.
- The federal Invest Act was passed by the House and needs to be passed by September. It calls for \$5.79 billion, 4 times the amount of the Recovery Act, and has a lot to enable the replacement of old bridges in the east. Between now and the final approval a lot of things will likely change in it.
- The National Highway Freight Program briefing gave an overview of the projects that were awarded funding. There were a lot of questions about the process for selecting projects. Funded projects include truck parking in Grand Junction.
- SB 267/260 3B list of projects: STAC has a provision in the bylaws that says if action is proposed on an item, they need to receive all information a full week ahead of the meeting, and packet materials for this item came in a few days before the meeting, so there was a lot of discussion about whether STAC should consider the item at all. Ultimately, STAC decided to go forward with the item given that TC would consider the resolution with or without STAC's recommendation, but they wanted the TC to understand that they had these objections to the process, and to the speed of it moving forward without ample time for them to speak with their constituents. Questions were also raised about why certain projects from year 5 on the 10 Year Plan project list were moving ahead and not others.
- An emergency STAC meeting was held yesterday for GHG rulemaking discussion. STAC mentioned that we have been working on this for all of Colorado, and message is out there, but there are groups of people that haven't seen it yet, and STAC resolution asked TC to wait until August 30th to discuss rulemaking to give more time for outreach, but some members felt that the process needed to start now, and that the start of the public outreach process could occur during a public comment period with public hearings.

Act on Consent Agenda – Passed unanimously on July 15, 2021. Motion by Commissioner Beedy, Second by Commissioner Adams

1. Proposed Resolution #1: Approve the Regular Meeting Minutes of June 17, 2021 (Herman Stockinger)
2. Proposed Resolution #2: IGA Approval >\$750,000 (Steve Harelson)
3. Proposed Resolution #3: Disposal: Region 3, SH 133 & MP 31.5 (Parcel 1 REV-EX) (Mike Goolsby)
4. Proposed Resolution #4: Legislative Memorial Designations (Herman Stockinger and Andy Karsian)

Discuss and Act on Proposed Resolution #5: 1st Budget Supplement of FY 2022 (Jeff Sudmeier) – Passed unanimously on July 15, 2021. Motion by Commissioner Adams, Second by Commissioner Bracke

- Requesting approval of 1st supplement includes 2 requests
 - The first is to reallocate \$360,000 in project savings from one Region 5 project to another Region 5 project
 - Second is to approve \$10 million in SB 267 Year 3 funding for the Military Access Mobility Safety Improvement Project in Region 2

Discuss and Act on Proposed Resolution #6: 1st Budget Amendment of FY 2022 (Jeff Sudmeier) – Passed unanimously on July 15, 2021. Motion by Commissioner Hickey, Second by Commissioner Vasquez

- The amendment results from several changes to the budget resulting from passage of SB21-260 along with other legislative measures. Collectively those changes result in a \$640 million addition to the budget, which we are also requesting be reallocated between operations and administration budgets to align with the legislative budget.

Discuss and Act on Proposed Resolution #7: SB 267/ SB260 Funding Allocation (Rebecca White, Marissa Gaughan and Kay Kelly) - Passed unanimously on July 15, 2021. Motion by Commissioner Vasquez, Second by Commissioner Stuart

- Request is for CDOT to dedicate \$238 million in funding provided by the premium from year 3 of SB-267 together with the FY 22 portion of SB260 funding to the list of projects included in the resolution.
- Rebecca also took the opportunity to address comments requesting that the TC delay consideration, making the case that because this is essentially an allocation of stimulus dollars, that it was intended to go to shovel ready projects quickly, so they are honoring the intent by moving forward with this first step quickly, but made the commitment to take the next step of GHG rulemaking and application to planning documents more slowly to give ample time for careful consideration, reflection and outreach.
- Commissioner Bracke commended Rebecca and staff for being so responsive in putting all this together and commented that they are doing a great job of moving quickly, but also being careful and considerate.
- Commissioner Stuart acknowledged that she reviewed DRCOG's letter requesting more time, and for further information about the criteria used to move projects from year 5 up to year 4. She indicated that she understands their position, but also thinks that the next step of the process is where there is an opportunity to talk more about the criteria that will be used going forward. She stated that she was very excited to be able to support this list today.
- Commissioner Hickey commented on how important it is to note the words in this resolution focusing on recovery, but agrees that there needs to be criteria, and predictability in decision-making, and timing is important, but because this list of projects rests in the 10 Year Plan, she is supportive of this resolution.

Discuss and Act on Proposed Resolution #8: Commence Permanent Rulemaking and Delegate Authority to an Administrative Hearing Officer to Conduct a Public Rulemaking Hearing for the Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions ("the Planning Rules"), 2 CCR 601-22 (Herman Stockinger and Rebecca White)

– Passed unanimously on July 15, 2021. Motion by Commissioner Vasquez, Second by Commissioner Stanton

- Pointed out three changes to the resolution that were made based on STAC feedback. The changes add two additional whereas clauses. The first one, notes that the vote on this resolution, begins the rulemaking process but does not lock in the timeline.
- The second indicates that the ad-hoc committee will be involved in determining a timeline that garners robust comfort and support, noting the importance of introducing the rulemaking process to understand the full extent of what is being proposed.
- The 3rd change concerns a clause that all regions will be engaged in the process with multiple public hearings.
- Commissioner Hickey thanked the TC for putting their trust in the ad-hoc committee and plans to issue questions to be addressed in public comments, so comments can be focused and efficiently respond to questions from you. Need to move quickly, and with that thank you.
- Commissioner Bracke thanked Commissioner Hickey for all the work on the Committee in getting to this important milestone.

Recognitions:

- No recognitions

Other Matters:

- No other matters

Adjournment

- Meeting Adjourned at 11: 21 am.

**Transportation Commission Ad Hoc Agency
Coordination Committee
Tuesday, July 13, 2021, 3:00 pm to 4:00 pm
Tuesday, July 27, 2021 3:00 pm to 4:00 pm**

On May 20, 2021, the TC Chair established a TC Ad Hoc Committee to study and discuss how to amend the TC planning rules to incorporate pollution reduction standards as required by recently passed legislation. On July 13, 2021, and July 27, 2021, Committee members Commissioner Hickey, Commissioner Stuart, and Commissioner Vasquez met with counsel for the Attorney General's Office and CDOT staff to discuss draft rule language and the anticipated rulemaking process.

The Transportation Commission Workshops were held on Wednesday, August 18, 2021, and the Regular Meeting was held on Thursday, August 19, 2021. These meetings were held in a hybrid format with TC and CDOT staff meeting participants invited to participate both in-person and remotely, with members of the public invited to participate via streaming, in an abundance of caution due to the COVID-19 pandemic.

Documents are posted at <https://www.codot.gov/about/transportation-commission/meeting-agenda.html> no less than 24 hours prior to the meeting. The documents are considered to be in draft form and for information only until final action is taken by the Transportation Commission.

Transportation Commission Workshops

Wednesday, August 18, 2021, 1:00 pm – 5:00 pm

Call to Order, Roll Call:

All 11 Seated Commissioners were in attendance: Commissioners Kathy Hall (TC Chair), Don Stanton (TC Vice Chair), Karen Stuart, Terry Hart, Yessica Holguin, Gary Beedy, Kathleen Bracke, Mark Garcia, Eula Adams, Lisa Tormoen Hickey, and Barbara Vasquez.

Condemnation Authorization Workshop (Steve Harelson)

Region 4 Condemnation Authorization Request

- I-25 North: SH 402 to SH 14, Project Code: 21506

Discussion:

- Two separate property ownerships within the condemnation authorization request – Jensen Investments, LLC and CWH Properties. CDOT needs immediate possession of the property, which condemnation authorization grants to CDOT.
- Commissioner Bracke referred to the letter recently received, that raises different concerns about the process followed.
 - Steve Harelson, CDOT Chief Engineer, understands that property owner has a question regarding the letter of map revision.
 - CDOT offered \$284,000 to Jensen Investment, LLC, and the counteroffer was \$1.8 million due to floodplain impacts with upcoming changes to the floodplain model. Steve Harelson explained that the FEMA floodplain mapping revision is a separate process from this project.
- Kenneth Skogg, representing Jensen Investments, LLC, explained that their request is to table this item for further discussion with CDOT and property owners before filing condemnation authorization, to discuss how to mitigate the issue with property being considered within the floodplain, even with elevation of the property.
- Commissioner Bracke confirmed that the negotiation may still continue with the TC proceeding with the condemnation authorization process.
- Steve Harelson, noted the concerns raised by Jensen Investments LLC property, regarding the FEMA floodplain mapping related to this site, is over a disagreement on the LOMAR and FEMA mapping from 2013 Floods, and not this project.
- The second property owner, CWH Properties, was concerned with loss of access to recharge ponds on the site that increased the property's value, but CDOT has reached an agreement on the value of the property with the property owner in this instance, only the paperwork needs to be completed. Since CDOT needs possession of the land to proceed with the project, the condemnation authorization is being requested for the TC to approve.

Budget Workshop (Jeff Sudmeier and Bethany Nichols)

FY 2022 Budget Amendment and Supplement

Purpose: Obtain TC approval to: increase Maintenance Level of Service (MLOS) Operating Budget and fund Snowplow Operator, Winter Operations Bonus Program. In addition, get TC approval for TC contingency funds to go towards I-70 Glenwood Canyon emergency response and repair, and funding for a Region 1 Homeless Camp Clean Up Pilot Program.

Action: For the Budget Amendment there is one request that is to transfer \$6 million from TC Contingency to Division of Maintenance and Operations (DMO) for the following: \$4 million into MLOS Operating Budgets and \$2 million to the snowplow operator bonus initiative. These funds will be converted into highway maintenance section budgets and the winter operations bonus program. For the Budget Supplement the request is to transfer \$10 million from TC Contingency to I-70 Glenwood Canyon emergency response, and \$1.0 million for a Region 1 Homeless Camp Cleanup pilot project.

Discussion:

- Commissioner Adams asked about the number of maintenance staff impacted by the funding. The number of staff impacted by this roughly 1,600.
- John Lorme, CDOT Division of Maintenance and Operations Director, noted it is a very difficult job for the compensation, and requires being on call for extended periods of time. There is a hot market for CDL drivers right now. Winter operations can't contract out to cover this service. CDOT is aggressively recruiting maintenance staff, looking at bonuses, and how to cover housing costs for workers. A current vacancy of staff is approximately 225 people.
- Commissioner Stanton asked about the \$2,000 bonus at the end of the winter, and wanted to know if it comes with the requirement to stay at CDOT beyond the winter. John responded that will be up to workers to decide, but the thought is that many will stay beyond the bonus this year, and stay on to continue receiving the bonus at the end of the winter.
- Commissioner Vasquez asked if CDOT staff had considered breaking up the bonus on a monthly basis after the winter versus providing a lump sum bonus. John noted that for CDOT it is easier to manage the lump sum, which also encourages recipients to stay at least until then. A performance evaluation would only occur twice a year. John noted he would check into the monthly bonus concept. Commissioner Vasquez also asked about how CDOT compares to what counties pay. John noted some instances where we are low, but other areas where we can be competitive.
- Commissioner Adams supported the bonus plan. And wondered how CDOT could modify bonuses to be sure not to lose too many staff at one time. Asked how do we, at CDOT, become a leader in this category. We would want to be in the top tier for this. We should push harder in this category.
- John noted Human Resources is pushing for this.
- Executive Director Lew expressed her support for compensating workers fairly for their hard work. We have a short, mid and long-term plan to address this problem.
- Commissioner Holguin asked questions about the percentage of the TM 1 Bonus pay – and attrition rate of maintenance workers and what time of year folks are leaving CDOT. Also suggested considering non-monetary incentives for workers.
- Paul Jesaitis, CDOT Region 1 Transportation Director, described the pilot homeless area cleanup project, which was supported by several Commissioners. Concern with the potential effectiveness of the project was raised given the cyclical nature of homeless encampments. It was recognized that cleanup projects are not the full solution. Engaging Volunteers of America in these types of projects was also suggested.

Policy Directive (PD) 703.0 (Jeff Sudmeier and Bethany Nichols)

Purpose: To provide an annual review of Policy Directive (PD) 703.0 and request TC consideration of updates to the PD.

Action: TC approval of the updated PD 703.0.

Discussion:

- Bethany Nichols, CDOT Budget Director, explained that PD 703.0 was revised last year. This workshop is being conducted to discuss how changes worked in the past year.

- There are no structural or significant changes to the PD 703.0; added newer definitions highlighted in SB 260 and references to relevant pieces. Also allows staff to transfer funds to different line items, if it helps fund projects that support the intent of the funding as approved. TC will also now approve indirect budget and staff will add construction engineering to the list of the indirect budget items.
- Commissioner Hall asked about the new funding enterprises of SB 260, and how that fits in with TC decision making. Bethany responded that the way the TC works with the Bridge Enterprise is how the TC would work with the newer enterprises, with a separate board established for each enterprise for approvals considered high risk. Jeff Sudmeier, CDOT Chief Financial Officer, noted that once boards are established the PD 703.0 will be revisited to consider the enterprises.
- Commissioner Hall asked about the staffing level changes related to the enterprises. Jeff noted that CDOT staff will provide much support to the enterprise boards, as is done for the Bridge Enterprise.
- Commissioner Vasquez asked if the TC would make policy changes for enterprises. Herman Stockinger, CDOT Deputy Executive Director, noted that these new enterprises may likely work as the Aeronautics Division does, where the TC approves the Aeronautics budget, as it is statutorily established, and the TC doesn't make any changes to it. This is closer to how we think the enterprises will operate.
- Commissioner Stanton asked if TC members will be on the new enterprise boards. Herman explained that the Governor will make appointments for boards of the Clean Transit Enterprise, but the other new enterprise board will not be Governor appointees.
- Commissioner Hall ended the workshop noting that there are lots of new things to talk about regarding the enterprises and the TC's role and participation, and recognized a lot still needs to be sorted out.

Glenwood Canyon Update (Mike Goolsby)

Purpose: Provide the TC with an update on the status of Glenwood Canyon due to mudslides in the Grizzly Creek burn scar area.

Action: No action.

Discussion:

- Deputy Chief Engineer Stefanik joined in on the conversation with Mike Goolsby, Region 3 Transportation Director, now Incident Commander at Glenwood Canyon.
- CDOT has been dealing with this issue since June 29th.
- Things changed on July 29th – with the emergency declaration, and this precipitated the increase in our response. The river in the canyon rose about six feet.
- CDOT has hauled over 4,000 loads or 48,000 tons/96 million pounds of material out of the canyon to two dump sites.
- Protocols put into place last year due to the fire, worked out well for this event. This is a 500-year event. On July 29th 13 different areas along the canyon experienced mud slides.
- Large debris flows changed the channel of the river in the canyon, particularly near MP 123.5
- Commissioner Vasquez asked if this is really a 500-year event, or if we can anticipate these types of events more frequently. Mike Goolsby noted that changes in definitions of event types due to changes in the climate is a larger consideration that is a possibility.
- Keith Stefanik spoke of the Disaster/Emergency Declaration. To summarize it, we had about 66 million in direct damages, as a result of the events that occurred over the past. Since June 26, we also had an earmark/placeholder for \$50 million for redundancy and resiliency throughout. Letters were sent off to request funds from FHWA, and we had an immediate response with a quick release of \$11.6 million, which was very fast, and very effective and appreciated. On August 8 the team took action to get this road open on Saturday just before 7:00 am.
- Steve Harelson also described the events in Glenwood Canyon, and the importance of partnerships with multiple agencies and personnel, which was extensive and led to a great response to this emergency.

Revitalizing Main Street (Rebecca White and Nathan Lindquist)

Purpose: In March 2021, staff briefed the TC on plans to use \$30 million in new state stimulus funding approved by the legislature in Senate Bill 21-110 (SB 110). Staff proposed allocating this funding via two grant opportunities, larger safety infrastructure grants (\$22 million) and smaller economic resiliency grants (\$8 million). This Workshop will outline the projects that have been selected for award for the larger safety infrastructure grants. Because the legislature allocated additional, long term funding support for this program in SB-260, this workshop will also discuss a request for Commission support on next steps.

Action: This agenda item is part informational and part action. The action requested is Commission support (Resolution) for staff to release a notice of funding availability for the first allocation, totaling \$22 million of the Revitalizing Main Streets Program as provided by SB-260.

Discussion:

- Sixteen projects are proposed to be awarded with the initial \$22 million of funding. Requesting TC approval of these.
- Next notice of funding opportunity (NOFO)– get this out soon so those not chosen to have the opportunity to respond to a second round of grant funds, and re-apply in September 2021.
- Commissioner Stuart asked about the turnaround time for reimbursement of expenditures for projects. Jeff Sudmeier noted the CDOT has generally 60 days to pay invoices, but we endeavor to pay in less than 30 days.
- Commissioner Beedy asked about the number of projects that are on state highway vs. local streets. – Per Executive Director Lew most were off-system of the 72 applications. Commissioner Beedy also mentioned that the naming of the program is getting confusing with other grant programs with the term “Main Streets” in their titles - the CDOT program vs. Department of Local Affairs (DOLA) program.
- Commissioner Hall confirmed the ask for the NOFO is for the \$22 million – a new \$22 million for round 2 call for projects.
- Commissioner Bracke observed that the local communities like the rolling application process concept. She has heard lots of positive feedback on more frequent opportunities to apply. Rebecca White, CDOT Division of Transportation Development Director, noted the cadence of the application process is an important consideration that still needs to be decided. Nathan Lindquist’s trip was designed and intended to listen to the communities before determining a process moving forward.
- Commissioner Garcia asked about inclusion of side streets in this program. Rebecca commented that many applications were off system/local streets. For example, Lake City wanted an investment on their Main Street that is off the highway, so non highway facilities are included in grant applications.
- Just for clarity, Rebecca White explained that the first allocation from SB 260 was \$22 million. The NOFO requested for round 2 is also for \$22 million.

GHG Rule Making Update and Next Steps (Rebecca White and Theresa Takushi)

Purpose: This workshop will provide an update on the status of the Greenhouse Gas (GHG) Pollution Reduction Standard for Transportation Planning rulemaking and stakeholder engagement process.

Action: N/A

Discussion:

- Rebecca White explained that the Rules shared today are not the same as the version in the TC packet. The final version was submitted late on Friday, August 13, 2021, for the Rulemaking process. She requested reviewers to read the Preamble for Rulemaking portion of the revised Rules.
- Commissioner Hickey noted the hours of time invested in the process to get the GHG Rules drafted. The public outreach conducted was very effective and CDOT was very responsive to input received.
- Rebecca initiated an overview of the draft Rules. There will be a 60-day public comment period to follow the public posting of the rules.

- Rules are redlined and some work cleaned up text, but GHG-related text changes are the main focus. Led to multiple new definitions. Rules align with SB 260, HB 1261, Ozone Attainment, etc.
- Key definitions (19 new) were added and include but were not limited to: Applicable Planning Documents – shorthand for numerous planning documents, Disproportionately Impacted Communities, Regionally Significant Projects, among others.
- Herman Stockinger, CDOT Deputy Executive Director and TC Secretary, clarified one definition that spoke of amended documents for applicable planning documents – the amendment was to the planning documents and not amending projects, as the text was confusing.
- Commissioner Vasquez noted that the Baseline term in the Rules was related to a modeled baseline vs. a measured baseline in the GHG Roadmap. There is a need to clarify this distinction.
- Rebecca White explained that Metropolitan Planning Organizations (MPOs) are impacted by the Rules differently:
 - Grand Valley MPO, Pueblo Area Council of Governments (PACOG) and Pikes Peak Area Council of Governments (PPACG) will not need to comply until 2030.
 - Denver Regional Council of Governments (DRCOG) and North Front Range (NFR) MPO need to measure for current planning horizon of 2025.
- Rebecca also explained that GHG Rules are based on GHG modeling (an EPA model called MOVES), and will include data such as population growth, vehicles miles of travel (VMT), and land use.
- Non-MPO areas will be planned and modeled by CDOT.
- All information will be submitted to the TC in a GHG Report.
- *Table 1: GHG Transportation Planning Reduction Level in MMT of CO₂e* outlines the proposed GHG emissions reductions in million metric tons (MMT) explained by Rebecca White. Erik Sabina, CDOT Information Management Branch Director, confirmed Rebecca’s explanation of the table that includes estimated GHG emissions in various planning horizons and then includes the number of MMT of reduction required of each MPO, and CDOT for years 2025, 2030, 2040, and 2050. CDOT has its own budget for the non-MPO areas. The amounts of reduction proposed are reduced over time.
- *Table 2: Baseline Emissions Due to Projected Number of Light-Duty Electric Vehicles (EVs)* provides estimates of GHG emissions associated with projected light-duty electric vehicles (EVs) for years 2025, 2030, 2040, and 2050.
- Rebecca further explained that the gap in GHG emissions highlighted in the GHG Roadmap noted the reduction needed was 4.7 MMT to meet the State goals, but these Rules only account for a reduction of 1.5 MMT. If we comply with the Rules we make a significant reduction, but it is not the full solution.
- Erik Sabina responded that the GHG Rules are based on the built transportation system. The three MPOs – GVMPO, PACOG, and PPACG all read N/A for 2025, and kick-in for reductions in 2030, with the other two – DRCOG and NFRMPO.
- Commissioner Vasquez asked if the model anticipates EVs just for passenger vehicles or if it includes light, medium and heavy-duty vehicles.
 - Erik Sabina noted that the model only accounts for eventually 100% light-duty vehicles, and doesn’t include medium or heavy-duty vehicles. Erik further noted that roughly 85% of tail pipe emissions come from light-duty vehicles.
- A Commissioner asked about EV airplanes.
 - Rebecca noted that the CDOT staff is working closely with David Ulane, the Aeronautics Division Director. CDOT doesn’t have much jurisdiction over plane fuels, but there is a biofuel that is expensive, being used in Telluride and Vail airports.
- Commissioner Bracke requested the reductions be translated to per capita reductions to provide context. Erik Sabina noted that the per capita reductions would be possible to calculate and can be provided.
- Herman Stockinger noted two important pieces to consider for the GHG Rules are:
 - The Model
 - A Collection of Mitigation Measures with known levels of GHG reductions associated with them.
 - By April 2022 CDOT is to provide a Mitigation Action Plan outlining acceptable mitigation actions and what reductions in GHG emissions they can provide. CDOT will be working on this over the next six months or so. Herman also noted the benefit of not

including specific mitigation measures in the GHG Rules as it allows for the mitigation measures to be living and evolving actions allowing for more flexibility over time.

- In order for the model runs to be properly reviewed the Air Pollution Control District (APCD) will be provided a 30-day opportunity to review the GHG Report to confirm its contents and validity 45 days prior to being submitted to the TC for approval.
- If the APCD does not respond within 30 days, the report is deemed accepted by the APCD.
- If an MPO is not compliant with the Colorado State GHG Rules for State dollars with SB 260 even with mitigation measures taken the MPO will be restricted in use of funds and project selection. More specifically the DRCOG and NRFMPO Transportation Plans need to comply with GHG reduction requirements by October 2022. And Multimodal Mitigation Options Fund (MMOF) projects must be in compliance by 2023.
- For Federal rules related to Surface Transportation Block Grant (STBG) funds and Congestion Mitigation Air Quality (CMAQ) funds – if CDOT does not comply with their Statewide Transportation Plan that includes the MPOs and non-MPO areas (including when MPOs do not meet their targets separately) CDOT too can be restricted in how they spend funds on their 10-year Plan and how they conduct project selection activities.
- Commissioner Stanton asked if there was precedent for TC to reject a plan.
- Kathy Young was not able to identify an example.
- Commissioner Stanton observed that the TC has the authority to determine if they deem a project is a special safety project without major GHG emissions issues, and that a waiver for a particular project may be granted.
- CDOT Executive Director Lew stressed the point that the approach used in drafting the GHG Rules were borrowed from other programs that also have enforcement methods, and that the enforcement in the GHG rules mimic other enforcement practices such as the Highway Safety improvement Program (HSIP), and other tried and true approaches.
- A discussion ensued related to the TC's role as a legislative body vs. a judicial body. The enforcement component of the GHG Rules have a judicial feel to them, but attorneys who reviewed the draft GHG Rules paid attention to not supersede the TC's legislative role by stepping into a judicial role. However, one attorney present noted that public comments on this matter would be very welcome to ensure GHG Rules are invoked only where TC authority exists.
- Vince Rogalski, Statewide Transportation Advisory Committee (STAC) Chair noted that in the past funds were reduced due to not successfully reducing the DUI levels. This is an example of a previous enforcement of legislation.
- It was noted that in the GHG Rules the term reconsideration is included vs. use of the term appeal – to avoid a judicial term.
- Commissioner Hart noted that a broader perspective for transportation is needed that includes collaboration and coordination/cooperation of parties along major corridors, which is an important consideration. He asked staff is looking at it as a cooperative effort along major corridors.
- Rebecca White responded that this point was well made and that the drafting team did consider that we are dealing with political boundaries that are somewhat arbitrary when you are thinking about GHG emissions and corridors that cross multiple boundaries. She noted that this would still need further consideration, and is hoping that the public comments will help to clarify how to approach this. There is a need to think more about that in terms of how the GHG Rules will be implemented. For MPOs many projects are CDOT projects due to overlap, a partnership exists there, and we still have to work out how we will deal with that.
- Commissioner Hart also identified the Front Range Rail and Bustang feeder lines as mitigation factors to reduce GHG emissions.
- Vince Rogalski asked about how to consider GHG emissions coming from other states – for example Western States' smoke and how to measure that.
- Rebecca responded that CDOT is only looking at GHG emissions from vehicles that operate in the state of Colorado.
- In response to a question from Commissioner Beedy, about how capacity projects in non MPO areas would be impacted, Rebecca White explained that it would be a rare occasion for any project in a rural

area to rise to the threshold of a regionally significant project. In the rare occurrence that a regionally significant project is needed in a rural area, such as US 550/160 in Durango, the project would be modeled with the entire system, so the focus of the GHG rule would be in aggregate and not on one single project, so it would likely not raise the total GHG levels to a point that would require burdensome mitigation measures, and that would not fall solely on one jurisdiction as it would be part of the entire picture for the state. She clarified that passing lanes on rural state highways would not rise to the level of a regionally significant project.

- In follow up Commissioner Beedy asked if adding four lanes on I-76 near the I-70 interchange would be considered regionally significant. CDOT Executive Director Lew responded that although such a project would likely be considered regionally significant, the GHG Rules would not prevent the project from happening. She pointed to Floyd Hill as an example of a regionally significant project that will likely be subject to the mitigation measures required of the GHG Rules. She intends to use Floyd Hill as a case study to showcase a variety of ways to mitigate GHG emissions.
- In response to a follow up question about whether the mitigation measures would need to take place in the same boundary as the project, CDOT Executive Director Lew clarified that the rule is structured by region so the mitigation measures would be considered in aggregate for the state and would be implemented to ensure that benefits of mitigation measures accrue in disproportionately impacted communities. So, in short, implementation of the mitigation measure for a specific project could take place elsewhere, but the focus will still need to be on mitigating the impacts on disproportionately impacted communities.
- Commissioners Vasquez and Bracke asked about checks and balances on modeling assumptions and what would be done to ensure that the GHG Rules leads to real change in GHG emissions from mobile sources beyond projected changes in a modeling exercise.
- Rebecca White indicated that they would also be checking the modeling assumptions against gas sales and other indicators to ensure that it is effective in lowering emissions from mobile sources to meet the GHG Roadmap goals.
- Rebecca White and Theresa Takushi closed by giving an overview of the stakeholder engagement efforts and efforts to ensure robust public comments with eight public hearings that would be held in each region of the state, broad distribution of the public notice, and a user-friendly interface to ensure submittal of written public comment is easy and accessible to all.
- Commissioner Hickey added that in addition to the hearing officer presiding over the public hearings a Transportation Commissioner will also be present at each public hearing.
- Commissioner Garcia asked about how the GHG rulemaking process was impacted by the Colorado Department of Public Health and Environment (CDPHE's) decision to withdraw the employee trip reduction rule. Rebecca White explained that they are responding and preparing for the extra attention that it brings with a robust outreach effort on the ground, reminding the Commissioners that the efforts to engage stakeholders on the GHG Rules began over a year ago and has already involved a series of regional workshops throughout the state.
- Chair Hall expressed gratitude for CDOT's efforts to hold hearings in every region of the state.
- Commissioner Vasquez suggested that CDOT establish an award for all of those who have been working so hard on the engagement piece.

Walking Down Main Streets Listening Tour (Nathan Lindquist)

Purpose: This workshop covers the purpose and lessons learned from the Revitalizing Main Streets Listening Tour.

Action: N/A

Discussion:

- Nate Lindquist, CDOT Land Use and Community Planner, explained that over May and June, CDOT conducted a Main Street Walking tour of 20 communities across Colorado to determine what works and what doesn't for downtown areas.

- There is \$85 million in funds in SB 260 so talking with communities prior to expending these funds is important.
- Locating housing and jobs closer helps with traffic reduction and GHG emissions reduction. There is excitement about the RMS program and what it can offer communities.
- Got a lot of good applications for bike/pedestrian facilities linking to housing and places of employment.
- Broomfield, Wellington, Alamosa, Colorado Springs, and Centennial were just a few communities highlighted as case studies.
- Next steps and priorities include learning to institutionalize innovations that work and convene partners to develop the next round of large grant criteria for the RMS program. Working with DOLA and the Colorado Energy Office (CEO) to align grant criteria for transportation, housing and infrastructure programs. Conduct conversations where locals are interested in regional collaboration, and investigating the link between the transportation system's fiscal sustainability and downtown access.
- Commissioner Hall asked about how closely CDOT is working with local transportation agencies. Nathan noted that CDOT is working with these and all entities with a stake in this.
- Commissioner Beedy expressed his support to help community streets, but cautioned against any changes that restrict traffic flows, especially to ensure freight can pass through without causing additional delays. Out at Hugo a three semi-truck incident occurred recently with a fatality. Wants to ensure we keep thinking of freight, especially when considering road diet plans. Access controls with new housing development are another concern, and we need more combined access points to keep artery traffic moving, as it is important.
- Commissioner Stuart commented that she attended the meeting at Broomfield, and stressed that partnership is important. The chicken and egg issue with housing and transportation continues. Need to partner with RTD. Need to plan for transit prior to development, but development is needed to support transit. CDOT doesn't have control of land use, and it is important to have partnerships so we can plan ahead and be aware of land use plans.
- Commissioner Bracke echoed comments highlighting the importance of partnerships. With the recent census data that is now available she asked that staff look at growth, and creating more inviting downtowns so that the market creates housing there too. Some projects may spur infill and redevelopment. A retrofit piece is fantastic. Communities that are more walkable and bikeable is what we want and need.
- Commissioner Adams believes directionally, this is the right way to go, and asked about our next steps. Does it include RMS program management at this point? How big is the team today and what is the budget for this? Rebecca responded that Nathan sits in planning team with about 20 folks. The two RFPs are a study on urban arterials as a safety and community barrier. Colorado Blvd. is an example. DTD needs to determine the financial and staffing needs as months unfold.
- Commissioner Garcia noted that he will abstain from the vote for the RMS NOFO as he will likely be an applicant for RMS funds in his role for his day job.

Small Business and Diversity Committee (Greg Diehl and Emily Crespin)

Purpose: The purpose of this workshop is to provide an introduction to the USDOT Disadvantaged Business Enterprise (DBE) Program and introduce tomorrow's Resolution to Adopt CDOT's FFY22-24 Overall DBE Goal.

Action: TC is asked to adopt a resolution that supports the staff's recommendation to set the FFY22-24 overall DBE goal at 11.89%.

Discussion:

- Greg Diehl, CDOT Civil Rights Program Director, explained that this is an important report we do every three years for the Small Business and Diversity Committee.
- Jun Arcilla, CDOT DBE Program Manager and Certification Lead, provided an overview of two key programs, the Disadvantaged Business Enterprise (DBE - a federal program that is race and gender conscience) and the Emerging Small Business program (ESB – a CDOT Program that is race and gender-neutral, and increases competition of small businesses for CDOT contracts).
- DBE creates a level playing field for those historically kept out of these types of contracts.
- Resolution tomorrow relates to the proposed DBE percentage requirements for federally funded projects.
- Emily Crespin, CDOT Small Business and Workforce Development Manager, provided a presentation on supportive services CDOT offers for DBEs and ESBs.
- Commissioner Holguin asked about the measures taken to ensure we meet our DBE goals. The response was that Supportive Services help to make DBE certification happen and sparks interest in program participation. CDOT reports on DBE work contracted. DBE goals in CDOT contracts is another vehicle to help meet DBE goals. The Commissioner explained that the Disparity Study did show that woman and minorities are not in a level playing field for construction work and thanked CDOT staff for the work accomplished.
- Commissioner Adams is a member of Conference of Minority Transportation Officials (COMPTO), and observed folks who have done business with CDOT. There are negative perceptions and difficulties associated with working for CDOT that we need to overcome. This DBE program does excellent work, and the approach is good. It's about working capital and getting paid. However, he urged CDOT to push for more ambitious goals as a 4.83% race and gender-neutral goal is too low. He believes there is more opportunity for small businesses.
- Commissioner Hall adjourned the Committee meeting, recognizing staff for their important work.

Transportation Commission Regular Meeting Thursday, August 19, 2021, 9:00 am to 11:00 am

Call to Order, Roll Call:

All 11 Seated Commissioners were in attendance: Commissioners Kathy Hall (TC Chair), Don Stanton (TC Vice Chair), Mark Garcia, Yessica Holguin, Gary Beedy, Karen Stuart, Kathleen Bracke, Terry Hart, Eula Adams, Barbara Vasquez and Lisa Tormoen Hickey.

Swearing In of New Commissioner (Herman Stockinger)

- Yessica Holguin was sworn in as Transportation Commissioner to represent District 1.

Public Comments (provided to Commissioners in writing before meeting)

- ██████████ Mesa County Commissioner, came to speak about the economic impacts of the I-70 closure. Commented that while Mesa County was just starting to recover economically from the pandemic the recent closure has been another setback. He requested further consideration be given to alternate route I-70 bypass.
- ██████████ Clear Creek County Commissioner, discussed emissions that impact Clear Creek County, and pointed out that health concerns are now established. He urged support of an aggressive GHG Rule and looks forward to participating in the public hearing process.
- ██████████ Mayor of Broomfield, expressed appreciation for the commitment to setting strong GHG targets through the GHG rule, and said that Broomfield is equally committed to taking steps to lower GHG emissions. She pointed to ample evidence that urgent action is needed to prevent the worst impacts of climate change. The proposed Rule must be measurable, equitable, and actionable. She thanked the TC for the opportunity to provide comment and looks forward to participating in the live hearings.

- [REDACTED], Mayor Pro Tem of Northglenn, stated that climate change is causing enormous impacts and that it is time for the transportation sector to step up to address climate change. She stated that relying on electrification alone would not be enough to reach the goals set forth in the GHG Roadmap. Furthermore, lowering emissions by 1.5 MMT is simply not enough for Colorado to reach its goals, and CDOT needs to make this Rule strong.
- [REDACTED], Air and Climate Policy Analyst of Boulder County, commented on how exciting it is to see this Rule moving forward, and noted that this rulemaking process is critically important considering that the employee trip reduction policy (ETRP) has been withdrawn. It's exciting to see this opportunity for transportation, but this Rule needs to be made stronger as a 12.5 MMT reduction is what is needed to meet goals set forth in the GHG Roadmap. She stated that she looks forward to reviewing further modeling details. She also stated that it is important that the Rules established are enforceable and urged a focus to be on reducing VMT and increasing transit options rather than relying exclusively on EV.
- [REDACTED] Conservation Colorado Transportation Advocate-Denver, said that she is excited to see the Transportation Commission moving forward with this rulemaking, but sees room for improvement in the Rule. She started by discussing how more could be done in the area of equity and environmental justice and mitigating impacts for disproportionately impacted communities. Efforts must be spelled out, and it is disheartening to see that this Rule does not include a goal to reduce VMT by 10% by 2020. She urged the TC to strengthen the Rule and looks forward to participating in the public hearing process.
- [REDACTED] Southwest Energy Efficiency Project (SWEET) Transportation Policy Analyst, noted that he has been participating in this process as a member of the Greenhouse Gas Advisory Committee. Matt congratulated CDOT on the herculean efforts in drafting this rule, but echoed the earlier comments requesting more aggressive targets be included. He commended CDOT for their efforts to launch the Revitalizing Main Streets grant program, and for launching and expanding Bustang. He urged a Rule that does more to prevent capacity projects with the bulk of transportation investments in strategies to reduce emissions and maintenance of the existing system. Furthermore, he asked for more to be done to address land use. He also noted the importance of developing an accurate model, and requested that the Rule require review of the statewide model by external experts.
- [REDACTED], legal counsel for Jenson Investments, LLC, an [REDACTED] appeared concerning Resolution #10, the condemnation authorization resolution. He requested that the TC reject or at the very least postpone consideration of condemnation of the Jenson property in light of drainage findings that have not been accounted for in the CDOT offer. It is [REDACTED]'s position that the drainage improvements that CDOT deemed necessary are necessitated by an increase in I-25's elevation that was improperly completed by CDOT, and resulting in Jenson property bearing the burden of CDOT's improper action. [REDACTED] noted that CDOT now realizes the substantial impact of the drainage, but CDOT's offer doesn't account for these impacts. These drainage improvements need to be explored before a final purchase price agreement can be determined and he requested that they don't allow condemnation authorization process to proceed.
- [REDACTED] of Montrose was invited to provide comments, but was not on the line.
- Numerous written public comments contained in the meeting packet were also entered into the record, including written comments from:
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]

Comments of the Chair and Individual Commissioners

- Commissioner Holguin – No Comment
- Commissioner Hart – No comments
- Commissioner Garcia – Echoed the other comments commending CDOT on their amazing work on Glenwood Canyon. He noted that he had the opportunity to meet Region 5's RTD, Julie Constan. He also

was able to attend TPR meetings, and found that it was great to hear from CDOT staff about all the projects going on in the region.

- Commissioner Hickey will comment on GHG rule when the item comes forward, but thanked the public for their comments, which will be considered carefully. She thanked CDOT staff for handling Glenwood Canyon so well. She noted that freight needs must be considered too. She is looking forward to a US 285 meeting on Monday where they will be discussing ways to manage the congestion on the corridor.
- Commissioner Vasquez thanked the public for their comments, and commended the CDOT team on the draft GHG Rule. All stakeholders have the opportunity to comment on the actual language, instead of forming opinions based on rumors, and hopes that this is a collaborative process going forward. On the topic of Glenwood Canyon, she noted that her district has suffered severe congestion as the main detour route, and that more needs to be done to mitigate and manage the impacts to those communities.
- Commissioner Adams – No comment
- Commissioner Bracke expressed thanks and appreciation to CDOT staff for all the great work on Glenwood Canyon, and for opening it back up in record time. Acknowledged CDOT's responsiveness around the 10-year list of projects. Appreciates Heather Paddock, CDOT Region 4 RTD, for talking to them about the 10-year pipeline, and pointing out the opportunities going forward. She also called attention to plans to host summit next summer regarding the Pawnee Grasslands and ways to encourage people to see that area of the state.
- Commissioner Beedy called attention to some freight resiliency issues arising from Glenwood Canyon which has led to long detours diverting traffic on I-80. He noted that a typical semi uses significant fuel per mile, and so shorter detour routes are needed, as the current option adds over 700lbs of GHG, to get basic goods and services to the public. Freight needs to be considered to keep good, open, and free moving routes. He also noted the importance of adding longer passing lanes that can accommodate trucks. He noted a recent crash that occurred outside of the Hugo County Fairgrounds that might have been avoided with better passing lanes. He also questioned how many charging stations would be needed to meet the demand on interstates. By some estimates 1,300 charging stations would be needed to meet the demand of EVs on an interstate corridor. He noted that such investment would need to be privately funded as rural communities don't have the resources to fund charging capacity at that scale.
- Commissioner Stuart thanked the staff for all the efforts on Glenwood Canyon, and thanked Mike Goolsby for leading such a monumental effort to get the Canyon open in record time.
- Commissioner Stanton (Vice Chair) welcomed the three new commissioners, and thanked CDOT for exceptional work on Glenwood Canyon and the 10-year Plan. He also noted that he attended a report out from interns and thanked them for providing such professional reports on their work and noted how impressed he was with their work on solving very difficult and complex issues.
- Commissioner Hall (Chair) thanked all of the commissioners for their reports.

Executive Director's Management Report (Shoshana Lew)

- Director Lew discussed the difficulty of Glenwood Canyon, and the work that has gone into this situation. The weather is making that situation worse. With all the uncertainty it is too risky to open the canyon back up, but so far, the repairs have held up. There are no perfect solutions. Working group with local partners forming with Keith Stefanik and Steve Harelson leading the team.
- There is no perfect solution for alternate routes as there just aren't a lot of options. Keith Stefanik and Herman Stockinger, Rebecca White and Theresa Takushi, were thanked and recognized for all the work completed and noted that more hard and technical work that will still need to be accomplished, with a sense of urgency.

Chief Engineer's Report (Steve Harelson)

- In addition to the work on Glenwood Canyon, Chief Engineer Harelson detailed four other major projects going on:

- Central 70: The viaduct is 85% down, two areas are left, and they are going down this week. CDOT is working through that, Kiewit was recognized for stopping work to keep dust down, took a few days off, and CDOT applauded them for that.
- I-25 North segment 5,6 7, and 8 moving along and making good time.
- On I-25 Gap project things are going along well.
- US 550/160 project in Durango area, has pulled one deck and working on another, going forward.
- Research on flood led to this information from a USGS resource - Peak flow in Fruita in 1884, In 1921 statewide flooding occurred in each basin- Colorado, Arkansas and Platte, downtown Pueblo was completely wiped out, and floods like this aren't unprecedented, and we try to learn from those in the past.
- Recommended an engineer's book club: Wooing a Harsh Mistress: Glenwood Canyon's Highway Odyssey by John L Haley.

High Performance Transportation Enterprise (HPTE) Director's Report (Nick Farber)

- No Board meeting yesterday. Express lane westbound opened July 30th and finished installing equipment for tolling. Estimating that it will start somewhere between November 2021 and/or January 2022.
- Had the 3rd steering committee meeting on Central 70's tolling equity program to narrow down eight options to three options. The first option would be a flat benefit for qualifying drivers for a free sticker transponder, the second option is a neighborhood benefit such as free bus pass to be issued after construction and continuing annually in Globeville and Elyria Swansea, and then the third option would be a combination of both the first and second options. Next steps for the steering committee will be to develop range of costs for each option and then discuss which is best.
- I-25 unsolicited proposal status: Region 1 and Region 4 met with CDOT Executive Management to discuss a response which will be announced in a couple weeks.

Federal Highway Administration (FHWA) Colorado Division Administrator's Report (John Cater)

- Glenwood Canyon: He recognized Mike Goolsby and Keith Stefanik for the phenomenal job they have done to open the canyon in record time. There was progress on the federal side as well. Of the \$116 million requested in emergency federal dollars, there was a quick release of \$11.6 million to CDOT to draw on immediately, and working with FEMA and other partners to get it working on the ground.
- Commissioner Hall commented on how grocery shelves in Grand Junction are really getting empty because of the I-70 Glenwood Canyon closure, highlighting how important the highway network is for delivery of basic goods.
- Discussed a School of Mines pilot that launched the first ever autonomous vehicle program around campus on August 10th. This was the biggest deployment to date of autonomous vehicles, and there will be more of those to come.
- Commissioner Stuart commented on participating in the easy ride shuttle program, which gave a presentation on a Panasonic autonomous vehicle, and how important those pilots are to get the ball rolling.

Statewide Transportation Advisory Committee (STAC) Report (STAC Chair, Vince Rogalski)

- Vince thanked Commissioner Stanton for his comments about STAC being an important input to the TC.
- It is important to show support for how CDOT always comes through on promises in opening I-70 so quickly.
- Herman discussed a reformat of 10- year Plan as a first step to taking another look at this Plan, and everyone was supportive of the new format.
- STAC had a presentation on the new \$1 trillion-dollar federal Infrastructure Bill that passed the U.S Senate and is now being considered by the House of Representatives. It contains \$550 billion in new funding for basic infrastructure (roads and bridges), but also contains funding for transit and other things like resiliency, and given what happened in Glenwood Canyon, and the Little Blue Canyon project

this is becoming increasingly important. \$795 million would be going to Colorado highways for the next five years representing a \$230 million increase over previous years of funding.

- Had a presentation on Revitalizing Main Streets (RMS) and visits to several communities across the state, and it was interesting to see the public comments and the positive feedback on CDOT's efforts to help communities get revitalized.
- Decided to move the GHG item to the top of the meeting anticipating that it would be contentious, but it really wasn't at all. There were some concerns from rural communities about how it will impact them since it is a statewide program, and while it will impact urban communities more, rural communities still want an opportunity to have a say in the process, given that the Rule is a statewide rule that still might impact the rural areas as well.
- The next STAC meeting is September 10th

Act on Consent Agenda – Passed unanimously on August 19, 2021. Motion by Commissioner Stuart, Second by Commissioner Holguin

- Proposed Resolution #1: Approve the Regular Meeting Minutes of July 15, 2021 (Herman Stockinger)
- Proposed Resolution #2: IGA Approval >\$750,000 (Steve Harelson)
- Proposed Resolution #3: Repeal of Policy Directive 16.0 "Regional Transportation Director Authority for Administrative Settlement of Construction Contract Claims" (Steve Harelson)
- Proposed Resolution #4: Approval of Updated Policy Directive 1301.0 "Transportation Commission Guidelines to Determine Whether Acquisition of Property for a CDOT Highway Project by a Petition in Condemnation will Serve the Public Interest" (Steve Harelson)
- Proposed Resolution #5: PD 703.0 Annual Review (Jeff Sudmeier and Bethany Nichols)
- Proposed Resolution #6: Disposal: Hugo Rest Area US 40 - Reaffirm (Parcel 1) (Heather Paddock)

Discuss and Act on Proposed Resolution #7: 2nd Budget Supplement of FY 2022 (Jeff Sudmeier) – Passed unanimously on August 19, 2021. Motion by Commissioner Beedy, Second by Commissioner Vasquez

Includes six items:

- The first is a correction to an amount that was identified previously and is a request from Region 3 for a multimodal improvement to I-70B project that increased the amount by \$500,000 from what the resolution requested last month, so this would correct that error.
- Second, a Region 2 request to reallocate \$350,000 in SB 267 project savings to the Kiowa County bus facility.
- Third, requests to allocate \$1 million of program reserve funds to a homeless camp clean-up pilot program in Region 1.
- The fourth request is to increase the budget on a signals and FASTER safety project for Wadsworth Blvd widening to \$1.6 million to award to the lowest bidder.
- The fifth request is to allocate \$10 million in TC contingency funds to the Glenwood Canyon response and repair, which was preauthorized by the Chair in response to the emergency.
- The sixth request is to increase the budget on a geohazards project in Region 3, SH 133 landslide repair, to award the project to the lowest bidder.
- Commissioner Beedy pointed out that the packet needed an amendment as information on the \$10 million was missing.

Discuss and Act on Proposed Resolution #8: 2nd Budget Amendment of FY 2022 (Jeff Sudmeier) – Passed unanimously on August 19, 2021. Motion by Commissioner Hickey, Second by Commissioner Garcia

- Request to reallocate \$6 million from TC contingency to MLOS to transfer funds from contingency to maintenance program areas. Includes a \$4 million increase to the base maintenance budget and \$2 million to establish a new winter operations bonus program.

Discuss and Act on Proposed Resolution #9: Adopt FFY 22-24 Statewide DBE Goal (Jun Arcilla) - Passed unanimously on August 19, 2021. Motion by Commissioner Adams, Second by Commissioner Hickey

- Commissioner Adams commended staff for their presentation and excellent work on this part of the presentation, and wanted to go on record to stress the importance of continuing to push the boundaries in this area because there are still things CDOT can do to support small businesses beyond this work.

Discuss and Act on Proposed Resolution #10: Discuss and Act on Condemnation (Steve Harelson)

– Passed unanimously on August 19, 2021. Motion by Commissioner Bracke, Second by Commissioner Adams.

- No comments or questions presented.
- Commissioner Bracke noted that she appreciated the comments from the property owner's representative and based on the staff presentation yesterday she feels comfortable moving forward.

Discuss and Act on Proposed Resolution #11: Approve Moving Forward on Next Round of Revitalizing Main Streets (Rebecca White)

– Passed unanimously on August 19, 2021. Motion by Commissioner Bracke, Second by Commissioner Stanton.

- Request is for staff to move forward with the Notice of Funding Opportunity (NOFO) for the Revitalizing Main Streets program with the \$22 million for round 2 of funding through SB 260.
- Commissioner Mark Garcia abstained from the vote on resolution #11.

Recognitions:

- No recognitions

Other Matters:

- No other matters

Adjournment

- **Meeting Adjourned at 10:51 a.m.**

Live Commenters:

██████████, Mesa County Commissioner

Commissioner ██████████

Commissioner ██████████

Commissioner ██████████

██████████████████, Mayor of Broomfield

██████████████████, Mayor Pro-Tem of Northglenn

██████████████████, City Councilor from Northglenn

██████████████████

██████████████████

██████████████████

██████████████████ (might join right at 9am or later, may be too late for public comment)

██████████████████ SWEEP

Ken Skogg (Condemnation)

Written Public Comments – August (just read their names to acknowledge we received them)

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██████████████████

██████████████████

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization
Public

Which group is your comment for?
Transportation Commission

Comment

Re: the GHG pollution rulemaking. Coloradans are desperate for reductions in toxic air pollution & GHGs from transportation given their scale & impact on public health & climate. We want substantial investments in public transit, multi-modal transit, & programs for disproportionately impacted communities that remedy environmental racism & provide healthy, affordable, convenient, & sustainable alternatives to driving in cars — NOT MORE HIGHWAY EXPANSIONS.

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization

Which group is your comment for?
Transportation Commission

Comment

Transportation is Colorado's largest source of greenhouse gas emissions. This rulemaking process could result in a framework that not only drives decarbonization, but makes life better for Coloradans. To do this, please ensure that this rulemaking focuses on reducing vehicle miles traveled (VMT). Please also include a reward for local and regional governments that make land use and housing decisions that allow more people to live near jobs, other destinations, and transit.

----- Forwarded message -----

From: [REDACTED]

Date: Tue, Aug 3, 2021 at 1:46 PM

Subject: It is possible, urgent, and CO law requires transportation pollution reductions of 25% by 2025 and 50% by 2030

To: <Jennifer.Uebelher@state.co.us>, <Herman.Stockinger@state.co.us>

Dear Transportation Commissioners,

I'm a mom of two kids who have asthma. A lot of kids have asthma and breathing difficulties here. My mom is on oxygen. This beautiful place is also the third worst in the country for ozone, after L.A. and CA's Central Valley, especially from cars and trucks. Most days the air isn't safe or healthy to breathe here by EPA standards, and now it has been in the "unhealthy" zone since the first day of summer. Note that research doctors have said the EPA safe levels are anything but, and there is NO safe level of the air pollutants we are having to breathe. We need to pause all further widenings this decade; research conclusively shows new lanes produce more traffic and pollution, on a 1:1 basis.

It's time to follow through on promises and Colorado LAW to reduce pollution 26% by 2025 and 50% by 2030. **This can be done in transportation**, but it will require reorientation and for engineers to be engineers and design some new things. Assistance and guides are out there, to do it. The research shows: build what people need and they will come.

Safe ways to travel outside of cars are necessary, especially because 20-30%+ of folks in a given area don't, can't, or shouldn't drive, and this part of the populace has received the impacts but been underserved, infrastructure-wise, by many years of disproportionate focus on highways. My son used to ride his bike to high school, but then he was hit by a car at a gap in a protected bikeway and spent 5 days in the hospital, in a lot of pain, and much longer in a wheelchair. Denver found that 59% of folks are uncomfortable riding without protected networks for non-drivers, but would ride if these were available. Safe, connected bike (and scooter or wheelchair) networks are provided in other countries and are required on/parallel to streets above 20-25 mph. We need that infrastructure here, soon, plus funding for transit and operations, conversion of all school and public buses to EVs, and buildout of missing networks essential for access for all, like broadband for all – not just payments to big out-of-state firms for expensive and poor service. We can do much better and are asking that this be a priority – safe air and the needed missing infrastructure for all, not fossil-fuel based donors and systems -- now.

Thank you,

[REDACTED]

Colorado Small Business Alliance

Former City Planning Commissioner & CDOT Manager, and current TRB chair, AHD10-1
Environmental Management & Decarbonization

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization

Which group is your comment for?

Transportation Commission

Comment

Re: the rule about the impact of transit projects on climate change: I rely almost exclusively on public transit and walking, which limits my ability to engage in leisure activities, such as visiting state parks. I have used the Bustang service to Boulder multiple times and found it to be pretty easy to navigate, convenient, and pleasant. More trains would be an excellent addition—they can accommodate sustainability and add immeasurable value to the travel experience.

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization

350 Colorado

Which group is your comment for?

Transportation Commission

Comment

The GPS Rulemaking should set clear emissions reduction targets that are aligned with the targets established by the Governor's Roadmap and HB19-1261. The rulemaking

should include a process to calculate GHG emissions from individual projects and reprioritize transportation projects which reduce VMT. Additionally, the reprioritization process should consider racial justice by analyzing the health impacts on nearby populations in project calculations

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization

Which group is your comment for?

Transportation Commission

Comment

Hello. My name is [REDACTED] and as the mother of three teenagers I feel climate change is extremely urgent. Our world is on track for over 3 degrees warming by 2100. In the west right now we're witnessing catastrophic impacts of warming just over 1 degrees C. We need an ambitious greenhouse gas pollution standard with explicit targets, strong enforcement mechanisms and lowers Colorado's transportation emissions. This is my top priority as a voter. Thank you for your service.

Name (first & last)

[REDACTED]

Your E-Mail Address

[REDACTED]

Your Daytime Phone Number

[REDACTED]

Your Company/Organization

Which group is your comment for?

Transportation Commission

Comment

I'm writing to urge the Transportation Commission to keep to its original timeline for rulemaking on the Greenhouse Gas Pollution Standard. It is of urgent importance that rulemaking on this standard is not delayed, so that CDOT/MPOs have enough time to update their plans prior to October 2022 as SB260 requires. If we are to meet or even make progress on HB19-1261 GHG reductions targets for 2025 and 2030, it is imperative that rules are put in place and not delayed.

[Redacted]

1 **Cost-Effective Strategies to Achieve Transportation Greenhouse Gas Pollution Reduction**
2 **Targets This Decade**

3

4 [Redacted]

5 Chair, TRB AHD10-1 Environmental Management & Decarbonization
6 (former CDOT & DRCOG staff, and Littleton City Planning Commissioner)

7 Venner Consulting, [Redacted]

8 [Redacted]

9

10 [Redacted]

11 Principal
12 Victoria Transportation Policy Institute

13 [Redacted]

14 [Redacted]

15

16 *Word Count: 5,300 words + 5 graphics (250 words per graphic = 1250) = 6,550*

17

18 Submitted August 1, 2021

19

20

21



1 **ABSTRACT**

2 Many organizations and jurisdictions have ambitious transportation emission reduction targets,
3 such as 30-60% emission reductions within a decade or two and are developing plans to achieve
4 these and other community goals including greater public health, affordability, and social
5 equity. Meanwhile, multiple international analyses concur that emissions must be halved this
6 decade, to limit global heating to 1.5 C, as recommended by the International Panel on Climate
7 Change (IPCC). Transportation is far from the most difficult sector and analysts figure
8 transportation must deliver its full share of pollution reductions, now in 8 years. What are the most
9 feasible and cost-effective strategies to achieve these goals? How should planners think about and
10 evaluate the benefits and costs of potential emission reduction policies and programs? This paper
11 critically evaluates various transportation emission reduction plans. It identifies various biases in
12 current evaluation practices that tend to exaggerate the benefits of fuel switching and
13 underestimate the benefits of vehicle travel reduction policies. This analysis suggests that large
14 transportation emission reductions are possible, but additional policies and different priorities are
15 now essential, requiring big steps and a rapid shift from policies and funds allocations to date.
16 Already performed effectiveness and cost-benefit analysis supports the necessary reallocation of
17 investment. State Transportation Improvement Programs (STIPs) and Long Range Transportation
18 Plans (LRTPs) for this decade should be realigned to accord with the evidence, without delay.

19

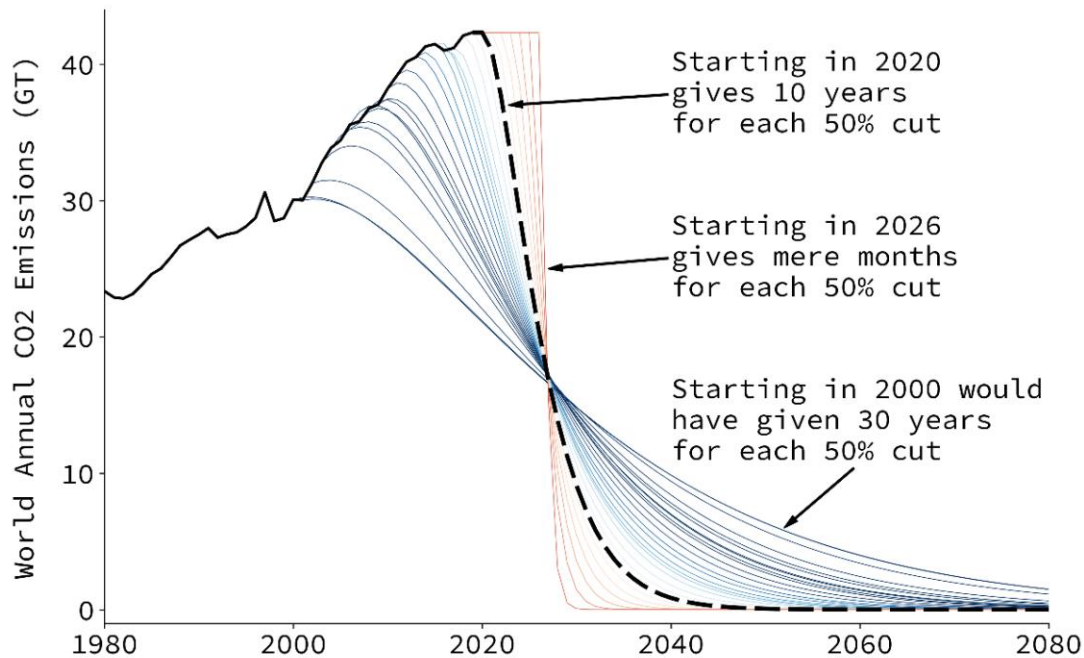


1 **INTRODUCTION**

2 Greenhouse gas (GHG) emissions threaten our environment, economy and human lives. Major
3 emission reductions, often defined as net zero by 2050, are needed to avoid catastrophic damages.
4 Many organizations and jurisdictions have ambitious targets to reduce transportation emissions.
5 For example, in April 2021, President Biden established a target to reduce U.S. GHG emissions 50-
6 52% by 2030.(1) This is a major challenge. Despite past emission reduction plans, Vehicle Miles
7 Traveled (VMT) have increased and transportation emissions have only declined slightly.(2)

8 The 2018 IPCC on the importance of 1.5 C as a limit documented how essential steep fossil fuel
9 emission cuts are by 2025 and 2030.³ The later reductions begin in earnest, the less possible it is to
10 achieve the necessary reductions in time.(4) Starting now, we must halve emissions by 2030 and
11 every decade thereafter. Waiting until 2026 (further planning and studies) to get started gives
12 mere months for each 50% cut, whereas starting in 2000 would have allowed 30 years for each
13 50% cut in CO2 emissions, to have a reasonable chance of staying under 2 C.⁵

14 *Figure 1: GHG Emission Reductions of 7-8%/year are necessary the remainder of the decade.*



15
16 *Mitigation curves required to hit a 1.5 C/2.7 F world, Saul Griffith's 2020 redrawing of data from Robbie Andrew.*

17 **The sufficiency and timeliness of action from today is the most critical consideration.**

18 Highlights from a couple key studies of potential interest to planners, engineers, and other public
19 servants convey the seriousness and urgency with which we must now act to change direction.

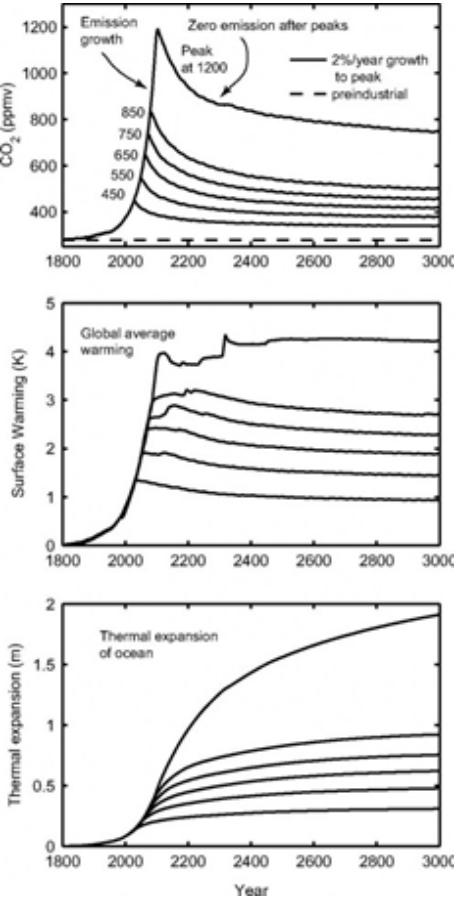
20 In 2011, the International Energy Agency lead economist and now director Fatih Birol examined the
21 implications of continuing to invest in anything fossil fueled, if allowed to use for projected
22 lifecycles and noted that by 2017 we (would) have built enough to take world temperatures over
23 2°C.(6) Yet in 2021 the public sector is still allowing registration of vehicles causing 200,000 deaths
24 or more per year just from the air pollution they emit (7) and agencies are currently not discussing
25 setting targets for public phase-out of sales of NEW vehicles until the 2030s, meaning ICE vehicles
26 will operate into the 2030s, 2040s, and 2050s. This endangers health and lives and imposes
27 inequitable impacts across racial and ethnic groups, across economic quintiles, and to children,

1 entitled to equal protection under the law. Meanwhile, sea
2 level rise and ocean acidification are accelerating, and
3 current levels of CO2 are unleashing unprecedented changes
4 in climate systems, leading to severe ecological and economic
5 disruptions, promising worse to come.(8)

6 The carbon and emission pollution that we are putting in the
7 atmosphere from combustion stays there far beyond our
8 timescales. Climate change due to increases in CO2
9 concentration is largely irreversible for 1,000 years after
10 emissions stop; and 20% of the global-warming pollution we
11 emit will still be there in 20,000 years (See S. Solomon, PNAS,
12 2009, graphs Figure 2, illustrating how CO2 stays in the
13 atmosphere, and for how long, after we stop emitting. Global
14 heating stays close to the same point it is when we stop using
15 fossil fuels and adding methane and CO2 to the
16 atmosphere).(9)

17 To date, in terms of carbon emissions, transportation is the
18 worst-performing sector of the economy.(10) While many of
19 us may have heard we must embrace incremental engine
20 efficiency improvements, that transportation was going to be
21 one of the most difficult to decarbonize and that allowed
22 lower expectations, transportation is no longer considered to
23 be a sector that should have a pass because options are few.
24 Housing and buildings have a longer life cycle than vehicles,
25 and retrofits are costly. Now transportation is considered
26 one of the fastest sectors that can be reduced, after electricity
27 generation. Large emissions cuts this decade are crucial (11)
28 and it is up to us to find, discuss, and accomplish those.

Figure 2: Heating remains at levels near where fossil fuel emissions stop. (S. Solomon, PNAS, 2009, Irreversible Climate Change)



29 **EVALUATION FRAMEWORK**

30 Cutting emissions in half this decade requires a rapid shift, and large investment reallocations.
31 Many of our key transportation challenges (GHG emission reductions, reducing congestion and
32 SOVs, air pollution) are interrelated. The most cost-effective approaches for transportation are
33 more comprehensive and integrated.(12) Bhardwaj et al. and Axeson and Plotz list criteria for
34 selection: (13)

- 35 1. Effectiveness at GHG mitigation (e.g., achieving 50% GHG reduction by 2030)
- 36 2. Cost-effectiveness (Does the policy miss achieve the GHG target at least cost to society?)
- 37 3. +/- Acceptability (Some policies are more acceptable than others, and in certain areas)
- 38 4. Transformational Signal (Adds clarity and congruence, showing the new direction that is
39 being taken and will occur in the future, prompting many additional parties and actions)

40 **Effectiveness at GHG mitigation is primary**, and cost-effectiveness can still be a guide. Some
41 policies have the benefit of also providing a transformational signal and some policies are more
42 acceptable than others. To take an ICE vehicle ban as an example, this policy reduces GHG in a large
43 amount in a sizable sector/mode and delivers an undeniable, clear and strong transformational
44 signal. As it applies to new vehicles and addresses future decision making not retrofits of past poor

1 decisions, it is very cost-effective. But political acceptability is low in the near term and many lack
2 good alternatives yet. This may imply the benefit of delivering this signal as soon as possible to give
3 notice, set direction, and clear and uncontradictory communication. Again, the most important
4 criteria is what policies have the capacity to get us to the necessary reductions this decade. The
5 most cost-effective and fast to implement ones should be high on our lists.

6 STRATEGY OVERVIEW

7 The authors have evaluated greenhouse gas reduction strategies, environmental best practice and
8 cost-effective climate adaptation over the past 20 years, drafting such guides as are maintained on
9 AASHTO's website still, for Design, Construction, Maintenance, and Operations, in addition to
10 participation in Sustainable Low Carbon Transportation initiative, international climate action
11 follow up meetings for transportation, and as North American consultants on Horizon 2020 projects.
12 Pulling from the practices that meet the top criteria of timely and sufficient effect, as well as cost-
13 effectiveness, we note a number of cost-effective Transportation Demand Management and Smart
14 Growth policies with substantial co-benefits can be implemented relatively quickly:(14)

- 15 • **Fully implemented Pay as you drive (PAYD) vehicle insurance, taxes & registration**
16 **fees** could reduce personal travel by 10-15% within a few years.
- 17 • **Parking policy reforms, so motorists pay directly rather than indirectly**, have parking
18 cash out, and parking unbundling, for a major portion of parking, could reduce 5-15% of
19 vehicle travel within a few years.
- 20 • **Cost-recovery road user fees (approximately doubling fuel taxes so they pay all**
21 **roadway costs)** or a gradual but predictable carbon tax, could reduce driving 5-15%, and
22 eventually more as the carbon tax approaches \$50/tonne.
- 23 • **Reforming transport funding, so transportation agencies are willing to spend as much**
24 **on a walk, bike, transit trip as on an automobile trip, which would significantly**
25 **improve travel by resource-efficient modes.** Improving cycling conditions while
26 encouraging micro modes could reduce 5-15% of automobile trips.¹⁵
- 27 • **Residents of walkable urban neighborhoods drive 30-60% less than they would in**
28 **automobile-oriented areas, and there is significant latent demand for housing in such**
29 **areas.** Reforming zoning codes to allow more affordable infill, and retrofitting suburbs to be
30 more multimodal, could allow more households to find high-accessibility housing.
- 31 • **Logistics improvements can reduce commercial travel** - 10% of travel, 30% of
32 emissions, so critical for emission reductions.

33 These can provide large economic, social and environmental benefits together achieving 20-30%
34 travel reductions by creating opportunities and incentives that reward people for less driving.

35 RE-EVALUATE PLANS AND PROGRAMS

36 A 50% GHG pollution reduction target is achievable in ways that benefit most people overall,
37 through a combination of vehicle travel reductions, and shifts to more efficient and alternative
38 fueled vehicles. Current planning, programming, and project development procedures should
39 minimize induced vehicle travel, promote greater use of roadway pricing, and redirect funding
40 streams to greatly increase investment in bicycling, walking, transit, micro and shared mobility, off
41 the state highway system as well as on.



1 As a general rule, single occupant vehicle (SOV) drivers will shift to an alternative mode only if the
2 alternative is equal to or better than SOV travel in terms of factors such as convenience, travel time,
3 reliability, perceived safety, and cost. Infrastructure investments need to support these shifts
4 rather than continue existing funding patterns. Every individual makes travel choices based on
5 these and other decision factors, with variation in the relative importance of each factor. It is
6 important to improve the accessibility, safety, comfort, and cost/relative competitiveness of options
7 such as transit, rideshare, bicycling, and walking – for public health, transportation choice, and
8 public well-being as well as GHG reduction. To consider an example how continued highway
9 expansion investments are counter-productive for reducing VMT and emissions, early estimates are
10 that just eight Colorado DOT projects on 270, I-25, and I-70 will increase vehicle miles traveled and
11 associated pollution by 2% over the decade rather than decrease pollution and VMT;
12 meanwhile, the Denver Regional Council of Governments has outlined \$3.2 billion in unfunded
13 transit, bike and walking projects.(16)

14 **To achieve large and fast GHG reductions this decade, State DOTs will need to re-evaluate**
15 **and reissue STIPs and LRTPs.** Transport model improvements provide better information on the
16 impacts and benefits of vehicle travel reductions;(17) when fully implemented such reforms
17 typically reduce vehicle travel 10-30% compared with conventional, automobile-oriented
18 planning.(18) A framework for local governments and MPOs that also prioritizes carbon reduction,
19 clarifies the sources of carbon they are responsible for cutting, and provides the resources to enable
20 planning, design, and investments is also desirable. National, regional and local action are
21 complementary and there is a strong case for coherence in a multi-scalar approach to carbon action
22 plans in the transport sector as transport crosses spatial boundaries and the policy system places
23 different levers at different scales.(19) Furthermore, as Marsden and Anable note, “transparency
24 will be beneficial for honesty with the public and the difficult politics this rapid transition
25 necessitates. It will also mitigate against blame shifting across governments between and within
26 scales and the resultant inaction which characterized the previous decade of supposed ‘climate
27 action’.”(20)

28 **PAUSE HIGHWAY CAPACITY IMPROVEMENTS**

29 There are critical things to look for if transportation is going to play its part in delivering rapid and
30 deep cuts in emissions and abandoning plans for highway capacity expansions this decade is one of
31 them.(21) Capacity expansions should be suspended at least until pollution reductions are
32 achieved. Research solidly shows that spending on highway lane additions increase emissions and
33 vehicle miles traveled whether those lanes are HOV/managed lanes or not, and improved air
34 quality benefits the health of everyone in the region. US research clearly shows that additional
35 highway lanes generate additional vehicle miles traveled and pollution, on a 1:1 basis over 5-10
36 years, not to mention the opportunity cost for investment on that timeframe.²²

37 It is well documented that adding new lanes, even HOV lanes, adds VMT and emissions. Projects
38 that expand highway capacity where conditions are congested will induce additional vehicle travel.
39 Capacity additions effectively reduce the “price” of driving. As far back as the 1960s, researchers
40 have identified this phenomenon, sometimes dubbed the “Fundamental Law of Road Congestion,”
41 which asserts that the amount of vehicle travel will increase in exact proportion to the highway
42 capacity expansion, so that traffic speeds will revert to their pre-expansion levels.

43 In the short term, effects such as new trips, mode shift to automobile travel, and longer automobile
44 trips all contribute to a net increase in VMT. The most recent and comprehensive research (Hymel,
45 2019) suggests that long-run elasticity is close to 1.0, which means that a 10% expansion of

1 highway capacity will lead to a 10% increase in VMT. This can negate any near-term congestion
 2 relief and lead to an increase in GHG emissions, particularly in urbanized areas. A review of
 3 literature commissioned by the California Air Resources Board concludes: "Capacity expansion
 4 leads to a net increase in VMT, not simply a shifting of VMT from one road to another."(17)

5 *Table 1: Research on the Impact of Capacity Expansion on Induced Vehicle Travel (Caltrans & CARB,*
 6 *2020)*

Study	Study Location (and Type)	Study Years	Time Period	Elasticity (change in VMT / Change in Lane- Miles)
Hymel (2019)	U.S (States)	1981-2015	long-term	0.89 to 1.06
Duranton & Turner (2011)	U.S. (Metro Statistical Areas – Interstates)	1983-2003	10 years	0.93 to 1.03 •
Cervero & Hansen (2002)	California	1976-1997	short-term intermediate term	0.59 0.79
Noland (2001)	U.S. (States – all roadway types)	1984-1996	short-term long-term	0.30 to 0.60 0.70 to 1.00
Noland & Cowart (2000)	U.S. (Metro Areas – Freeways and arterials)	1982-1996	short-term long-term	0.28 0.90
Hansen and Huang (1997)	California	1973-1990	short-term long-term	0.20 0.60 to 0.90

7 Source: Duranton, G., & Turner, M. A., "The Fundamental Law of Road Congestion: Evidence from US Cities," *American Economic*
 8 *Review*, 101 (6), 2011; Handy, Susan and Boarnet, Marlon, G., "Impact of Highway Capacity and Induced Travel on Passenger
 9 Vehicle Use and Greenhouse Gas Emissions," California Air Resources Board, 2014; Hymel, Kent, "If You Build It, They Will Drive:
 10 Measuring induced demand for vehicle travel in urban areas," *Transport Policy*. Volume 76, pp. 57-66, 2019.

11 Note a: Duranton & Turner developed several models and elasticities but report 1.03 as the "most defensible estimate." (from
 12 CARB, 2020)

13 Capacity expansions will also be a waste of resources in the face of the lower traffic growth that
 14 must be achieved. It is important to build accountability around GHG emissions, opportunity costs,
 15 and mitigation. Beyond cost-effectiveness, health effects and climate risks, equity of service for
 16 public expenditure is another key reason to reason to revamp transportation planning, pause
 17 highway capacity improvements, and re-focus public spending. 20-40% of the population should
 18 not or do not drive in any given community, and this segment has been underserved for the last 70
 19 years. (23)

20 **REORIENT SPENDING TO ENABLE PEOPLE TO USE THEIR CARS LESS**

21 Some ways to reduce pollution provide more total benefits than others. There are cost-effective
 22 policy reforms that can help us make the pollution reductions we need, in time. Many of these will
 23 also help solve transportation problems by improving resource-efficient mobility options and
 24 removing market distortions that cause excessive motor vehicle travel.



1 **Hitting our CO2 budget this decade will require reorienting our transportation investments**
2 **to enable a future in which people can and will use their cars less.** This will not be possible if
3 car traffic is allowed to continue to rise and public investments facilitate and enable that. While
4 extensive dispersed development exists and transition to electric vehicles will be necessary,
5 technical substitution alone may be too slow to contribute meaningfully to carbon reduction
6 targets. Over-reliance on a shift to electric vehicles and slow pace of ICE vehicle phase-out (without
7 very high taxes or bans on registrations of new ICE vehicles) leaves a transition too slow to meet
8 the carbon budget. The cumulative amount emitted and timing of the transition matters most and
9 insufficient progress is occurring.(24) Meanwhile, average vehicles are being used for a lengthening
10 period of time. ICE vehicles in the mix will be operating for longer. Curtailing the lifespan of assets
11 (stranding) is less cost-efficient than other options and to be avoided if possible.

12 **SUPPORT A RAPID TRANSITION TO ELECTRIC VEHICLES AND AVIATION**

13 **Transition to electric from fossil fuels , and EVs yield great efficiencies in addition to saving**
14 **public health and our life support systems,** threatened by climate change. Electricity is much
15 more efficient; close to 80% of the electricity goes to move the vehicle compared to high losses to
16 heat and inefficiency for fossil-fueled vehicles (12-25% of which goes to move the vehicle), which is
17 improving as clean energy becomes a greater portion of the mix.

18 New vehicles are driven more annual miles than older ones, so this could represent 50% of all VMT,
19 but electric SUVs, light trucks and vans are just coming to market in 2022-2023. Even if 50% of
20 VMT is electric by 2030, there will probably be lots of fuel intensive, high-mileage vehicle-miles,
21 including those opting for the largest and most polluting passenger vehicles until these are
22 disallowed for sale or registration. Many may keep older, dirtier vehicles out of preference or
23 nostalgia. EV incentives to date have been costly and regressive.

24 **Disallow further registration of new ICE vehicles, as soon as possible, especially in urban and**
25 **nonattainment areas.** Used ICE vehicles may be purchased and registered by the state for some
26 years, but disallowance of new ICE vehicle registrations will begin to reduce GHG pollution from
27 vehicles at a rate approaching 5% per year. Disallowance can be fully justified on either air
28 pollution health effects (immediate) or climate impacts and threats. See former CDC Director
29 Thomas Frieden’s description of [Government’s Role in Protecting Health and Safety](#) on government
30 has obligations relating to health and air pollution, in his article in the *New England Journal of*
31 *Medicine.*(25)

32 **Support safe bicycle and e-bike infrastructure, particularly near transit.** This includes more
33 complete streets, bike ways, bike parking, plus e-bike subsidies and recharging stations.

34 **E-Aviation.** Half of US air travel are flights less than 500 miles. The US could ramp up certification
35 and manufacture of light airplanes for half of all flights. EV emissions for car, bus, and the only e-
36 aviation possible and in the certification process at this point (9-19 passenger small aircraft, under
37 650 mile range) use approximately the same electricity and have similar CO2 emissions. For e-
38 aviation this is one-tenth of a conventional plane at 2,500 Btu/mile or 0.73 KWh/mile. A Tesla
39 Model 3, which Hawaii DOT’s fleet managers found the most economical option, uses about 0.33
40 KWh/mile (or 3 miles/KWh), meaning a car that e-aviation (think of a bus) is more efficient than a
41 car unless it is full (4 passengers, 0.0825 KWh/passenger miles).

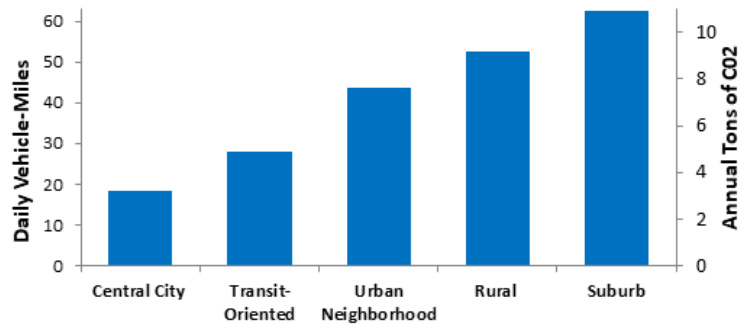


1 **ENSURE FULL PRICING AND COSTS FOR CARS**

2 Because they have lower operating costs, EVs can encourage more car use, a rebound effect (26).
3 Electric vehicles do not get rid of all health problems. Much particulate pollution is from tires and
4 brake wear, though regenerative braking means the latter is less with EVs. USEPA and USDOT
5 could require tires that generate fewer particulates, which are dangerous for both people and
6 aquatic life.

7 **PUBLIC TRANSIT IMPROVEMENTS AND TRANSIT-ORIENTED DEVELOPMENT**

8 There are many ways to improve and encourage public transit travel including increasing service,
9 giving transit vehicles priority in traffic, improving vehicle and station comfort, more convenient
10 user information and payment systems, lower fares, commuter financial incentives, and targeted
11 marketing that encourages commuters to try transit travel. Transit Oriented Development (TOD)
12 uses transit stations as a catalyst to create compact, walkable neighborhoods where residents tend
13 to own fewer cars, drive less and rely more on non-auto modes (World Bank 2018). High quality
14 transit can attract 5-15% of urban trips, and TOD residents typically drive 20-50% less than in
15 automobile-oriented areas (27). See below.



16

17 **EXTEND ACTIVE TRAVEL IMPROVEMENTS**

18 Active travel includes independent mobility via walking, bicycling, wheelchairs, scooters and more.
19 Approximately 12% of U.S. personal trips are made by active modes, and their potential is much
20 greater.(28) A quarter of current vehicle trips are less than one mile, a distance suitable for walking;
21 half are less than three miles, a distance suitable for bicycling; and most are less than five miles, a
22 distance suitable for e-biking.(29) Active mode improvements can also increase transit travel.
23 Better and more protected facilities (paths, sidewalks, crossing, and bike parking), traffic calming,
24 and more compact development (30) typically reduce automobile travel 5-15%.(31) Frank, et al.
25 (2011) found that increasing the portion of street with sidewalks from 30% to 70% reduces local
26 vehicle travel by 3.4% and emissions 4.9%.(32)

27 Protected bikeways and networks draw users and commuters. A major academic study, A Global
28 High Shift Cycling Scenario, estimated that improving bicycling conditions could increase urban
29 bicycle and e-bike mode shares from the current 6% up to 17-22%.(33) PNAS reported that in cities
30 where bike infrastructure was added, cycling had increased up to 48% more than in cities that did
31 not add bike lanes.(34) A 2013 Portland study found that build out of a protected bike system could
32 occur for the same cost as 1 mile of 4-lane highway.(35)



1 **ENCOURAGE AND ENABLE VEHICLE SHARING & ELECTRIC MICRO MODES**

2 **Vehicle sharing** with car, scooter, bike and car rental services provides a convenient alternative to
3 private vehicle travel and can allow households to own fewer vehicles. Drivers who shift from car
4 ownership to carsharing typically reduce their vehicle travel 30-60%, and scooter- and bike-
5 sharing can substitute for automobile trips.(36) Cars are only in use for 3-5% of an average day.

6 **Electric micro modes** such as e-bikes and e-scooters can travel faster, farther, in more conditions
7 and with heavier loads than human powered equivalents. One study, which accounted for various
8 climatic and geographic constraints, estimated that in typical urban areas they could achieve 10-
9 15% mode shares and 12% vehicle emission reductions.(37)

10 **BUILD OUT/ENSURE UNIVERSAL BROADBAND**

11 USDOT Secretary Buttigieg has spoken about “digital infrastructure, a very important
12 part of how we address under-served areas that have been cut off from the kind of
13 broadband access they need.” DOTs such as California and Maine have taken on their
14 state’s mandates to extend internet access and explore broadband/fiber along highway
15 right of way. In the US, \$13 billion/year is included in the federal infrastructure plan
16 currently for broadband.(38) Broadband reduces congestion in a more effective,
17 sustainable and permanent way.(39)

18 **INSTITUTE EFFICIENT PRICING FOR PARKING, ROADS, AND PAY AS YOU DRIVE**

19 Efficient parking pricing means drivers pay cost-recovery prices for the parking facilities they use,
20 with higher rates under congested conditions (ICAT 2020). It can also include parking cash out,
21 which means that non-drivers receive the cash equivalent of parking subsidies offered to motorists,
22 and parking unbundling, which means that parking is rented separately from building space, so
23 occupants are no longer required to pay for costly parking spaces they don’t need. Including land,
24 construction and operating expenses, a typical urban parking space has \$500-1,500 annual costs, so
25 efficient prices are typically \$2-8 per day, and more during peak periods.(40) Efficient parking
26 pricing is facilitated by using new automated pricing methods. Efficient parking pricing typically
27 reduces affected vehicle travel 10-30%.(41)

28 Efficient **road pricing** to ensure cost recovery (or decongestion pricing during peak periods)
29 typically reduces affected vehicle traffic 10-30%, with larger reductions if implemented with
30 improvements to alternative modes such as public transit (CARB 2010-2015). **Fuel taxes** would
31 need to approximately double to cover all roadway costs (in 2018 U.S. governments collected \$121
32 billion in vehicle fuel taxes and road tolls, about half of the \$225 billion spent on roads [FHWA
33 2018]), and more to internalize other costs. Full coverage of roadway impacts by weight of vehicle
34 would help cover road wear and maintenance costs.

35 **Eliminating fuel subsidies and increasing fuel taxes** is predicted to reduce global GHG emissions
36 11-18% (42).

37 **Pay-As-You-Drive** (also called Distance-Based and Mileage-Based) pricing means that vehicle
38 insurance, registration, taxes and lease fees are based directly on the vehicle’s annual mileage. For
39 example, a \$400 annual insurance premium becomes 3¢ per mile and a \$1,200 annual premium
40 becomes 10¢ per mile. A typical U.S. motorist would pay about 7¢ per mile for insurance, plus 3¢ for
41 registration fees and taxes. This is more equitable and affordable, and typically reduces affected
42 vehicles’ annual mileage by 5-15%, depending on design.(43)



1 **SUPPORT TRANSPORTATION DEMAND MANAGEMENT (TDM)**

2 TDM programs encourage use of resource-efficient modes.(44) Commute Trip Reduction programs
3 target employee travel. School and Campus Trip Management programs target students and school
4 staff. Transportation Management Associations target a particular area, such as a commercial or
5 industrial center. Although most TDM strategies individually only affect a small portion of total
6 travel, an integrated program can typically reduce affected vehicle travel 5-15% if it only provides
7 information and encouragement, and 10-30% if it has financial incentives such as efficient road or
8 parking pricing (45).

9 **SMART GROWTH DEVELOPMENT POLICIES ENABLE SHORTER TRAVEL DISTANCES & MORE**
10 **TRAVEL OPTIONS**

11 Smart growth development practices result in more compact, multimodal communities, sometimes
12 called a 15-minute neighborhood, where common services are accessible within a 15 minute or
13 bike ride.⁴⁶ Surveys indicate that many families want to live in such neighborhoods, but cannot due
14 to inadequate supply; Smart Growth policies respond to these demands by allowing more infill
15 development.⁴⁷ Smart Growth policies typically reduce per capita vehicle travel and emissions 10-
16 30%, and more if implemented with complementary strategies such as efficient road and parking
17 pricing.⁴⁸ The report, Quantifying the Effect of Local Government Actions on VMT,⁴⁹ found that
18 households located in automobile- dependent, urban fringe areas drive about three times more
19 miles and produce about three times the carbon emissions as otherwise comparable households
20 located in compact, multimodal neighborhoods. Smart Growth policies provide adequate supply for
21 most households and businesses to locate in compact, multimodal neighborhoods.

22 **FREIGHT TRANSPORT MANAGEMENT**

23 Freight Transport Management includes various strategies to increase the efficiency of freight and
24 commercial transport.(50) This includes improving distribution practices to reduce vehicle trips,
25 shifting freight to more resource efficient modes (such as from air and truck to rail and marine),
26 improving efficient modes such as marine and rail, and better siting of industrial locations to
27 improve distribution efficiency. Freight vehicle represent less than 10% of total vehicle travel but
28 about 30% of vehicle emissions. More efficient management typically reduces freight vehicle travel
29 5-20%.(51) Axeson (2020) recommends a Low Carbon Fuel Standard for freight.⁵²

30 **SUPPORT FAST TRANSITION TO RENEWABLE ELECTRICITY**

31 Carbon intensity and transportation emissions from powered vehicles are increasingly related to
32 electricity source. DOTs can support the most rapid and affordable reductions that can be achieved
33 in fossil fuel emissions; the most rapid and cost-effective CO2 emissions reductions that can be
34 achieved overall are by closing coal by 2025, getting to around 70% renewable electricity by then
35 and over 95% by 2030.⁵³ Solar photovoltaic (PV) can be constructed in 3 months and wind in 6-12
36 months.(54) Today, even wind, solar, and storage tends to be cheaper than continued operation of
37 coal, even without accounting for health effects or climate risks. However, Investor Owned Utilities
38 (IOUs) are set up to maximize shareholder returns rather than public benefits and tend to try to
39 keep plants running longer to achieve their full rate of profit on coal for as long as possible.(55)
40 Faster and more affordable transition to renewables have been achieved by municipally owned
41 utilities and through community choice aggregation and might be achieved through public
42 ownership and financing, as IOUs are guaranteed returns of 7-11% and public financing is
43 considerably lower cost.



1 **SUMMARY**

2 The following table indicates the portion of total travel that these strategies can reduce, and the
3 typical emission reductions that they can provide.

4 **Table 2: Travel Impacts of Various TDM Strategies (56)**

Emission Reduction Strategy	Portion of Vehicle Travel Affected	Typical Reductions of Affected Travel	Total Reductions
Planning Reforms	100%	10-30%	10-20%
Transit & TOD	30%. Mainly urban travel	10-30%	3-9%
Walking & Cycling	20%. Shorter-distance trips	10-30%	2-6%
Micromobilities	40%. Medium-distance trips	10-30%	4-12%
Carsharing	5%. Suitable households	20-40%	1-2%
Road Pricing	30%. On new or congested roads	10-20%	3-6%
Parking Cash-Out	20%. Commute travel	10-30%	2-6%
Parking Pricing	40%. Mainly urban travel	10-20%	4-8%
Pay-As-You-Drive Pricing	80%. Private automobile travel	10-12%	8-10%
Fuel Taxes - Tax Shifting	100%	5-15%	5-15%
TDM Programs	40%. Travel affected by programs	10-30%	4-12%
Smart Growth Reforms	50%. Mainly urban travel	20-50%	10-25%
Freight Transport Man.	10%. Freight and commercial travel	5-20%	0.5-2%

5 *This table indicates that portion of total travel that each strategy affects & typical magnitude of reductions.*

6 This indicates that an integrated package of TDM and Smart Growth policies can reduce travel by
7 20-30% while helping to achieve other economic, social and environmental goals. Other
8 researchers also conclude that TDM and Smart Growth policies can provide large cost- effective
9 emission reductions (57, 58). Most of these strategies reflect market principle: they respond to
10 latent consumer demands for non-auto travel options and housing in multimodal neighborhoods,
11 they more efficiently price vehicle travel, they help achieve multiple planning goals, and they
12 ensure that people who depend on non-auto modes receive their fair share of transportation
13 infrastructure investments.

14 These strategies reduce emissions in ways that benefit most people overall, by improving
15 affordable and healthy mobility options, reducing congestion and crash risk, and creating more
16 livable communities. The COVID pandemic demonstrated that many people can significantly reduce
17 their vehicle travel in ways that are efficient and convenient. For example, many people relied
18 more on telework, delivery services, and local services. Failing to invest much more in increasing
19 the safety and attraction of other ways to travel is a huge missed opportunity that can help achieve
20 emission reduction targets and other community goals.

21 **CONCLUSION**

22 This paper clarifies what will produce adequate and necessary reductions in time as well as what
23 needs to be paused that is undermining such efforts and potentially sacrificing the futures of so
24 many. Although there are many possible ways to achieve GHG emission targets, some are faster and
25 provide more total benefits than others. A useful rule of thumb is that at least half of transportation
26 emission reduction targets should be achieved with vehicle travel reduction strategies that provide
27 large co-benefits.(59) The necessary GHG reductions may be achieved from transportation this
28 decade but there is no time to waste and departure from normal and failure work and paths will be

1 necessary. Planning, re-programming and reallocation of funds must occur to reach nationally and
2 internationally agreed GHG reduction objectives, in line with many state goals as well. It is no
3 longer acceptable to conclude that it cannot be done. It can and strong public benefits can be
4 achieved cost-effectively.

³ International Panel on Climate Change Report, Global Warming of 1.5°C, Oct 6, 2018, link

⁴ Saul Griffith et al., 2020, https://www.rewiringamerica.org/s/Rewiring_America_Field_Manual.pdf

⁵ Multiple studies. Authors think the best, simple depiction is in Saul Griffith, 2020, Rewiring America.

⁶ <https://www.iea.org/newsroom/news/2011/november/the-world-is-locking-itself-into-an-unsustainable-energy-future.html>, 2011 edition of the *World Energy Outlook (WEO)*.

<https://www.theguardian.com/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change>

⁷ MIT News, <https://news.mit.edu/2013/study-air-pollution-causes-200000-early-deaths-each-year-in-the-us-0829>

⁷ Frederica Perera, Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist, *Int J Environ Res Public Health*. 2018 Jan; 15(1): 16. 2017 Dec 23. doi: 10.3390/ijerph15010016; John Vidal 24 March 2014, [https://www.theguardian.com/environment/2014/mar/25/air-pollution-single-biggest-environmental-health-risk-who-causing-nearly-one-in-eight-deaths-in-2012-according-to-the-World-Health-Organisation-\(WHO\)](https://www.theguardian.com/environment/2014/mar/25/air-pollution-single-biggest-environmental-health-risk-who-causing-nearly-one-in-eight-deaths-in-2012-according-to-the-World-Health-Organisation-(WHO)).

⁸ World Meteorological Organization, “Greenhouse gas concentrations surge to new record, October 2017.

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Business as usual is killing us and it is time to invest in the strong state, economy, and communities we can have! There are many alternatives to shoveling money out the door in old ways and the largest chunks possible. (See [Freeway expansion is the wrong way to spend Colorado's COVID-19 relief dollars: When the pandemic is behind us, will we want increased air pollution and GHG?](#))

- **Affordable housing** – Rents and home prices have skyrocketed even much more in the last year. It was a crisis even before COVID-19. Now, more people than ever are living out of their cars. What's the extent of the problem, need, and proposal for investment? Building might occur on existing city or state land, land from congregations, or as a height or density incentive on private property.
- **Rooftop, parking lot, and on-farm solar + storage** – distributed investment saves on transmission spending, is more resilient in disasters, and provides returns to citizens/communities, and can be more affordable if financed through a public bank (1-2%) than through out-of-state investor owned utilities (7-11% rate of return). [Link](#): 1 in 8 homes.
- **Retrofitting low and middle income households - Pay As You Save** – on bill financing for water heater, furnace, range, dryer replacements to electric and other efficiency upgrades. **Implement new decade's building codes**, no longer dependent on fossil fuels, requiring passive home construction, optimizing solar radiation for power generation and heating.
- **Training for HVAC and appliance installers**. BlocPower has retrofit more than 1000 buildings, many with heat pumps and solar panels, in disadvantaged communities.
- **EV school buses ASAP are an investment in education**, with big health and learning benefits for kids, as pollution inside tends to be several times higher than the diesel outside. A [study](#) also found strong evidence of academic improvements from the retrofits... most significant for English test scores. According [to the study](#): "Comparing our results to those of [another study](#) looking at pollution and test scores, retrofitting an entire district's fleet is at least as effective as moving all students from a district with average air pollution levels to one with air pollution levels in the 10th percentile." Also see <http://bit.ly/AQheadlines>
- **Road maintenance and resurfacing must be separated from widening**. Some rural roads haven't been repaved since the 1970s and need repairs; however, road widenings deliver 1:1 [extra traffic and pollution within 5-10 years](#). Additional lanes, even HOV, lead to additional vehicle miles traveled and pollution. See [bit.ly/TransportationBestOpportunities](#)
- **Transit, bike, and walking infrastructure** – entice people with pleasant/comfortable, safe, convenient, protected ways to travel. Research shows: if we build it, they will come!
 - \$3.2 billion in transit improvements/backlog – DRCOG 2050 MetroVision Plan
 - Every new public bus an EV (finance the difference, pay back in fuel and maintenance savings)
 - Plan and build out a full network of protected bike & walkways for all. Denver estimates around 1 million/mile for high comfort bikeways or protected bikes lanes. For a network of 400-600 miles that's \$400-\$600M. 20 cities from CO would be about 10Billion. Cost of a bike network for a city is around \$60million (2008 estimate) [https://activelivingresearch.org/sites/activelivingresearch.org/files/Dill Bicycle Facility Cost June2013.pdf](https://activelivingresearch.org/sites/activelivingresearch.org/files/Dill_Bicycle_Facility_Cost_June2013.pdf)
- **Closing and remediating orphaned and abandoned wellheads** - \$1.7 billion immediately for already identified orphan wells. 70,000 wells are in some state of abandonment. Let's assume CO has to plug 40,000 of those. Others might be closed by industry or developers as

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many as in the track of housing expansion? At a quarter million a piece, closure of 40K wells is \$7 billion. Note: there are 124K abandoned and active wells and research shows all wells tend to leak over 30 years.

- **Offer student loans at 1.25% interest**, like the Bank of North Dakota, and refinancing to such rates. There are **\$26 billion in student loans in Colorado**.
- **Agriculture – full funding or low interest loans (as above) for family farms implementing improvements to build soils, add PV, etc.** Some farmers who have tried to access funds through FSA with their lower rates but they didn't qualify for the lending through them because they could actually get a loan from a commercial bank where the rate would be more in the 6% or higher range.
- **Lending to small businesses, farms, and ranches for PV, soil health improvements, and more** – half of lending from Bank of North Dakota (1-2% interest generally, offered through local banks) is to small businesses.
- **Pay off homes for fossil fuel workers/transporters. Finance new businesses, just transition, and enable community ownership of PV, wind, and storage to produce a long-term replacement income stream for communities** like Craig and Pueblo. A **Colorado Energy Authority** could identify what generation, transmission, and distribution investments are most profitable, clean, effective and financially beneficial for Coloradans.
- **Save interest on state Certificates of Participation** (borrowing and what is owed in the future). This is another area that generates a return on investment so is good for public bank financing. Buy the COPs from the current investor, pay half back to the state, the rest to the state's bank, providing a long-term source of income for the state vs. a one-time shot in the arm like the stimulus.

Investments may be divided into two lists - those with potential returns and thus eligible for a loan, say at 1-3% interest from a public bank. Public banks (all banks) can tap funding near zero percent, actually 0.25%, from the Federal Reserve lending window. Loans are made from existing community banks but financing is provided through the state public bank; e.g., Bank of North Dakota. The latter gives half of its loans to small businesses in-state, student loans are available at 1.25% interest. Compare this to private sector banks, which barely loan to small businesses any more or Xcel, which will make investments at 7-10% interest (they tried to have a nearly 11% rate of return approved last year).

Policies for a just transition are detailed in [Appendix B of policy suggestions](#) in our letter from 67 organizations, plus Colorado businesses and clergy at bit.ly/COCoalitionLetter, as below.

Policy Recommendations Submitted Earlier

There are multiple approaches to reach the reductions in Colorado statute for 2025 and 2030. Most traditionally and reliably, there can (or should) be **actual limits on emissions from particular sources**. At the end of the day, this is thought to be the only guarantee that reductions will occur. These have been implemented elsewhere both or either: 1) sector by sector or source by source, such that the total amount of pollution allowed is regulated and declines over time, and/or 2) overall multi-sector limits. While our coalition is unified in calling for and counting reliable, enforceable limits that will actually achieve the reductions (get the job done), we agree that the AQCC should be able to consider a wide array of alternatives that have likely ability to get the job done in time and are considered “best practice” in various quarters.

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Utilities/Electricity.

The easiest, most straight-forward and reliable progress will be made on the electricity supply until it exceeds 80-90% carbon free **before** 2030 -- 2025 even, targeting 75% by 2025 statewide. It is possible to get to 80% renewable in 5 years, cost-effectively as Xcel's own bids and community bids or requests for indicative pricing have shown over recent years. Although electricity is only 1/3 of CO2 emissions, we should do this ASAP since it supports clean up of other steps too and is cost-effective at present, leaving less CO2 to clean up later.

- **Phase out remaining coal plants by 2025 to reduce GHGe** by ~ 13 MMT This is the single most cost effective large piece the AQCC might implement. Virginia is now requiring coal phase out by 2024.
- **Non-wires alternatives should be considered as true alternatives (and has been repeatedly ignored by the utilities).** The transmission plan is a joint plan from Xcel, Black Hills and Tri-State. The 10 year plan lacks a big picture view of how to accommodate 80% by 2030, much less by 2025. The next ERP must have this because bidders must have some clue about points of interconnection with the electric system.
- **Require all Investor Owned Utilities to assess their current assets** in relation to
 - **Social cost of carbon** and immediately retire what is unprofitable.
 - **Social cost of methane as well.** Given the importance of lowering methane emissions, the social cost is much higher cost than its GHG equivalent.
- **Allow/promote local ownership/prevention of \$500M - \$1Billion/year outflow of residents' dollars** that could otherwise be reinvested for the energy transition, community redevelopment and lower costs for communities, individuals and businesses.
 - Community Choice Energy is a potential first step to allow now.
 - Allow communities to buy back infrastructure (poles/wires) at depreciated value.
- **Maximize wind and PV in resource plans.** Value commercial and residential PV on distribution and feeder lines for function of avoiding upgrades and improving resiliency. Through better rate / tariff design, remove disincentives and incorporate incentives for DG and non-wire alternatives allowing natural market forces to increase DGRs. For example: provide non-demand based tariffs for commercial customers who invest in minimum 50% on-site load offset and / or minimum 2 EV charging stations per 20,000 sq/ft of building space.
- **Audit existing efficiency standards. Upgrade to CA standards when there is a gap.**
- **Storage - Use batteries strategically to integrate the PV and wind and maintain grid reliability.** [Bloomberg](#) and [Utility Dive](#) reported last December that battery prices have fallen nearly 50% in 3 years and almost 90% since 2010, and they continue to decline at a fast pace.
 - **Incentivize distributed batteries to optimize** distribution and feeder upgrades.
 - **Sell surplus renewables to existing customers for cheap to charge EV batteries, heat water. Synchronize power use with renewables availability in real time by using dynamic pricing based on renewables forecasting** (i.e., Time of Use/Renewables rates -- time when either wind or solar are plentiful).
 - **Maximize rates/use of renewables in harmony with batteries** to have the highest demand flexibility at the lowest cost.

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- **Demand shifting could be considered to be interchangeable with batteries at a lower cost—especially in the short term** as batteries and other storage options scale up and the prices come down.
- **Where possible, implement this with smart appliances that require almost no customer interaction after setup** – grid responsive chargers, thermostats, and hot water heaters. These are all available now. Reward owners fairly for their contribution to synchronizing power use.
- **Charging infrastructure should be designed to support the renewables grid rather than fighting it.** Charge with renewables whenever possible
 - **Integrate industrial processes with the electrical grid to decarbonize both at a cost less than each alone.** For example, use cold storage and heat storage processes within industrial applications to support the flexible grid by timing the energy use whenever possible.
- **Facilitate critical transmission links to support renewables. Investigate the costs and benefits of joining regional transmission organizations.**
- **Investigate the advantages and costs of joining Energy Imbalance Markets.** Model EIMs now verify they will provide the maximum benefit for using inevitable renewables surplus when all neighboring utilities are at high levels of renewables (e.g., 2030). Offer the surplus for cheap for EV charging by residents/voters first, then to other utilities through an energy imbalance market. Enable interface with heating, hot water.
- **Maximize competitive bidding for generation, transmission, storage, demand-response, and efficiency initiatives within the resource planning process to determine and minimize costs in a way that trades off between all of these to result in lowest cost.**

Oil & Gas Extraction

Methane is a prominent greenhouse gas, responsible for about 20% of all atmospheric radiative forcing. Research from NASA, Cornell and Harvard show that the worrying global spike in methane over the last decade is largely from a rise in one country and one industry -- US fracking. Further, the industry admits that nearly all wells leak over a period of 30 years, and a substantial number leak immediately (Schlumberger). Meanwhile, financial assurances from the industry are lacking, increasing the state's liabilities fiscally in addition to our air, land, and climate. Common sense tells us that the only way to reduce emissions is to stop adding to them through further permitting. Colorado must properly study and assess the full impact of the industry and begin to transition away from oil and gas, in order to both reduce VOC emissions statewide and address the full climate footprint of this state, especially since the presence in the atmosphere has increased greatly since the advent of fracking over a decade ago. As our planet continues to warm due to radiative forcing caused by greenhouse gases, understanding, monitoring, and reducing these emissions are increasingly important. Diminishing methane emissions is one of the most important opportunities and responsibilities before us, as methane produces immediate and out-sized positive effects. Identifying emission sources and quantifying emission rates can improve regional greenhouse gas budgets and mitigation strategies.

Avoiding adding any more emissions to Colorado air and water (or this unreasonable use of our water) is an immediate, rational and cost-effective path forward.

- **Requirement for future rules to have full coverage/bonding (\$200-300K) for continued operation of wells.** 2017 estimates for plugging and abandonment costs of

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non-horizontal wells were around \$82,000 per well. This range appears to be best to provide coverage for Coloradans and Colorado budgets for what the state has now.

- **Eliminate blanket bonding for all operators.** Adequate financial assurances are essential for clean-up and closure over the lifetime of the well-head concrete
- Ingraffea's research shows **5% of wells have methane gas leaks immediately** from failed casing, with the methane migrating up along the well annulus. See <https://www.psehealthyenergy.org/wp-content/uploads/2014/03/The-Science-of-Shale-Gas-March-2014.pdf>. **Nearly all casings fail within 30 years.**
- For operators in immediate financial stress, eliminate their existing blanket bonds to require full \$100,000 per well under current rules (which can be done under existing rules in North Dakota – CO needs to end blanket bonding immediately due to precipitous increase in industry bankruptcy rates).
- **Use of a 20 year timeframe to assess the global warming potential for CO₂e, per IPCC's 5th Assessment.** This factor of 86 times that of CO₂ must be used to calculate 1261 goals of 26% reduction in GHGs by 2025 based on the actual emission inventory to be obtained by the state using aerial and satellite data and NOT by 2005 baseline emission data alone.
- **Implementation of a [social cost of methane](#), different from CO₂.** Under Obama, EPA set the social price of methane at \$1400 per ton for the year 2020 based on \$50/ton CO₂ times the 25-28 GWP over 100 years, which would be more than double that under most recent scientific guidance (86x). <https://www.scientificamerican.com/article/epa-revises-the-social-cost-of-a-potent-greenhouse-gas/>
- **Begin top-down assessment of methane leaks NOW. Find the small number of wells, those super emitters,** causing most of the - methane fugitive emissions. More accurately estimate pollution overall through...
- **Implementation continuous on-the-ground monitoring by operators requiring a new rule based on instruments that have been peer reviewed as valid + robust aerial and satellite monitoring by CDPHE to spot and stop super emitters, financed by an industry fee.**
- **Raise and enforce fines** - 100x fines could be justified by the social cost of methane
- **No further fracking permits should be issued** while the state is still not meeting its 2025 and 2030 GHG reduction targets. New York, Vermont and Maryland have already banned fracking for health reasons <https://www.realnatural.org/three-states-ban-fracking/>
- **For/in coordination with COGCC, the COGCC should:**
 - Implement a statewide, uniformly applied, minimum setback of 2500-feet from homes, schools, and other occupied buildings, as well as public lands, vulnerable areas and water sources, in siting of gas wells (Section A, Rule 604).
 - Phase out permitting for Colorado to meet IPCC goals.
 - Create science-based rules that take into full account the cumulative health and environmental impacts of oil and gas development in order to adequately meet SB19-181's mandate "to protect against adverse impacts to public health, safety, and welfare, the environment, and wildlife resources" and must meet SB19-181's mandate to "protect against adverse environmental impacts on any air, water, soil, or biological resource resulting from oil and gas operations" [C.R.S. 34-60-106(2.5)(a)].

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- Perform/require continuous monitoring at all oil and gas sites, as called for in SB19-181, and this data must be made available to the public online in real-time.
- Adopt the most protective standards for emissions and put into place public warning systems and penalties against polluters when there has been a violation of public health standards and regulations.
- Provide Sovereign Tribal Governments and other Disproportionately Impacted Communities with at least as much deference as Local & Proximate Governments.
- Require Oil and Gas Operators to provide adequate financial assurances to remediate past and future impacts on public health, safety, welfare, the environment, and wildlife resources. The oil and gas industry must pay for environmental and health externalities.
- Assess the financial standing of companies prior to permitting, introduce appropriate bonding of \$270,000 per well, and hold Operators liable should their transferees and/or subsidiaries file for bankruptcy or otherwise fail to fulfill its obligations to the Commission.
- Not allow operators to escape liability through corporate mergers, transfers, corporate veils or bankruptcy - ensure that Parent Corporations and Shareholders of closely held corporations are held liable should transferees not fulfill their responsibilities to the Commission.

Transportation

- **Electrify transportation**
 - **Announce that a phase out date for registration of NEW combustion vehicles** is likely to be needed, at least in some areas of Colorado. Further total gas and diesel costs to consumers are over \$6.5 billion per year in CO (including vehicles, commercial, residential). **Electricity would cost \$2.5 billion to do all these miles. So savings are \$4 billion per year.**
 - **Support/enable widespread and low income purchase of EVs.** State and public receive cleaner air and lower climate risk, less family/job disruption through vehicle repairs and unexpected costs. Invest in savings, reasonable expectation of a half a million miles out of a new Tesla. Depreciation, maintenance costs, and fuel costs are all way lower. Ideally increase registration or annual fees by weight/space/pollution of vehicles.
 - **Home-based charging and storage.** Over 90% of charging is at home and wires to buildings already exist.
 - **Support/require installation of chargers at apartments and in new construction**
 - **TOU - Charge EVs** - big batteries, durable/lasts for weeks, practical. Fill up in surplus, leave almost 100 mile range all the time. Dominion/e-school bus investment to use batteries for grid balancing at the peak.
 - **Get ready for in-state flights and flight training** on eFlyers manufactured in Colorado.
 - **Support establishment of low/no emissions zones**, including cutting delivery vehicle pollution in urban areas.
- **Invest in transit and make it free.** Drivers have indicated again and again they are willing to subsidize getting others off the road and out of their/our way.

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- **Invest in safe/separated bike, walking infrastructure** (reallocated space and \$\$).

Buildings. The AQCC should regulate pollution from gas appliances, both indoor and outdoor.

- **Building Standards**
 - **Study CA standards for new construction and implement best practices** for low-energy-use buildings.
 - Incorporate consideration of building and window orientation to take advantage of passive solar heating and cooling.
 - Educate tree-planting programs about the impact of shading on solar building design or solar generation devices.
 - **Require all new residential and light commercial buildings to be built to DOE Zero Energy Home requirements and without natural gas.** (<https://www.energy.gov/eere/buildings/doe-zero-energy-ready-home-partner-central>) and without natural gas.
 - Heat pumps are less costly than conventional furnaces and AC because the builder doesn't need to install ductwork. If the residence is all electric (e.g. heat pump water heater & electric oven/induction cooktop), the home saves about \$1,500 for installation of the gas line. The fixed portion of the gas bill has been estimated at \$2,080 by SWEEP and Xcel is seeking a 16% rate increase in natural gas. Building construction savings come to ~\$20,000 on a standard 8-plex townhouse
 - Home health and safety reasons for shifts - 10% of home fires start on gas cooktops/stoves and pollution levels, asthma rates, and medical costs are significantly higher.
 - Shifting new buildings off natural gas soon is important to get some people moved, to train the trades, the businesses, get people used to the idea. Existing buildings will be one of the biggest challenges as it is labor intensive and costly. Funding will be needed.
 - **Retrofit standards**
 - **Study European building retrofit standards and adopt** when it makes sense.
 - **Convene an expert panel to oversee the practical and cost-effective retrofit electrification of existing buildings.** Most of the buildings in 2030 and 2040 most likely already exist. Panel to include significant real-world building trade experience.
 - **New appliances should be electric and incentivized**/additional costs covered, again, potentially with the support of a public bank/low interest loans.
- **The State should evaluate how to decarbonize buildings.** This needs to be more specific to emissions from buildings, as California has done with AB 3232.
 - **The PUC should evaluate what regulatory changes are needed.** Because the PUC regulates gas utilities there is a lot tied up in the gas business model that can help or hinder progress in decarbonizing buildings. A good place to start is a deeper investigation of this. See example from RI: www.ri.gov/press/view/36269
 - **Investigate market development initiatives and incentives** (similar to CA, SB 1477 and what various efforts in New York and New England have already been doing for several years). Build incentives, perhaps combined with workforce training or other initiatives, to start to build the market for heat pumps.

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- **Offer state tax rebates to offset the incremental cost of a high-efficiency cold-climate heat pump over the cost of a conventional gas furnace**, so that the first cost of the heat pump is not a disincentive to the consumer. This would be similar to the existing EV credits, but not as large. According to SWEEP, the incremental cost for a typical home is on the order of \$700.
- **Allow or require electric utilities to offer discounted electric space heating rates to offset increased operating costs of heat pumps.** Heat pumps are far more efficient than gas furnaces, but even so, gas is cheaper than electricity on a per-Btu basis; for the representative existing home that SWEEP modeled, the annual heating cost was about \$880 with a heat pump, vs. \$425 for a gas furnace. Modeling conducted by Vibrant Clean Energy showed that electrification is generally good for all ratepayers, because increased electricity consumption spreads fixed costs for the electric system over more kWh, bringing rates down. It is to everyone's financial benefit (let alone health and environmental benefit) to encourage electrification, so the idea here is to require substantially lower electric rates to consumers who heat with electricity (approximately in half to bring parity with low gas prices). Lower electric rates would also encourage adoption of EVs.
- **Have the state, or possibly the local gas distribution utility, offer long-term, very low-cost financing for anyone who wants to convert their existing gas heating system to a heat pump system, and allow for repayment of the loan in the gas or electric bill.** This would further lower the barriers to making the switch and prime the market for heat pump conversions, eventually leading to market transformation: making heat pumps the preferred option (as they are in other parts of the country), reducing their installed cost by increasing production and distribution volumes and growing the ranks of experienced HVAC installers so that installation costs decline. There are existing market transformation programs currently in the Northeast and Northwest that could be used as a model.
- See draft list of user-selectable alternative technologies on the [NEAT webpage](#).

Agriculture

Farmers investments in carbon and methane sequestration, soil and runoff improvement, renewables and storage could also be supported by a public bank.

Many farmers realize that not only our Colorado climate but all of the progress we've achieved through the millennia is at risk with heating, drought, and climate change: the food security and economic progress that have been achieved, public health and life expectancy, and expanding peace. The changes we are seeing threaten to dramatically reverse, not merely stall these advancements as our human systems struggle to deal with a radically changing climate. American farmers can do much. American farmers have advanced agricultural systems and public policy support as well as leading agricultural research institutions. What's needed now is to make it profitable for farmers to help solve the climate crisis, for funding to be made available, via no cost loans through a public bank or through direct public financing, for farmers to lead and innovate so they can develop the agricultural systems that will reduce emissions, capture carbon, and help stabilize the climate, to improve the economics of our farms and rural communities and heal the environment at the same time. Transitioning into the Green Revolution didn't require farmers to tear down their farms and start over. It was a natural evolution where farmers made annual investments and innovated on their own farms. Five practice areas of innovation farmers will use, include 1) **Conservation tillage**—no till is an example,, 2) **Permaculture**—cover crops and woody vegetation are two examples of keeping roots in the ground all year, 3) **Extending crop**

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rotations—expanding crops on a whole farm basis drawing on 10,000 years of genetics rather than relying on only a narrowing set of crops, and 4) **Generating energy**— on the farm solar, wind, and methane digesters. 5) Adding Compost to soil as a soil amendment--applying compost to agricultural and rangeland soils can greatly increase carbon sequestration.

Materials Management

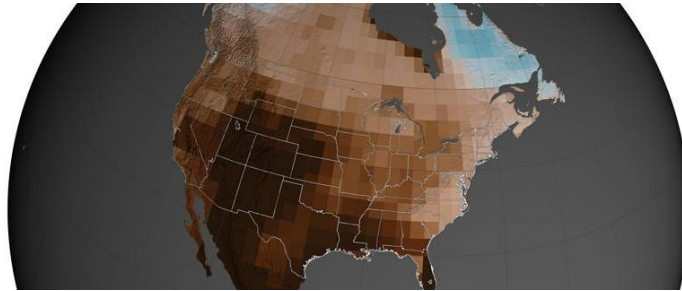
Colorado is one of the worst states when it comes to recycling, diverting only 17% of our waste from landfills compared to the national average of 35%.

1. Coordinate with the Colorado Department of Public Health and the Environment (CDPHE) to implement the state materials management plan and establish greater collaboration with the Colorado Climate Plan.
2. Include consumption emissions (the total emissions for a product, including its production and consumption) in future greenhouse gas inventories. The City of Boulder recently estimated that its consumption-based emissions were larger than all its current in-boundary emissions (including transportation and electricity), highlighting that how residents and businesses consume and manage their materials offers tremendous potential to reduce the city's climate impacts.
3. Dedicate staff at the state level to work on initiating and enhancing recycling, waste reduction, and waste diversion in all state-owned and state-operated buildings and agencies (in support of #4 below), developing markets for sustainable materials management, implementing a state materials management plan, and providing technical assistance to local communities.
4. Lead by example in state government by strengthening and enforcing the Green Purchasing Order, by recycling and composting in all state agency facilities, and by expanding state agency efforts to reduce food waste. Ensure these activities are acknowledged and supported by the state's Greening Government Leadership Council. Share these efforts with local government partners.
5. Seek avenues for state funding that support innovation in the waste sector, provide expanded waste diversion infrastructure to both rural and urban communities, and provide incentives for markets for recycled materials (e.g. tax breaks for siting a facility to make corrugated cardboard into new paper). Ensure materials recovery programs are eligible for funding sources focused on greenhouse gas reduction.
6. Implement policies that reduce organics such as yard-trimmings and food waste going in the landfill, which then become a source of methane, a potent greenhouse gas. Prioritize policies that keep organic materials out of the landfill over mitigation programs such as landfill gas recovery systems.
7. Support market development of compost use, including Colorado Department of Transportation purchasing for finishing road re
8. Quantify and include the greenhouse gas savings from waste reduction, recycling and composting in any plan updates or annual reports to highlight work already in progress.
9. Use the 20-year GWP of methane. Roughly 40% of Colorado's waste is organic materials that contribute to methane emissions.

In conclusion, we want to reiterate our gratitude for your commitment and service around this most important of matters. We have barely discussed land, in the above, but we note that **the land unifies all of us in Colorado. We all care about the land, our state, and our future**. Some of our ancestors have cared for this land and known it as part of our family for millennia. Many others have been drawn to our beautiful state more recently and value it. From farming or ranching families, living close to the land and across the political spectrum, many of us are wondering how it will support the next generation amidst “one of the deepest ‘mega droughts’ in the region in more than 1,200 years,” recently [published in the journal Science](#), and a [third to a half attributable to climate change](#). For over 5 years we have all known about the extreme threats

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to Colorado (see NASA's 2013 and [2015 research](#), image below), which said we were and are on track for a 30+ year Dustbowl style drought this century, stretching from Kansas to California's Central Valley. Any delaying action unconscionably risks our land, future, and people of Colorado, not just for us, our children and grandchildren, but [irreversibly](#), according to other Colorado-led research. We must rise to the occasion and challenge as those who came before us, and now you!



Colorado Businesses for a Livable Climate

Call to Action Colorado

Together Colorado

League of Women Voters - Colorado

Moms Clean Air Force - Colorado

Colorado Latino Forum

Weld Air and Water

Colorado Immigrant Rights Coalition (CIRC)

International Indigenous Youth Council - Colorado

Unite North Metro Denver

GreenLatinos

CDP Energy & Environment Initiative

JeffCO NAACP Lifetime Members

Parents for the Planet

CatholicNetwork

Estes Valley Clean Energy Coalition (EVCEC)

Ethics and Ecological Economics (EEE) Forum

Rocky Mountain Peace and Justice Center

North Range Concerned Citizens

Broomfield Health and Safety First

Climate Reality Project - Denver-Boulder Chapter

Northern Colorado Community Rights Network (NOCOCRN)

Fort Collins Sustainability Group

Ekar Farms

Larimer Alliance for Health, Safety and Environment

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The Land, Methodist Church
Colorado Coalition for a Livable Climate
The Lookout Alliance
Be The Change
Community for Sustainable Energy
EcoJustice Ministries
Loretto Earth Network
EnergyShouldBe.org
Renewables Now Loveland
350 Colorado
350 Colorado Springs
350 JeffCO
350 Denver
350 Northern Colorado
Wall of Women Colorado
Wild Earth Guardians
Resilient Denver
Wind & Solar Denver
Adams County Communities for Drilling Accountability NOW
Denver Catholic Worker
What the Frack?!! Arapahoe
The Wilderness Society
Center for Biological Diversity
Solar United Neighborhoods
Green Task Force, Jefferson Unitarian Church
Creation Care Ministry of Most Precious Blood Church - Denver
St. Ignatius Loyola Church - Care for Our Common Home team
System Change Not Climate Change - Colorado
Clean Energy Action
Sunrise Boulder
Sunrise Denver
Sunrise Fairview
Eco-Cycle, Inc.
Healthy Air & Water Colorado
The Climate Mobilization Colorado
Spirit of the Sun - Indigenous Youth
GreenFaith
Climate Hawks Vote

Build Back Stronger: Investments Accomplishing More for Coloradans

Climate Reality Denver/Boulder Chapter
Spirit of the Sun at CHUN
Defiende Nuestra Tierra
Wilderness Workshop
ActivateCO (across justice movements)
Clean Energy Lakewood

Businesses:

Gosar Investigations
R+B DESIGN Architecture
Venner Consulting, Inc.
Dr. Shirley Smithson: Just Imagine LLC!!
Better Things Shared
The Mind's Eye
Mercury Cafe
Wilwerding Consulting
EnergyLogic, Inc.
Sustainable Hiker, LLC
Bondadosa, LLC
Hugelrado Farms, LLC
Book See Financial Group, LLC
Capitol Solar Energy, LLC (Harvesting Sunlight since 1982)

Ministers/Rabbis/Imams/other Faith Leaders from the Colorado faith community:

[REDACTED]

1 **No Safe Level: A Review of Critical Air Pollution Health Effects Research from the Last**
2 **Decade and Government Responsibilities**

3
4
5 [REDACTED]
6 Chair, TRB AHD10-1 Environmental Management & Decarbonization
7 (former CDOT & DRCOG staff, and Littleton City Planning Commissioner)
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14 Denver, Colorado

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16
17 [REDACTED]
18 Psychiatrist
19 Former Veterans Administration COS
20 Colorado Springs, Colorado

21 [REDACTED]
22
23 [REDACTED]
24 Traffic Engineer
25 City of Kalamazoo,
26 Kalamazoo, Michigan 49001

27 [REDACTED]
28
29 Word Count: 7481 words (no tables)

30
31
32 *Submitted August 1, 2021*
33



1 **ABSTRACT**

2
3 In the 90s and 2000s transportation agencies wrestled with going beyond mere compliance to
4 environmental stewardship, delivering a “better than before” environment. Such thinking is needed now
5 relative to air quality, given the huge advances and discoveries this past decade, about the much more
6 extensive harms occurring from air pollution. Many agency staff are not aware of this avalanche of
7 research findings, expanding the known health effects from fossil fuel vehicle emissions far beyond the
8 diseases and health indicators known for decades (strokes, cardiac events, lung disease, asthma, and
9 emergency room visits) to a wide span of diseases where air pollution has been found to cause
10 inflammation, physical changes to organs, disease, and marked erosion in well-being and mental health.
11 This paper reviews that literature for transportation agencies so it may be included in investment decision-
12 making henceforth, beyond NAAQS and conformity. The paper outlines government responsibilities as
13 described by the Centers for Disease Control, in the New England Journal of Medicine. Executive Orders
14 and policies encompass the disproportionate air pollution health impacts resulting from transportation
15 investments. USDOT’s Executive Order on Advancing Racial Equity acknowledges that misguided
16 policies and missed opportunities can reinforce racial, ethnic, geographic, and disability disparities. This
17 inequity, these harms, and the urgent dangers of existing health and climate situations require substantial
18 change on a short timeframe, to protect health and life and avoid further harm. Agencies can do better.
19 Investments this decade can be refocused to dramatically reduce pollution, improve outcomes, and make
20 up for past harms.

21 (250 words)

22 **Keywords:** air, pollution, reduction, fossil fuel, health, research, disproportionate impacts, climate, race,
23 NAAQS, conformity, equity, Title VI, decarbonization, planning, VMT, NOx, particulate matter, PM,
24 ozone, government, roles, responsibilities

25



1 **INTRODUCTION: Well-proven, deadly, long known impacts of vehicle emissions**

2 A huge number of early deaths in the US, over 360,000 deaths per year, are from particulate matter
3 inhalation from fossil fuel combustion.(1) Researchers have found that vehicle emissions are the biggest
4 contributor.(2) The science of air pollution health impacts is more settled than that of climate change, on
5 which there is scientific consensus.(3) Air pollution from fossil fuel is the world’s largest single
6 environmental health risk and a major contributor to inequity.(4)

7 Air pollution health effects have been known for decades. Cost benefit analysis for most of this time has
8 centered around strokes, cardio, lung disease, asthma, and emergency room admissions.(5) In testimony
9 before Congress last year, NAS researcher Drew Shindell discussed the health and economic benefits of
10 getting on a 2°C policy path over the next 50 years in the US. Doing so would:

11 **prevent roughly 4.5 million premature deaths in the US, 3.5 million hospitalizations and**
12 **emergency room visits, and 300 million lost workdays in the US. The avoided deaths are valued**
13 **at more than \$37 trillion.**

14 **This amounts to over \$700 billion *each year* in benefits to the US from improved health and**
15 **labor alone**, far more than the energy transition would cost.

16 **In the next 20 years, roughly 1.4 million lives can be saved from improved air quality by**
17 **making the energy transition in time to hit a path that keeps heating under 2°C. Air pollution**
18 **responds immediately to emissions reductions** and produces rapid health improvements.(6)

19 In the past decade, scientists have uncovered causal links with a whole new set of diseases where
20 inflammation from air pollution from motor vehicles is a factor, including dementia, diabetes, organ
21 cancers and inflammation, autism, cognition, development and learning, mental health and more.

22 **NO SAFE LEVEL**

23 Medical researchers have detected harm from fossil fuels and combustion emissions far below USEPA
24 “safe” levels (more at <http://bit.ly/AQheadlines>):

- 25 • Joel Schwarz of Harvard notes that “Particulate air pollution is like lead pollution, **there is no**
26 **evidence of a safe threshold even at levels far below current standards, including in rural**
27 **areas.**” This research team found harmful effects from PM2.5 in areas where concentrations were
28 less than a third of the current standard set by USEPA and that both short- and longterm
29 PM2.5 exposure resulted in higher death rates, even when restricted to zip codes and times with
30 annual exposures well below EPA standards.
- 31 • Yuming Guo, from Monash School of Public Health and Preventive Medicine notes, “The serious
32 health effects of air pollution are well-documented...there is **no safe level of exposure.**”(7)
- 33 • Leo Stockfelt, Univ. of Gothenburg, Sweden: “**we do not see any signs of a safe level, but**
34 **rather that improvements are beneficial at all levels.**”(8)

35 Small exposures have big effects:

- 36 • **Pollutants and risks spread further than previously thought**; even a miniscule increase in
37 small air pollution particles causes overall increase in death from all causes and in heart and
38 respiratory diseases.(9) **Risks increase sharply as traffic increases.**(10)
- 39 • **Just 1-year exposure to polluted air led to 7.5% increase in mortality** for each increment of
40 10µg/m3 increase in PM2.5.(11)
- 41 • **A mere 2-day exposure led to >2% rise in mortality per 10 µg/m3 increase in PM2.5**
42 **concentration.**(12)

- **Exposure to air pollution 30 years ago is associated with increased risk of death.**(13) Every additional 10µg/m³ of exposure to air pollution 30 years prior increased mortality risk by 2% (vs. 24% increase in risk for exposure the previous year).(14)
- **An increase in PM10 particles of 10µg/m³ cuts life expectancy by 9-11 years, among those dying prematurely from the exposure.**(15)

Eliminating a harmful pollutant can lead to enormous improvements in quality of life, higher IQ, and total lifetime earnings. For example, lead phase-out made a giant difference in lives. For each 2-year-old the estimated economic benefit for *each year's cohort of 3.8 million 2-year-old children* ranges from \$110 billion to \$319 billion for lead reductions.(16) In addition to effects on physical health, life, and well-being, air pollution has been found even to have an association with crime and violence, after excluding other factors that may also affect crime,(17)(18) and in one study showing a much higher effect than finishing high school.(19)

Whether it is the health effects, the trauma and its extent, economic contributions, or climate risks, **each justifies a rapid shift off fossil fuels to the fossil free alternatives now available.** Pollution reductions in the range of 50% could be achieved in transportation this decade(20) and much more from the power sector.(21) Transport decarbonization researchers now look to transportation to achieve much faster pollution reductions than the building sector, for example, given the latter have a much slower turnover than vehicles and costly retrofits.(22)

HIGHLIGHTS FROM REVIEW OF HEALTH EFFECTS LITERATURE

Small particulate pollution is associated with smaller total cerebral brain volume even in low pollution areas and among otherwise relatively healthy adults.(23,24) Doctors see changes in brain structure(25) from such exposure, linked to poorer cognitive function, dementia and other neurological problems.(26) In addition to impairing cognitive performance, mental health problems including anxiety and depression increase with air pollution, as do suicides, autism, breast cancer, appendicitis cases, and more.(27)

Air pollution causes inflammation

Air pollution triggers the body's inflammation process as the body reacts and mobilizes white blood cells. This inflammation can then generate pain, obesity, ADD/ADHD, peripheral neuropathy, diabetes, heart disease, stroke, migraines, thyroid issues, dental issues, and cancer. In the past decade researchers have learned even more **about increased heart and cardiovascular disease associated with polluted air:**

- **Air pollution -- even at levels below regulatory standards -- accelerates the progression of atherosclerosis and can cause heart attacks:** for every 5µg/m³ higher concentration of PM2.5, or 35 parts per billion (ppb) higher concentration of NOx people had a 20% acceleration in the rate of calcium deposits. **Arrhythmias, atrial fibrillation, or acute coronary syndromes increase with levels of air pollution: 3% increase for every 10µg/m³ increase in PM10.**²⁸
- Irregular heartbeat, lung blood clots, atrial fibrillation, and pulmonary embolism are clearly linked to air pollution. For every increase in PM of 10µg/ m³ the previous year, risk of deep vein thrombosis (blood clots) increased 70%.(29)
- **Blood sugar and cholesterol levels worsen with exposure to air pollution,** raising heart disease risk.(30)
- **Exposure to fine particulate matter over a few hours or weeks can trigger irregular heartbeats, heart failure, cardiovascular deaths, and strokes.**(31)
- Difference in air quality between a city like LA and one like St. Louis MO raises a woman's risk of cardiovascular disease by 44% if she has type 2 diabetes, more in some cases.(32)



1 ● **Pollution levels are linked to narrowing of arteries, often a precursor to stroke.** PM2.5 is linked
2 to faster thickening of carotid artery and indications of **atherosclerosis among people with no**
3 **obvious symptoms of heart disease.**(33) Those in higher pollution areas near roads or city centers,
4 controlling for other factors, are twice as likely to suffer from coronary artery calcification than
5 people who live in less polluted urban and rural areas. Accumulations of coronary artery calcium
6 makes patients 6x more likely to suffer a heart attack or die from heart disease.(34) Narrowing of
7 carotid artery is also linked to problems in learning, memory, thinking and decision-making.(35)

8 **Air pollution induces oxidative stress and inflammation in organs and the circulatory system.**
9 Higher levels of leptin, an inflammatory cytokine, have been linked to increased rates of **heart disease,**
10 **obesity, and diabetes.**(36) Increased insulin resistance and altered fat tissue are linked with air
11 pollution(37), raising risk of insulin resistance (precursor to diabetes) in children.

12 **The risk of chronic inflammatory disease and asthma severity rises with exposure to traffic exhaust.**
13 Those living in higher traffic areas have markedly increased c-reactive protein, a marker of
14 inflammation.(38) Air pollution also causes organ inflammation and/or fibrosis; exposure impacts the
15 brain, liver, heart, pancreas, kidneys and more, even the appendix, causing more appendicitis
16 hospitalizations on “high ozone” days. Doctors have found that the effect of air pollution is strongest
17 during summer when people are more often outside.(39) Kidney disease levels also rise with PM2.5 and
18 PM10 levels, even at levels of air pollution much lower than typically considered unhealthy. And air
19 pollution causes liver fibrosis, which is associated with metabolic disease and advanced stage of chronic
20 liver injury (fibrosis) more usually thought to be caused by chronic hepatitis, viral infection, obesity,
21 alcoholism or autoimmune diseases. Now doctors have found that air pollution plays a significant
22 role.(40) Increased heat is exacerbating these effects too.(41)

23 *Lung development and asthma*

24 Air pollution matters more than passive smoking/inhalation of others’ smoke and affects lung
25 development, even at low levels. US researchers/doctors have commented that “the traditional approach
26 to estimating the burden of air pollution-related disease has markedly underestimated the true effect”(42)
27 on lung development, asthma and more. Now we know:(43)

- 28 ● **In utero exposure to traffic air pollution is associated with asthma** by age 6.(44)
- 29 ● **The effect from exposure to traffic pollution matters more than passive smoking**(45).
- 30 ● **Even low levels of air pollution affect a child’s lungs** (46).

31 *Cancer increases with auto exhaust*

32 **Outdoor air pollution is a leading cause of deaths from all cancers.** Cancer link with air pollution is so
33 pronounced it is now considered a Group 1 human carcinogen along with radiation, dioxins, inhaled
34 asbestos. **For every 10µg/m³ of increased exposure to PM2.5 the risk of dying from any cancer rose**
35 **by 22%.**(47) PM2.5 was associated with increased risk of mortality for all causes of cancer and for
36 specific cause of cancer in upper digestive tract, digestive accessory organs in all subjects; breast cancer
37 in females; and lung cancer in males. **With regard to digestive tract, liver, and pancreatic cancer,**
38 every additional 10µg/m³ of PM2.5 increased mortality from cancer in the upper digestive tract by 42%
39 and by 35% in other digestive organs like the liver, bile ducts, gall bladder, and pancreas.(48)

40 **Breast cancer, the second leading cause of death in women, has been linked to traffic pollution.**
41 Breast cancer risk increased by about 25% with every increase of NO2 of 5 pp billion (used as an air
42 pollution marker): women exposed to higher pollution levels were almost twice as likely to develop breast



1 cancer.⁴⁹ There is an 80% increase in risk of mortality from breast cancer with every 10µg/m³ increase in
2 exposure to PM2.5.⁵⁰

3 ***Infectious disease connection – Exhaust makes immune cells less responsive to infection***

4 Tuberculosis is the leading cause of infectious disease in world, killing 1.5 million/year and infecting 4.6
5 per million people in the US alone. Carbon monoxide from vehicle emissions triggers the
6 mycobacterium; **exposure to diesel exhaust particles makes immune cells less responsive to infection,**
7 **suppressing their function on a cellular level.**⁵¹ “We're talking about huge socio-economic and public
8 health implications,” said one of the doctors conducting the research.⁵² COVID vulnerability is worsened
9 with air pollution too.(53)

10
11 ***Fertility, maternal and child health and development***

12 Air pollution and the inflammation from it negatively affect fertility (30% reduction) and maternal and
13 child health and healthy development, and increases risk of death.(54) **Even small amounts of air**
14 **pollution cause observable, biological changes at the cellular level in pregnant women. Women**
15 **exposed to the highest levels of air pollution were twice as likely to have intrauterine inflammation(55),**
16 **which is linked to lifelong neurological and respiratory disorders for the child.(56)**

17 **Traffic-related air pollutants are also associated with pre-term births and still births.** The time
18 before conception, in early pregnancy, and during the last 6 weeks before birth are especially vulnerable
19 to inflammation, which air pollution makes worse.(57) And 4 µg/m³ increase in exposure to PM2.5 is
20 associated with 2% increased risk of stillbirth. This heightened risk also occurs with exposure to NO₂,
21 carbon monoxide, PM10 and ozone.(58)

22 **Allergens.** Early air pollution exposure raises risk of allergies, and air pollution worsens plant allergen
23 severity. Plants produce higher concentrations of allergens when exposed to traffic pollution.596061.

24 **Traffic pollution also chemically alters and worsens allergens in other ways too; ozone oxidizes an**
25 **amino acid, setting off a chain of chemical reactions, binding proteins together, making allergens**
26 **stronger.** Other auto exhaust pollutants alter polarity, binding capabilities of allergenic proteins.(62)
27 Finally, risk of developing all allergies rises with exposure to traffic pollution in first year of life.(63)

28 **Autism.** Multiple studies have found that pollution in utero or and in the early years places children at
29 risk of autism. Early exposure to small particulate matter or NO_x especially during pregnancy and a
30 child’s first year of life raises the risk.(64) NO_x exposure during the first year doubles the risk of autism
31 and the greater risk of autism based on PM2.5 exposure was found in pregnancy through the first two
32 years of life.(65). Exposure to high levels of traffic-related air pollution during first year increases autism
33 risk by 300%.(66)

34 ***Neuroinflammation and damage to cognitive function and social competence***

35 Air pollution and the neuroinflammation from it damages neural circuits, harming the brain and cognitive
36 function of children and adults.(67)

- 37 ● **Elevated levels of traffic-related air pollution lead to slower cognitive development** in children
38 **ages 7-10 years old.(68)**
- 39 ● **Elevated levels of PM2.5 are associated with smaller cerebral brain volume even in low pollution**
40 **areas and among otherwise relatively healthy adults.** A study of men and women age 50+ found that
41 every 10% (a couple microgram) increase between 4.1 and 20.7 of PM2.5 led to a .36 point **drop in**
42 **cognitive function score equivalent to 3 years of aging.** Long-term exposure can cause damage to

1 brain structures and directly and negatively affects cognitive function in older adults. Recent studies
2 observe this **even in middle-aged adults.**(69)

- 3 ● **Traffic pollution produces cognition and brain MRI alterations akin to Alzheimer's. Air**
4 **pollution is estimated to cause 21% of vascular dementia and Alzheimer's disease.**(70) Higher
5 levels of long-term exposure to PM produces significantly faster cognitive decline and physical
6 changes.(71)
- 7 ● **An increase of only 2µg per cubic meter in PM2.5 was equivalent to one year of brain aging and**
8 **a 46% greater risk of silent strokes**, with systemic inflammation being the likely cause. Silent
9 strokes **increase the risk of overt strokes and developing dementia, problems walking, and**
10 **depression.**(72)
- 11 ● When people live in areas with air pollution, their brains produce **autoantibodies similar to those**
12 **found in those of people who have neuroinflammatory diseases like multiple sclerosis**, and long-
13 term exposure to air pollution can cause inflammation and **physical changes to the hippocampus**
14 **associated with depression, memory, and learning difficulties.**(73)
- 15 ● **Brain biopsies of young urban children living in areas with high air pollution show**
16 **neurodegenerative changes, similar to Alzheimer's or Parkinson's.**(74)

17
18 **Cognition, IQ, self-regulation, and social competence.** Air pollution exposure from fossil fuel
19 combustion is associated with lower intellectual quotient (IQ), social competence, self-regulation, and
20 academic performance after controlling for other factors that could affect each.

- 21 ● **ADHD, anxiety, depression, inattention, and behavioral disorders increase with prenatal**
22 **exposure to PAHs from motor vehicles, oil and coal, combustion.** Research doctors observe
23 physical changes to the hippocampus (shorter dendrites, reduced cell complexity) with exposure to
24 traffic pollution (PM2.5), along with effects on learning, memory, and increased depression.(75)
- 25 ● Air toxics are associated with significantly lower GPAs and IQ tests at age 5.(76)
- 26 ● Prenatal exposure to PAHs raises the odds of behavior problems associated with attention deficit
27 hyperactivity disorder, or ADHD, at age 9.(77)
- 28 ● This damage to neural circuits and social competence from early exposure to vehicle pollution leads
29 lifelong effects. Children exposed to higher levels of PAHs **did not improve in self-regulatory**
30 **function as they grew.**(78)

31
32 **Psychiatric risk** for all people increases with pollution.

- 33 ● **Air pollution is associated with anxiety, the most common psychiatric disorder.**(79)
- 34 ● Prenatal exposure to airborne PAH during gestation associated with **developmental delay at age 3,**
35 **reduced verbal and full-scale IQ at age 5, and symptoms of anxiety and depression at age 7.**(80)
36 Depression is the leading cause of disability worldwide and results in major economic and life
37 impacts.(81)
- 38 ● **Psychiatric diagnosis** and medical treatment thereof correlates with air pollution concentrations: **risk**
39 **increases 9% per 10 mg/cubic meter increased concentration of nitrogen dioxide.**(82)
- 40 ● Salt Lake City residents were **more likely to commit suicide within 3 days of exposure to**
41 **increased levels of nitrogen oxide or high concentrations of fine particulate matter.**(83)
- 42 ● **Short-term air pollution exposure increased suicide risk by 25% for NOx, 5% for PM.**(84)

43
44 **Cognition impacts for otherwise healthy people, from otherwise safe pollutants.** Even safer
45 pollutants from fossil fuel combustion, like CO2, erode cognition as CO2 rises and concentrates indoors.
46 When we breathe air with high CO2 levels, blood CO2 levels rise, reducing the oxygen that reaches the



1 brain; studies show that this can increase sleepiness and anxiety, and impair cognitive function.(85)
2 Indoor CO2 levels can be 3-4x those outside (415 ppm now) and low to moderate levels of CO2 have a
3 negative impact on productivity, learning, and test scores. Studies have found cognitive scores 2x higher
4 on days with high outdoor air/ventilation(86). Occupant satisfaction drops when building CO2 is over
5 600-700 ppm. For every 10% increase in dissatisfaction with air quality, productivity performance
6 decreased by 1.1% or more and seems to be noticed more than PM.(87)
7 Even stock trading performance decreases steadily with the severity of air pollution.(88) Researchers
8 discovered that “being exposed to bad air, even for a day, affects your emotional state. It puts you in a more
9 depressed mood. It also reduces your cognitive capability. It negatively affects how you feel and how good
10 you are at thinking (and) bad moods and lower cognitive capabilities...associated with (robust 12%) lower
11 returns.”(89)

12 ***Unjust, inequitable, highly disproportionate impacts, especially on people of color***

13 Air pollution effects are disproportionate, falling most heavily on people of color (POC), non-drivers, and
14 those who drive less.(90) [Those living or walking near exhaust sources \(typically those with lower](#)
15 [incomes\) face greater exposure, morbidity, and mortality.](#)(91) 70% of the over 20 million people who live
16 in counties with failing grades for ozone, short-term and year-round particle pollution are POC.(92) Only
17 40% of whites do.

18 In addition to effects on physical health, life, and well-being, air pollution has been found even to have an
19 association with crime and violence, after excluding other factors that may also affect
20 crime,(93)(94)(95)(96) and in one study showing a much higher effect than finishing high school.

21 **RAPID, SIZABLE AIR POLLUTION REDUCTION IS KEY**

22 [Clean Air Act \(CAA\)](#) compliance through STIP conformance with National Ambient Air Quality
23 Standards (NAAQS) for [criteria air pollutants](#) is falling short.

- 24 • Evaluations and standards are set separately for pollutants, so when EPA cannot tease apart
25 confounding effects, the agency often errs on the side of saying the effect of one cannot be
26 determined with confidence.
- 27 • A further problem has been the timing and lack of updates during a critical decade of research
28 and health findings. The last one for PM was published in final form in 2012, with drafts in
29 circulation the previous two years, so research was primarily from the previous decade, but
30 virtually all of the research on air pollution health effects and attribution beyond respiratory and
31 cardio – all the other physical diseases and many mental and cognitive conditions -- has occurred
32 since 2010.⁹⁷
- 33 • Even older, inadequate standards are not being complied with. For example, Denver has been in
34 non-attainment for ozone for over a decade.(98) Meanwhile and ironically, the state is spending
35 COVID recovery dollars on highway widenings(99), as the literature confirms vehicle miles
36 traveled rise on a 1:1 level with additional lanes over 5-10 years,(100) causing more
37 pollution(101)(102) and disproportionate impacts.(103) Professionals, including Chicago’s,
38 submitted comments to USDOT noting that:

39 ***Air quality models to prove that roadway capacity projects will conform to emissions limits in***
40 ***nonattainment areas are easily gamed by tweaking inputs to continue to allow roadway***
41 ***expansion in places suffering negative air quality impacts due to transportation. Those impacts***
42 ***are felt more severely by communities that have borne the brunt of road building and already***
43 ***suffer major air quality problems and high rates of associated illnesses -- usually communities of***

1 *color. This set of regulations should be completely overhauled and made far more aggressive at*
2 *protecting human health and directing investments to those that are carbon free.(104)*

3 Greater consideration of such health factors and effective curbs to future widening investments are
4 needed. Former CDC Director Thomas Frieden notes in the *New England Journal of Medicine*:(105)
5 [Government's Role in Protecting Health and Safety](#) that government has key obligations:(106)

- 6 • **Law and public opinion recognize protection of health and safety as a core government**
7 **function**, despite opposition with financial, philosophical or legal bases.
- 8 • **Government must protect individuals from preventable harm and unhealthy environments**
9 **caused by others, often through population-wide action**, a more effective and efficient means
10 of protecting public health, as individuals cannot feasibly implement this on their own.
- 11 • **Government is sometimes the only entity capable of promoting the greater good by**
12 **reconciling social and economic interests**. Public acceptance occurs as the benefits are realized.
- 13 • **Public health agencies operate on the belief that government has a valid interest in a**
14 **healthier populace**.
- 15 • **Controversy can be reduced by providing data documenting the health burden and building**
16 **consensus about the problem and the action's efficacy**.

17 Frieden goes on to say: "Opponents of specific public health actions may believe that the health burden is
18 low, the intervention too costly or likely to be ineffective, and that the expected benefits don't warrant the
19 costs. There may also be philosophical objections, such as perceived loss of personal autonomy or the
20 belief that these actions will undermine self-reliance or individual choice. However **the benefits of**
21 **public health action include economic, health care, and productivity gains, as well as longer,**
22 **healthier lives**. Dissemination of accurate information on costs and benefits may be the best way to
23 reduce opposition and implement effective public health actions. When government fails to protect and
24 improve people's health, society suffers." For multiple reasons, not least urgent health improvement from
25 transportation emissions that have been imposed for decades, now is the chance for a "do over" to avoid
26 climate change, address injustice, improve public health, safety, and livability.

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<http://ajp.psychiatryonline.org/doi/abs/10.1176/appi.ajp.2010.09050706>

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COLORADO

Department of Transportation

Greenhouse Gas Pollution Standard For Transportation Planning

Transportation Commission - April 14, 2021



Agenda

1. Background - Colorado's Climate Legislation & GHG Goals
2. Proposed rule and policy for transportation sector
3. GHG Modeling for Transportation in Colorado
4. Next Steps



Colorado's Efforts To Address Climate Change

HB-1261

- Colorado General Assembly passed House Bill-1261 in 2019
The Climate Action Plan to Reduce Pollution
- GHG reduction targets:
 - 26% by 2025, 50% by 2030, and 90% by 2050 from 2005 levels

GHG Roadmap

- Lays out near/long term actions in every sector to meet the established targets



Regulatory Approach

CDPHE GHG Rule

Initial Draft Rule development led by CDOT & Transportation Stakeholders

Rulemaking Process led by CDPHE with CDOT involvement

Approved by the Air Quality Control Commission

CDOT GHG Policy

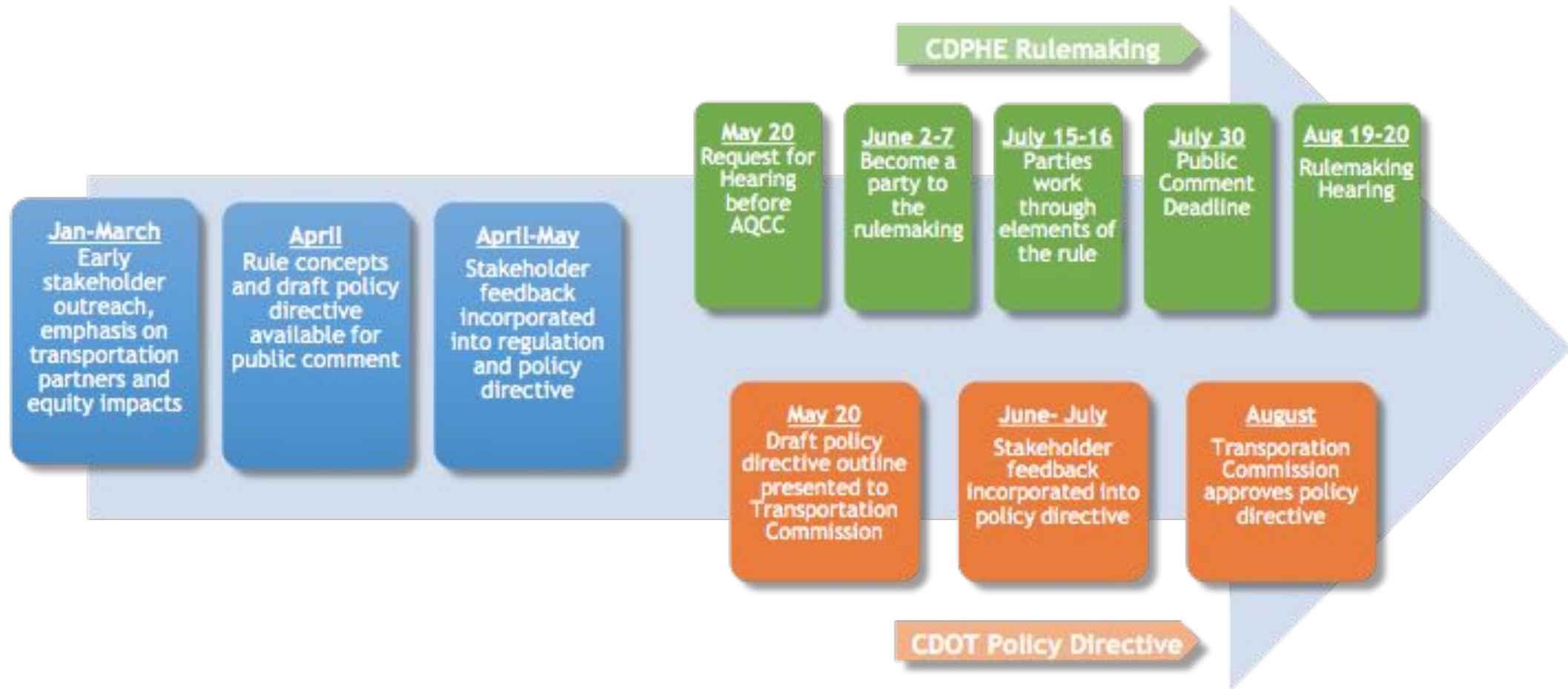
Led by CDOT

Informed by Stakeholders, Advisory Group

Approved by the Transportation Commission



Timeline: GHG Transportation Planning Rule and Policy





Incorporating Stakeholder Feedback

Over 25 Meetings Held, Over 125 Participating Stakeholders

CDOT Advisory Group

Regional - GHG Stakeholder Meetings

CDPHE/CDOT Listening Sessions

Other Smaller Stakeholder Meetings as Requested



Areas of Feedback

- Rural and regional differences
- Incentives vs. penalties/unfunded mandate (carrots vs. sticks)
- Equity considerations
- Enforcement
- MPO roles and responsibilities
- Clarification on which projects included/excluded
- How this impacts the 10 year plan and adopted regional plans
- Cost and interest in Cost Benefit Analysis
- Concern about feasibility of 2025 budget
- Importance of a bright line separating ozone conformity and this rule
- GHG reductions feasible through this rule



GHG Transportation Planning Rule

Main Elements of the Draft RULE

Statewide “budget” for future years -(e.g. 2025, 2030, 2040 & 2050)

- Budget refers to MMT CO₂e
- Includes sub-budgets for MPOs
- Phased implementation for MPOs

Inter-Agency Coordination and Roles

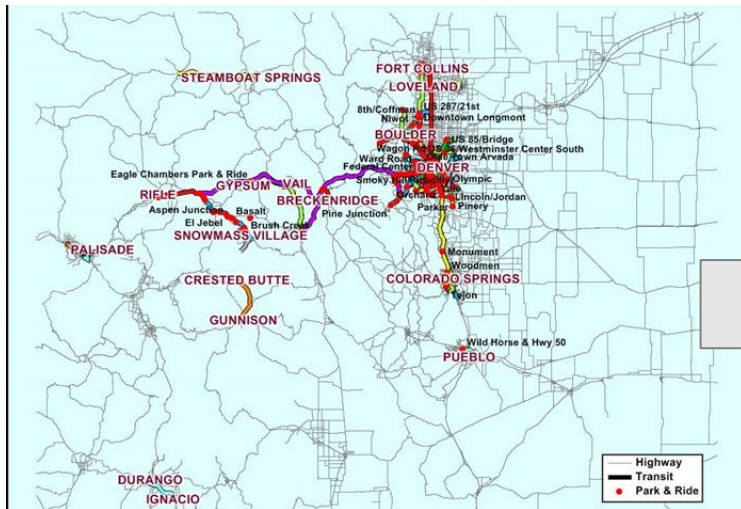
Contingency/Mitigation Measures to meet budget if needed

Transparent reporting requirements including modeling and mitigation measures



Modeled Data - Transportation Sector

CDOT TRAVEL MODEL



Outputs: VMT,
congestion/speed

CDPHE MOVES MODEL



Fleet Mix/Age & Fuel Type

TOGETHER
these models
show

TRANSPORTATION
GHG
EMISSIONS



Modeling to Determine Cost/Benefit

Energy & Emissions Reduction Policy Analysis Tool (EERPAT)

FHWA simplified tool - *Policy* → *GHG emissions*

Scenario	Measures Included
1. Travel choices	<ul style="list-style-type: none"> a. Non-worksite travel reduction/demand management, e.g., <ul style="list-style-type: none"> i. Neighborhood and school-based trip reduction programs. ii. Tele-shopping, tele-medicine, tele-school, etc. iii. Regional carpool and rideshare programs. b. Bicycle, pedestrian, and micromobility facilities, policies, and incentives.
2. Travel choices + transit	<ul style="list-style-type: none"> a. Scenario 1 measures. b. Rapid bus and rail service expansion. c. Enhanced bus frequency, reliability, and/or service hours. d. Free or reduced-fare transit.
3. Travel choices + transit + land use	<ul style="list-style-type: none"> a. Scenario 2 measures. b. Land use measures - Incentives (funding, project selection criteria) and technical support to encourage transit-supportive land use/walkable neighborhoods.



Main Elements of the Draft POLICY

Describes the GHG reduction requirements in HB19-1261 & the GHG Pollution Reduction Roadmap

Outlines the Transportation Commission's role

Includes a schedule for incorporation of GHG in transportation plans

Describes opportunities for GHG reductions in project analysis (NEPA), delivery and maintenance

Explains equity consideration of GHG reductions in areas where mitigation occurs



Rule

- CDPHE Rulemaking Process will begin with a Request for Hearing - May 20, 2021
 - Petition for Party Status
 - Formal Public Comment process

Policy Directive

- CDOT will continue meeting with the Advisory Group and stakeholders to inform the PD and mitigation measures through project delivery
- Updates to TC as policy directive is developed



Theresa Takushi

GHG Climate Action Specialist

theresa.takushi@state.co.us

303.757.9977

<https://www.codot.gov/programs/environmental/greenhouse-gas/ghg-transportation-policy-rulemaking-process>



COLORADO

Department of Transportation

Draft Greenhouse Gas Pollution Standard For Transportation Planning

Transportation Commission - June, 2021



GHG Transportation Planning Rule Concepts

- Working with CDPHE
- Meeting with Advisory Group
- Establishing the State Budget and MPO Sub budgets
 - Interagency coordination (CDOT & CDPHE)
 - Economic Impact Analysis Scenarios
 - Different ways to consider allocating sub budgets
- Incorporating feedback from 5 Regional stakeholder meetings/comment letters



Regional Stakeholder Meetings

Feedback collected at Regional Stakeholder meetings through interactive polling

Go to www.menti.com and use the code 2013 7549

Are there other reporting requirements that should be considered in the rule?

1) Total VMT and VMT per capita, statewide and for each MPO. VMT is a good surrogate for GHG emissions. 2) Housing and employment numbers, locations, density, and mobility or transit access.

Managed lanes provide good HOV encouragement and transit mobility especially when the GP lanes are congested.

Equity and health impacts

clarify the size and type of projects that this impacts. what other options have been evaluated. The public should be made aware of how this will impact them.

Description of TDM measures applied to specific projects or regionally

Conversion of General Purpose lanes

Will reporting requirements/criteria change as more vehicles become electric?

Press ENTER to pause scroll

16

Go to www.menti.com and use the code 21 23 01 3

What additional mitigation strategies should be included in the transportation planning policy?

That the adoption of EVs is converse to inequitable treatment. EVs are expensive and the fed. Tax credit is based on tax liability. That the barrier to entry for new TNC companies is high, @\$111000 for a permit. This ensures costs stay high

Clearer relationship between GHG goals that include conversion to EV and VMT and congestion reduction goals.

moving away from capacity projects, towards more multimodal; not just adding a carpool lane along with a capacity project

Alternative route improvements to reduce congestion. Travel times. Maintenance and preservation of infrastructure to keep all routes usable.

I'm not sure about additional mitigation strategies, but some of these mitigations would require a lot of money. Do you anticipate there would be funding to help with mitigation? Are our contractors

A one size fits all program won't get us there. Allowing other alternative fuel vehicles, not only EVs, to help

Press ENTER to pause scroll

13

Go to www.menti.com and use the code 21 23 01 3

Do the proposed rule concepts and approach incorporate and balance the stakeholder input?

No

Yes

4.6



Regional Stakeholder Meetings

Themes from stakeholder feedback:

Overarching comments about rule

- VMT
- Reporting clarification
- Capacity projects
- Project evaluation

Comments about mitigations

- Managed lanes
- Multimodal & transit
- Land use/ TOD
- CDOT leading in mitigation strategies
- Equity & health impacts

Regionally Specific themes

- R1: Mitigation strategies
- R2: Reporting & impacts to business
- R3: Modeling & implementation
- R4: Incentives & voluntary participation
- R5: No MPO



Framing Document Discussion

TABLE OF CONTENTS

- A. Overview
- B. Background: embracing the challenge of addressing greenhouse gas pollution at CDOT Staffing and governance
- C. Electrification and clean vehicles
- D. Expanding transportation choice and multimodal options
- E. Improving modeling and planning conventions within the department
- F. Bringing more voices into the transportation conversation
- G. GHG Pollution standards and CDOT Policy Approach
- H. Tackling outstanding questions

Tackling outstanding questions



COLORADO

Department of Transportation

THANK YOU!



COLORADO

Department of Transportation

GHG Policy Memo & Pollution Reduction Planning for Transportation

Transportation Commission Briefing - July 14, 2021



Progress Since June

Updating stakeholders on SB260 language and new approach to rulemaking.

Continued engagement on policy paper and key policy issues inherent in rule.

Upcoming rulemaking opportunity noticed on CDOT rule and GHG website with sign up link.

Coordination with TC inter-agency ad hoc committee members.



Rulemaking Notice

Rule Number	Rule Contact	Rule Title	Proposed Revisions	Deadline	Public Comments	Sign Up for Rulemaking Updates
<u>2 CCR 604-1</u>	<u>Natalie Lutz</u>	Emerging Small Business (ESB) Program	Proposed Redline <u>(PDF)</u>	December 4, 2020	<u>Written Comments</u>	
<u>2 CCR 601-22</u>	<u>Natalie Lutz</u> <u>Theresa Takushi</u>	Statewide Transportation Planning Process and Transportation Planning Regions				<u>Greenhouse Gas Pollution Reduction Planning Rulemaking Sign Up</u>

<https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>



DRAFT Rulemaking Timeline

subject to change and refinement due to TC action and rulemaking development

Authorize Rulemaking

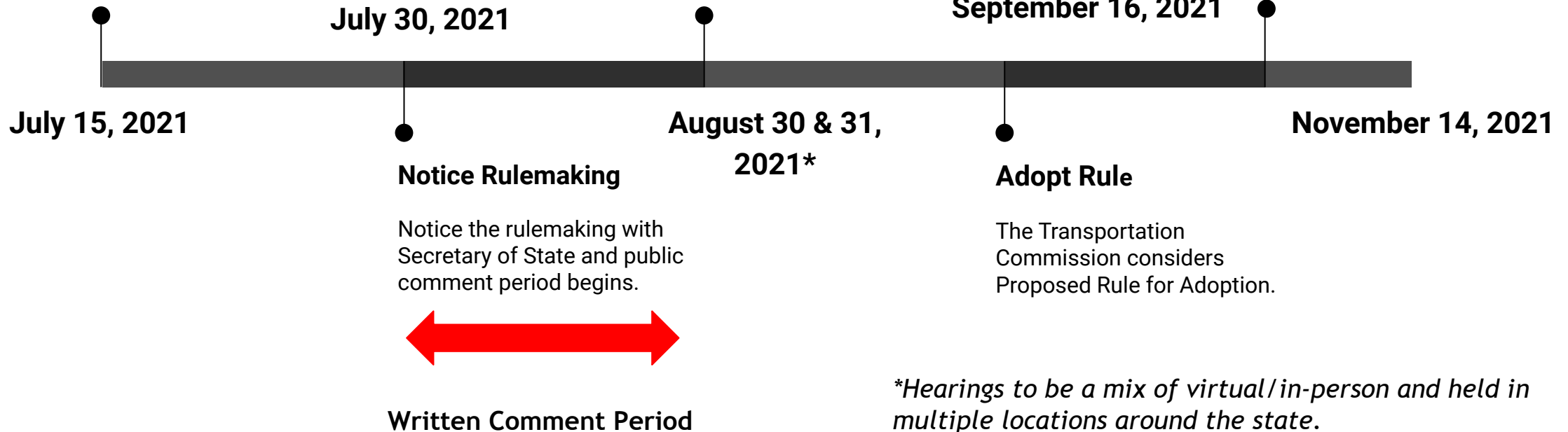
Transportation Commission authorize staff to commence rulemaking and delegates a Hearing Officer to conduct rulemaking hearing.

Rulemaking Hearing

Opportunity for Public Testimony and Submission of Written Comments

Rule Effective

Rule becomes effective.





Public Engagement in Rulemaking Process

User-friendly and Inclusive Rulemaking Process

- Party Status is not necessary- all interested parties are encouraged to fully participate in the rulemaking process
 - <https://www.codot.gov/business/rules/stakeholder-engagement-protocol-workshops>
- Multiple Opportunities for Public Comment
 - Department rulemaking often includes one or more stakeholder sessions/opportunities to review potential rules and issue so that we may consider stakeholder comments even before filing the rules
 - Submission of written comments prior to the Rulemaking Hearing
 - Oral testimony and submission of written comments at Rulemaking Hearing



CDOT GHG Policy Paper

- Explains intent of rule and key policy issues
- Builds understanding around concept and its intricacies
- Provides initial drafting for rulemaking and format to advance regulatory concepts in a more plain-english format



Key Comment Areas Based on TC and Stakeholder Feedback

- **Timeline of rule & how stakeholders can engage**
 - How equity will be addressed
- **Clarity on Language - regionally significant projects, mitigation/offset**
- **How the scenarios relate to the rule itself and the range**
 - Help establish the GHG target levels
 - For use in the cost benefit analysis
- **More clarification around vehicle miles traveled (VMT)**
- **MPO Role/relationship to CDOT/authority**



Additional Commission feedback on policy paper



Next Steps on GHG Rulemaking

Proposed resolution to commence rulemaking process.

- This step would officially begin both the timeline and process steps under the APA.

Statewide public meeting on July 22 (tentative).

Continued engagement with key stakeholder groups.



STATE OF COLORADO

Lutz - CDOT, Natalie <natalie.lutz@state.co.us>

Fwd: scheduling a meeting with you

1 message

Lisa Hicke [redacted]
To: Natalie Lutz - CDOT <natalie.lutz@state.co.us>

Wed, Aug 25, 2021 at 5:35 PM

Sending as comment.

----- Forwarded message -----

From: [redacted]
Date: Wed, Aug 25, 2021, 5:06 PM
Subject: scheduling a meeting with you
To: [redacted]
Cc: [redacted]

Dear Commissioner Hickey,

Thanks for heading up the working group addressing the Greenhouse Pollution Standard rulemaking. We met at a meeting at the Alliance Center last month with CDOT staff. We shared stories in the coffee shop about our bus journeys to the meeting.

We are hoping to schedule a meeting with you soon to discuss the Greenhouse Pollution Standard rulemaking currently before the Transportation Commission. The coalition of conservation groups working on the rulemaking, including NRDC, Conservation Colorado, CoPIRG, Southwest Energy Efficiency Project and Sierra Club, is interested the rule's potential to help meet climate goals and improve equity outcomes in our communities. We're happy to meet via Zoom or the virtual platform of your choice to learn your thoughts on the rulemaking and to share ours. We'll be a small group of leaders from District 9 and the coalition.

My colleague [redacted] and I are the leads on scheduling the meetings, so please let us know some times that might work for you.

Thank you,

[redacted signature]

[redacted] [Further Strategies](#)

Exhibit 13



August 12, 2021

RE: Transportation Greenhouse Gas Rulemaking

Dear Transportation Commissioners, Governor Polis, and CDOT Executive Director Shoshana Lew,

The Colorado Sierra Club, which has more than 100,000 members and supporters in Colorado, and the 119 undersigned Coloradan supporters write to express our gratitude for your work on the Transportation Rulemaking.

As transportation is the top source of GHG emissions in Colorado, it is important to quickly implement new rules to set clear, enforceable GHG emission reduction targets.

A strong GHG pollution standard with clear targets and enforcement mechanisms can get us closer to our emissions reduction goals as outlined by HB-1261, and to meeting the state Climate Roadmap goal of a 10% reduction in vehicle miles traveled (VMT) by 2030. To meet our climate goals, the standard must consider pollution when selecting transportation projects, and all projects should model VMT impacts.

The rulemaking must prioritize reducing VMTs, GHGs, and highway expansion by prioritizing investment in multimodal transit, electrifying vehicles, expanding public transit, and investing in bicycling and pedestrian infrastructure. Across Colorado, these shifted priorities will enable communities to have more non-polluting, reliable, and affordable transportation options, and thus to enjoy better access to healthcare, education, and employment.

These goals must be met while integrating equity into planning, processes, and outcomes.

The rulemaking must apply strong scrutiny to large transportation projects that will increase traffic and pollution already experienced by disproportionately impacted communities. All Coloradans deserve transportation options that don't pollute the places where we live, work and play.

Thank you for your consideration.

Sincerely,

[Redacted text block containing approximately 20 lines of blacked-out content]

[Redacted text block containing approximately 25 lines of blacked-out content]

[Redacted text block containing 25 lines of blacked-out content]

[Redacted text block containing 25 lines of obscured content]

[Redacted text block containing approximately 25 lines of blacked-out content]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Grand Junction Transportation

Mon, Aug 23, 2021 at 12:51 PM

[REDACTED]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

1. The bus system in Grand Junction and surrounding areas must be substantially increased before we can consider public transportation as an option.
2. Employers that already have a large population of car-pooling should be allowed credit for past behavior rather than only an "improvement" metric.

[REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

This e-mail message (including attachments, if any) is intended for the use of the individual or entity to which it is addressed and may contain information that is privileged, proprietary, confidential and exempt from disclosure. If you are not the intended recipient, you are notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender and erase this e-mail message immediately.



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Transportation Planning Standard

1 message

Mon, Aug 30, 2021 at 4:53 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

I would like to voice my support for the GHG Transportation Planning Standard code updates under consideration (RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS 2 CCR 601-22). Historically, we have spent the vast majority of transportation funding on building roads and highways, so it is no surprise that the vast majority of our population commutes to their jobs via personal automobile. The greenhouse gas emissions resulting from that system are obvious in Denver's high ozone and this summer's absurdly poor air quality (caused by fires exacerbated by GHG emissions). The natural disasters, like the Morgan Creek Fire and Hurricane Ida, that have become more common every summer for my entire life highlight the urgent need for a reprioritization of how we fund our transportation systems. Coloradans are relying on you to protect the clean mountain air that makes Colorado a great place to call home.

Thank you,

City of Centennial 2 CCR 601-22



August 31, 2021

CDOT Transportation Commission
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Dear Commissioners:

Thank you for the opportunity to provide public comments to the Transportation Commission on the proposed changes to the Rules Governing Statewide Transportation Planning Process Transportation Planning Regions, containing the Greenhouse Gas Transportation Planning Standard, proposed on August 13, 2021. We have continued to discuss this rule with Colorado Department of Transportation (CDOT) staff and appreciate the time spent explaining the proposal and discussing our suggestions. In an effort to continue that process of open collaboration, we are submitting the following comments early in the rulemaking process so we can continue those discussions while making the Transportation Commission aware of the dialogue.

Colorado Communities for Climate Action is a coalition of 39 counties and municipalities across Colorado advocating for effective state and federal climate policy. CC4CA's members span Colorado's Western Slope and Front Range; small rural towns and major suburbs; counties and municipalities; and wealthy, middle income, and low-income neighborhoods. With member populations ranging from under 1,000 to more than 500,000, CC4CA local governments represent nearly one-quarter of all Coloradans. Rural communities make up two-thirds of the membership, including more than half of the members being West Slope communities.

Because the Employee Traffic Reduction Program (ETRP) was withdrawn from consideration by the Air Quality Control Commission, this proposal is Colorado's first major transportation-related rulemaking specifically designed to respond to the climate crisis. As such, we understand that this is new territory for Colorado and all parties involved, but it's important to keep in mind the overarching target established by Colorado's Greenhouse Gas (GHG) Emissions Reduction Roadmap to reduce transportation sector emissions by 12.8 million metric tons (MMT) of carbon dioxide equivalent (CO₂e) by 2030.

This letter reflects initial comments and questions on the proposal, and we expect to have additional input after more discussion with CDOT staff and after the technical documentation is made available for a full review. The main points covered in the comments below include: ensuring that equity is a key focus of this rulemaking, the necessity for robust emission reduction targets and

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Nederland · Northglenn · Ouray County · Pitkin County · Ridgway · Salida · San Miguel County
Snowmass Village · Summit County · Superior · Telluride · Vail · Westminster

reductions in vehicle miles traveled (VMT), allowing public review of the modeling analysis and ground truthing the model, and key points related to potential loopholes in the proposal and enforceability of the rule.

Equity Must be a Primary Focus of this Rulemaking

This rule presents one of Colorado’s best opportunities to fulfill the intent and requirements of HB19-1261 and HB21-1266 to prioritize benefits and avoid harms to disproportionately impacted communities as defined in § 24-38.5-302(3), C.R.S. We are encouraged to see some seeds planted in the proposed rule towards engaging and serving these communities, and we urge greater specificity and assurance that the most beneficial projects will be realized in those communities according to their expressed needs as well as data-driven approaches to projecting benefits.

Disproportionately impacted community input must inform all measures affecting them

Equity engagement for these rules cannot take place primarily through large listening sessions and stakeholder meetings. Before detailed measures are proposed, CDOT should work with climate outreach staff at the Colorado Air Pollution Control Division (APCD) and the Equity Unit at the Colorado Department of Public Health and Environment (CDPHE) to assess transportation priorities in disproportionately impacted communities. We appreciate the existing equitable outreach provisions (4.02.5) but would further recommend that outreach should take place at existing community meetings wherever possible. We have been glad that SB21-260 will establish a new Environmental Justice and Equity Office within CDOT in order to “work directly with disproportionately impacted communities in the project planning, environmental study and project delivery phases of transportation capacity projects.” We ask that this Office be stood up in time to help existing state equity outreach staff ensure that measures being considered meet the needs of disproportionately impacted communities.

We are eagerly awaiting the public release of CDPHE’s Colorado EnviroScreen tool, based on the EPA EJSCREEN model, that will enable us to delineate communities qualifying as “disproportionately impacted” under HB21-1266. CDOT and Metropolitan Planning Organizations (MPOs) must work with CDPHE as soon as possible to initiate outreach to these communities as located by the tool.

As this rule is refined, we recommend that the Transportation Commission consider the work that CDPHE’s Air Pollution Division, together with its Climate Equity Advisory Committee, has already done in drafting a Climate Equity Framework, including six Climate Equity Principles that should be used in shaping state rule development. From those principles, APCD developed a checklist of “Key Questions” and “Other Important Questions to Ask” to help rulemaking staff and boards anticipate potential benefits or burdens to disproportionately impacted communities from rules being considered in order to equitably shape rule development. The Climate Equity Framework is a living document still taking input. We recommend that CDOT work with CDPHE and the Climate Equity Advisory Committee to add shape to the Framework around transportation equity so that it can be most effectively applied to these rules. We urge CDOT and the Transportation Commission to apply these Key Questions for now to develop and evaluate proposed rules, and to work with the APCD, the Climate Equity Advisory Committee, the Climate Equity Community Advisory Group, and the Environmental Justice unit at CDPHE to do so. It may be helpful to index this language to the Equity Principles and/or key questions. Furthermore, it would

inspire confidence in the community if their input is indexed and/or reflected specifically in adopted rules and Applicable Planning Documents. Finally, APCD review (8.04) should answer all the “Key Questions” and “Other Important Questions to Ask,” consulting with the Climate Equity Advisory Committee and Climate Equity Community Advisory Group as needed.

The rule must stipulate VMT reductions and specific local benefits in the Applicable Planning Documents as well as in Mitigation Measures

We recognize that disproportionately impacted communities benefit from any project that reduces GHG emissions or that drives down VMT on the major thoroughfares that cut through these communities. However, this rule must prioritize projects that directly improve local air quality while providing needed local clean transportation services by reducing VMT. Section 8.0.3, GHG Mitigation Measures in includes a list of good examples for the type of project that that should be prioritized. Certain measures such as these that (1) fill the transit gap in communities that are being pushed further from community centers; (2) increase affordable EV ownership and charging; and (3) evolve neighborhoods toward “complete streets” should be discussed with the community and considered as best practices that should be implemented in all disproportionately impacted communities.

It's critical that the final rule include specific requirements that will result in defined direct benefits to Disproportionately Impacted Communities. Therefore, we suggest the following specific language be added to section 8 of the proposed rule. Black text is from CDOT’s proposal, red text is suggested language:

8.02 Process for Determining Compliance

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts **and benefits** of GHG Mitigation Measures, measuring and prioritizing localized impacts **and benefits** to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact **and benefit**. **Where such impact or benefit affects a Disproportionately Impacted Community, that consideration shall take precedence over others. At least 25% of the Mitigation Measures must have a direct benefit in terms of increased multimodal options to Disproportionately Impacted Communities.**

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

- 8.02.5.3.1 The anticipated start and completion date of each measure.
- 8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures.
- 8.02.5.3.3 Quantification of specific co-benefits including reduction of copollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes

to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities and a demonstration of how at least 25% of mitigation measures will directly benefit Disproportionately Impacted Communities.

These are just two specific additions to the rule with an equity focus; we would like to discuss other options for adding equity measures to the rule. We appreciate that the plan for selecting GHG Mitigation Measures (8.02.3) and the Mitigation Action Plan (8.02.5.3) express intent to prioritize disproportionately impacted communities. However, since these only take effect “In the event that a plan fails to comply,” we ask CDOT to consider commensurate equity provisions in the “Applicable Planning Document[s]” defined in the proposed rule. An emphasis on reducing VMT, discussed in our comments below, also brings a focus on equity because increasing multimodal options can have a direct impact on equity.

GHG Emissions Reduction Targets and VMT Reductions

The proposed emission reduction targets should be the absolute minimum amount of reductions considered for this rule. Colorado’s existing and planned transportation measures leave a gap of 4.7 MMT of GHG reductions in 2030, and this proposed rule would reduce that gap by 1.5 MMT. CDOT staff has explained that the 1.5 MMT is the high end of the modeled range and that 0.5 MMT is the low end. That falls far short of the at least 3.3 MMT in reductions by 2030 that should be met in order to reach Colorado’s climate goals. Additional strategies to further reduce transportation emissions within the 4.7 MMT category have yet to be developed, so the amount of the associated emissions reductions is uncertain. The Clean Trucking Strategy and indirect source rules are two strategies being considered in this area, but the potential reductions are unknown at this time. Because of the worsening nature of the climate crisis, early reductions have the largest impact and are absolutely necessary to reverse the current devastating course. Therefore, we strongly urge the Commission and CDOT staff to increase the GHG planning reduction levels identified in Table 1 (8.01.2).

The Roadmap’s “HB 1261 Targets Scenario” assumes a VMT reduction of 10% by 2030. Because of this statewide goal, VMT reductions should be explicitly included in this rule. VMT reductions should be closely tied to the reduction goals in the budgets that are developed under the GHG planning standard. A primary emphasis of the GHG rule should be to reduce VMT through multimodal strategies such as increased transit, bike paths, and sidewalks. Strong VMT reductions in the next five years are very important because there will not be enough EVs on the road by then to reduce vehicle emissions to meet Colorado’s goals. Additionally, an emphasis on VMT reduction will benefit DI communities.

The current definition of multimodal projects includes projects that increase capacity, such as adding several new traffic lanes along with bike paths. This is counterproductive: a heavy emphasis on multimodal that does not reduce VMT won’t help us achieve our GHG goals. Any project that increases capacity in turn increases VMT. Yet, transportation modeling and air quality models for transportation conformity incorrectly assume that capacity projects that reduce congestion will decrease emissions.

Comments and suggested edits to Section 8, Table 1, and Table 2 of the proposed rule:

- We suggest adding language in Section 8.01.1 explaining that the reduction targets by MPO area reflect the total reductions in that area and are not the sole responsibility of the MPOs and that CDOT will assist the MPOs in meeting the targets. We understand from CDOT staff that it was too difficult to break out the share of the reductions between CDOT and the MPOs, but an explanation to this effect in the rule should be included to avoid any misunderstanding.
- The baseline projections in Table 1 are confusing despite the explanation in 8.01.1. because the projections only show slight decreases and then increase by 2050. These projections are using a business as usual scenario for modeling the emission reductions from this rule only and don't take account of the other emissions reduction strategies in Colorado. It would be best to remove these projections from the rule because it appears as if transportation emissions will barely decrease in almost 30 years, while in reality, emissions should greatly diminish.
- If the baseline projections remain in the rule, an explanation should be added as to why the projections vary from the Roadmap projections. The 2025 baseline projections in the proposed rule are 27.4 MMT while Colorado's GHG Roadmap figure for 2025 is 23 MMT.
- Table 2 is confusing as well; presumably these figures project total transportation sector emissions with all the strategies implemented, including this proposed rule. But the 2030 projections are 20 MMT while the Roadmap's 2030 projections are 18 MMT (see Colorado's GHG Roadmap Table 7, page 97). Is this meant to indicate that the proposed rule, plus the projected uptake of EVs, will leave us 2.0 MMT short of the Roadmap target?
- Suggested new language for the Table 2 description is provided below. If the figures in this table don't reflect the new explanation, we suggest that they be updated if possible.
- Based on our comments above, please include a table showing VMT reductions for all projection years as well.

Suggested edits follow. Black text is from CDOT's proposal, red text and red strikeouts are suggested edits.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs areas and the Non-MPO area within the state of Colorado as of the effective date of these Rules. ~~The reduction levels listed by MPO are not meant as the sole responsibility of that MPO, but rather the total reduction for that area. CDOT is responsible for a share of the reductions in the MPO area. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.~~ Table 2 projects total transportation sector emissions ~~reflects the difference in Baseline levels from year to year~~ assuming a rapid growth in Colorado's electric vehicles ~~goals are met across the State~~ (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050) ~~in addition to the emission reductions from this rule.~~

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>0.27</u>	<u>0.82</u>	<u>0.63</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>0.04</u>	<u>0.12</u>	<u>0.11</u>	<u>0.07</u>
<u>PPACG</u>	<u>N/A</u>	<u>0.15</u>	<u>0.12</u>	<u>0.07</u>
<u>GVMPO</u>	<u>N/A</u>	<u>0.02</u>	<u>0.02</u>	<u>0.01</u>
<u>PACOG</u>	<u>N/A</u>	<u>0.03</u>	<u>0.02</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>0.12</u>	<u>0.37</u>	<u>0.30</u>	<u>0.18</u>
<u>TOTAL</u>	<u>0.5</u>	<u>1.5</u>	<u>1.2</u>	<u>0.7</u>

Table 2: ~~Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles~~ Transportation Sector ~~Emissions~~ Projections from All Implemented Strategies

	<u>2025 Projections (MMT)</u>	<u>2030 Projections (MMT)</u>	<u>2040 Projections (MMT)</u>	<u>2050 Projections (MMT)</u>
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

Modeling Analysis Review and Modeling Requirements Under the Rule

The technical documentation and the modeling analysis and inputs should be available for the public to review now that the rulemaking process has begun. Without these technical materials, it's difficult to review this rule as a whole. CDOT has said that they are working on finalizing a modeling report and a Q&A document; it would be best if this information is made available well in advance of the scheduled regional hearings. Because we haven't been able to review any technical document associated with this proposal, we aren't able to provide comments on the modeling at this time. But one key question about the modeling at this point is whether EVs and charging infrastructure investments are included in the modeling. We need to ensure those reductions are not

double counted in this proposal because most of those reductions are already covered in other emissions reduction estimates.

Regarding the modeling requirements in the proposed rule itself, we have the following questions and comments:

- Are MPOs going to be required to ground truth their modeled GHG emissions/VMT with real-world data collection (such as traffic counts)? If so, how often will this be required?
- Will a third-party review process be used to review the modeling analyses?
- Will the modeling results and documentation be available for public review?

Measurable Reductions Are Critical

Under the proposal CDOT and MPOs need to provide a GHG Transportation Report that meets several specific requirements, including a GHG emissions analysis demonstrating compliance with the applicable GHG reductions level and a mitigation action plan that identifies the needed mitigation measures and estimates reductions, where feasible (see Section 8.02.5.3.2). We would like more explanation of when GHG estimates would be infeasible and suggest edits to the rule language so that the rule does not imply that estimates would often be infeasible.

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, ~~where feasible,~~ of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures. ~~It's expected there will be rare situations where GHG estimates are not feasible.~~

Enforcement is Key to the Success of this Rule

Under the proposed rule, if compliance is not demonstrated after committing to GHG mitigation measures, the Commission will restrict the use of certain funds, requiring that money be focused on projects that reduce GHGs. The proposal includes the option to apply for a waiver if the rule requirements have not been met. We would like to learn more about this potential waiver process and how Colorado's GHG goals will still be met. The proposal states that "a substantial increase in GHG emissions" won't be allowed, but what is considered a substantial increase and how can we meet reduction goals while allowing any increases in emissions? As explained above, the proposed 1.5 MMT reductions by 2030 are not enough to meet the sector's goal of 12.8 MMT reductions. Waivers could also circumvent the requirement to protect and prioritize disproportionately impacted communities that might otherwise see air quality and transportation infrastructure improvements. Any increase in GHG emissions would be counter to the goal of this rule.

We appreciate the opportunity to comment on this proposed rule and the continued communications with CDOT staff to ensure that this is a strong rule that will help Colorado achieve its reduction goals for the transportation sector. Much progress has been made and we look forward to discussing our input with the Transportation Commission and CDOT.

Sincerely,



c: Shoshana Lew, Herman Stockinger, Rebecca White, Theresa Takushi



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards

Thu, Sep 2, 2021 at 1:07 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>
Cc: "natalie.lutz@state.co.us" <natalie.lutz@state.co.us>

Thank you for the opportunity to comment on the Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards.

These common-sense proposed standards are an excellent start to the implementation of Colorado's GHG reduction goals for the transportation sector. Section 4.06.1.8 is a good addition, requiring analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. In section 8, GHG reduction requirements, the Regional GHG Transportation Planning Reduction Levels contained in table 1 are very reasonable. Since the majority of emissions reductions are assumed to be achieved by an optimistic projection of private (and in some cases public) purchases of electric vehicles, the additional greenhouse gas emission reduction levels that CDOT and the MPOs need to achieve are tiny—in some cases, as little as 40,000 metric tonnes of CO₂-eq. These targets are incredibly reasonable, some might even say they are too small.

These targets can be achieved, and communities may already be further along developing actions to help achieve these goals than the Commission may realize. To illustrate, in my area, the Northwest TPR, our local electricity cooperative is already assisting in achieving these goals by helping businesses and homeowners finance EV chargers, and by funding electric school bus purchases. In the fast-growing east Grand county region, our expanding public bus systems is helping reduce vehicle miles traveled, and new bike lanes, pedestrian walkways and approved e-bike routes are helping provide additional multimodal transportation options. CDOT should consider working closely with Colorado's rural electric cooperatives in addition to local governments—co-ops can be helpful partners in the State's plan to achieve these targets.

Thank you again, and good luck implementing your new rules.

[Redacted], Institute for Governance & Sustainable Development

[Redacted]

[Redacted]

[Redacted]

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STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 8:09 AM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

This rule making should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

Furthermore, we've over prioritized investment in single occupancy vehicle infrastructure, like highway expansions, for decades: to the detriment of other, less polluting, modes of transportation. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases options for walking, biking, and public transit for urban and rural Coloradans.

Climate change, and the associated pollution from the transportation sector, is a dire health crisis. Coloradans are struggling to breathe and developing chronic conditions from the resulting impacts. We urge CDOT to strengthen the proposed rule by including strengthened provisions regarding environmental justice and more enforcement mechanisms that ensure pollution reduction and reduced vehicle miles traveled.

Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 10:44 AM

To: dot_rules@state.co.us

Dear Transportation Commission,

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Sincerely,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 11:20 AM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

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Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 11:53 AM

To: dot_rules@state.co.us

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Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 12:16 PM

To: dot_rules@state.co.us

Dear Transportation Commission,

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Sincerely,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 2:04 PM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

This rule making should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

Furthermore, we've over prioritized investment in single occupancy vehicle infrastructure, like highway expansions, for decades: to the detriment of other, less polluting, modes of transportation. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases options for walking, biking, and public transit for urban and rural Coloradans.

Climate change, and the associated pollution from the transportation sector, is a dire health crisis. Coloradans are struggling to breathe and developing chronic conditions from the resulting impacts. We urge CDOT to strengthen the proposed rule by including strengthened provisions regarding environmental justice and more enforcement mechanisms that ensure pollution reduction and reduced vehicle miles traveled.

Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 4:22 PM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

This rule making should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

Furthermore, we've over prioritized investment in single occupancy vehicle infrastructure, like highway expansions, for decades: to the detriment of other, less polluting, modes of transportation. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases options for walking, biking, and public transit for urban and rural Coloradans.

Climate change, and the associated pollution from the transportation sector, is a dire health crisis. Coloradans are struggling to breathe and developing chronic conditions from the resulting impacts. We urge CDOT to strengthen the proposed rule by including strengthened provisions regarding environmental justice and more enforcement mechanisms that ensure pollution reduction and reduced vehicle miles traveled.

Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Please strengthen the "Greenhouse Gas Pollution Standard"

1 message

Tue, Sep 7, 2021 at 11:41 AM

[REDACTED]
[REDACTED]
To: Colorado Transportation Commission <dot_rules@state.co.us>

Dear The Colorado Transportation Commission,

The climate crisis has never been worse. This summer's ongoing wildfires and drought remind us that dirty air pollution and climate change are already hurting our health—especially in communities of color.

Colorado is not on track to meet our targets to reduce climate pollution—especially from our state's largest source of climate pollution: transportation.

I am writing today to ask that your draft "Greenhouse Gas Pollution Standard" include stronger greenhouse gas reduction targets in order to meet the goals for reductions from the transportation sector in the state's climate roadmap. Unfortunately, the draft rule leaves a gap of two million metric tons of carbon dioxide - reductions that will not come from vehicle electrification and must be achieved through a reduction in statewide vehicle miles traveled.

The draft rule also is insufficient for Black, Indigenous, Latinx, and other people of color who are hurt worst by transportation pollution. We ask you to develop a Transportation Equity Framework, and include representatives of disproportionately impacted and marginalized communities in developing, monitoring and implementing the rule.

Thank you for your work and leadership. Please ensure that your transportation rule is equitable, enforceable, and verifiable.

Sincerely,
[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Tue, Sep 7, 2021 at 4:37 PM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

This rule making should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

Furthermore, we've over prioritized investment in single occupancy vehicle infrastructure, like highway expansions, for decades: to the detriment of other, less polluting, modes of transportation. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases options for walking, biking, and public transit for urban and rural Coloradans.

Climate change, and the associated pollution from the transportation sector, is a dire health crisis. Coloradans are struggling to breathe and developing chronic conditions from the resulting impacts. We urge CDOT to strengthen the proposed rule by including strengthened provisions regarding environmental justice and more enforcement mechanisms that ensure pollution reduction and reduced vehicle miles traveled.

Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Rule Redline Suggestions

1 message

Wed, Sep 8, 2021 at 11:24 AM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

[Redacted]

CDOT staff,

The attached document has redline edits for CDOT's consideration for the GHG rule update for tomorrow, 9/9. These edits are technical in nature and the NFRMPO will submit more substantive comments at a later date. Please let me know if you have any questions.

Thank you,

[Redacted]

Transportation and Air Quality Planner III

Pronouns: she/her



Website: <https://nfrmpo.org>

[Redacted]

[Redacted]

2 CCR 601-22_Redline_8.13.21_NFR FINAL.doc
228K

DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation

STATEMENT OF BASIS AND PURPOSE, ~~AND~~ STATUTORY AUTHORITY AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or~~ CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation commissionCommission of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado ~~that will reduce traffic and smog~~.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per~~pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning~~regionsRegions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~ **Multimodal** transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~ **State**. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~ **STAC** pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2016, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

Copies of the referenced United States Code may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2414

Copies of the referenced Code of Federal Regulations may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103(5), C.R.S., and § 43-1-106(8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Preamble for 2021 Rulemaking

Overview

Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and/or are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Commented [REDACTED]: The rule says or, not and.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[.]" acknowledged that "Colorado is already experiencing harmful climate impacts[.]" and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities. see § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." see § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation

are a "significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color." see Roadmap, p. XII.

A key finding in the Roadmap recognized that "[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool" to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State's goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for "developing and maintaining the state transportation planning process and the state transportation plan" in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged "to assure that the preservation and enhancement of Colorado's environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado." see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized "to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . ." see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives "while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes..." see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will "protect and enhance the environment, promote energy conservation, improve the quality of life..." see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection..." see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a "comprehensive statewide transportation plan" pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must

address a number of factors including, but not limited to, "environmental stewardship" and "reduction of greenhouse gas emissions." see § 43-1-1103(5)(h) and (i), C.R.S.

Regional Transportation Plans must account for the "expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner." see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs "[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives." see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or "conform to" a state's plan to reduce emissions. Colorado's front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments' MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State's climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

1.00 — Definitions.

- 1.01 — Accessible — ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with limited English proficiency. Accessible opportunities to on-planning related matters include those provided on the internet and through such methods as telephone town halls.
comment
- 1.02 — Attainment Area — any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).
- 1.03 — Commission — the transportation commission of Colorado created by § 43-1-106, C.R.S.
- 1.04 — Corridor — a transportation system that includes all modes and facilities within a described geographic area.
- 1.05 — Corridor Vision — a comprehensive examination of a specific transportation corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes transportation modes and facilities over a planning period.
- 1.06 — Department — the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.07 — Division — the Division of Transportation Development within the Colorado Department of Transportation.
- 1.08 — Division Director — the Director of the Division of Transportation Development.
- 1.09 — Fiscally Constrained — the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) programming periods.
- 1.10 — Intergovernmental Agreement — an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.11 — Intermodal Facility — A site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.12 — Land Use — the type, size, arrangement, and use of parcels of land.
- 1.13 — Limited English Proficiency (LEP) — individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.14 — Long-range Planning — a reference to a planning period with a minimum 20-year planning horizon.
- 1.15 — Maintenance Area — any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended in 1990.
- 1.16 — Memorandum of Agreement (MOA) — a written agreement between two or more parties on an intended plan of action.

- 1.17 — ~~Metropolitan Planning Agreement (MPA) — a written agreement between the MPO, the State, and the providers of public transportation serving the metropolitan planning area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.~~
- 1.18 — ~~Metropolitan Planning Area — a geographic area determined by agreement between the Metropolitan Planning Organization for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.~~
- 1.19 — ~~Metropolitan Planning Organization (MPO) — an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the regional transportation plans and programs in a metropolitan planning area pursuant to 23 U.S.C. § 134.~~
- 1.20 — ~~Mobility — the ability to move people, goods, services, and information among various origins and destinations.~~
- 1.21 — ~~Multimodal — an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.~~
- 1.22 — ~~National Ambient Air Quality Standards (NAAQS) — are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.~~
- 1.23 — ~~Nonattainment Area — any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which an NAAQS exists.~~
- 1.24 — ~~Non-metropolitan Area — a rural geographic area outside a designated metropolitan planning area.~~
- 1.25 — ~~Plan Integration — Plan integration is a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.~~
- 1.26 — ~~Planning Partners — local and tribal governments, the rural Transportation Planning Regions and MPOs.~~
- 1.27 — ~~Project Priority Programming Process (“4P”) — the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the statewide transportation improvement program (STIP).~~
- 1.28 — ~~Regional Planning Commission (RPC) — a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural Transportation Planning Region.~~
- 1.29 — ~~Regional Transportation Plan (RTP) — a long-range plan designed to address the future transportation needs for a Transportation Planning Region including, but not limited to, anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban Transportation Planning Regions in the state produce RTPs.~~
- 1.30 — ~~State Transportation System — refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.~~

- 1.31 — Statewide Transportation Advisory Committee (STAC) — the committee created by § 43-1-1104, C.R.S., comprising one representative from each Transportation Planning Region and one representative from each tribal government to review and comment on Regional Transportation Plans, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.32 — Statewide Transportation Improvement Program (STIP) — a staged, fiscally constrained, multi-year, statewide, multimodal program of transportation projects which is consistent with the statewide transportation plan and planning processes, with metropolitan planning area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.33 — Statewide Transportation Plan — the long range, comprehensive, multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.34 — System Continuity — includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring Regional Transportation Plans, and, to the extent practicable, other neighboring states' transportation plans.
- 1.35 — Traditionally Underserved — refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.36 — Transit and Rail Advisory Committee (TRAC) — an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail related activities.
- 1.37 — Transportation Commonality — the basis on which Transportation Planning Regions are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, travelsheds, watersheds, geographic unity, existing intergovernmental agreements, and socioeconomic unity.
- 1.38 — Transportation Improvement Program (TIP) — a staged, fiscally constrained, multi-year, multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.39 — Transportation Mode — a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.40 — Transportation Planning and Programming Process — all collaborative planning-related activities including the development of regional and statewide transportation plans, the Department's Project Priority Programming Process, and development of the Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).
- 1.41 — Transportation Planning Region (TPR) — a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for transportation commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO Transportation Planning Regions, MPO Transportation Planning Regions, and Transportation Planning Regions with both MPO and non-MPO areas.

- ~~1.42 — Transportation Systems Planning — provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.~~
- ~~1.43 — Travelshed — the region or area generally served by a major transportation facility, system, or corridor.~~
- ~~1.44 — Tribal Transportation Improvement Program (TTIP) — a multi-year fiscally constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.~~
- ~~1.45 — Urbanized Area — an area with a population of 50,000 or more designated by the Bureau of the Census.~~
- ~~1.46 — Watershed — a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.~~

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- ~~1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
- ~~1.02 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, CDOT's STIP in non-MPO areas within an NAA, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.~~
- ~~1.03 Approved Air Quality Model - the most recent version of the Environmental Protection Agency issued model that quantifies GHG emissions from transportation and is required for transportation conformity analyses per federal regulations.~~
- ~~1.04 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- ~~1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most~~

recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.

- 1.06 Carbon Dioxide Equivalent (CO2e) - a metric measure used to standard unit for comparing the emissions from various GHG based upon the 100-year global warming potential (GWP). CO2e is calculated by multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO2e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different standard time periods.
- 1.07 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.08 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated federal funding program established in 23 U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.09 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- 1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO2e reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and help meet the GHG Reduction Levels.

Commented [REDACTED]: MMT is a metric measure, but CO2e is not inherently metric

Commented [REDACTED]: Any agency's GHG measures should be able to count, same as how any regionally significant project (even if locally funded) counts. In addition, better to not use the past tense because almost all the measures are planned measures for future implementation.

- 1.20 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.21 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.22 Land Use - the type, size, arrangement, and use of parcels of land.
- 1.23 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.24 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.25 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.26 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.27 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.28 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.29 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.30 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.31 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.32 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.33 Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.34 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.

- 1.35 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.36 Nonattainment Area - any geographic region of the United States which has been designated as nonattainment by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.37 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning Area.
- 1.38 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.39 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.40 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.41 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.42 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.43 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.44 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.45 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.46 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.

Commented [REDACTED]: EPA also designates areas as attainment, maintenance, or unclassifiable.

Commented [REDACTED]: Recommend clarifying if this applies to all areas or just those without an EPA-approved definition.

- 1.47 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.48 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.49 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.50 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.51 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.52 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.53 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.54 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.55 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.56 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.57 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.58 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.

- 1.59 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.60 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.
- 1.61 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.62 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.63 Vehicle Miles Traveled (VMT) - the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.64 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.65 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
- 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
- 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
- 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
- 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
- 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
- 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
- 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.

- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
 - 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
 - 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.
 - 2.01.11 The Intermountain ~~Transportation Planning Region~~TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
 - 2.01.12 The Northwest ~~Transportation Planning Region~~TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
 - 2.01.13 The Upper Front Range ~~Transportation Planning Region~~TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
 - 2.01.14 The Central Front Range ~~Transportation Planning Region~~TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
 - 2.01.15 The South Central ~~Transportation Planning Region~~TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
 - 2.02.1.1 A geographical description of the proposed boundary change.
 - 2.02.1.2 A statement of justification for the change considering transportation commonalities.
 - 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~RPC.
 - 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
 - 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~nonNon-metropolitan-Metropolitan area~~Area TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State-Colorado~~Administrative Procedure Act, § 24-4-103, C.R.S. to consider a

boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.

2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~Intergovernmental agreement Agreement governing the RPC as specified in these Rules.

2.03 Transportation Planning Coordination with MPOs.

2.03.1 The Department and the MPOs shall coordinate activities related to the development of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~Planning partners-Partners affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

3.01 Duties of the ~~Statewide Transportation Advisory Committee~~(STAC). Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

- 3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.
 - 3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.
 - 3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.
 - 3.01.4 Colorado's ~~mobility~~ Mobility requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.
 - 3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~ System continuityContinuity.
 - 3.01.6 Proposed TPR boundary revisions.
- 3.02 Notification of Membership
- 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~STAC
- 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
 - 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
 - 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
 - 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.**
- 4.01 ~~Regional Planning Commission~~RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all

applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.

4.02 Public Participation

4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. The objectives of public participation in the transportation planning process include: providing a mechanism for public perspectives, needs, and ideas to be considered in the planning process; developing the public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.

4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying out public participation for developing, amending, and updating the ~~statewide~~ Statewide transportation-Transportation planPlan, the ~~Statewide Transportation Improvement Program~~ (STIP), and other statewide transportation planning activities.

4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation-plan~~ RTPs, ~~transportation-improvement-programs~~ TIPs and other related regional transportation planning activities for their respective ~~metropolitan~~ Metropolitan planning-Planning areasAreas. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.

4.02.4 Non-MPO TPR Plans and Programs. ~~Regional Planning Commission~~ RPCs for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional Planning Commission~~ RPC and the Department.

4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:

4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, and those with ~~limited~~ Limited English ~~proficiency~~ Proficiency; and members of the general public expressing such interest in the transportation planning process.

- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings.
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 Seeking out those persons or groups ~~traditionally-Traditionally underserved-Underserved~~ by existing transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low-income, and those with ~~limited-Limited English proficiency~~ ~~Proficiency~~, for the purposes of exchanging information, increasing their involvement, and considering their transportation needs in the transportation planning process. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional-Planning-Commission~~ ~~RPCs~~, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP-Limited English Proficiency~~ services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional-Planning Commissions~~ ~~RPCs~~ and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional-Planning-Commission~~ ~~RPCs~~, and the Department, shall use an integrated ~~multimodal-Multimodal transportation-Transportation systems-Systems planning-Planning~~ approach in developing and updating the long-range ~~Regional-Transportation Plans~~ ~~RTPs~~ and the long-range Statewide Transportation Plan for a minimum 20-year forecasting

period. ~~Regional Planning Commission~~RPCs shall have flexibility in the methods selected for ~~transportation-Transportation systems-Systems planning-Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~RPCs regarding the selection of appropriate methods.

4.03.1 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~RPCs and the Department may also identify any ~~corridor~~Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.

4.03.2 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall consider ~~corridor-vision-needs~~ and desired state of the transportation system including existing and future land use and infrastructure, major activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.

4.03.3 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~Mobility of people goods, and services.

4.03.4 Transportation ~~systems-Systems planning-Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state-State transportation-Transportation system~~System.

4.03.5 Transportation ~~systems-Systems P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the ~~Transit and Rail Advisory Committee~~(TRAC).

4.03.6 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.

4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.

4.04.1 Content of ~~Regional Transportation Plan~~RTPs. Each RTP shall include, at a minimum, the following elements:

4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.

- 4.04.1.2 State and federal transportation system planning factors to be considered by ~~Regional Planning Commission~~RPCs and the Department during their respective ~~transportation-Transportation systems-Systems planning-Planning~~ shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor-Corridor~~ studies, or ~~corridor-Corridor~~ visionsVisions, including a discussion of impacts to minority and low-income communities.
- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 For rural RTPs, the integrated performance-based ~~multimodal~~ Multimodal transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally-Fiscally constrained-Constrained~~ financial plan.
- 4.04.1.6 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~longLong-range-Range planning-Planning~~ purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.7 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.8 A resolution of adoption by the responsible ~~Metropolitan Planning Organization~~MPO or the ~~Regional Planning Commission~~RPC.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning Region~~TPRs shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation plan~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide-Statewide transportation-Transportation plan~~Plan.
- 4.04.2.3 Final Plan. ~~Transportation Planning Region~~TPRs shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these

Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range Range planning-Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance areaArea for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment areaArea to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range Range planning-Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment areaArea for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.

- 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~-Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.

4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.

4.06.1.9 Includes the 10-Year Plan as an appendix.

4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.

4.06.3 Review and Adoption of the Statewide Transportation Plan.

4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. ~~The Statewide Transportation Plan and appendices~~The publication will be available in physical form upon ~~request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and~~ made available on the internet.

4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.

5.00 Updates to Regional and Statewide Transportation Plans.

5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal

and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.

5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

7.02 The Department will work with its ~~planning~~Planning partnersPartners to coordinate a schedule for development and adoption of TIPs and the STIP.

7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally ~~constrained~~Constrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportationTransportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population and employment growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

Regional Areas	2025 Baseline Projections (MMT)	2025 Reduction Level (MMT)	2030 Baseline Projections (MMT)	2030 Reduction Level (MMT)	2040 Baseline Projections (MMT)	2040 Reduction Level (MMT)	2050 Baseline Projections (MMT)	2050 Reduction Level (MMT)
<u>DRCOG</u>	<u>14.9</u>	<u>0.27</u>	<u>11.8</u>	<u>0.82</u>	<u>10.9</u>	<u>0.63</u>	<u>12.8</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>2.3</u>	<u>0.04</u>	<u>1.8</u>	<u>0.12</u>	<u>1.9</u>	<u>0.11</u>	<u>2.2</u>	<u>0.07</u>
<u>PPACG</u>	<u>2.7</u>	<u>N/A</u>	<u>2.2</u>	<u>0.15</u>	<u>2.0</u>	<u>0.12</u>	<u>2.3</u>	<u>0.07</u>
<u>GVMPO</u>	<u>0.38</u>	<u>N/A</u>	<u>0.30</u>	<u>0.02</u>	<u>0.30</u>	<u>0.02</u>	<u>0.36</u>	<u>0.01</u>
<u>PACOG</u>	<u>0.50</u>	<u>N/A</u>	<u>0.40</u>	<u>0.03</u>	<u>0.30</u>	<u>0.02</u>	<u>0.4</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>6.7</u>	<u>0.12</u>	<u>5.3</u>	<u>0.37</u>	<u>5.2</u>	<u>0.30</u>	<u>6.1</u>	<u>0.18</u>
<u>TOTAL</u>	<u>27.4</u>	<u>0.5</u>	<u>21.8</u>	<u>1.5</u>	<u>20.6</u>	<u>1.2</u>	<u>24.2</u>	<u>0.7</u>

Commented [1]: For some of the compliance years, the TOTAL line at the bottom does not match the sum of the regional areas. The same number of significant digits should be used for all baselines and reduction levels.

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	2025 Projections (MMT)	2030 Projections (MMT)	2040 Projections (MMT)	2050 Projections (MMT)
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

Commented [1]: There is no regulatory purpose for this table. If a regulatory purpose is not provided, it should be removed from the rule. Potential regulatory purpose: Adding in the EV assumption for each year and stating if the EV assumption changes, then the reduction levels in the rule should be revisited to determine if they are still feasible.

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions. Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects. The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each compliance year in Table 1, as long as the compliance year is not in the past and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

Commented [1]: The comparison to Table 1 should occur using the GHG Emissions Analysis AND the GHG mitigation measures, not just the GHG Emissions analysis.

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO

Commented [1]: CDOT should also have an IGA required prior to the next 10-year plan

responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.3 The State Interagency Consultation Team shall meet as needed to address any questions on the classification of projects as Regionally Significant, modeling assumptions, and projects that reduce GHG emissions.

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach to assist in meeting the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.

Commented [REDACTED]: Unclear what these terms mean. The rule already provides a process for reporting the status of the measures – would this process impact the format/approval process of the mitigation report and/or status report?

Commented [REDACTED]: Agencies may choose to report these measures even though they don't enable reaching the reduction levels (i.e. they still fall short). Not sure if the suggested language goes far enough to explain that concept.

8.02.4 Timing for Determining Compliance

8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.

8.02.4.2 After October 1, 2022

8.02.4.2.1 CDOT must #For each Applicable Planning Document adopted or amended after October 1, 2022, CDOT must meet either the reduction levels within Table 1 for Non-MPO areas or the requirements as set forth in Rule 8-058.02.5.1.1.

Commented [REDACTED]: As proposed, the rule implies the applicable plans must comply immediately after October 1, 2022.

8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 #For each Applicable Planning Document adopted or amended after October 1, 2022, MPOs must either meet the corresponding reduction levels within Table 1, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8-058.02.5.1.1 or Rule 8.02.5.1.2, as applicable. This provision shall not apply to MPO TIP Amendments.

Commented [REDACTED]: Only having this language in §8.02.1 means we'd still have to comply and submit a report for TIP Amendments, it just wouldn't have the emissions analysis. Is that the intent?

8.02.5 Demonstrating Compliance. At least thirty (30) days prior to adoption or amendment of any Applicable Planning Document except amendments to MPO TIPs, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:

8.02.5.1 GHG emissions analysis and, if applicable, a GHG Mitigation Plan demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO₂e for each compliance year in Table 1 or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, have been met.

Commented [REDACTED]: The rule needs to clearly identify that compliance is not based solely on the GHG emissions analysis (or the GHG emissions analysis needs to clearly identify that the mitigation measures are included in the analysis)

8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions.

Commented [REDACTED]: If "or" is retained here, it is unclear which provision applies to MPOs that receive only one of the federal suballocations

8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes shall award those funds anticipated to be expended on Regionally Significant Projects onto projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes shall award 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions.

Commented [REDACTED]: Unclear when this takes effect. Projects currently in progress should not have their funding removed, as that would be highly disruptive. The least disruptive approach is to apply the requirement to future awards.

8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.

8.02.5.3 At the discretion of the MPO or CDOT, submission of a Mitigation Action Plan that identifies GHG Mitigation Measures, if any, needed to meet that will count toward the reduction levels within Table 1. The Mitigation Action Plan shall include:

Commented [REDACTED]: Rule should allow an agency to not submit a Mitigation Action Plan. If the GHG analysis demonstrates compliance, no mitigation measures would be needed.

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, where feasible, of the annual GHG emissions reductions in MMT of CO₂e achieved per year by any GHG Mitigation Measures.

8.02.5.3.3 Quantification of specific co-benefits, where feasible, including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities.

Commented [REDACTED]: Again, measures would likely be identified even if they don't allow the agency to meet the reduction levels.

8.02.6 Reporting on Compliance- Following the submission of a GHG Transportation Report containing a Mitigation Action Plan, ~~Annually by April 1,~~ CDOT and MPOs must provide a status report to the Commission annually by April 1 on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:

8.02.6.1 The implementation timeline;

8.02.6.2 The current status;

8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and

8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.

8.03 GHG Mitigation Measures. When assessing compliance with the GHG Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:

- 8.0.3.1 The addition of transit resources in a manner that can displace VMT.
- 8.0.3.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.
- 8.0.3.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.
- 8.0.3.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.
- 8.0.3.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.
- 8.0.3.6 Adopting or encouraging the adoption of locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.
- 8.0.3.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure – as well as upgrading commensurate grid improvements – into the design of key freight routes to accelerate truck electrification.
- 8.0.3.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.
- 8.0.3.9 ~~Adoption of~~ implementing or encouraging the adoption of transportation demand management practices that reduce VMT.
- 8.0.3.10 Implementing or encouraging the implementation of operations improvements such as ramp metering, signal timing, intersection improvements, access control plans, anti-idling programs, and incident management that result in GHG reductions.

Commented [REDACTED]: This language is unclear.

Commented [REDACTED]: This language is unclear.

8.04 Air Pollution Control Division (APCD) Confirmation and Verification

- 8.04.1 At least sixty (60) ~~forty five (45)~~ days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable. The APCD shall submit any written verification to the agency adopting the Applicable Planning Document and to the Commission.
- 8.04.2 At least forty-five (45) ~~thirty (30)~~ days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within thirty (30) ~~forty five (45)~~ days, the document shall be considered acceptable.

8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.

- 8.05.1 If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.

8.05.2 If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG. Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non-MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:

8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions. A waiver may be requested at any time, including concurrently with the submission of a GHG Transportation Report. The Commission may waive the restrictions on specific projects on the following basis:

8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions; and

8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions when compared to the required reduction levels in this Rule.

8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met. A request for reconsideration must be submitted within thirty (30) days of Commission action.

8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be ~~denied~~approved.

8.05.3 Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.

8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG reduction accomplishments.

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, et. seq., in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.05.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

[Colorado Energy Office](#)
[1600 Broadway, Suite 1960](#)
[Denver, CO 80202](#)
[\(303\) 866-2100](#)
[energyoffice.colorado.gov](#)

9.0.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

[U.S. Environmental Protection Agency](#)
[The Office of Transportation and Air Quality](#)
[1200 Pennsylvania Ave. N.W.](#)
[Washington, DC 20460](#)
[\(734\) 214-4574 or \(202\) 566-0495](#)
[mobile@epa.gov](#)
<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

Entire rule eff. 12/15/2012.
Section SB&P eff. 05/30/2013.
Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Proposed revisions

1 message

[REDACTED]
to: dot_rules@state.co.us

Thu, Sep 9, 2021 at 3:10 PM

Yes!! Please do everything possible to improve public transportation, bike paths and sidewalks! Our air quality is atrocious and climate change is upon us. It is in everyone's best interest to make changes towards sustainable transportation-NOT more roads and highways.

Thank you,
[REDACTED]

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Rule Public Comment Extension Request

1 message

Mon, Sep 13, 2021 at 4:42 PM

To: "governorpoli@state.co.us" <governorpoli@state.co.us>, "shoshana.lew@state.co.us" <shoshana.lew@state.co.us>, "Andrew.Hogle@state.co.us" <Andrew.Hogle@state.co.us>, [REDACTED]

[REDACTED] "dot transp comm@state.co.us" <dot transp comm@state.co.us>

[REDACTED]

[REDACTED] "Stockinger, Herman (herman.stockinger@state.co.us)" <herman.stockinger@state.co.us>, Rebecca White - CDOT <rebecca.white@state.co.us>, Theresa Takushi - CDOT <theresa.takushi@state.co.us>, "Lutz - CDOT, Natalie" <natalie.lutz@state.co.us>, "Uebelher - CDOT, Jennifer" <jennifer.uebelher@state.co.us>

Governor Polis, Director Lew, Hearing Officer Hogle, and Transportation Commissioners,

Please see the attached comment letter from the North Front Range Metropolitan Planning Organization (NFRMPO) requesting an extension of the public comment period for the TC's proposed Greenhouse Gas (GHG) rule for transportation plans.

Thank you,

[REDACTED]

Transportation and Air Quality Planner III

[REDACTED]



[REDACTED]

GHG Rule Time Request 9.13.2021 - signed.pdf
190K



September 13, 2021

To: Governor Jared Polis, Director Shoshana Lew, Hearing Officer Andrew Hogle, and Transportation Commissioners

Re: Public Comment Period Extension Request for the Proposed GHG Rule

Thank you for the opportunity to provide comment on the Transportation Commission's (TC's) proposed greenhouse gas (GHG) rule for transportation plans. The North Front Range Transportation & Air Quality Planning Council, also known as the NFRMPO, is comprised of 15 elected officials representing portions of Larimer and Weld counties. As a Metropolitan Planning Organization (MPO), the NFRMPO will be responsible for demonstrating compliance with the proposed rule and NFRMPO staff have engaged extensively in the stakeholder process conducted by the Colorado Department of Transportation (CDOT) that began in January 2021.

The public comment period for this rulemaking began on August 16, 2021, and is scheduled to close on October 15, 2021. This comment letter addresses the need for additional time to make informed public comment on the proposed rule. The NFRMPO anticipates providing substantive comments on the proposed rule in a separate letter prior to the close of the public comment period.

The NFRMPO recognizes CDOT has conducted considerable public outreach and stakeholder engagement on this rule, particularly at the conceptual level. However, there are certain pieces of technical information that must be released during the public comment period to allow for fully informed decision making and meaningful stakeholder involvement. There are four items the NFRMPO has requested from CDOT staff and/or Colorado Department of Public Health and the Environment (CDPHE) staff which have not been provided, although these requests have been acknowledged and NFRMPO staff have been told they are underway.

The specific request is for the **public comment period to extend at least 30 days past the delivery of the following information** to allow for the submission of data-driven comments and development of a data-driven rule:

1. The **technical report** from CDOT describing the modeling process for demonstrating compliance and documentation for the Energy and Emissions Reduction Policy Analysis Tool (EERPAT) model.
 - **Status:** This information was requested in mid-July and has not yet been provided. Documentation for the EERPAT model is not available online.
 - **Reason:** The technical report and EERPAT documentation will enable the staff at agencies subject to the rule to understand how the GHG Baselines and GHG Reduction Levels were set and how modeling for future compliance demonstrations will be conducted. Such understanding may uncover

[Redacted signature block]



comments or suggestions for how to improve the rule's timing requirements, clarity (e.g. will the compliance demonstrations be compared against the GHG Baselines and/or the GHG Reduction Levels), and feasibility of the GHG Reduction Levels.

2. **GHG Baselines** from CDPHE for each compliance year based on MPO models instead of the statewide model for any MPO that prefers the GHG Baselines in the rule to be set based on their in-house model.
 - **Status:** The NFRMPO submitted this request to CDPHE on July 29, 2021, for the NFRMPO region. In a best-case scenario, these results will not be available until October 1, 2021. CDPHE staff are experienced and trained in using the EPA's Motor Vehicle Emissions Simulator (MOVES) model, which is the model needed to turn outputs from the travel demand model into GHG emission estimates. MPO and CDOT staff do not have the experience or training to run MOVES.
 - **Reason:** CDOT and each MPO maintain their own travel demand model. These models have different update schedules, base years, and sensitivities. The GHG baselines in the rule were set using the statewide model; however, the NFRMPO will demonstrate compliance using the travel demand model maintained by the NFRMPO, as allowed by the rule. Using one model to set a baseline and a different model to assess compliance is a concern because they could show different outputs with the same set of inputs. Using the MPO model to demonstrate compliance instead of the statewide model is preferable because it will be more resource efficient allowing for model updates and iterations that would not be feasible if the information needs to pass through to CDOT and incorporated into the statewide model each time a GHG analysis is needed.
3. **Corrections to the GHG Reduction Levels** from CDOT for Table 1 to address the likely error that occurred when transferring data between models.
 - **Status:** This issue was originally raised on July 6, 2021, and has been raised several other times since then. On August 31, 2021, CDOT staff agreed it was likely an issue and are currently investigating it.
 - **Reason:** It appears light-duty VMT reductions were mistakenly applied to all vehicle types, resulting in unreasonably high GHG Reduction Levels in the later compliance years. This can most clearly be seen in the 2050 compliance year, which shows a reduction of 0.7 MMT GHG using strategies that reduce light duty VMT while also assuming only 3 percent of light duty vehicles will be powered by internal combustion engines in 2050. It is not possible for the VMT reductions of 3 percent of the light duty fleet to create 0.7 MMT in GHG reductions.



4. **Per capita GHG emissions** from CDOT in each compliance year to enable the rule's GHG estimates to be more tangible.
 - **Status:** Commissioner Bracke requested this information at the TC Workshop on August 18, 2021. CDOT staff agreed to provide this information, and again at a meeting with NFRMPO staff on August 27, 2021, CDOT staff agreed this information would be made available.
 - **Reason:** The State of Colorado, but particularly the Front Range, is projected to have tremendous population and employment growth. GHG per capita would provide a clearer picture into how the reduction levels are trending while the population increases.

Providing time in the rulemaking for review of these four items will enhance, not jeopardize, the ability of the NFRMPO, DRCOG, and CDOT to meet the October 1, 2022, deadline for updating their plans in compliance with the GHG rule per the requirements of SB21-260.

The NFRMPO appreciates the time and effort CDOT staff has committed to developing a GHG Rule to reduce GHG emissions from transportation planning. We respectfully request the Hearing Officer, TC Ad Hoc Committee, and the TC ensure there is adequate time for public comment, and we look forward to continuing the collaboration of the NFRMPO with CDOT staff in this effort. If you have any questions, please contact [REDACTED]

Sincerely,

[REDACTED]

[REDACTED]






GHG Rule Time Request 9.13.2021

Final Audit Report

2021-09-13

Created:	2021-09-13
By:	[REDACTED]
Status:	Signed
Transaction ID:	[REDACTED]

"GHG Rule Time Request 9.13.2021" History

-  Document created by NFR MPO [REDACTED]
2021-09-13 - 5:43:22 PM [REDACTED]
-  Document emailed to [REDACTED] for signature
2021-09-13 - 5:43:42 PM GMT
-  Email viewed by [REDACTED]
2021-09-13 - 10:10:09 PM GMT - [REDACTED]
-  Document e-signed by [REDACTED]
Signature Date: 2021-09-13 - 10:10:44 PM GMT - Time Source: [REDACTED]
-  Agreement completed.
2021-09-13 - 10:10:44 PM GMT



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG pollution reduction standard comments

1 message

Wed, Sep 15, 2021 at 1:35 PM

To: dot_rules@state.co.us

I am writing today on behalf of myself and my family. Thank you for the opportunity to provide written testimony.

Reducing greenhouse gas pollution is of utmost importance to our community, Colorado, the nation, and the world. If successful, this rulemaking will be among the first of its kind in the country. I appreciate CDOT for undertaking this project.

- While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. It's impossible to miss the effects that climate change is having in Western Colorado. From the beetle-killed trees, to the record-breaking heat waves after record-breaking heat-waves, to the intense drought that has gripped our region for nearly 20 years. Wildfire smoke the last two years has been intense, unhealthy, and pervasive. This is not the Colorado that we have come to know and love!
- This rulemaking should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.
- A transportation system built to serve cars limits how we can move. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases freedom of choice for urban and rural Coloradans.
- As an EV driver and advocate, I applaud the implementation of Colorado's "DC Fast Charging Corridors". However, we need more DC fast chargers in visible and usable places such as roadside rest areas. Level 2 chargers should be more present in State Parks, apartment and condo complexes, and major workplaces.

Thank you,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Please strengthen the Greenhouse Gas Pollution Standard

1 message

Wed, Sep 15, 2021 at 9:31 PM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear CDOT Rulemaking Comments,

Our car-centric transportation system has divided communities, polluted our air, and left Coloradans with few options for safely and conveniently moving around our state. I'm excited to see this rulemaking moving forward and have a few recommendations for improving the draft.

I urge you to strengthen the rule to center communities most harmed by the impacts of our existing transportation system. A Transportation Equity Framework should be developed as a part of this process and representatives of disproportionately impacted and marginalized communities should be included in developing, monitoring, and implementing this rule.

Colorado is in an air quality crisis and transportation is a top contributor. We must take aggressive action to reduce emissions or we will all continue to pay the price by way of air pollution and the ongoing impacts of the climate crisis. Please outline specific goals for pollution reduction that will enable us to meet existing air quality targets.

I urge you to consider these changes and continue to strengthen this rule through the revision process.

Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]

Exhibit 14



COLORADO
Department of Transportation

2829 W. Howard Place
Denver, CO 80204-2305

MEMORANDUM

To: Office of Policy and Government Relations
From: Natalie Lutz, Rules Administrator
Date: August 23, 2021
RE: **Permanent Records Retention of Rule File for 2 CCR 601-22**

Please establish an official rule making file for the rulemaking and hearing process pursuant to § 24-4-103(8.1), C.R.S. which requires that “an agency shall maintain an official rulemaking record for each proposed rule for which a notice of proposed rulemaking has been published in the Colorado Register. Such rulemaking record shall be maintained by the agency until all administrative and judicial review procedures have been completed pursuant to the provisions of this article. The rulemaking record shall be available for public inspection.”

For retention purposes, this file should be considered permanent.

Please contact me if you need additional information.

Natalie Lutz
303.757.9441
Natalie.Lutz@state.co.us



Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?
9/14/2021 14:26:00	dean.bressler@mesacounty.us	Dean Bressler	Grand Valley MPO	970-623-8479	I have not decided yet.	Yes	Yes
9/14/2021 14:31:31	jbaldwin@otero.gov	Jim	South East TPR [1]	719 468 1629	I have not decided yet.	No	No
9/14/2021 14:30:36	jenny@conservationco.org	Jenny Gaeng	Conservation Colorado	4438030368	Yes	Yes	No
9/14/2021 14:33:50	john.featherstone@state.co.us	John Featherstone	Colorado Department of Transportation	9084160514	No	No	Yes
9/14/2021 14:36:42	erelford@weldgov.com	Elizabeth Relford	Weld County	9706735836	I have not decided yet.	Yes	Yes
9/14/2021 14:40:37	jason.longsdorf@hdrinc.com	Jason Longsdorf	HDR	13033014017	No	No	No
9/14/2021 14:41:26	kelly.blynn@state.co.us	Kelly Blynn	CEO	6102205378	No	I have not decided yet.	Yes
9/14/2021 14:41:45	etracy@larimer.org	Eric Tracy	Larimer County	9704985729	No	No	No
9/14/2021 14:48:24	artellme2@gmail.com	Karen Artell	n/a		No	I have not decided yet.	No
9/14/2021 14:51:06	rongretlarsen@comcast.net	Ronal Larson	Larson Consulting	17203511828	I have not decided yet.	I have not decided yet.	Yes
9/14/2021 15:25:42	afarouche@earthjustice.org	Ava Farouche	Earthjustice	3039969619	No	No	Yes
✓ 9/14/2021 15:27:51	tmilo@ccainfo.org	Tony Milo	Colorado Contractors Assoc	3039214650	Yes	Yes	Yes
9/14/2021 15:35:03	jsriver@RAQC.org	Jen Shriver	Regional Air Quality Council	7205646950	Yes	I have not decided yet.	Yes
9/14/2021 15:45:49	elizabeth.scherer@denvergov.org	Elizabeth Scherer	Denver Dept. Public Health & Environment	9088393445	No	No	No
✓ 9/15/2021 11:42:12	citizensforcleanairgj@gmail.com	Karen Sjoberg	Citizens for Clean Air Grand Junction	1-970-242-1054	Yes [2]	I have not decided yet. [3]	Yes
9/14/2021 16:23:29	kathleen.pritchard@dgslaw.com	Kathleen Pritchard	DGS	2567623899	No	No	No
9/14/2021 16:38:58	kbullen@fruita.org	Kimberly Bullen	City of Fruita	9702501279	No	I have not decided yet.	Yes
9/14/2021 16:52:30	ning.wigraisakda@state.co.us	Ning Wigraisakda	Colorado Department of Public Health and Environment	3036923215	No	No	Yes
9/15/2021 6:58:04	michaelgurule@haselden.com	Michael Gurule	Haselden Construction	3037283824	I have not decided yet.	I have not decided yet.	Yes
9/15/2021 7:57:09	david.mintzer@gmail.com	David Mintzer		3038596657	I have not decided yet.	Yes	Yes
9/15/2021 8:51:02	kyle.alpha@unitedco.com	Kyle Alpha	United Companies	9706407340	Yes	I have not decided yet.	Yes
9/15/2021 9:11:43	vheersink@alamosacounty.org	Vern Heersink	Alamosa County	7198501629	I have not decided yet.	I have not decided yet.	Yes
9/15/2021 9:30:12	aschluntz@earthjustice.org	Alexandra Schluntz	Earthjustice	5055738479	No	Yes	Yes
9/15/2021 9:55:42	hhuryk@bhfs.com	Harry Huryk	Brownstein Hyatt Farber Schreck	13032231564	No	No	Yes
✓ 9/15/2021 10:02:09	gary.moyer@rbc.us	Gary Moyer	Rio Blanco County Commissioner	19706295136	Yes	Yes	Yes
9/15/2021 10:36:47	mvillard@moffatcounty.net	Melody Villard	Moffat County	19708249155	No	I have not decided yet.	Yes
9/15/2021 11:05:30	jeramy.murray@state.co.us	Jeramy Murray	CDPHE	3036923245	No	No	No
9/15/2021 12:11:10	burchell.alison@gmail.com	Alison Burchell	NTS Group, CEA, City of Boulder - Energy Task force	13034992717	No	I have not decided yet.	Yes
9/15/2021 12:13:18	jfogleman96@gmail.com	Jake Fogleman			No	I have not decided yet.	Yes
9/15/2021 13:42:39	Stephanie.Blochowiak@gmail.com	Stephanie Blochowiak	RockSol Consulting Inc	9702311913	No	No	Yes
9/15/2021 14:38:51	diane@gjchamber.org	Diane Schwenke	GJ Chamber	9702506461	Yes	I have not decided yet.	Yes
9/15/2021 14:41:34	rrash@montrosecounty.net	Roger Rash	Montrose County	720 732 2745	I have not decided yet.	I have not decided yet.	Yes

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?
8/18/2021 14:36:04	David.Fife@unitedco.com	David Fife	United Companies	19705497122	I have not decided yet.	I have not decided yet.	Yes
8/18/2021 19:52:52	tarl@capitoltsolutionsinc.com	Tarl King	Capitol Solutions	3038091233	No	No	Yes
8/17/2021 9:54:24	celbridge@wagnerequipment.com	Cody Eldridge	Wagner Equipment Co.	3033784468	No	No	Yes
8/17/2021 10:20:59	kbullen@fruita.org	Kimberly Bullen	City of Fruita	(970)250-1279	No	I have not decided yet.	Yes
8/17/2021 16:41:24	meszaros@pinyon-env.com	Katlin Mezaros	Pinyon Environmental, Inc.	6312450308	No	I have not decided yet.	Yes
8/23/2021 12:49:11	asekulich@powerpro.com	Alma Sekulich	Innovative Textiles, Inc.	19702503002	No	I have not decided yet.	Yes
8/24/2021 9:15:38	sgrieger@wcca-gi.com	Shawna Grieger	Western Colorado Contractors Assn	9702451394	I have not decided yet.	I have not decided yet.	Yes
8/25/2021 8:30:05	lvanoni@archuletacounty.org	Laura Vanoni	Archuleta County	9702642250	I have not decided yet.	I have not decided yet.	Yes
9/1/2021 9:41:16	marie@vennerconsulting.com	Marie Venner	Small Business Alliance	303 798 5333	Yes	I have not decided yet.	Yes
9/1/2021 9:49:35	david.averill@smartelluride.com	David Averill	S.M.A.R.T.	9709881219	No	No	Yes
9/1/2021 11:29:06	lauren.masias@coloradocompetes.com	Lauren Masias	Colorado Competitive Council	3036561941	I have not decided yet.	I have not decided yet.	Yes
9/1/2021 14:38:23	jeff.purdy@capcolinc.com	Jeff Purdy	Capco LLC	9702438750	No	I have not decided yet.	Yes
9/1/2021 16:19:36	benty3z@yahoo.com	Christopher Coleman	Hg Consult	9702091119	No	Yes	Yes
9/2/2021 9:02:24	jmugg@hgcons.com	Jerry Mugg		7207230679	No	No	No
9/7/2021 13:18:34	sandovalsusana2021@gmail.com	Susana Sandoval	Human Rights Commissioner	3123079051	Yes	Yes	Yes
9/7/2021 13:59:22	eralford@weldgov.com	Elizabeth Relford	Weld County	970-673-5836	I have not decided yet.	I have not decided yet.	Yes
9/8/2021 9:46:39	kkoliski@yahoo.com	Kurt Kolleth	Kimley-Horn	303-667-2138	No	No	Yes
9/8/2021 11:31:59	MMINOR@CPRMAL.ORG	Nathaniel Minor	Colorado Public Radio	2184431272	No	No	Yes
9/9/2021 11:26:22	bsarahbirk@gmail.com	Sarah Birkhauser		3035548824	I have not decided yet.	I have not decided yet.	No
9/9/2021 12:38:33	commissioner.stuart@state.co.us	Karen Stuart	CDOT TC	3032633079	No	No	Yes
9/9/2021 12:44:36	jennifer.perez@ball.aerospace.corr	Jenn Perez	Ball Aerospace	303-939-5327	No	I have not decided yet.	Yes
9/9/2021 14:33:12	drew.fumes@state.co.us	Drew Fumes	CDOT	3037200891	I have not decided yet.	No	Yes
9/10/2021 9:06:46	steve.rasor@comcast.net	steve rasor		303 494 4960	No	I have not decided yet.	Yes
9/10/2021 11:11:58	jason@monumentoil.com	Jason Farrington	Monument Oil Company	9702453440	No	I have not decided yet.	Yes
9/11/2021 17:00:35	jdark@town.ridgway.co.us	John Clark	Town of Ridgway	(970) 417-8434	Yes	I have not decided yet.	No
9/12/2021 17:35:48	kellygreenlover@gmail.com	Patricia Kelley	New Day Hydrogen	303-829-5358	No	I have not decided yet.	Yes
9/13/2021 11:02:42	chris@atlassolar.com	Christopher Campbell	Atlas Solar Center & Sunrabit Clean Transport	3617799176	Yes	Yes	No
9/13/2021 13:38:43	deinonychi@gmail.com	John Hodge	Private Party	9704627119	I have not decided yet.	Yes	Yes
9/13/2021 14:16:17	jhome@ramboil.com	Jeremy Horne	Ramboll	9497983617	Yes	I have not decided yet.	Yes
9/14/2021 8:36:57	catie@sightline.org	Catie Gould	Sightline Institute		No	No	No
9/14/2021 10:30:35	greg.poschman@pitkincounty.com	Greg Poschman	Pitkin County	9703097997	Yes	I have not decided yet.	Yes
9/14/2021 10:42:43	mbornhoff@infmpo.org	Medora Bornhoff	North Front Range Metropolitan Planning Organization	9702898283	I have not decided yet.	Yes	Yes
9/14/2021 10:54:29	sjames@weldgov.com	Scott James	Weld Board of County Commissioners	970-227-8386	Yes	Yes	Yes
9/14/2021 14:19:18	slots3@men.com	Bill Hoffman		9702165413	I have not decided yet.	I have not decided yet.	Yes

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?
9/15/2021 16:21:13	jim.doody@elamconstruction.com	Jim Doody	Kilgore Companies LLC dba Elam Construction	9707126634	I have not decided yet.	I have not decided yet.	Yes
9/16/2021 15:08:03	jmurray@denverpost.com	Jon Murray	The Denver Post	3039541405	No	No	No
9/16/2021 15:14:15	reneechnacon@spiritofthesun.org	Renee M. Chacon	Spirit of the Sun	7202244204	Yes	I have not decided yet.	Yes
9/16/2021 15:20:18	mmionstheill@gmail.com	Micaela Iron Shell	350 Colorado	7203413089	I have not decided yet.	Yes	Yes
9/16/2021 15:30:41	meszaros@pinyon-env.com	Kaitlin Meszaros	Pinyon Environmental, Inc	6312450308	No	I have not decided yet.	Yes
9/16/2021 15:37:25	daniellaa@gcity.org	Dani Acosta	City of Grand Junction	9702564089	No	I have not decided yet.	Yes
9/16/2021 15:39:00	joangreen@me.com	Joan Turner	J. Andrew Green & assoc., Inc		I have not decided yet.	I have not decided yet.	Yes
9/16/2021 15:41:35	felix@gcity.org	Felix Landry	City of Grand Junction	9702564009	No	I have not decided yet.	No
9/16/2021 15:52:47	vanessa.santistevan@state.co.us	Vanessa Santistevan	CDOT	9703502264	No	No	Yes
9/16/2021 19:00:38	soliver@monsiecleanairforce.org	Shaina Oliver	Independent	3039942421	Yes	No	Yes
9/16/2021 20:26:53	ahutchison@tochamber.org	Ann Hutchison	FC Area Chamber	9702182288	Yes	Yes	Yes
9/16/2021 20:28:06	daniel.larkin@mesacounty.us	Daniel Larkin	Mesa County	970-254-4151	No	I have not decided yet.	Yes
9/16/2021 21:54:35	kliffe@gmail.com	Keith Fife	Myself		I have not decided yet.	I have not decided yet.	No

Elizabeth
Palkford

Tim Consoadlyne



No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
1	GARY Meyer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Leo Blane Comm
2	STEPH Carter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cabrer / Bicycle Co
3	Carol STANBY	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	JEAN BRESSLER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GV Planning
5	JASON Hudell	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6	DAVE GEARIK	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
24	Eric Mocko - City of Grand Junction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ericmocko@cityofgj.com
25		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
31		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
35		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
36		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
37		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
38		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
39		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
40		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
41		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
42		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
43		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
44		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
45		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
46		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

15 B

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings?
		Yes	No	Yes	No	If yes, please provide your email address.
1	Chris Chovan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	no
2	Jessica Holguin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Alexandra Schlutz	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
✓ 4	Piep van Heuven	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Piep@BicycleColorado.org
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

No. Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
24 Jenny Gaery	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
25	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
26	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
27	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
28	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
29	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
30	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
31	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
32	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
33	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
34	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
35	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
36	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
37	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
38	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
39	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
40	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
41	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
42	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
43	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
44	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
45	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
46	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?
8/16/2021 8:45:57	william.obermann@denvergov.org	Bill Obermann	City and County of Denver	7208559952	I have not decided yet.	I have not decided yet.	No
8/16/2021 13:56:24	Katy@tchd.org	Kate Fury	TCHD	9045345022	I have not decided yet.	I have not decided yet.	No
8/16/2021 14:12:43	mike@westconcolorado.org	Michael Hughes	West Line Corridor Collaborative	303-941-8010	Yes	Yes	Yes
8/16/2021 16:27:53	copeland@bouldercountry.org	Chris Copeland	Boulder County	3034411242	Yes	Yes	No
8/16/2021 17:05:45	katrachel@cdotid5.com	Kathleen Barckle	CDOT Transportation Commission	970-219-6765	No	No	No
8/16/2021 18:41:29	bsattler@gmail.com	Ramresh Bhatt	NA		No	I have not decided yet.	Yes
8/17/2021 6:40:26	tan@capitol-solutionsinc.com	Tan King	Capitol Solutions	3039091233	Yes	I have not decided yet.	Yes
8/17/2021 8:18:05	katlon@dtccog.org	Katie Fallon	Denver Regional Council of Government	3034806757	No	I have not decided yet.	Yes
8/17/2021 8:52:33	katherine.mcferson@gmail.com	KC McFerson	City and County of Denver	7208559952	No	I have not decided yet.	Yes
8/17/2021 8:53:38	william.obermann@denvergov.org	Bill Obermann	City and County of Denver	7208559952	Yes	Yes	Yes
8/17/2021 16:41:50	meszaros@pnyon-env.com	Katlin Meszaros	Pinyon Environmental, Inc.	6312450308	No	I have not decided yet.	Yes
8/17/2021 17:12:29	brent.goodie@gmail.com	Brent Goodie	Public	7202915613	I have not decided yet.	I have not decided yet.	Yes
8/18/2021 11:15:07	ipulver@douglass.co.us	Lauren Pulver	Douglass County	720-415-9170	No	I have not decided yet.	No
8/20/2021 9:57:44	deborah.kaploff@westernresources.com	Deborah Kaploff	Western Resource Advocates	3013432978	I have not decided yet.	I have not decided yet.	Yes
8/23/2021 11:40:39	mike@westconcolorado.org	Michael Hughes	West Corridor Transport Management	303-941-8010	Yes	Yes	Yes
8/26/2021 10:55:04	sanson@poudrecolorado.gov	Jean Sanson	Capitol Solutions	13038091233	I have not decided yet.	I have not decided yet.	Yes
8/27/2021 9:23:51	tan@capitol-solutionsinc.com	Tan King	Capitol Solutions	3038705227	No	I have not decided yet.	Yes
8/31/2021 14:28:05	kevin.matthews@gmail.com	Kevin Matthews	YMJBV Denver/350 Denver	617-821-7886	Yes	I have not decided yet.	Yes
8/31/2021 10:43:56	dan.graewe@coag.gov	Dan Graewe	Colorado Department of Law	720-508-6278	No	I have not decided yet.	No
9/2/2021 9:21:02	greg.mh@denvergov.org	Gracia Rink	City & County of Denver	7208927830	No	I have not decided yet.	Yes
9/2/2021 8:51:42	ynholqum@gmail.com	Yessica Holqum	City & County of Denver	7203419391	No	I have not decided yet.	Yes
9/2/2021 12:34:00	janrose212@yahoo.com	Jan Rose	CLCC (CO Coalition for a Livable City)	3036536068	Yes	I have not decided yet.	Yes
9/2/2021 8:00:08	james.eussen@state.co.us	James Eussen	CDOT R4	970-301-3907	No	I have not decided yet.	No
9/2/2021 9:14:05	genlie@rocked.com	Lauren Genlie	RoadSol Consulting Group		No	I have not decided yet.	Yes
9/2/2021 7:21:39	jonathan.feng@gmail.com	Jonathan Feng	Self	14047987914	I have not decided yet.	I have not decided yet.	No
9/2/2021 8:37:24	dezval@gmail.com	Devin Zavala	Millie High Comments	6823583332	Yes	I have not decided yet.	Yes
9/2/2021 11:27:26	bsarahbhr@gmail.com	Sarah Birkhaeuser	CDOT TC	303-549-8824	I have not decided yet.	Yes	No
9/2/2021 12:39:47	commissioner.stuart@state.co.us	Karen Stuart	Ball Aerospace	3032633079	No	I have not decided yet.	Yes
9/2/2021 12:45:53	jenifer.renez@ball.aerospace.com	Jean Perez	Ball Aerospace	13039395227	No	I have not decided yet.	Yes
9/3/2021 8:46:02	bewright15@outlook.com	Benedict Whight	Benedict Whight	303-828-6705	I have not decided yet.	I have not decided yet.	Yes
9/3/2021 12:16:19	bewright15@outlook.com	Benedict Whight	Benedict Whight	3038286705	I have not decided yet.	Yes	Yes
9/14/2021 10:06:09	vanessa.henderson@state.co.us	Vanessa	CDOT	720-497-8924	No	I have not decided yet.	No
9/14/2021 12:28:36	aklorvik@gmail.com	Alison Tonvik	Please Select	3036890471	Yes	I have not decided yet.	No
9/14/2021 13:58:28	alisoncwjll@gmail.com	Alison Cowjill	Community member	3035118810	Yes	I have not decided yet.	No
9/14/2021 15:16:22	jodyrick@gmail.com	Jody Davidson	Community member	7739888474	Yes	I have not decided yet.	Yes
9/14/2021 18:53:09	laytonh@gmail.com	Layton Hill	N/A	30391132058	Yes	I have not decided yet.	Yes
9/14/2021 23:18:27	rcoury@earthjustice.org	Rebecca Coury	Earthjustice	3039989622	No	I have not decided yet.	Yes
9/15/2021 7:58:28	jmw562@cornell.edu	James Warren	N/A	7204224287	Yes	I have not decided yet.	No
9/15/2021 11:03:07	sharon@mymountaintown.com	Sharon Trilk	My Mountain Town	720-608-0285	No	I have not decided yet.	No
9/15/2021 15:26:56	claus_wegner@mac.com	Claus	Wagner	3037488125	No	I have not decided yet.	No
9/15/2021 15:33:52	phibocic@gmail.com	Jonathan Piboco	Jonathan Piboco	6122866056	Yes	Yes	Yes
9/16/2021 19:05:20	abram.handler@gmail.com	Abram Handler		9177103155	Yes	Yes	Yes
9/17/2021 9:48:28	christopher.yen.miller@gmail.com	Chris Miller		7655244098	Yes	I have not decided yet.	No
9/17/2021 9:52:41	copeland@bouldercountry.org	Chris Copeland	Boulder County	3034411242	Yes	Yes	No
9/19/2021 8:36:53	robert.a.greer@gmail.com	Robert Greer	CDOT	661-498-5202	Yes	Yes	Yes
9/19/2021 14:41:30	david.mintzer@gmail.com	David Mintzer	CDOT	3039698657	Yes	Yes	Yes
9/20/2021 10:47:43	idacosstitt@gmail.com	Ida Sosstitt-Glesner	CHATO'S CONCRETE, LLC	8049804653	No	Yes	Yes
9/20/2021 12:34:55	MARLENE@CHATO'S CONCRETE, LLC	MARLENE ANDRADA	CHATO'S CONCRETE, LLC	7206884854	Yes	Yes	Yes
9/20/2021 13:18:53	jean.l.perez76@gmail.com	Jean Perez	Ball Aerospace	7202699664	No	I have not decided yet.	Yes
9/20/2021 13:19:16	collins@dnyon-env.com	Dustin Collins	Pinyon Environmental, Inc.	17203332976	No	I have not decided yet.	Yes
9/20/2021 13:27:04	brent.goodie@gmail.com	Brent Goodie	Public	7202915613	I have not decided yet.	I have not decided yet.	No
9/20/2021 13:27:10	phil.greenwald@longmontcolorado.gov	Phil Greenwald	City of Longmont	303-651-8335	I have not decided yet.	I have not decided yet.	No
9/20/2021 13:28:56	adolopez-ncc@gmail.com	Adrian Lopez	Northern Colorado Clean Cities	970-439-2826	I have not decided yet.	I have not decided yet.	Yes
9/20/2021 13:31:54	kathleen.pritchard@gmail.com	Kathleen Pritchard	DGS LLP	2967623899	No	I have not decided yet.	Yes
9/20/2021 13:35:10	sahver@nomscaanarforce.org	Shaina Oliver	Independent	13039942421	I have not decided yet.	Yes	Yes
9/20/2021 13:40:45	rene.millard@comcast.net	Renea Millard Chacon	Spirit of the Sun	7202244204	Yes	I have not decided yet.	Yes
9/20/2021 13:41:31	pidoe@comcast.net	Phillip Doe	Be the Change, Colorado	3039496986	I have not decided yet.	I have not decided yet.	Yes

15 C

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
✓1	Randy Helms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
✓2	Andy Bunnings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NO
3	Richard B. Robertson	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	YES
4	Rick SONNENBURG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RSONNENBURG@PPACG.ORG
5	John LIOSATOS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	JLIOSATOS@PPACG.ORG
6	Jim Godfrey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	jim.godfrey@comcast.net
✓7	Mark Schenberger	<input type="checkbox"/>	Maybe? <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	the.schenberger.l@gmail.com
8	Robert Belland	<input type="checkbox"/>	Maybe <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	450distrider1970@gmail.com
✓9	Cory Sutela	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cory@bikecoloradosprings.org
10	Lisa Tarmoore Hickey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lisahickey@newlawgroup.com
11	Denise Widner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	denise.widner@gmail.com
12	Michael Colombe	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	michaelcolombe3@gmail.com
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?	
8/16/2021 8:45:57	william.obermann@denvergov.org	Bill Obermann	City and County of Denver	7208658952	I have not decided yet.	I have not decided yet.	Yes	
8/16/2021 13:56:24	kfury@tchd.org	Kate Fury	TCHD	9045345022	I have not decided yet.	I have not decided yet.	No	
8/16/2021 14:12:43	mike@westcorridor.org	Michael Hughes	West Line Corridor Collaborative	303-941-8010	Yes	Yes	Yes	
8/16/2021 16:27:53	ccopeland@bouldercounty.org	Cindy Copeland	Boulder County	3034411242	Yes	Yes	No	
8/16/2021 17:05:45	kbrackeTCDistrict5@gmail.com	Kathleen Bracke	CDOT Transportation Commission	970-219-6765	No	No	Yes	
8/16/2021 18:41:29	bhattlex@gmail.com	Ramesh Bhatt	n/a		Yes	I have not decided yet.	Yes	
8/17/2021 6:40:26	tari@capitolsolutionsinc.com	Tari King	Capitol Solutions	3038091233	No	No	Yes	
8/17/2021 8:18:05	kfallon@drcog.org	Kalie Fallon	Denver Regional Council of Governm	3034806757	No	I have not decided yet.	Yes	
8/17/2021 9:52:33	katherine.mcferson@gmail.com	KC McFerson			No	Yes	Yes	
8/17/2021 9:53:38	william.obermann@denvergov.org	Bill Obermann	City and County of Denver	7208658952	Yes	Yes	Yes	
8/17/2021 16:41:50	meszaros@pinyon-env.com	Kaitlin Meszaros	Pinyon Environmental, Inc.	6312450308	No	I have not decided yet.	Yes	
8/17/2021 17:12:29	brent.goodlet@gmail.com	Brent Goodlet	Public	7202915613	I have not decided yet.	I have not decided yet.	Yes	
8/18/2021 11:15:07	lpulver@douglas.co.us	Lauren Pulver	Douglas County	720-415-9170	No	I have not decided yet.	Yes	
8/20/2021 9:57:44	deborah.kapiloff@westernresources.com	Deborah Kapiloff	Western Resource Advocates	3013432978	I have not decided yet.	I have not decided yet.	Yes	
8/23/2021 11:40:39	mike@westcorridor.org	Michael Hughes	West Corridor Transpo Management	303-941-8010	Yes	Yes	Yes	
8/26/2021 10:55:04	sansonj@bouldercolorado.gov	Jean Sanson	City of Boulder	3038705227	I have not decided yet.	I have not decided yet.	Yes	
8/27/2021 9:23:51	tari@capitolsolutionsinc.com	Tari King	Capitol Solutions	13038091233	No	No	Yes	
8/31/2021 14:28:05	kevin.r.matthews@gmail.com	Kevin Matthews	YIMBY Denver/350 Denver	617 821 7686	Yes	I have not decided yet.	Yes	
9/1/2021 10:43:56	dan.graeve@coag.gov	Dan Graeve	Colorado Department of Law	720-508-6278	No	No	No	
9/2/2021 9:21:02	grace.rink@denvergov.org	Grace Rink	City & County of Denver	7206927830	No	No	Yes	
9/3/2021 8:51:42	yxholguin@gmail.com	Yessica Holguin		7203419391	No	No	Yes	
9/4/2021 12:34:00	janrose212@yahoo.com	Jan Rose	CCLC (CO Coalition for a Livable Cl	3036536068	Yes	I have not decided yet.	Yes	
9/8/2021 8:00:08	james.eussen@state.co.us	James Eussen	CDOT R4	970-301-3907	No	No	No	
9/8/2021 9:14:05	gentile@rocksol.com	Lauren Gentile	RockSol Consulting Group		No	I have not decided yet.	Yes	
9/9/2021 7:21:39	jonathan.fertig@gmail.com	Jonathan Fertig	Self	14047987914	I have not decided yet.	I have not decided yet.	No	
9/9/2021 9:37:24	dzavala@milehighconnects.org	Deyanira Zavala	Mile High Connects	6823658332	Yes	I have not decided yet.	Yes	
9/9/2021 11:27:26	bsarahbirk@gmail.com	Sarah Birkhaeuser		303-549-8824	I have not decided yet.	Yes	No	
9/9/2021 12:39:47	commissioner.stuart@state.co.us	Karen Stuart	CDOT TC	3032633079	No	No	Yes	
9/9/2021 12:45:53	jennifer.perez@ball.aerospace.com	Jenn Perez	Ball Aerospace	13039395327	No	I have not decided yet.	Yes	
9/13/2021 8:46:02	bewright15@outlook.com	Benedict Wright		303-828-6705	I have not decided yet.	Yes	Yes	
9/13/2021 12:16:19	bewright15@outlook.com	Benedict Wright		3038286705	I have not decided yet.	Yes	Yes	
9/14/2021 10:06:09	vanessa.henderson@state.co.us	Vanessa	CDOT	720-497-6924	No	No	No	
9/14/2021 12:29:36	aktorvik@gmail.com	Alison Torvik	Please Select	3036680471	Yes	No	No	
9/14/2021 13:58:28	allencowgill@gmail.com	Allen Cowgill		3035186810	Yes	No	No	
9/14/2021 15:15:22	jodyvick@gmail.com	Jody Davison	Community member	7739888474	Yes	Yes	Yes	
9/14/2021 19:53:09	laytoniv@gmail.com	Layton Hill	N/A	3039132058	Yes	I have not decided yet.	Yes	
9/14/2021 23:18:27	rcurry@earthjustice.org	Rebecca Curry	Earthjustice		3039969622	No	I have not decided yet.	Yes
9/15/2021 7:58:28	jmw562@comell.edu	James Warren	N/A		7204224287	Yes	Yes	No
9/15/2021 11:03:07	sharont@mymountaintown.com	Sharon Trlik	My Mountain Town	720-608-0285		No	No	No
9/15/2021 15:26:56	claus_wagner@mac.com	Claus	Wagner		3037488125	No	Yes	No
9/15/2021 15:33:52	pitoccojc@gmail.com	Jonathan Pitocco			6122866056	Yes	Yes	Yes
9/16/2021 19:05:20	abram.handler@gmail.com	Abram Handler			9177103155	Yes	No	Yes
9/17/2021 9:49:28	christopher.ryan.miller@gmail.com	Chris Miller			7655244098	Yes	I have not decided yet.	No
9/17/2021 9:52:41	ccopeland@bouldercounty.org	Cindy Copeland	Boulder County		3034411242	Yes	Yes	No
9/19/2021 8:36:53	robert.a.greer@gmail.com	Robert Greer	Voter	661-496-5202		Yes	Yes	Yes
9/19/2021 14:41:30	david.mintzer@gmail.com	David Mintzer			3038596657	Yes	Yes	Yes
9/20/2021 10:47:43	idacossitt@gmail.com	Ida Cossitt-Glesner			8049806453	No	Yes	Yes
9/20/2021 12:34:55	MARLENE@CHATOSCONCRETE.C	MARLENE ANDRADE [1]	CHATO'S CONCRETE. LLC		7206684834	Yes	No	Yes
9/20/2021 13:18:53	jenn.l.perez76@gmail.com	Jenn Perez	Ball Aerospace		7202899684	No	No	Yes
9/20/2021 13:19:16	collins@pinyon-env.com	Dustin Collins	Pinyon Environmental, Inc.		17203332976	No	No	Yes
9/20/2021 13:27:04	brent.goodlet@gmail.com	Brent Goodlet	Public		7202915613	I have not decided yet.	I have not decided yet.	No
9/20/2021 13:27:10	phil.greenwald@longmontcolorado.g	Phil Greenwald	City of Longmont	303-651-8335		I have not decided yet.	Yes	No
9/20/2021 13:28:56	adlopez.nccc@gmail.com	Adrian Lopez	Northern Colorado Clean Cities	970-439-2926		I have not decided yet.	I have not decided yet.	Yes
9/20/2021 13:31:54	kathleen.pritchard@gmail.com	Kathleen Pritchard	DGS LLP		2567623899	No	No	Yes
9/20/2021 13:35:10	soliver@momscleanairforce.org	Shaina Oliver	independent		13039942421	I have not decided yet.	Yes	Yes
9/20/2021 13:40:45	renee.millardchacon@gmail.com	Renee Millard Chacon	Spirit of the Sun		7202244204	Yes	I have not decided yet.	Yes
9/20/2021 13:41:31	ptdoe@comcast.net	Phillip Doe	Be the Change, Colorado		3039496986	I have not decided yet.	I have not decided yet.	Yes

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?
9/20/2021 13:43:33	schneils@co.larimer.co.us	Lea Schneider	Larimer County Dept of Health & Env	9704986777	No	No	Yes
9/20/2021 14:02:53	tim.roberts@coloradosprings.gov	Tim Roberts	City of Colorado Springs	7193527243	I have not decided yet.	I have not decided yet.	No
9/20/2021 14:08:54	gosselin@rocksol.com	Mark Gosselin	Rocksol Consulting Group	303-962-9313	No	I have not decided yet.	No
9/20/2021 14:57:46	jmurray@denverpost.com	Jon Murray	The Denver Post	3039541405	No	No	No
9/20/2021 15:08:25	garygnurps@gmail.com	Gary Sprung		3038599331	Yes	I have not decided yet.	Yes
9/20/2021 15:08:41	erin@hotshotsupplyco.com	Erin Hartman	Hot Shot Supply Co.	7203521869	Yes	Yes	Yes
9/20/2021 15:26:46	jeansanson@hotmail.com	Jean Sanson	City of Boulder	13038705227	No	I have not decided yet.	Yes
9/20/2021 16:30:27	jcastro1399@gmail.com	José Castro			I have not decided yet.	I have not decided yet.	Yes
9/21/2021 7:40:15	jortizh7@gmail.com	Joanna Ortiz		5306659269	Yes	I have not decided yet.	Yes
9/21/2021 8:40:09	ryan.seastrom@coga.org	Ryan Seastrom	Colorado Oil & Gas Association	3038610362	No	No	Yes
9/21/2021 9:24:02	rrash@montrosecounty.net	Roger Rash	Montrose County	720 732 2745	I have not decided yet.	I have not decided yet.	Yes
9/21/2021 9:52:18	tim.harris@horrocks.com	Tim Harris	Horrocks Engineers	7209791493	I have not decided yet.	I have not decided yet.	Yes
9/21/2021 10:25:52	alex.pulley@fhueg.com	Alex Pulley	Felsburg Holt & Ullevig	3036010371	I have not decided yet.	I have not decided yet.	Yes
9/21/2021 11:52:37	lalucylok@gmail.com	Lucy Molina	Commerce City Resident	7202755479	Yes	I have not decided yet.	Yes
9/21/2021 12:35:18	craig@policypreneur.com	Emerson Williams	Policypreneur.com	3033305541	Yes	Yes	Yes
9/21/2021 12:35:50	ewilson@avon.org	Eva Wilson	Town of Avon	9703902014	No	I have not decided yet.	Yes
9/21/2021 12:47:30	brent.goodlet@gmail.com	Brent Goodlet	Public	7202915613	I have not decided yet.	I have not decided yet.	No
9/21/2021 13:00:52	kelly.blynn@state.co.us	Kelly Blynn	Colorado Energy Office		No	I have not decided yet.	Yes
9/21/2021 13:13:30	denverbridget@gmail.com	Bridget Walsh	VB1-70 CAG	7204403562	I have not decided yet.	I have not decided yet.	Yes
9/21/2021 13:51:45	clevy@bouldercounty.org	Commissioner Claire Levy	Boulder County	3035790156	Yes	I have not decided yet.	No
9/21/2021 14:20:45	jaguirreja@aol.com	Fran Aguirre	Unite North Metro Denver	3034775928	I have not decided yet.	I have not decided yet.	Yes
9/21/2021 14:21:36	beckyrep@gmail.com	Becky English	Sierra Club	303 728-4131	Yes	I have not decided yet.	Yes
9/21/2021 14:26:47	tyler.drum1992@gmail.com	Tyler Drum		3039191214	Yes	I have not decided yet.	Yes
9/21/2021 15:04:35	stevesjrm@gmail.com	Steve Douglas			Yes	I have not decided yet.	Yes
9/21/2021 15:34:21	dehalterman@comcast.net	David Halterman	Management	303-888-3504	No	No	Yes
9/21/2021 16:31:37	grace.rink@denvergov.org	Grace Rink	City and County of Denver	7206927830	Yes	Yes	Yes
9/21/2021 16:43:07	erin.kunkel@martinmarietta.com	Erin Kunkel	Martin Marietta	3032532558	No	Yes	Yes
9/21/2021 19:02:11	anitalouiseseitz@gmail.com	Anita Seitz - Mayor Pro Tem	City of Westminster	303-817-5237	Yes	I have not decided yet.	Yes
9/21/2021 19:04:28	cmurillo@auroragov.org	Crystal Murillo - City Councilor	City of Aurora	720-951-6708	Yes	I have not decided yet.	Yes
9/21/2021 19:06:15	rwheelock@co.clear-creek.co.us	Randy Wheelock - County Commissi	Clear Creek County	970-390-2195	Yes	I have not decided yet.	Yes
9/21/2021 19:07:39	hhenkel@broomfieldcitycouncil.org	Heidi Henkel - City Councilor	City of Broomfield	303-359-4950	Yes	I have not decided yet.	Yes
9/21/2021 19:09:01	julia.s.marvin@gmail.com	Julia Marvin - City Council	City of Thornton	720-201-4801	Yes	I have not decided yet.	Yes
9/22/2021 8:58:28	patrick@duffyredmond.com	Patrick Duffy	None - just interested citizen	4085046459	I have not decided yet.	Yes	Yes
9/22/2021 9:29:24	maritza.braswell@coag.gov	Maritza Dominguez Braswell	COAG	720-614-7211	No	No	No
9/22/2021 9:36:36	samuellmurray86@gmail.com	Samuel Murray	Community Leader	3038429055	Yes	Yes	No
9/22/2021 10:56:11	barrett.jensen@wasteconnections.co	Barrett Jensen	Waste Connections of Colorado	303-301-5383	No	No	Yes

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No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
1	John W. Stephens III	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>iw.stephens@gmail.com</u>
2	Lisa Tormoen Hickley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Eula Adams	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

John Stevens

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDDT rulemaking hearings?	Do you need Spanish interpretation services for this hearing? We require notice at least 48 hours in advance to accommodate this request. / ¿Usted necesita servicios de interpretación al español para esta audiencia? Requerimos por lo menos 48 horas de anticipación para que podamos acomodar el pedido.
8/18/2021 18:46:43	barnett@barnettengineering.us	Maureen Barnett	Barnett Engineering PLLC	7202150324	No	No	Yes	No
8/17/2021 8:43:20	bar@capitolbookstore.com	Teri King	Capitol Solutions	3038091233	No	No	Yes	No
8/17/2021 16:43:01	meszaros@plyon-ent.com	Kellin Meszaros	Plyon Environmental, Inc.	6312450008	No	No	Yes	No
8/16/2021 11:16:05	lujan@tdouglas.co.us	Lauren Puker	Douglas County	720-415-8170	No	No	No	No
8/26/2021 7:51:51	stumptry@muliereng.com	Steven Humphrey	Muller Engineering Company	3035198178	No	No	Yes	No
8/26/2021 14:38:00	aaron.bustow@dcd.gov	Aaron Bustow	Federal Highway Administration	7209633022	No	No	No	No
9/1/2021 9:33:58	mandy.whorton@pebaconsultingco.com	Mandy Whorton	Peak Consulting Group	3039875940	No	No	Yes	No
9/2/2021 7:07:55	steve.gardlar@yahoo.com	Steve Gardlar	Dolores County Commissioner	970 394 0500	No	No	Yes	No
9/9/2021 12:42:20	commissioner.stuart@state.co.us	Karen Stuart	CDDOT TC	3032833079	No	No	Yes	No
9/10/2021 9:47:17	jerry@westurn.com	Jerry Tinharow	Western Urban Sustainability Advisors, LLC	3032844102	No	No	No	No
9/10/2021 13:52:16	bunca.nicholas@gmail.com	Nicholas Bunce	Colorado Office of the Attorney General	8327678935	No	No	Yes	No
9/22/2021 9:21:13	kathy.young@coag.gov	Kathy Young	CDDOT Transportation Commission	7208102121	No	No	No	No
9/22/2021 11:02:08	skylew07@comcast.net	Don Stanton	CDDOT Transportation Commission	7036226475	No	No	No	No
9/22/2021 11:16:20	pswebel@gmail.com	Paul Zwebel	Climate Reality Project	(303)896-7410	Yes	Yes	No	No
9/23/2021 8:28:43	Artirach@Terralogics.com	Arthur Hirach	Climate Reality Project	3037889111	No	Yes	Yes	No
9/23/2021 8:43:48	dpellar@gmail.com	Deborah Pellar	Climate Reality Project	3037889111	No	Yes	Yes	No
9/23/2021 9:24:49	dmitri.simbereg@quanschutz.edu	Dmitri Simberg	University of Colorado Anschutz Medical Ca	3037248241	No	No	Yes	No
9/23/2021 13:47:29	alvanzochristina3@gmail.com	Christine Alonzo	self	7206751464	Yes	No	Yes	No
9/23/2021 16:08:43	tracy@cpa.org	Matt Tibby	Piatta River Power Authority	9702291782	No	No	Yes	No
9/24/2021 15:38:10	tracy@cpa.com	Tracy Sakaguchi	cpa	7203153888	No	Yes	Yes	No
9/24/2021 16:05:44	alexis.schwartz@slamclub.org	Alexis Schwartz	CPA	7203153888	No	No	No	No
9/24/2021 20:06:18	barnett@barnettengineering.us	Maureen Barnett	barnett@barnettengineering.us	7202150324	Yes	Yes	Yes	No
9/25/2021 6:35:10	etha.ammanuati@gmail.com	Ethi Mcklanus	Teela	2406267209	Yes	No	Yes	No
9/25/2021 20:58:33	mestel@jane.com	Jane Mestel	Teela	7206715494	No	No	Yes	No
9/26/2021 6:23:08	Matthew.groves@colorado.auto	Matthew Groves	CADA	3038686861	Yes	No	Yes	No
9/26/2021 10:01:15	tmuauer@centennialco.gov	Termy Muauer	City of Centennial	3037543346	No	No	Yes	No

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No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings?
		Yes	No	Yes	No	If yes, please provide your email address.
47	Gary Beedy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	gary.beedy@gmail.com
48	Rhianna Poss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rhianna.poss@state.co.us
49	Tom Peterson	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	tom.peterson@co-asphalt.com
50		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
51		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
52		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
53		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
54		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
55		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
56		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
57		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
58		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
59		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
61		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
62		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
63		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
64		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
65		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
66		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
67		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
68		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
69		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the rulemaking regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?	Do you need Spanish interpretation services for this hearing? We require notice at least 48 hours in advance to accommodate this request. / ¿Usted necesita servicios de interpretación al español para esta audiencia? Requerimos por lo menos 48 horas de anticipación para que podamos acomodar el pedido.
8/17/2021 6:44:30	tari@capitolsolutionsinc.com	Tari King	Capitol Solutions	3038091233	No	No	Yes	
8/17/2021 16:44:17	meszaros@pinyon-env.com	Kaitlin Meszaros	Pinyon Environmental, Inc	30312450308	No	I have not decided yet.	Yes	
8/24/2021 14:47:32	jmccaleb@smithfield.com	Julie McCaleb	Smithfield Hog Production	970-848-3902	I have not decided yet.	I have not decided yet.	Yes	
8/24/2021 15:12:25	jenn@domestategies.com	Jenn Penn	Dome Strategies	17209372148	No	I have not decided yet.	Yes	
9/1/2021 12:04:01	lauren.masias@coloradocompetes.org	Lauren Masias	Colorado Competitive Co	3036561941	I have not decided yet.	I have not decided yet.	No	
9/1/2021 12:06:07	lisa.knoblauch@longmontcolorado.gov	Lisa Knoblauch	City of Longmont	3036518403	No	No	No	
9/8/2021 8:10:42	james.eussen@state.co.us	James Eussen	R4 CDOT	970-301-3907	No	No	No	
9/14/2021 11:02:08	michael.hines@state.co.us	Mike Hines	CDOT	7197600733	No	I have not decided yet.	Yes	
9/15/2021 13:24:59	josie.hadley@state.co.us	Josie Hadley	Colorado Dept. of Transp	360-852-6414	No	No	Yes	
9/24/2021 15:40:10	tracy@cmca.com	Tracy Sakaguchi	cmca	7203153888	No	Yes	Yes	No
9/26/2021 20:22:05	ntaverna@mines.edu	Nicole Taverna	Colorado School of Mines	610-389-0522	No	No	No	No
9/26/2021 22:34:25	jjud77@gmail.com	Sean Sorensen		3035255936	I have not decided yet.	I have not decided yet.	Yes	No
9/27/2021 5:40:58	cxgodwin10@gmail.com	Claire G			No	No	No	No
9/27/2021 7:31:20	hunterhall864@gmail.com	Hunter Hall			No	I have not decided yet.	No	No
9/27/2021 8:24:14	jmwatkin713@gmail.com	John Watkins		704-560-8737	I have not decided yet.	Yes	Yes	No
9/27/2021 12:59:22	eagle messenger1954@gmail.com	Debi Shirey		17203188069	No	No	Yes	No
9/27/2021 13:59:14	johnadams@pueblo.us	John Adams	PACOG		No	I have not decided yet.	No	No
9/28/2021 9:37:21	AMitchell@parkco.us	Amy Mitchell	Park County County Com	17198380340	I have not decided yet.	I have not decided yet.	Yes	No
9/28/2021 9:39:05	kelly.blynn@state.co.us	Kelly Blynn	Colorado Energy Office		No	I have not decided yet.	Yes	No
9/28/2021 10:07:55	tompeter@co-asphalt.com	Tom Peterson	Colorado Asphalt Paveme	3032296710	Yes	I have not decided yet.	Yes	No
9/28/2021 10:20:54	anwilson@comcast.net	Weston Wilson	BE THE CHANGE - COL	7193370402	No	I have not decided yet.	Yes	No
9/28/2021 11:08:31	cohouse143@gmail.com	Kalli Graham		9706332696	I have not decided yet.	I have not decided yet.	Yes	No
	cathy@pro15.org	Cathy Schull	Pro15	9708679167	Yes	I have not decided yet.	No	No

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
1	BILL BECKER ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	bill@ic.org
2	Medora Bornhoff ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	Dr Stephen L. Henke ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Suzette Mullette ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	Erika Benti ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Mark Houshelt ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	William Karspeck ✓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Elizabeth Reiford ✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Stephanie Blochowiak ✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

15 F

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revisions?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notice of all CDOT rulemaking hearings?	Do you need Spanish interpretation services for this hearing? We require notice at least 48 hours in advance to accommodate this request. / ¿Usted necesita servicios de interpretación al español para esta audiencia? Requerimos por lo menos 48 horas de anticipación para que podamos acomodar el pedido.
9/23/2021 10:32:11	smallette@nfrmpo.org	Suzette Mallette	North Front Range MPO	9709864197	Yes	Yes	No	No [1]
8/16/2021 16:00:56	mbornhoft@nfrmpo.org	Medora Bornhoft	North Front Range Metropolitan Planning Organization	9702898283	Yes	Yes	Yes	
8/16/2021 17:01:17	kbrackeTCDistrict5@gmail.com	Kathleen Bracke	CDOT Transportation Commission	970-219-6765	No	No	Yes	
8/17/2021 6:46:57	tari@capitolsolutionsinc.com	Tari King	Capitol Solutions	3038091233	No	No	Yes	
8/17/2021 8:11:27	stephen.hoemke@necalg.org	Dr. Stephen L. Hoemke	NECALG	9707683858	Yes	No	Yes	
8/17/2021 16:45:10	meszaros@pinyon-env.com	Kaitlin Meszaros	Pinyon Environmental, Inc.	6312450308	No	I have not decided yet.	Yes	
8/17/2021 17:33:14	jimp@lpbroadband.net	Jim Piraino	Citizen	18053779599	I have not decided yet.	I have not decided yet.	Yes	
8/18/2021 9:21:06	rkarasko@nfrmpo.org	Becky Karasko	NFRMPO		No	No	Yes	
8/20/2021 11:13:47	erelford@weldgov.com	Elizabeth Relford	Weld County	970-673-5836	I have not decided yet.	Yes	Yes	
8/24/2021 9:59:46	justin.pipe@state.co.us	Justin Pipe	CDOT	9706911286	I have not decided yet.	I have not decided yet.	No	
8/27/2021 15:46:38	richard.christy@state.co.us	Rich Christy	CDOT	9705902570	No	I have not decided yet.	Yes	
8/31/2021 11:18:38	manager@berthoudraft.org	Ruth Fletcher-Carter	Rural Alternative for Transportation (RRAFT)	(970) 391-8898	No	Yes	Yes	
9/1/2021 7:24:13	kenneth.mooney@necalg.org	Kenneth Mooney	Northeast Colorado Association of Local Governments	9708679409	No	I have not decided yet.	Yes	
9/1/2021 9:34:38	stephen.hoemke@necalg.org	Dr. Stephen Hoemke	NECALG	9707683858	Yes	No	Yes	
9/1/2021 9:40:37	bill@ic.org	Bill Becker	Loveland Chamber of Commerce	970-215-5999	No	No	Yes	
9/1/2021 10:58:51	wil.mannes@state.co.us	Wil	CEO		No	I have not decided yet.	No	
9/1/2021 11:33:56	mar@acec-co.org	Marilen Reimer	American Council of Engineering Companies of Colorado (ACEC Colorado)	303-832-2228	I have not decided yet.	I have not decided yet.	Yes	
9/3/2021 10:33:14	johnmparks1@gmail.com	John Parks	Climate Reality	9706316786	Yes	Yes	Yes	
9/7/2021 16:59:28	tamara.keefe@flueng.com	Tamara Keefe	Felsburg Holt and Ullevig	8018708523	No	I have not decided yet.	Yes	
9/8/2021 8:12:12	james.eussen@state.co.us	James Eussen	R4 CDOT	970-301-3907	No	No	No	
9/8/2021 15:26:34	crperez.consulting@gmail.com	Carla Perez	HDR	13036194583	I have not decided yet.	No	Yes	
9/8/2021 15:59:52	bryce.reeves@state.co.us	Bryce Reeves	CDOT	970-350-2126	No	No	Yes	
9/14/2021 16:17:58	bill@ic.org	Bill Becker	Loveland Chamber of Commerce	970-215-5999	No	No	Yes	
9/20/2021 19:36:10	carchuleta@fcgov.com	Cassie Archuleta	City of Fort Collins	9704071203	No	No	Yes	
9/21/2021 5:56:22	artellme2@gmail.com	Karen Artell			I have not decided yet.	I have not decided yet.		
9/23/2021 9:54:11	farhocl@rams.colostate.edu	Corrina Farho			Yes	No		
9/23/2021 10:35:14	wkarspeck@berthoud.org	William Karspeck	North Front Range MPO		Yes	Yes	No	No
9/23/2021 11:52:58	fertig.ryan@gmail.com	Ryan Fertig			Yes	No	No	No
9/23/2021 13:22:55	sandra.stewart.tab@gmail.com	sandra stewart	Longmont Transportation Advisory Board	3036511689	I have not decided yet.	I have not decided yet.	Yes	No
9/23/2021 15:58:06	AHirsch@Terralogicss.com	Arthur Hirsch	Climate Reality	3037869111	Yes	Yes	Yes	No
9/24/2021 15:41:04	tracy@cmca.com	Tracy Sakaguchi	cmca	7203153888	No	Yes	Yes	No
9/26/2021 8:16:38	karenskib@gmail.com	Karen Balog		970 227-2094	I have not decided yet.	Yes	Yes	No
9/27/2021 13:55:20	jenny@conservationco.org	Jenny Gaeng	Conservation Colorado	4438030368	No	Yes	Yes	No
9/27/2021 14:02:57	kkeefe@adcogov.org	Katie Keefe	Adams County Government	7205236986	No	No	No	No
9/27/2021 14:13:07	phil.greenwald@longmontcolorado.go	Phil Greenwald	City of Longmont	303-651-8335	I have not decided yet.	Yes	Yes	No
9/27/2021 14:36:44	kelly.blynn@state.co.us	Kelly Blynn	Colorado Energy Office		No	I have not decided yet.	Yes	No
9/27/2021 14:38:46	ning.wigraisakda@state.co.us	Ning Wigraisakda	Colorado Department of Public Health and Environr	3036923215	No	No	Yes	No
9/27/2021 15:14:17	kathleen.pritchard@dgs.gov	Kathleen Pritchard	DGS	2567623899	No	No	No	No
9/27/2021 15:38:32	marie@vennerconsulting.com	Marie Venner	Small Business Alliance	3037985333	Yes	I have not decided yet.		
9/27/2021 15:39:19	carla.perez@hdrinc.com	Carla Perez	HDR	13036194583	No	I have not decided yet.	Yes	No
9/27/2021 16:20:10	darlene.bray@lafargeholcim.com	Darlene Bray	Holcim (US) Inc	7192881427	No	No	No	No
9/27/2021 17:15:28	erik.larson@aims.edu	Erik Larson	Aims Community College	970-339-6474	No	I have not decided yet.	Yes	No
9/28/2021 0:13:09	reeneemchacon@spiritofthesun.org	Renee Millard Chacon	Spirit of the Sun	7202244204	Yes	I have not decided yet.	Yes	No

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9/28/2021 9:23:00	tortutita@live.com	Maria Gonzalez	Community member	9705995229	Yes	No	No	Yes / Sí
9/28/2021 11:55:51	etracy@larimer.org	Eric Tracy	Larimer County	9704433629	No	No	No	No
9/28/2021 12:25:00	kekiram24@gmail.com	Erika Ramos	community leader	9706858965	Yes	I have not decided yet.	No	Yes / Sí
9/28/2021 18:49:12	Alexis.schwartz@sierraclub.org	Alexis Schwartz		8507666320	I have not decided yet.	I have not decided yet.		No
9/28/2021 20:18:57	dshaff@broomfieldcitycouncil.org	Devan Shaff	City of Broomfield	970-231-6158	Yes	I have not decided yet.	Yes	No
9/28/2021 20:20:57	marloalston4citycouncil@gmail.com	Marlo Alston	City of Centennial	303-525-3740	Yes	I have not decided yet.	Yes	No
9/28/2021 20:21:50	cmurillo@auroragov.org	Crystal Murillo	City of Aurora	7209516708	Yes	I have not decided yet.	Yes	No
9/28/2021 20:24:33	sloflin@erieco.gov	Sara Loflin	City of Erie	303-819-6531	Yes	I have not decided yet.	Yes	No
9/28/2021 20:26:24	jennyclaywillford@gmail.com	Jenny Willford	City of Northglenn	303-710-1140	Yes	I have not decided yet.	Yes	No
9/28/2021 20:29:07	JShadduckMcNally@larimer.org	Jody Shadduck-McNally	Larimer County	970-498-7003	Yes	I have not decided yet.	Yes	No
9/28/2021 20:32:37	thoward@stonecroftcapital.com	Tim Howard	City of Superior	703-929-6807	Yes	I have not decided yet.	Yes	No
9/28/2021 20:49:53	joannarosasaenz@gmail.com	Joanna Rosa-Saenz	Community Organizer	7204223539	Yes	I have not decided yet.	Yes	No
9/29/2021 9:16:02	faithwinter@gmail.com	Faith Winter	Colorado Senate	13035945594	Yes	No	Yes	No
9/29/2021 9:18:01	matt@matthewgray.us	Matt Gray	House of Representatives	303-668-7954	Yes	No	Yes	No
9/29/2021 10:00:03	keith.sheaffer@state.co.us	Keith Sheaffer	CDOT	9703736758	No	I have not decided yet.	Yes	Yes / Sí

[1] Responder updated this value.

Exhibit 15
~~September 22, 2021~~
 Oct 4, 2021
 Glenwood Springs

PLEASE SIGN IN

15 G

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
70	Terri Partch	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	terri.partch@coqs.us
✓ 71	Steve Child	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	steve.child@pitkincounty.com
✓ 72	STEVE SMITH	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ssmith@rof.net
73	Linda Dupriest	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	linda.dupriest@coqs.us
✓ 74	Stefan Johnson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	stefan@cleanenergyed.com
75		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
76		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
77		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
78		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
79		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
80		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
81		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
82		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
83		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
84		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
85		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
86		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
87		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
88		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
89		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
90		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
91		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
92		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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8/16/2021 16:53:28	david.pesnichak@pikincounty.com	David Pesnichak	Pikinc County	970-309-3188	No	No	No	No
8/17/2021 6:48:18	tan@capitolosolutionsinc.com	Tari King	Capitol Solutions	3038091233	No	No	No	No
8/17/2021 16:45:56	meszaros@pinyon-env.com	Kaitlin Meszaros	Pinyon Environmental, Inc.	6312450308	No	I have not decided yet.	Yes	No
9/1/2021 9:39:09	bill@ic.org	Bill Becker	Loveland Chamber of Commerce	970-215-5999	No	No	Yes	No
9/1/2021 11:55:36	tdaugherty@silverthorne.org	Tom Daugherty	Town of Silverthorne	970-922-2317	I have not decided yet.	I have not decided yet.	Yes	No
9/1/2021 14:31:36	corygaines@gmail.com	Cory Gaines	TOSV Transportation	970-922-2317	Yes	Yes	No	Yes
9/2/2021 11:33:27	sguart1@yahoo.com	Sam Guarnio	CDOT TC	3032633079	No	No	Yes	Yes
9/2/2021 12:43:23	commissioner.stuart@state.co.us	Karen Stuart	CDOT TC	3032633079	No	No	Yes	Yes
9/16/2021 10:25:45	christian@club20.org	Christian Reece	Club 20	19702423264	Yes	I have not decided yet.	Yes	No
9/20/2021 15:06:02	eichnerstacey@gmail.com	Stacey Eichner	GreenPeace	12252902432	I have not decided yet.	I have not decided yet.	Yes	No
9/24/2021 9:02:51	beatriz@conservationco.org	Beatriz Soto	Conservation Colorado/P	7203559297	Yes	I have not decided yet.	Yes	Yes / SI
9/24/2021 15:42:05	tracy@cmca.com	Tracy Sakaguchi	cmca	7203153888	No	Yes	Yes	No
9/27/2021 11:53:28	waterandbeats@gmail.com	Rachel V Murray		7202723304	I have not decided yet.	I have not decided yet.	Yes	No
9/27/2021 13:03:53	blisdell@ouraycounty.co.gov	Ben Tisdell	Ouray County Board of C	970-318-1037	Yes	I have not decided yet.	No	No
9/27/2021 16:26:22	AHirsch@Terralogics.com	Arthur Hirsch	Climate Reality Project	3037869111	Yes	Yes	No	No
9/28/2021 21:19:44	Ryan@TheEV-angelist.com	Ryan Baggett	The Evangelist	(469) 426-1859	Yes	Yes	Yes	No
9/29/2021 16:31:37	joan@joanmay.org	Joan May	none	970-729-1359	No	I have not decided yet.	Yes	No
9/30/2021 14:15:45	matt.scherr@eaglecounty.us	Matt Scherr	Eagle County Governer	970.376.4449	Yes	I have not decided yet.	No	No
10/1/2021 9:58:13	prendergast@api.org	Justin Prendergast	API Colorado	4048612978	No	No	Yes	No
10/1/2021 10:03:32	reneemchacon@spiritofthesun.org	Renee Willard Chacon	Spirit of the Sun	7202244204	Yes	I have not decided yet.	Yes	No
10/1/2021 10:10:51	kelly.blynn@state.co.us	Kelly Blynn	Colorado Energy Office	6102205378	No	I have not decided yet.	Yes	No
10/1/2021 10:20:42	wondwalkers7@gmail.com	J Moore	Colorado Energy Office	970-994-3397	Yes	I have not decided yet.	Yes	No
10/1/2021 10:40:07	jacob.matsen@coloradosprings.gov	Jacob Matsen	Mountain Metro Transit	719-385-5620	No	I have not decided yet.	Yes	No
10/1/2021 10:50:10	devorallyramos@gmail.com	Devora Lily Ramos	Mountain Metro Transit	347-221-4891	Yes	I have not decided yet.	Yes	No
10/1/2021 10:56:50	devorallyramos@gmail.com	Devorah Casazza	La Sava's World	347-221-4891	Yes	Yes	Yes	No
10/1/2021 15:31:56	sjohnson@cleanenergyeconomy.net	Stefan Johnson	CLEER	71777123742	I have not decided yet.	I have not decided yet.	Yes	No
10/2/2021 17:39:53	evets.chill@junco.com	Steve Child	Pikinc County Board of Cc	970-927-3008	Yes	I have not decided yet.	No	No
10/2/2021 17:41:59	jonathan.godes@coogs.us	Jonathan Godes	Glenwood Springs City C.	970-384-6400	Yes	I have not decided yet.	No	No

Devora Ramos

Ahirsch

Devora ✓
✓
✓

No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
93	USA Erickson Court Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
94	Tom Norton	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TFNLLC@ComcastNet
95	Sandra Solin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
96	Eric HODEK ERIC HODEK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
97		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
98		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
99		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
100		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
101		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
102		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
103		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
104		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
105		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
106		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
107		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
108		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
109		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
110		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
111		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
112		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
113		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
114		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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No.	Printed First and Last Name	Do you wish to speak at the hearing regarding the proposed rule revisions?		Are you planning on submitting written comments regarding the proposed rule revisions?		Do you wish to receive notice of all CDOT rulemaking hearings? If yes, please provide your email address.
		Yes	No	Yes	No	
1	<i>Robert Stroheker</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>bobstroheker@gmail.com</i>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule revision?	Are you planning on submitting written comments regarding the proposed rule revision?	Do you wish to receive notice of all COOT remaining hearings?	Do you need Spanish interpretation services for the hearing? We require notice at least 48 hours in advance to accommodate the request. ¿Usted necesita servicios de interpretación al español para esta audiencia? Requerimos por lo menos 48 horas de anticipación para que podamos acomodar el pedido.
01/02/2021 19:47:48	turn@capitolcolorado.com	Tan King	Capitol Solutions	303.809.233	No	I have not decided yet.	No	
01/12/2021 7:47:14	wheneath@alamogordo.org	Vern Heerink	Alamosa County	719.850.028	I have not decided yet.	No	No	
01/12/2021 12:16:58	kmurfin@wildliferylandusa.org	Kathrine Malin	Wildlife Guardians		Yes	I have not decided yet.	Yes	
01/12/2021 16:40:28	macc@evco.org	Karen Maccas	Evco Environmental, Inc.	601.240.0308	No	I have not decided yet.	Yes	
02/02/2021 7:43:52	bill@westlibra.com	Mary Tili	Smethon Labs	720.483.880	I have not decided yet.	I have not decided yet.	Yes	
02/22/2021 17:36:17	argyle@hetrovegroup.org	Angie Howes	The Howes Group	333.942.336	I have not decided yet.	I have not decided yet.	Yes	
02/22/2021 6:42:01	blairv@realistatela.com	Brian Vermils	Colorado Department of Transportation	970.475.0121	No	No	No	
02/22/2021 6:50:40	james@evco.com	James Eussen	COOT	970.401.3807	No	No	No	
02/22/2021 15:32:55	harris@evco.com	Michelle and Dave Harris		1	I have not decided yet.	Yes	Yes	
02/12/2021 13:08:14	aron.burlew@del.gov	Aron Burlew	Federal Highway Administration	720.983.022	No	No	No	
03/12/2021 6:21:59	emerc@evco.com	Sarah Meeres	Ford Motor Company	313.449.9785	I have not decided yet.	I have not decided yet.	Yes	
03/02/2021 8:48:47	seash@delaware.gov	Sarah Hill	City of Durango	970.475.4801	No	I have not decided yet.	Yes	
03/02/2021 11:07:29	dosenor@bma.net	Julie Brigham	Dolores County Senior Services	970.677.787	No	I have not decided yet.	Yes	
03/02/2021 12:44:29	commissions@state.co.gov	Karen Blum	COOT TC		No	No	Yes	
01/19/2021 13:40:43	Martha.Perrin-Horton@legis.marche.rode-veillon.com	Douglas Pidgey	La Plata County	970.789.9243	Yes	No	Yes	
01/19/2021 13:53:39	douglas@piedmont.com	Chloé Lopez	N/A	970.781.1122	I have not decided yet.	I have not decided yet.	Yes	
01/19/2021 17:04:22	brayn@buildco.gov	Todd Brown	Town of Telluride Town Council	970.789.7816	Yes	I have not decided yet.	No	
01/19/2021 12:03:29	carped@alamogordo.com	Chris Lopez	Alamosa, Colorado	720.881.8758	No	No	Yes	
03/09/2021 16:37:02	david1@hdschools.org	Gang Lukins	Hinsdale County	916.458.1228	Yes	I have not decided yet.	No	
10/12/2021 4:52:12	shawn@71@gmail.com	Shawn Benjamin	La Sierra World	720.826.822	Yes	Yes	Yes	
10/12/2021 11:02:16	doreally@hdschools.org	Deborah Cassano	Boulder County	347.421.4891	Yes	Yes	Yes	
10/4/2021 21:32:25	damb@bouldercourty.org	Colin Tamb	Boulder County	720.201.1797	No	No	No	
10/4/2021 22:46:02	leu@evco.com	Luyi Madra	Self employed	720.275.9478	Yes	I have not decided yet.	Yes	
10/6/2021 17:47:04	batph@evco.com	H Bruce Stephens	Garden County Electric Assoc	970.641.7348	No	No	No	
10/6/2021 8:18:57	ma@montrosecounty.net	Roger Rash	Montrose County	720.732.2745	I have not decided yet.	I have not decided yet.	Yes	
10/6/2021 18:24:59	julia.constanz@state.co.us	Julia Constan	COOT	970.381.484	No	No	No	
10/6/2021 18:28:58	cyd@dchurh@legis.state.co.us	Cyde Church	La Plata County	970.789.7850	I have not decided yet.	No	No	
10/9/2021 10:05:29	arnetha.vanortm@state.co.us	Arnette van Ortme	COOT HQ		No	No	No	
10/6/2021 11:11:54	kat@hdschools.org	KC MacFerson			I have not decided yet.	Yes	No	
10/6/2021 11:33:20	lisa.ortme@state.co.us	Lisa Schwanke	COOT	970.749.2015	No	No	No	
10/9/2021 14:18:48	dennis@hdschools.org	Dana Barry	Holston (US) Inc	719.281.427	No	No	Yes	
10/9/2021 17:04:16	la@evco.com	Lauren Taylor	Colorado Energy Office	970.398.0302	Yes	No	No	
10/6/2021 9:07:57	ke@evco.com	Kathy Byrum	Colorado Energy Office	970.222.0378	No	Yes	Yes	
10/6/2021 18:38:25	kye.m@coloradomaterials.com	Kyle High	Four Corners Materials	(505) 488-0820	Yes	No	Yes	
10/9/2021 10:12:29	emerc@evco.com	Sarah Meeres	Ford Motor Company	703.400.2434	I have not decided yet.	I have not decided yet.	Yes	
10/9/2021 10:33:47	dier@evco.com	David Th			Yes	No	No	
10/9/2021 10:34:57	joel@evco.com	Joel Berdie			Yes	No	No	
10/9/2021 10:42:25	ke@evco.com	Maria Seta-Phifer			Yes	No	No	
10/9/2021 10:51:08	j@evco.com	Jojo Nelson			Yes	No	No	

Alexis Schwartz (San Goodwin)

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Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the hearing regarding the proposed rule as visitors?	Are you planning on submitting written comments regarding the proposed rule revisions?	Do you wish to receive notices of all COOT rulemaking hearings?	Do you need Spanish interpretation services for this hearing? Yes require notice at least 48 hours in advance to accommodate this request / ¿Usted necesita servicios de interpretación al español para esta audiencia? Requerimos por lo menos 48 horas de anticipación para que podamos acomodar el pedido.
10/8/2021 10:51:55	Joel.Bardie@gmail.com	Joel Bardie			Yes	No	No	No
10/8/2021 10:52:40	dsh@qma.org	David Tah			Yes	No	No	No
10/8/2021 10:53:05	triam@star9@gmail.com	Triam Kowitz			Yes	No	No	No

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the meeting?	Are you an elected official?	Are you planning on submitting written comments?	Do you wish to receive a copy of the meeting minutes?	Do you need Spanish interpretation?
10/19/2021 15:12:23	meszaros@pinyon-env.org	Kaitlin Meszaros	Pinyon Environmental, Inc	6312450308	I have not decided yet.	No	I have not decided yet.	Yes	No
10/19/2021 15:12:59	marie@vennerconsulting.com	Marie Venner	Small Business Alliance	3037985333	Yes	No	I have not decided yet.	Yes	No
10/19/2021 15:13:00	jenny@conservationco.org	Jenny Gaeng	Conservation Colorado	4438030368	Yes	No	Yes	Yes	No
10/19/2021 15:13:33	prendergastj@api.org	Justin Prendergast	American Petroleum Instit	4048612978	No	No	No	No	No
10/19/2021 15:14:30	smallette@nfrmpo.org	Suzette Mallette	North Front Range MPO	9709864197	Yes	No	Yes	No	No
10/19/2021 15:32:32	daniel.larkin@mesacounty.org	Daniel Larkin	Mesa County	9702544151	I have not decided yet.	No	I have not decided yet.	Yes	No
10/19/2021 15:33:14	gayle.sturdivant@colorado.gov	Gayle Sturdivant	City of Colorado Springs	7193855628	I have not decided yet.	No	I have not decided yet.	Yes	No
10/19/2021 15:41:19	erelford@weldgov.com	Elizabeth Relford	Weld County	970-673-5836	Yes	No	Yes	Yes	No
10/19/2021 15:49:12	mar@acec-co.org	Marilen Reimer	American Council of Engin	303-832-2228	No	No	Yes	Yes	No
10/19/2021 15:52:03	david.pesnichak@pitkinco.org	David Pesnichak	Pitkin County	970-309-3188	No	No	I have not decided yet.	No	No
10/19/2021 15:55:50	bkarasko@nfrmpo.org	Becky Karasko	NFRMPO	970-237-1821	Yes	No	Yes	Yes	No
10/19/2021 16:02:50	WKarspeck@berthoud.org	William Karspeck	North Front Range MPO		Yes	Yes	Yes	No	No
10/19/2021 16:12:45	alice@ramsisle.com	Alice Ramsey			No	No	I have not decided yet.	Yes	No
10/19/2021 16:22:18	beth.haake@martinmarietta.com	Beth Haake	Martin Marietta	7202497447	No	No	No	Yes	No
10/19/2021 17:14:04	mbornhoft@nfrmpo.org	Medora Bornhoft	North Front Range Metro	9702898283	Yes	No	Yes	Yes	No
10/19/2021 18:25:07	mike@westcorridor.org	Michael Hughes	West Corridor TMA	3039418010	Yes	No	No	No	No
10/19/2021 18:50:17	ning.wigraisakda@state.co.gov	Ning Wigraisakda	Colorado Department of F	3036923215	No	No	No	No	No
10/19/2021 22:47:18	maria.eisemann@state.co.gov	Maria Eisemann	Colorado Energy Office	7206071993	No	No	No	No	No
10/20/2021 6:14:21	barrett@barrettengineerin.com	Maureen Barrett	Barrett Engineering PLLC	7202150324	Yes	No	Yes	Yes	No
10/20/2021 8:00:00	steve.garchar@yahoo.com	Garchar	Dolores County	970 394 0500	No	Yes	No	Yes	No
10/20/2021 8:10:06	tim.harris@horrocks.com	Tim Harris	Horrocks Engineers	7209791493	I have not decided yet.	No	I have not decided yet.	Yes	No
10/20/2021 8:39:52	james.rodacy@evrazna.com	James Rodacy	EVRAZ	7192523031	No	No	No	No	No
10/20/2021 10:37:41	lpulver@douglas.co.us	Lauren Pulver	Douglas County	720-415-9170	No	No	I have not decided yet.	No	No
10/20/2021 11:51:15	soliver@moms-cleanairfor.com	Shaina Oliver	independent	13039942421	Yes	No	I have not decided yet.	Yes	No
10/20/2021 15:06:16	tari@capitol-solutionsinc.com	Tari King	Capitol Solutions	13038091233	No	No	No	Yes	No
10/20/2021 16:07:27	kbrackeTCDDistrict5@gmail.com	Kathleen Bracke	CDOT Transportation Cor	9702196765	No	No	No	No	No
10/21/2021 13:30:54	jivey@isp-law.com	Jennifer Ivey	Icenogle Seaver Pogue, F	3038673003	I have not decided yet.	No	I have not decided yet.	No	No
10/21/2021 16:50:30	soliver@moms-cleanairfor.com	Shaina Oliver	independent	13039942421	Yes	No	No	Yes	No
10/24/2021 18:10:30	darlene.bray@lafargeholcim.com	Darlene Bray	Holcim (US) Inc	7192881427	No	No	No	Yes	No
10/25/2021 10:50:15	spacha@healthiercolorado.org	Sabrina Pacha			No	No	Yes	Yes	No
10/25/2021 11:03:25	teasley@cc4ca.org	Tom Easley	Colorado Communities fo	3038874626	I have not decided yet.	No	No	No	No
10/25/2021 12:25:20	ccopeland@bouldercountycolorado.gov	Cindy Copeland	Boulder County	3034411242	Yes	No	Yes	No	No
10/26/2021 9:22:54	jenn.l.perez76@gmail.com	Jenn Perez	Ball Aerospace	7202899684	No	No	No	Yes	No
10/26/2021 13:33:42	malvarez@ccainfo.org	Moses Alvarez	Colorado Contractors Ass	3032906611	I have not decided yet.	No	I have not decided yet.	Yes	No
10/28/2021 10:14:38	tari@capitol-solutionsinc.com	Tari King	Capitol Solutions	13038091233	No	No	No	Yes	No
10/28/2021 16:12:20	eas16628@msn.com	Elizabeth Smith	Colorado Sierra Club	3032747951	Yes	No	I have not decided yet.	No	No
10/28/2021 16:13:05	hatscott@comcast.net	Scott Hatfield	self		Yes	No	I have not decided yet.	Yes	No
10/28/2021 16:32:31	kneches@gmail.com	Kathy Neches		8052524838	I have not decided yet.	No	Yes	Yes	No
10/28/2021 16:35:51	mcl862123@gmail.com	Mary Lang		8456640135	I have not decided yet.	No	I have not decided yet.	No	No
10/28/2021 16:57:45	mlrgmt@gmail.com	Grant Miller	self	6604413775	No	No	Yes	No	No
10/28/2021 17:33:18	bookingdenver@msn.com	Christiane H. Citron	Not Employed	1303772242	Yes	No	I have not decided yet.	No	No
10/28/2021 23:03:29	Lindsey@westwardbrokers.com	Lindsey Stapay	westward advisors	3036413341	Yes	No	I have not decided yet.	Yes	No
10/29/2021 11:19:52	carla.perez@hdrinc.com	Carla Perez	HDR	3036194583	No	No	Yes	Yes	No
11/1/2021 13:51:17	monica@monicamccaffery.com	Monica	MCM Strategies	3039033394	No	No	No	No	No
11/1/2021 13:56:13	bill@ic.org	Bill Becker	Loveland Chamber of Com	970-215-5999	No	No	No	Yes	No
11/1/2021 14:17:51	greg@cmca.com	Greg Fulton	Colorado Motor Carriers A	303-433-3375	Yes	No	Yes	No	No
11/2/2021 11:35:36	Duncan@350Colorado.org	Duncan Gilchrist	350 Colorado	845 240 2662	Yes	No	Yes	Yes	No
11/2/2021 12:01:47	jhome@ramboll.com	Jeremy Horne	Ramboll	9497983617	Yes	No	I have not decided yet.	Yes	No
11/2/2021 12:38:30	mar@acec-co.org	Marilen Reimer	American Council of Engin	3038322228	No	No	Yes	Yes	No
11/2/2021 12:40:51	tmilo@ccainfo.org	Tony Milo	Colorado Contractors Ass	3039214650	Yes	No	Yes	Yes	No
11/2/2021 12:44:35	mfrommer@swenergy.org	Matt Frommer	Southwest Energy Efficien	9084321556	Yes	No	Yes	Yes	No
11/2/2021 12:46:05	danny@copirg.org	Danny Katz	CoPIRG (Colorado Public	3035737474	Yes	No	No	No	No
11/2/2021 12:47:15	molly@denverstreetspartnership.com	Molly McKinley	Denver Streets Partnersh	9195889676	Yes	No	I have not decided yet.	Yes	No
11/2/2021 12:55:55	snedell@e2.org	Susan Nedell	E2 - Environmental Entrep	303-250-4559	I have not decided yet.	No	Yes	No	No
11/2/2021 13:00:28	considine.timothy@gmail.com	Tim Considine	Natural Resource Econom	3077608400	Yes	No	Yes	Yes	No

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the meeting?	Are you an elected official?	Are you planning on submitting written comments?	Do you wish to receive notification of future meetings?	Do you need Spanish interpretation?
11/2/2021 13:29:25	beatriz@conservationco	Beatriz Soto	Conservation Colorado	7203559297	Yes	No	I have not decided yet.	Yes	No
11/2/2021 14:56:50	martha@furtherstrategies	Martha Roskowski	Further Strategies	303-895-0951	Yes	No	Yes	Yes	No
11/3/2021 8:42:11	rebecca.rathburn@state.c	Rebecca Rathburn	CDOT	9702706683	No	No	No	No	No
11/3/2021 10:48:15	sandra.stewart.tab@gmail	Sandra Stewart	Longmont Transportation	3036511689	No	No	No	Yes	No
11/3/2021 11:48:40	beckyrep@gmail.com	Becky English	Sierra Club	3037284131	Yes	No	Yes	Yes	No
11/3/2021 14:13:47	david.roy@comcast.net	David Roy	Sierra Club	970-237-2794	Yes	No	I have not decided yet.	Yes	No
11/3/2021 18:53:30	tari@capitolosolutionsinc.	Tari King	Capitol Solutions	13038091233	No	No	I have not decided yet.	Yes	No
11/4/2021 9:52:09	TORTUTITA@live.com	Maria Gonzalez	community member		Yes	No	No	No	Yes / Sí
11/4/2021 13:29:44	gary.moyer@rbc.us	Gary Moyer	Rio Blanco County	9706295136	Yes	Yes	I have not decided yet.	Yes	No
11/5/2021 0:00:13	rcurry@earthjustice.org	Rebecca Curry	Earthjustice	601-919-7606	No	No	I have not decided yet.	Yes	No
11/5/2021 11:23:23	patricia@newdayhydroge	Patricia Kelley	New Day Hydrogen	303-829-5358	I have not decided yet.	No	I have not decided yet.	Yes	No
11/5/2021 13:02:04	pitoccojc@gmail.com	Jonathan Pitocco		6122866056	Yes	No	Yes	Yes	No
11/5/2021 16:24:24	paul.culnan@gmail.com	Paul Culnan		7203756806	Yes	No	I have not decided yet.	Yes	No
11/7/2021 9:15:49	ctomb@bouldercounty.org	Collin Tomb	Boulder County	7202017877	I have not decided yet.	No	Yes	Yes	No
11/7/2021 9:57:52	david.mintzer@gmail.com	David Mintzer		3038596657	Yes	No	Yes	Yes	No
11/8/2021 12:18:50	richard.zamora@state.co	Richard Zamora	CDOT R2	7195465452	No	No	No	Yes	No
11/8/2021 13:30:02	tim.harris@horrocks.com	Tim Harris	Horrocks Engineers	7209791493	I have not decided yet.	No	I have not decided yet.	Yes	No
11/8/2021 14:59:36	booth@coloradosun.com	Michael Booth	Colorado Sun	3038687972	No	No	No	Yes	No
11/8/2021 15:18:43	cpollan@broomfield.org	Camille Pollan	City and County of Broom	(720)887-2278	No	No	No	Yes	No
11/8/2021 15:19:44	meszaros@pinyon-env.co	Kaitlin Meszaros	Pinyon Environmental, Inc	6312450308	I have not decided yet.	No	I have not decided yet.	Yes	No
11/8/2021 15:20:55	claire.gomba@aecom.com	Claire Gomba	AECOM	8454536455	No	No	I have not decided yet.	Yes	No
11/8/2021 15:28:43	marchaga@ups.com	Mario Archaga	UPS	15628249954	I have not decided yet.	No	I have not decided yet.	Yes	No
11/8/2021 15:36:02	alexis.schwartz@ncf.edu	Alexis Schwartz	self	8507666320	I have not decided yet.	No	I have not decided yet.	No	No
11/8/2021 15:42:22	lpulver@douglas.co.us	Lauren Pulver	Douglas County	720-415-9170	No	No	I have not decided yet.	No	No
11/8/2021 15:44:09	lalucylok@gmail.com	Lucy Molina	Self employed	7202755479	Yes	No	I have not decided yet.	Yes	No
11/8/2021 15:44:18	thomas.christian@colorad	Tom Christian	University of Colorado	3034926010	No	No	No	Yes	No
11/8/2021 15:44:42	kelly.blynn@state.co.us	Kelly Blynn	Colorado Energy Office	6102205378	No	No	Yes	Yes	No
11/8/2021 15:50:56	teasley@cc4ca.org	Tom Easley	Colorado Communities fo	3038874626	No	No	Yes	No	No
11/8/2021 15:51:06	gayle.sturdivant@colorad	Gayle Sturdivant	City of Colorado Springs	7193855628	I have not decided yet.	No	I have not decided yet.	Yes	No
11/8/2021 16:03:48	jenny@conservationco	Jenny Gaeng	Conservation Colorado	4438030368	Yes	No	Yes	Yes	No
11/8/2021 16:09:57	lisaallee@hotmail.co	Lisa Allee			Yes	No	No	No	No
11/8/2021 16:24:25	KOgden@ISP-Law.com	Karlie Ogden	Icenogle Seaver Pogue, F	3038673011	No	No	I have not decided yet.		No
11/8/2021 16:28:01	greg@cmca.com	Greg Fulton	CMCA	3034789078	Yes	No	Yes	Yes	No
11/8/2021 16:55:23	elaine@bouldertc.org	Elaine C. Erb	Boulder Transportation Co	3036527232	I have not decided yet.	No	I have not decided yet.	Yes	No
11/8/2021 17:16:44	kbrackeTCDistrict5@gma	Kathleen Bracke	CDOT Transportation Cor	9702196765	No	No	No	Yes	No
11/8/2021 17:49:06	besheija@yahoo.com	Judith Beshel	self	7208835998	Yes	No	I have not decided yet.	No	No
11/8/2021 18:06:18	mike@coloradoconcern.c	Mike Kopp	Colorado Concern	303-929-9349	Yes	No	Yes	Yes	No
11/8/2021 18:55:26	considine.timothy@gmail.	Tim Considine	Natural Resource Econom	3077608400	Yes	No	Yes	Yes	Yes / Sí
11/8/2021 19:57:53	mturner@milehighconnec	Morgan Turner	Mile High Connects	9137420973	Yes	No	Yes	No	No
11/8/2021 21:22:51	steve.garchar@yahoo.co	Steve Garchar	Dolores County	970-394-0500	No	Yes	No	Yes	No
11/8/2021 22:14:55	reneemchacon@gmail.co	Renee Millard Chacon	Womxn from the Mountai	7202244204	Yes	No	Yes	Yes	No
11/9/2021 3:12:08	douglas@motleytools.co	Douglas Tooley			I have not decided yet.	No	I have not decided yet.	Yes	No
11/9/2021 5:53:36	mattsura.law@gmail.com	Matt Sura	Conservation Colorado, I	7205631866	I have not decided yet.	No	Yes	Yes	No
11/9/2021 7:24:49	jbaldwin@otero.gov.org	Jim Baldwin	S.E. TPR, Otero County Commissioner		I have not decided yet.	Yes	No	Yes	No
11/9/2021 7:34:30	daniel.larkin@mesacount	Daniel Larkin	Mesa County	9702544151	I have not decided yet.	No	I have not decided yet.	Yes	No
11/9/2021 7:57:50	jared.r.hocking@gmail.co	Jared Hocking	self	8507666320	Yes	No	I have not decided yet.	No	No
11/9/2021 8:02:21	Scott.Weiser@DenverGa	Scott Weiser	The Denver Gazette	719 237 2345	I have not decided yet.	No	I have not decided yet.	Yes	No
11/9/2021 8:22:43	lalucylok@gmail.com	Lucy Molina	Self employed	7202755479	Yes	No	I have not decided yet.	Yes	No
11/9/2021 8:25:34	barbara@ires-net.com	Barbara Koelzer	IRES, LLC	303-886-5675	Yes	No	I have not decided yet.	Yes	Yes / Sí
11/9/2021 8:30:26	tracy@cmca.com	Tracy Sakaguchi	cmca	7203153888	I have not decided yet.	No	I have not decided yet.	Yes	No
11/9/2021 8:45:03	annabella.sherman@gma	Annebella Sherman			Yes	No	No	No	No
11/9/2021 8:57:09	calmack@calmack.com	Tony Morris on behalf of reporter San	Calderwood-Mackelprang	303-477-3500	No	No	No	No	No
11/9/2021 9:28:48	joan.peck@longmontcolo	Joan Peck	City of Longmont	7203522067	I have not decided yet.	Yes	No	Yes	No
11/9/2021 9:30:08	julia.rosborn@gmail.com	Julia Osborn			Yes	No	No	No	No
11/9/2021 9:43:12	marie@vennerconsulting.	Marie Venner	Small Business Alliance a	303 798 5333	Yes	No	Yes	Yes	No

Timestamp	Email Address	First and Last Name	Organization	Phone Number	Do you wish to speak at the meeting?	Are you an elected official?	Are you planning on submitting written comments?	Do you wish to receive notification of future meetings?	Do you need Spanish interpretation?
11/9/2021 9:46:29	dcaponton@gmail.com	Daniel Pontón		(626) 298-5224	No	No	Yes	Yes	No
11/9/2021 10:03:11	msilverstein@raqc.org	Mike Silverstein	Regional Air Quality Council	3039158236	Yes	No	Yes	Yes	No
11/9/2021 10:10:49	mobley@highdesertoutdoors.org	Jeff Mobley	Self - High Desert Life Outdoors		Yes	No	No	No	No
11/9/2021 10:28:34	montepython63@gmail.com	Monte McVay	AFCEC	7199633852	No	No	No	Yes	No
11/9/2021 10:54:45	angie@thehowesgroup.org	Angie Howes	Colorado Retail Council	3032492336	No	No	I have not decided yet.	Yes	No
11/9/2021 11:10:15	shsolin@mac.com	Sandra Hagen Solin	Capitol Solutions	3038101914	Yes	No	Yes	Yes	No
11/9/2021 11:12:48	Rbeck@cscedc.com	Rachel Beck	Colorado Springs Chamber of Commerce	7194596022	Yes	No	Yes	Yes	No
11/9/2021 11:19:19	afolkestad@pavement.com	Angela Folkestad	CO/WY Chapter - ACPA	303-947-9576	I have not decided yet.	No	Yes	No	No
11/9/2021 12:41:04	kendra.ssilc@gmail.com	Kendra	Kendra Sandoval w Sandoval	3034806866	Yes	No	Yes	Yes	No
		Piep van Heuven	Bicycle Colorado		Yes				
		Keith Baker	chairman of the San Luis Valley TPR and a member of STAC			Yes			

August 12, 2021

RE: Transportation Greenhouse Gas Rulemaking

Dear Transportation Commissioners, Governor Polis, and CDOT Executive Director Shoshana Lew,

The Colorado Sierra Club, which has more than 100,000 members and supporters in Colorado, and the 119 undersigned Coloradan supporters write to express our gratitude for your work on the Transportation Rulemaking.

As transportation is the top source of GHG emissions in Colorado, it is important to quickly implement new rules to set clear, enforceable GHG emission reduction targets.

A strong GHG pollution standard with clear targets and enforcement mechanisms can get us closer to our emissions reduction goals as outlined by HB-1261, and to meeting the state Climate Roadmap goal of a 10% reduction in vehicle miles traveled (VMT) by 2030. To meet our climate goals, the standard must consider pollution when selecting transportation projects, and all projects should model VMT impacts.

The rulemaking must prioritize reducing VMTs, GHGs, and highway expansion by prioritizing investment in multimodal transit, electrifying vehicles, expanding public transit, and investing in bicycling and pedestrian infrastructure. Across Colorado, these shifted priorities will enable communities to have more non-polluting, reliable, and affordable transportation options, and thus to enjoy better access to healthcare, education, and employment.

These goals must be met while integrating equity into planning, processes, and outcomes.

The rulemaking must apply strong scrutiny to large transportation projects that will increase traffic and pollution already experienced by disproportionately impacted communities. All Coloradans deserve transportation options that don't pollute the places where we live, work and play.

Thank you for your consideration.

Sincerely,



[REDACTED]

[Redacted text block containing 25 lines of blacked-out content]



[Redacted text block containing approximately 25 lines of blacked-out content]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Grand Junction Transportation

Mon, Aug 23, 2021 at 12:51 PM

[REDACTED]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

1. The bus system in Grand Junction and surrounding areas must be substantially increased before we can consider public transportation as an option.
2. Employers that already have a large population of car-pooling should be allowed credit for past behavior rather than only an "improvement" metric

[REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Transportation Planning Standard

1 message

Mon, Aug 30, 2021 at 4:53 PM

[REDACTED]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

I would like to voice my support for the GHG Transportation Planning Standard code updates under consideration (RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS 2 CCR 601-22). Historically, we have spent the vast majority of transportation funding on building roads and highways, so it is no surprise that the vast majority of our population commutes to their jobs via personal automobile. The greenhouse gas emissions resulting from that system are obvious in Denver's high ozone and this summer's absurdly poor air quality (caused by fires exacerbated by GHG emissions). The natural disasters, like the Morgan Creek Fire and Hurricane Ida, that have become more common every summer for my entire life highlight the urgent need for a reprioritization of how we fund our transportation systems. Coloradans are relying on you to protect the clean mountain air that makes Colorado a great place to call home.

Thank you,

[REDACTED]
City of Centennial 2 CCR 601-22





August 31, 2021

CDOT Transportation Commission
CDOT Headquarters
2829 W. Howard Pl.
Denver, CO 80204

Dear Commissioners:

Thank you for the opportunity to provide public comments to the Transportation Commission on the proposed changes to the Rules Governing Statewide Transportation Planning Process Transportation Planning Regions, containing the Greenhouse Gas Transportation Planning Standard, proposed on August 13, 2021. We have continued to discuss this rule with Colorado Department of Transportation (CDOT) staff and appreciate the time spent explaining the proposal and discussing our suggestions. In an effort to continue that process of open collaboration, we are submitting the following comments early in the rulemaking process so we can continue those discussions while making the Transportation Commission aware of the dialogue.

Colorado Communities for Climate Action is a coalition of 39 counties and municipalities across Colorado advocating for effective state and federal climate policy. CC4CA's members span Colorado's Western Slope and Front Range; small rural towns and major suburbs; counties and municipalities; and wealthy, middle income, and low-income neighborhoods. With member populations ranging from under 1,000 to more than 500,000, CC4CA local governments represent nearly one-quarter of all Coloradans. Rural communities make up two-thirds of the membership, including more than half of the members being West Slope communities.

Because the Employee Traffic Reduction Program (ETRP) was withdrawn from consideration by the Air Quality Control Commission, this proposal is Colorado's first major transportation-related rulemaking specifically designed to respond to the climate crisis. As such, we understand that this is new territory for Colorado and all parties involved, but it's important to keep in mind the overarching target established by Colorado's Greenhouse Gas (GHG) Emissions Reduction Roadmap to reduce transportation sector emissions by 12.8 million metric tons (MMT) of carbon dioxide equivalent (CO₂e) by 2030.

This letter reflects initial comments and questions on the proposal, and we expect to have additional input after more discussion with CDOT staff and after the technical documentation is made available for a full review. The main points covered in the comments below include: ensuring that equity is a key focus of this rulemaking, the necessity for robust emission reduction targets and

Adams County · Aspen · Avon · Basalt · Boulder · Boulder County · Breckenridge · Broomfield
Carbondale · Clear Creek County · Crested Butte · Dillon · Durango · Eagle County · Edgewater · Erie · Fort Collins
Frisco · Gilpin County · Glenwood Springs · Golden · Lafayette · Longmont · Louisville · Lyons · Mountain Village
Nederland · Northglenn · Ouray County · Pitkin County · Ridgway · Salida · San Miguel County
Snowmass Village · Summit County · Superior · Telluride · Vail · Westminster

reductions in vehicle miles traveled (VMT), allowing public review of the modeling analysis and ground truthing the model, and key points related to potential loopholes in the proposal and enforceability of the rule.

Equity Must be a Primary Focus of this Rulemaking

This rule presents one of Colorado’s best opportunities to fulfill the intent and requirements of HB19-1261 and HB21-1266 to prioritize benefits and avoid harms to disproportionately impacted communities as defined in § 24-38.5-302(3), C.R.S. We are encouraged to see some seeds planted in the proposed rule towards engaging and serving these communities, and we urge greater specificity and assurance that the most beneficial projects will be realized in those communities according to their expressed needs as well as data-driven approaches to projecting benefits.

Disproportionately impacted community input must inform all measures affecting them

Equity engagement for these rules cannot take place primarily through large listening sessions and stakeholder meetings. Before detailed measures are proposed, CDOT should work with climate outreach staff at the Colorado Air Pollution Control Division (APCD) and the Equity Unit at the Colorado Department of Public Health and Environment (CDPHE) to assess transportation priorities in disproportionately impacted communities. We appreciate the existing equitable outreach provisions (4.02.5) but would further recommend that outreach should take place at existing community meetings wherever possible. We have been glad that SB21-260 will establish a new Environmental Justice and Equity Office within CDOT in order to “work directly with disproportionately impacted communities in the project planning, environmental study and project delivery phases of transportation capacity projects.” We ask that this Office be stood up in time to help existing state equity outreach staff ensure that measures being considered meet the needs of disproportionately impacted communities.

We are eagerly awaiting the public release of CDPHE’s Colorado EnviroScreen tool, based on the EPA EJSCREEN model, that will enable us to delineate communities qualifying as “disproportionately impacted” under HB21-1266. CDOT and Metropolitan Planning Organizations (MPOs) must work with CDPHE as soon as possible to initiate outreach to these communities as located by the tool.

As this rule is refined, we recommend that the Transportation Commission consider the work that CDPHE’s Air Pollution Division, together with its Climate Equity Advisory Committee, has already done in drafting a Climate Equity Framework, including six Climate Equity Principles that should be used in shaping state rule development. From those principles, APCD developed a checklist of “Key Questions” and “Other Important Questions to Ask” to help rulemaking staff and boards anticipate potential benefits or burdens to disproportionately impacted communities from rules being considered in order to equitably shape rule development. The Climate Equity Framework is a living document still taking input. We recommend that CDOT work with CDPHE and the Climate Equity Advisory Committee to add shape to the Framework around transportation equity so that it can be most effectively applied to these rules. We urge CDOT and the Transportation Commission to apply these Key Questions for now to develop and evaluate proposed rules, and to work with the APCD, the Climate Equity Advisory Committee, the Climate Equity Community Advisory Group, and the Environmental Justice unit at CDPHE to do so. It may be helpful to index this language to the Equity Principles and/or key questions. Furthermore, it would

inspire confidence in the community if their input is indexed and/or reflected specifically in adopted rules and Applicable Planning Documents. Finally, APCD review (8.04) should answer all the “Key Questions” and “Other Important Questions to Ask,” consulting with the Climate Equity Advisory Committee and Climate Equity Community Advisory Group as needed.

The rule must stipulate VMT reductions and specific local benefits in the Applicable Planning Documents as well as in Mitigation Measures

We recognize that disproportionately impacted communities benefit from any project that reduces GHG emissions or that drives down VMT on the major thoroughfares that cut through these communities. However, this rule must prioritize projects that directly improve local air quality while providing needed local clean transportation services by reducing VMT. Section 8.0.3, GHG Mitigation Measures in includes a list of good examples for the type of project that that should be prioritized. Certain measures such as these that (1) fill the transit gap in communities that are being pushed further from community centers; (2) increase affordable EV ownership and charging; and (3) evolve neighborhoods toward “complete streets” should be discussed with the community and considered as best practices that should be implemented in all disproportionately impacted communities.

It's critical that the final rule include specific requirements that will result in defined direct benefits to Disproportionately Impacted Communities. Therefore, we suggest the following specific language be added to section 8 of the proposed rule. Black text is from CDOT’s proposal, red text is suggested language:

8.02 Process for Determining Compliance

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts **and benefits** of GHG Mitigation Measures, measuring and prioritizing localized impacts **and benefits** to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact **and benefit**. **Where such impact or benefit affects a Disproportionately Impacted Community, that consideration shall take precedence over others. At least 25% of the Mitigation Measures must have a direct benefit in terms of increased multimodal options to Disproportionately Impacted Communities.**

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

- 8.02.5.3.1 The anticipated start and completion date of each measure.
- 8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures.
- 8.02.5.3.3 Quantification of specific co-benefits including reduction of copollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes

to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities and a demonstration of how at least 25% of mitigation measures will directly benefit Disproportionately Impacted Communities.

These are just two specific additions to the rule with an equity focus; we would like to discuss other options for adding equity measures to the rule. We appreciate that the plan for selecting GHG Mitigation Measures (8.02.3) and the Mitigation Action Plan (8.02.5.3) express intent to prioritize disproportionately impacted communities. However, since these only take effect “In the event that a plan fails to comply,” we ask CDOT to consider commensurate equity provisions in the “Applicable Planning Document[s]” defined in the proposed rule. An emphasis on reducing VMT, discussed in our comments below, also brings a focus on equity because increasing multimodal options can have a direct impact on equity.

GHG Emissions Reduction Targets and VMT Reductions

The proposed emission reduction targets should be the absolute minimum amount of reductions considered for this rule. Colorado’s existing and planned transportation measures leave a gap of 4.7 MMT of GHG reductions in 2030, and this proposed rule would reduce that gap by 1.5 MMT. CDOT staff has explained that the 1.5 MMT is the high end of the modeled range and that 0.5 MMT is the low end. That falls far short of the at least 3.3 MMT in reductions by 2030 that should be met in order to reach Colorado’s climate goals. Additional strategies to further reduce transportation emissions within the 4.7 MMT category have yet to be developed, so the amount of the associated emissions reductions is uncertain. The Clean Trucking Strategy and indirect source rules are two strategies being considered in this area, but the potential reductions are unknown at this time. Because of the worsening nature of the climate crisis, early reductions have the largest impact and are absolutely necessary to reverse the current devastating course. Therefore, we strongly urge the Commission and CDOT staff to increase the GHG planning reduction levels identified in Table 1 (8.01.2).

The Roadmap’s “HB 1261 Targets Scenario” assumes a VMT reduction of 10% by 2030. Because of this statewide goal, VMT reductions should be explicitly included in this rule. VMT reductions should be closely tied to the reduction goals in the budgets that are developed under the GHG planning standard. A primary emphasis of the GHG rule should be to reduce VMT through multimodal strategies such as increased transit, bike paths, and sidewalks. Strong VMT reductions in the next five years are very important because there will not be enough EVs on the road by then to reduce vehicle emissions to meet Colorado’s goals. Additionally, an emphasis on VMT reduction will benefit DI communities.

The current definition of multimodal projects includes projects that increase capacity, such as adding several new traffic lanes along with bike paths. This is counterproductive: a heavy emphasis on multimodal that does not reduce VMT won’t help us achieve our GHG goals. Any project that increases capacity in turn increases VMT. Yet, transportation modeling and air quality models for transportation conformity incorrectly assume that capacity projects that reduce congestion will decrease emissions.

Comments and suggested edits to Section 8, Table 1, and Table 2 of the proposed rule:

- We suggest adding language in Section 8.01.1 explaining that the reduction targets by MPO area reflect the total reductions in that area and are not the sole responsibility of the MPOs and that CDOT will assist the MPOs in meeting the targets. We understand from CDOT staff that it was too difficult to break out the share of the reductions between CDOT and the MPOs, but an explanation to this effect in the rule should be included to avoid any misunderstanding.
- The baseline projections in Table 1 are confusing despite the explanation in 8.01.1. because the projections only show slight decreases and then increase by 2050. These projections are using a business as usual scenario for modeling the emission reductions from this rule only and don't take account of the other emissions reduction strategies in Colorado. It would be best to remove these projections from the rule because it appears as if transportation emissions will barely decrease in almost 30 years, while in reality, emissions should greatly diminish.
- If the baseline projections remain in the rule, an explanation should be added as to why the projections vary from the Roadmap projections. The 2025 baseline projections in the proposed rule are 27.4 MMT while Colorado's GHG Roadmap figure for 2025 is 23 MMT.
- Table 2 is confusing as well; presumably these figures project total transportation sector emissions with all the strategies implemented, including this proposed rule. But the 2030 projections are 20 MMT while the Roadmap's 2030 projections are 18 MMT (see Colorado's GHG Roadmap Table 7, page 97). Is this meant to indicate that the proposed rule, plus the projected uptake of EVs, will leave us 2.0 MMT short of the Roadmap target?
- Suggested new language for the Table 2 description is provided below. If the figures in this table don't reflect the new explanation, we suggest that they be updated if possible.
- Based on our comments above, please include a table showing VMT reductions for all projection years as well.

Suggested edits follow. Black text is from CDOT's proposal, red text and red strikeouts are suggested edits.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs ~~areas~~ and the Non-MPO area within the state of Colorado as of the effective date of these Rules. ~~The reduction levels listed by MPO are not meant as the sole responsibility of that MPO, but rather the total reduction for that area. CDOT is responsible for a share of the reductions in the MPO area. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 projects total transportation sector emissions reflects the difference in Baseline levels from year to year assuming a rapid growth in Colorado's electric vehicles goals are met across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050) in addition to the emission reductions from this rule.~~

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>0.27</u>	<u>0.82</u>	<u>0.63</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>0.04</u>	<u>0.12</u>	<u>0.11</u>	<u>0.07</u>
<u>PPACG</u>	<u>N/A</u>	<u>0.15</u>	<u>0.12</u>	<u>0.07</u>
<u>GVMPO</u>	<u>N/A</u>	<u>0.02</u>	<u>0.02</u>	<u>0.01</u>
<u>PACOG</u>	<u>N/A</u>	<u>0.03</u>	<u>0.02</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>0.12</u>	<u>0.37</u>	<u>0.30</u>	<u>0.18</u>
<u>TOTAL</u>	<u>0.5</u>	<u>1.5</u>	<u>1.2</u>	<u>0.7</u>

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles Transportation Sector Emissions Projections from All Implemented Strategies

	<u>2025 Projections (MMT)</u>	<u>2030 Projections (MMT)</u>	<u>2040 Projections (MMT)</u>	<u>2050 Projections (MMT)</u>
<u>TOTAL</u>	<u>27.0</u>	<u>20.0</u>	<u>14.0</u>	<u>8.9</u>

Modeling Analysis Review and Modeling Requirements Under the Rule

The technical documentation and the modeling analysis and inputs should be available for the public to review now that the rulemaking process has begun. Without these technical materials, it's difficult to review this rule as a whole. CDOT has said that they are working on finalizing a modeling report and a Q&A document; it would be best if this information is made available well in advance of the scheduled regional hearings. Because we haven't been able to review any technical document associated with this proposal, we aren't able to provide comments on the modeling at this time. But one key question about the modeling at this point is whether EVs and charging infrastructure investments are included in the modeling. We need to ensure those reductions are not

double counted in this proposal because most of those reductions are already covered in other emissions reduction estimates.

Regarding the modeling requirements in the proposed rule itself, we have the following questions and comments:

- Are MPOs going to be required to ground truth their modeled GHG emissions/VMT with real-world data collection (such as traffic counts)? If so, how often will this be required?
- Will a third-party review process be used to review the modeling analyses?
- Will the modeling results and documentation be available for public review?

Measurable Reductions Are Critical

Under the proposal CDOT and MPOs need to provide a GHG Transportation Report that meets several specific requirements, including a GHG emissions analysis demonstrating compliance with the applicable GHG reductions level and a mitigation action plan that identifies the needed mitigation measures and estimates reductions, where feasible (see Section 8.02.5.3.2). We would like more explanation of when GHG estimates would be infeasible and suggest edits to the rule language so that the rule does not imply that estimates would often be infeasible.

8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels within Table 1 shall include:

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, ~~where feasible,~~ of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures. ~~It's expected there will be rare situations where GHG estimates are not feasible.~~

Enforcement is Key to the Success of this Rule

Under the proposed rule, if compliance is not demonstrated after committing to GHG mitigation measures, the Commission will restrict the use of certain funds, requiring that money be focused on projects that reduce GHGs. The proposal includes the option to apply for a waiver if the rule requirements have not been met. We would like to learn more about this potential waiver process and how Colorado's GHG goals will still be met. The proposal states that "a substantial increase in GHG emissions" won't be allowed, but what is considered a substantial increase and how can we meet reduction goals while allowing any increases in emissions? As explained above, the proposed 1.5 MMT reductions by 2030 are not enough to meet the sector's goal of 12.8 MMT reductions. Waivers could also circumvent the requirement to protect and prioritize disproportionately impacted communities that might otherwise see air quality and transportation infrastructure improvements. Any increase in GHG emissions would be counter to the goal of this rule.

We appreciate the opportunity to comment on this proposed rule and the continued communications with CDOT staff to ensure that this is a strong rule that will help Colorado achieve its reduction goals for the transportation sector. Much progress has been made and we look forward to discussing our input with the Transportation Commission and CDOT.

Sincerely,



c: Shoshana Lew, Herman Stockinger, Rebecca White, Theresa Takushi



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards

Thu, Sep 2, 2021 at 1:07 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>
Cc: "natalie.lutz@state.co.us" <natalie.lutz@state.co.us>

Thank you for the opportunity to comment on the Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards.

These common-sense proposed standards are an excellent start to the implementation of Colorado's GHG reduction goals for the transportation sector. Section 4.06.1.8 is a good addition, requiring analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State. In section 8, GHG reduction requirements, the Regional GHG Transportation Planning Reduction Levels contained in table 1 are very reasonable. Since the majority of emissions reductions are assumed to be achieved by an optimistic projection of private (and in some cases public) purchases of electric vehicles, the additional greenhouse gas emission reduction levels that CDOT and the MPOs need to achieve are tiny—in some cases, as little as 40,000 metric tonnes of CO₂-eq. These targets are incredibly reasonable, some might even say they are too small.

These targets can be achieved, and communities may already be further along developing actions to help achieve these goals than the Commission may realize. To illustrate, in my area, the Northwest TPR, our local electricity cooperative is already assisting in achieving these goals by helping businesses and homeowners finance EV chargers, and by funding electric school bus purchases. In the fast-growing east Grand county region, our expanding public bus systems is helping reduce vehicle miles traveled, and new bike lanes, pedestrian walkways and approved e-bike routes are helping provide additional multimodal transportation options. CDOT should consider working closely with Colorado's rural electric cooperatives in addition to local governments—co-ops can be helpful partners in the State's plan to achieve these targets.

Thank you again, and good luck implementing your new rules.

[Redacted] Institute for Governance & Sustainable Development
[Redacted]
[Redacted]
[Redacted]

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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 8:09 AM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

This rule making should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

Furthermore, we've over prioritized investment in single occupancy vehicle infrastructure, like highway expansions, for decades: to the detriment of other, less polluting, modes of transportation. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases options for walking, biking, and public transit for urban and rural Coloradans.

Climate change, and the associated pollution from the transportation sector, is a dire health crisis. Coloradans are struggling to breathe and developing chronic conditions from the resulting impacts. We urge CDOT to strengthen the proposed rule by including strengthened provisions regarding environmental justice and more enforcement mechanisms that ensure pollution reduction and reduced vehicle miles traveled.

Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 10:44 AM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 11:20 AM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 11:53 AM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am strongly urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 12:16 PM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 2:04 PM

[REDACTED]
[REDACTED]
To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[REDACTED]
[REDACTED]
[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Mon, Sep 6, 2021 at 4:22 PM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Please strengthen the "Greenhouse Gas Pollution Standard"

1 message

[Redacted]

Tue, Sep 7, 2021 at 11:41 AM

To: Colorado Transportation Commission <dot_rules@state.co.us>

Dear The Colorado Transportation Commission,

The climate crisis has never been worse. This summer's ongoing wildfires and drought remind us that dirty air pollution and climate change are already hurting our health—especially in communities of color.

Colorado is not on track to meet our targets to reduce climate pollution—especially from our state's largest source of climate pollution: transportation.

I am writing today to ask that your draft "Greenhouse Gas Pollution Standard" include stronger greenhouse gas reduction targets in order to meet the goals for reductions from the transportation sector in the state's climate roadmap. Unfortunately, the draft rule leaves a gap of two million metric tons of carbon dioxide - reductions that will not come from vehicle electrification and must be achieved through a reduction in statewide vehicle miles traveled.

The draft rule also is insufficient for Black, Indigenous, Latinx, and other people of color who are hurt worst by transportation pollution. We ask you to develop a Transportation Equity Framework, and include representatives of disproportionately impacted and marginalized communities in developing, monitoring and implementing the rule.

Thank you for your work and leadership. Please ensure that your transportation rule is equitable, enforceable, and verifiable.

Sincerely,

[Redacted]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Strengthen the transportation rule

1 message

Tue, Sep 7, 2021 at 4:37 PM

To: dot_rules@state.co.us

Dear Transportation Commission,

In order to ensure the health of Coloradans, I am urging you to strengthen the proposed transportation rule to ensure environmental justice is centered in decision making, and strong pollution reduction methods are enforceable. While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in a public health crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change.

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Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Rule Redline Suggestions

1 message

Wed, Sep 8, 2021 at 11:24 AM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

[Redacted]

CDOT staff,

The attached document has redline edits for CDOT's consideration for the GHG rule update for tomorrow, 9/9. These edits are technical in nature and the NFRMPO will submit more substantive comments at a later date. Please let me know if you have any questions.

Thank you,

[Redacted]

Transportation and Air Quality Planner III

Pronouns: she/her



Website: <https://nfrmpo.org>

[Redacted]

[Redacted]

2 CCR 601-22_Redline_8.13.21_NFR FINAL.doc
228K

DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation

STATEMENT OF BASIS AND PURPOSE, ~~AND~~ STATUTORY AUTHORITY AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or~~ CDOT), in cooperation with local governments, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation commissionCommission of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado ~~that will reduce traffic and smog~~.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per~~pursuant to 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning~~regionsRegions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~ **Multimodal** transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~ **State**. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~ **STAC** pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2016, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

Copies of the referenced United States Code may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411

Copies of the referenced Code of Federal Regulations may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Preamble for 2021 Rulemaking

Overview

Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from local governments and other partners to be considered on an iterative basis.

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions and/or are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S.

Commented [REDACTED]: The rule says or, not and.

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life," acknowledged that "Colorado is already experiencing harmful climate impacts," and that "many of these impacts disproportionately affect" certain Disproportionately Impacted Communities, see § 25-7-102(2), C.R.S. The General Assembly also recognized that "[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment." see § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation

are a "significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color." see Roadmap, p. XII.

A key finding in the Roadmap recognized that "[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool" to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State's goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for "developing and maintaining the state transportation planning process and the state transportation plan" in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged "to assure that the preservation and enhancement of Colorado's environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado." see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized "to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . ." see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives "while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes..." see 23 U.S.C. § 134; see also 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will "protect and enhance the environment, promote energy conservation, improve the quality of life..." see 23 U.S.C. § 134(h)(1)(E); see also 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see also 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection..." see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a "comprehensive statewide transportation plan" pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must

address a number of factors including, but not limited to, "environmental stewardship" and "reduction of greenhouse gas emissions." see § 43-1-1103(5)(h) and (i), C.R.S.

Regional Transportation Plans must account for the "expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner." see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs "[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives." see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or "conform to" a state's plan to reduce emissions. Colorado's front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments' MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State's climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

1.00 — Definitions.

- 1.01 — Accessible — ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with limited English proficiency. Accessible opportunities to on planning related matters include those provided on the internet and through such methods as telephone town halls.
comment
- 1.02 — Attainment Area — any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).
- 1.03 — Commission — the transportation commission of Colorado created by § 43-1-106, C.R.S.
- 1.04 — Corridor — a transportation system that includes all modes and facilities within a described geographic area.
- 1.05 — Corridor Vision — a comprehensive examination of a specific transportation corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes transportation modes and facilities over a planning period.
- 1.06 — Department — the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.07 — Division — the Division of Transportation Development within the Colorado Department of Transportation.
- 1.08 — Division Director — the Director of the Division of Transportation Development.
- 1.09 — Fiscally Constrained — the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) programming periods.
- 1.10 — Intergovernmental Agreement — an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.11 — Intermodal Facility — A site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.12 — Land Use — the type, size, arrangement, and use of parcels of land.
- 1.13 — Limited English Proficiency (LEP) — individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.14 — Long-range Planning — a reference to a planning period with a minimum 20-year planning horizon.
- 1.15 — Maintenance Area — any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended in 1990.
- 1.16 — Memorandum of Agreement (MOA) — a written agreement between two or more parties on an intended plan of action.

- 1.17 — Metropolitan Planning Agreement (MPA) — a written agreement between the MPO, the State, and the providers of public transportation serving the metropolitan planning area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.18 — Metropolitan Planning Area — a geographic area determined by agreement between the Metropolitan Planning Organization for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.19 — Metropolitan Planning Organization (MPO) — an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the regional transportation plans and programs in a metropolitan planning area pursuant to 23 U.S.C. § 134.
- 1.20 — Mobility — the ability to move people, goods, services, and information among various origins and destinations.
- 1.21 — Multimodal — an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.22 — National Ambient Air Quality Standards (NAAQS) — are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.23 — Nonattainment Area — any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which an NAAQS exists.
- 1.24 — Non-metropolitan Area — a rural geographic area outside a designated metropolitan planning area.
- 1.25 — Plan Integration — Plan integration is a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.26 — Planning Partners — local and tribal governments, the rural Transportation Planning Regions and MPOs.
- 1.27 — Project Priority Programming Process (“4P”) — the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the statewide transportation improvement program (STIP).
- 1.28 — Regional Planning Commission (RPC) — a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural Transportation Planning Region.
- 1.29 — Regional Transportation Plan (RTP) — a long-range plan designed to address the future transportation needs for a Transportation Planning Region including, but not limited to, anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban Transportation Planning Regions in the state produce RTPs.
- 1.30 — State Transportation System — refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.

- 1.31 — Statewide Transportation Advisory Committee (STAC) — the committee created by § 43-1-1104, C.R.S., comprising one representative from each Transportation Planning Region and one representative from each tribal government to review and comment on Regional Transportation Plans, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.32 — Statewide Transportation Improvement Program (STIP) — a staged, fiscally constrained, multi-year, statewide, multimodal program of transportation projects which is consistent with the statewide transportation plan and planning processes, with metropolitan planning area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.33 — Statewide Transportation Plan — the long range, comprehensive, multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.34 — System Continuity — includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring Regional Transportation Plans, and, to the extent practicable, other neighboring states' transportation plans.
- 1.35 — Traditionally Underserved — refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.36 — Transit and Rail Advisory Committee (TRAC) — an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail related activities.
- 1.37 — Transportation Commonality — the basis on which Transportation Planning Regions are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, travelsheds, watersheds, geographic unity, existing intergovernmental agreements, and socioeconomic unity.
- 1.38 — Transportation Improvement Program (TIP) — a staged, fiscally constrained, multi-year, multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.39 — Transportation Mode — a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.40 — Transportation Planning and Programming Process — all collaborative planning-related activities including the development of regional and statewide transportation plans, the Department's Project Priority Programming Process, and development of the Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).
- 1.41 — Transportation Planning Region (TPR) — a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for transportation commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO Transportation Planning Regions, MPO Transportation Planning Regions, and Transportation Planning Regions with both MPO and non-MPO areas.

- ~~1.42 — Transportation Systems Planning — provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.~~
- ~~1.43 — Travelshed — the region or area generally served by a major transportation facility, system, or corridor.~~
- ~~1.44 — Tribal Transportation Improvement Program (TTIP) — a multi-year fiscally constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.~~
- ~~1.45 — Urbanized Area — an area with a population of 50,000 or more designated by the Bureau of the Census.~~
- ~~1.46 — Watershed — a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.~~

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- ~~1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.~~
- ~~1.02 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, CDOT's STIP in non-MPO areas within an NAA, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.~~
- ~~1.03 Approved Air Quality Model - the most recent version of the Environmental Protection Agency issued model that quantifies GHG emissions from transportation and is required for transportation conformity analyses per federal regulations.~~
- ~~1.04 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).~~
- ~~1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most~~

recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.

- 1.06 Carbon Dioxide Equivalent (CO2e) - a metric measure used to standard unit for comparing the emissions from various GHG based upon the 100-year global warming potential (GWP). CO2e is calculated by multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO2e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different standard time periods.
- 1.07 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.08 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated federal funding program established in 23 U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.09 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- 1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO2e reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and help meet the GHG Reduction Levels.

Commented [REDACTED]: MMT is a metric measure, but CO2e is not inherently metric

Commented [REDACTED]: Any agency's GHG measures should be able to count, same as how any regionally significant project (even if locally funded) counts. In addition, better to not use the past tense because almost all the measures are planned measures for future implementation.

- 1.20 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.21 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.22 Land Use - the type, size, arrangement, and use of parcels of land.
- 1.23 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.24 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.25 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.26 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.27 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.28 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.29 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.30 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.31 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.32 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.33 Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.
- 1.34 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.

- 1.35 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.36 Nonattainment Area - any geographic region of the United States which has been designated as nonattainment by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.37 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning Area.
- 1.38 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.39 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.40 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.41 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.42 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.43 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.44 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.45 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.46 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.

Commented [REDACTED]: EPA also designates areas as attainment, maintenance, or unclassifiable.

Commented [REDACTED]: Recommend clarifying if this applies to all areas or just those without an EPA-approved definition.

- 1.47 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.48 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.49 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.50 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.51 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.52 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.53 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.54 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.55 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.56 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.57 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.58 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.

- 1.59 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.60 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.
- 1.61 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.62 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.63 Vehicle Miles Traveled (VMT) - the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.64 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.65 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
 - 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
 - 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
 - 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
 - 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
 - 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
 - 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
 - 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.

- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
 - 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
 - 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.
 - 2.01.11 The Intermountain ~~Transportation Planning Region~~TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
 - 2.01.12 The Northwest ~~Transportation Planning Region~~TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
 - 2.01.13 The Upper Front Range ~~Transportation Planning Region~~TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
 - 2.01.14 The Central Front Range ~~Transportation Planning Region~~TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
 - 2.01.15 The South Central ~~Transportation Planning Region~~TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
 - 2.02.1.1 A geographical description of the proposed boundary change.
 - 2.02.1.2 A statement of justification for the change considering transportation commonalities.
 - 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~RPC.
 - 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
 - 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~nonNon-metropolitan-Metropolitan area~~Area TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State-Colorado~~Administrative Procedure Act, § 24-4-103, C.R.S. to consider a

boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.

- 2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~Intergovernmental agreement Agreement governing the RPC as specified in these Rules.

2.03 Transportation Planning Coordination with MPOs.

- 2.03.1 The Department and the MPOs shall coordinate activities related to the development of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

- 2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

- 2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~Planning partners-Partners affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

- 2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

- 3.01 Duties of the ~~Statewide Transportation Advisory Committee~~(STAC). Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

- 3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.
- 3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.
- 3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.
- 3.01.4 Colorado's ~~mobility~~Mobility requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.
- 3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~System ~~continuity~~Continuity.
- 3.01.6 Proposed TPR boundary revisions.
- 3.02 Notification of Membership
 - 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~STAC
 - 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
 - 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
 - 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
 - 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.
 - 4.01 ~~Regional Planning Commission~~RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all

applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.

4.02 Public Participation

4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. The objectives of public participation in the transportation planning process include: providing a mechanism for public perspectives, needs, and ideas to be considered in the planning process; developing the public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.

4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying out public participation for developing, amending, and updating the ~~statewide-Statewide transportation-Transportation planPlan~~, the ~~Statewide-Transportation Improvement Program (STIP)~~, and other statewide transportation planning activities.

4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation-planRTPs~~, ~~transportation-improvement-programsTIPs~~ and other related regional transportation planning activities for their respective ~~metropolitan-Metropolitan planning-Planning areasAreas~~. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.

4.02.4 Non-MPO TPR Plans and Programs. ~~Regional-Planning-CommissionRPCs~~ for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional-Planning-CommissionRPC~~ and the Department.

4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:

4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, and those with ~~limited-Limited~~ English ~~proficiencyProficiency~~; and members of the general public expressing such interest in the transportation planning process.

- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings.
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 Seeking out those persons or groups ~~traditionally-Traditionally underserved-Underserved~~ by existing transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low-income, and those with ~~limited-Limited English proficiency~~ ~~Proficiency~~, for the purposes of exchanging information, increasing their involvement, and considering their transportation needs in the transportation planning process. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional-Planning-Commission~~ ~~RPCs~~, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP-Limited English Proficiency~~ services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional-Planning Commissions~~ ~~RPCs~~ and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional-Planning-Commission~~ ~~RPCs~~, and the Department, shall use an integrated ~~multimodal-Multimodal transportation-Transportation systems-Systems planning-Planning~~ approach in developing and updating the long-range ~~Regional-Transportation Plans~~ ~~RTPs~~ and the long-range Statewide Transportation Plan for a minimum 20-year forecasting

period. ~~Regional Planning Commission~~RPCs shall have flexibility in the methods selected for ~~transportation-Transportation systems-Systems planning-Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~RPCs regarding the selection of appropriate methods.

4.03.1 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~RPCs and the Department may also identify any ~~corridor~~Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.

4.03.2 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall consider ~~corridor-vision-needs~~ and desired state of the transportation system including existing and future land use and infrastructure, major activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.

4.03.3 Transportation ~~systems-Systems planning-Planning~~ by ~~Regional Planning Commission~~RPCs shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~Mobility of people goods, and services.

4.03.4 Transportation ~~systems-Systems planning-Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state-State transportation-Transportation system~~System.

4.03.5 Transportation ~~systems-Systems P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the ~~Transit and Rail Advisory Committee~~(TRAC).

4.03.6 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.

4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.

4.04.1 Content of ~~Regional Transportation Plan~~RTPs. Each RTP shall include, at a minimum, the following elements:

4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.

- 4.04.1.2 State and federal transportation system planning factors to be considered by ~~Regional Planning Commission~~RPCs and the Department during their respective ~~transportation-Transportation systems-Systems planning-Planning~~ shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor-Corridor~~ studies, or ~~corridor-Corridor visions~~Visions, including a discussion of impacts to minority and low-income communities.
- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 For rural RTPs, the integrated performance-based ~~multimodal~~ Multimodal transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally-Fiscally constrained-Constrained~~ financial plan.
- 4.04.1.6 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~longLong-range-Range planning-Planning~~ purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.7 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.8 A resolution of adoption by the responsible ~~Metropolitan Planning Organization~~MPO or the ~~Regional Planning Commission~~RPC.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning Region~~TPRs shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation plan~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide-Statewide transportation-Transportation plan~~Plan.
- 4.04.2.3 Final Plan. ~~Transportation Planning Region~~TPRs shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these

Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range ~~Range~~ planning-Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance areaArea for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment areaArea to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range ~~Range~~ planning-Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment areaArea for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.

- 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~-Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.

4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.

4.06.1.9 Includes the 10-Year Plan as an appendix.

- 4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.
- 4.06.3 Review and Adoption of the Statewide Transportation Plan.
 - 4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. ~~The Statewide Transportation Plan and appendices~~The publication will be available in physical form upon request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and made available on the internet.
 - 4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.

5.00 Updates to Regional and Statewide Transportation Plans.

- 5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal

and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.

- 5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

- 7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

7.02 The Department will work with its ~~planning~~Planning partnersPartners to coordinate a schedule for development and adoption of TIPs and the STIP.

7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally ~~constrained~~Constrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportationTransportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission Requirements

8.01 Establishment of Regional GHG Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population and employment growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

Regional Areas	2025 Baseline Projections (MMT)	2025 Reduction Level (MMT)	2030 Baseline Projections (MMT)	2030 Reduction Level (MMT)	2040 Baseline Projections (MMT)	2040 Reduction Level (MMT)	2050 Baseline Projections (MMT)	2050 Reduction Level (MMT)
DRCOG	14.9	0.27	11.8	0.82	10.9	0.63	12.8	0.37
NFRMPO	2.3	0.04	1.8	0.12	1.9	0.11	2.2	0.07
PPACG	2.7	N/A	2.2	0.15	2.0	0.12	2.3	0.07
GVMPO	0.38	N/A	0.30	0.02	0.30	0.02	0.36	0.01
PACOG	0.50	N/A	0.40	0.03	0.30	0.02	0.4	0.01
CDOT/Non-MPO	6.7	0.12	5.3	0.37	5.2	0.30	6.1	0.18
TOTAL	27.4	0.5	21.8	1.5	20.6	1.2	24.2	0.7

Commented [1]: For some of the compliance years, the TOTAL line at the bottom does not match the sum of the regional areas. The same number of significant digits should be used for all baselines and reduction levels.

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	2025 Projections (MMT)	2030 Projections (MMT)	2040 Projections (MMT)	2050 Projections (MMT)
TOTAL	27.0	20.0	14.0	8.9

Commented [1]: There is no regulatory purpose for this table. If a regulatory purpose is not provided, it should be removed from the rule. Potential regulatory purpose: Adding in the EV assumption for each year and stating if the EV assumption changes, then the reduction levels in the rule should be revisited to determine if they are still feasible.

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions. Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects. The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each compliance year in Table 1, as long as the compliance year is not in the past and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

Commented [1]: The comparison to Table 1 should occur using the GHG Emissions Analysis AND the GHG mitigation measures, not just the GHG Emissions analysis.

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO

Commented [1]: CDOT should also have an IGA required prior to the next 10-year plan

responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.3 The State Interagency Consultation Team shall meet as needed to address any questions on the classification of projects as Regionally Significant, modeling assumptions, and projects that reduce GHG emissions.

8.02.3 By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach to assist in meeting the Regional GHG Planning Reduction Levels in Table 1. Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.

Commented [REDACTED]: Unclear what these terms mean. The rule already provides a process for reporting the status of the measures – would this process impact the format/approval process of the mitigation report and/or status report?

Commented [REDACTED]: Agencies may choose to report these measures even though they don't enable reaching the reduction levels (i.e. they still fall short). Not sure if the suggested language goes far enough to explain that concept.

8.02.4 Timing for Determining Compliance

8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.

8.02.4.2 After October 1, 2022

8.02.4.2.1 CDOT must #For each Applicable Planning Document adopted or amended after October 1, 2022, CDOT must meet either the reduction levels within Table 1 for Non-MPO areas or the requirements as set forth in Rule 8.058.02.5.1.1.

Commented [REDACTED]: As proposed, the rule implies the applicable plans must comply immediately after October 1, 2022.

8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 #For each Applicable Planning Document adopted or amended after October 1, 2022, MPOs must either meet the corresponding reduction levels within Table 1, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8.058.02.5.1.1 or Rule 8.02.5.1.2, as applicable. This provision shall not apply to MPO TIP Amendments.

Commented [REDACTED]: Only having this language in §8.02.1 means we'd still have to comply and submit a report for TIP Amendments, it just wouldn't have the emissions analysis. Is that the intent?

8.02.5 Demonstrating Compliance. At least thirty (30) days prior to adoption or amendment of any Applicable Planning Document except amendments to MPO TIPs, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:

8.02.5.1 GHG emissions analysis and, if applicable, a GHG Mitigation Plan demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO2e for each compliance year in Table 1 or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, have been met.

Commented [REDACTED]: The rule needs to clearly identify that compliance is not based solely on the GHG emissions analysis (or the GHG emissions analysis needs to clearly identify that the mitigation measures are included in the analysis)

8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions.

Commented [REDACTED]: If "or" is retained here, it is unclear which provision applies to MPOs that receive only one of the federal suballocations

8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes shall award those funds anticipated to be expended on Regionally Significant Projects onto projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes shall award 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions.

Commented [REDACTED]: Unclear when this takes effect. Projects currently in progress should not have their funding removed, as that would be highly disruptive. The least disruptive approach is to apply the requirement to future awards.

8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.

8.02.5.3 At the discretion of the MPO or CDOT, submission of a Mitigation Action Plan that identifies GHG Mitigation Measures, if any, needed to meet that will count toward the reduction levels within Table 1. The Mitigation Action Plan shall include:

Commented [REDACTED]: Rule should allow an agency to not submit a Mitigation Action Plan. If the GHG analysis demonstrates compliance, no mitigation measures would be needed.

8.02.5.3.1 The anticipated start and completion date of each measure.

8.02.5.3.2 An estimate, where feasible, of the annual GHG emissions reductions in MMT of CO₂e achieved per year by any GHG Mitigation Measures.

8.02.5.3.3 Quantification of specific co-benefits, where feasible, including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership numbers, etc. as applicable).

8.02.5.3.4 Description of benefits to Disproportionately Impacted Communities.

Commented [REDACTED]: Again, measures would likely be identified even if they don't allow the agency to meet the reduction levels.

8.02.6 Reporting on Compliance- Following the submission of a GHG Transportation Report containing a Mitigation Action Plan, ~~Annually by April 1,~~ CDOT and MPOs must provide a status report to the Commission annually by April 1 on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:

8.02.6.1 The implementation timeline;

8.02.6.2 The current status;

8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and

8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.

8.03 GHG Mitigation Measures. When assessing compliance with the GHG Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:

8.0.3.1 The addition of transit resources in a manner that can displace VMT.

8.0.3.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.

8.0.3.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.

Commented [REDACTED]: This language is unclear.

8.0.3.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.

8.0.3.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.

8.0.3.6 Adopting or encouraging the adoption of locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.

8.0.3.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure – as well as upgrading commensurate grid improvements – into the design of key freight routes to accelerate truck electrification.

8.0.3.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.

Commented [REDACTED]: This language is unclear.

8.0.3.9 ~~Adoption of~~ Implementing or encouraging the adoption of transportation demand management practices that reduce VMT.

8.0.3.10 Implementing or encouraging the implementation of operations improvements such as ramp metering, signal timing, intersection improvements, access control plans, anti-idling programs, and incident management that result in GHG reductions.

8.04 Air Pollution Control Division (APCD) Confirmation and Verification

8.04.1 At least sixty (60) ~~forty-five (45)~~ days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable. The APCD shall submit any written verification to the agency adopting the Applicable Planning Document and to the Commission.

8.04.2 At least forty-five (45) ~~thirty (30)~~ days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within thirty (30) ~~forty-five (45)~~ days, the document shall be considered acceptable.

8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.

8.05.1 If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.

8.05.2 If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG. Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non-MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:

8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions. A waiver may be requested at any time, including concurrently with the submission of a GHG Transportation Report. The Commission may waive the restrictions on specific projects on the following basis:

8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions; and

8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions when compared to the required reduction levels in this Rule.

8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met. A request for reconsideration must be submitted within thirty (30) days of Commission action.

8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be ~~denied~~approved.

8.05.3 Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.

8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG reduction accomplishments.

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, et. seq., in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.05.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

Colorado Energy Office
1600 Broadway, Suite 1960
Denver, CO 80202
(303) 866-2100
energyoffice.colorado.gov

9.0.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

U.S. Environmental Protection Agency
The Office of Transportation and Air Quality
1200 Pennsylvania Ave. N.W.
Washington, DC 20460
(734) 214-4574 or (202) 566-0495
mobile@epa.gov
https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

Entire rule eff. 12/15/2012.
Section SB&P eff. 05/30/2013.
Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Proposed revisions

1 message

[REDACTED]
to: dot_rules@state.co.us

Thu, Sep 9, 2021 at 3:10 PM

Yes !! Please do everything possible to improve public transportation, bike paths and sidewalks ! Our air quality and climate change is upon us. It is in everyone's best interest to make changes towards sustainable transportation-NOT more roads and highways.

Thank you,
[REDACTED]

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG Rule Public Comment Extension Request

1 message

Mon, Sep 13, 2021 at 4:42 PM

To: "governorpoli@state.co.us" <governorpoli@state.co.us>, "shoshana.lew@state.co.us" <shoshana.lew@state.co.us>, "Andrew.Hogle@state.co.us" <Andrew.Hogle@state.co.us>, "dot transp comm@state.co.us" <dot_transp_comm@state.co.us>

[Redacted]
"Stockinger, Herman (herman.stockinger@state.co.us)" <herman.stockinger@state.co.us>, Rebecca White - CDOT <rebecca.white@state.co.us>, Theresa Takushi - CDOT <theresa.takushi@state.co.us>, "Lutz - CDOT, Natalie" <natalie.lutz@state.co.us>, "Uebelher - CDOT, Jennifer" <jennifer.uebelher@state.co.us>

Governor Polis, Director Lew, Hearing Officer Hogle, and Transportation Commissioners,

Please see the attached comment letter from the North Front Range Metropolitan Planning Organization (NFRMPO) requesting an extension of the public comment period for the TC's proposed Greenhouse Gas (GHG) rule for transportation plans.

Thank you,

[Redacted]
Transportation and Air Quality Planner III
[Redacted]



GHG Rule Time Request 9.13.2021 - signed.pdf
190K



September 13, 2021

To: Governor Jared Polis, Director Shoshana Lew, Hearing Officer Andrew Hogle, and Transportation Commissioners

Re: Public Comment Period Extension Request for the Proposed GHG Rule

Thank you for the opportunity to provide comment on the Transportation Commission's (TC's) proposed greenhouse gas (GHG) rule for transportation plans. The North Front Range Transportation & Air Quality Planning Council, also known as the NFRMPO, is comprised of 15 elected officials representing portions of Larimer and Weld counties. As a Metropolitan Planning Organization (MPO), the NFRMPO will be responsible for demonstrating compliance with the proposed rule and NFRMPO staff have engaged extensively in the stakeholder process conducted by the Colorado Department of Transportation (CDOT) that began in January 2021.

The public comment period for this rulemaking began on August 16, 2021, and is scheduled to close on October 15, 2021. This comment letter addresses the need for additional time to make informed public comment on the proposed rule. The NFRMPO anticipates providing substantive comments on the proposed rule in a separate letter prior to the close of the public comment period.

The NFRMPO recognizes CDOT has conducted considerable public outreach and stakeholder engagement on this rule, particularly at the conceptual level. However, there are certain pieces of technical information that must be released during the public comment period to allow for fully informed decision making and meaningful stakeholder involvement. There are four items the NFRMPO has requested from CDOT staff and/or Colorado Department of Public Health and the Environment (CDPHE) staff which have not been provided, although these requests have been acknowledged and NFRMPO staff have been told they are underway.

The specific request is for the **public comment period to extend at least 30 days past the delivery of the following information** to allow for the submission of data-driven comments and development of a data-driven rule:

1. The **technical report** from CDOT describing the modeling process for demonstrating compliance and documentation for the Energy and Emissions Reduction Policy Analysis Tool (EERPAT) model.
 - **Status:** This information was requested in mid-July and has not yet been provided. Documentation for the EERPAT model is not available online.
 - **Reason:** The technical report and EERPAT documentation will enable the staff at agencies subject to the rule to understand how the GHG Baselines and GHG Reduction Levels were set and how modeling for future compliance demonstrations will be conducted. Such understanding may uncover

[REDACTED]



comments or suggestions for how to improve the rule's timing requirements, clarity (e.g. will the compliance demonstrations be compared against the GHG Baselines and/or the GHG Reduction Levels), and feasibility of the GHG Reduction Levels.

2. **GHG Baselines** from CDPHE for each compliance year based on MPO models instead of the statewide model for any MPO that prefers the GHG Baselines in the rule to be set based on their in-house model.
 - **Status:** The NFRMPO submitted this request to CDPHE on July 29, 2021, for the NFRMPO region. In a best-case scenario, these results will not be available until October 1, 2021. CDPHE staff are experienced and trained in using the EPA's Motor Vehicle Emissions Simulator (MOVES) model, which is the model needed to turn outputs from the travel demand model into GHG emission estimates. MPO and CDOT staff do not have the experience or training to run MOVES.
 - **Reason:** CDOT and each MPO maintain their own travel demand model. These models have different update schedules, base years, and sensitivities. The GHG baselines in the rule were set using the statewide model; however, the NFRMPO will demonstrate compliance using the travel demand model maintained by the NFRMPO, as allowed by the rule. Using one model to set a baseline and a different model to assess compliance is a concern because they could show different outputs with the same set of inputs. Using the MPO model to demonstrate compliance instead of the statewide model is preferable because it will be more resource efficient allowing for model updates and iterations that would not be feasible if the information needs to pass through to CDOT and incorporated into the statewide model each time a GHG analysis is needed.
3. **Corrections to the GHG Reduction Levels** from CDOT for Table 1 to address the likely error that occurred when transferring data between models.
 - **Status:** This issue was originally raised on July 6, 2021, and has been raised several other times since then. On August 31, 2021, CDOT staff agreed it was likely an issue and are currently investigating it.
 - **Reason:** It appears light-duty VMT reductions were mistakenly applied to all vehicle types, resulting in unreasonably high GHG Reduction Levels in the later compliance years. This can most clearly be seen in the 2050 compliance year, which shows a reduction of 0.7 MMT GHG using strategies that reduce light duty VMT while also assuming only 3 percent of light duty vehicles will be powered by internal combustion engines in 2050. It is not possible for the VMT reductions of 3 percent of the light duty fleet to create 0.7 MMT in GHG reductions.



4. **Per capita GHG emissions** from CDOT in each compliance year to enable the rule's GHG estimates to be more tangible.
 - **Status:** Commissioner Bracke requested this information at the TC Workshop on August 18, 2021. CDOT staff agreed to provide this information, and again at a meeting with NFRMPO staff on August 27, 2021, CDOT staff agreed this information would be made available.
 - **Reason:** The State of Colorado, but particularly the Front Range, is projected to have tremendous population and employment growth. GHG per capita would provide a clearer picture into how the reduction levels are trending while the population increases.

Providing time in the rulemaking for review of these four items will enhance, not jeopardize, the ability of the NFRMPO, DRCOG, and CDOT to meet the October 1, 2022, deadline for updating their plans in compliance with the GHG rule per the requirements of SB21-260.

The NFRMPO appreciates the time and effort CDOT staff has committed to developing a GHG Rule to reduce GHG emissions from transportation planning. We respectfully request the Hearing Officer, TC Ad Hoc Committee, and the TC ensure there is adequate time for public comment, and we look forward to continuing the collaboration of the NFRMPO with CDOT staff in this effort. If you have any questions, please contact [REDACTED]

Sincerely,

[REDACTED]

[REDACTED]






GHG Rule Time Request 9.13.2021

Final Audit Report

2021-09-13

Created:	2021-09-13
By:	[REDACTED]
Status:	Signed
Transaction ID:	[REDACTED]

"GHG Rule Time Request 9.13.2021" History

-  Document created by NFR MPO [REDACTED]
2021-09-13 - 5:43:22 PM [REDACTED]
-  Document emailed to [REDACTED] for signature
2021-09-13 - 5:43:42 PM GMT
-  Email viewed by [REDACTED]
2021-09-13 - 10:10:09 PM GMT - [REDACTED]
-  Document e-signed by [REDACTED]
Signature Date: 2021-09-13 - 10:10:44 PM GMT - Time Source: [REDACTED]
-  Agreement completed.
2021-09-13 - 10:10:44 PM GMT



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG pollution reduction standard comments

1 message

[Redacted]
To: dot_rules@state.co.us

Wed, Sep 15, 2021 at 1:35 PM

I am writing today on behalf of myself and my family. Thank you for the opportunity to provide written testimony.

Reducing greenhouse gas pollution is of utmost importance to our community, Colorado, the nation, and the world. If successful, this rulemaking will be among the first of its kind in the country. I appreciate CDOT for undertaking this project.

- While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. It's impossible to miss the effects that climate change is having in Western Colorado. From the beetle-killed trees, to the record-breaking heat waves after record-breaking heat-waves, to the intense drought that has gripped our region for nearly 20 years. Wildfire smoke the last two years has been intense, unhealthy, and pervasive. This is not the Colorado that we have come to know and love!
- This rulemaking should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.
- A transportation system built to serve cars limits how we can move. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases freedom of choice for urban and rural Coloradans.
- As an EV driver and advocate, I applaud the implementation of Colorado's "DC Fast Charging Corridors". However, we need more DC fast chargers in visible and usable places such as roadside rest areas. Level 2 chargers should be more present in State Parks, apartment and condo complexes, and major workplaces.

Thank you,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Please strengthen the Greenhouse Gas Pollution Standard

1 message

Wed, Sep 15, 2021 at 9:31 PM

To: dot_rules@state.co.us

Dear CDOT Rulemaking Comments,

Our car-centric transportation system has divided communities, polluted our air, and left Coloradans with few options for safely and conveniently moving around our state. I'm excited to see this rulemaking moving forward and have a few recommendations for improving the draft.

I urge you to strengthen the rule to center communities most harmed by the impacts of our existing transportation system. A Transportation Equity Framework should be developed as a part of this process and representatives of disproportionately impacted and marginalized communities should be included in developing, monitoring, and implementing this rule.

Colorado is in an air quality crisis and transportation is a top contributor. We must take aggressive action to reduce emissions or we will all continue to pay the price by way of air pollution and the ongoing impacts of the climate crisis. Please outline specific goals for pollution reduction that will enable us to meet existing air quality targets.

I urge you to consider these changes and continue to strengthen this rule through the revision process.

Sincerely,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments on the Greenhouse Gas Pollution Standard


1 message

Thu, Sep 16, 2021 at 6:40 PM

[REDACTED]
To "dot rule @ tate co u " dot rule @ tate co u
Cc: "governorpolis@state.co.us" <governorpolis@state.co.us>

Our comments regarding the Greenhouse Gas Pollution Standard are attached in MS Word format.

Regards,
[REDACTED]

 Comments on greenhouse gas reduction rule.docx
15K

Dear Colorado Department of Transportation
Cc: Governor Jared Polis

As a Palisade, Colorado resident, I'm writing in support of a stronger greenhouse gas reduction rule to reduce emissions, clean up our air and most importantly mitigate global climate change.

We are feeling the impacts of climate change firsthand. Here on the Western Slope our mega drought continues with flows in the Colorado River dropping to extremely low levels. Low flows in the Colorado River will also impact the Front Range as water diversions through the Rocky Mountains are junior to the 1922 River Compact and may be shut off one day soon when the Lower Basin states make a call.

Transportation is the biggest source of climate-busting carbon pollution in Colorado — and passenger cars and commercial trucks are a leading cause of the state's poor air quality, including here on the West Slope. We strongly support vehicle emissions testing here in the Grand Junction area, as we suffer from bad air quality from car and truck exhaust, especially in the winter during thermal inversions. Vehicle emissions testing will not only improve air quality but also reduce greenhouse gases as poorly running vehicles are repaired.

Colorado must meet the urgency of the moment and invest in changes TODAY that will protect all Coloradans, advance environmental justice, and provide a more livable climate and environment for generations to come.

Specially, I'm calling on the Colorado Department of Transportation to ensure this new rule:

- * Requires regional transportation plans to cut emissions to meet Colorado's climate goals
- * Requires investments in climate-friendly transportation and mobility options like electric vehicles, passenger rail trains, buses, bike-sharing programs, and safe walking and biking paths, that support healthy communities while cutting air pollution and traffic
- * Stops the widening of freeways which just adds more cars to the road and pollution into the air
- * Can be enforced to ensure these emissions reductions aren't just lost in the complicated planning processes of local transportation districts.

If successful, this rulemaking will be among the first of its kind in the country.

While the draft rule suggests good policies to mitigate transportation pollution, we need to set solid goals for pollution reduction that will enable us to meet our existing targets. Colorado is in an air quality crisis, with over 60 days and counting of unhealthy air quality due to ozone, transportation pollution, and wildfire smoke from climate change. This is not just a front range issue. Wildfire smoke in Western Colorado is an increasingly troublesome problem exacerbating respiratory problems including asthma, COPD, and Covid. The increase in wildfire activity is directly a result of CO2 and methane emissions.

This rulemaking should center people and environmental justice, and right now, the draft rule fails us. Black, Indigenous, Latinx, and other people of color are hurt worst by transportation pollution. CDOT should develop a Transportation Equity Framework, and representatives of disproportionately impacted and marginalized communities need to be included in developing, monitoring and implementing the rule.

A transportation system built to serve cars limits how we can move. The state's climate roadmap calls for a 10% reduction in driving by 2030. We need to get cars off the road in a permanent, sustainable way that increases freedom of choice for urban and rural Coloradans.

Western Colorado is a hub for off-road biking, with many trails in the Redlands and Fruita areas. In town, however, safe bike lanes are sorely lacking. The Grand Junction area needs many more safe biking routes allowing people to use bicycles to go to work, school, restaurants and shops. The access roads next to our canals would make an ideal, safe routes for bikes. It's time to plow through the local resistance to such access and force the canal companies to open up their access roads. It's done all over back east. Why not here?

Imagine if instead of investing in gridlocked roads and highways, we expanded clean and affordable transit options that made walking, biking, and public transit as easy and convenient as driving.

Thank you for helping turn this vision into a reality. I'm counting on you to put in place a bold and equitable transportation rule that tackles the climate crisis and protects communities.

Our future depends on it.





STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Regarding Green House Gas Reduction

1 message

Thu, Sep 16, 2021 at 7:42 PM

To "governorpoli @ tate co u " governorpoli @ tate co u , "dot rule @ tate co u " dot rule @ tate co u

Dear Colorado Department of Transportation
Cc: Governor Jared Polis

A a long tanding Colorado native, I USED to love Denver and the urrounding uburb But not anymore
Growth and expansion is a normal process, but the impractical and ridiculous rubber stamping of DENSE housing by
our local municipalities has taken the current and soon future population to a point beyond what our infrastructure can
adequately and safely handle and it is grossly contributing to our poor air quality problem!

Yes, we need stronger greenhouse gas reduction rules, but we also need to put a halt on the sheer volume.
Transportation IS the biggest source of carbon pollution here and the insane density that keeps getting approved
DIRECTLY causes all drivers to spend MUCH more time on the road (than should be necessary) substantially adding
to thi pollution

CDOT (or some entity) needs to set sensible and safe boundaries for any and all expansion (it is apparent the cities
are NOT and are assuming that CDOT will come in and resolve the transportation issues they create with their dense
planning AFTER the fact) Development/e pan ion hould be forced to fall within safe and intelligent guideline
Additionally, it is irrational to assume that individuals who live in a community that has walkable, rideable, etc.
amenities (or access by public transit) will also not want to utilize major roadways such as I-25 or I-70. These roads
just CRAWL at times adding a huge amount of air pollution and this will happen with increases of population
regardle of what i planned around a city or community

CDOT should . . .

- * Set emission standards that can be measured and enforced AND also penalize some of the municipalities for
contributing to den ity and poor traffic flow (thu air pollution)
- * Require investments in climate-friendly transportation like bicycle, walking, or scooter paths, electric passenger
vehicles, feasible mass transit, and electric trucking/delivery vehicles (including efficient/electric transit for shipping of
goods and supplies).
- * En ure that the e new inve tment happen in all communitie including in and through indu trial park , bu ine
parks, shopping, neighborhoods, etc.
- * Stop the need for the widening of freeways BY being able to limit local governments with their housing growth or
expansion. Also, these bogged roads create major safety issues relative to any form of emergency vehicles being
able to re pond in a timely manner

The change needs to happen today with someone who has oversight to all these contributing causes. Please look at
the whole picture and help improve/preserve our quality of life in Colorado because it is quickly getting ruined and
lo ing it de irability!

Thank you for your consideration,

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

PowerPoint Slides from Rulemaking Hearing Presentation on Sept 17, 2021

1 message

Fri, Sep 17, 2021 at 6:17 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Cc: [Redacted]

Hello,

Per Rebecca White's request during the rulemaking hearing today, attached are the slides I shared via Zoom during my testimony. Please let me know if you have any questions.

Thanks,

[Redacted]

[Redacted]

[Redacted]

[Redacted]

 **CDOT GHG Rule Hearing Slides 9-17-2021 v1.pdf**
274K

WELD COUNTY

CDOT GHG TRANSPORTATION PLANNING STANDARD (2 CCR 601-22)

Concerns and Recommendations

September 17, 2021

Presented by: [REDACTED]



CONCERN #1: The rule allows for different model(s) to be used to demonstrate compliance, as compared with the model(s) used to estimate the baseline.

Table 1. GHG emission factor changes in light-duty vehicles (LDVs) due to model updates between MOVES2014b and MOVES3*

Vehicle type	Model Year	MOVES2014b CO2 (g/mile)	MOVES3 CO2 (g/mile)	% Difference
Passenger Cars	2017	269	219	-19%
	2018	258	208	-19%
	2019	247	197	-20%
	2020	236	188	-20%
	2026	190	168	-12%
Light duty trucks	2017	348	295	-15%
	2018	340	285	-16%
	2019	332	278	-16%
	2020	324	270	-17%
	2026	250	243	-3%

- **GHG emission factors for LDVs are lower in MOVES3 than MOVES2014b due to recent model updates**
- In general, **GHG emission factors tend to decrease over time** due to improvements in fuel economy and other factors
- **Lower GHG emission factors means a greater VMT reduction will be required** to meet reduction targets

RECOMMENDATION: The rule should be modified to require the same models for GHG budget setting and assessing compliance.

CONCERN #2: The timeframes specified in the proposed rule are problematic and may lead to implementation and/or compliance challenges.

8.04.1 At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.

- GHG Transportation Reports may be considered acceptable without technical review
- There is no timeframe for the TC to complete their review of the GHG Transportation Reports

RECOMMENDATION: The rule language should be modified to ensure that:

- 1. GHG Transportation reports undergo technical review; and**
- 2. The TC acts within a specified timeframe.**

CONCERN #3: Some numbers in Table 1 when added together do not meet the "TOTAL" reductions shown.

$$0.27 + 0.04 + 0.12 = 0.43 \neq 0.5$$

- **Actual emission reductions may fall short of estimated totals** even if rule requirements are met
- The discrepancy is greater than the reduction targets for many regional areas

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

<u>Regional Areas</u>	<u>2025 Baseline Projections (MMT)</u>	<u>2025 Reduction Level (MMT)</u>	<u>2030 Baseline Projections (MMT)</u>	<u>2030 Reduction Level (MMT)</u>	<u>2040 Baseline Projections (MMT)</u>	<u>2040 Reduction Level (MMT)</u>	<u>2050 Baseline Projections (MMT)</u>	<u>2050 Reduction Level (MMT)</u>
<u>DRCOG</u>	<u>14.9</u>	<u>0.27</u>	<u>11.8</u>	<u>0.82</u>	<u>10.9</u>	<u>0.63</u>	<u>12.8</u>	<u>0.37</u>
<u>NFRMPO</u>	<u>2.3</u>	<u>0.04</u>	<u>1.8</u>	<u>0.12</u>	<u>1.9</u>	<u>0.11</u>	<u>2.2</u>	<u>0.07</u>
<u>PPACG</u>	<u>2.7</u>	<u>N/A</u>	<u>2.2</u>	<u>0.15</u>	<u>2.0</u>	<u>0.12</u>	<u>2.3</u>	<u>0.07</u>
<u>GVMPO</u>	<u>0.38</u>	<u>N/A</u>	<u>0.30</u>	<u>0.02</u>	<u>0.30</u>	<u>0.02</u>	<u>0.36</u>	<u>0.01</u>
<u>PACOG</u>	<u>0.50</u>	<u>N/A</u>	<u>0.40</u>	<u>0.03</u>	<u>0.30</u>	<u>0.02</u>	<u>0.4</u>	<u>0.01</u>
<u>CDOT/Non-MPO</u>	<u>6.7</u>	<u>0.12</u>	<u>5.3</u>	<u>0.37</u>	<u>5.2</u>	<u>0.30</u>	<u>6.1</u>	<u>0.18</u>
<u>TOTAL</u>	<u>27.4</u>	<u>0.5</u>	<u>21.8</u>	<u>1.5</u>	<u>20.6</u>	<u>1.2</u>	<u>24.2</u>	<u>0.7</u>

RECOMMENDATIONS:

1. Clarify calculation of TOTAL row in Table 1; and
2. Provide guidance regarding the number of significant figures to be used in GHG emissions estimates.

Thank you





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Standards

1 message

Sun, Sep 19, 2021 at 11:20 AM

to: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

My name is [REDACTED], I'm a 6-year resident of Colorado and a University of Denver alumnus. I am writing to demand action in the form of concrete policy - the daily alerts I get about our declining air quality, the worsening seasonal storms, the unpredictable weather pattern, the raging wildfire are all conspiring to show us that we are out of time

Even if we stopped all use of fossil fuels right now, we would not be able to stop the catastrophic effects of climate change and global warming. So congratulations on being useless. I hope you are satisfied with your lack of action and your complicity in the circumstance that will make it almost impossible for future generation to thrive. I don't know how you all sleep at night.

Please consider at least passing mitigating policies that will significantly reduce emissions, such as FUNDING/SUPPORTING ROBUST PUBLIC TRANSIT, REGULATING CORPORATE EMISSIONS, ETC

Sincerely,

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

In Support of Stronger GHG Reduction Rules

1 message

Mon, Sep 20, 2021 at 8:01 AM

To: dot_rules@state.co.us

Cc: Governorpoli @ tate co u , je ie daniel on enate@ tate co u , kerry tipper hou e@ tate co u

Dear Colorado Department of Transportation
Cc: Governor Jared Polis, Senator Danielson, Representative Tipper,

As a Colorado resident, I'm writing in support of a stronger greenhouse gas reduction rule to reduce emissions and ensure cleaner air.

Coloradans like myself are feeling the impacts of climate change firsthand. And transportation is the biggest source of climate building carbon pollution in Colorado and passenger car and commercial truck are a leading cause of the state's poor air quality.

Colorado must meet the urgency of the moment and invest in changes TODAY that will protect all Coloradans, advance environmental justice, and provide a more livable climate and environment for generations to come.

Specifically, I'm calling on the Colorado Department of Transportation to ensure this new rule:

- * Require regional transportation plan to cut emissions to meet Colorado's climate goal
- * Requires investments in climate-friendly transportation and mobility options like electric vehicles, passenger rail trains, buses, bike-sharing programs, and safe walking and biking paths, that support healthy communities while cutting air pollution and traffic
- * Ensure that the new investment happens in low income communities and communities of color that often live near freeways, ports, and freight-hubs and disproportionately feel the impacts of pollution
- * Is developed in coordinate with communities most impacted by the burdens of pollution
- * Stops the widening of freeways which just adds more cars to the road and pollution into the air
- * Can be enforced to ensure the emissions reduction aren't just lost in the complicated planning process of local transportation districts.

Respectfully submitted,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Pollution Reduction Planning Standards Public Hearing

1 message

[REDACTED]
to: dot_rules@state.co.us

Mon, Sep 20, 2021 at 10:51 AM

Hello!

I am very concerned about climate change and air pollution. I support any and every measure to dramatically reduce pollution, especially carbon emissions and ozone.

Thank you,
[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Public Comment on Proposed Greenhouse Gas Pollution Reduction Standards

1 message

[Redacted]

Mon, Sep 20, 2021 at 5:31 PM

To: dot_rules@state.co.us

Dear CDOT Rulemaking Committee

I recently read the "COST-BENEFIT ANALYSIS FOR RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING" and I wish to express my full support for a new standard to reduce greenhouse gas emissions within the transportation sector. As such, I wish to see CDOT prioritize multi-modal transportation infrastructure and especially e-bike accessible recreation pathway. I wish to see CDOT participate in the expansion of public EV charging station infrastructure, and I wish to see CDOT limit new roadway constructions and roadway expansions to only those projects meant to address immediate life-safety concerns. You hold the power to help reshape and improve many Colorado communities and our collective future. Thank you for your thoughtful consideration in this important rulemaking process.

[Redacted]



Rules for Carbon Regulation

1 me age

Tue, Sep 21, 2021 at 4:14 PM

To: dot_rules@state.co.us

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- Colorado is not on track to meet its climate targets, even though July was the hottest month ever recorded. It is critical that our state agencies embrace policies that drive broad scale decarbonization. The current draft rule has to be more ambitious to ensure that we meet our emissions reduction targets
- GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2 reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap.
- The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. This is the kind of wishful thinking that will get us nowhere.
- Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle -- affordable, efficient public transit (**with programs to make it comfortable for all those car drivers who have never been on a bus and think it beneath them**), expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers.
- We need more passenger trains in Colorado.
- This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods
- The draft rules do not account for all greenhouse gas sources from vehicles. Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2.
- Please develop a rule that truly addresses climate change instead of just sounding good to the general public.



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

(no subject)

1 message

Tue, Sep 21, 2021 at 4:17 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Please pass the Greenhouse Gas Pollution Standard for Transportation Planning. This act goes toward tackling climate change which costs so much every year. Here's some facts that show how strongly action is needed.

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
- A matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision-making process** to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table.
- **GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap** issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more account tricks.
- **The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates** and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt a stricter carbon budget that will allow us to meet our emissions reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- **Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansion, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.

- **The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbon (HFC) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2.

- Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emission

Thank you, [REDACTED]



Greenhouse Gas Pollution Standard for Transportation Planning

1 message

Tue, Sep 21, 2021 at 4:40 PM

To: dot_rules@state.co.us

To DRCOG Board:

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
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- **The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHG with Global Warming Potential (GWP) hundred to thousand of times greater than that of CO₂.
- Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Thank you for your consideration and cooperation in these matters.





Greenhouse Gas Pollution Standard for Transportation Planning

1 message

Tue, Sep 21, 2021 at 4:40 PM

[REDACTED]
To: dot_rules@state.co.us

To DRCOG Board:

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
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- Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Thank you for your consideration and cooperation in these matters.





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG standards for transportation planning

1 message

Tue, Sep 21, 2021 at 4:56 PM

To "dot rule @ state co u " dot rule @ state co u

- **Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.

The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt a stricter carbon budget that will allow us to meet our emission reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Decarbonize Transportation!

1 message

[REDACTED]
to: dot_rules@state.co.us

Tue, Sep 21, 2021 at 5:25 PM

To Whom It May Concern

Happy Tuesday Sept 21-21....

What are you waiting for.... The entire world to run out of water, endless fires , drought, famine , extinction, death, pandemics???

YOU CAN START WITH DECARBONIZING TRANSPORTATION!!!

Thanks, [REDACTED]

Sent from my iPhone



Greenhouse Gas Pollution Standard for Transportation Planning

1 message

Tue, Sep 21, 2021 at 6:27 PM

[REDACTED]
to: dot_rules@state.co.us

We need to lower emissions from the transportation sector while improving equity, access, and multimodal transportation alternatives for all Coloradans.

- GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2 reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more accounting tricks.
- The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt stricter carbon budgets that will allow us to meet our emissions reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.
- As a matter of environmental justice, disproportionately impacted communities and communities of color must be at the heart of any decision making process to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table.
- The draft rules do not account for all greenhouse gas sources from vehicles. Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2.
- Transportation models, assumptions, estimates and figures used to guide transportation policy by CDOT must be transparent for the public to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Please keep these points in mind while developing greenhouse gas pollution standards relative to transportation in Colorado.

[REDACTED]

[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Pollution Standard for Transportation Planning

1 message

Tue, Sep 21, 2021 at 7:25 PM

[REDACTED]
To: dot_rules@state.co.us

July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emission reduction targets.

As a matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision making process** to ensure access to affordable, multi modal transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rule making that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table.

GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO₂e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emission from the transportation sector

The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt stricter carbon budget that will allow us to meet our emission reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.

Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle like electric bicycle and scooter for shorter trip, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhood

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Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making process that impact public health, traffic congestion and our state's GHG emissions.

Sincerely,
[REDACTED]



Virus-free. www.avast.com





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Pollution Standard for Transportation Planning

1 message

[Redacted]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Tue, Sep 21, 2021 at 9:34 PM

TO whom it may concern,

July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization. The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.

As a matter of environmental justice, disproportionately impacted communities and communities of color must be at the heart of any decision-making process to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table

[Redacted]



Climate change

1 message

Wed, Sep 22, 2021 at 9:10 AM

To: dot_rules@state.co.us

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
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- The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates** and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt stricter carbon budget that will allow us to meet our emission reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansion, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.
- The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful

GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2

- Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making process that impact public health, traffic congestion and our state's GHG emissions.



Greenhouse Gas Pollution Standard for Transportation Planning

1 me age

Wed, Sep 22, 2021 at 9:28 AM

[REDACTED]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Hello,

I am a resident of Greeley, Colorado and have lived in Colorado all my life. I am concerned about the existential crisis climate change presents and would like to see the Colorado Department of Transportation develop the Greenhouse Gas Pollution Standard for Transportation Planning to establish an innovative framework that would require planning agencies to meet specific carbon budgets, or face penalties. This should be as strong a rule as possible! Reasons for this include

- 1) July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
- 2) As a matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision-making process** to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table.
- 3) **GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO₂e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap** issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more account tricks.
- 4) **The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates** and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt stricter carbon budgets that will allow us to meet our emissions reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- 5) **Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.
- 6) **The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are

powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2.

7) Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Thank you for your time and consideration,

[REDACTED]



Greenhouse Gas Pollution Standard for Transportation Planning.

1 message

Wed, Sep 22, 2021 at 9:46 AM

To: dot_rules@state.co.us

CDOT Transportation Commission

July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate target! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.

As a matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision-making process** to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensure that individual from disproportionately impacted communities are given a real seat at the decision making table.

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Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.

The draft rules do not account for all greenhouse gas sources from vehicles. Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWP) hundred to thousand of times greater than that of CO₂.

Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Thank you.





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

CDOT: greenhouse gas standards

1 message

Wed, Sep 22, 2021 at 4:48 PM

[REDACTED]
to: dot_rules@state.co.us

Dear CDOT Transportation Committee member ,

I would like to urge you to develop very strong policies as you develop your Greenhouse Gas Pollution Standards for Transportation. As everyone now knows the world is at a crisis point with climate change. It will require serious efforts to curb greenhouse gas emissions in any way, and for all of us to be creative in the effort. The reduction in greenhouse gas emissions from transportation are key components- and they need to be real, accurate, fair, enforceable and accountable.

We can't rely on the voluntary transition to electric vehicles without adequate incentives or strong barriers to the continued use of gasoline vehicles. We need a stricter carbon budget not just an optimistic one. We do not need more roads or wider roads- we need less! We need better, more accessible mass transit- buses, light rail, etc. We need to make the roads safe for bicycles, golf-carts, e-bikes- anything but cars!

Transportation model, assumptions, estimates and figures used to guide transportation policy by CDOT must be transparent for the public to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

I do not want to live in a world in which I can't go outside in the summer because of heat and poor air quality. I don't want to worry about every drop of water that I use to water the garden. And I don't want to fear for the future for my grandchildren. You have a tough job; there will need to be some sacrifices, and costs now to pay for a future payback.

Thank you,

[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Reduction Planning

1 message

[REDACTED]
to: dot_rules@state.co.us

Thu, Sep 23, 2021 at 8:46 AM

Hello,

I fully support planning and action efforts to reduce greenhouse gas emissions in Colorado.

[REDACTED]

STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Transportation Rulemaking

1 message

Thu, Sep 23, 2021 at 10:04 AM



to: dot_rules@state.co.us

Department of Transportation,

As a voter and Colorado taxpayer, my top priority issue is reducing greenhouse gas emissions to fight climate change. I understand that you are looking at rules that will help us get to Colorado's GHG emission goals in the transportation sector.

July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.

We demand change now. The technologies are present, we just need the will to step forward into the future without fossil fuels. Please know that my family and I are closely watching your efforts. Thank you for your work.





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Please strengthen the Greenhouse Gas Pollution Standard

1 message

Thu, Sep 23, 2021 at 10:13 AM

Reply-to: [REDACTED]
To: dot_rule @ state co u

Dear CDOT Rulemaking Comments,

As a 4th generation Colorado and resident of Denver for over a quarter of a century, I am distressed, saddened and quite frankly that the city has become a car centric, traffic bound mini LA. The approach to transportation and the system that we have accepted has divided communities, polluted our air, and left Coloradans with few options for safely and conveniently moving around our state. I'm excited to see this rulemaking moving forward and have a few recommendations for improving the draft.

First, I urge you to strengthen the rule to center communities most harmed by the impacts of our existing transportation system. A Transportation Equity Framework should be developed as a part of this process and representatives of disproportionately impacted and marginalized communities should be included in developing, monitoring, and implementing this rule.

Second, while a goal of decreasing driving by 10% by 2030 is admirable, it isn't nearly enough or fast enough. This summer was apocalyptic with day after day of AQI alerts driving us indoors to watch the orange sky through our windows. Colorado is in an air quality crisis and transportation is a top contributor. We must take aggressive action to reduce emissions or we will all continue to pay the price by way of air pollution and the ongoing impacts of the climate crisis. Please outline specific goals for pollution reduction that will enable us to meet existing air quality targets.

I urge you to consider the climate change and continue to strengthen this rule through the revision process.

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

RE: Instructions - Virtual Rulemaking Hearing regarding the Proposed Greenhouse Pollution Reduction Standards for Transportation Planning on 9/24/ Instruccion

1 message

[Redacted]

Thu, Sep 23, 2021 at 3:14 PM

To: CDOT Rule <dot_rule@state.co.us>

My written comments below:

My name is [Redacted], a collaborative ensuring a racially equitable, resilient Denver metro region where community solutions are at the center of systems change.

As community advocates, we recognize the intersection between multiple competing crises - housing, health, and climate - and our Black, Brown and other communities of color. We call on CDOT to develop an implement a transportation equity framework that includes representatives from disproportionately impacted communities in the process - from development to implementation. We need to incentivize more equitable transportation systems and equitable zoning/land use practices to get to the root cause of our GHG emissions. It's time to shift how and where we plan and build our housing directly connects to how they will get to job centers and other critical services.

These crises need to be met with bold action. I look forward to reviewing a strengthen rule but for now, thank you for your time today

[Redacted]

[Redacted]

From CDOT Rule [cdot_rule @ tate co u](mailto:cdot_rule@state.co.us)

Sent: Thursday, September 23, 2021 3:11 PM

To: [REDACTED]

Subject: Re: Instructions – Virtual Rulemaking Hearing regarding the Proposed Greenhouse Pollution Reduction Standard for Transportation Planning on 9/24/ In truccione Audiencia Virtual de Elaboración de Norma obre la Normas Propuestas para la Reducción de

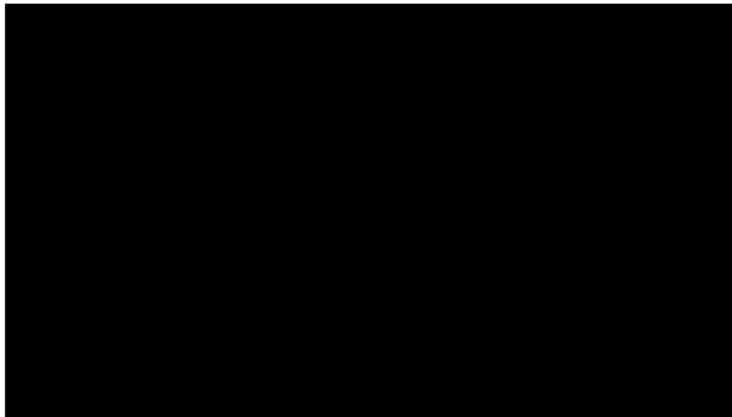
Yes, that is acceptable. If you would like to provide a written comment please respond to this email account with your comment! Thank you for letting us know.

Best,

Rebecca Rathburn

[REDACTED] wrote:

Hi there, I had originally planned to provide spoken testimony and was curious if I could provide written testimony instead. Please advise. Thank you.



From CDOT Rule [cdot_rule @ tate co u](mailto:cdot_rule@state.co.us)

Sent: Thursday, September 23, 2021 1:14 PM

To: Rebecca Rathburn - CDOT <rebecca.rathburn@state.co.us>

Subject: Instructions – Virtual Rulemaking Hearing regarding the Proposed Greenhouse Pollution Reduction Standard for Transportation Planning on 9/24/ In truccione Audiencia Virtual de Elaboración de Norma obre la Normas Propuestas para la Reducción de l...

Stakeholder:

You are receiving this email because you signed up to attend the rulemaking hearing on September 24, 2021, at 3 pm, virtually. This email contains instructions for how to join, listen, and provide testimony if you wish at the public hearing.

Listening and Watching the Public Hearing - English Only

We are going to live stream the public hearing on CDOT's YouTube Channel. If you do not wish to provide testimony, we strongly recommend that you listen and watch the public hearing on YouTube rather than joining the Zoom video

call. You can access the YouTube live stream from the link below or from [CDOT's Proposed Rules and Public Hearing Dates website](#).

<https://youtu.be/WkUq-KOXCTQ>

Planning to Provide Public Testimony in English/Spanish and Listening to Spanish Interpretation

If you wish to provide testimony, you must join the Zoom video call from the link below. If you would like to listen and/or provide testimony in Spanish please email CDOT_Rules@state.co.us as soon as possible so that we can accommodate that request.

<https://cdot.zoom.us/j/97966686335?pwd=d2xmUm0yTWJoNkZtaVJzWVRvTWtkdz09>

If requested, we will be offering simultaneous Spanish interpretation for each hearing through Zoom. When you log into Zoom at the beginning of the hearing, please select your language of choice (English/Spanish). Please watch a brief [YouTube video explaining how Zoom Simultaneous Interpretation work](#)

Additionally, we request that you mute your microphone and do not share your camera until the testimony phase of the public hearing. During the testimony phase, the hearing officer will announce your name when it is your turn to provide your testimony. At that time, please unmute your microphone and share your camera if you wish. Your testimony will be time limited. Please speak clearly and slowly for the recording and transcription.

Technical Difficulties with Zoom

Please contact Jamie Grim at Jamie.Grim@state.co.us or 970.481.1024.

Thank you for participating in the rulemaking process.

Thank you,

Rebecca Rathburn

Accionista:

Usted recibió este correo electrónico porque se inscribió para asistir a la audiencia de elaboración de normas el 24 de septiembre de 2021 a las 3 pm en forma virtual. Este correo electrónico contiene instrucciones sobre cómo ingresar, escuchar y dar su testimonio, si lo desea, en la audiencia pública.

Escuchar y Ver la Audiencia Pública - Solo en Inglés

Vamos a transmitir la audiencia pública en vivo en el canal de YouTube del CDOT. Si usted no desea dar su testimonio, le recomendamos encarecidamente que escuche y vea la audiencia pública en YouTube en lugar de unirse a la videollamada de Zoom. Usted puede acceder a la audiencia pública de YouTube desde el enlace a continuación o desde [la página de Internet de Normas Propuestas y Fechas de Audiencia Pública del CDOT](#).

<https://youtu.be/WkUq-KOXCTQ>

Planificación para Brindar Testimonio Público en Inglés / Español y Escuchar la Interpretación en Español

Si usted desea brindar su testimonio, debe unirse a la videollamada de Zoom desde el enlace a continuación. Si usted le gustaría escuchar o brindar el testimonio en español, envíe un email a CDOT_Rules@state.co.us lo antes posible para que podamos acomodar el pedido.

<http://cdot.zoom.us/j/97966686335?pwd=d2xmUm0yTWJoNkZtaVJzWVRvTWtkdz09>

Si se solicita, ofreceremos interpretación simultánea en español en cada audiencia a través de Zoom. Cuando usted inicie la sesión en Zoom al comienzo de la audiencia, seleccione el idioma que prefiera (inglés / español). Mire un breve video de [YouTube que explica cómo funciona la interpretación simultánea de Zoom](#).

Además, le recomendamos que apague su micrófono y no encienda su cámara hasta la fase de testimonio de la audiencia pública. Durante la fase de testimonio, el funcionario de audiencias anunciará su nombre cuando sea su turno de dar su testimonio. En ese momento, encienda el micrófono y su cámara si lo desea. Su testimonio será por tiempo limitado. Hable claro y despacio para la grabación y transcripción.

Dificultades Técnicas con Zoom

Comuníquese con Jamie Grim al Jamie.Grim@state.co.us o al 970.481.1024.

Gracias por participar en el proceso de elaboración de normas.

Gracias,

Rebecca Rathburn



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Pollution Standard for Transportation Planning

1 message

[REDACTED]

Thu, Sep 23, 2021 at 5:38 PM

to: dot_rules@state.co.us

To whom it may concern at CDOT,

Thank you for undertaking the greenhouse gas standard in transportation planning. Please consider making this as strict as possible, as all of our futures depend on us taking the most direct and ambitious action possible. Even though it is hard to imagine swift and foundational change when it comes to transportation, I hope that you will understand the gravity of this situation, and that you have the power to help many generations to come, but only if you take bold and unprecedented steps. Please, take this seriously, and do what you can to help us.

Sincerely,

[REDACTED]



Greenhouse Gas Pollution Standard for Transportation Planning

1 message

Thu, Sep 23, 2021 at 6:18 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Decarbonizing Transportation

This is the most critical issue we will face in our lifetimes. We MUST STOP this environmental suicide mission we are on

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets.
- As a matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision-making process** to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensure that individual from disproportionately impacted communities are given a real seat at the decision making table.
- **GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap** issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more account trick
- **The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates** and provide no alternative proposal for achieving the net GHG reduction if EV adoption is lower than anticipated. Therefore, this rule should adopt stricter carbon budgets that will allow us to meet our emissions reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- **Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** — like electric bicycles and scooters for shorter trips, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decision to provide more bike lanes, sidewalks, and pedestrian centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhoods.

- **The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHG with Global Warming Potential (GWP) hundred to thousand of times greater than that of CO₂.
- Transportation model, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments re: Greenhouse Gas Pollution Standard for Transportation Planning.

1 me age

Thu, Sep 23, 2021 at 8:53 PM

[Redacted]
To: "dot_rules@state.co.us" <dot_rules@state.co.us>

To whom it may concern;

The proposed rule should be focused on helping Colorado lower emissions from the transportation sector while improving equity, access, and multi-modal transportation alternatives for all Coloradans

The current draft rule is a good start, but should be more ambitious to ensure that we meet our emissions reduction targets. As a matter of environmental justice, disproportionately impacted communities and communities of color must be at the heart of any decision making process to ensure access to affordable, multi-modal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table.

GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector not more account tricks

The draft rules do not account for all greenhouse gas sources from vehicles. Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO2.

Transportation models, assumptions, estimates and figures used to guide transportation policy by CDOT must be transparent for the public to engage in decision making processes that impact public health, traffic congestion and our state's GHG emissions.

Sincerely,

[Redacted signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Written comment on draft rule for greenhouse gas emissions reduction

1 message

Fri, Sep 24, 2021 at 10:00 AM

To: dot_rule @ state.co.us

Dear CDOT:

I am writing in support of the proposed standard that requires CDOT to determine the total pollution and greenhouse gas emission increase from future transportation project

It is hard not to be disappointed with how CDOT plans projects and spends the budget. It seems widening highways and making roads faster, louder, and more dangerous to people on foot and bike is always the chosen option.

I look at pictures on the internet of cities with complete streets with shade trees and safe places for people walking and biking and wonder why we don't choose that. Why do we spend our money on streets that are so hostile to anyone not in a car and so damaging to our health?

There was a time when VMT was associated with increasing standard of living, but I think we passed the point long ago when increasing vehicle miles became a burden, not a benefit.

PLEASE take air pollution into account when planning your new project. Give us a chance to choose something other than cars. Don't let your legacy be dirty air, sprawl, road deaths, bulldozed walkable neighborhoods, and a city that lives in a traffic jam.

Also please revise the proposal to include the 10% reduction in VMT. What you build today will be the transportation infrastructure of tomorrow. We can plan for a healthier city.

Thank you for reading,

[Redacted signature]

[Large redacted block]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Weld County Initial Written Comments 2CCR601-22

1 message

Fri, Sep 24, 2021 at 12:05 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Cc: [Redacted]

Please see the attached. Weld County will be participating in or listening to the various public rulemaking hearings scheduled over the next few weeks. Weld County reserves the right to submit additional comments on or before October 15th.

[Redacted]



Confidentiality Notice: This electronic transmission and any attached documents or other writings are intended only for the person or entity to which it is addressed and may contain information that is attorney privileged and confidential, or otherwise protected from disclosure. If you have received this communication in error, please immediately notify sender by return e mail and de troy the communication Any di clo ure, copying, di tribution or the taking of any action concerning the contents of this communication or any attachments by anyone other than the named recipient is strictly prohibited

WeldCo_WrittenComments_2CCR601-22.pdf
281K

**BEFORE THE DEPARTMENT OF TRANSPORTATION AND TRANSPORTATION
COMMISSION
STATE OF COLORADO**

IN THE MATTER OF PROPOSED REVISIONS TO 2 CCR 601-22

**WRITTEN COMMENTS FROM THE BOARD OF COUNTY COMMISSIONERS OF
WELD COUNTY, COLORADO**

The Board of County Commissioners of Weld County (“Weld County”) submits these comments in connection with the above-captioned rulemaking. Weld County appreciates the opportunity to participate in this rulemaking proceeding regarding the Colorado Department of Transportation’s (“CDOT”) revisions to 2 CCR 601-22, Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (“Proposed Rule”) proposed by the Colorado Department of Transportation (“CDOT”). The Proposed Rule establishes greenhouse gas (“GHG”) reduction targets for transportation and requires CDOT and the Metropolitan Planning Organizations (“MPOs”) to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions resulting from its state or regional plans do not exceed a specified emissions level in total. The purpose of these requirements is to limit the GHG pollution that would result from the transportation system if the plans were implemented. If compliance cannot be demonstrated, even after committing to GHG mitigation measures, the Proposed Rule requires the Transportation Commission (“TC”) to restrict the use of certain funds to projects that are recognized as approved mitigation measures and help reduce transportation emissions.

The transportation sector is one of the largest contributors to GHG and ozone precursor emissions. Therefore, Weld County generally supports efforts to increase multimodal options and provide more sustainable travel options to achieve reductions in air pollution, including GHG and ozone precursor emissions, from the sector. However, Weld County has several concerns about the Proposed Rule, and more generally, the rushed nature of the rulemaking and lack of data provided by CDOT. This lack of critical information impedes stakeholders’ ability to evaluate the overall efficacy of the Proposed Rule and provide meaningful comments.

Therefore, Weld County is submitting these initial written comments on the Proposed Rule and requests CDOT provide the data requested by stakeholders, including the data requested in Weld County’s CORA request, dated September 17, 2021 (see **Attachment A**). In addition, Weld County requests the Transportation Commission extend the deadline for written comments to no earlier than 30 days after receipt of the requested data, and schedule an additional hearing after the close of the extended comment period. Our request for additional data notwithstanding, Weld County intends to review the cost-benefit analysis (“CBA”), regulatory analysis, and any other data and information provided by CDOT and submit additional written comments before the close of the comment period.

Weld County’s concerns about the Proposed Rule and its corresponding recommendations are outlined below.

Concern No. 1

CDOT has not provided sufficient time before the rulemaking hearings to review supporting documentation for the Proposed Rule, including the CBA, regulatory analysis, and other technical documentation.

- These supporting documents were not released with the notice of the rulemaking and Proposed Rule Language. CDOT has not provided key analyses, data, and the underlying documentation used to develop the Proposed Rule.
- Without such documents, stakeholders are unable to evaluate the accuracy or reasonableness of the GHG emission estimates in the Proposed Rule or the efficacy of the Proposed Rule.
- While CDOT has met the minimum time requirements for public release of the CBA and regulatory analysis, the scope and novelty of the Proposed Rule warrants additional time for stakeholders to review and comments on these documents. Extending the time period for review and comment would benefit stakeholders and the rulemaking process by allowing for more careful consideration and further refinement of the Proposed Rule.
 - A cost-benefit analysis is required under C.R.S. § 25-7-103(2.5) and a separate regulatory impact analysis is required under C.R.S. § 25-7-103(4.5).
 - Per the Department of Regulatory Agencies, a CBA must be made available to the public 10 days prior to the first hearing and the regulatory analysis must be completed and made available to the public 5 days prior to the first hearing.¹

Weld County’s Recommendation

- CDOT should provide supporting documentation—such as a technical support document—describing the methods used to conduct the analysis for the GHG estimates in Table 1 and Table 2 of the Proposed Rule.
- CDOT should provide additional time – beyond regulatory minimums – for stakeholders to review and comment on the CBA and regulatory analysis.

Concern No. 2

The rule allows for different model(s) to be used to demonstrate compliance, as compared with the model(s) used to estimate the baseline. Different models could yield different results complicating compliance with the rule.

- The rule allows for the use of MPO models or the Statewide Travel Model when performing GHG emissions analyses. Examples (emphasis added):

¹ Colo. Dep’t of Regul. Agencies, *Colorado’s Rulemaking and Cost-Benefit Analysis Process*, <https://coprrr.colorado.gov/rulemaking-and-cost-benefit-analysis>.

- “1.05 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model...”
- “8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions analysis using MPO Models or the Statewide Travel Model...”
- “8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e.”
- It is not clear why the definition of baseline would allow for use of the MPO Models or the Statewide Travel Model when the baseline represents a single set of GHG emission estimates that were presumably prepared using one of the modeling platforms (i.e., either the MPO Models, or the Statewide Travel Model, not both).
- Different models exhibit different sensitivities to inputs and assumptions, whereby running two different models with the same inputs and assumptions could yield different results. Therefore, allowing different model(s) to be used in the GHG emissions analysis than was used in estimate of baseline GHG emissions and development of GHG reduction targets is problematic. For example, while the emission reduction levels shown in Table 1 may be achievable based on modeling conducted using the Statewide Travel Model, demonstrating compliance using the MPO Model(s) may be infeasible.
 - Further, the use of multiple different models among CDOT and the MPOs in their respective GHG emissions analyses complicates review of the GHG Transportation Reports by both APCD and the Transportation Commission (TC) as required in Sections 8.04.1 and 8.05, respectively.
- The role of Section 8.02.2 “Agreements on Modeling Assumptions and Execution of Modeling Requirements” in constraining/coordinating the “development and execution” of the models is not clear and should be clarified per our recommendations below.
- The definition for “Approved Air Quality Model” refers to “the most recent” model, meaning the approved air quality model used in future years to demonstrate compliance with the Proposed Rule may differ from the model that was used to estimate the baseline emissions and reduction targets. Similar to the concerns above, future updates to the approved air quality model (i.e. MOVES3, the Motor Vehicle Emissions Model) may alter the model’s sensitivity to key inputs (e.g., VMT, vehicle miles traveled) used in the GHG emissions analyses and compliance assessments.
 - Such changes may present compliance challenges. For example, if every vehicle is “cleaner” (i.e., lower GHG emissions per mile), then CDOT and MPOs would need to achieve greater VMT reductions to achieve the same GHG emission reductions.

Weld County’s Recommendation:

- The definition of baseline should be revised to refer to only the model(s) used to prepare the estimates of baseline GHG emission estimates and CDOT should provide a technical

support document describing the methods and assumptions used to estimate the baseline emissions.

- Modify rule to require the same model(s) for GHG budget setting (i.e., Table 1 and 2 of the Proposed Rule) and assessing compliance (i.e., GHG emissions analyses and GHG Transportation Reports as required under the Proposed Rule), or outline process for continuity if model changes are determined to be critical.
 - To ensure the same air quality model is used for GHG budget setting and compliance assessments, either:
 - Revise the definition of Approved Air Quality Model to refer to the specific model used in the determination of the GHG emission estimates in Table 1 and Table 2 of the Proposed Rule; or
 - Revise the Proposed Rule to require the GHG emission estimates in Table 1 and Table 2 be updated following the release of a new (or update to an existing) Approved Air Quality Model.
- Should different models be allowed in the Proposed Rule, CDOT should conduct a sensitivity analysis to compare the sensitivity of different models to inputs and assumptions, specifically as related to Travel Choice, Transit, and Land Use considered in the development of the GHG estimates in Table 1 and Table 2 of the Proposed Rule.
- The specific requirements for and components of the “Intergovernmental Agreement” required per Section 8.02.2 should be specified in the rule language, particularly as related to model(s) used in the analyses and assumptions used in the modeling, to ensure consistent modeling methodology.

Concern No. 3

For areas outside the urban corridor (i.e., rural areas and/or those with a lower population density) the GHG mitigation measures specified in the Proposed Rule may be overly restrictive and may present compliance challenges for CDOT and/or MPOs.

- Urban and rural lifestyles, land usage, density, and thus transportation patterns are critically different. To date, most GHG mitigation strategies for the transportation sector have been targeted to more densely populated, urban areas.^{2,3} According to the Transportation Research Board, “By far, and not surprisingly, most of the research on GHG emissions reduction strategies has focused on metropolitan areas or at the national and state levels.” and that “...very little attention has been given to nonurban areas”.⁴ The

² New England Transport Consortium, *Data and Information to Support Cost Effective Transportation GHG Mitigation in Rural Communities* (2020), <https://www.newenglandtransportationconsortium.org/wp-content/uploads/N20ME2-GHG-Mitigation-1.pdf>.

³ Org. for Econ. Co-operation and Dev., *Decarbonising Urban Mobility with Land Use and Transport Policies: The Case of Auckland, New Zealand* (2020), <https://www.oecd-ilibrary.org/sites/5181a1e0-en/index.html?itemId=/content/component/5181a1e0-en>.

⁴ PB Americas, Inc., Cambridge Systematics, Inc., E.H. Pechan & Assocs., Inc., EuQuant, Inc., Strategic Highway Rsch. Program Capacity Focus Area, Transp. Rsch. Bd., & Nat’l Academies of Scis., Eng’g, and Med., *Incorporating*

example GHG mitigation strategies given in Section 8.03 are less feasible and/or less effective in rural areas, especially given that rural roads tend to have lower traffic flows and thus have less traffic impacts.⁵ For example, the California Air Pollution Control Officers Association finds that reducing VMT through carpooling measures is not applicable for implementation in rural areas.⁶ Rural areas also have less financial and logistical resources, and may bear disproportionate financial burdens from higher taxes, and fuel and vehicle costs that are associated with GHG reduction strategies.^{7,8}

- Examples of mitigation measures provided in Section 8.03 of the Proposed Rule are largely infeasible or ineffective outside of metropolitan areas and transportation GHG mitigation measures are generally less available in rural areas and/or areas with a lower population density.
- Additionally, per Section 1.19, GHG mitigation measures are defined as strategies that reduce transportation GHG pollution. Thus, mitigation measures that reduce GHG emissions from other sources or sectors would not qualify as mitigation measures to help achieve GHG Reduction Levels set forth in the Proposed Rule. This further constrains the availability of mitigation measures.

Weld County's Recommendation

- CDOT should evaluate the feasibility of, and provide examples of, transportation GHG mitigation measures for rural areas.
- The definition of GHG Mitigation Measures in the Proposed Rule should be revised to allow for strategies that reduce GHG pollution from sources and sectors other than transportation, provided that there is a transportation nexus.

Concern No. 4

The timeframes specified in the Proposed Rule are problematic and may lead to implementation and/or compliance challenges.

- First, the 30-day time window for APCD to provide review and verification of the technical data contained in the draft GHG Transportation Reports may be insufficient, and may allow for GHG Transportation Reports to be provided to the TC for compliance

Greenhouse Gas Emissions into the Collaborative Decision-Making Process, at 22805 (2012), <https://doi.org/10.17226/22805>.

⁵ N. Singru, *Reducing Carbon Emissions from Transport Projects*, at 107 (2010), <https://www.oecd.org/derec/adb/47170274.pdf>.

⁶ Cal. Air Pollution Control Officers Ass'n, *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (2021), http://www.airquality.org/ClimateChange/Documents/Handbook%20Public%20Draft_2021-Aug.pdf.

⁷ Marisa Beck, Nicholas Rivers, & Hidemichi Yonezawa, *A rural myth? Sources and implications of the perceived unfairness of carbon taxes in rural communities*, *Ecological Economics*, at 124, 124–134 (2016), <https://doi.org/10.1016/j.ecolecon.2016.01.017>.

⁸ Cynthia J. Burbank, *Greenhouse Gas (GHG) and Energy Mitigation for the Transportation Sector* (2009), <http://onlinepubs.trb.org/onlinepubs/sr/sr299GHG.pdf>.

assessment without sufficient technical review. Per Section 8.04.1 of the Proposed Rule, “At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.”

- As currently written, there is the potential for GHG Transportation Reports to be considered acceptable without having undergone technical review and verification from APCD. Presumably the technical review and verification from APCD is intended to ensure accuracy and validity of the GHG emissions estimates, so it is critical reports are reviewed by APCD prior to a compliance determination from the TC. It is unclear if APCD has provided feedback to CDOT regarding the feasibility of meeting this time requirement.
- In the event the GHG Transportation Report is not reviewed by APCD and is considered acceptable after 30 days, it’s not clear if the TC is equipped or expected to perform technical review and verification of the analysis. Thus, there is the potential for the TC to act upon the GHG emissions estimates presented in the GHG Transportation Report without such estimates having undergone technical review.
 - Similarly, Per Section 8.05, the TC shall review “the sufficiency of any GHG Mitigation Measures needed for compliance.” However, the Proposed Rule does not specify what the review for “sufficiency” requires and it is not clear if the TC is equipped to perform this review (i.e., technical knowledge, time, resources, etc).
- Second, per Section 8.02.5, GHG Transportation Reports must be submitted to the TC at least thirty (30) days prior to adoption of any Applicable Planning Document.
 - Based on the timeframes specified in Section 8.04.1 and Section 8.02.5, it seems there the potential for a GHG Transportation Report to be submitted to the TC 15 days after submission to APCD, whereby the TC could potentially reach a compliance determination prior to the end of the 30-day APCD review period. In such a scenario, the TC could act upon the GHG emissions estimates presented in the GHG Transportation Report without such estimates having undergone technical review, or while technical review from APCD is still underway.
- Third, there is no timeframe for the TC to complete their review of the GHG Transportation Report and determine compliance per Section 8.05 of the Proposed Rule. Section 8.05 specifies the enforcement of the Proposed Rule, stating that “The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance.” However, there is no timeframe specified.
- Finally, the Proposed Rule does not specify the timeline for enforcement actions taken under Section 8.05.2 of the Proposed Rule. Specifically, it is not clear when funding restrictions would be implemented or to which projects they would apply should the TC

restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG.

Weld County's Recommendation

The rule language should be modified to ensure that:

- GHG Transportation reports undergo technical review and verification prior to a compliance determination from the TC;
- The TC reviews and evaluates the compliance of GHG Transportation Reports within a specified timeframe; and
- Enforcement timeframes are specified, particularly as related to the restrictions of funds.

Concern No. 5

Some numbers in Table 1 when added together do not meet the total reductions, possibly due to rounding, which may result in actual emission reductions falling short of estimated totals even when all rule requirements are met.

- For example, 2025 reduction levels are shown as 0.27, 0.04, and 0.12, the sum of which is 0.43, as compared with 0.5 reported for TOTAL. While the discrepancy may seem small in magnitude, it is greater than the reduction level for NFRMPO in this year.
- Therefore, even if DRCOG, NFRMPO, and CDOT meet their respective reduction targets of 0.27, 0.04, and 0.12 MMT CO₂e, the total GHG emission reductions achieved would fall short of the 0.5 MMT CO₂e estimated for total reductions in 2025.
 - A similar concern exists for compounding rounding errors in GHG emissions estimates reported by CDOT/MPOs. For example, if each regional area were to round estimated GHG reductions up to demonstrate compliance, actual GHG emission reduction may fall further short of estimated total. For example, 0.265, 0.035, 0.115 may be rounded to 0.27, 0.04, and 0.12 respectively, based on the number of significant figures reported, and would result in actual emission reductions of 0.415 MMT CO₂e.

Weld County's Recommendation

- Clarify calculation of TOTAL row in Table 1 of the Proposed Rule. Table 1 should be revised to show the same significant figures for all of the values. Additional information should be presented in a supplemental technical support document.
- Provide guidance regarding the number of significant figures to be used in GHG emissions estimates, particularly as related to rounding for regional area totals compared against the values in Table 1 of the Proposed Rule.

Concern No. 6

The basis for waivers specified in Sections 8.05.2.1.1 and 8.05.2.1.2 of the Proposed Rule is vague, and it is not clear what criteria or guidelines will be used to ensure fair and equitable evaluation of waivers.

- Per Section 8.05.2.1, a waiver can be requested from the TC imposing restrictions on specific projects not expected to reduce GHG emissions, and the TC may waive the restrictions on specific projects based on the requirements in Sections 8.05.2.1.1 and 8.05.2.1.2. However, the criteria in Sections 8.05.2.1.1 and 8.05.2.1.2 are not quantitative in nature.
 - For example, it is not clear how “significant effort and priority” will be determined, or what is a “substantial increase in GHG emissions when compared to the required reduction levels.”
- Furthermore, waivers (or reconsideration requests) are deemed denied if no action is taken by the TC within 30 days (or at the next regularly scheduled TC meeting), which may result in automatic denial simply due to inaction.

Weld County’s Recommendation

CDOT should clarify, through revised rule language or a guidance document accompanying the Proposed Rule, the criteria used to evaluate waivers. For example, guidance on how “significant effort” will be evaluated should be provided, and a “substantial increase in GHG emissions when compared to the required reduction levels” should be quantified.

Concern No. 7

The Proposed Rule and statement of basis and purpose do not address potential interactions between actions taken by CDOT/MPOs as a part of the Proposed Rule and actions taken by the enterprises⁹ created in SB21-260 to reduce GHG emissions.

- By definition in SB21-260, the four enterprises are created “to serve the primary business purpose of reducing and mitigating the adverse environmental and health impacts of air pollution and greenhouse gas emissions...” Additionally, the specific function of the first three Enterprises is focused primarily on electrification (including infrastructure) and the non-attainment area (NAA) mitigation Enterprise is focused on traffic/VMT reduction, along with projects that “directly reduce air pollution.” Examples in the last category include “retrofitting of construction equipment, construction of roadside vegetation barriers, and planting trees along medians.”
- While it seems unlikely the Enterprises would undertake a “regionally significant project” as defined in the Proposed Rule, the Enterprises may undertake projects that could qualify as GHG Mitigation Measures under the Proposed Rule. It’s not clear from

⁹ SB21-260 created the community access enterprise, the clean fleet enterprise, the clean transit enterprise, the nonattainment area air pollution mitigation enterprise. See Colo. SB 21-260, https://leg.colorado.gov/sites/default/files/2021a_260_signed.pdf.

the Proposed Rule language if projects that reduce GHG emissions undertaken by the Enterprises could be used as mitigation measures by CDOT/MPOs to meet the reduction targets specified in the Proposed Rule. Accurate accounting of GHG reduction projects is critical to avoid double counting and understand the compliance options available to CDOT and MPOs.

- Additionally, it's unclear if the modeling conducted for the Proposed Rule (i.e., values in Table 1 and Table 2) account for any Enterprise projects, either in the baseline or the reduction targets.

Weld County's Recommendation

CDOT should clarify, through revised rule language or a guidance document accompanying the Proposed Rule, how Enterprise activities interact with the actions taken by CDOT/MPOs as a part of the Proposed Rule, particularly as related to GHG mitigation measures.

Concern No. 8

No guidance is provided as to how modeling should be conducted to demonstrate compliance with the applicable reduction targets in Table 1.

- It's not clear from the language in the Proposed Rule what model inputs, assumptions, and methodology can or should be used by CDOT/MPOs to estimate GHG emissions. Further, it's not clear if CDOT/MPOs must meet the reduction levels in Table 1, or if they must meet an absolute GHG emissions target determine based on the baseline projects and reduction levels in each target year.
 - For example, would NFRMPO need to meet a GHG emission level of 2.3-0.04=2.26 MMT CO₂e in 2025? Or would they need to demonstrate, by modeling two or more scenarios, that they have met a reduction level of 0.04 MMT CO₂e?
- Per Section 8.02.1, "The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each year in Table 1 and compare these emissions to the Baseline specified in Table 1." Thus, this section suggests total CO₂e emissions must be compared to the baseline.
- However, other sections (i.e., 8.02.4.1, 8.02.5.1, 8.02.5.3, 8.05, etc) specifically refer to meeting or demonstrating compliance with the reduction levels. In particular, Section 8.05 states "The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 have been met and the sufficiency of any GHG Mitigation Measures needed for compliance."
 - Therefore, it's not clear why Section 8.02.1 requires comparing emissions to the baseline if compliance is assessed based on meeting reduction levels.

Weld County's Recommendation

CDOT should revise the rule language to clarify how compliance is assessed and develop a guidance document that describes the modeling methodology that should be used to determine compliance with the Proposed Rule.

Conclusion

Weld County appreciates the opportunity to participate in this rulemaking and thanks CDOT and the TC in advance for their attention to these initial written comments. Given the concerns outlined above, Weld County requests the Transportation Commission extend the deadline for written comments to no earlier than 30 days after receipt of the requested data, and schedule an additional hearing after the close of the extended comment period.

Respectfully submitted this 24th day of September, 2021.

BOARD OF COUNTY COMMISSIONERS
OF WELD COUNTY, COLORADO

A redacted signature block consisting of two black rectangular boxes. The first box is on the left, and the second box is on the right, connected by a thin horizontal line. The second box is positioned lower than the first, suggesting a signature and a title or name.



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Public comment: Greenhouse Gas Pollution Standard

1 message

[Redacted]

Fri, Sep 24, 2021 at 12:24 PM

To: dot_rules@state.co.us

Hello,

Attached please find a public comment created at an advocacy workshop on August 5, 2021, which focused on the Greenhouse Gas Pollution Standard rulemaking. The workshop had 50 attendees from around the state, mainly grassroots activists. The comment is submitted on behalf of them and their communities, not any organization.

At the workshop, we spoke to participants about the upcoming rulemaking, then asked them to share their stories about transportation planning in Colorado. We used the interactive software of Google Jamboards to create a collaborative vision, and I have attached the final result as a PDF.

The comment addresses the following questions in a visual format:

- Where are you from?
- How do you get where you need to go?
- How do you *wish* you could get there?
- What frustrates you about transportation where you live?
- What transportation project would you like in your community?

This is a powerful way to collect public comment. The atmosphere was friendly and comfortable, participants felt no pressure to participate in a certain way, names are not attached, and the format for making comments was easy and accessible. We hope that moving forward, CDOT will consider more innovative methods of community outreach, and creative forms of testimony.

Thank you for the opportunity to center the voices of the community in this rulemaking. We look forward to a strong Greenhouse Gas Pollution Standard.

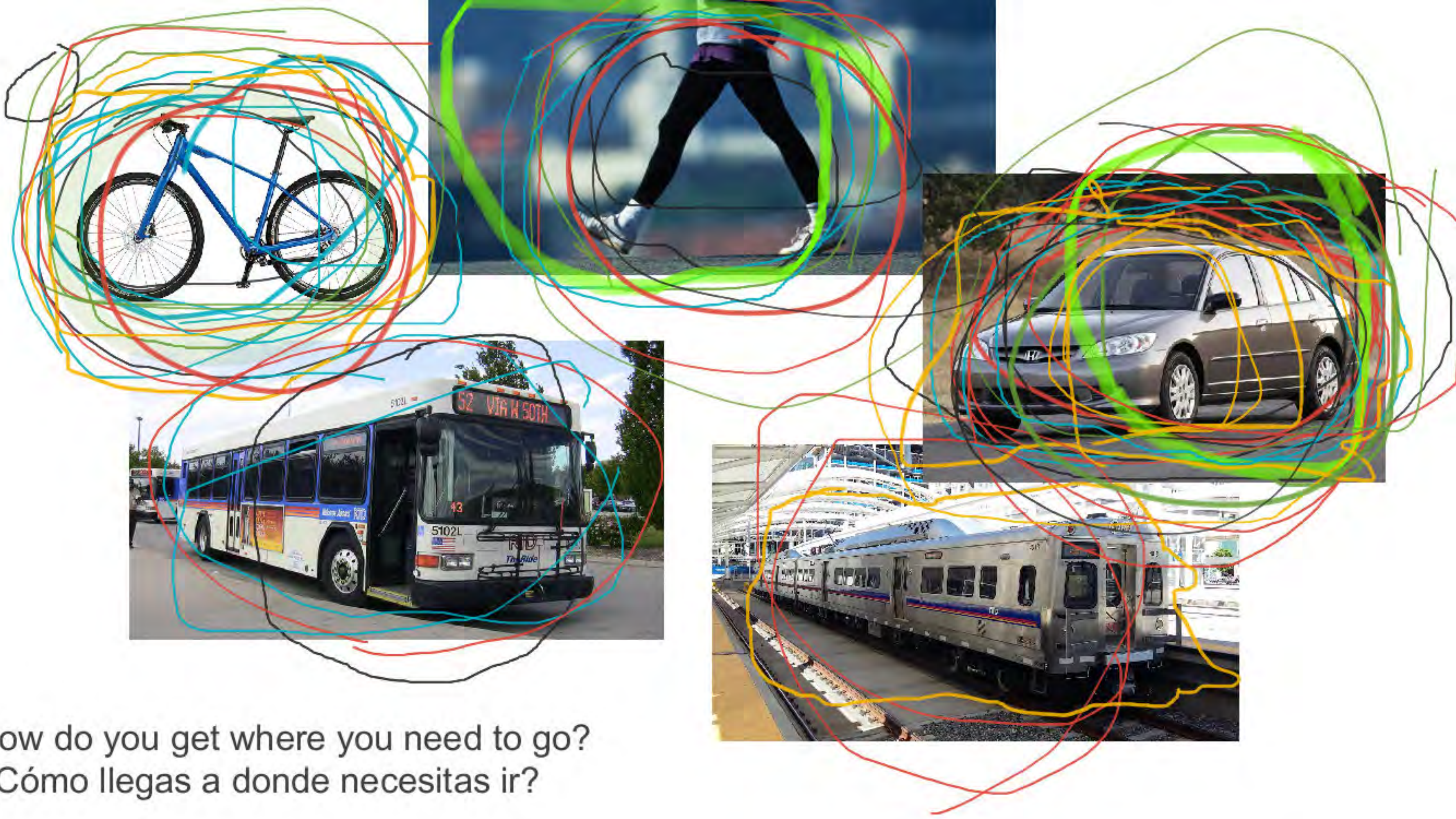
[Redacted signature]



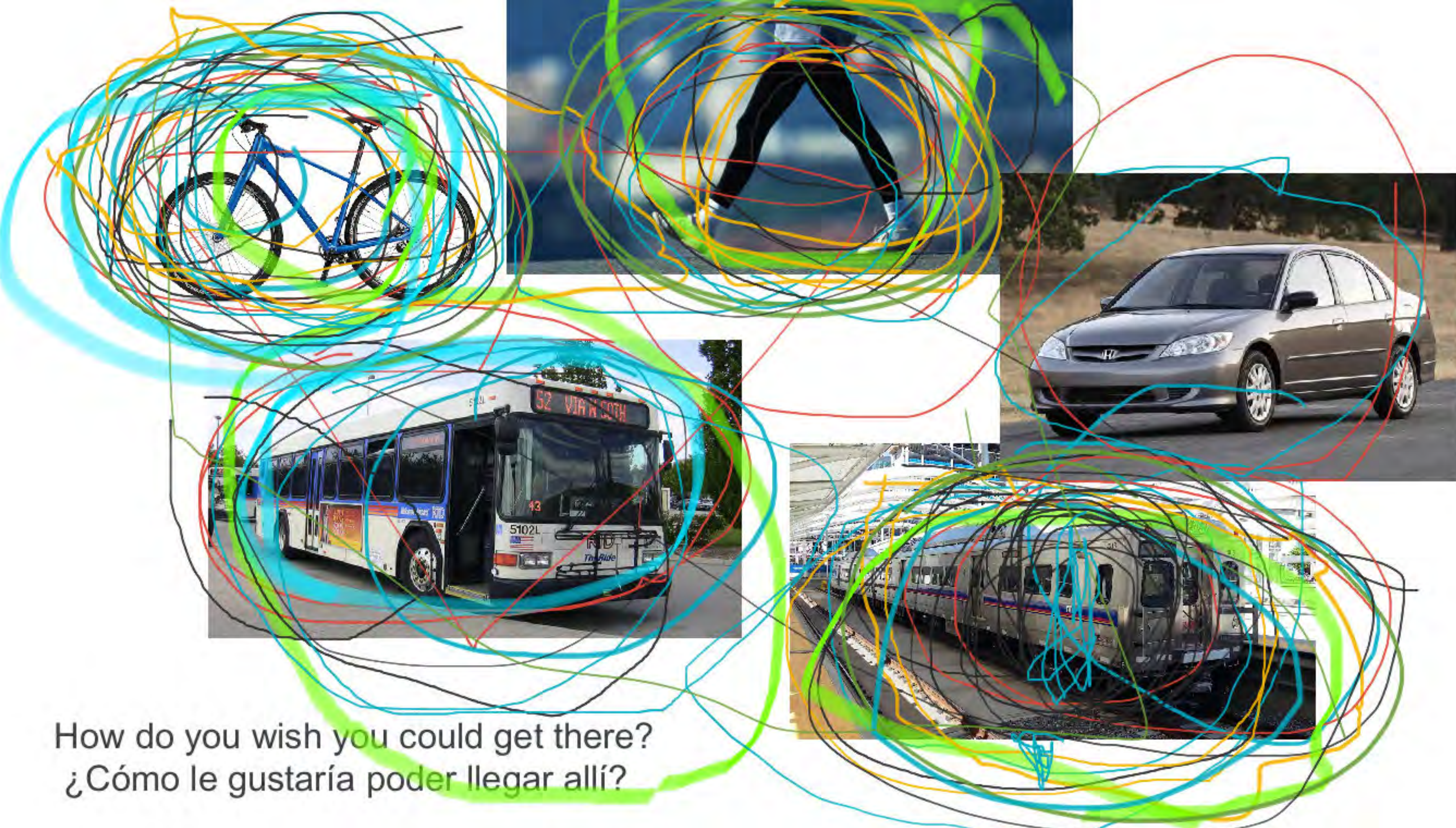
Conservation Colorado

Transportation Vision Advocacy Workshop (1).pdf
4092K





How do you get where you need to go?
¿Cómo llegas a donde necesitas ir?



How do you wish you could get there?
¿Cómo le gustaría poder llegar allí?

What frustrates you about transportation where you live? ¿Qué le frustra del transporte donde vive?

Bus doesn't go where I need it to

Transit stops are far away

Bus never comes when it's supposed to

Not enough frequent transit service

Not enough affordable housing near transit

Lack of options and safety.

Bike lanes are deadly instead of safe

Lack of protected/good bike lanes on the roads

Dangerous to ride a bike.

It's EXPENSIVE!

It takes 3 times as long to get to work by transit than by car.

The transit time for a bus to Denver takes 2 hours vs. 30 minutes in a car.

Transit takes 1 hour 15 min to get to work with transfer. Too long.

not dense enough to be walkable

Pathetic bicycle facilities.

Dangerous bike/walk routes

Lack of connecting bike lanes.

Breathing in air pollution when I ride my bike.

City planners don't understand & promote bicycling!

No enforcement of blocked bike lanes.

Need more bus routes & frequency, need rapid rail.

Not enough 5-15min neighborhoods

transit too far away, doesn't run as often as I need, it's usually almost halfway to my destination to use transit, so I often end up driving

congestion, bus routes don't connect well, ozone pollution

Even when biking, it is hard to bike near the main roads due to trouble breathing as well near cars, construction (like asphalt), and fires

I live in Fort Collins, and we have excellent all-around transportation. It would be great if we could have a bike trail that takes us to Denver or elsewhere!

Virtually no public transportation. There is a bus from Durango to Grand Junction and back every day but doesn't go thru at a time that is useful. Rural areas the only choice is don't go or drive!

Difficulty taking any transit into the mountains for weekend or evening recreation

That the US 36 commuter rail train does not go to Boulder.

What frustrates you about transportation where you live?
¿Qué le frustra del transporte donde vive?

**Air
pollution**

GHG

**Air quality
this
summer :(**

**Too many
tailpipes**

**Too many cars
causes too
much air
pollution**

**Too much
ground level
ozone & wild
fire smoke**

**Too
many
cars**

**traffic
is wack**

**Traffic is
awful, and
parking is
scarce**

**Congestion.
People forgot
how to drive**

**Car-centric
sprawl
landscape**

Traffic

**Congestion! The
way people drive.
Like they forgot
how to drive during
the pandemic. Rude
& run red lights all
the time.**

**Trouble
breathing
in the
exhaust**

**6 lane
streets**

**Too many
people
drive to
school**

**Coal
Rollers!!**

**Too often
road
building**



What transportation project would you like in your community? ¿Qué proyectos de transporte le gustaría ver en su comunidad?

Walkable
or free
bus

**Better
mass
transit.**

affordable
housing
near
transit

**Faster
buses**

**Extensive
transit
routes/
free**

All transit
comes at least
every 10
minutes.

**Bus
stations
with
dignity**

**Dedicated
bus lanes**

dedicated bus lanes
and transit signal
priority (esp FF in
Boulder) + high
frequent service

**Trains run
on clean
energy**

Trains run on
renewable/
clean energy

**Hover
craft. walk
all places.**

**Various
size buses
all
electrified**

We need electric
buses and routes for
all the people who
need to work & shop
for groceries, etc

Pollution
controls on
trains, and
transition to
electrification!

I wish I could
walk
everywhere I
need to go
within 10-15
minutes

Transportation
organizations from
CDOT to DoPIRG to
Bike Fort Collins to
assemble all models
& specs on electric
bikes for public
perusal.

State & Cities to
organize electric
bike traveling shows
which include as
many e bikes as
available for
comparisons and
introduction.

**Desperate
need for rural
transportation
& it needs to
be electric
also.**

Need subsidies for
public transit and
for EVs including
used so everyone
can afford them.

**flatiron
flyer
should be
free**

World class active
transportation
network throughout
the front range

To complete
the northwest
rail line.

More RTD or
shuttles from
Boulder to
Eldora in
winter

Transit priority
for Flatiron
Flyer through
downtown
Boulder

More CDOT
Bustang
service,
including
from Boulder
to mountains

Electric Buses
with a rapid
transit route
to Denver

frequent
transit service
along I70
corridor

Train to the
mountains

Seconding the
train to the
mountains!

Mass transit
connecting
Pueblo to Fort
Collins.

Bike transportation
all across Colorado!!
From Northern
Colorado all the way
to Southern
Colorado would be
awesome!!

What transportation project would you like in your community? ¿Qué proyectos de transporte le gustaría ver en su comunidad?

all vehicles must be electric

Turn in your ICE car for an EV!

Drastically reduced number of SOVs and combustion engines

Less parking provided with developments

Reduced commitment (and space dedication) to car infrastructure

on current roads and retrofitting current cars with a way to attach to the track system and run on electricity thru the system which is made from solar and wind power and from the turning of all the wheels and breaking in the system.

Rebates for eBikes

Dedicated Bike, ped transit routes



more protected bike lanes

More bike lanes.

separated bike facilities

better bike storage on light rail cars

Bike lanes and better bike cars on the light rail

Walkable neighborhood connected to residences via bike trails

Fix intersection light timing to improve driver safety, lower excess hard braking, and lower congestion related air pollution

Current cars retrofitted to run on tracks on current roads using electricity from sun, wind and the cars themselves!

traffic-separated bike lanes throughout the city!!!!

Congestion charge for downtown denver which funds real Dutch style protected bike lanes.

Full network of protected bike lanes. Wide sidewalks. Frequent transit.

Improve incident management, coordination between agencies and the removal of disabled vehicles from travel way quickly.



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Testimony re: greenhouse gas planning rule

1 message

[Redacted]
to: dot_rules@state.co.us

Fri, Sep 24, 2021 at 6:03 PM

Testimony to the Colorado Transportation Commission

Regarding Greenhouse Gas Transportation Planning Rules

Sept. 23, 2021

My name is [Redacted] and I'm speaking for myself. I commend CDOT for acknowledging the phenomenon of induced demand, which was originally expressed as the result of adding lanes to expressways. If we add lanes, congestion of the expressway temporarily reduces. But because it's easier to drive, more people drive, so the congestion returns. We are seeing this now with the T-Rex project through south Denver. It was wide-open for some years after construction, but now often fills up. It's not just that our population has expanded. It's the fact that we are driving more.

I believe that CDOT and the Commission have not come to a full reckoning with the reality of induced demand. Our state plan to build many expansion to highway I find it particularly galling that we still plan to widen I 25 west of downtown. That project will certainly induce more demand for automobile travel and it will come at the expense of major disruption and consumption of extremely valuable downtown land. It will increase our collective greenhouse gas footprint. This project should be abandoned.

What we must learn, but today refuse to learn, is that EVERY investment that makes it easier to drive will result in more people driving more miles. When we make local roads smoother, or straighten them, or improve their signals, those actions make it easier to drive. When we build slip lanes to improve the flow of traffic at intersections, that too makes it easier to drive.

As long as we continue to spend our public transportation money on making it easier to drive, VMT will increase and traffic congestion will always, eventually return. We cannot build our way out of traffic congestion by building bigger or better roads. So CDOT must remove from its greenhouse gas calculations any improvements alleged to come with road improvement. You may temporarily reduce idling at intersection or slowdown on arterial. But the change will not last.

If we fully electrify our automobile fleet, and charge those batteries only with renewable energy, the greenhouse gas calculation would be different. However, the induced demand problem would remain the same. People will still be frustrated by congestion because every investment we make in our road system causes a collective increase in our driving. We cannot solve congestion by improving road facilities.

The answer is to invest instead in alternatives to roads and cars. We need far more frequent buses. We need trains that connect all our cities and towns. We need less sprawl, more concise urban environment where it's easy and safe to get to most destinations by walking and bicycling.

I know that does not meet the concerns of rural Coloradoans, where public transportation may always be sparse and distances are too long for walking and bicycling. So how about we rededicate to roads in rural Colorado much of the money that would otherwise go to demand-inducing roads in the Front Range cities.

I urge CDOT to revise the rule and modeling to better account for the induced demand for driving caused by nearly all road investments.

[Redacted signature block]





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Train

1 message

[Redacted]
to: dot_rules@state.co.us

Sun, Sep 26, 2021 at 3:34 PM

To whom it may concern,

I saw the DOT is trying to reduce greenhouse gas emissions.

With the population in CO booming and with this, increased state tax revenue, investing in a train from Denver to the mountains is overdue.

Traffic is constantly at a standstill on 70.

What's more, out of towners will be more inclined to visit for ski season if they don't have to rent a car and drive on 70 during the winter...adding to your tourism revenue.

The Swiss have figured this out a long time ago if you want to look somewhere for an example

Everyone is desperate for this.

Thank ,
[Redacted]

[Redacted]

STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Written comment for proposed Greenhouse Gas Standards

1 message

Mon, Sep 27, 2021 at 8:41 AM

[REDACTED]
to: dot_rules@state.co.us

To the Colorado Department of Transportation

Thank you for hosting a hearing on your proposed greenhouse gas standards. I am submitting a written comment in advance of the hearing.

The only way to reduce our greenhouse gas emissions in the travel sector is to *greatly* reduce the number of personal vehicle miles driven. I mean this in an absolute sense, not in a per-capita sense. We need to have goals to vastly reduce personal vehicles on the road, even if our population continues to increase.

This needs to be done in two ways: 1) Strongly incentivize walking/biking/mass transit, and make those modes of travel both convenient and safe for citizens of all ages and abilities, and 2) *Disincentivize* personal vehicle travel, especially in densely-populated metro areas. Repeal all parking minimums. Set goals to convert open-air parking lots into usefully-developed land (e.g., public park, housing, business, or ideally a multi-use mix of all of the above), especially near city cores. Dedicate more streets to be car-free, à la Denver's 16th Street Mall. Work with the legislature to ban single-housing exclusionary zoning statewide, and use policy to pressure localities to allow more density in their jurisdictions. And more—these are just a few examples of goals we should set, and I am in favor of bold, sweeping action to convert our cities into pedestrian and bike friendly communities.

Also, set *aggressive* timeline goals. It's fine to have goals for 2040 or 2050, but we need to take aggressive action to reduce greenhouse gas emissions, and we need to see real change by 2025 if we are to avoid the worst of climate change outcomes.

Thank you again,

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Yes on Carbon budgets!

1 message

[Redacted]

Mon, Sep 27, 2021 at 9:01 AM

To: dot_rules@state.co.us

I am writing today in support of establishing rule for carbon budget, and to encourage you to go farther. We need bold moves for our state to meet (or how about we exceed) our goals for reduction of pollution.

GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO2e reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap issues by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more account tricks.

I urge you to press forward and make Colorado a leader in the important moves needed to reduce greenhouse gas emissions. Let's lead the way!

[Redacted]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

PPRTA Chair [REDACTED] Testimony on 9/24/21

1 message

Mon, Sep 27, 2021 at 9:13 AM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Cc: [REDACTED]

There a Taku hi,

Please find attached a copy of the testimony given by Pike Peak RTA Chair Randy Helm at CDOT' Rule Making Public Hearing on September 24, 2021 in Colorado Springs.




cdot.ghg_20210927100747.pdf

72K



Colorado Department of Transportation GHG Rule-Making Public Hearing: September 24, 2021.

 Chair of the Pikes Peak Rural Transportation Authority provided the following public comments on behalf of the Pikes Peak Rural Transportation Authority's Board of Directors.

1. Implementation of the proposed rules should be delayed to no earlier than January 1, 2023 would allow much needed additional time for review, revisions, assessment of impact, feasibility assessments of various mitigation measures, planning, budgeting, and implementation.
2. Without a proposed draft of the Administrative Process for GHG Mitigation Measures, which has not been released, there is no way to meaningfully consider if or how the Regional GHG Planning Reduction Levels set forth in Table 1 can be achieved.
3. The proposed definition of "Regionally Significant Project" should be revised to clarify that it applies only to transportation projects that are facilitated by CDOT or an MPO thereby removing ambiguity related to projects facilitated by other entities.
4. The waiver requirements appear to only be available to projects that won't "substantially increase" GHG emissions, but there is no definition of what constitutes a "substantial increase". Further, the availability of this waiver could result in it not being a meaningful option for important projects that may have net economic, societal, and environmental benefits.
5. The proposed rules do not, but should, account for regions that have continued to remain in attainment with federally-regulated air quality standards.



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments on Greenhouse Gas Pollution Standard for Transportation Planning

1 message

[Redacted]
to: dot_rules@state.co.us

Mon, Sep 27, 2021 at 12:29 PM

To whom it may concern,

Below are my comments on the Greenhouse Gas Pollution Standard for Transportation Planning rulemaking process.

Colorado is failing to meet its emission reduction target, part of the West face unprecedented drought, and climate change is having profound impacts on every continent. The time for delay is long past. Anything less than a bold policy to aggressively reduce transportation emissions would be a dangerous abdication of our responsibility to our citizens, humanity, and future generations.

The draft rules will not result in adequate emissions reductions, missing out on the already-inadequate 12.7 million metric tons CO2e target set in the state GHG Pollution Reduction Roadmap. Stop failing to do your jobs. The final rule must exceed the target, and not depend on accounting tricks, overoptimistic projections (for example related to EV adoption), or other phony. The final rule should include contingencies for how to make up for any shortfall that occurs as a result of inaccurate projections or unforeseen circumstances.

I would like to see a halt to new highway construction as a matter of state policy, with a redirection of focus towards better transit and land use decisions that enable low emission transportation.

Any rule must account for and address the need for low income communities to have affordable, multimodal options for transportation that simultaneously reduce emissions.

Finally, COMPREHENSIVE DETAILS FOR ALL MODELING, ESTIMATES, AND ASSUMPTIONS MUST BE MADE AVAILABLE FOR REVIEW BY THE PUBLIC. There should be no hiding behind impenetrable bureaucracy. Transparency is crucial.

Thank you,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments on The GHG Pollution Reduction Planning Standard

1 me age

Mon, Sep 27, 2021 at 4:01 PM

[REDACTED]
to: dot_rules@state.co.us

To the Rule Making Committee

I live in Centennial and my medical practice is in Highlands Ranch

Thank you for making this great step forward to fight the devastating effects of Green House Gases, but the current draft does not go far enough

The impact of the last 40 years of rapid growth in Metro Denver has impacted me personally and professionally
The landscape has transformed dramatically with increased construction displacing green scape, and increased population density leading to more vehicles on the road and traffic congestion

As a result, quality of life and health indices have deteriorated in Colorado, once an icon to healthy living and lifestyle
I can't believe how many days we could not see the mountains because of this summer's air pollution!

As a medical doctor, I am very concerned about the health effects of increasing amounts of air pollution and the increasing number of days of unhealthy air in Colorado

Just last week, the World Health Organization revised its air quality guidelines on the basis of evidence based data and the awareness that no amount air pollution is safe for human beings

To act with conviction and commitment to ensure our children and grandchildren have clean air to breathe in Colorado, I urge CDOT to strengthen the rule in 3 specific ways

- 1 Explicitly prioritize projects that focus on reducing VMT
- 2 Make the 10% reduction in VMT statutory
- 3 Rather than overseeing regionally significant projects, create specific project level modeling maximizing GHG and VMT reduction

Thank you for your work on this profoundly important issue

Sincerely,

[REDACTED]

[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments to the Rule Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22 (8/31/2021)

1 message

Mon, Sep 27, 2021 at 5:51 PM

To: dot_rules@state.co.us

Cc: "Takushi - CDOT, Theresa" <theresa.takushi@state.co.us>

Natalie Lutz

CDOT Formal Comments to Rule Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22 (8/31/2021)

My name is [REDACTED] and I represent the Climate Reality Project

I am a former environmental consultant to CDOT and the Federal Highway Administration

The proposed rulemaking feels and smells just like the old planning process that promotes increased system capacity and vehicle miles traveled without making the hard GHG reduction decisions.

Environmental Justice populations need to be integrated into the planning discussions regarding GHG reductions; these populations are most at risk for GHG emissions and climate change impact. I have not noted any EJ population giving testimony. I urge that CDOT follow their EJ policy and integrate these populations. CDOT needs to contact the Chief Equity Officer for Environmental Justice and Community Partnerships.

At what point does CDOT determine that they cannot meet the GHG reduction target and need to go into the mitigation options? It is not clear how mitigation options can be selected since there are no mass CO2 reduction established for each option. It is not clear what if the transportation plan and mitigation option does not meet the GHG reduction target. The project should go back to the "drawing board" and not allowed to continue until GHG reduction targets are fully met.

CDOT contains the largest population of engineers in the state and their interests are to build road infrastructure and not manage GHG reductions. How does CDOT plan to reconcile increased system capacity (i.e. increased roads and lane age) and vehicle miles traveled with decreasing GHG emission requirements? Electric vehicles alone (as mentioned by a confused Governor Polio during an interview) will not solve this VMT/GHG problem.

It is my understanding according to the Roadmap that the Clean Truck Strategy considered a mitigation option? This action should be ongoing and it is not clear if a planning project that cannot make the GHG reduction target will take a credit from the Clean Truck Strategy. This needs clarification.

A strong working relationship with RTD, DRCOG, CDOT, and the Governor is needed to improve transit problems in the Denver Area. Significant VMT reductions can only be realized if there is an increase in light rail, rail, carpooling, and bus service in the large metro area; thus, decreasing GHG emissions.

CDOT and MPOs need to re-evaluate previous transportation plans that are within the past 5-year window and address their GHG emissions with new proposed projects.

Transportation Plans that address GHG reductions need to be made for public review/comment; transportation plans that address GHG emissions and climate change need to be transparent and not made behind the curtain without public oversight and feedback to the MPO and CDOT.

The rule proposes a State Interagency Consulting Team made up of CDOT and CDPHE management and MPO Directors, but their function is not defined in the rule making; nowhere is there a mention of a public representative from an environmental organization. Decisions need to be made in a transparent fashion.

Waivers are an easy way for large transportation projects to avoid GHG reduction-based transportation plans. They need to be the extreme exception and not the rule. The criteria and approval mechanisms for waivers need to be identified with public notification.

The proposed rule dares to mention CDOT experience in Clean Air Act conformity when ozone compliance aided by transportation is nonexistent.

How does CDOT plan to measure success with this new rule making and what adaptive management actions will be considered?

CDOT need to compile all of the TRP reduction for all MPO and po t them to the public annually and evaluate the e data to the required regulatory reductions.

CDOT will need at least 3-4 Full Time Equivalent employees experienced in planning to manage this proposed rule change with direct over ight by upper planning management at the MPO/CDOT region level

The CDOT NEPA process needs to referenced the TRP GHG reduction plan for projects to ensure compliance to established GHG emission reductions. The NEPA manual needs to be revised to address the planned GHG reductions for project

[Redacted]

*“Unless someone like you cares a whole awful lot,
Nothing is going to get better. It's not.”*

“I speak for the trees, for the trees have no tongues.”
– Dr. Seuss, [The Lorax](#)



Comments to CDOT Transportation Commission

1 me age

Mon, Sep 27, 2021 at 6:35 PM

[REDACTED]
to: dot_rules@state.co.us

- 1.Support zero-emission transit services and charging stations and expand transit routes.
- 2.Give tax incentives to anyone buying new or used electric vehicles until 2025.
- 3.Work with Amtrak to build a transit service from Pueblo to Fort Collins with transfers to local light rail and/or bus transit into cities and add and/or expand extra parking lots with added rapid charging stations for electric and hybrid/electric vehicles parked in the lots.
- 4.Give hotels along highways tax incentives to add charging stations to their parking lots.
- 5.Give restaurants/fast food places/truck stops along highways (between hotels with charging stations) tax incentives to add rapid charging stations and the same for large malls in cities over 100 thousand.
- 6.Give tax incentives or rebates to current vehicle owners who retrofit hybrid motors in newer vehicles purchased within last 5 years.
- 7.The state might set up a fund to help new and used car dealers to add hybrid motors to vehicles worth five to seven thousand dollars until 2025. The state must have a plan to get fossil fueled vehicles off the road by 2030.
- 8.Prioritize deploying zero emission heavy-duty vehicles in communities and magnet facilities such as commercial warehouses in same communities.
- 9.Support transit and zero-emission services and charging stations and expand transit routes in metro areas of 100 thousand or more. Light rail stations should have shuttle buses to business hubs and bus systems should expand services.
- 10.Use railway services to bring in loaded trailers that are transferred to local zero emission heavy duty trucks and/or have goods transferred to smaller zero-emission trucks for distribution.
- 11.Need a law transitioning from gasoline/diesel fueled vehicles and heavy duty trucks and farm equipment to zero emission vehicles by 2030.
12. Require cities of 100 thousand or more to replace their fossil fueled buses with zero emission busses by 2030. Provide incentives to cities with zero emission busses in 2030 by 2035 to add zero emission shuttles between 6AM to 9AM and 3PM to 6PM in underserved residential neighborhoods to transport riders to designated bus stops.. Not everyone has a car or can afford one.
13. Require hybrid owners to switch to zero-emission vehicles by 2035.



Geenhouse Gas Pollution Standards

1 me age

Wed, Sep 29, 2021 at 1:50 PM

To: dot_rules@state.co.us

- July was the hottest month ever recorded, our Earth is hotter than it's ever been since the beginning of the last ice age, and yet Colorado is not on track to meet its climate targets! **It is critical that our state agencies embrace bold, transformative policies that drive broad scale decarbonization.** The current draft rule is a good start, but should be more ambitious to ensure that we meet our emission reduction target
- As a matter of environmental justice, **disproportionately impacted communities and communities of color must be at the heart of any decision-making process** to ensure access to affordable, multimodal, transportation options that reduce toxic air pollution and traffic congestion. Please also develop an equity framework beyond this rulemaking that ensures that individuals from disproportionately impacted communities are given a real seat at the decision making table
- **GHG reduction levels in the draft rules do not add up to the 12.7 million metric tons of CO_{2e} reductions from Transportation by 2030 figure outlined in the state's GHG Pollution Reduction Roadmap** issued by Governor Polis' Office in January of this year. Coloradans deserve a clear, enforceable, and equitable plan to reduce GHG emissions from the transportation sector — not more account trick
- **The draft rules rely heavily upon optimistic electric vehicle (EV) adoption rates** and provide no alternative proposals for achieving these GHG reductions if EV adoption is slower than anticipated. Therefore, this rule should adopt stricter carbon budgets that will allow us to meet our emissions reduction targets given the likelihood that EV adoption does not occur as fast as this rule anticipates.
- **Instead of more highway expansion projects, Coloradans need more and better transportation alternatives to driving a vehicle** like electric bicycle and cooter for shorter trip, affordable and efficient public transit for longer trips, expanded light rail and bus rapid transit along major routes, and better land use decisions to provide more bike lanes, sidewalks, and pedestrian-centric urban centers. This rule should impose a moratorium on highway expansions, as this strategy has only shown to increase traffic, air pollution and displace neighborhood
- **The draft rules do not account for all greenhouse gas sources from vehicles.** Hydrofluorocarbons (HFCs) are not included in the definition of a greenhouse gas. This is a significant omission because HFCs from vehicle air conditioners and refrigeration trucks are powerful GHGs with Global Warming Potentials (GWPs) hundreds to thousands of times greater than that of CO₂

- Transportation models, assumptions, estimates and **figures used to guide transportation policy by CDOT must be transparent for the public** to engage in deci ion making proce e that impact public health, traffic congestion and our state's GHG emissions.

Finally, plea e remember the Rule of the Nine P' Plea e Prioritize People and Planet over Profit, Politic , Poi on , Power, and Partisanship!

Sincerely,





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Greenhouse Gas Emissions Reduction Opportunities-Public hearing 9/29/21 Limon Colorado

1 message

Wed, Sep 29, 2021 at 3:06 PM

[Redacted]
to: dot_rules@state.co.us

Hello,

I tried to attend the public meeting scheduled for Limon on 9/29/21, but was not able to gain access to the virtual meeting, this link simply did not work for me...

9/29/2021 2:5 p.m. CDOT Regional Office
Big Sandy Conference Room
2738 Victory Highway
Limon, CO 80828

[Sept. 29 Virtual Registration Form](#)
(Registration Closes at 11 am) on Sept. 28)

[Sept. 29 YouTube Hearing Link](#)
(Viewing Only)

I admit I have **not** read all 207 pages of the Colorado Greenhouse Gas Pollution Reduction Roadmap, so I'm going to repond with the following based on my experience of living between Ru h and Boone Colorado

Where I reside we are stuck with dirt roads that are **not** maintained at all in my opinion. When I moved here in 2014 I would see a road grader working my dirt road on Whittemore Road about once every other month or so, and after severe weather they would arrive within a few day to fi the damage cau ed by bad weather

Today, the above activity has been reduced to once every six months if at all. When it rains this road and the surrounding dirt roads become quagmires and completely impassable, this is where ditch bogging and **extreme** four wheel driving come into play So I know if I leave my property, there i no way for me to return until the road dry out, or I take my chances to see how bad the ditches are.

Due to these extreme road conditions I face living out here, I must use a diesel pickup truck on steroids to get myself to the grocery tore and then home again I truly believe there will never be an electric vehicle that will match the torque requirements needed to traverse these horrible dirt roads, especially in an emergency situation. Hence the reason I won't buy an electric vehicle, leave alone never being able to afford one.

I've contacted El Pa o County asking when my area will ever ee our road paved, and to thi day I till remember the full belly laugh the party answering the phone gave after I stated my query.

Also I have to keep on hand a large diesel tractor to traverse these horrible dirt roads that I use mainly to pull my poor tired old diesel truck home once it becomes stuck in these quagmire washboard roads we are forced to use out here.

So I'm writing to request a waiver to any changes made by this new proposal that will affect me personally. Thank you for your consideration in this matter

[Redacted]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Concern

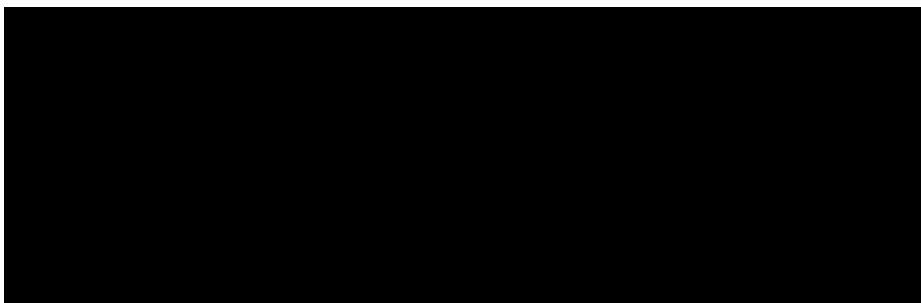
1 message

Wed, Sep 29, 2021 at 4:19 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

I'm [redacted], Environmental Manager for Smithfield Hog Production in Yuma, CO. We are concerned with the proposed change a to how it will work with the rural highway structure. We not only use highway to transfer our animals across state lines. We use local highways in commuting to our different farms, with our feed truck, staff, and contractors. Eastern Colorado seems to be on the lowest priority list in getting these roads fixed. We understand the concern for greenhouse gas emissions and we are striving to reduce this at our locations nationwide. We feel that by shifting funding to promote infrastructure along the front range where the non attainment areas are, will once again impact us in rural Colorado. We agree that something must be done with traffic along the Front Range of Colorado and the amount of emissions that are polluting the air along the mountains. Sitting in Eastern Colorado on a daily basis and looking out my west window is sickening. We believe that funding of this is again placed on the backs of rural commuters as we must drive more miles just to get essential services. We already pay more at the pump due to the miles we travel this is a double whammy to all of our pocket books. Besides, we are very concerned with how these initiatives will impact our most vulnerable in our society. Public Transit availability may impede these persons in our society from getting the services they need as well. We believe we must all pay our share of these improvements to our state, the influx of people have been along the Front Range of Colorado and they are the contributors to the problem, so they should bear this burden financially.

Sent from Mail for Windows



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STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Public Comment: GHG Reduction for Transportation

1 message

[Redacted]
to: dot_rules@state.co.us

Sat, Oct 2, 2021 at 8:20 AM

Dear Colorado Department of Transportation and Governor Polis,

Thank you for the opportunity to comment on the Greenhouse Gas Pollution Reduction for Transportation Planning Proposed Standards, 2 CCR 601-22, and for your efforts in this rulemaking process.

I am submitting this comment in a personal capacity but, as a Board Member and Treasurer at Holy Cross Energy, I am familiar with the opportunities and challenges associated with transitioning to a cleaner energy economy.

Here in the state's mountain communities we see the traumatic impacts of increasing fires and fire intensity, mudslides, hotter days (and nights) and the impairment of water flow in our rivers. And with river flows lower and reservoirs dropping now we face disruptions to electricity supply as generating capacity drops. Climate change caused by GHG emissions is an existential crisis.

Materially addressing transportation emissions is an important step to mitigating these threats as well of course of improving air quality and hence health outcomes especially for more marginalized communities forced to live near major traffic routes.

I strongly support a robust GHG standard for future transportation projects because such standards will help the state reach its emissions reduction goals, encourage multimodal transportation methods that reduce Vehicle Miles Traveled, and improve the health and safety of *all* Colorado residents.

I would add that in my view, based on the recent IPCC "Code Red" report, our climate reduction goals are themselves not adequate. We need to do more and faster to forestall the worst climate and air quality outcomes. I look forward to more state legislation in this regard in 2022.

[Redacted signature]

STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Yes to the GHG Pollution Reduction Planning Standard

1 message

Sat, Oct 2, 2021 at 2:43 PM


To: dot_rules@state.co.us

Dear CDOT,

I strongly support the proposed GHG Pollution Reduction Planning Standard. For too long, our state transportation development has prioritized unsafe and energy-intensive motor vehicle travel over all other forms of travel. We have paid the price for the past choice in the form of thousands of traffic fatalities and severe injuries, urban sprawl, worsening motor vehicle traffic, and some of the worst air quality in the nation. The number of air quality alerts this past summer was appalling. I had to spend many summer days indoors with the air conditioner on to escape the pollution.

I want to be able to safely travel via foot, bike, transit, or car, and I can't do that because of how dangerous the roads are throughout Colorado. I have no hope that we can address climate change and the major GHG contributions from the transportation sector unless we make it easy and safe for people to choose alternatives to motor vehicle travel. Climate change is a crisis and CDOT can give it the emergency treatment it deserves by implementing the GHG Pollution Reduction Planning Standard. This change cannot come fast enough.

Sincerely,




STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Public Comment: GHG Pollution Standards rulemaking

1 message

Mon, Oct 4, 2021 at 2:43 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

Cc: [Redacted]

Dear CDOT,

Attached is a sign-on letter in response to the GHG Pollution Standards rulemaking that captures the voices of community member , e pecially Spani h peaking individual who live in home mo t impacted by highway e pan ion

This letter is still open, and we anticipate additional sign-ons by the end of public comment; however, we felt that it was important to share this message and signatures as of October 4 to help inform the process.

Sincerely,

[Redacted]

[Redacted]

10.4.21 Letter to Transportation Commissioners.pdf
71K

October 4, 2021

Note: This letter is still active, and we anticipate that additional community members will sign on before the end of public comment; however, we felt it was worthy of submitting this letter in English and Spanish as of October 4 as a preview.

Two community members also shared their comments on video:



**Letter Supporting Equitable and Ambitious Transportation Rule //
Carta de apoyo a la regla de transporte equitativo y ambicioso**

Dear Commissioner,

Thank you for your work on the Greenhouse Gas (GHG) Pollution Standards Rulemaking.

This rulemaking is a chance to clean up the dirty air that is harming our health, especially our kids, elderly friends and family, and communities located near busy highways, and I am asking you to stand up for clean air, safe streets, and healthy neighborhoods.

As the Colorado Department of Transportation (CDOT) revises the draft GHG Pollution standard over the next few months, we are asking CDOT to:

1. Center EQUITY in all decision-making processes,
2. Elevate COMMUNITY VOICES through robust public participation processes that include language translation, targeted outreach, and early publication of hearings,
3. Set MORE AMBITIOUS pollution reduction targets.

This is Colorado's opportunity to make good on our climate and environmental justice commitments, prioritize investments in public transit, and include a public engagement process that centers communities most impacted by transportation pollution.

Estimado Comisario,

Gracias por su trabajo pertinente a la reglamentación de los estándares de contaminación de los gases de efecto invernadero (GEI).

Esta reglamentación es una oportunidad de limpiar el aire sucio que está dañando nuestra salud, especialmente a nuestros niños, amigos y familiares ancianos que viven en comunidades cerca

carreras muy tráficas, y les pido que defendan el aire limpio, calles seguras y barrios saludables.

A medida que el Departamento de Transporte de Colorado (CDOT) revisa la guía de (GEI) durante los próximos meses, le pedimos a CDOT lo siguiente:

1. Centrar la EQUIDAD durante el proceso de tomar decisiones,
2. Elevar las VOCES DE LA COMUNIDAD a través de procesos sólidos de participación públicas que incluyen traducción de idiomas, divulgación directa, y publicación temprana de audiencias.
3. Establecer objetivos de la reducción de contaminación MÁS AMBICIOSOS.

Esta es la oportunidad de Colorado para cumplir con nuestros compromisos de justicia ambiental y climática, priorizar las inversiones en el transporte público e incluir un proceso de participación pública que se enfoque en las comunidades más afectadas por la contaminación del transporte.

Sincerely // Attentamente,

Name, County:

[Redacted signature block]

[Redacted signature block]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Proposed Greenhouse Pollution Reduction Standards.

1 message

Mon, Oct 4, 2021 at 3:00 PM

To: "CDOT_Rules@state.co.us" <CDOT_Rules@state.co.us>

Here are my thoughts on the Transportation Section of the rule making.

1. One-to-one vehicle replacement problem – The private trucking sector and the transit industry will struggle with the limited range of the battery electric bus/truck for a while until the service range gets to a point that one vehicle can cover a service route for a whole day. If the vehicle can't cover the service route for a whole day, then it will need to be pulled out of service to be charged or you will have to make payments at higher utility rates for prime time charging while on route. It is also hard to justify the compound impact of paying a premium for the electric bus/truck technology and then having to purchase two vehicles to cover what one did. Given that the electric vehicle may only cover 1/2 the service day, you would need two vehicles to make the service work. The reserves do not exist within an agency to provide a replacement to continue the service for every route. So, you will need two vehicles to cover what one did before. I am sure the manufacturers are searching for batteries with greater range. I know the electric vehicles are a challenge for the transportation industry as a whole. The sooner we get to longer battery range or Hydrogen fueling, the more likely the industry will get on board with a one-to-one vehicle replacement.
2. Hydrogen fuel cell technology has the possibility of being a one-to-one vehicle replacement option. Researching how to develop local hydrogen fueling stations for local commercial vehicles and/or even private vehicles should be looked into. A Public Private Venture in creating a shared fueling facility would help to increase the conversion to this technology by a broader base of users both public and private. This is a concept much like the subsidies used to establish CNG fueling stations.
3. To address the battery range issue, it is often suggested that looking at your route structure and shift planning is a way to bring the electric vehicle back to the facility to charge and send the new bus out for the rest of a shift. Regardless of the solution for covering the service day, funding operations to facilitate the additional time needed for the bus switching would be in order. Regardless, the need to be switching vehicles into and out of service will have operational impact that should be addressed by operational funding.
4. I am very glad to see Land Use planning being included to increase efficiency and help reduce VMT. I have been suggesting this for some time. I believe that Urban Growth Boundaries were one solution for addressing this issue, but I believe what is being proposed is even more inclusive of transit options connected to land use. Integrating transit access in development submission would help make alternative modes more accessible to residents. Encouraging urban core redevelopment is another way to put housing close to where jobs are as well and thereby reduce VMT. Regentrification of core property has had a negative impact on equity within a community. It tends to price out low income and minority groups. Land owners may cry foul on having greater restrictions on developing rural property, which would need to be addressed.
5. I believe the Aviation statement is too anemic on requiring integration with transit/rail systems. Airports should be required to make strong connections to transit and alternative modes of transportation to help reduce VMT and GHG emissions. A premium should be paid to rent private cars from airports and the rental fleets should be required to be electric vehicles predominately. A premium should be required for gasoline/diesel vehicles for long distance travel. Too often it seems that transit/rail options have to be reverse engineered into airport facilities.

These are my thoughts fast and dirty. Good luck

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]





STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments: Proposed Transportation Commission regulations on GHG emissions from transportation

1 message

Mon, Oct 4, 2021 at 3:02 PM

To: dot_rules@state.co.us

Cc: [Redacted]

Please accept the following comment on the Proposed Transportation Commission regulation on GHG emissions from transportation:

Thank you for both this groundbreaking work that Colorado is embarking on, and for this opportunity to provide comment on it.

Well before my time as county commissioner, Eagle County has been aware of the specific threat of climate change to our environment, our economy, and our quality of life. More than a decade ago, the county began investing in alternative energy and resource efficiency. Six years ago we commissioned a study to determine the community's baseline greenhouse gas emissions. We then developed a plan to mitigate those emissions and created a community wide climate action collaborative to help achieve the goal of that plan

Just this year, the county cooperated in a study for our mountain resort region conducted by the Rocky Mountain Climate Organization. The findings were dire...and unsurprising: Higher temperatures, chaotic precipitation, and unpredictable weather patterns that threaten an already delicate mountain ecosystem and tourism economy

As a society, we knew the probability of these outcomes decades ago, yet we failed to act systemically when that action would have been both less costly and a better return on the investment in our economy. The need to act has never diminished; that need has just become more urgent. Which brings me to my specific comment on the draft rule

We need stronger GHG reduction targets as well as targets for reducing Vehicle Miles Traveled. There is still a gap in achieving the goals of the GHG roadmap.

CDOT should develop a Transportation Equity Framework to ensure marginalized communities both benefit from our efforts and become eager participants in our shared climate goals.

Loopholes are always a concern in a policy so novel and complex. I'll just reference and emphasize comments provided by Colorado Communities for Climate Action for some potential loopholes to be aware of. (Eagle County is an enthusiastic member of CC4CA, by the way)

I will also emphasize CC4CA comments here that project-level modeling must be improved and reference those comments for specifics on how and why.

Even though action now may seem more difficult and cost can appear high in the short term, the return on investment remains the same: A more efficient economy that is safer and healthier for all Coloradans. CDOT has never taken on a project this important or big. Most economists agree that systemic policies implemented 30 years ago would have gone nearly unnoticed in our daily lives and in our economy. We would simply have a more resilient, robust, and equitable economy

We missed that window, but we humans do like a little drama. Now's our chance to go big, make a splash, and lead the nation in transforming our economy from the wheels up.

Thanks again to the Commission for your time and consideration of the community's perspective on this unprecedented work you are undertaking.

[Redacted signature block]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Invest Federal Funds in Transit

1 message

Mon, Oct 4, 2021 at 3:37 PM

[REDACTED]
to: dot_rules@state.co.us

Dad Sir/Madam,

In the event Colorado receives federal infrastructure funds now being considered by the Congress, I would ask you to please invest these funds in bike, bus, and rail transit alternatives rather than continue expanding highway lanes throughout the state. In the future people need to move about more efficiently, i. e. Consuming less energy and land area to get around. A car oriented culture wastes energy, heats the planet, and occupies a great deal of space if you take roads as well as parking lots into consideration. Besides, everyone can utilize transit. Not everyone can afford automobile transportation or are able to drive.

Thank you,

[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Why to spend Fed \$ on ebikes & bike lanes, not cars!

1 message

Mon, Oct 4, 2021 at 4:24 PM

To: dot_rules@state.co.us

1. The world's famous Rocky Mountain Institute says the current spend plan will worsen pollution and congestion! <https://rmi.org/if-you-build-it-the-cars-and-the-pollution-will-come/>. We've understood this for decades. This will violate the climate and pollution reduction law passed in 2019, HB 1261. "First, do no harm."

2. We all learned by high school that bicycles are the most efficient means of transportation in both the artificial and natural worlds. Electric bikes are actually *even more* efficient because electricity is far cheaper to produce than the extra food a hard-working bicyclist requires.

E-bikes typically take 10-30 times less electricity than an electric car and up to 100 times less energy than a gas car! My e-bike will go about 50 miles for about \$0.15 worth of electricity, at an average speed of 20 mph. No other form of transportation can compete.

3. Ebikes save a huge amount of space, which is even more important than saving fuel in crowded cities. Saving space reduces congestion. Planners figure a bike in motion takes only one-seventh the space of a car in motion. They save even more space when parked.

4. Ebikes are great exercise and physical therapy and total fun - IF we're protected from speeding drivers on their cell phones!!

Here in North Boulder there are hundreds of families out on their ebike for fun and doing errands together. I regularly see a young mother with her three daughters on her \$1900 cargo ebike.

I suggest subsidizing cargo e-bikes to encourage people to replace local car trips, not just recreate.

5. It's only fair and equitable. Colorado gives electric car buyers a \$5,000 tax break. I suggest a \$500 tax break for electric bikes. Since there are now excellent \$1,000 e-bikes (like <https://lectricebikes.com/>) a \$500 subsidy will make them affordable for most people.

6. Using an e-bike or bike for local trips preserves your car much longer, reducing the embodied GHGs that come with car repair and replacement. Combustion car engines wear out far faster in local stop and go traffic than on the highway.

7. Bike and e-bike effectively **never** wear out the path and street, unlike car and especially large truck and bus. That's another huge savings in embodied greenhouse gases necessary to pave and repave. Concrete and asphalt both have large carbon footprints.

Unless your origin and destination are both along the same bus route, an ebike is going to be much faster, as well as use far less fuel and not damage the roads. People have fled the buses because of the pandemic and with ebikes becoming ubiquitous and affordable, there is no going back. Many bus routes, like most in Boulder, can be far more efficiently served with 15 passenger vans than the 7/8-empty full-size buses now clogging and rutting our roads. Dial-a-ride service can replace bus routes that don't get used much.

8. One of the biggest sources of microplastics in the environment is car tires and brakes. With a person on an e-bike weighing some 12-25 times less than a person in a car, that's 15 to 30 times less microplastics and asbestos to poison us.

9. Ebikes remove most obstacles to cycling: distance, cargo, hills, wind, time, age, disability, everything except weather. A "rain cape" can deal with precipitation, and regular ski clothes are fine for winter biking.

I spearheaded getting Boulder City Council to legalize e-bikes on our path system in 2013. I haven't had a car since 1989. I know a good deal about e-bikes, having had three and I'm happy to share my knowledge.

[REDACTED]

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

CDOT greenhouse gas reduction rules comment

1 message

Mon, Oct 4, 2021 at 4:26 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

To whom it concerns,

I am a Denver resident and would like to provide comment on CDOT's drafted rules ensuring greenhouse gas reduction in transportation planning

I applaud CDOT plan to comply with Colorado's ambitious goal to cut emissions of greenhouse gas

However I worry that the new rule will still allow for the construction high emission project including new highway and highway expansions which will induce—not inhibit—reliance on cars. Especially with new federal infrastructure funding likely coming to the state, it is imperative that funds be directed to support transit-oriented, low-carbon lifestyles throughout Colorado.

Regarding the drafted new rule specifically, I worry about the enforcement mechanism and the language around enforcement which seem vague and may allow for new, high emission project to go forward. In the drafted rule in section 8.05.02, a waiver may be issued if "significant effort and priority" to reduce greenhouse emissions has been placed and won't be issued if it results in "substantial increases" in emissions. This qualitative language worries me. What do these words "significant" and "substantial" mean? Who's to say? I worry that such language will be weaponized by those who do not care to reduce emissions with transportation planning

The will of the people of Colorado to reduce greenhouse gas emissions is clear. This rule and its enforcement mechanism should also be clear. Please take care not to introduce a vague loophole. The law is only as good as its enforcement.

I urge CDOT to be as ambitious and thorough as possible with its emission reduction goals and the enforcement of those goals. Thank you for your time.

Sincerely,

[Redacted signature]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Fwd: Public testimony for GWS hearing

1 message

Mon, Oct 4, 2021 at 5:56 PM

To: dot_rules@state.co.us

Thank you for the opportunity to provide written testimony and comment. My name [REDACTED], and I am the Director of Protége, an organizing-focused program that advocates for equitable access to a healthy environment, especially for Colorado's Latine communities. I speak on behalf of our membership, as well as my community in New Castle, the Roaring Fork, Colorado River and Eagle Valleys and all the rural central mountains, in support of a revised Greenhouse Gas Pollution Standard that accounts for our needs and advances racial equity.

In the central mountain, the need of our community look different than on the Front Range. Our region is home to many Latine worker and familie who support the local economy by working long hour, often for low wage, a hou ekeeper, land caper, re ort taff, con truction worker, and proven during COVID 19 clo er, frontline worker. Some of our public school can't be acce ed via public tran portation, o even that is hard to acce via current public tran portation option. The affordable hou ing cri is ha di placed many worker and led to extremely long commute, often between town that are eparated by fifty mile or more. Our community is under erved by public tran it that work for the e indu trie and the remote place where we work. Unfortunately infra tructure like bike and walking path are not reali tic option for people who work on their feet all day, the e are lu urie we can't afford.

The proposed rule is estimated to shift 28% of transportation funding to "clean" projects by 2050. For our communities, this is not enough. We need to prioritize land use decisions that build affordable housing with easy access to transit, and transit systems that connect us directly to the places we need to go -- and we need this now, not in the next thirty years.

House Bill 21-1266 defines in statue "disproportionately-impacted community," and includes "the proportion of households that are housing cost-burdened is greater than forty percent" in that definition. This includes vast swaths of the Roaring Fork and Colorado River Valleys. CDOT's more narrow definition must be expanded to comply with the law, and the rule must direct investments accordingly -- meaning that a certain percentage of benefits must be focused in disproportionately-impacted communities, at least 25% if not more.

I would love to see public transportation connect to all schools and colleges in our area. Connecting Parachute and Battlement Mesa to Glenwood Springs, affordably and frequently. A comprehensive analysis for where people live and work to get a good sense of commute patterns in our communities. We need transportation that is not only for tourists but for people that live and work here. Special busses for construction and landscape workers, and workforce where people can carry their tools, cleaning supplies, special equipment and have smaller shuttles move them to their place of work.

Just like RFTA, CDOT has not done an adequate job of engaging our community. While this rule is in motion, it can still be revised to doing better, and we ask you to include the development of a Transportation

Equity Framework to codify outreach practices and direct policy decisions to advance environmental justice and economic justice. We deserve and can accomplish world class, clean, reliable transportation for ALL. This framework must be created with community members and give them decision-making power.

Thank you for the opportunity to provide testimony today



"All things are connected. Whatever befalls the earth befalls the children of the earth" - *Chief Seattle, Suquamish and Duwamish*



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comment on your proposed transportation rule

1 message

Tue, Oct 5, 2021 at 4:40 AM

[REDACTED]
To: dot_rules@state.co.us

To the CDOT rulemaking board,

My name is [REDACTED] and I am a resident of Logan County Colorado. I am writing to you today to provide feedback on your proposed rule 2 CCR 601-22. I have some questions for you and some concerns I'd like to bring to your attention.

Our government is founded upon the belief that the decisions should be made by the people; i.e. that the people are the ones best equipped to make the kinds of value judgments that governments are required to make on a daily basis. Our government, Colorado especially, also is founded upon the idea of local control.

It is true that everyday people may not have the expertise to understand bridge design, and it's common to delegate those kind of decisions to people with the specialized knowledge, education, and experience needed to build our infrastructure correctly.

If your rule were strictly about those kinds of decisions--the ones that it is proper for engineers and CDOT boards to decide--I would have fewer concerns. It is not. The rulemaking we are here to discuss is rather a value judgment. One that says more about what you think about climate change than it does about the soundness of a design.

As such, I wonder why it is seemingly that a group of unelected officials in Denver have taken it upon themselves to make decisions for the whole state. Perhaps I've misunderstood.

Will your rule be stepping in to tell local, elected officials what to do with regard to designing their transportation infrastructure?

Will you be telling people, say, on the Western Slope from Denver how they need to lay out their roads and what choices they need to make with regard to transportation modalities?

How many of the people participating in this rulemaking have been outside Denver for any length of time? How many times, for example, has Ms. Lew visited Sterling? How many visits to Las Animas?

If you do continue on the path you seem to be set on, how much will you be dictating to local people and how much will you be visiting and discussing their transportation plans?

If your answer is that you are planning to overrule local will and that you're planning to do so from your office buildings in Denver, I disagree strongly. I urge you to remember the foundational principles of this country and our state. Local people who will pay for projects should be able to have a voice in how their roads are laid out.

I would also like to point out one last thing. I live in a rural area as do many other Coloradans. Your proposed rule ignores one simple fact for the outlying parts of our state. Transit is fine. Bike lanes are fine. I do not disagree with having either a appropriate. Let me repeat that last bit is appropriate. What rural Colorado needs is asphalt not transit. Simply driving outside of the Metro area would be enough to convince you of that. To have a board focusing on bussing and bike lanes while the roads in many parts of the state are crumbling speaks to misdirected priorities at best. Perhaps this should be placed at a higher priority.

Thank you for your time.

[REDACTED]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Fwd: Oct. 5 meeting

1 message

Grim - CDOT, Jamie <jamie.grim@state.co.us>
To: CDOT Rules <cdot_rules@state.co.us>

Tue, Oct 5, 2021 at 10:03 AM

Hey-

Can you add this to the written comments?

Thanks!
Jamie

Jamie Grim
Federal and Local Government Liaison
Office of Policy and Government Relations

C: 970.481.1024
2829 W. Howard Place, Denver, CO 80204
Jamie.Grim@state.co.us | www.codot.gov | www.cotrip.org



Under the Colorado Open Records Act (CORA), all messages sent by or to me on this state-owned email account may be subject to public disclosure.

----- Forwarded message -----

From [REDACTED]
Date Fri, Oct 1, 2021 at 11:59 AM
Subject: Oct. 5 meeting
To: <Jamie.Grim@state.co.us>

Proposed Greenhouse Pollution Reduction Standard for Transportation Planning Rebecca Rathburn CDOT
rebecca.rathburn@state.co.us CDOT Rules cdot_rules@state.co.us

Dear Jamie Grim,

Do you have a description of the topics that will be presented for comment?

I seriously agree in general that the GHG pollution is incredibly important to the survival of our very lives. This is what drives global warming and hence climate change. The destruction of I70 in the Glenwood Canyon is just one small example.

Building more roadway is not a solution, rather it creates still more traffic and therefore more GHG. More roadway encourage more development which produce still more traffic

The hort an wer i imply to ta the fuel and the vehicle Thi provide fund for better ma tran it and reduce individual travel. Special arrangements are needed for lower income people. That could include free mass transit options and possibly a card to buy gas that provide a discount for low income people. Such as a City Market value card that allows discounted gas.

The same could work for toll roads.



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

submittal of written comments on planning regulation

1 message

[REDACTED]
to: dot_rules@state.co.us

Tue, Oct 5, 2021 at 5:28 PM

Please find attached written comments that I would like submit on CDOT's proposed draft planning regulation (2 CCR601-22) Thank you!

[REDACTED]

[REDACTED]



Written Comments on GHG Planning Regulation - [REDACTED] - 10-14-2021.pdf
196K

October 14, 2021

Transportation Commission of Colorado

Re: Notice of Proposed Rulemaking - Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions 2 CCR 601-22

Via email to: dot_rules@state.co.us

I present my written comments herein on the draft planning regulation based on three decades of air quality permitting and analysis, including running the mobile source models that are proposed for regional and project scale air emissions analysis. To substantiate the basis upon which I make my comments, I relay that my training is in air quality (**MS, Atmospheric Sciences, UW**) and engineering (**BS, Aerospace Engineering, UVA**), my engineering license is in Colorado, and I have permitted and analyzed the impacts of mobile and stationary sources in over 20 US states, including Colorado.

Some examples of how modeling and analysis solved transportation pollutant problems of the past include those in New England, where carbon monoxide exceedances were occurring at ski resorts at lift-closing, as well as at crowded intersections in downtown Boston and Cambridge; where mesoscale analysis of emissions for Mass DOT and Mass Pike projects were used to design lower-impact alternatives for regional ozone attainment plans; and in Virginia, where citizens living adjacent to highways had been poorly represented as stakeholders within DOT and FHWA highway expansion projects. My client list includes governmental organizations; environmental advocacy organizations; mall developers; citizens; manufacturers; and energy producers.

I review this recent history of analysis to solve transportation-derived air quality issues because it is important that we all understand that the approaches and methods necessary to solve the issue of GHG emission reduction from transportation are already embodied in the Clean Air Act, and that the Clean Air Act is also the statutory authority from which many of CDOT's historic and current environmental requirements derive. CDOT should not only avoid reinventing the wheel, it must use the already-proven approaches of the Clean Air Act within a more powerful and fair 2 CCR601-22 if Colorado is to be successful in meeting the regulation's targets.

The current draft regulation, as it stands, will fall short of success because it does not include the necessary stepping-stones for permitting of transportation projects. While the targets are essential elements of the rule, project sponsors deserve clarity, and citizens deserve clarity, of exactly the steps by which these targets will be achieved. I list below multiple concepts and processes, already demonstrated as successful approaches within the Clean Air Act that I recommend CDOT include as permitting stepping-stones in its next draft of 2 CCR 601-22:

- **Within the regulation, the entire state of Colorado should be deemed a severe nonattainment area for each of the GHGs.** From this status can flow the rigorous planning and permitting requirements that the Clean Air Act dictates. I remind CDOT that the US east and west coasts had many severe and serious nonattainment regions prior to the 2000's, many of which have achieved attainment status because of the nonattainment methodology of the Clean Air Act. I also remind CDOT that the entire eastern US suffered chronic acid rain events in the 1980s and 1990s, all of which have now been alleviated because of the Clean Air Act concept of capping and trading of emissions. The offset concept for new emissions proposed here essentially rests on the same mechanism of a cap-and-trade program.
- **The new regulation should then use the concept of low triggers in nonattainment permitting to require that new project sponsors find emission offsets at ratios greater than 1:1 for**

Regionally Significant Projects. To iterate, this is the approach by which previously successful Clean Air Act programs brought their states or regions into compliance with other pollutants.

- Given that our GHG concentrations must be on the order of 15% lower to meet an “attainment” concentration, any **Regionally Significant Project should be required to offset their new emissions at a 1.15 to 1.0 ratio in their build scenarios.**
- **The sponsor of any Regionally Significant Project can obtain offsets by working with municipalities and private entities on any GHG reduction project,** and CDOT should allow cross-boundary, intra-regulatory projects, including stationary source reductions, to provide for ample flexibility on where project sponsors can obtain offsets for their new mobile source projects.
- **The definition of Regionally Significant Project that is currently in the regulation must include an emissions threshold within its definition.**
- Just as existing DOT regulations stipulate that a certain category of projects always require microscale analysis to assure compliance with the particulate matter standards, such as bus terminals, so should **this new regulation require that any new or modified parking lot over a low threshold be defined as a Regionally Significant Project,** i.e., that any sponsor of a parking lot over a certain threshold should be required to find offsets for the emissions that it indirectly creates. Again, this approach is already defined in the CAA, wherein indirect emissions associated with air pollutant sources must quantify the emissions that a project induces at offsite locations. This more fairly places the burden of these indirect emissions on the source owner/operator that profits from them. For instance, the city of Breckenridge just announced the opening of a new 1,000 car parking lot, yet there was no analysis of the GHG emissions of the vehicles on Summit County roadways that the town will attract with this new lot. Keystone Resort enlarged a parking lot a few years ago yet felt no need (apparently) to implement any trip or emission reduction scheme on the Summit, Clear Creek, and Jefferson Counties and Denver highways that experience the increase in these induced GHG emissions. Vail Resorts, in recent correspondence, very carefully avoided any ownership responsibility for the GHG vehicle emissions that their resorts induce, and from which Vail Resorts profits. Similarly, Amazon distribution facilities attract 1000’s of workers and their vehicles, while Colorado tax-payers alone foot the bill for the associated growth in GHG emissions that are so negatively impacting our economy.
- **To iterate, under the new regulation, any construction project that includes modifying or building a new parking lot should be defined as a Regionally Significant Project, thereby requiring review and the need to obtain offsets for their indirect emissions.** The threshold, or trigger to be defined as a Regionally Significant Project, should be lower for a new parking lot, while for an already-existing parking lot of a certain size, the threshold should be much lower to reflect that those who are already major contributors to our nonattainment status will be expected to find offsets at lower expansion thresholds.
- **CDOT should brook no objection to low triggers, i.e., thresholds, for Regionally Significant Projects.** As one of those who has run both stationary source and mobile source models, I can assure the sponsors of transportation projects that an emissions evaluation required of a Regionally Significant Projects is far less complex than dispersion air modeling analyses that are regularly required of many new air sources in Colorado. Most transportation projects will have already used traffic engineers to define their traffic volumes and traffic movements, so that once the roadway volumes and movements have been defined, summing the GHG emissions for these build scenarios using US EPA’s MOVES according to guidelines is essentially just a math problem.
- **Multiple other states’ approaches on this issue should be researched and methods should be developed in concert.** I apologize if I missed them, but I have not seen any results of research by CDOT rule writers of what other US states have successfully implemented in their own parallel DOT planning regulations for GHG mitigation, and how CDOT has incorporated them in drafting 2 CCR 601-22. Although, Colorado elected officials often extoll how revolutionary are the state’s new regulations, sometimes these elected officials and leaders they appoint to our agencies (including the Air Pollution Control Division, and I say this based on involvement in several highly contentious air quality proceedings in Colorado) use “enforcement discretion” to not only

undermine new regulations but ignore existing Clean Air Act requirements that in other states are regularly enforced. Therefore, it is important that CDOT consult with other states' transportation departments, not only to work towards multi-state uniformity, but to avoid regulatory approaches that make enforcement difficult.

- **Other commenters have raised the issue of ground-truthing modeling estimates of traffic volumes and emissions of projects.** When developing the modeling guidelines that this draft regulation references, CDOT should review Colorado-specific highway and regionally important projects, to compare traffic volumes between the predicted build scenario and the actual build outcomes, to develop a generally agreeable factor for volume unpredictability that should be applied in developing all traffic volume forecasts.

In conclusion, I urge CDOT to take more time to draft a more powerful and fair 2 CCR 601-22. Throughout the past 30 years since I completed my graduate work in atmospheric radiative warming, i.e., the physical process by which global warming occurs, I, like so many citizens, have anxiously waited for the day when our air agencies and departments of transportation create the means to regulate and mitigate our GHG sources. Now, after 30 years, we finally see such a draft transportation regulation in Colorado, but it was cast just in weeks and only cites targets, instead of also prescribing the stepping-stones by which project sponsors, DOT and MPOs can arrive at these targets.

Thank you.





STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

GHG reduction public comment

1 message

[REDACTED]
To: dot_rules@state.co.us

Wed, Oct 6, 2021 at 2:38 PM

Attached please find my written comment regarding the proposed Greenhouse Gas Reduction Rule. Thank you,

[REDACTED]



[REDACTED] GHG comment.docx

15K

I am a physician at a safety net hospital in Denver. I have spent much of the last year and a half treating patients with COVID-19 and every day I see the consequences air pollution has on the health of our most marginalized communities. I also saw firsthand the effect on my own family this past summer when our 9 year old daughter suffered her first asthma attack, leaving her in tears.

I applaud this effort to address the climate and air pollution impacts of our transportation system, but I fear the proposed rules do not meet the urgency of the moment. I am concerned that the reliance on imperfect predictive models will allow us to largely continue doing business as usual. By the time we find that highway expansions have increased air pollution and greenhouse gas emissions, it will be too late to mitigate them. Rather than mitigating the harms of our transportation system, we should aim to avoid the harms to begin with.

Just as we are not permitting new coal burning power plants, we should not be permitting new highway expansions through our urban corridors that we know will increase air pollution, greenhouse gas emissions and respiratory illness. Highway expansions already being planned such as I-25 through the Sun Valley neighborhood and I-270 through Commerce City must not escape scrutiny under these greenhouse gas reduction rules. Funds for those projects should be redirected to infrastructure that reduces air pollution and VMT and simultaneously improves the lives of Disproportionately Impacted Communities.

As both a GHG reduction strategy and equity issue, CDOT's 10-year plan should be amended to give the same priority to urban arterials that are state highways as it does to rural roads and interstate highways. In this spirit, the metro Denver bus rapid transit network should be funded this decade. This priority would be a key strategy to reduce VMT and GHG emissions in the near term and would provide crucial mobility options to environmental justice communities.

Lastly, I would like to address the CDOT briefing memo from July 13th stating that GHG rulemaking will abandon the 10% VMT reduction goal as modeled by Colorado's Greenhouse Gas Reduction Roadmap. The memo emphasizes other solutions such as the employee trip reduction program that has already been cancelled. It is clear that without reducing VMT this decade we will simply not attain the air pollution and greenhouse gas reductions necessary for a livable climate. We should only allow highway expansions that will increase VMT if we meet our ambitious EV goals set forth in the roadmap and if we do not achieve these EV goals, VMT mandates will need to be ratcheted up accordingly. I urge the transportation commission to ensure that all CDOT and MPO plans are consistent with this reduction in VMT.

Thank you for your consideration.



I'm [REDACTED]. I've lived in this community since 1966 and am a transportation cyclist with over 120,000 miles since 1995. My remarks may be controversial because they are retrogressive, but over the years this GHG-reducing solution has been superseded by "progress."

Simply put, concrete and asphalt roads are dangerous for cyclists in inclement weather. Crusher fines paths, like the rec district builds, are useless during mud season, silt up our creeks and require excessive maintenance. Worse yet is when crusher fines meet concrete. There is an easy, effective, solution; well-known since the 1810s: Macadam bike roads.

John Loudon McAdam discovered that rock foundations were unnecessary, and asserted that native soil alone would support the road and traffic upon it, as long as it was covered by a road crust that would protect the soil underneath from water and wear. Macadam roads work for the same reason that railroad grades work: They are built on a raised, drained grade, and the cover material is small, interlocking rocks with a crown of less than 1%, maintained by roller compaction and appropriate use. The result is permeable and durable when used by appropriate traffic.

The issue of crown is significant because cyclists ride on the margin, where the roadway is sometimes pitched excessively. This can lead to falls in icy weather. If bike roads are to be useful in all seasons they need to be designed for all seasons. And they should be built as roads, with appropriately banked curves as best practice.

Why are cyclists not clamoring for macadam roads? Because it's never been an option. As far as I can tell, I AM the macadam lobby.

Please note that concrete and asphalt, with their large GHG hits, are not involved here. I am talking about a true macadam road of unbound, angular aggregate. Macadam has become a generic term that has expanded far beyond the materials and techniques useful for cycling roads. Maybe we should call it McAdams' macadam to differentiate?

Since the capture of transportation by automobiles and trucks, cyclists in the US are viewed as recreationalists out for exercise, an appendix to the transportation colon, the tail trying to wag the dog. To accommodate cyclists, a fraction of roads was apportioned to them, bypassing the prevailing knowledge that cyclists fare best with their own, separate infrastructure. And they don't need roads built to accommodate trucks and cars. Macadam roads are perfect for cyclists.

Colorado is known for leading the nation in good things -- I work as an Election Judge and Colorado makes me proud. We can take a big step forward by taking a big step backward. I'm hoping that CDOT will test macadam bike roads as part of it's GHG reduction strategies.

Thank you. Questions?

For more on macadam please refer to "*A Practical Essay on the Scientific Repair and Preservation of Public Roads*" McAdams' 1819 book

This document's URL:

<https://docs.google.com/document/d/1ZAzOLZvm4cNDItN69nhyAMiky1jzIYqyHFUQJRq6scQ/edit?usp=sharing>



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Written comments on the GHG standard in transportation planning rules

1 me age

Wed, Oct 6, 2021 at 9:39 PM

To: dot rules <dot_rules@state.co.us>

Cc

[Redacted] on GHG Standard for Transportation Planning Proposed Rule

My name is [Redacted] and I am a resident of Longmont and a retired EPA attorney and retired RTD Director. Thank you for the opportunity to comment on CDOT's proposed regulatory change to create a greenhouse gas ("GHG") pollution reduction standard applicable to major transportation projects. The idea to require proposed transportation projects to be reviewed for their carbon footprint is a good one. I do have some major concerns, however, about what I see as underlying deficiencies of the proposed program which take away from its actual effectiveness in truly reducing emissions.

My primary concern is that the proposed regulatory program continues to treat the funding of major transportation projects in a "business as usual" manner, although we are living in anything but business-as-usual time. The implication underlying this regulation scheme is that major transportation projects such as a new highway construction will continue to be funded and will not be denied merely because the standards aren't being met. In my opinion, this means that the regulation is effectively ignoring the elephant in the room – that such projects are toxic to the climate survival of our society and should not be tolerated except under highly unusual circumstances.

Instead of business-as-usual funding, if serious the program would impose moratoriums on construction of major highway expansions unless alternative modalities are first considered, with an overwhelming preference given to such alternatives. Also, enforcement should really be bolstered, with true teeth provided when standards will not be met. In addition, the reduction standards proposed in Table 1, in my opinion, are dangerously low, predicated upon an assumption that as yet unwritten regulations will effectively increase electric vehicle usage and reduce transportation emissions in a wished-for, substantial amount. These are unproven assumptions and should not in good conscience be used to justify low reduction standards in this regulation. Finally, to be most impactful, these regulatory requirements should be extended to transportation projects already approved in the pipeline, so that these projects will also be subject to carbon reduction requirements. The fact that projects have already been approved makes them no less toxic to society's climate survival than newer projects. The same deadly climate science applies to both.

Thank you for the work and effort already expended on the proposed regulation. I raise these tough comments and suggestions because these are not ordinary times.

[Redacted signature block]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Cleaner Air and Better Transportation Options

1 message

[REDACTED]
to: dot_rules@state.co.us

Thu, Oct 7, 2021 at 12:10 PM

Hello!

I just wanted to write and ask that our beautiful mountain towns continue to be made accessible for those who wish to travel there without risking life and limb on the overpopulated I-70, and other roads.

Electric buses that run more often and are more attractive to more people as a safe alternative to driving a personal vehicle will entice a commuter mentality. These buses should have convenient storage for luggage and other items if possible, so more multi-day visitors, hikers, and campers will use this alternative.

Small electric vans that transport groups might also be nice. Every car that is off those roads increases the likelihood that our air will become cleaner, and will minimize the wear and tear on roads, along with decreasing the chances of costly accidents.

Thank you for your time, and best of luck with this important endeavor!

[REDACTED]



STATE OF
COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Comments on 2 CCR 601-22 draft rule

1 me age

Thu, Oct 7, 2021 at 6:59 PM

To: "dot_rules@state.co.us" <dot_rules@state.co.us>

My comment are regarding the assumption that GHG emission reduction from transportation project will be greatly enhanced by rapid growth in adoption of EV and whether this aspiration should be addressed in acceptable mitigation measures.

Table 1 establishes GHG emissions planning levels at 5-year intervals from 2025 to 2050. Considering population growth, there will be only a very small overall reduction in baseline GHG (3.2 MMT CO₂e which is 11.7% reduction from 2025 baseline) by 2050 resulting from the most recent transportation plans. If we can assume rapid growth in electric vehicles, then the reduction in GHG emissions will be much greater than estimated (i.e., Table 2). That is, to a baseline of 8.9 MMT CO₂e (which is 67% of baseline 2025).

Colorado is encouraging consumer adoption of EV by program such as expanding and publicizing the EV charging infrastructure, tax credits for purchase, and requiring electric utilities to provide incentives such as EV purchase rebates and assistance with home high-voltage charging installation.

The proposed rules should include examples of additional mitigation measures that would promote EV adoption. Current example GHG mitigation include addition of transit resource; improved bike access; adding more EV charging infrastructure. These listed examples assume that there is a ready consumer market to use these resources and that costs are affordable to these consumers.

In addition, I would urge supporting more direct incentives for consumer adoption of EV (including eBikes) that have been shown to be successful in studies and in other states such as

- Point-of-sale rebates on the purchase of EV. This kind of program should include purchase of used EV as well as new models.
- "Cash for Clunkers" –type programs to remove older, less fuel-efficient ICE from our roads. This could be provided in the form of transit voucher as an alternative to cash.
- Discounts and/or rebates for the purchase of eBikes or eScooters.

These additional mitigation measures would support the goal of reducing VMT in polluting, ICE vehicles.

Respectfully,

[Redacted Signature]



STATE OF COLORADO

Rules - CDOT, DOT_ <dot_rules@state.co.us>

Environmental Coalition comments on draft planning rule

1 message

Fri, Oct 8, 2021 at 1:27 PM

To: dot_rules@state.co.us

Cc: "White CDOT, Rebecca" rebecca.white@state.co.us

Colorado Department of Transportation Rule Administrator

Please find, attached, the Environmental Coalition's comment on CDOT's draft planning rule




Please call or email if there are any questions or problems with this transmission

Thank you,

[Redacted signature]

[Redacted signature block]

3 attachments

-  Environ Coalition comments on CDOT rulemaking to reduce GHG and VMT.pdf
835K
-  Environ Coalition redlines of CDOT rulemaking.pdf
479K
-  Env Coalition 1-7 Exhibits.pdf
10646K

BEFORE THE COLORADO TRANSPORTATION COMMISSION
COLORADO DEPARTMENT OF TRANSPORTATION

**COMMENTS ON RULEMAKING
BY CONSERVATION COLORADO, NATURAL RESOURCES DEFENSE COUNCIL,
SIERRA CLUB, AND SOUTHWEST ENERGY EFFICIENCY PROJECT
(COLLECTIVELY, THE “ENVIRONMENTAL COALITION”)**

IN THE MATTER OF PROPOSED REVISIONS TO 2 CCR 601-22, RULES GOVERNING
STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION
PLANNING REGIONS

October 8, 2021

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 1.2 The rule should translate the proposed GHG reduction targets into total VMT and VMT per capita reduction targets.

 1.3 The rule should set stronger post-2030 VMT reduction targets to reach 20% by 2050.

 1.4 Set VMT per capita reduction targets and measure the VMT per capita impacts of individual transportation projects.

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 2.1 The rule should direct CDOT’s new Environmental Justice Division to prioritize the creation of a Transportation Equity Framework.

 2.2 Disproportionately impacted communities should receive direct benefits from lowering GHG pollution and VMT from transportation planning. The percentage of direct benefits must be commensurate or greater than the proportion of disproportionately impacted population in the affected planning area.

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4.1 Continue to include CDOT’s Four Year Prioritized Plans and the MPO TIPs in the definition of Application Planning Documents.	
4.2 Create interim GHG and VMT reduction targets to align with the adoption of the TIPs and CDOT’s Four-Year Prioritized Plans.	
4.3 Update the definition of “multimodal” to focus on transit, biking, walking, TDM and other projects that increase access to non-auto modes of transportation and reduce VMT and GHGs.	
4.4 Apply the targets to all 5 MPOs on the same timeline and create interim GHG and VMT reduction targets to align with the adoption of the TIPs and CDOT’s Four-Year Prioritized Plans.	
4.5 Restrict use of waivers. If a waiver is granted, funds should be restricted until the MPO or TPR comes back into compliance with VMT and GHG reduction targets.	
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LIST OF ORGANIZATIONS SUBMITTING COMMENTS
(Collectively, the “Environmental Coalition”

Conservation Colorado is a statewide grassroots environmental non-profit with the mission to protect Colorado’s land, air, and water for future generations. Conservation Colorado believes in addressing the root causes of climate change, defending our state’s wild places, protecting our stressed rivers and drinking water, accelerating the transition to a clean energy future, and elevating voices from impacted communities to help ensure all Coloradans are represented and engaged in order to build a powerful conservation movement.

Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 3 million members and online activists, of which 30,000 are Coloradans. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment.

Sierra Club, Colorado is a powerful collective of more than 100,000 grassroots changemakers working together across the state to advance climate solutions, act for justice, get outdoors, and protect lands, water, air, and wildlife. Sierra Club believes in the power of working together to make change happen.

Southwest Energy Efficiency Project (SWEEP) is a nonprofit organization dedicated to advancing energy efficiency and clean transportation in Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming in order to save customers money, protect the environment, address the climate crisis, and build a more resilient, sustainable economy.

COMMENTS ON CDOT'S PROPOSAL

We appreciate the opportunity to comment on CDOT's Proposed GHG Planning rule. Transportation is the top source of GHG pollution in Colorado and we need bold policies to reduce and electrify vehicle travel in the coming years. The proposed GHG Planning Rule is ground-breaking, and we commend CDOT, the MPOs, local governments, and other organizations for collaborating on the proposed rule. While the proposed GHG Planning Rule is innovative climate policy, we believe it needs to be strengthened in order to meet our state climate targets, maximize the environmental and economic benefits for Coloradans, and advance equity, particularly in disproportionately impacted communities.

1. TARGETS: GHG Pollution Reduction and VMT Reduction Targets.

1.1. Increase the GHG reduction targets to at least 0.60 MMT by 2025 and 2.0 MMT by 2030. (Alt. Rule 8.02.2)

Stronger GHG Reduction targets will:

- Implement the state's GHG Pollution Reduction Roadmap and help Colorado reduce transportation GHG pollution 25% by 2025 and 40% by 2030 compared to 2005 levels,
- Maximize the economic and societal benefits of the policy by increasing total cost savings and improving health outcomes for Colorado residents,
- Limit funding for new highway capacity projects, which induce more vehicle travel and air pollution,
- Compensate for the withdrawal of the Employer Traffic Reduction Program (ETRP) rule, and

- Leverage federal infrastructure dollars to advance our state climate targets.

[Colorado needs to cut 12.7 MMT](#) of transportation GHG pollution by 2030 to hit the HB-1261 climate targets.¹ [CDOT anticipates](#) about 8 MMT of GHG reductions from replacing light-duty vehicles with more fuel-efficient and electric vehicles (EVs).² Implementing the state’s Clean Trucking Strategy, including potential adoption of the Advanced Clean Truck Rule, could deliver another 1.5 MMT reduction in GHGs in the most optimistic scenario. The remaining 3.2 MMT, or 25% of the required GHG reductions from transportation by 2030, must be achieved by reducing vehicle miles traveled (VMT).

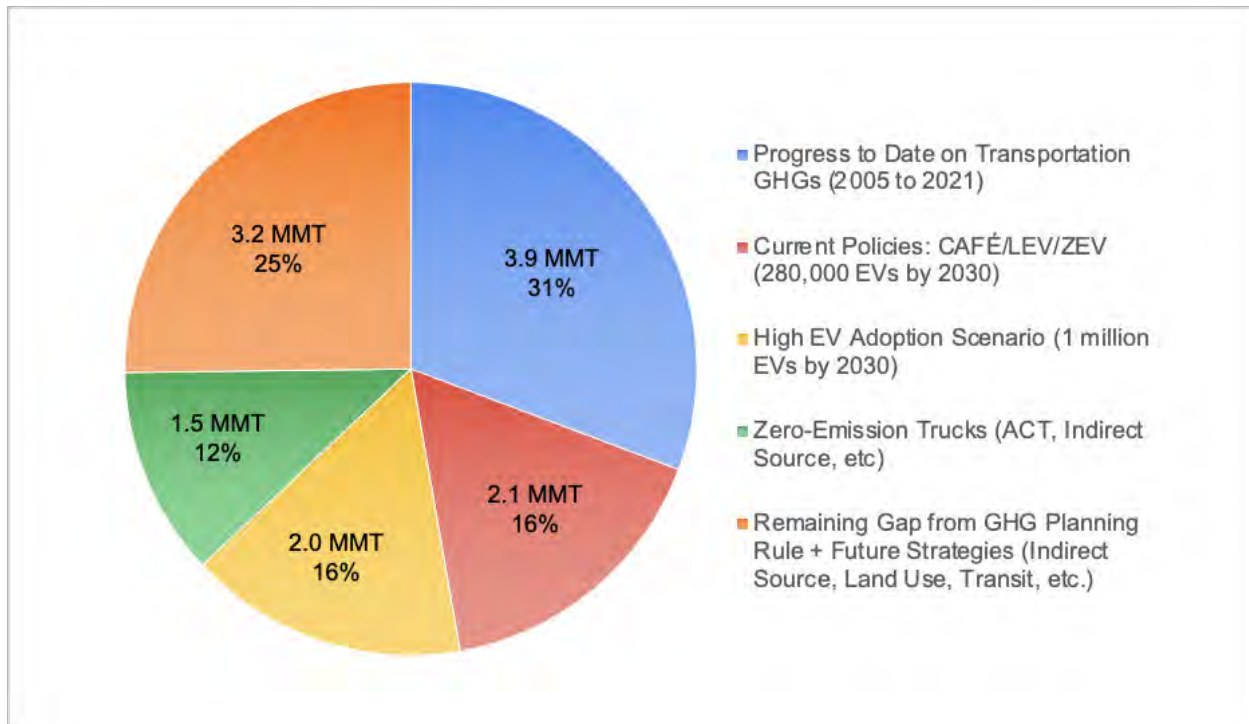


Figure 1. Progress Toward Colorado’s 2030 Transportation GHG Targets:
 Source: Southwest Energy Efficiency Project using modeling from the [Colorado GHG Pollution Reduction Roadmap](#). Scenario assumes the adoption of future policies to increase the share of zero-emission medium- and heavy-duty vehicle sales to 40% by 2030.

Colorado has a statutory obligation to meet the state’s [HB19-1261 climate targets](#) for 2025, 2030, and 2050³, and doing so will require bold action on transportation, the largest source of GHG pollution both statewide and nationally. The GHG Planning Rule will influence how we

¹ Colorado Governor Jared Polis, Greenhouse Gas Pollution Reduction Roadmap, January 14, 2021. https://drive.google.com/file/d/1jzLvFcrDryhhs9ZkT_UXkQM_0LiiYZfq/view

² Colorado Department of Transportation, Greenhouse Gas Pollution Reduction Standard for Transportation Planning Frequently Asked Questions, August 30, 2021. <https://www.codot.gov/programs/environmental/greenhousegas/faq.pdf>

³ “HB19-1261 Climate Action Plan to Reduce Pollution”, Colorado State Legislature (2019): <https://leg.colorado.gov/bills/hb19-1261>

spend nearly [\\$28 billion](#) on transportation infrastructure over the next 28 years⁴, and the projects we choose to build influence how we travel and the amount of pollution our system produces.

As a result, it is essential that the scale of the rule’s GHG reduction targets be commensurate with the scale of the climate challenge. In the near-term, it is imperative that we hit the 2025 and 2030 GHG reduction targets. The [IPCC’s Special Report on Global Warming](#) warns that “without increased and urgent mitigation ambition in the coming years, leading to a sharp decline in greenhouse gas emissions by 2030, global warming will surpass 1.5°C in the following decades, leading to irreversible loss of the most fragile ecosystems, and crisis after crisis for the most vulnerable people and societies.”⁵

Good for the planet, good for the economy.

In addition to the environmental benefits, the proposed rule will deliver overwhelming economic and societal benefits to Colorado residents. The rule’s [Cost-Benefit Analysis](#) (CBA) estimates about \$40 billion in economic benefits to Coloradans, primarily in the form of lower vehicle operating costs, safety benefits, and less congested roads from reduced Vehicle Miles Traveled (VMT).⁶ It also shows a proportional relationship between the amount of GHG emission reductions and the economic benefits, meaning the more we invest in strategies that reduce GHGs and VMT, the more money Colorado consumers save on their transportation and healthcare costs – strong justification for more aggressive GHG reduction targets.

According to the CBA, the policy would divert around 16% of the 2022-2030 transportation budget to “multimodal and environmentally-beneficial projects” to achieve a 1.5 MMT reduction in GHGs by 2030. One-sixth of our transportation budget is not nearly enough to address the scale of the climate emergency and the air quality crisis along the Front Range. Colorado has the funding to pursue more aggressive GHG and VMT reduction targets, and climate must be a top priority for CDOT and the MPOs if we hope to limit global warming to 1.5°C.

We have been underinvesting in transit, biking, and pedestrian infrastructure for decades, so there is no shortage of opportunities to build a more connected and safer multimodal transportation system. Denver Regional Council of Government’s (DRCOG) [2040 Metro Vision](#) compared the region’s unconstrained transportation plan to one that’s fiscally-constrained by available funding in the state, and of all the transportation project categories, “Regional Transit

⁴ Colorado Department of Transportation, “Cost-Benefit Analysis for Rules Governing Statewide Transportation Planning,” 2021. <https://www.codot.gov/business/rules/documents/cdot-cost-benefit-analysis-for-ghg-rule-sept-2021.pdf>

⁵ “IPCC Special Report: Global Warming of 1.5 °C,” (2021): <https://www.ipcc.ch/sr15/about/foreword/>

⁶ Colorado Department of Transportation, Cost-Benefit Analysis for Rules Governing Statewide Transportation Planning, August 31, 2021. <https://www.codot.gov/business/rules/documents/cdot-cost-benefit-analysis-for-ghg-rule-sept-2021.pdf>

System Capacity” showed the largest gap in funded projects.⁷ The 2040 Metro Vision included \$28 billion worth of transit capacity projects between 2016 and 2040, with funding for only \$6 billion, or just 22% of those projects.

Limiting funding for roadway expansion projects.

Stronger GHG and VMT reduction targets will limit funding for new highway expansion projects, which from a climate perspective, is one of the [most impactful adjustments](#) we can make to the current transportation planning process.⁸ In addition to investing in multimodal transportation options, we must also “stop the bleeding” of induced travel from new roadway capacity projects. These [types of projects have proven](#) to exacerbate our pollution problems, undermine investments in multimodal transportation by making driving the more appealing option, and monopolize transportation funding at the expense of cleaner and more efficient options.⁹

The research shows a proportional relationship between roadway expansion and VMT, meaning a 1% increase in freeway lane miles will deliver 1% increase in systemwide VMT within 5 to 10 years. In 2021, Rocky Mountain Institute adapted the National Center for Sustainable Transportation’s Induced Travel Calculator to [estimate the induced travel](#) from Colorado’s current and planned highway widening projects.¹⁰ Controlling for population growth, this set of highway projects would increase statewide VMT by 2%, adding 600,000 metric tons of new GHG pollution by 2030. That is the equivalent of putting 70,000 more cars on our roads every year – almost twice as many EVs as we currently have in Colorado. Highway expansion projects like Central I-70 and I-270 also increase local pollutants in disproportionately impacted communities, intensifying existing social and health inequities.

Highway expansion projects are counterproductive to our climate and air quality goals and cancel out many of the benefits of electrification and multimodal transportation investments. More aggressive transportation planning GHG reduction targets are necessary to focus more investment directly on projects that reduce pollution. Colorado will not meet its goals if we

⁷ Denver Regional Council of Governments (DRCOG), 2040 Metro Vision Regional Transportation Plan, April 18, 2018, Pg. 79. https://drcog.org/sites/default/files/resources/FINAL%20-%202040%20MVRTP%20-%20April%202018_1.pdf

⁸ M. G. Boarnet and S. L. Handy. “Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions.” California Air Resources Board: Policy Brief, 2014. https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf.

⁹ M. G. Boarnet and S. L. Handy. “A Framework for Projecting the Potential Statewide Vehicle Miles Traveled (VMT) Reduction from State-Level Strategies in California.” University of California Davis, 2017. <Exhibit 1> <https://escholarship.org/content/qt2z48105j/qt2z48105j.pdf?t=psmhvh&v=lg>

¹⁰ Rocky Mountain Institute. “If You Build It, the Cars (and the Pollution) Will Come,” 2021. <https://rmi.org/if-you-build-it-the-cars-and-the-pollution-will-come/>

continue building roadway capacity projects then attempt to mitigate the additional pollution and VMT through accessory multimodal elements.

CDOT and the MPOs deserve credit for focusing new highway expansions on High-Occupancy Vehicle (HOV) and High-Occupancy Toll (HOT) lanes instead of general-purpose lanes. However, [studies from Caltrans](#) have shown there's "little evidence to suggest that adding HOV lanes will reduce GHG emissions, and some research to suggest that HOV lanes increase GHG emissions.... New HOV and Express Lanes induce new vehicle travel so any traffic flow improvements will be offset by new VMT."¹¹

All the new Express Lanes (HOT and HOV lanes) in Colorado – on I-25, C-470, US-36, and I-70 – have been constructed as additional lane miles, which induce new VMT in urbanized areas. To improve the effectiveness of Express Lanes and reduce both VMT and GHG pollution, CDOT should convert existing general-purpose lanes to Express Lanes and add frequent and reliable transit service in those lanes. Express Lanes should prioritize carpooling, vanpooling, and transit over SOV travel and the occupancy requirements and toll rates for Express Lanes should be high enough to preserve the performance of the Express Lanes and ensure fast and reliable travel times for transit users.

Compensating for the withdrawal of ETRP.

The GHG Planning Rule should compensate for the withdrawal of the Employer Traffic Reduction Program (ETRP) rule by absorbing at least a portion of its proposed GHG benefits. When CDOT began working with stakeholders on the GHG Planning Rule, the state's Air Pollution Control Division (APCD) was developing an ETRP rule at the Air Quality Control Commission (AQCC). [According to the proposal](#), the ETRP rule would have cut 0.68 MMT of annual GHG pollution by 2025, about 5% of the 12.7 MMT needed to hit the 2030 target, by working with the state's largest employers to reduce single-occupancy vehicle (SOV) commute rates.¹² In July, the APCD withdrew the proposal and in August, the AQCC voted to abandon the rulemaking.

The [GHG Roadmap](#) counted the ETRP rule as an important strategy to achieve Colorado's 2030 transportation climate targets and its cancellation must be addressed by other policies to reduce GHGs.¹³ In practical terms, the Transportation Demand Management (TDM) strategies proposed in the ETRP proposal are also included in DRCOG's Transportation Improvement Program

¹¹ Caltrans Division of Transportation Planning, "Caltrans Greenhouse Gas Emissions and Mitigation Report," Final Report August 2020. Pg. 21. <Exhibit 2> <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/ghg-emissions-and-mitigation-report-final-august-2-2020-revision9-9-2020-a11y.pdf>

¹² Colorado Department of Health and Environment, "Economic Impact Analysis: AQCC Regulations Number 11, 20, and 22", 2021. https://drive.google.com/file/d/1nQJfz3YUL7uOJxL3JQj_sSSq_dITZeX4/view?usp=sharing

¹³ Polis, Greenhouse Gas Pollution Reduction Roadmap. Pg. 64.

(TIP) and other transportation planning documents. “Adoption of transportation demand management practices that reduce VMT,” is listed as a potential GHG Mitigation Measure in the proposed rule (8.03.9).

Leveraging federal funding to advance state climate targets.

Lastly, it is possible the federal government will pass an infrastructure bill that would bring another \$746 million to Colorado’s state transportation budget over the next 5 years.¹⁴ Such a funding boost could increase our capital infrastructure budget by about 15%. This should be viewed as an opportunity to implement the state’s [GHG Roadmap](#) and direct more funding toward transportation projects that reduce VMT and GHG pollution.

1.2. The rule should translate the proposed GHG reduction targets into total VMT and VMT per capita reduction targets. (Alt. Rule 8.01.5)

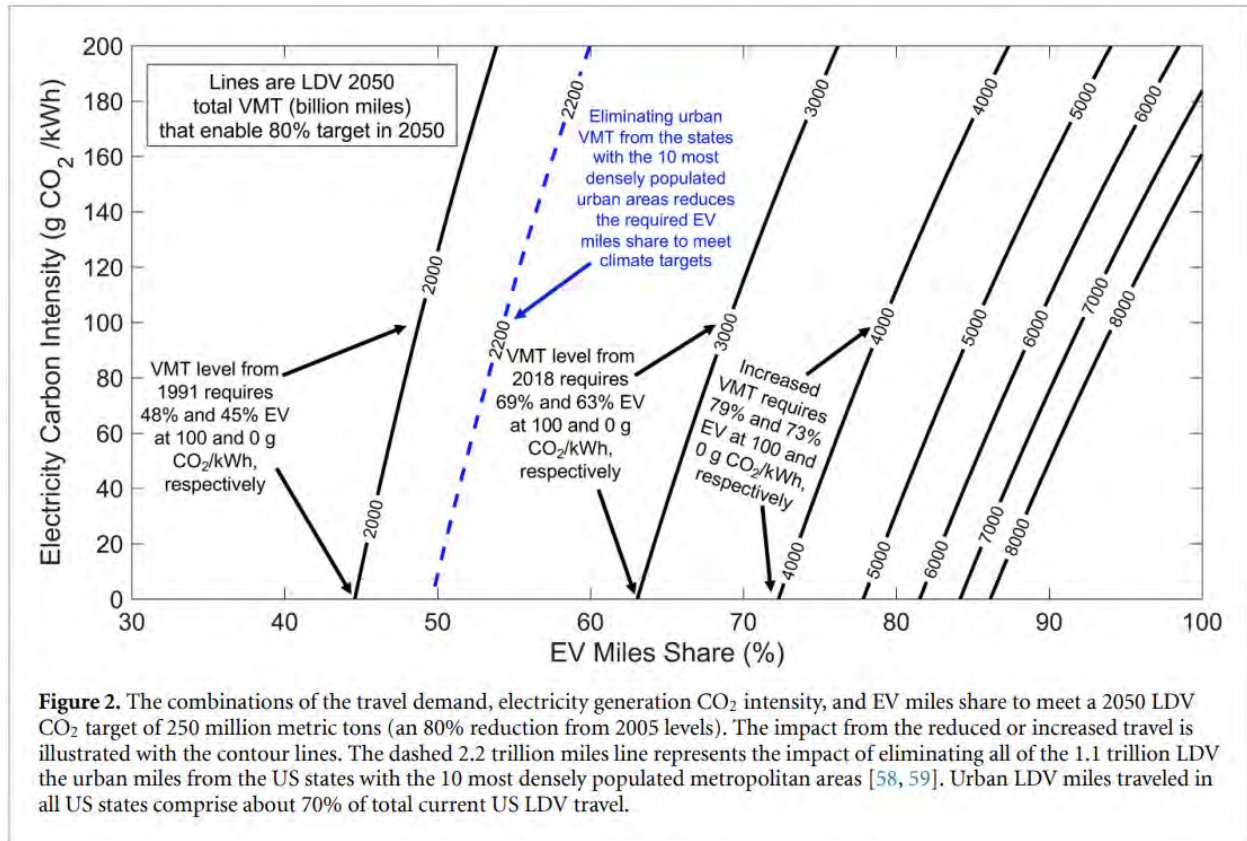
VMT Reduction Targets will:

- Focus investment on projects that improve access to clean multimodal transportation options,
- Provide greater clarity on how to comply with the rule and ease implementation.
- Address the overreliance on electric vehicles to meet our transportation GHG reduction targets on their own. Colorado needs both EVs and VMT reduction to hit our climate targets,
- Prevent the use of traffic operations improvements as a strategy to reduce GHG pollution – benefits that are unreliable, short-lived, and “generally overstated” in the modeling, and
- Maximize the co-benefits to improve safety, congestion, health, access, affordability, and equity.

The state and regional transportation planning process determines how Colorado allocates its transportation funding, which directly influences how people travel to work, school, grocery stores, hospitals, and other services. It is important to recognize that our car-dependent travel behavior is less a reflection of personal choice and more a result of policies and planning decisions that have directed the vast majority of transportation funding toward SOV infrastructure. The GHG Planning Rule is an opportunity to align transportation spending with our environmental and social goals by shifting investments toward projects that improve access to more efficient, low-carbon mobility options by increasing transit service, expanding bicycle and pedestrian infrastructure, promoting TDM programs, and encouraging transportation-efficient land use patterns. VMT reduction is the best measure to guide these investments and track our progress.

¹⁴ Email from Jeffrey Sudmeier, CFO, Colorado Department of Transportation, August 12, 2021. (Describing the potential effect of the “Infrastructure investment and Jobs Act” on CDOT’s budget.)

The more we reduce VMT, the less we must rely on vehicle electrification to hit our climate targets. [A recent study](#) from Carnegie Mellon University analyzed the relationship between VMT and EV adoption in the U.S., and found that, if total VMT increases to 4 trillion (a 37% increase), at least 73% of vehicles would need to be electric to reduce GHG emissions by 80%.¹⁵ If VMT drops to 2 trillion (a 32% decrease), less than 50% of vehicles would need to be electric to achieve the same GHG reduction. In the near-term, allowing VMT growth to continue at current rates would cancel out most of the GHG reductions from EVs between 2022 and 2030.



Source: Alarfah, A., Griffin, W., Samaras, C., “Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel”. 2020. Pg. 6. <Exhibit 3> <https://iopscience.iop.org/article/10.1088/1748-9326/ab7c89>

CDOT and MPOs like DRCOG have recognized the importance of VMT reduction as a guiding performance measure for transportation planning. In 2020, CDOT updated [Policy Directive 14](#) to include a 10% VMT reduction goal for 2030.¹⁶ Similarly, [DRCOG adopted a VMT performance](#)

¹⁵ Alarfah, A., Griffin, W., Samaras, C., “Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel,” 2020. Pg. 5. <Exhibit 3> <https://iopscience.iop.org/article/10.1088/1748-9326/ab7c89>

¹⁶ State of Colorado Transportation Commission, Resolution #TC-2020-11-11 Adoption of updated Policy Directive 14.0 “Policy Guiding Statewide Plan Goals & Objectives,” November 19, 2020.

[measure](#) with the goal of reducing VMT per capita per day by 10% by 2040 compared to 2010 levels.¹⁷ But these goals are merely aspirational and not enforceable. From 2010 to 2019, VMT per capita per day *increased* by 1%, which demonstrates the need for a stronger commitment to VMT reduction through rulemaking.

As a metric, VMT is a good proxy for GHG pollution. It is also easier to measure and track than GHG emissions, which are an aggregate of collective emissions in the atmosphere from every sector of the economy. In addition, focusing the rule on VMT reduction will simplify implementation and avoid confusion around the complex relationship between EV adoption, total VMT, and transportation GHG pollution.

A focus on VMT reduction will also preclude the use of traffic operations improvements as a strategy to reduce GHG pollution – benefits that are unreliable and difficult to model. Traditionally, state DOTs and MPOs have relied on traffic operational improvements such as traffic signal management, ramp metering, traffic incident management, and roundabouts to improve traffic flow and minimize idling, which can reduce pollution. However, the [Caltrans Greenhouse Gas Emissions and Mitigation Report](#) from 2020 raises serious concerns about relying on traffic operational strategies to deliver GHG reductions:

“The emissions impacts of traffic operations strategies are complex and not well understood. One reason for this is that evaluating the impacts of traffic operations strategies using controlled field experiments is difficult and costly. Thus, most studies use simulation models, which inherently raises questions about how well these models reflect actual conditions. In addition, when traffic operations strategies succeed in reducing delay, they can also induce new vehicle travel, which can potentially offset the emissions benefits of speed improvements. The available research is insufficient to make definitive statements about the conditions under which traffic operations strategies will reduce emissions and by how much. Nearly all of the published research does not consider induced vehicle traffic effects, so reports of GHG emissions benefits are generally overstated.”¹⁸

The proposed rule would require CDOT and MPOs to model the total system wide GHG emissions from their transportation plans and programs. Such an analysis would bundle hundreds

https://www.codot.gov/about/transportation-commission/approved-resolutions/2020-approved-resolutions/nov2020/tc_res_2020_11_11-pd-14.pdf

¹⁷ DRCOG, 2040 Metro Vision Regional Transportation Plan, Pg. 111; DRCOG Website visited on October 6, 2021. (Updating progress on VMT Metro Vision target)

[https://metrovision.drcog.org/in_practice/performance_measures/#vehicle_miles_traveled_\(VMT\)](https://metrovision.drcog.org/in_practice/performance_measures/#vehicle_miles_traveled_(VMT))

¹⁸ Caltrans Division of Transportation Planning, “Caltrans Greenhouse Gas Emissions and Mitigation Report” Pg. 48. <Exhibit 2>

of individual transportation projects, including traffic operational strategies, and produce a total system wide GHG impact.

This has played out in other states. For example, Massachusetts passed a [similar transportation GHG rule](#) in 2017, setting GHG reduction targets for state and regional transportation plans.¹⁹ The ensuing [2017-2021 STIP](#) shows 50% of the projected GHG reductions from traffic operation improvements like traffic signals and intersection reconstruction.²⁰ As written, the proposed CDOT rule would also allow the GHG benefits of traffic operation improvements to be counted toward compliance with the proposed targets – reductions that are unreliable, short-lived, and “generally overstated” in the modeling. A more straight-forward and effective rule would set strong and enforceable VMT reduction targets to guarantee progress toward our climate targets and provide much-needed funding for multimodal projects.

In addition, strategies that reduce total driving deliver significant co-benefits for Coloradans. Reducing VMT not only reduces GHGs, it also cuts local pollution, improves safety and connectivity for cyclists and pedestrians, promotes physical activity and health, stimulates economic development in local communities, relieves congestion on our roadways, reduces vehicle ownership and household transportation costs, and advances equity for underserved communities.²¹

According to the rule’s [Cost-Benefit Analysis](#), the economic benefits of the proposed rule are directly tied to VMT reduction and over 95% of the \$40 billion in estimated benefits is attributed to lower vehicle operating costs, improved safety, time travel savings, and more physical activity. We need to give Coloradans cleaner, safer, and more affordable travel options. The more we reduce total VMT, the greater the environmental and economic benefits for all Coloradans.

VMT reduction strategies would directly advance other state and regional transportation goals to address safety, air quality, congestion, transit access, multimodal mobility, affordability, equity, and environmental justice. As part of their Metro Vision process, DRCOG established a series of performance measures to guide transportation investments:

¹⁹ Massachusetts Department of Transportation, Edits to “60.05: Global Warming Solutions Act Requirements for Transportation,” adopted July 27, 2017. <https://www.mass.gov/doc/final-regulation-4/download>

²⁰ Massachusetts Department of Transportation, “Statewide Transportation Improvement Program 2017-2021”, https://www.mass.gov/files/documents/2017/10/17/STIP17-21_Final.pdf

²¹ Kevin Fang and Jamey Volker, “Cutting Greenhouse Gas Emissions is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled,” National Center for Sustainable Transportation, 2017. University of California. <Exhibit 4> <https://escholarship.org/uc/item/4h5494vr>

DRCOG Metro Vision Performance Measures
Increase the share of the region’s total housing units located in urban centers.
Increase the share of the region’s total employment located in urban centers.
Increase the population-weighted average of the density of each census tract in the region.
Increase the share of workers using a travel mode other than driving alone to commute to work.
Decrease the average weekday vehicle miles of travel per capita.
Increase the average variation in travel time on roadway segments when comparing peak to off-peak conditions.
Limit the average weekday person travel delay per capita.
Reduce the annual total of traffic-related fatalities resulting from crashes occurring in the region.
Reduce the surface transportation related emissions of greenhouse gases.
Increase the land protected from development for outdoor recreation; wildlife habitat; natural resources; prominent geographical, geologic, or cultural features; ranching; farming; visual buffering; and/or community separation.
Limit the share of the region’s housing in areas with wildfire Fire Threat Index (FTI) values of 4 or 5 (“high threat” and “highest threat”) and/or Special Flood Hazard Areas (SFHA), which are areas with a 1 percent chance of inundation per year (often referred to as the “100-year floodplain”)
Increase the share of the region’s population living in areas with housing and transportation costs that do not exceed 45 percent of the annual income of the typical household in the region, where the typical household earns the median income for the region, with both the average household size and average number of commuters per household for the region
Increase the total number of jobs in the region
Increase the share of the region’s housing within ½ mile of rapid transit stations, or within ¼ mile of bus stops with 96 or more departures per weekday (average of 4 per hour)
Increase the share of the region’s employment within ½ mile of rapid transit stations, or within ¼ mile of bus stops with 96 or more departures per weekday (average of 4 per hour)

Source: [DRCOG Metro Vision Performance Measures](#)²²

State legislation also requires a focus on both GHG and VMT reduction targets. Senate Bill 21-260 requires CDOT and the MPOs to take additional steps in their planning process “to account for the impacts on the amount of statewide greenhouse gas pollution and **statewide vehicle miles traveled** that are expected to result from such projects.” [C.R.S §43-1-128](#). The legislation also defines a “Greenhouse Gas Mitigation Project” as any project “that helps achieve compliance

²² DRCOG Website visited on October 6, 2021. (Progress report on Metro Vision targets) https://metrovision.drcog.org/in_practice/performance_measures/

with federal or state laws or rules that regulate transportation-related greenhouse gas emissions by **reducing vehicle miles traveled** or increasing multimodal travel.” [C.R.S §43-1-1102](#).

1.3. The rule should set stronger post-2030 VMT reduction targets. (Alt. Rule 8.01.5)

Table A.11 in the [Cost-Benefit Analysis](#) shows the estimated VMT reductions from the proposed rule in 2030, 2040, and 2050. Dividing those totals by [population projections](#) from the State Demography Office produces the estimated VMT per capita in each of those years.²³ The proposed rule would result in a 6.8% reduction in VMT per capita between 2020 and 2030, a 0.9% reduction from 2030 to 2040, and a 1.6% *increase* from 2040 to 2050. In other words, the policy aims to cut annual VMT per capita from 9,288 in 2022 to 8,650 in 2030, then hold that number relatively steady out to 2050.

At some point, VMT reduction will play less of a role in GHG reductions as a higher percentage of the vehicle fleet is electrified, but that point is not 2030 or even 2035. Even in an optimistic scenario, just 16% of the light-duty fleet will be electric by 2030. In addition, the CBA outlines a number of economic benefits from VMT reduction strategies such as lower vehicle operating costs, savings on healthcare from fewer crashes and more physical activity, and congestion benefits. The economic and environmental benefits of this policy justify continued progress toward lower VMT.

As a result, the rule should continue to put downward pressure on total VMT and VMT per capita for the duration of the policy. The Minnesota DOT [recently proposed](#) a 20% VMT reduction target for 2050 to achieve its state climate targets.²⁴ We have proposed that Colorado also set a 20% VMT reduction target by 2050. Alt. Rule 8.01.5.

1.4. Set VMT per capita reduction targets and measure the VMT per capita impacts of individual transportation projects. (Alt. Rules 8.01.5 Table 3; 8.02.2.5)

The rule should translate the total VMT reduction targets into VMT per capita reduction targets to encourage smart growth policies at the local level. The modeling in the CBA assumes that 75% of new growth in the DRCOG region is focused in urban mixed-use areas, a land use pattern that generally facilitates low-VMT lifestyles through shorter vehicle trips, greater walkability and bikeability, and transit-supportive density. However, increasing population and

²³ State of Colorado, Dept. of Local Affairs website “Population Totals for Colorado and Sub-State Regions” Visited on 10/6/21. <https://demography.dola.colorado.gov/population/population-totals-colorado-substate/#population-totals-for-colorado-and-sub-state-regions>

²⁴ Minnesota Department of Transportation, “2020 Sustainable Transportation Advisory Council Recommendations,” April 28, 2021. <http://www.dot.state.mn.us/sustainability/docs/advisory%20council/stac-recommendations-response-2020.pdf>

employment density will also increase total VMT and GHGs both locally and regionally, creating a potential disincentive to pursue transportation-efficient land use policies.

Throughout this rulemaking process, local governments have expressed concerns that they will be penalized for population growth. This policy should avoid inadvertently promoting “No Growth” policies such as residential growth caps and exclusionary zoning in the pursuit of community wide GHG reductions. Such policies may reduce local pollution, but they increase statewide pollution by restricting infill development, and therefore, deflecting growth to other less-efficient land use patterns. This is one reason DRCOG set a VMT per capita performance measure in its [2050 Metro Vision](#).²⁵ The GHG Planning rule should set total VMT reduction targets for state and regional plans, but also create a tool to measure the VMT per capita impacts of individual transportation projects.

2. EQUITY: Advance equity in the transportation planning process and improve health outcomes in disproportionately impacted communities. (Alt. Rules 1.12; 4.02.1; 4.02.5.4; 4.06.1.9; 8.02.2.3; 8.02.3; 8.02.5.3.4; and 8.05.3)

Colorado House Bill 21-1266, the Environmental Justice Act, finds that “all people have the right to breathe clean air, drink clean water, participate freely in decisions that affect their environments, live free of dangerous levels of toxic pollution, [and] experience equal protection provided by environmental policies.” It also finds that “**less-burdened communities have benefitted from relationships that impose burdens on other communities, which is a tangible debt that must be repaid through financial reinvestment,**” and that “The state government has a responsibility to achieve environmental justice, health equity, and climate justice for all communities by avoiding and mitigating harm.” In other words, climate policy and clean investments are not exempt from perpetuating environmental racism, and the State of Colorado is responsible for imbuing all climate policy with *environmental justice* -- the urgent practice of rectifying disparities in pollution burdens, infrastructure, and access.

All throughout the state, we see the same pattern: the highway-adjacent communities are home to high percentages of people with low incomes, mostly Latine, Black, Indigenous, and other people of color. Toxic vehicle emissions lead to high rates of asthma, headaches, nosebleeds, low birth weights, and cancer, and [communities near highways suffer the most](#).²⁶ This is the result of decades of environmental inequity in transportation planning -- these communities have long borne the brunt of policy choices that prioritize the health of wealthy and white communities at

²⁵ DRCOG, 2050 Metro Vision Regional Transportation Plan, April 21, 2021, Pg. 27.
https://drcog.org/sites/default/files/resources/2050_RTP.pdf

²⁶ American Lung Association website, “Living Near Highways and Pollution,” visited October 6, 2021.
<https://www.lung.org/clean-air/outdoors/who-is-at-risk/highways>

the expense of low-income communities of color. A [2018 study](#) from the National Academy of Sciences²⁷ found that air pollution is disproportionately caused by non-Hispanic White Americans and disproportionately inhaled by black and Hispanic Americans, leading to greater risk of disease and higher healthcare costs.

In addition, low-income and minority communities tend to pay a higher percentage of their household income on transportation costs and often lack mobility options that would help them reach jobs, medical care, and other services – obstacles that perpetuate existing economic and health inequities. On average, [low-income households spend 37% of their income on transportation](#), almost twice the percentage of middle-income households.²⁸ As a result, these communities have the most to gain from greater investment in clean and affordable transportation options. A data-driven policy would account for these racial and socioeconomic inequities, and be proactive about closing the gaps while improving access to opportunity for disproportionately impacted communities.

[HB21-1266](#) broadens the definition of “disproportionately-impacted community” to include “a community that is in a census block group, as determined in accordance with the most recent United States census, where the proportion of households that are low income is greater than forty percent, the proportion of households that identify as minority is greater than forty percent, or the proportion of households that are housing cost-burdened is greater than forty percent; or is any other community as identified or approved by a state agency, if: the community has a history of environmental racism perpetuated through redlining, anti-Indigenous, anti-immigrant, anti-Hispanic, or anti-Black laws; or the community is one where multiple factors, including socioeconomic stressors, disproportionate environmental burdens, vulnerability to environmental degradation, and lack of public participation, may act cumulatively to affect health and the environment and contribute to persistent disparities [...] "Cost-burdened" means a household that spends more than thirty percent of its income on housing, and "low income" means the median household income is less than or equal to two hundred percent of the federal poverty guideline.” **This definition, wider than the one currently in place in the rulemaking language, is estimated by CDPHE to include one third of Colorado’s population. We have proposed expanding the definition in the rules to include the expanded definition required by HB21-1266.**

So far, the rulemaking has failed to address equity and environmental justice. To be sure, it is a daunting endeavor; however, from both a legal and ethical standpoint, environmental justice must be incorporated into all climate policy in Colorado. **Excluding equity from this**

²⁷Christopher W. Tessum et. al., “Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure.” 2019. <Exhibit 5> <https://www.pnas.org/content/116/13/6001>

²⁸ U.S. Department of Transportation Bureau of Transportation Statistics website, “Household Spending on Transportation: Average Household Spending” viewed on 10/6/21. <https://data.bts.gov/stories/s/ida7-k95k>

rulemaking will result in a severe loss of trust from environmental justice organizations and community leaders. This will jeopardize the success of CDOT’s forthcoming Environmental Justice branch.

Colorado is home to some of the [worst local air pollution](#) in the country,²⁹ and we cannot continue to perpetuate existing economic and health inequities with more investment in highway expansion, particularly in the most affected communities. To solve this, we recommend a two-pronged approach:

1. Ensure proportionate benefits from this rule are felt by disproportionately impacted communities. Our draft would require that GHG and VMT reductions obtained through GHG Mitigation Measures must directly benefit disproportionately impacted communities at a level equal to or greater than the percentage of the population within disproportionately impacted communities within that planning area. Statewide, the percentage of Colorado’s population within a disproportionately impacted community is 30% but that number may be higher or lower in individual MPOs or TPRs.
2. No Applicable Planning Document, including the near-term Four-Year Prioritized Plans and Transportation Improvement Programs (TIPs), shall produce a net increase in greenhouse gas or co-pollutant emissions in disproportionately impacted communities that is already experiencing high levels of pollution relative to the state population unless those impacts are entirely mitigated.

2.1. The rule should direct CDOT’s new Environmental Justice Division to create a Transportation Equity Framework. (Alt. Rules 1.56; 4.02.5.4; 4.03.7; and 4.04.1.6)

Community engagement opportunities can take a toll on the public’s time, resources, and energy. While CDOT has made new efforts during this rulemaking process, current practices still make engagement inaccessible to many Coloradans.

One simple thing that this rulemaking can do quite easily is mandate the creation of a *Transportation Equity Framework* to guide CDOT and MPOs moving forward. Equity frameworks are in use across the country, including at the Colorado Department of Public Health and Environment, which published its draft [Climate Equity Framework](#) this year. It includes best practices for community engagement as well as requirements for the Air Quality Control Commission (AQCC) in evaluating future policy concepts. Given that the AQCC was the initial venue for this rulemaking, the considerations in the Framework and legal requirements in HB-21-1266 should be applied to the Transportation Commission. However, the State’s draft Climate Equity Framework does not include transportation planning. It is the role of CDOT and the Commission to fill this gap.

²⁹ American Lung Association website, “Most Polluted Cities,” visited October 6, 2021. <https://www.lung.org/research/sota/city-rankings/most-polluted-cities>

Luckily, we have models to turn to. In California, a [Mobility Equity Framework](#) commissioned by the Greenlining Institute finds that “Decades of local, regional, and state transportation plans and investments in California have not adequately responded to the mobility needs of low-income communities of color, reinforcing unequal land-use patterns and contributing to disproportionate health and economic impacts.”³⁰ This level of study is needed in Colorado in order to determine our course of action. The Framework also details a community engagement plan in order to “embrace an equitable deployment of investments and policy interventions to prioritize the mobility needs of low-income individuals of color and address the historical neglect they have experienced.”³¹

Other equity models are listed below:

Equity Frameworks and Tools Summary Table	
Framework/Tool	Description
Colorado’s Draft Climate Equity Framework (CDPHE)	Puts forth 6 principles to promote equity in the development of climate change strategies, to provide a “menu of options that the state can use to build equity considerations into the greenhouse gas reduction rulemaking process.”
Mobility Equity Framework: How to Make Transportation Work For People (Greenlining Institute, CA)	3-step framework utilizing 12 “mobility equity indicators”. Posits social equity and community power as primary values in transportation planning and decision-making, framework can help “elevate these values and address structural inequities through an adaptable, customizable process for community, advocates, and transportation decision- makers.”
Transit Justice Principles (National Campaign for Transit Justice & Transit Center)	List of 5 principles for improving transit justice in the U.S. Makes specific recommendations to improve transit justice at the local, state and federal level.

³⁰ The Greenlining Institute, “Mobility Equity Framework,” 2018. Pg. 5. https://greenlining.org/wp-content/uploads/2019/01/MobilityEquityFramework_8.5x11_v_GLI_Print_Endnotes-march-2018.pdf

³¹ *Id.*

<u>Seattle Racial Equity Toolkit</u> (Seattle, WA)	6-step toolkit for all Seattle government departments to use to “guide the development, implementation and evaluation of policies, initiatives, programs, and budget issues to address the impacts on racial equity.”
<u>Oregon Transportation Equity Framework</u> (Oregon Department of Transportation)	Framework developed for the Oregon Department of Transportation (ODOT) to evaluate the equity impacts of new tolling projects in the state. Distinguishes between “process” and “outcome” equity.
<u>Equitable Development Principles & Scorecard</u> (Twin Cities, MN)	Tool designed for use by governments and planners when conducting activities such as “planning with a focus on equity,” “evaluating the impacts of policy on the needs of the community,” “making policy change recommendations”, and more.

Environmental justice advocates and members of the public have made it overwhelmingly clear that we need to see equity addressed in this rulemaking, not postponed for another rulemaking or until the Environmental Justice branch of CDOT is active. **We are asking for the rule to include a directive to develop the *Transportation Equity Framework*, initiated no later than spring of 2022.**

Our suggestions for the *Transportation Equity Framework* are not meant to serve as a complete outline. Ultimately, members of the communities most impacted by inequality in transportation planning must be consultants, with their input weighed heavily in decision-making.

The *Transportation Equity Framework* should:

- Identify all Colorado communities disproportionately impacted by transportation pollution and, possibly in collaboration with other state agencies, track emission sources and pollution levels (including co-pollutants) on an ongoing basis. This data should be transparent, in plain language, and publicly accessible.
- Codify best practices for community engagement for rulemakings, Applicable Planning Documents, and approval of regionally significant transportation projects
 - Use multiple methods of outreach, including community hubs like local schools, social media, social and activity clubs, libraries, or other services. Hold public meetings at locations that are trusted by and accessible to community members, rather than in government buildings.
 - Create outreach materials concerning the proposed action that:
 - Are in plain language and avoid the use of jargon.
 - Are translated in a timely manner into the primary languages spoken in a community, using professional translation services.

- Schedule variable times of day, and days of the week, for opportunities for public input on the proposed actions, including at least one weekend time, one evening time, and one morning time.
- For prolonged engagement opportunities such as advisory boards and task forces, provide transportation support, childcare, and funding for community members to reduce costs of participating.
- Establish inclusive and equitable decision-making processes for future rulemakings
 - All Commissioners should either attend hearings or read transcriptions of public comment in full -- not summaries.
 - All rule language should explicitly analyze the equity implications of its components and refer directly to public input.
 - If CDOT chooses to reject community recommendations, rule language or associated documents should document the specific reasons for doing so and include a plan for addressing concerns in the future.
- Identify near-term actions for immediate relief of toxic air pollution.
- Develop criteria for analyzing regionally significant projects for their impacts on public health, displacement and affordable housing, social factors such as noise pollution, neighborhood connectivity, and other factors gathered directly from public input.

2.2. Disproportionately impacted communities should receive direct benefits from lowering GHG pollution and VMT from transportation planning. The percentage of direct benefits must be commensurate or greater than the proportion of disproportionately impacted population in the affected planning area. (Alt. Rules 8.02.3 and 8.02.5.3.4)

Increasing access and reducing pollution in disproportionately impacted communities supports both geographic and racial equity. The policy should avoid focusing climate and air quality benefits in wealthier communities at the expense of disproportionately impacted communities that are already suffering from toxic levels of air pollution and spend a higher percentage of their household income on transportation.

The benefits from reducing GHG pollution and VMT should be directed to disproportionately impacted communities at a level that is at least commensurate with the percentage of the population living in disproportionately impacted communities. Recent projections by the CDPHE's Environmental Justice Program indicate that 30% of Colorado's population lives within a disproportionately impacted community (as defined by that agency). If we are to address historic inequities, the benefits from reducing GHG pollution and VMT should be directed to disproportionately impacted communities at levels greater than 30%.

To improve equity and air quality, and lower transportation costs in disproportionately impacted communities, the rule should:

- Require reductions in GHG pollution and VMT to directly affect disproportionately impacted communities in a percentage commensurate with the percentage of population within that planning area living within a disproportionately impacted community as defined by HB21-1261. This level is estimated to be 30% statewide but will vary within individual MPOs and TPRs. (Alt. Rules 8.02.3; 8.05.3)
- Avoid making a bad situation worse in our most-polluted communities by including a requirement that no Applicable Planning Document, including the near-term Four Year Prioritized Plans and Transportation Improvement Programs (TIPs), shall produce a net increase in greenhouse gas or co-pollutant emissions in disproportionately-impacted communities already experiencing degraded environmental conditions relative to the state population unless those environmental or public health impacts are entirely mitigated. (Alt. Rule 8.05.3)

3. MODELING: Ensure the modeling accurately estimates the GHG and VMT impacts of current and future transportation projects.

3.1. Include more specific provisions in the Intergovernmental Agreement to improve modeling accuracy and require periodic review. (Alt. Rules 8.02.2; 8.02.5.2)

The effectiveness of this policy hinges on the modeling and how accurately it estimates the VMT and GHG impacts of individual transportation projects and the Applicable Planning Documents as a whole. A recent study from researchers at UC-Davis found that environmental reviews of highway expansion projects from state DOTs and MPOs around the country consistently underestimate the impact of new lane miles on systemwide VMT, and by extension, GHG pollution.³² It is widely understood that an increase in roadway capacity generally leads to a proportional increase in vehicle travel on the network over a 5 to 10 year period. The basic law of supply and demand applies to vehicle travel, where increasing the supply of lane miles increases average speeds, which in turn reduces the perceived “cost” of driving and thereby induces more driving.

³² Volker, Jamey Lee, Amy Handy, Susan. “Environmental Reviews Fail to Accurately Analyze Induced Vehicle Travel from Highway Expansion Projects,” 2021. <Exhibit 6> <https://escholarship.org/uc/item/14b0x0nm>

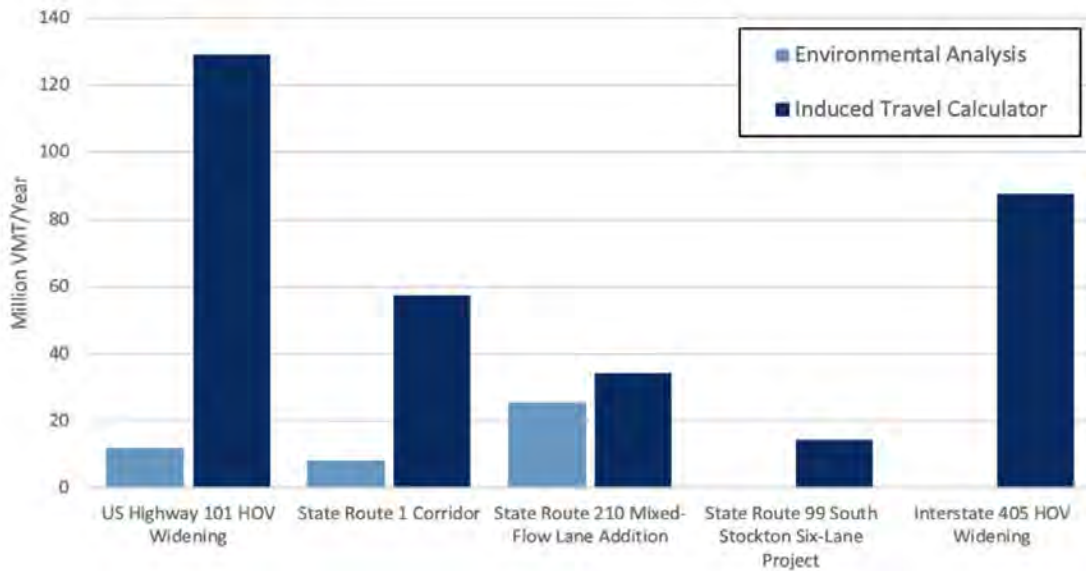


Figure 3. Comparison of induced VMT estimates in highway expansion project environmental analysis versus the induced Travel Calculator (analyses for the State Route 99 and Interstate 405 projects did not estimate induced travel.)

Source: Volker, Jamey Lee, Amy Handy, Susan. “Environmental Reviews Fail to Accurately Analyze Induced Vehicle Travel from Highway Expansion Projects,” 2021. <Exhibit 6> <https://escholarship.org/uc/item/14b0x0nm>

CDOT has acknowledged this phenomenon, and SB21-260 established new modeling requirements for CDOT and the MPOs to modify their guiding documents to measure “the impact on emissions of greenhouse gas pollutants of induced demand resulting from transportation capacity projects.” [C.R.S §43-1-128](#)

In July, CDOT published a [GHG Briefing Memo](#) describing the purpose and key challenges for the GHG Planning Rule. On the topic of modeling, CDOT explains the difference between the traditional “trip-based model” and the newer “activity-based model,” the latter of which can more accurately model future land use patterns to predict induced demand from new capacity projects.³³ Both CDOT and DRCOG are now using the activity-based model to evaluate the impacts of transportation capacity projects.

However, based on the most recent planning documents, CDOT has yet to incorporate induced demand into their environmental review process. In August, CDOT released an Environmental Assessment for the expansion of I-70 from Floyd Hill to Veterans Memorial Tunnels, a project that would add 16.5 new lane miles to one of Colorado’s most congested highways. According to the project’s [Air Quality Technical Report](#) the “No Action” scenario, where the existing highway stays at two lanes in each direction, would generate more VMT and pollution than a scenario that

³³ Colorado Department of Transportation, “Transportation GHG Roadmap Briefing Update” July 13, 2021. Pgs. 9-10. <https://www.codot.gov/programs/environmental/greenhousegas/ghg-briefing-memo-july-2021.pdf>

expands the roadway capacity to three lanes.³⁴ This analysis clearly contradicts the principles of induced demand whereby any increase in roadway capacity encourages people to drive longer distances and take more trips.

The proposed rule's [Cost-Benefit Analysis](#) appears to correct for some of this by stating, "capacity expansion projects consider the effects of "induced demand", or increased traffic that is observed to result over time after roads are expanded. This increased traffic may lead to net increases in greenhouse gas emissions as a result of the project.... The long-run demand elasticity is assumed to be 0.67 for freeways and 0.5 for arterials. This elasticity represents the ratio of percent growth in VMT to percent growth in lane-miles." In contrast, the I-70 Floyd Hill Environmental Assessment uses an induced demand elasticity of 0, and as a result, finds minimal impact on air quality and climate from the additional lane miles.

This is not meant to challenge the safety and other potential benefits of the I-70 Floyd Hill project, but only to highlight the discrepancies between the VMT modeling results. If we are going to evaluate transportation plans and programs for compliance based on the projected VMT and GHG impacts, then the models need to be as accurate as possible.

We urge CDOT to consider using the [NCST Induced Travel Calculator](#), which Caltrans is now using alongside their state travel demand model to measure the VMT and GHG impacts of proposed capacity projects. The NCST Calculator and CDOT's activity-based model can be run side by side and the delta between the two examined to improve the accuracy of the modeling. According to Caltrans' 2020 [Induced Travel Analysis](#).³⁵

"In general, two approaches exist for induced travel assessment. The first is the empirical approach, which applies elasticities from empirical studies that quantify the induced travel effect (the National Center for Sustainable Transportation (NCST) Induced Travel Calculator applies this approach. The other is the travel demand model-based approach. The general guideline is to use both methods and disclose both induced travel numbers wherever applicable."

To bolster confidence, we request that CDOT apply their activity-based model (ABM) to past and current highway expansion projects in Colorado, like the I-25 TREX expansion and the central I-70 widening, to see how they compares to real-world data, and use the results to develop a Colorado-specific empirical model. (Alt. Rule 8.02.2.6). We recognize the modeling is

³⁴ Colorado Department of Transportation, "I-70 Floyd Hill to Veterans Memorial Tunnels State Air Quality Technical Report". 2021. <https://www.codot.gov/projects/i70floydhill/assets/ea/appendixa/floyd-hill-state-aq-technical-report.pdf>

³⁵ California Department of Transportation, "Draft Transportation Analysis Framework: Induced Travel Analysis," 2020. Pg. 2. <Exhibit 7> <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-04-13-taf-a11y.pdf>

extremely challenging and we recommend incorporating a periodic reassessment of accuracy of the relevant models in the rulemaking and policy directives. (Alt. Rule 8.02.2.4).

As mentioned above, the CBA describes an induced travel elasticity of 0.67, the most conservative estimate in the literature. Such a low elasticity is likely to overestimate the traffic congestion relief benefits and underestimate the environmental impacts of highway capacity projects. [A recent study](#) from leading experts on the subject of induced vehicle travel, which was also cited in the CBA, recommends using an induced travel elasticity of 1.0 for freeways and 0.75 for arterials.³⁶ We have incorporated these limits in Alt. Rule 8.02.2.1. We recognize the induced demand elasticity for a new Express Lane carrying HOV, HOT, and transit vehicles may be lower than that of a new general purpose lane, but the [research suggests](#) that new Express Lanes still create additional VMT on the system.³⁷ CDOT and MPOs should work together to establish a reliable induced demand elasticity for different roadway lane types.

In addition to the higher induced demand elasticity, we recommend adding provisions to Section 8.03.2 to create requirements for the Intergovernmental Agreement on the modeling. These recommendations will ensure that CDOT and all the MPOs are using consistent models and assumptions, and create a process to periodically review, reassess, and refine the models based on how well they perform against real-world data.

3.2. Require CDOT and MPOs to consider local land use when modeling the GHG and VMT impacts of individual transportation projects and establish criteria to reward projects that reduce VMT per capita through additional transportation-efficient land use strategies.

In order to achieve a 1.5 MMT reduction by 2030, CDOT’s model assumes that 75% of new population and employment growth will occur in urban mixed-use areas in the DRCOG region and 50% for other MPOs. This scenario is the inverse of current trends where [76% of lots under development](#) in the Denver metro-area are in Adams, Arapahoe, and Douglas counties – mostly new subdivisions on undeveloped land with little access to transit or jobs and services within walking distance.³⁸ While it’s possible for some of the proposed GHG Mitigation Measures to promote infill development, hitting such targets will require a more comprehensive approach to better integrate transportation and land use planning.

³⁶ Volker, Jamey M. B., et al. “Induced Vehicle Travel in the Environmental Review Process.” Transportation Research Record, vol. 2674, no. 7, July 2020, pp. 468–479, doi:10.1177/0361198120923365.

³⁷ Caltrans Division of Transportation Planning, “Caltrans Greenhouse Gas Emissions and Mitigation Report,” Pg. 22. <Exhibit 2>

³⁸ John Aguilar, DENVER’S SUBURBS LOOKING DECIDEDLY MORE URBAN, BUT ARE THEY AFFORDABLE ENOUGH? Denver Post, June 6, 2021. <https://www.denverpost.com/2021/06/06/denver-suburbs-housing-market-design-affordability/>

To maximize the VMT and GHG reductions, the rule should harness the synergistic effects of multiple transportation and land use policies working together. More investment in multimodal transportation is essential to reducing VMT, but it must be coupled with smart land use policies to locate housing, jobs, schools, grocery stores, and other services in close proximity to one another. Such policies reduce the number and distance of vehicle trips while also creating enough density to support high-frequency transit service and commercial development within walking distance.

DRCOG’s Metro Vision 2050 [Scenario Modeling](#) compares a number of different transportation and land use scenarios to identify potential pathways to achieve their Metro Vision GHG and VMT performance measures.³⁹ One scenario would invest \$16 billion in transit over 30 years, resulting in a 2% decrease in VMT per capita by 2050 against a business-as-usual scenario. A second scenario combines the same \$16 billion transit investment with a land use scenario that focuses two-thirds of all new housing and employment in existing urban centers and along high-frequency transit corridors. The result is a 25% reduction in VMT per capita. Smart land use is a force multiplier for GHG and VMT reductions.

CDOT and MPOs are required by Senate Bill 21-260 to “consider the role of land use in the transportation planning process and develop strategies to encourage land use decisions that reduce vehicle miles traveled and greenhouse gas emissions.” [C.R.S §43-1-128](#). The rule should incorporate land use metrics in the evaluation of each transportation project by requiring CDOT and MPOs to:

- Measure the VMT and VMT per capita impacts of individual transportation projects in all planning and programming, including the RTPs and 10 Year Plans, and the TIP and Four-Year Prioritized Plan project selection process,
- Consider local land use and development patterns and the extent to which they contribute to VMT per capita reductions for the proposed transportation project,
- Prioritize projects that incorporate additional smart growth strategies such as upzoning, mixed-use infill development, and transit-oriented development, and
- Create a bonus for projects that advance equity by incorporating affordable housing and TDM programs that lower the combined housing and transportation costs for low-income households.

CDOT should develop a calculator that shows the VMT per capita reductions possible from all types of projects, including zoning reform, adding housing, residential and commercial density, travel demand management, parking reform, parking pricing, roadway pricing, managed lanes, bike lanes, sidewalks, and transit service. The [Virginia DOT’s Smart Scale](#) uses a land use metric to evaluate project benefits based on the proposed or projected square footage of each

³⁹ DRCOG, 2050 Metro Vision Regional Transportation Plan Scenario Planning, Technical Memo, August 2020. https://drcog.org/sites/default/files/Scenario_Planning_Technical_Memo.pdf

development site, proximity to the transportation project, project status, and disproportionately-impacted community status to reflect the magnitude of the GHG and VMT impact.⁴⁰ The scoring rubric also includes accessibility criteria to measure a project’s ability to improve access to jobs for the community as a whole, and for disproportionately-impacted populations.

Another example is the City of San Jose’s [VMT Evaluation Tool](#), which measures the degree to which a proposed land use project impacts VMT. The City established VMT per capita “thresholds” or targets at 15% below the city-wide average. New developments that are found to exceed those thresholds must implement VMT reduction strategies to increase density, support housing affordability, improve multimodal infrastructure, reduce auto parking supply, or implement TDM programs.⁴¹ CDOT and the MPOs should work with local governments to develop similar tools that calculate the VMT impacts of proposed transportation projects in different land use scenarios. Projects that integrate and leverage multiple VMT reduction strategies (land use, multimodal infrastructure, parking policies, and TDM programs) should be prioritized for funding.

3.3. Track our progress on transportation-efficient land use by including housing, transit access, and location-efficiency metrics in the GHG Transportation Report.

Some examples might include:

- Total number of housing units and jobs within each city and county,
- Share of housing and employment within half-mile of high-frequency transit stations or within a quarter mile of high-frequency bus stops *,
- A description of steps taken to promote infill development in urban mixed-use areas and near transit stations,
- Change in the share of population and employment located in areas with high non-work accessibility **,
- Changes in regional population-weighted density *,
- Share of the region's population living in areas with affordable housing and transportation costs *,
- Share of population in disproportionately impacted communities with access to high-quality transit, biking, and walking infrastructure.

* Existing DRCOG Metro Vision performance measure

** Virginia DOT Smart Scale criteria

⁴⁰ Virginia Department of Transportation, “Smart Scale Technical Guide: Funding the Right Transportation Projects in Virginia,” 2020. <http://smartscale.org/documents/2020documents/rd3tord4trackchanges06012020.pdf>

⁴¹ City of San Jose, “Transportation Analysis Handbook,” 2020.

<https://www.sanjoseca.gov/home/showpublisheddocument/28461/637378425915570000>

4. IMPLEMENTATION AND ENFORCEMENT

4.1. Continue to include CDOT's Four Year Prioritized Plans and the MPO TIPs in the definition of Application Planning Documents.

In addition to the long-term 10-Year Plan and Regional Transportation Plans (RTPs), the GHG and VMT reduction targets must also apply to the short-term Four-Year Prioritized Plans and TIPs, as currently proposed in the rule. Our true transportation policy is how we spend our money, so the GHG Planning Rule must apply to both plans and programs. The TIP process is where individual transportation projects in the RTPs compete for funding and are prioritized based on their ability to advance our safety, mobility, environmental, and other goals. It is important to note that not all the projects listed in the RTPs are funded or built, so the projected GHG benefits from the full list of projects are not guaranteed. In contrast, projects in the TIP are awarded funding and advanced toward the construction phase.

Colorado should learn from the experience of California. In 2008, the California legislature passed [Senate Bill 375](#), which created transportation GHG budgets for each MPO in the state. The state followed up in 2013 with [Senate Bill 743](#), establishing VMT as the most appropriate metric to evaluate transportation impacts on climate and setting statewide and per capita VMT reduction targets. Despite these ambitious policies and targets, California has been unsuccessful in curbing VMT and transportation GHG pollution, partially because SB375 only applies to the long-term plans and not the near-term programs (TIPs). A [review of the policy](#) from researchers at UC Berkeley suggested that “allocation formulae could reward MPOs for reducing VMT and GHG emissions sooner rather than later, discouraging MPOs from delaying implementation of GHG-reducing projects like transit and active transportation to later years.”⁴²

4.2. Create interim GHG and VMT reduction targets to align with the adoption of the TIPs and CDOT's Four-Year Prioritized Plans.

RTPs, like DRCOG's Metro Vision 2050, outline 10-year “staging periods” and assign projects for each decade: 2021-2030, 2031-2040, and 2041-2050. In contrast, the TIPs cover a four-year project funding cycle and are adopted every two years (e.g., DRCOG's 2020-2023 and 2022-2025 TIPs). To address this, the rule should set linear GHG and VMT reduction paths with annual targets that align with the adoption of transportation plans and programs.

⁴² Sciara, Gian-Claudia Lee, Amy E. “Allocating Transportation Revenues to Support Climate Policies in California and Beyond.” 2018. <https://escholarship.org/uc/item/6vs3v6wh>

4.3. Update the definition of “multimodal” to focus on transit, biking, walking, TDM and other projects that increase access to non-auto modes of transportation and reduce VMT and GHGs. (Alt. Rule 1.34)

Change the definition of “multimodal” to match the definition of “multimodal projects” in Senate Bill 260.

- Current definition in Section 1.33: “Multimodal - an integrated approach to transportation that takes into account all modes of travel, such as bicycles and walking, personal mobility devices, buses, transit, rail, aircraft, and motor vehicles.”
- Proposed alternative definition from Senate Bill 260, Section 50: ““Multimodal projects” means capital or operating costs for fixed route and on-demand transit, transportation demand management programs, multimodal mobility projects enabled by new technology, multimodal transportation studies, modeling tools, greenhouse gas mitigation projects, and bicycle or pedestrian projects.”

4.4. Apply the targets to all five MPOs on the same timeline and create interim GHG and VMT reduction targets to align with the adoption of the TIPs and CDOT’s Four-Year Prioritized Plans. (Alt. Rule 1.03 - definition of “Applicable Planning Documents”)

Unlike local air pollutants, GHG emissions are a global issue. Therefore, any statewide climate policy should apply to all five MPOs on the same timeline. Combined, the three MPOs that are exempt from meeting the 2025 GHG reduction targets in the proposed rule – Grand Valley, Pikes Peak Area Council of Governments (COG), and Public Area COG – represent nearly a quarter of the total state population. These organizations also represent some of the most urban communities in the state and therefore, have the greatest potential to reduce transportation pollution through shorter vehicle trips, greater walkability and bikeability, and transit-supportive density. By applying the rule to all five MPOs on the same timeline, CDOT will increase the near-term GHG reductions from the rule and maximize our chances of hitting the HB21-1261 climate targets.

4.5. Restrict use of waivers. If a waiver is granted, funds should be restricted until the MPO or TPR comes back into compliance with VMT and GHG reduction targets. (Alt. Rule 8.05.2.1.3)

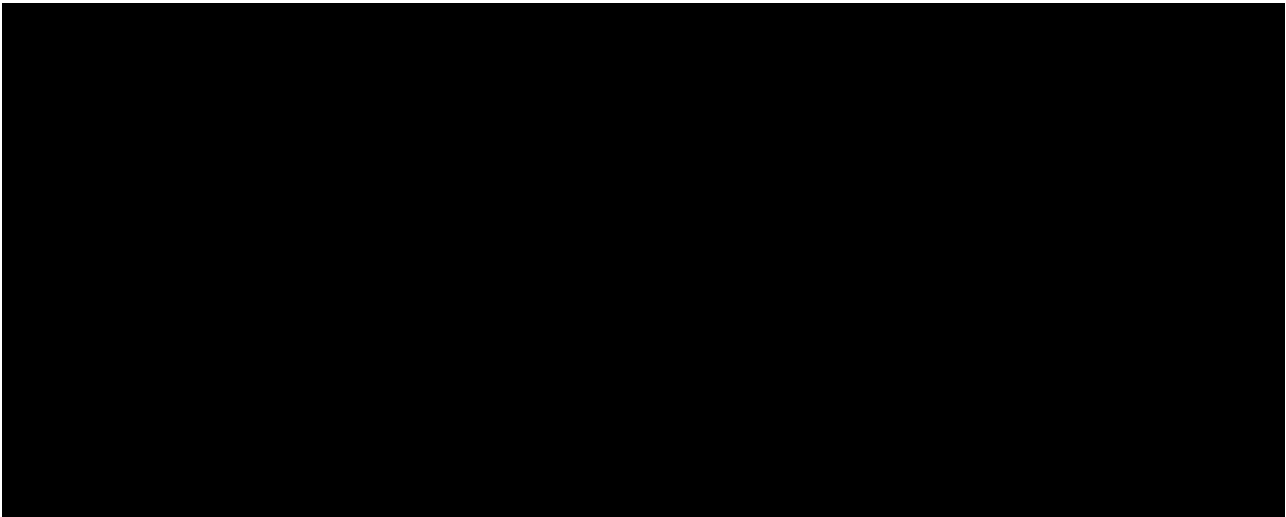
The Environmental Coalitions' proposal attempts to limit waivers to a one-time use only. Once a waiver has been granted, the funds should be restricted to the MPO or TPR until they can demonstrate compliance with both GHG pollution and VMT reductions.

CONCLUSION

Our present transportation planning policies are failing us. Whether it is measured by increased traffic, sprawling subdivisions, poor air quality, or our changing climate – our present path is unsustainable.

House Bill 121-1266 and Senate Bill 21-260 represent a sea change in Colorado. The rules are a fair but inadequate effort to meet either the requirements of the legislation or the challenges of our time. We look forward to continuing to work with the CDOT staff and other stakeholders to design a rule that will reduce GHG pollution, address inequities in our transportation planning policies, and offer a better future for Colorado.

Respectfully submitted on October 8th, 2021,



LIST OF EXHIBITS

1. M. G. Boarnet and S. L. Handy. “A Framework for Projecting the Potential Statewide Vehicle Miles Traveled (VMT) Reduction from State-Level Strategies in California.” University of California Davis, 2017.
<https://escholarship.org/content/qt2z48105j/qt2z48105j.pdf?t=psmhhh&v=lg>
2. Caltrans Division of Transportation Planning, “Caltrans Greenhouse Gas Emissions and Mitigation Report,” Final Report August 2020. <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/ghg-emissions-and-mitigation-report-final-august-2-2020-revision9-9-2020-a11y.pdf>
3. Alarfah, A., Griffin, W., Samaras, C., “Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel,” 2020. Pg. 5.
<https://iopscience.iop.org/article/10.1088/1748-9326/ab7c89>
4. Kevin Fang and Jamey Volker, “Cutting Greenhouse Gas Emissions is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled,” National Center for Sustainable Transportation, 2017. University of California. <https://escholarship.org/uc/item/4h5494vr>
5. Christopher W. Tessum et. al., “Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure.” 2019.
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7. California Department of Transportation, “Draft Transportation Analysis Framework: Induced Travel Analysis”, 2020. <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-04-13-taf-a11y.pdf>

APPENDIX I: ALTERNATIVE RULES AND STATEMENT OF BASIS AND PURPOSE

ENVIRONMENTAL COALITION'S 10/8/2021 REDLINES

DEPARTMENT OF TRANSPORTATION

Transportation Commission

RULES GOVERNING STATEWIDE TRANSPORTATION PLANNING PROCESS AND TRANSPORTATION PLANNING REGIONS

2 CCR 601-22

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

August 13, 2021, Version

Please note the following formatting key:

Font Effect	Meaning
<u>Underline</u>	New Language
Strikethrough	Deletions
[Blue Font Text]	Annotation
<u>Blue underlined</u>	<u>Conservation Community edits</u>

STATEMENT OF BASIS AND PURPOSE, ~~AND STATUTORY AUTHORITY~~ AND PREAMBLE

The purpose of the Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (Rules) is to prescribe the statewide transportation planning process through which a long-range ~~multimodal~~Multimodal, comprehensive ~~statewide~~Statewide transportation~~Transportation plan~~Plan will be developed, integrated, updated, and amended by the Colorado Department of Transportation (Department ~~or CDOT~~), in cooperation with local governments, Metropolitan Planning Organizations (~~MPOs~~), Regional Planning Commissions, Indian tribal governments, relevant state and federal agencies, the private sector, transit and freight operators, ~~special interest groups~~, and the general public. This cooperative process is designed to coordinate regional transportation planning, guided by the statewide transportation policy set by the Department and the ~~transportation~~Transportation ~~commission~~Commission of Colorado ("Commission"), as a basis for developing the ~~statewide~~Statewide transportation~~Transportation plan~~Plan. The result of the statewide transportation planning process shall be a long-range, financially feasible, environmentally sound, ~~multimodal~~Multimodal transportation system plan for Colorado ~~that will reduce traffic and smog and reduce Colorado's Greenhouse Gas (GHG) emissions~~.

Further, the purpose of the Rules is to define the state's Transportation Planning Regions for which long-range Regional Transportation Plans are developed, prescribe the process for conducting and initiating transportation planning in the non-MPO Transportation Planning Regions and coordinating with the ~~Metropolitan Planning Organizations~~MPOs for planning in the metropolitan areas. Memoranda of Agreement (MOA) that serve as the Metropolitan Planning Agreements (MPAs) ~~per~~per ~~pursuant to~~ 23 C.F.R. § 450 between the Department, each MPO, and applicable transit provider(s) further prescribe the transportation planning process in the MPO ~~transportation~~Transportation planning~~Planning regions~~Regions. In addition, the purpose of the Rules is to describe the organization and function of the

Statewide Transportation Advisory Committee (STAC) as established by § 43-1-1104, Colorado Revised Statutes (C.R.S.).

The Rules are promulgated to meet the intent of both the U.S. Congress and the Colorado General Assembly for conducting a continuing, cooperative, and comprehensive statewide performance-based ~~multimodal~~Multimodal transportation planning process for producing a Statewide Transportation Plan and Regional Transportation Plans that address the transportation needs of the ~~state~~State. This planning process, through comprehensive input, results in systematic project prioritization and resource allocation.

The Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of Multimodal, cost-effective, and environmentally sound means of transportation which leads to cleaner air and reduced traffic. The Rules reflect the Commission's and the Department's focus on Multimodal transportation projects including highways, transit, rail, bicycles and pedestrians. Section 8 of these Rules establishes an ongoing administrative process for identifying, measuring, confirming, and verifying those best practices and their impacts, so that CDOT and MPOs can easily apply them to their plans in order to achieve the pollution and Vehicle Miles Traveled reduction levels required by these Rules.

The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103 (5), C.R.S., and § 43-1-106 (8)(k), C.R.S.

Preamble for 2018 Rulemaking

In 2018, rulemaking was initiated to update the rules to conform to recently passed federal legislation, update expired rules, clarify the membership and duties of the ~~Statewide Transportation Advisory Committee~~STAC pursuant to HB 16-1169 and HB 16-1018, and to make other minor corrections. ~~The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements contained in 23 United States Code (U.S.C.) §§ 134, 135 and 150, Pub. L. No. 114-94 (Fixing America's Surface Transportation Act or the "FAST Act") signed into law on December 4, 2015, and its implementing regulations, where applicable, contained in 23 Code of Federal Regulations (C.F.R.) Part 450, including Subparts A, B and C and 25 C.F.R. § 170.421 in effect as of August 1, 2017, which are hereby incorporated into the Rules by this reference, and do not include any later amendments. All referenced laws and regulations shall be available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.~~

~~Copies of the referenced United States Code may be obtained from the following address:~~

~~Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2414~~

~~Copies of the referenced Code of Federal Regulations may be obtained from the following address:~~

~~U.S. Government Publishing Office
732 North Capitol Street, N.W.
Washington, DC 20401
(202) 512-1800~~

~~The Statewide Planning Rules, governing the statewide planning process, emphasize Colorado's continually greater integration of multimodal, cost-effective and environmentally sound means of transportation. The Rules reflect the Department's focus on multimodal transportation projects including highways, aviation, transit, rail, bicycles and pedestrians.~~

~~The Rules are promulgated by the Commission pursuant to the specific statutory authority in § 43-1-1103(5), C.R.S., and § 43-1-106(8)(k), C.R.S. The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.~~

Preamble for 2021 Rulemaking

Overview

Section 8 of these Rules establishes Greenhouse Gas (GHG) pollution reduction planning levels for transportation that will improve air quality, reduce smog, [start to address inequities in our transportation system](#), and provide more sustainable options for travelers across Colorado. The purpose of these requirements is to limit the GHG pollution [and provide more transportation options](#) which would result from the transportation system if the plan was implemented, consistent with the state greenhouse gas pollution reduction roadmap. This is accomplished by requiring CDOT and MPOs to establish plans that meet targets through a mix of [long-range and short-term](#) projects that limit and mitigate air pollution and improve quality of life and Multimodal options. CDOT and MPOs will be required to demonstrate through travel demand modeling and approved air quality modeling that statewide and regional aggregate emissions [and net Vehicle Miles Traveled](#) resulting from its state or regional plans do not exceed a specified levels. In the event that a plan fails to comply, CDOT and MPOs have the option to commit to implementing GHG Mitigation Measures that provide travelers with cleaner and more equitable transportation options such as safer pedestrian crossings and sidewalks, better transit and transit-access, or infrastructure that supports access to housing, jobs, and retail.

Examples of these types of mitigations, which also benefit quality of place and the economic resilience of communities, will include but not be limited to: adding bus rapid transit facilities and services, enhancing first-and-last mile connections to transit, adding bike-sharing services including electric bikes, improving pedestrian facilities like sidewalks and safe accessible crosswalks, investments that support vibrant downtown density and local zoning decisions that favor sustainable building codes and inclusive multi-use facilities downtown, and more. The process of identifying and approving mitigations will be established by a policy process that allows for ongoing innovations from [MPOs](#), local governments, [impacted communities](#), and other partners to be considered on an iterative basis.

[The process of identifying and approving mitigations will also be conducted in conjunction with Disproportionately Impacted Communities to ensure that approved mitigations are equitable. This process will be facilitated by the adoption, by rule or policy, of a Transportation Equity Framework. In order to address past inequities, and to prevent perpetuating inequitable practices, no projects will be allowed that will cause adverse environmental or public health impacts to a Disproportionately Impacted Community that is already experiencing degraded environmental conditions relative to the state population unless those environmental or public health impacts are entirely mitigated. Additionally, the benefits of projects and mitigation measures to decrease GHG pollution and VMT should directly benefit populations in Disproportionately Impacted Communities at a percentage that is commensurate with the percentage of population in the planning area within Disproportionately Impacted Communities.](#)

If compliance still cannot be demonstrated, even after committing to GHG Mitigation Measures, the Commission shall restrict the use of certain funds, requiring that dollars be focused on projects that help reduce transportation emissions, [reduce Vehicle Miles Traveled](#), and are recognized as approved mitigations. These requirements address the Colorado General Assembly's directive to reduce statewide GHG pollution in § 25-7-102(2)(g), C.R.S., [while reducing vehicle miles traveled, § 43-1-128\(3\), C.R.S](#) as well as the directive for transportation planning to consider environmental stewardship and reducing GHG emissions, § 43-1-1103(5), C.R.S. [in a manner that addresses the inequities of our current transportation system on disproportionately impacted communities. § 43-1-128 C.R.S.](#)

Context of Section 8 of these Rules Within Statewide Objectives

The passage of House Bill (HB)19-1261 set Colorado on a course to dramatically reduce GHG emissions across all sectors of the economy. In HB 19-1261, now codified in part at §§ 25-7-102(2) and 105(1)(e), C.R.S., the General Assembly declared that “climate change adversely affects Colorado’s economy, air quality and public health, ecosystems, natural resources, and quality of life[.]” acknowledged that “Colorado is already experiencing harmful climate impacts[.]” and that “many of these impacts

disproportionately affect” certain Disproportionately Impacted Communities. see § 25-7-102(2), C.R.S. The General Assembly also recognized that “[b]y reducing [GHG] pollution, Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment.” see § 25-7-102(2)(d), C.R.S.

Since 2019, the State has been rigorously developing a plan to achieve the ambitious GHG pollution reduction goals in § 25-7-102(2)(g), C.R.S. In January 2021, the State published its Greenhouse Gas Pollution Reduction Roadmap (Roadmap). The Roadmap identified the transportation sector as the single largest source of statewide GHG pollution as of 2020, with passenger vehicles the largest contributor within the transportation sector. Additionally, the Roadmap determined that emissions from transportation are a “significant contributor to local air pollution that disproportionately impacts lower-income communities and communities of color.” see Roadmap, p. XII.

A key finding in the Roadmap recognized that “[m]aking changes to transportation planning and infrastructure to reduce growth in driving is an important tool” to meet the statewide GHG pollution reduction goals. see Roadmap, p. 32. Section 8 of these Rules also advances the State’s goals to reduce emissions of other harmful air pollutants, including ozone.

Why the Commission is Taking This Action

Senate Bill 21-260, signed into law by the Governor on June 17, 2021, and effective upon signature, includes a new § 43-1-128, C.R.S., which directs CDOT and MPOs to engage in an enhanced level of planning, modeling and other analysis to minimize the adverse environmental and health impacts of planned transportation capacity projects. Section 43-1-128, C.R.S. also directs CDOT and the Commission to take steps to account for the impacts of transportation capacity projects on GHG pollution and Vehicle Miles Traveled and to help achieve statewide GHG pollution targets established in § 25-7-102(2)(g), C.R.S.

Under Colorado law governing transportation planning, CDOT is charged with and identified as the proper body for “developing and maintaining the state transportation planning process and the state transportation plan” in cooperation with Regional Planning Commissions and local government officials. see § 43-1-1101, C.R.S.

The Commission is responsible for formulating policy with respect to transportation systems in the State and promulgating and adopting all CDOT financial budgets for construction based on the Statewide Transportation Improvement Programs. see § 43-1-106(8), C.R.S. The Commission is statutorily charged “to assure that the preservation and enhancement of Colorado’s environment, safety, mobility and economics be considered in the planning, selection, construction and operation of all transportation projects in Colorado.” see § 43-1-106(8)(b), C.R.S. In addition, the Commission is generally authorized “to make all necessary and reasonable orders, rules and regulations in order to carry out the provisions of this part . . .” see § 43-1-106(8)(k), C.R.S.

As such, CDOT and the Commission are primarily responsible for ensuring compliance with GHG [and Vehicle Miles Traveled](#) reductions in transportation planning.

What Relevant Regulations Currently Apply to Transportation Planning

Transportation planning is subject to both state and federal requirements. Under federal law governing transportation planning and federal-aid highways, it is declared to be in the national interest to promote transportation systems that accomplish a number of mobility objectives “while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes...” see 23 U.S.C. § 134; see *also* 23 U.S.C. § 135(a)(1). In the metropolitan planning process, consideration must be given to projects and strategies that will “protect and enhance the environment, promote energy conservation, improve the quality of life...” see 23 U.S.C. § 134(h)(1)(E); see *also* 23 C.F.R. Part 450, Subpart B (federal regulations governing statewide transportation planning and programming). The same planning objective applies to statewide transportation planning. see 23 U.S.C. § 135(d)(1)(E); see *also* 23 C.F.R. Part 450, Subpart C (governing metropolitan transportation planning and programming). Further, the Statewide Transportation Plan shall be developed, as appropriate, in consultation with State...local agencies responsible for...environmental protection...” see 23 U.S.C. § 135(f)(2)(D)(i).

Under conforming Colorado law, the Statewide Transportation Plan is developed by integrating and consolidating Regional Transportation Plans developed by MPOs and regional transportation planning organizations into a “comprehensive statewide transportation plan” pursuant to rules and regulations promulgated by the Commission. see § 43-1-1103(5), C.R.S. The Statewide Transportation Plan must address a number of factors including, but not limited to, “environmental stewardship” and “reduction of greenhouse gas emissions.” see § 43-1-1103(5)(h) and (j), C.R.S.

Regional Transportation Plans must account for the “expected environmental, social, and economic impacts of the recommendations in the plan, including a full range of reasonable transportation alternatives...in order to provide for the transportation and environmental needs of the area in a safe and efficient manner.” see § 43-1-1103(1)(d), C.R.S. Further, in developing Regional Transportation Plans, MPOs “[s]hall assist other agencies in developing transportation control measures for utilization in accordance with state...regulations...and shall identify and evaluate measures that show promise of supporting clean air objectives.” see § 43-1-1103(1)(e), C.R.S.

Putting Section 8 of these Rules into Perspective

Section 8 establishes GHG regulatory requirements that are among the first of their kind in the U.S. However, from an air pollutant standpoint, connecting transportation planning to emissions is not a new policy area. In fact, transportation conformity provisions within the Clean Air Act approach ozone much the same way. Transportation conformity ensures that federally funded or approved highway and transit activities within a Nonattainment Area are consistent with or “conform to” a state’s plan to reduce emissions. Colorado’s front range has been in ozone nonattainment for many years, which has required the North Front Range and the Denver Regional Council of Governments’ MPOs to demonstrate conformity with each plan adoption and amendment.

However, because the transportation sector encompasses the millions of individual choices people make every day that have an impact on climate, a variety of strategies are necessary to achieve the State’s climate goals. Section 8 of these Rules is one of many steps needed to achieve the totality of reduction goals for the transportation sector.

Purpose of GHG Mitigation Measures

The transportation modeling conducted for this rulemaking may demonstrate that certain projects increase GHG pollution for a variety of reasons. These reasons may include factors such as induced demand as a result of additional lane mileage attracting additional vehicular traffic, or additional traffic facilitated by access to new commercial or residential development in the absence of public transit options or bicycle/pedestrian access that provides consumers with other non-driving options. Transportation infrastructure itself can also increase or decrease GHG and other air pollutants by virtue of factors like certain construction materials, removal or addition of tree cover that captures carbon pollution, or integration with vertical construction templates of various efficiencies that result in higher or lower levels of per capita energy use. The pollution impacts of various infrastructure projects will vary significantly depending on their specifics and must be modeled in a manner that is context-sensitive to a range of issues such as location, footprint of existing infrastructure, design, and how it fits together with transportation alternatives.

Furthermore, other aspects of transportation infrastructure can facilitate reductions in [Vehicle Miles Traveled and](#) emissions and thus serve as mitigations rather than contributors to pollution. For example, the addition of transit resources in a manner that can displace Vehicle Miles Traveled can reduce emissions. Moreover, improving downtown pedestrian and bike access, particularly in areas that allow individuals to shift multiple daily trips for everything from work to dining to retail, can improve both emissions and quality of life.

[Reduction of Vehicle Miles Traveled through planning is one of the more effective GHG Mitigation measures. It is also a separate goal identified in legislation. See § 43-1-128, C.R.S. Reducing Vehicle Miles Traveled is necessary for meeting Colorado’s GHG reduction goals, but there are numerous co-benefits such as reductions in vehicle fatalities, air pollution, water pollution, wildlife mortality, and traffic congestion, while improving public health, worker productivity, and Colorado’s economy.](#)

There is an increasing array of proven best practices for reducing pollution and smog and improving economies and neighborhoods that can help streamline decision-making for state and local agencies developing plans and programs of projects.

[Note: The Commission proposes to repeal Section 1 of these Rules in its entirety and re-enact Section 1 of these Rules below to re-format the numbering of the administrative rules into alphabetical order.]

[Note: The Commission proposes to add nineteen (19) new definitions. New proposed defined terms include: Applicable Planning Document, Approved Air Quality Model, Baseline, Carbon Dioxide Equivalent, Congestion Mitigation and Air Quality, Disproportionately Impacted Communities, Four-Year Prioritized Plan, Greenhouse Gas, Greenhouse Mitigation Measures, Greenhouse Gas Reduction Levels, Mitigation Action Plan, MPO Model, Multimodal Transportation and Mitigation Options Fund, Regionally Significant Project, State Interagency Consultation Team, Statewide Travel Model, Surface Transportation Block Grant, Vehicle Miles Traveled, and 10-Year Plan. Only minor non-substantive changes, such as correcting grammar errors or capitalizing defined terms, were made to the existing forty-six (46) defined terms.]

1.00 Definitions.

- 1.01 Accessible - ensure that reasonable efforts are made that all meetings are reachable by persons from households without vehicles and that the meetings will be accessible to persons with disabilities in accordance with the Americans with Disabilities Act (ADA), and also accessible to persons with Limited English Proficiency. Accessible opportunities to comment on planning related matters include those provided on the internet and through such methods as telephone town halls.
- 1.02 Activity-Based Model - estimates travel demand based on individual daily activity patterns. The model predicts the type of activity, the time the activity occurs, the activity location, the activity duration, the number of individual trips, and the travel mode choice.
- 1.03 Applicable Planning Document - refers to MPO Fiscally Constrained RTPs, TIPs for MPOs in NAAs, CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas, and amendments to the MPO RTPs and CDOT's 10-Year Plan and Four-Year Prioritized Plan in non-MPO areas that include the addition of Regionally Significant Projects.
- 1.04 Approved Air Quality Model - the most recent Environmental Protection Agency issued model that quantifies GHG emissions from transportation.
- 1.05 Attainment Area - any geographic region of the United States that meets the national primary or secondary National Ambient Air Quality Standards (NAAQS) for the pollutants as defined in the Clean Air Act (CAA) (Amendments of 1990).
- 1.06 Baseline - estimates of GHG emissions for each of the MPOs, and for the non-MPO areas, prepared using the MPO Models or the Statewide Travel Model. Estimates must include GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules.
- 1.07 Carbon Dioxide Equivalent (CO₂e) - a metric measure used to compare the emissions from various GHG based upon the 100-year global warming potential (GWP). CO₂e is multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO₂e (metric tons per year). This calculation allows comparison of different greenhouse gases and their relative impact on the environment over different time periods.
- 1.08 Commission - the Transportation Commission of Colorado created by § 43-1-106, C.R.S.
- 1.09 Congestion Mitigation and Air Quality (CMAQ) - a federally mandated program established in 23

- U.S.C § 149 to improve air quality in Nonattainment and Maintenance Areas for ozone, carbon monoxide, and particulate matter. References related to this program include any successor programs as established by the federal government.
- 1.10 Corridor - a transportation system that includes all modes and facilities within a described geographic area.
- 1.10 Corridor Vision - a comprehensive examination of a specific transportation Corridor, which includes a determination of needs and an expression of desired state of the transportation system that includes Transportation Modes and facilities over a planning period.
- 1.11 Department or CDOT - the Colorado Department of Transportation created by § 43-1-103, C.R.S.
- 1.12 Disproportionately Impacted Communities - defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%); or is any other community as identified or approved by a state agency, if: the community has a history of environmental racism perpetuated through redlining, anti-Indigenous, anti-immigrant, anti-Hispanic, or anti-Black laws; or the community is one where multiple factors, including socioeconomic stressors, disproportionate environmental burdens, vulnerability to environmental degradation, and lack of public participation, may act cumulatively to affect health and the environment and contribute to persistent disparities.
- 1.13 Division - the Division of Transportation Development within CDOT.
- 1.14 Division Director - the Director of the Division of Transportation Development.
- 1.15 Fiscally Constrained - the financial limitation on transportation plans and programs based on the projection of revenues as developed cooperatively with the MPOs and the rural TPRs and adopted by the Commission that are reasonably expected to be available over the long-range transportation planning period and the TIP and STIP programming periods.
- 1.16 Four-Year Prioritized Plan - a four-year subset of the 10-Year Plan consisting of projects prioritized for near-term delivery and partial or full funding.
- 1.17 Greenhouse Gas (GHG) - for purposes of these Rules, GHG is defined as the primary transportation greenhouse gases: carbon dioxide, methane, and nitrous oxide.
- ~~1.18 Greenhouse Gas (GHG) Reduction Level - the amount of the GHG expressed as CO₂e, reduced from the projected Baseline that CDOT and MPOs must attain through transportation planning.~~
- 1.19 Greenhouse Gas (GHG) Mitigation Measures - non-Regionally Significant Project strategies implemented by CDOT and MPOs that reduce transportation GHG pollution and reduce VMT and help meet the GHG and VMT Reduction Levels.
- 1.20 Induced Travel Elasticity - the percentage change in VMT / the percentage change in lane miles. An elasticity of 1.0 indicates that a given percent increase in lane miles will cause the same percent increase in VMT.
- 1.21 Intergovernmental Agreement - an arrangement made between two or more political subdivisions that form associations for the purpose of promoting the interest and welfare of said subdivisions.
- 1.22 Intermodal Facility - a site where goods or people are conveyed from one mode of transportation to another, such as goods from rail to truck or people from passenger vehicle to bus.
- 1.23 Land Use - the type, size, arrangement, and use of parcels of land.

- 1.24 Limited English Proficiency - individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
- 1.25 Long-Range Planning - a reference to a planning period with a minimum 20-year planning horizon.
- 1.26 Maintenance Area - any geographic region of the United States previously designated by the U.S. Environmental Protection Agency (EPA) as a Nonattainment Area pursuant to the Clean Air Act (CAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under § 175A of the CAA, as amended in 1990.
- 1.27 Memorandum of Agreement (MOA) - a written agreement between two or more parties on an intended plan of action.
- 1.28 Metropolitan Planning Agreement (MPA) - a written agreement between the MPO, the State, and the providers of public transportation serving the Metropolitan Planning Area that describes how they will work cooperatively to meet their mutual responsibilities in carrying out the metropolitan planning process.
- 1.29 Metropolitan Planning Area - a geographic area determined by agreement between the MPO for the area and the Governor, in which the metropolitan transportation planning process is carried out pursuant to 23 U.S.C. § 134.
- 1.30 Metropolitan Planning Organization (MPO) - an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the RTPs and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134.
- 1.31 Mitigation Action Plan - an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.
- 1.32 Mobility - the ability to move people, goods, services, and information among various origins and destinations.
- 1.33 MPO Models - one (1) or more of the computer-based models maintained and operated by the MPOs which depict the MPO areas' transportation systems (e.g., roads, transit, etc.) and development patterns (i.e., number and location of households and jobs) for a defined year (i.e., past, present, or forecast) and produce estimates of roadway VMT, delays, operating speeds, transit ridership, and other characteristics of transportation system use.
- 1.34 Multimodal Projects - capital or operating costs for fixed route and on-demand transit, transportation demand management programs, multimodal mobility projects enabled by new technology, multimodal transportation studies, modeling tools, greenhouse gas mitigation projects, and bicycle or pedestrian projects.
- 1.35 Multimodal Transportation and Mitigation Options Fund (MMOF) - a program created in the State Treasury pursuant to § 43-4-1003, C.R.S. which funds bicycle, pedestrian, transit and other Multimodal Projects as defined in § 43-4-1002(5), C.R.S. and GHG Mitigation projects as defined in § 43-4-1002(4.5), C.R.S.
- 1.36 National Ambient Air Quality Standards (NAAQS) - are those established by the U.S. Environmental Protection Agency for air pollutants considered harmful to public health and environment. These criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, small particles, and sulfur dioxide.
- 1.37 Nonattainment Area - any geographic region of the United States which has been designated by the EPA under section 107 of the CAA for any pollutants for which a NAAQS exists.
- 1.38 Non-Metropolitan Area - a rural geographic area outside a designated Metropolitan Planning

Area.

- 1.39 Plan Integration - a comprehensive evaluation of the statewide transportation system that includes all modes, an identification of needs and priorities, and key information from other related CDOT plans.
- 1.40 Planning Partners - local and tribal governments, the rural TPRs and MPOs.
- 1.41 Project Priority Programming Process - the process by which CDOT adheres to 23 U.S.C. § 135 and 23 C.F.R. Part 450 when developing and amending the STIP.
- 1.42 Regional Planning Commission (RPC) - a planning body formed under the provisions of § 30-28-105, C.R.S., and designated under these Rules for the purpose of transportation planning within a rural TPR.
- 1.43 Regionally Significant Project - a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. If the MPOs have received approval from the EPA to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.
- 1.44 Regional Transportation Plan (RTP) - a long-range plan designed to address the future transportation needs for a TPR including, but not limited to, Fiscally Constrained or anticipated funding, priorities, and implementation plans, pursuant to, but not limited to, § 43-1-1103, C.R.S. and 23 C.F.R. Part 450. All rural and urban TPRs in the state produce RTPs.
- 1.45 State Interagency Consultation Team - consists of the Division Director or the Division Director's designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director's designee, and the Director of each MPO or their designee.
- 1.46 State Transportation System - refers to all state-owned, operated, and maintained transportation facilities in Colorado, including, but not limited to, interstate highways, other highways, and aviation, bicycle and pedestrian, transit, and rail facilities.
- 1.47 Statewide Transportation Advisory Committee (STAC) - the committee created by § 43-1-1104, C.R.S., comprising one representative from each TPR and one representative from each tribal government to review and comment on RTPs, amendments, and updates, and to advise both the Department and the Commission on the needs of the transportation system in Colorado.
- 1.48 Statewide Transportation Improvement Program (STIP) - a Fiscally Constrained, multi-year, statewide, Multimodal program of transportation projects which is consistent with the Statewide Transportation Plan and planning processes, with Metropolitan Planning Area plans, Transportation Improvement Programs and processes, and which is developed pursuant to 23 U.S.C. § 135.
- 1.49 Statewide Travel Model - the computer-based model maintained and operated by CDOT which depicts the state's transportation system (roads, transit, etc.) and development scale and pattern (number and location of households, number and location of firms/jobs) for a selected year (past, present, or forecast) and produces estimates of roadway VMT and speed, transit, ridership, and other characteristics of transportation system use.
- 1.50 Statewide Transportation Plan - the long-range, comprehensive, Multimodal statewide

- transportation plan covering a period of no less than 20 years from time of adoption, developed through the statewide transportation planning process described in these Rules and 23 U.S.C. § 135, and adopted by the Commission pursuant to § 43-1-1103, C.R.S.
- 1.51 Surface Transportation Block Grant (STBG) - a flexible federal funding source established under 23 U.S.C. § 133 for state and local transportation needs. Funds are expended in the areas of the State based on population. References related to this program include any successor programs established by the federal government.
- 1.52 System Continuity - includes, but is not limited to, appropriate intermodal connections, integration with state modal plans, and coordination with neighboring RTPs, and, to the extent practicable, other neighboring states' transportation plans.
- 1.53 Traditionally Underserved - refers to groups such as seniors, persons with disabilities, low-income households, minorities, and student populations, which may face difficulties accessing transportation systems, employment, services, and other amenities.
- 1.54 Transit and Rail Advisory Committee (TRAC) - an advisory committee created specifically to advise the Executive Director, the Commission, and the Division of Transit and Rail on transit and rail-related activities.
- 1.55 Transportation Commonality - the basis on which TPRs are established including, but not limited to: Transportation Commission Districts, the Department's Engineering Regions, Travelsheds, Watersheds, geographic unity, existing Intergovernmental Agreements, and socioeconomic unity.
- 1.56 Transportation Equity Framework – policy to be created by the Department's Environmental Justice Division, that is informed by the state's Climate Equity Framework, and the Climate Equity Advisory Committee, codifying outreach practices and community empowerment in transportation planning and policy decisions. The Transportation Equity Framework must be developed in collaboration with environmental justice advocates and members of disproportionately-impacted communities.
- 1.57 Transportation Improvement Program (TIP) - a staged, Fiscally Constrained, multi-year, Multimodal program of transportation projects developed and adopted by MPOs, and approved by the Governor, which is consistent with an MPO's RTP and which is developed pursuant to 23 U.S.C. § 134.
- 1.58 Transportation Mode - a particular form of travel including, but not limited to, bus, motor vehicle, rail, transit, aircraft, bicycle, pedestrian travel, or personal mobility devices.
- 1.59 Transportation Planning and Programming Process - all collaborative planning-related activities including the development of regional and Statewide Transportation Plans, the Department's Project Priority Programming Process, and development of the TIPs and STIP.
- 1.60 Transportation Planning Region (TPR) - a geographically designated area of the state, defined by section 2.00 of these Rules in consideration of the criteria for Transportation Commonality, and for which a regional transportation plan is developed pursuant to the provisions of § 43-1-1102 and 1103, C.R.S. and 23 U.S.C. § 134. The term TPR is inclusive of these types: non-MPO TPRs, MPO TPRs, and TPRs with both MPO and non-MPO areas.
- 1.61 Transportation Planning Reduction Level - the amount of reduction of VMT and GHG (expressed as CO₂e) from the projected Baseline that CDOT and MPOs must attain through transportation planning.
- 1.62 Transportation Systems Planning - provides the basis for identifying current and future deficiencies on the state highway system and outlines strategies to address those deficiencies and make improvements to meet Department goals.
- 1.63 Travelshed - the region or area generally served by a major transportation facility, system, or Corridor.

- 1.64 Tribal Transportation Improvement Program (TTIP) - a multi-year Fiscally Constrained list of proposed transportation projects developed by a tribe from the tribal priority list or tribal long-range transportation plan, and which is developed pursuant to 25 C.F.R. Part 170. The TTIP is incorporated into the STIP without modification.
- 1.65 Urbanized Area - an area with a population of 50,000 or more designated by the Bureau of the Census.
- 1.66 Vehicle Miles Traveled (VMT), Net, the traffic volume of a roadway segment or system of roadway segments multiplied by the length of the roadway segment or system.
- 1.67 Vehicle Miles Traveled (VMT), Per Capita - is calculated as the total annual miles of vehicle travel divided by the total population in the state or in an urbanized area.
- 1.68 Watershed - a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.
- 1.69 10-Year Plan - a vision for Colorado's transportation system that includes a specific list of projects categorized across priority areas as identified in the Statewide Transportation Plan.

2.00 Transportation Planning Regions (TPR).

- 2.01 Transportation Planning Region Boundaries. ~~Transportation Planning Region~~TPRs are geographically designated areas of the state with similar transportation needs that are determined by considering transportation commonalities. Boundaries are hereby established as follows:
- 2.01.1 The Pikes Peak Area ~~Transportation Planning Region~~TPR comprises the Pikes Peak Area Council of Governments' metropolitan area within El Paso and Teller counties.
- 2.01.2 The Greater Denver ~~Transportation Planning Region~~TPR, which includes the Denver Regional Council of Governments' planning area, comprises the counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and parts of Weld.
- 2.01.3 The North Front Range ~~Transportation Planning Region~~TPR comprises the North Front Range Transportation and Air Quality Planning Council's metropolitan area within Larimer and Weld counties.
- 2.01.4 The Pueblo Area ~~Transportation Planning Region~~TPR comprises Pueblo County, including the Pueblo Area Council of Governments' metropolitan area.
- 2.01.5 The Grand Valley ~~Transportation Planning Region~~TPR comprises Mesa County, including the Grand Valley Metropolitan Planning Organization's metropolitan area.
- 2.01.6 The Eastern ~~Transportation Planning Region~~TPR comprises Cheyenne, Elbert, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Washington, and Yuma counties.
- 2.01.7 The Southeast ~~Transportation Planning Region~~TPR comprises Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.
- 2.01.8 The San Luis Valley ~~Transportation Planning Region~~TPR comprises Alamosa, Chaffee, Conejos, Costilla, Mineral, Rio Grande, and Saguache counties.
- 2.01.9 The Gunnison Valley ~~Transportation Planning Region~~TPR comprises Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel counties.
- 2.01.10 The Southwest ~~Transportation Planning Region~~TPR comprises Archuleta, Dolores, La Plata, Montezuma, and San Juan counties, including the Ute Mountain Ute and Southern Ute Indian Reservations.

- 2.01.11 The Intermountain ~~Transportation Planning Region~~ TPR comprises Eagle, Garfield, Lake, Pitkin, and Summit counties.
- 2.01.12 The Northwest ~~Transportation Planning Region~~ TPR comprises Grand, Jackson, Moffat, Rio Blanco, and Routt counties.
- 2.01.13 The Upper Front Range ~~Transportation Planning Region~~ TPR comprises Morgan County, and the parts of Larimer and Weld counties, that are outside both the North Front Range and the Greater Denver (metropolitan) TPRs.
- 2.01.14 The Central Front Range ~~Transportation Planning Region~~ TPR comprises Custer, El Paso, Fremont, Park, and Teller counties, excluding the Pikes Peak Area Council of Governments' metropolitan area.
- 2.01.15 The South Central ~~Transportation Planning Region~~ TPR comprises Huerfano, and Las Animas Counties.
- 2.02 Boundary Revision Process.
- 2.02.1 TPR boundaries, excluding any MPO-related boundaries, will be reviewed by the Commission at the beginning of each regional and statewide transportation planning process. The Department will notify counties, municipalities, MPOs, Indian tribal governments, and RPCs for the TPRs of the boundary review revision requests. MPO boundary review shall be conducted pursuant to 23 U.S.C. § 134 and 23 C.F.R. Part 450 Subpart B and any changes shall be provided to the Department to update the Rules. All boundary revision requests shall be sent to the Division Director, and shall include:
- 2.02.1.1 A geographical description of the proposed boundary change.
- 2.02.1.2 A statement of justification for the change considering transportation commonalities.
- 2.02.1.3 A copy of the resolution stating the concurrence of the affected ~~Regional Planning Commission~~ RPC.
- 2.02.1.4 The name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the contact person for the requesting party or parties.
- 2.02.2 The Department will assess and STAC shall review and comment (as set forth in these Rules) on all ~~non~~ ~~Non-metropolitan~~ ~~Metropolitan area~~ ~~Area~~ TPR boundary revision requests based on transportation commonalities and make a recommendation to the Commission concerning such requests. The Department will notify the Commission of MPO boundary changes. The Commission may initiate a rule-making proceeding under the ~~State~~ ~~Colorado~~ Administrative Procedure Act, § 24-4-103, C.R.S. to consider a boundary revision request. Requests received for a MPO or non-metropolitan TPR boundary revision outside of the regularly scheduled boundary review cycle must include the requirements identified above.
- 2.02.3 In the event that the Commission approves a change to the boundary of a TPR that has a ~~Regional Planning Commission~~ RPC, the RPC in each affected TPR shall notify the Department of any changes to the ~~intergovernmental~~ ~~Intergovernmental agreement~~ Agreement governing the RPC as specified in these Rules.
- 2.03 Transportation Planning Coordination with MPOs.
- 2.03.1 The Department and the MPOs shall coordinate activities related to the development

of ~~Regional Transportation Plan~~RTPs, the Statewide Transportation Plan, TIPs, and the STIP in conformance with 23 U.S.C. § 134 and 135 and § 43-1-1101 and § 43-1-1103, C.R.S. The Department shall work with the MPOs to resolve issues arising during the planning process.

2.04 Transportation Planning Coordination with Non-MPO RPCs.

2.04.1 The Department and RPCs shall work together in developing ~~Regional Transportation Plan~~RTPs and in planning future transportation activities. The Department shall consult with all RPCs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. In addition, the Department shall work with the RPCs to resolve issues arising during the planning process.

2.05 Transportation Planning Coordination among RPCs.

2.05.1 If transportation improvements cross TPR boundaries or significantly impact another TPR, the RPC shall consult with all the affected RPCs involved when developing the ~~regional transportation plan~~RTP. In general, RPC planning officials shall work with all ~~planning~~~~Planning partners~~~~Partners~~ affected by transportation activities when planning future transportation activities.

2.06 Transportation Planning Coordination with the Southern Ute and the Ute Mountain Ute Tribal Governments.

2.06.1 Regional transportation planning within the Southwest TPR shall be coordinated with the transportation planning activities of the Southern Ute and the Ute Mountain Ute tribal governments. The long-range transportation plans for the tribal areas shall be integrated in the Statewide Transportation Plan and the ~~Regional Transportation Plan~~RTP for this TPR. The TTIP is incorporated into the STIP without modification.

3.00 Statewide Transportation Advisory Committee (STAC).

3.01 Duties of the ~~Statewide Transportation Advisory Committee (STAC)~~. Pursuant to § 43-1-1104 C.R.S. the duties of the STAC shall be to meet as necessary and provide advice to both the Department and the Commission on the needs of the transportation system in Colorado including, but not limited to: budgets, ~~transportation improvement programs~~TIPs of the ~~metropolitan planning organizations~~MPOs, the ~~Statewide Transportation Improvement Program~~STIP, transportation plans, and state transportation policies.

The STAC shall review and provide to both the Department and the Commission comments on:

3.01.1 All ~~Regional Transportation Plan~~RTPs, amendments, and updates as described in these Rules.

3.01.2 Transportation related communication and/or conflicts which arise between RPCs or between the Department and a RPC.

3.01.3 The integration and consolidation of RTPs into the Statewide Transportation Plan.

3.01.4 Colorado's ~~mobility~~~~Mobility~~ requirements to move people, goods, services, and information by furnishing regional perspectives on transportation problems requiring interregional and/or statewide solutions.

3.01.5 Improvements to modal choice, linkages between and among modes, and transportation system balance and ~~system~~~~System~~ ~~continuity~~~~Continuity~~.

3.01.6 Proposed TPR boundary revisions.

3.02 Notification of Membership

- 3.02.1 Each RPC and tribal government shall select its representative to the STAC pursuant to § 43-1-1104(1), C.R.S. The Ute Mountain Ute Tribal Council and the Southern Ute Indian Tribal Council each appoint one representative to the STAC. Each TPR and tribal government is also entitled to name an alternative representative who would serve as a proxy in the event their designated representative is unable to attend a STAC meeting and would be included by the Department in distributions of all STAC correspondence and notifications. The Division Director shall be notified in writing of the name, title, mailing address, telephone number, fax number and electronic mail address (if available) of the STAC representative and alternative representative from each TPR and tribal government within thirty (30) days of selection.
- 3.03 Administration of ~~Statewide Transportation Advisory Committee~~ STAC
- 3.03.1 STAC recommendations on Regional and Statewide Transportation Plans, amendments, and updates shall be documented in the STAC meeting minutes, and will be considered by the Department and Commission throughout the statewide transportation planning process.
- 3.03.2 The STAC shall establish procedures to govern its affairs in the performance of its advisory capacity, including, but not limited to, the appointment of a chairperson and the length of the chairperson's term, meeting times, and locations.
- 3.03.3 The Division Director will provide support to the STAC, including, but not limited to:
- 3.03.3.1 Notification of STAC members and alternates of meeting dates.
 - 3.03.3.2 Preparation and distribution of STAC meeting agendas, supporting materials, and minutes.
 - 3.03.3.3 Allocation of Department staff support for STAC-related activities.
- 4.00 Development of Regional and Statewide Transportation Plans.**
- 4.01 ~~Regional Planning Commission~~ RPCs, MPOs, and the Department shall comply with all applicable provisions of 23 U.S.C. § 134 and § 135, 23 C.F.R. Part 450, and § 43-1-1103, C.R.S. and all applicable provisions of Commission policies and guidance documents in development of regional and statewide transportation plans, respectively.
- 4.02 Public Participation
- 4.02.1 The Department, in coordination with the RPCs of the rural TPRs, shall provide early and continuous opportunity for public participation in the transportation planning process. The process shall be proactive and provide timely information, adequate public notice, reasonable public access, and opportunities for public review and comment at key decision points in the process. [Adequate public participation for Disproportionately Impacted Communities requires utilizing best practice notice and engagement methods as outlined in the Transportation Equity Framework.](#) The objectives of public participation in the transportation planning process include: providing a mechanism for [directly-impacted communities to provide leadership](#), [share](#) perspectives, needs, and ideas to be considered in the planning process; developing the [Department's and](#) public's understanding of the problems and opportunities facing the transportation system; demonstrating explicit consideration and response to public input through a variety of tools and techniques; and developing consensus on plans. The Department shall develop a documented public participation process pursuant to 23 C.F.R. Part 450.
- 4.02.2 Statewide Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart B, the Department is responsible, in cooperation with the RPCs and MPOs, for carrying

out public participation for developing, amending, and updating the ~~statewide Statewide transportation-Transportation planPlan~~, the ~~Statewide Transportation Improvement Program (STIP)~~, [GHG Mitigation Plans](#), and other statewide transportation planning activities.

- 4.02.3 MPO Plans and Programs. Pursuant to 23 C.F.R. Part 450 Subpart C, the MPOs are responsible for carrying out public participation for the development of ~~regional transportation planRTPs~~, ~~transportation improvement programsTIPs~~, [GHG Mitigation Plans](#), and other related regional transportation planning activities for their respective ~~metropolitan-Metropolitan planning-Planning areasAreas~~. Public participation activities carried out in a metropolitan area in response to metropolitan planning requirements shall by agreement of the Department and the MPO, satisfy the requirements of this subsection.
- 4.02.4 Non-MPO TPR Plans and Programs. ~~Regional Planning CommissionRPCs~~ for non-MPO TPRs are responsible for public participation related to regional planning activities in that TPR, in cooperation with the Department. Specific areas of cooperation shall be determined by agreement between the ~~Regional Planning CommissionRPC~~ and the Department.
- 4.02.5 Public Participation Activities. Public participation activities at both the rural TPR and statewide level shall include, at a minimum:
- 4.02.5.1 Establishing and maintaining for the geographic area of responsibility a list of all known parties interested in transportation planning including, but not limited to: elected officials; municipal and county planning staffs; affected public agencies; local, state, and federal agencies eligible for federal and state transportation funds; local representatives of public transportation agency employees and users; freight shippers and providers of freight transportation services; public and private transportation providers; representatives of users of transit, bicycling and pedestrian, aviation, and train facilities; private industry; environmental and other interest groups; Indian tribal governments and the U.S. Secretary of the Interior when tribal lands are involved; and representatives of persons or groups that may be underserved by existing transportation systems, such as minority, low-income, seniors, persons with disabilities, [Disproportionately Impacted Communities](#), and those with ~~limited-Limited~~ English ~~proficiencyProficiency~~; and members of the general public expressing such interest in the transportation planning process.
- 4.02.5.2 Providing reasonable notice and opportunity to comment through mailing lists and other various communication methods on upcoming transportation planning-related activities and meetings. [Reasonable notice for Disproportionately Impacted Communities requires the notice to be translated in the major languages spoken in the community.](#)
- 4.02.5.3 Utilizing reasonably available internet or traditional media opportunities, including minority and diverse media, to provide timely notices of planning-related activities and meetings to members of the public, including ~~LEP-Limited English Proficiency~~ individuals, and others who may require reasonable accommodations. Methods that will be used to the maximum extent practicable for public participation could include, but not be limited to, use of the internet; social media, news media, such as newspapers, radio, or television, mailings and notices, including electronic mail and online newsletters.
- 4.02.5.4 [Implementation of the Transportation Equity Framework.](#) Seeking out those persons, ~~or~~ groups, [and communities Disproportionately Impacted or traditionally-Traditionally underserved-Underserved](#) by existing

- transportation systems including, but not limited to, seniors, persons with disabilities, minority groups, low- income, and those with ~~limited~~ Limited English ~~proficiency~~ Proficiency, for the purposes of exchanging information, increasing their involvement, ~~and~~ considering their transportation needs in the transportation planning process, responding to public input, and providing leadership opportunities to propose transportation projects in coordination with the Environmental Justice and Equity Branch. Pursuant to § 43-1-601, C.R.S., the Department shall prepare a statewide survey identifying the transportation needs of seniors and of persons with disabilities.
- 4.02.5.5 Consulting, as appropriate, with ~~Regional Planning Commission~~ RPCs, and federal, state, local, and tribal agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation concerning the development of long-range transportation plans.
- 4.02.5.6 Providing reasonable public access to, and appropriate opportunities for public review and comment on criteria, standards, and other planning-related information. Reasonable public access includes, but is not limited to, ~~LEP~~ Limited English Proficiency services and access to ADA-compliant facilities, as well as to the internet.
- 4.02.5.7 Where feasible, scheduling the development of regional and statewide plans so that the release of the draft plans may be coordinated to provide for the opportunity for joint public outreach.
- 4.02.5.8 Documentation of Responses to Significant Issues. ~~Regional Planning Commissions~~ RPCs and the Department shall respond in writing to all significant issues raised during the review and comment period on transportation plans, and make these responses available to the public.
- 4.02.5.9 Review of the Public Involvement Process. All interested parties and the Department shall periodically review the effectiveness of the Department's public involvement process to ensure that the process provides full and open access to all members of the public. When necessary, the process will be revised and allow time for public review and comment per 23 C.F.R. Part 450.
- 4.03 Transportation Systems Planning. ~~Regional Planning Commission~~ RPCs, and the Department, shall use an integrated ~~multimodal~~ Multimodal transportation ~~Transportation systems~~ Systems planning ~~Planning~~ approach in developing and updating the long-range ~~Regional Transportation Plans~~ RTPs and the long-range Statewide Transportation Plan for a minimum 20-year forecasting period. ~~Regional Planning Commission~~ RPCs shall have flexibility in the methods selected for ~~transportation~~ Transportation systems ~~Systems~~ planning ~~Planning~~ based on the complexity of transportation problems and available resources within the TPR. The Department will provide guidance and assistance to the ~~Regional Planning Commission~~ RPCs regarding the selection of appropriate methods.
- 4.03.1 Transportation ~~systems~~ Systems ~~planning~~ Planning by ~~Regional Planning Commission~~ RPCs and the Department shall consider the results of any related studies that have been completed. ~~Regional Planning Commission~~ RPCs and the Department may also identify any ~~corridor~~ Corridor(s) or sub-area(s) where an environmental study or assessment may need to be performed in the future.
- 4.03.2 Transportation ~~systems~~ Systems ~~planning~~ Planning by ~~Regional Planning Commission~~ RPCs shall consider ~~corridor~~ vision-needs and desired state of the transportation system including existing and future land use and infrastructure, major

activity centers such as industrial, commercial and recreation areas, economic development, environmental protection, and modal choices.

- 4.03.3 Transportation ~~systems~~ Systems planning ~~Planning~~ by Regional Planning Commission ~~RPCs~~ shall include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and ~~mobility~~ Mobility of people goods, and services.
- 4.03.4 Transportation ~~systems~~ Systems planning ~~Planning~~ by the Department should include capital, operations, maintenance and management strategies, investments, procedures, and other measures to ensure the preservation and most efficient and effective use of the ~~state~~ State transportation ~~Transportation system~~ System.
- 4.03.5 Transportation ~~systems~~ Systems ~~P~~lanning by the Department shall consider and integrate all modes into the Statewide Transportation Plan and include coordination with Department modal plans and modal committees, such as the Transit and Rail Advisory Committee ~~(TRAC)~~.
- 4.03.6 Transportation Systems Planning by RPCs and the Department shall consider and integrate GHG Roadmap objectives into the Statewide Transportation Plan and include coordination and review with APCD and the Colorado Energy Office.
- 4.03.7 Transportation Systems Planning by RPCs and the Department shall implement the Transportation Equity Framework for community engagement and identifying projects that effectively promote racial equity and economic justice while meeting transportation and GHG Roadmap objectives.
- 4.03.8 Transportation Systems Planning by the Department shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. § 150 (FAST Act, P.L. 114-94). Performance targets that the Department establishes to address the performance measures described in 23 U.S.C. § 150, where applicable, are to be used to track progress towards attainment of critical outcomes for the state. The state shall consider the performance measures and targets when developing policies, programs, and investment priorities reflected in the Statewide Transportation Plan and STIP.
- 4.04 Regional Transportation Plans (RTP). Long-range ~~regional transportation plans~~ RTPs shall be developed, in accordance with federal (23 U.S.C. § 134 and § 135) and state (§ 43-1-1103 and § 43-1-1104, C.R.S.) law and implementing regulations. Department selection of performance targets that address the performance measures shall be coordinated with the relevant MPOs to ensure consistency, to the maximum extent practicable.
- 4.04.1 Content of Regional Transportation Plan ~~RTPs~~. Each RTP shall include, at a minimum, the following elements:
- 4.04.1.1 Transportation system facility and service requirements within the MPO TPR over a minimum 20-year planning period necessary to meet expected demand, and the anticipated capital, maintenance and operating cost for these facilities and services.
- 4.04.1.2 State and federal transportation system planning factors to be considered by Regional Planning Commission ~~RPCs~~ and the Department during their respective ~~transportation~~ Transportation systems ~~Systems planning~~ Planning shall include, at a minimum, the factors described in § 43-1-1103 (5), C.R.S., and in 23 U.S.C. § 134 and § 135.
- 4.04.1.3 Identification and discussion of potential environmental mitigation measures, ~~corridor~~ Corridor studies, or ~~corridor~~ Corridor visions ~~Visions~~, including a discussion of impacts to minority and low-income communities.

- 4.04.1.4 A discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.
- 4.04.1.5 [Include an analysis of how the RTP is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the Region.](#)
- 4.04.1.6 [Include an analysis of how the RTP is aligned with the Transportation Equity Framework in engaging the community and identifying projects that effectively promote racial equity and economic justice.](#)
- 4.04.1.7 For rural RTPs, the integrated performance-based ~~multimodal~~ **Multimodal** transportation plan based on revenues reasonably expected to be available over the minimum 20-year planning period. For metropolitan RTPs, a ~~fiscally-Fiscally constrained-Constrained~~ financial plan.
- 4.04.1.8 Identification of reasonably expected financial resources developed cooperatively among the Department, MPOs, and rural TPRs for ~~longLong-range-Range planning-Planning~~ purposes, and results expected to be achieved based on regional priorities.
- 4.04.1.9 Documentation of the public notification and public participation process pursuant to these Rules.
- 4.04.1.10 A resolution of adoption by the responsible ~~Metropolitan Planning OrganizationMPO~~ or the ~~Regional Planning CommissionRPC~~.
- 4.04.2 Products and reviews
- 4.04.2.1 Draft Plan. ~~Transportation Planning RegionTPRs~~ shall provide a draft of the RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.2 Draft Plan Review. Upon receipt of the draft RTPs, the Department will initiate its review and schedule the STAC review (pursuant to these Rules). The Department will provide its comments and STAC comments to the ~~Transportation Planning RegionTPR~~ within a minimum of 30 days of receiving the draft RTP. ~~Regional transportation planRTPs~~ in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide-Statewide transportation-Transportation planPlan~~.
- 4.04.2.3 Final Plan. ~~Transportation Planning RegionTPRs~~ shall provide the final RTP to the Department through the Division ~~of Transportation Development~~.
- 4.04.2.4 Final Plan Review. Upon receipt of the final RTP, the Department will initiate its review and schedule the STAC review (pursuant to these Rules) of the final RTPs to determine if the plans incorporate the elements required by the Rules. If the Department determines that a final RTP is not complete, including if the final RTP does not incorporate the elements required by these Rules, then the Department will not

integrate that RTP into the statewide plan until the ~~Transportation Planning Region~~TPR has sufficiently revised that RTP, as determined by the Department with advice from the STAC. The Department will provide its comments and STAC comments to the ~~Transportation Planning Region~~TPR within a minimum of 30 days of receiving the final RTP. ~~Transportation Planning Region~~TPRs shall submit any RTP revisions based on comments from the Department and STAC review within 30 days of the Department's provision of such comments. ~~Regional transportation plans~~RTPs in metropolitan areas completed pursuant to the schedule identified in 23 C.F.R. § 450.322 shall be subject to the provisions of this section prior to being submitted to the Department for consideration as an amendment to the ~~statewide~~Statewide ~~transportation~~Transportation planPlan.

- 4.05 Maintenance and Nonattainment Areas. Each RTP, or RTP amendment, shall include a section that:
- 4.05.1 Identifies any area within the TPR that is designated as a ~~maintenance~~Maintenance or ~~nonattainment~~Nonattainment areaArea.
 - 4.05.2 Addresses, in either a qualitative or quantitative manner, whether transportation related emissions associated with the pollutant of concern in the TPR are expected to increase over the ~~long~~Long-range-Range planning-Planning period and, if so, what effect that increase might have in causing a ~~maintenance~~Maintenance area-Area for an NAAQS pollutant to become a ~~nonattainment~~Nonattainment areaArea, or a ~~non-attainment~~Nonattainment area-Area to exceed its emission budget in the approved State Implementation Plan.
 - 4.05.3 If transportation related emissions associated with the pollutant are expected to increase over the ~~long~~Long-range-Range planning-Planning period, identifies which programs or measures are included in the RTP to decrease the likelihood of that area becoming a ~~nonattainment~~Nonattainment area-Area for the pollutant of concern.
- 4.06 Statewide Transportation Plan. The ~~Regional Transportation Plans~~RTPs submitted by the ~~Regional Planning Commissions~~RPCs shall, along with direction provided through Commission policies and guidance, form the basis for developing and amending the Statewide Transportation Plan. The Statewide Transportation Plan shall cover a minimum 20-year planning period at the time of adoption and shall guide the development and implementation of a performance-based ~~multimodal~~Multimodal transportation system for the State.
- 4.06.1 The Statewide Transportation Plan shall:
 - 4.06.1.1 Integrate and consolidate the RTPs and the Department's systems planning, pursuant to these Rules, into a long-range 20-year ~~multimodal~~Multimodal transportation plan that presents a clear, concise path for future transportation in Colorado.
 - 4.06.1.2 Include the long-term transportation concerns of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe in the development of the Statewide Transportation Plan.
 - 4.06.1.3 Coordinate with other state and federal agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
 - 4.06.1.4 Include a discussion of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan developed in consultation with federal, state, and tribal

- wildlife, land management and regulatory agencies.
- 4.06.1.5 Include a comparison of transportation plans to state and tribal conservation plans or maps and to inventories of natural or historical resources.
- 4.06.1.6 Provide for overall ~~multimodal~~Multimodal transportation system management on a statewide basis.
- 4.06.1.7 The Statewide Transportation Plan shall be coordinated with metropolitan transportation plans pursuant to 23 C.F.R. Part 450, § 43-1-1103 and § 43-1-1105, C.R.S. Department selection of performance targets shall be coordinated with the MPOs to ensure consistency, to the maximum extent practicable.
- 4.06.1.8 Include an analysis of how the Statewide Transportation Plan is aligned with Colorado's climate goals and helps reduce, prevent, and mitigate GHG pollution throughout the State.
- 4.06.1.9 Include an analysis of how the Statewide Transportation Plan helps prevent, reduce, and mitigate GHG pollution and hazardous co-pollutants within Disproportionately Impacted Communities.
- 4.06.1.10 Includes the 10-Year Plan as an appendix.
- 4.06.2 Content of the Statewide Transportation Plan. At a minimum, the Statewide Transportation Plan shall include priorities as identified in the RTPs, as identified in these Rules and pursuant to federal planning laws and regulations. The Statewide Transportation Plan shall be submitted to the ~~Colorado Transportation~~ Commission for its consideration and approval.
- 4.06.3 Review and Adoption of the Statewide Transportation Plan.
- 4.06.3.1 The Department will submit a draft Statewide Transportation Plan to the Commission, the STAC, and all interested parties for review and comment. The review and comment period will be conducted for a minimum of 30 days. The Statewide Transportation Plan and appendices~~The publication~~ will be available in physical form upon request at public facilities, such as at the Department headquarters and region offices, state depository libraries, county offices, TPR offices, Colorado Division offices of the Federal Highway Administration and Federal Transit Administration, and made available on the internet.
- 4.06.3.2 The Department will submit the final Statewide Transportation Plan to the ~~Colorado Transportation~~ Commission for adoption.
- 5.00 Updates to Regional and Statewide Transportation Plans.**
- 5.01 Plan Update Process. The updates of ~~Regional Transportation Plan~~RTPs and the Statewide Transportation Plan shall be completed on a periodic basis through the same process governing development of these plans pursuant to these Rules. The update cycle shall comply with federal and state law and be determined in consultation with the ~~Transportation~~ Commission, the Department, the STAC and the MPOs so that the respective update cycles will coincide.
- 5.02 Notice by Department of Plan Update Cycle. The Department will notify ~~Regional Planning Commission~~RPCs and the MPOs of the initiation of each plan update cycle, and the schedule for completion.

6.00 Amendments to the Regional and Statewide Transportation Plans.

6.01 Amendment Process

6.01.1 The process to consider amendments to ~~Regional Transportation Plan~~RTPs shall be carried out by rural RPCs and the MPOs. The amendment review process for ~~Regional Transportation Plan~~RTPs shall include an evaluation, review, and approval by the respective RPC or MPO.

6.01.2 The process to consider amendments to the Statewide Transportation Plan shall be carried out by the Department, either in considering a proposed amendment to the Statewide Transportation Plan from a requesting RPC or MPO or on its own initiative.

6.01.3 The process to consider amendments to the 10-Year Plan shall be carried out by CDOT in coordination with the rural RPCs and the MPOs.

7.00 Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program (STIP).

7.01 TIP development shall occur in accordance with 23 C.F.R. Part 450, Subpart C. The Department will develop the STIP in accordance with 23 C.F.R. Part 450, Subpart B.

7.02 The Department will work with its ~~planning~~Planning partnersPartners to coordinate a schedule for development and adoption of TIPs and the STIP.

7.03 A TIP for an MPO that is in a ~~non-attainment~~Nonattainment or Maintenance Area must first receive a conformity determination by FHWA and FTA before inclusion in the STIP pursuant to 23 C.F.R. Part 450.

7.04 MPO TIPs and Colorado's STIP must be ~~fiscally~~Fiscally constrainedConstrained. Under 23 C.F.R. Part 450, each project or project phase included in an MPO TIP shall be consistent with an approved metropolitan RTP, and each project or project phase included in the STIP shall be consistent with the long-range ~~statewide~~Statewide transportationTransportation planPlan. MPO TIPs shall be included in the STIP either by reference or without change upon approval by the MPOs and the Governor.

8.00 GHG Emission and VMT Transportation Planning Reduction Requirements

8.01 Establishment of Regional GHG and VMT Transportation Planning Reduction Levels

8.01.1 The GHG emission reduction levels within Table 1 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT area and represent estimates of GHG emissions resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. Table 2 reflects the difference in Baseline levels from year to year assuming a rapid growth in electric vehicles across the State (940,000 light duty electric vehicles in 2030, 3.38 million in 2040 and a total of 97% of all light duty vehicles in 2050).

Values in both tables include estimates of population growth as provided by the state demographer.

8.01.2 Regional GHG Transportation Planning Reduction Levels

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

Regional Areas	2025 Baseline Projections (MMT)	2025 Reduction Level (MMT)	2030 Baseline Projections (MMT)	2030 Reduction Level (MMT)	2040 Baseline Projections (MMT)	2040 Reduction Level (MMT)	2050 Baseline Projections (MMT)	2050 Reduction Level (MMT)
DRCOG	14.90	0.32	11.80	1.13	10.90	0.94	12.80	0.60
NFRMPO	2.30	0.05	1.80	0.16	1.90	0.18	2.20	0.10
PPACG	2.70	0.06	2.20	0.21	2.00	0.18	2.30	0.11
GVMPO	0.38	0.01	0.30	0.03	0.30	0.03	0.36	0.02
PACOG	0.50	0.01	0.40	0.04	0.30	0.03	0.40	0.02
CDOT/Non-MPO	6.70	0.15	5.30	0.51	5.20	0.46	6.10	0.28
TOTAL	27.40	0.59	21.80	2.06	20.60	1.78	24.20	1.12

8.01.3 Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

Table 2: Baseline Emissions Due to Projected Number of Light Duty Electric Vehicles

	2025 Projections (MMT)	2030 Projections (MMT)	2040 Projections (MMT)	2050 Projections (MMT)
TOTAL	27.0	20.0	14.0	8.9

8.01.4 The VMT reduction levels within Table 3 apply to MPOs and the Non-MPO area within the state of Colorado as of the effective date of these Rules. Baseline values are specific to each MPO and CDOT and represent estimates of net VMT resulting from the existing transportation network and implementation of the most recently adopted RTP for all MPOs and the 10-Year Plan in non-MPO areas as of the effective date of these Rules. The figures below represent a 15% reduction in net VMT for each MPO and CDOT by 2030 and maintaining the 15% VMT reduction (adjusting for estimated population growth).

8.01.5 Regional VMT Transportation Planning Reduction Levels

Table 3: VMT Transportation Planning Reduction Levels (in millions of miles)

Regional Areas	2025 Baseline Projections	2025 Reduction Level	2030 Baseline Projections	2030 Reduction Level	2040 Baseline Projections	2040 Reduction Level	2050 Baseline Projections	2050 Reduction Level
<u>DRCOG</u>	30,855	2,160	33,364	5,005	37,311	6,529	41,258	8,252

NFRMPO	5,387	377	5,826	874	6,515	1,140	7,204	1,441
PPACG	5,877	411	6,355	953	7,107	1,244	7,859	1,572
GVMPO	980	69	1,059	159	1,184	207	1,310	262
PACOG	980	69	1,059	159	1,184	207	1,310	262
CDOT/Non-MPO	14,693	1,028	15,888	2,383	17,767	3,109	19,647	3,929
Total VMT	58,771	4,114	63,551	9,533	71,069	12,437	78,587	15,717
VMT per Capita (miles)	8,969	672	8,254	1,457	8,017	1,701	7,964	1,991
% VMT Reduction vs Baseline		7.00%		15.00%		17.50%		20.00%

*Assumes GHG and VMT targets apply to all MPOs and CDOT on the same timeframe.

8.02 Process for Determining Compliance

8.02.1 Analysis Requirements When Adopting or Amending an Applicable Planning Document - Each MPO and CDOT shall conduct a GHG emissions [and a net VMT](#) analysis using MPO Models or the Statewide Travel Model, and the Approved Air Quality Model, to estimate total CO₂e emissions [and net VMT](#). Such analysis shall include the existing transportation network and implementation of Regionally Significant Projects.

8.02.1.1 The emissions analysis must estimate total CO₂e emissions in million metric tons (MMT) for each year in Table 1 and compare these emissions to the Baseline specified in Table 1. This provision shall not apply to MPO TIP amendments.

8.02.1.2 [The net VMT analysis will estimate the expected net VMT that would result from the Regionally Significant Projects in the applicable planning document as compared to the reductions required in net VMT in the chart above. This provision shall apply to MPO TIP amendments.](#)

8.02.2 Agreements on Modeling Assumptions and Execution of Modeling Requirements. Prior to the adoption of the next RTP for any MPO, CDOT, CDPHE, and each MPO shall enter into an Intergovernmental Agreement which outlines CDOT, CDPHE, and MPO responsibilities for development and execution of MPO Models or the Statewide Travel Model, and Approved Air Quality Model.

8.02.2.1 [The Induced Travel Elasticity for roadway capacity projects shall be set at 1.0 for freeways and 0.75 for arterials.](#)

8.02.2.2 [MPOs will agree to participate in measuring actual VMT on regionally significant projects to assess the accuracy of the models used in predicting VMT.](#)

8.02.2.3 [Regionally Significant Projects will be run through an equity analysis. Parties to the intergovernmental agreement will commit that no Regionally Significant Project will cause adverse environmental or public health impacts to a Disproportionately Impacted Community that is already experiencing degraded environmental conditions relative to the](#)

- [state population unless those environmental or public health impacts are entirely mitigated.](#)
- 8.02.2.4 [Every five years the parties will reassess and improve the models based on how well they have performed against past Induced Travel and GHG emissions data. Third-party experts will be invited to evaluate the modeling and share those findings publicly.](#)
- 8.02.2.5 [The Parties will work to develop calculators to accurately estimate the GHG and VMT impacts of individual projects, on both a total and per capita level, including the smaller projects on the GHG Mitigation Menu.](#)
- 8.02.2.6 [By January 1, 2023, CDOT and MPOs are required to use a consistent Activity-Based Model.](#)
- 8.02.3** By April 1, 2022, CDOT shall establish an ongoing administrative process, through a public process, for selecting, measuring, confirming, and verifying GHG Mitigation Measures, so that CDOT and MPOs can incorporate one or more into each of their plans in order to reach the Regional GHG [and VMT Transportation](#) Planning Reduction Levels in Table 1 [and Table 3](#). Such a process shall include, but not be limited to, determining the relative impacts of GHG Mitigation Measures, measuring and prioritizing localized impacts to communities and Disproportionately Impacted Communities in particular. [The percentage of GHG and VMT reductions obtained through GHG Mitigation Measures must directly benefit Disproportionately Impacted Communities at a level equal to or greater than the percentage of population represented by Disproportionately Impacted Communities within that MPO or TPR. The scoring of competing projects shall be public and transparent.](#) The mitigation credit awarded to a specific solution shall consider both aggregate and community impact.
- 8.02.4** Timing for Determining Compliance
- 8.02.4.1 By October 1, 2022, CDOT shall update their 10-Year Plan and DRCOG and NFRMPO shall update their RTPs pursuant to § 43-4-1103, C.R.S. and meet the reduction levels in Table 1 [and Table 3](#) or the requirements pursuant to § 43-4-1103, C.R.S and restrictions on funds.
- 8.02.4.2 After October 1, 2022
- 8.02.4.2.1 CDOT must for each Applicable Planning Document, meet either the reduction levels within Table 1 [and in Table 3](#) for Non-MPO areas or the requirements as set forth in Rule 8.05.
- 8.02.4.2.2 MPOs must meet either the corresponding reduction levels within Table 1 [and in Table 3](#) for each Applicable Planning Document, or the relevant MPO and CDOT each must meet the requirements as set forth in Rule 8.05.
- 8.02.5** Demonstrating Compliance. At least thirty (30) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to the Commission a GHG Transportation Report containing the following information:
- 8.02.5.1 GHG emissions [and VMT](#) analysis demonstrating that the Applicable Planning Document is in compliance with the GHG Reduction Levels in MMT of CO₂e for each compliance year in Table 1 [and net VMT for each compliance year in Table 3](#) or that the requirements in Rules 8.02.5.1.1 or 8.02.5.1.2., as applicable, have been met.
- 8.02.5.1.1 In non-MPO areas or for MPOs that are not in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the Department utilizes 10-Year Plan funds anticipated to be

- expended on Regionally Significant Projects in those areas on projects that reduce GHG emissions [and reduce VMT](#).
- 8.02.5.1.2 In MPO areas that are in receipt of federal suballocations pursuant to the CMAQ and/or STBG programs, the MPO utilizes those funds on projects or approved GHG Mitigation Measures that reduce GHG emissions, and CDOT utilizes 10-Year Plan funds anticipated to be expended on Regionally Significant Projects in that MPO area, on projects that reduce GHG emissions [and reduce VMT](#).
- 8.02.5.2 Identification and documentation of the MPO Model or the Statewide Travel Model and the Approved Air Quality Model used to determine GHG emissions in MMT of CO₂e [and net VMT](#).
- 8.02.5.2.1 [The technical methodology must be found to yield accurate estimates of GHG emissions and VMT.](#)
- 8.02.5.2.2 [The data or documentation provided to support the estimates of GHG emissions and VMT must be sufficient for AQCC and CDOT to review.](#)
- 8.02.5.2.3 [To improve transparency, the GHG Transportation Report will include:](#)
- [Changes in population.](#)
 - [Changes in regional population-weighted density.](#)
 - [Share of housing and employment with ½ mile of high-frequency transit.](#)
 - [Share of low-income households and disproportionately impacted communities with access to high-quality transit, biking, and walking infrastructure.](#)
 - [Total number of housing units and employment density for each local government.](#)
- 8.02.5.3 A Mitigation Action Plan that identifies GHG Mitigation Measures needed to meet the reduction levels [for each compliance year](#) within Table 1 [and Table 3](#) shall include:
- 8.02.5.3.1 The anticipated start and completion date of each measure.
- 8.02.5.3.2 An estimate, where feasible, of the GHG emissions reductions in MMT of CO₂e achieved by any GHG Mitigation Measures [and the anticipated net VMT reductions](#).
- 8.02.5.3.3 Quantification of specific co-benefits including reduction of co-pollutants (PM_{2.5}, NO_x, etc.) as well as travel impacts (changes to [per capita VMT within the project area](#), pedestrian/bike use, transit ridership numbers, etc. as applicable).
- 8.02.5.3.4 Description of [direct](#) benefits to Disproportionately Impacted Communities [and a demonstration that the percentage of GHG and VMT reductions anticipated from the mitigation measures will benefit Disproportionately Impacted Communities at a level equal to or greater than the percentage of the population within Disproportionately Impacted Communities in the affected TPR or MPO](#).

- 8.02.6 Reporting on Compliance- Annually by April 1, CDOT and MPOs must provide a status report to the Commission on an approved form with the following items for each GHG Mitigation Measure identified in their most recent GHG Transportation Report:
- 8.02.6.1 The implementation timeline;
 - 8.02.6.2 The current status;
 - 8.02.6.3 For measures that are in progress or completed, quantification of the benefit or impact of such measures; and
 - 8.02.6.4 For measures that are delayed, cancelled, or substituted, an explanation of why that decision was made.
- 8.03 GHG Mitigation Measures. When assessing compliance with the GHG [and VMT](#) Reduction Levels, CDOT and MPOs shall have the opportunity to utilize approved GHG Mitigation Measures as set forth in Rules 8.02.3 and 8.02.5.3 to offset emissions, [reduce VMT](#), and demonstrate progress toward compliance. Illustrative examples of GHG Mitigation Measures include, but are not limited to:
- 8.03.1 The addition of transit resources in a manner that can displace VMT.
 - 8.03.2 Improving pedestrian and bike access, particularly in areas that allow individuals to reduce multiple daily trips.
 - 8.03.3 Encouraging local adoption of more effective forms of vertical development and zoning plans that integrate mixed use in a way that links and rewards transportation project investments with the city making these changes.
 - 8.03.4 Improving first-and-final mile access to transit stops and stations that make transit resources safer and more usable by consumers.
 - 8.03.5 Improving the safety and efficiency of crosswalks for pedestrians, bicyclists, and other non-motorized vehicles, including to advance compliance with the ADA.
 - 8.03.6 Adopting locally driven changes to parking policies and physical configuration that encourage more walking and transit trips.
 - 8.03.7 Incorporating medium/heavy duty vehicle electric charging and hydrogen refueling infrastructure -- as well as upgrading commensurate grid improvements -- into the design of key freight routes to accelerate truck electrification.
 - 8.03.8 Establishing policies for clean construction that result in scalable improvements as a result of factors like lower emission materials, recycling of materials, and lower truck emissions during construction.
 - 8.03.9 Adoption of transportation demand management practices that reduce VMT.
- 8.04 Air Pollution Control Division (APCD) Confirmation and Verification
- 8.04.1 At least forty-five (45) days prior to adoption of any Applicable Planning Document, CDOT for Non-MPO areas and the MPOs for their areas shall provide to APCD for review and verification of the technical data contained in the draft GHG Transportation Report required per Rule 8.02.5. If APCD has not provided written verification within thirty (30) days, the document shall be considered acceptable.
 - 8.04.2 At least thirty (30) days prior to adoption or amendment of policies per Rule 8.02.3, CDOT shall provide APCD the opportunity to review and comment. If APCD has not provided written comment within forty-five (45) days, the document shall be considered acceptable.

- 8.05 Enforcement. The Commission shall review all GHG Transportation Reports to determine whether the applicable reduction targets in Table 1 [and Table 3](#) have been met, [and the sufficiency of any GHG Mitigation Measures needed for compliance, and adverse environmental or public health impacts to Disproportionately Impacted Communities are avoided or entirely mitigated.](#)
- [8.05.1](#) If the Commission determines the requirements of Rule 8.02.5 have been met, the Commission shall, by resolution, accept the GHG Transportation Report.
- [8.05.2](#) If the Commission determines, by resolution, the requirements of Rule 8.02.5 have not been met, the Commission shall restrict the use of funds pursuant to Rules 8.02.5.1.1 or 8.02.5.1.2, as applicable, to projects and approved GHG Mitigation Measures that reduce GHG [and VMT](#). Prior to the enforcement of such restriction, an MPO, CDOT or a TPR in a non- MPO area, may, within thirty (30) days of Commission action, issue one or both of the following opportunities to seek a waiver or to ask for reconsideration accompanied by an opportunity to submit additional information:
- 8.05.2.1 Request a waiver from the Commission imposing restrictions on specific projects not expected to reduce GHG emissions [or VMT](#). The Commission may waive the restrictions on specific projects on the following basis:
- 8.05.2.1.1 The GHG Transportation Report reflected significant effort and priority placed, in total, on projects and GHG Mitigation Measures that reduce GHG emissions [and VMT](#); and
- 8.05.2.1.2 In no case shall a waiver be granted if such waiver results in a substantial increase in GHG emissions [or VMT](#) when compared to the required reduction levels in this Rule.
- 8.05.2.1.3 [If a waiver on a specific project is granted, an MPO, CDOT, or a TPR in a non-MPO area will not be considered in compliance, and the use of funds will continue to be restricted pursuant to Rule 8.05.2, until the VMT and GHG requirements of Rule 8.02.5 have been met.](#)
- 8.05.2.2 Request reconsideration of a non-compliance determination by the Commission and provide written explanation of how the requirements of Rule 8.02.5 have been met.
- 8.05.2.3 The Commission shall act, by resolution, on a waiver or reconsideration request within thirty (30) days of receipt of the waiver or reconsideration request or at the next regularly scheduled Commission Meeting, whichever is later. If no action is taken within this time period, the waiver or reconsideration request shall be deemed to be denied.
- [8.05.3](#) [In its resolution, the Commission shall certify that the Applicable Planning Documents referenced in the GHG Transportation Report will not cause adverse environmental or public health impacts to a Disproportionately Impacted Community that is already experiencing degraded environmental conditions relative to the state population unless those environmental or public health impacts are entirely mitigated.](#)
-
- [8.05.4](#) Notwithstanding any other provision of this Rule, CDOT, DRCOG and NFRMPO must meet the requirements of § 43-4-1103, C.R.S.
- 8.06 Reporting. Beginning July 1, 2025, and every 5 years thereafter, the Executive Director on behalf of CDOT shall prepare and make public a comprehensive report on the statewide GHG [and VMT](#) reduction accomplishments. [The report shall contain, without limitation, the following information:](#)
- [8.06.1](#) [Whether the state is meeting GHG emission and VMT reductions required by Rule 8.02.5 statewide, for each TPR, and for each MPO.](#)

8.06.2 [If the report indicates that statewide VMT and GHG reductions required by Rule 8.02.5 are not projected to be met under existing rules, CDOT shall develop and propose additional requirements to the Commission, no later than December 31 of the same year, to be adopted no later than March 31 of the following year, which must be designed to make up the difference between VMT and GHG reductions achieved and the VMT and GHG reductions necessary to comply with Rule 8.02.5.](#)

8.06.3 [The number of projects affecting Disproportionately Impacted Communities and the net effect on VMT and GHG emissions of those projects.](#)

8.06.4 [A review of the mapping tools and any updates required by the analysis required by 8.03.2.4.](#)

9.00 Materials Incorporated by Reference

9.01 The Rules are intended to be consistent with and not be a replacement for the federal transportation planning requirements in Rule 9.01.1 and federal funding programs in Rules 9.01.2 and 9.01.3, which are incorporated into the Rules by this reference, and do not include any later amendments.

9.01.1 Fixing America's Surface Transportation Act or the "FAST Act"), 23 U.S.C. §§ 134, 135 and 150, Pub. L. No. 114-94, signed into law on December 4, 2015, and its accompanying regulations, where applicable, contained in 23 C.F.R. Part 450, including Subparts A, B and C in effect as of November 29, 2017, and 25 C.F.R. § 170 in effect as of November 7, 2016.

9.01.2 Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 23 U.S.C. § 149, in effect as of March 23, 2018.

9.01.3 Surface Transportation Block Grant (STBG) Program, 23 U.S.C. § 133, in effect as of December 4, 2015.

9.02 Also incorporated by reference are the following federal laws and regulations and do not include any later amendments:

9.02.1 Americans with Disabilities Act (ADA), 42 U.S.C. § 12101, *et. seq.*, in effect as of January 1, 2009.

9.02.2 Clean Air Act (CCA), 42 U.S.C. §§ 7407-7410, and 7505a, in effect as of November 15, 1990.

9.02.2 Transportation Conformity Regulations, 40 C.F.R. § 93.101, in effect as November 24, 1993.

9.03 Also incorporated by reference are the following documents, standards, and models and do not include any later amendments:

9.03.1 Greenhouse Gas Pollution Reduction Roadmap by the Colorado Energy Office and released on January 14, 2021.

9.03.2 MOVES3 Motor Vehicle Emissions Model for SIPs and Transportation Conformity released by the U.S. Environmental Protection Agency, in effect as of January 7, 2021.

9.04 All referenced laws and regulations are available for copying or public inspection during regular business hours from the Office of Policy and Government Relations, Colorado Department of Transportation, 2829 W. Howard Pl., Denver, Colorado 80204.

9.05 Copies of the referenced federal laws and regulations, planning documents, and models.

9.05.1 Copies of the referenced United States Code (U.S.C.) may be obtained from the following address:

Office of the Law Revision Counsel
U.S. House of Representatives
H2-308 Ford House Office Building
Washington, DC 20515
(202) 226-2411
<https://uscode.house.gov/browse.xhtml>

9.05.2 Copies of the referenced Code of Federal Regulations (C.F.R.) may be obtained from the following address:

U.S. Government Publishing Office
732 North Capitol State, N.W.
Washington, DC 20401
(866) 512-1800
<https://www.govinfo.gov/>

9.1.5.3 Copies of the Greenhouse Gas Pollution Reduction Roadmap (Roadmap) may be obtained from the following address:

Colorado Energy Office
1600 Broadway, Suite 1960
Denver, CO 80202
(303) 866-2100
energyoffice.colorado.gov

9.1.5.4 To download MOVES3 released by the U.S. Environmental Protection Agency may be obtained from the following address:

U.S. Environmental Protection Agency
The Office of Transportation and Air Quality
1200 Pennsylvania Ave, N.W.
Washington, DC 20460
(734) 214-4574 or (202) 566-0495
mobile@epa.gov
<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

10.00 Declaratory Orders

10.01 The Commission may, at their discretion, entertain petitions for declaratory orders pursuant to § 24-4-105(11), C.R.S.

Editor's Notes

History

Entire rule eff. 12/15/2012.

Section SB&P eff. 05/30/2013.

Entire rule eff. 09/14/2018.

Annotations

Rules 1.22, 1.25, 1.42, 2.03.1 – 2.03.1.4, 4.01, 4.02.1 – 4.02.3, 4.02.5.9, 4.04.2.2, 4.04.2.4, 4.06.1.7, 6.01.2, 7.01, 7.03 – 7.04 (adopted 10/18/2012) were not extended by Senate Bill 13-079 and therefore expired 05/15/2013.

A Framework for Projecting the Potential Statewide Vehicle Miles Traveled (VMT) Reduction from State-Level Strategies in California

March 2017

A White Paper from the National Center for
Sustainable Transportation

██████████, University of Southern California

██████████, University of California, Davis



National Center
for Sustainable
Transportation

About the National Center for Sustainable Transportation

The National Center for Sustainable Transportation is a consortium of leading universities committed to advancing an environmentally sustainable transportation system through cutting-edge research, direct policy engagement, and education of our future leaders. Consortium members include: University of California, Davis; University of California, Riverside; University of Southern California; California State University, Long Beach; Georgia Institute of Technology; and University of Vermont. More information can be found at: ncst.ucdavis.edu.

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A Framework for Projecting the Potential Statewide Vehicle Miles Traveled (VMT) Reduction from State-Level Strategies in California

A National Center for Sustainable Transportation White Paper

March 2017

██████████, Sol Price School of Public Policy, University of Southern California
██████████, Institute of Transportation Studies, University of California, Davis



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A Framework for Projecting the Potential Statewide Vehicle Miles Traveled (VMT) Reduction from State-Level Strategies in California

EXECUTIVE SUMMARY

The California Global Warming Solutions Act of 2006 (Assembly Bill 32) created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in the state to 80% below 1990 levels by 2050. With the recent passage of Senate Bill 32, the State of California has adopted an additional target of reducing greenhouse gas emissions to 40% below 1990 levels by 2030. To meet these goals, analysis shows that California will need to achieve an additional 7.5 percent reduction in light-duty vehicle miles of travel (VMT) by 2035, and an additional 15 percent reduction in light-duty VMT by 2050.

The California Air Resources Board (ARB) is thus considering a wide range of strategies for the 2016 Scoping Plan Update that focus on reducing demand for driving. These strategies fall into four general categories: Pricing, Infill Development, Transportation Investments, and Travel Demand Management Programs. The State has the ability to directly implement some of these strategies through state policy; for other strategies, the State can adopt policies that encourage or require the implementation of the strategy on the part of regional agencies, local governments, and/or the private sector.

In this paper, we consider the evidence available and assumptions needed for projecting statewide VMT reductions for each category of strategies. Our goal is to provide a framework for projecting the magnitude of reductions that the state might expect for the different strategies. This framework helps to illuminate the sequence of events that would produce VMT reductions and highlights important gaps in knowledge that increase the uncertainty of the projections. Despite uncertainties, the evidence justifies state action on these strategies: the available evidence shows that the strategies considered in this paper are likely to reduce VMT if promoted by state policy.

We do not in this paper examine the potential co-benefits of VMT-reduction strategies, including health, equity, and other benefits, but the evidence of these benefits is also strong and further justifies state action.

Strategy Category	State Policy to VMT Link	Effect on Individual VMT	Potential for Statewide Implementation and Adoption – Strategy Extent
Pricing	Most direct	Strong effect Solid evidence	Can be applied state-wide (fuel taxes, VMT fees) and in targeted areas (link pricing, cordon pricing, parking pricing). Most effective where individuals have good alternatives to driving. Strategies have equity implications. Generates revenues that can be invested in transportation system.
Infill Development	Direct and indirect	Moderate effect Solid evidence	Most applicable in metro areas. Will affect populations living and working in infill areas. May depend on changes in local land use policy. May require financial incentives. Land use changes and VMT effects accrue over the long term.
Transportation Investments			
<i>Bike/Ped</i>	Direct and indirect	Small effect Moderate evidence	Most applicable in metro areas. Will affect populations living and working where investments are made. May depend on changes in local investments. May require financial incentives. May require package of strategies. Many co-benefits.
<i>Transit</i>	Direct and indirect	Small effect Moderate evidence	Most applicable in metro areas. Will affect populations living and working where investments are made. May depend on changes in transit agency action. May require financial incentives. May require package of strategies. Many co-benefits.
<i>Highways</i>	Direct	Strong <i>induced</i> VMT effect Solid evidence	New capacity that reduces travel times leads to VMT growth. Effect is greatest in congested areas. Operational improvements that reduce travel times can also induce VMT.
Transportation Demand Management	More indirect	Moderate effect Solid evidence	Most applicable in metro areas. Generally implemented by large employers in response to state or local requirements or financial incentives. Some applications appropriate for rural areas.

Introduction

The California Global Warming Solutions Act of 2006 (Assembly Bill 32) created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in the state to 80% below 1990 levels by 2050. With the recent passage of Senate Bill 32, the State of California has adopted an additional target of reducing greenhouse gas emissions to 40% below 1990 levels by 2030.

The AB 32 Scoping Plan, first adopted in 2008, outlines how the state will meet these targets. In 2015, Governor Brown directed the California Air Resources Board (ARB) to update the Scoping Plan. The transportation sections of previous Scoping Plans were primarily focused on cleaner fuels and cleaner vehicles; VMT reduction strategies were limited to continuing implementation of SB 375. With the 2016 Scoping Plan Update, the California Air Resources Board (ARB) is considering a wider range of strategies that focus on reducing demand for driving. ARB projects that vehicle miles of travel (VMT) will grow 11 percent from today to 2030. A recent visioning scenario analysis done by ARB for the Mobile Source Strategy, which will be incorporated into the updated Scoping Plan, concluded that in addition to existing initiatives such as continued implementation of SB 375 and improvements in vehicle and fuel technology, California will need to achieve an additional 7.5 percent reduction in light-duty VMT by 2035, and an additional 15 percent reduction in light-duty VMT by 2050, in order to meet the State's overall GHG goals.¹

State-level policies, priorities, and investments will have a profound effect on trends in VMT and are critical to shifting the state from the projected increases in VMT to the needed reductions in VMT. There is extensive evidence on strategies that can reduce VMT, as documented in a series of research briefs we produced for ARB.² In response to SB 375, the State has already taken action to implement some of the strategies that research shows are likely to reduce VMT. State-funded grant programs, for example, provide funding and financing for infill development, transit, bicycle facilities, and other changes to the built environment that will enable Californians to reduce their driving. At the same time, it is important to recognize that many long-standing state policies are likely to contribute to increased VMT trends even though this was not their primary objective. Most notably, decades of expansions of the state highway system, declines in the inflation-adjusted state gas tax, and financial and policy barriers to infill development and housing production have contributed to an upward VMT trend.³ State policies often work against each other in influencing how much the state's residents drive.

¹ Mobile Source Strategy, May 2016. Available at:

² Senate Bill 375 - Research on Impacts of Transportation and Land Use-Related Policies. Available at: <https://arb.ca.gov/cc/sb375/policies/policies.htm>

³ For a summary of the evidence on how highway capacity increases lead to more VMT, see the ARB policy brief on highway capacity and induced travel, at

https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

The strategies for reducing driving that the State is considering for the Scoping Plan Update fall into four general categories: Pricing, Infill Development, Transportation Investments, and Travel Demand Management Programs. The State has the ability to directly implement some of these strategies, particularly pricing and some infrastructure strategies, through state policy and direct investment. For other strategies, the State can adopt policies that encourage or require the implementation of the strategy on the part of regional agencies, local governments, and/or the private sector. Infill development, for example, depends largely on local land use policies. For some strategies, such as bicycle infrastructure, state policy can both directly and indirectly influence its implementation.

Projecting the state-wide impact of state policy on VMT thus depends on two components: the “strategy effect,” the effect of the strategy, when implemented, on the behavior of Californians and the amount that they drive; and the “strategy extent,” the extent of the implementation of the strategy across the state in response to state policy and other forces. The evidence base on strategy effect is strong for most of the strategies under consideration: we can be confident that, if implemented, these strategies will produce a reduction in VMT, even if the magnitude of that reduction is uncertain. In contrast, the evidence on how to increase the strategy extent is often more limited.

Strategy Effect and Strategy Extent

Strategy Effect: The strategy effect is how a strategy (or policy) would change VMT. For example, if the fuel tax in the state were increased by ten percent, how would one driver’s VMT change?

Strategy Extent: Strategy extent is how many drivers (or persons) can or would be affected by a strategy. For example, if the State offers incentives for infill development, how many more infill units will be built, and hence how many persons are affected by the strategy?

We can simplify by imagining that the overall policy impact is the strategy effect multiplied by the strategy extent.

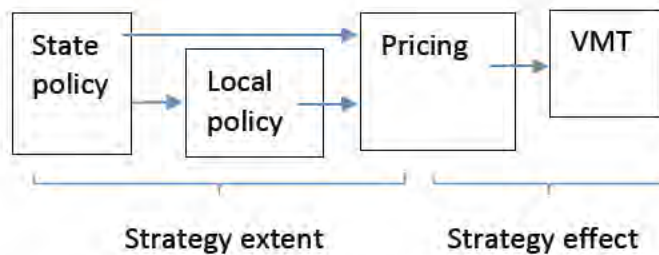
For example, the influence of state subsidies or affordable housing policy on the actions that local governments take with regard to providing more infill development is sometimes debated, suggesting a need for more research on actions the state could take to foster more infill development. The existing evidence base, however, clearly shows that increased infill development leads to reduced VMT. For infill development, the question is not whether infill development would lead to reduced driving – it will – but rather which state policies would lead to more infill and, if those policies are implemented, how much would VMT be reduced. This is only one example; we discuss the difference between strategy effect and strategy extent for all four categories of policies that are covered in this document. In this paper, we consider the

evidence available and assumptions needed for projecting statewide VMT⁴ reductions for each category of strategies. Our goal is to provide a framework for at least roughly projecting the magnitude of reductions that the state might expect for the different strategies. The projection methods differ for each strategy depending on its “causal chain” – the sequence of events triggered by state policy that ultimately produce reductions in VMT, including both strategy extent (the causal chain from state policy to strategy implementation) and strategy effect (the causal chain from strategy implementation to VMT reduction). The form in which each strategy effect is reported in the literature also determines the projection method; in discussing strategy effect we rely on our reviews of the evidence base as reported in the ARB Research Briefs, mentioned above. We also outline the critical gaps in knowledge, data, or methods that must be filled before more robust projections are possible. California has staked a cutting-edge position with its GHG reduction framework, and that gives the state an opportunity to push our knowledge base forward. By highlighting knowledge gaps we are noting areas where California can continue and extend its tradition of leadership in environmental policy and environmental science.

We do not in this paper examine the potential co-benefits of VMT-reduction strategies, though they are potentially substantial. Reducing VMT not only reduces GHG emissions, it also reduces emissions of pollutants that harm human health as well as agricultural productivity and natural habitats. Infill development coupled with investments in transit services and bicycle and pedestrian infrastructure expands transportation options, reducing the need for owning a private vehicle and the financial burden that comes with it for lower-income households. Evidence of the benefits of VMT-reduction strategies for human health, social equity, the environment, and the economy is strong, and it further justifies state action to promote these strategies.

⁴For most of the strategies we examine here, the available research examines the effect of the strategy on VMT or other aspects of travel behavior rather than GHG emissions. While VMT reductions translate relatively directly into GHG emissions reductions, other factors may come into play. If, in addition to VMT reductions, the strategy also leads to changes in driving speeds (not just averages but distributions of speeds over the course of trips) or changes in the types of vehicles Californian’s drive, then the conversion to GHG emissions is less straightforward. Infill development, for example, might reduce driving distances but also encourage smaller vehicles and produce more congestion and thus lower speeds. For the most part, the literature provides little basis for developing more nuanced conversions of VMT to GHG emissions for these strategies.

1. Pricing



Pricing is a particularly promising policy tool to reduce VMT and associated GHG emissions, for two reasons. First, the effect size from pricing interventions to VMT is larger than the effect size for other policy or planning tools. Second, pricing can be applied to a broad base, and state action can be particularly effective here. In other words, pricing can achieve a broad strategy extent quickly. Recall that the effect of a policy is the effect size (e.g. the amount that a driver's VMT would be reduced if the policy were applied to that driver) multiplied by the number of drivers exposed to the policy.

Pricing revenues can be used to expand non-automobile travel options, making the pricing policies themselves more effective at VMT reduction. Similarly, pricing policies can be used to address equity concerns, for example by expanding bus service, providing pedestrian or bicycle improvements, or mitigating environmental impacts in low-income neighborhoods.

Pricing also has the advantage of raising revenue to fund needed transportation projects. Statewide, our cities and counties have transportation needs that outstrip available revenue. For example, the State Transportation Plan identifies a \$294 billion funding gap – funding only 45 percent of the State's transportation system needs through 2020.⁵ Pricing and vehicle fees can fund infrastructure improvements, manage congestion, and maintain roadways while also improving air quality and better manage our transportation infrastructure.

There are several different ways to use pricing. We define those briefly here:

Link Tolls: Charge a toll to drive on a portion of a highway. The toll typically varies with congestion levels. Examples include the high-occupancy toll lanes on San Diego's SR-125 and Los Angeles I-110, and congestion priced toll lanes on SR-91 in Orange County. In the San Diego and Los Angeles examples, the toll adjusts based on traffic levels (more traffic implies a higher

⁵ See <http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/Final%20CTP/CTP2040-Appendices-WebReady.pdf>.

toll) while the toll on the SR-91 in Orange County is based on time of day (peak periods have higher tolls.)⁶

Cordon Tolls: Charge a toll to cross into a downtown central business district or other congested area. There are currently no examples of cordon toll pricing in the U.S. Well known international examples of cordon tolls include London's toll ring, around the center of the city, and the cordon toll in Singapore.

VMT fees: Drivers are charged a fee based on miles driven (VMT). Oregon launched a VMT fee pilot experiment which enrolled drivers in pilot programs to test replacing the state's fuel tax with a VMT fee. California launched a similar pilot in 2016.⁷ In 2008-2010, the University of Iowa led a national pilot program that examined VMT fees in lieu of fuel taxes in twelve locations. No VMT fee has moved beyond the pilot/study phase in the U.S.

Fuel taxes: Fuel taxes are applied by every state in the U.S. and the federal government. At-the-pump fuel taxes are assessed on a cents per gallon basis, and so are not adjusted for inflation. A relatively minor exception is cases where sales taxes are also applied to per-gallon fuel taxes. Increased fuel efficiency implies that persons can drive more per gallon, hence fuel taxes raise less revenue per mile driven as vehicle fuel efficiency increases.

Parking prices: There are many parking pricing schemes, from fixed-priced street meters to workplace parking cash-out schemes that offer employees cash in lieu of subsidized free parking to policies that charge employees or non-work travelers for parking to real-time metered parking prices that adjust to equilibrate supply and demand. All have been applied in California. To date, parking pricing policy in the state has been exclusively the domain of local governments, though AB 744 reduced parking space requirements statewide for affordable senior housing.⁸

Pay-as-you-go insurance: This policy proposes to change vehicle insurance from a monthly or six-month fee, which is typically assessed independent of driving, to a per-mile fee.

Freight low emission zones: This proposal would establish low emission zones, usually near residential areas, where trucks would either have to use low emission technology or pay a fee. The prospect of combining pricing with careful land use considerations is a promising way to

⁶ Some highways in California use tolls that do not vary with time of day or congestion. The toll roads in south Orange County (portions of SR 73, 133, 241, and 261) have flat rate pricing. The tolls on those lanes were not designed to manage congestion, but are solely a financing tool. There is little evidence on whether and how flat-rate tolls reduce driving, although one can infer that the price effect may be similar. We focus our attention on congestion tolls, which bring the added benefit of congestion management and for which the evidence base is larger.

⁷ See <https://www.californiaroadchargepilot.com> and, for a related discussion, Marlon G. Boarnet, "Policy Approaches for California's Transportation Future," California Central, 2016, available at <http://californiacentral.usc.edu/wp-content/uploads/2016/06/CA-Central-transportation-6-13-16.pdf>.

⁸ See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB744.

address environmental justice implications of truck emissions that disproportionately affect low-income communities. Yet this policy, because it is a hybrid of pricing, emission technology requirements, and land use patterns that would interact with the transportation network, is less a pure pricing strategy. Also, the response of truck traffic to pricing depends on the nature of driver contractual relationships with trucking companies and hence is best informed by evidence that is specific to pricing and trucking. For those reasons, we believe the existing pricing evidence, largely from passenger travel and mostly from pure pricing experiments or policies, cannot be as easily applied to low emission zones. We note, though, that the same basic theory applies to trucks as to passengers – higher prices would discourage driving activity in the locations and at the times for which the price is higher – and it is only the magnitude and detailed effect of a low emission zone that we do not discuss further here.

Strategy Effect: Impacts of Pricing on Individual or Household VMT

The available evidence on effect sizes can be grouped into four categories: (1) link and cordon tolls, (2) VMT fees, (3) Fuel prices (and hence fuel taxes), and (4) parking pricing. We know of no available evidence on the effect size of pay-as-you-go insurance, and for the reasons mentioned above we believe that freight low emissions zones, while promising, should be a separate topic of study.

Importantly, both theory and evidence suggest that the effect sizes are similar across the different pricing tools for which data are available. A price is a price, and, as an approximation, drivers should not care if they pay a dollar to buy gas, drive on the highway, or park; the effect of the price on driving might be quite similar for those different policies. As it turns out, the empirical range of pricing effect sizes across different policies are similar, and that allows some confidence to interpret from the existing evidence base to policies, such as pay-as-you-go insurance, for which there is not currently an effect size evidence base. It is reasonable to assume, for example, that pay-as-you-go insurance would look to drivers like a VMT fee, and hence that the VMT fee evidence would apply. As mentioned above, freight low emission zones, because they are a hybrid of pricing, emission technology requirements, and land use, would require additional evidence not discussed here.

The range of effect sizes in Table 1 is large in some cases (e.g. the long-run elasticity of VMT with respect to fuel price.) We note that a conservative estimate of an elasticity would be -0.1, which is toward the low end of the range for link and cordon tolls and for fuel prices. Similarly, results from the Oregon VMT fee pilot program suggest that replacing a fuel tax with a VMT fee in a revenue-neutral way could reduce VMT by 11 to 14 percent. Overall, we suggest that an elasticity of VMT with respect to pricing of -0.1 is a conservative estimate that might be used to apply across different pricing programs.

Most of the evidence on parking pricing relates price to the demand for parking spaces, and inferring a VMT elasticity for parking pricing can be more difficult. However, a recent program in San Francisco, *SFPark*, adjusts on-street parking prices based on occupancy – raising the

metered price for an on-street parking space when more than 80 percent of the spaces on a block are occupied (Millard-Ball, et al., 2014). Recent studies of *SFPark* suggest that the program and its demand-based pricing may reduce cruising for parking by 50 percent (Millard-Ball, et al., 2014).

Table 1: Effect Sizes for Pricing Policies

Pricing Policy	Elasticity (unless otherwise noted)	Source
Link and Cordon Tolls	-0.1 to -0.45	ARB policy brief on road user pricing
VMT fees	-11% to -14.6% reduction from shifting gas tax to VMT fee	ARB brief on road user pricing, from Oregon VMT fee experiment
Fuel prices	-0.026 to -0.1 (short-run) -0.131 to -0.762 (long-run)	ARB brief on gas price
Parking pricing	-0.3 for demand for parking spaces	ARB parking pricing and parking management brief

Source: ARB policy briefs, at <https://arb.ca.gov/cc/sb375/policies/policies.htm>

Strategy Extent: Impact of State Policy on Pricing

Pricing can be implemented in ways that achieve broad strategy extent. VMT fees and fuel prices can affect every driver in the state. Again, this paper provides a framework for at least roughly projecting the magnitude of reductions that the state might expect for the different strategies. There are few other State actions that could similarly achieve universal coverage without collaboration or leadership from a broad range of municipal governments. Link and cordon tolls have typically been the purview of local governments, and because such congestion pricing is applicable in congested locations, link and cordon tolls would likely continue to be a local government activity. But Caltrans is the owner operator of the state highway system, and so the State has many opportunities to encourage link pricing, in particular, on state highway routes. The State could, for example, offer subsidies or incorporate pricing more explicitly into the SB 375 Sustainable Communities Strategy (SCS) process. Similarly, the State could work closely with local governments and county transportation agencies to encourage innovative programs that use pricing while also addressing the equity questions that are raised by road or VMT pricing. Other efforts, such as pay-as-you-go insurance, could be implemented through State action. Overall, State action in pricing can have a broad extent and can take effect quickly, as opposed to land use policies which would have a sizeable effect but over a longer period of time as the built environment is modified.

The steps to use in quantifying the impact of State-level pricing strategies on VMT are shown in Table 2 below. Table 2 has four panels, for fuel taxes, VMT fees, link or cordon tolls, and pay-as-you-go insurance. Parking pricing is not shown, because the link from those policies to VMT has been less studied, although the nascent evidence from *SFPark* is promising and suggests that

priced parking can substantially reduce the amount that drivers “cruise” to find parking spaces (Millard-Ball, Weinberger, and Hampshire, 2014).

Note that the data on the fuel prices gives direct estimates of the effect of changes in fuel prices (from, e.g., tax changes) on VMT; relatively few assumptions are needed compared to other policies that we discussed in this paper. The data on VMT fees similarly require few assumptions, although the state would require advances in modeling the location of traffic across the state and into and from neighboring states for a complete analysis. While the VMT fee data are from pilot programs, those programs and the current pilot in California provide an opportunity to get good evidence on the effect of VMT fees on driving. Tolls require an assumption about the amount of driving that would be diverted to routes or times of day that are not tolled, and the evidence on that is more limited. Leape (2006) estimates that a quarter of the traffic reduction within the London cordon toll ring was diverted to other routes. Pay-as-you-go insurance requires an assumption that the elasticities from VMT fee or fuel tax studies apply, but such an assumption is theoretically sound. Overall, quantifying the effect of pricing on driving requires relatively few assumptions compared with other policies.

Table 2: Assumptions and Data Needed to Estimate Effect of State-Level Pricing Strategies on VMT

Panel A: Fuel Prices			
Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Quantify percentage increase in fuel price	Compare proposed tax increases to existing fuel prices	Validity = 5 (excellent) Data are available on fuel prices, by state and for areas within the state. Fuel prices vary over time, often substantially so, and so analysts would have to address that variation over time in assessing the "base" (before-tax-increase) fuel price.	Data are available.
2. Determine population that will be affected by tax	Fuel taxes typically affect everyone in the state	Validity = 4 (good) to 5 (excellent) The literature on passenger travel and fuel taxes gives good evidence; less literature on freight travel and fuel taxes	To refine future estimates, the state can study how freight travel responds to fuel taxes and whether the strategy effect, from mostly passenger vehicle studies, applies to freight traffic.
3. Apply strategy effect to affected population	Use elasticity of -0.1 (minus 0.1), per discussion above	Validity = 4 (good) to 5 (excellent)	Studies on the effect size are high quality. Future research should examine how variation in fuel prices over time affect VMT, given the high month-to-month and year-to-year volatility in fuel prices. Over the long-term, taxes might be designed to adjust in the opposite direction of market fuel price variation, holding at-the-pump fuel prices more constant.

Panel B: VMT Fee			
Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Assess extent of VMT fee	Fees could be statewide or for sub-sets of state	Validity = 4 (good) to 5 (excellent)	Traffic will cross borders if VMT fee does not apply to entire state, and even if statewide, some traffic will enter and leave the state. Some improvement in statewide travel modeling could be needed to account for border effects.
2. Quantify whether VMT fee will be revenue neutral	Assumption about revenue neutrality will translate to amount of the VMT fee	Validity = 4 (good) to 5 (excellent)	Continue pilot programs to understand how revenue responds to fee levels
3. If fee is revenue neutral, apply evidence on effect	Oregon pilot program suggests revenue neutral VMT fee will reduce driving by 11 to 14 percent	Validity = 3 (fair) to 4 (good)	Evidence from California pilot program (now underway) should be used to supplement the Oregon evidence

Panel C: Link or Cordon Tolls			
Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Estimate toll amount and resulting change in cost of travel	Data on pre-existing travel needed -- use estimates of number of persons passing link from Caltrans link travel data (e.g. AADT), and estimate pre-toll dollar cost of travel based on average trip lengths	Validity = 3 (fair) Data on link travel can be obtained, but the literature does not clarify if the time-cost of travel should be included in the base amount to analyze change in travel cost.	California has existing toll lanes, and data from those lanes should be used to get better information about the appropriate measure of the population affected and how to measure toll costs for purposes of applying the elasticity of the strategy effect.
2. Estimate reduction in traffic in tolled area	Apply elasticities, which for link and cordon tolls will usually predict reduction in traffic in the tolled area, not reductions in VMT	Validity = 3 (fair) to 4 (good)	Continue research, particularly on cordon tolls which have not been implemented in U.S. and so require research from international settings
3. Estimate diverted traffic	Estimate the amount of driving that moved from the tolled area to a different route	Validity = 2 (poor)	The evidence on how tolls divert traffic is limited. Leape (2006) estimates 1/4 of reduced traffic in London cordon toll was diverted to other routes. Toll lane price changes in California can provide an opportunity for before-after studies of traffic diversion.
4. Estimate VMT reduction	Use data or assumptions about average trip lengths (before tolling), reduction in trips, and the fraction of trips diverted to get estimate of reduced VMT.	Validity = 2 (poor) to 3 (fair)	Diverted traffic is the weakest link here, and future research should focus on how toll price changes divert traffic.

Panel D: Pay-As-You-Go-Insurance			
Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Assess Population Affected by Pay-As-You-Go Insurance	If program is voluntary, use data from pilot programs or other markets to assess how many drivers would opt for pay-as-you-go insurance	Validity = 3 (fair)	There is very limited experience with pay-as-you-go insurance. Pilot programs are advisable to understand the "take up" rate for this insurance product, particularly if pay-as-you-go competes with traditional flat-rate insurance.
2. Quantify percentage increase in cost of driving	Compare proposed pay-as-you go fees (per mile basis) to existing per-mile driving costs	Validity = 4 (good) to 5 (excellent)	Data are available on per-mile driving costs.
3. Determine effect size for drivers	Assume pay-as-you-go strategy effect is similar to VMT fees or fuel taxes, hence elasticity = -0.1	Validity = 4 (good)	The price effect is likely very similar to VMT fees or fuel taxes which change the marginal (e.g. per-mile) cost of driving. Pilot programs should be developed to confirm this theoretical prediction.
4. Apply effect size to affected population	Direct calculation from steps above	Validity = 4 (good) to 5 (excellent)	Again, if pay-as-you-go competes with flat-rate insurance, understanding consumer demand for pay-as-you-go will be important

Policy Considerations for Pricing

Pricing policies generate a revenue stream. That is an important potential benefit. Pricing also brings substantial policy advantages beyond VMT reduction. Pricing revenues can be used to expand non-automobile travel options, making the pricing policies themselves more effective at VMT reduction. Similarly, pricing policies can be used to address equity concerns, for example by expanding bus service, providing pedestrian or bicycle improvements, or mitigating environmental impacts in low-income neighborhoods.

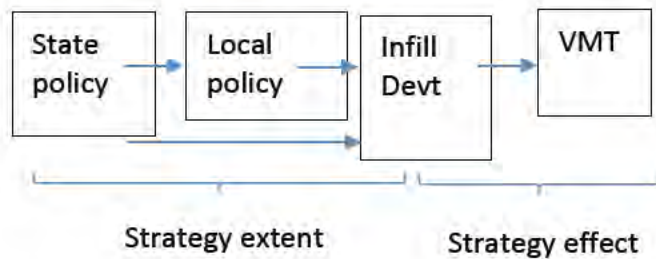
Sales tax finance has become the primary means of transportation finance in most large California metropolitan areas. The sales tax is regressive, meaning that sales taxes are a larger

fraction of income for lower income persons than for high income persons. Sales taxes are paid by persons irrespective of their use of roads, raising both efficiency and equity issues. From an efficiency perspective, sales taxes provide no nexus between revenues raised and use of the transportation system. From an equity perspective, sales taxes are paid by persons who do not use the system, with lower income persons paying a larger share of their income in sales taxes. Schweitzer and Taylor (2008) compared the toll-road finance of the SR-91 in Orange County with an equivalent (revenue-neutral) sales tax finance and found that under reasonable assumptions toll road finance would be more equitable, and that sales tax finance could in many cases place a larger burden on lower income households. Pricing policies have the prospect of providing much needed revenues for transportation, in ways that build a link between use of the system and financing while being more equitable than current transportation finance policies.

Pricing policies will be more effective in reducing VMT when and where there are easily available non-automobile options. Hence policymakers should be aware that implementing pricing in locations with many travel options, or with a plan to expand travel options, would be a preferred approach. Fortunately, congestion and parking pricing would likely be implemented first in congested urban areas or in locations where land values are high, which are typically the same locations with non-automobile transportation options.

While evidence suggests that state intervention to increase the price of driving is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 2 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

2. Infill Development



Land use in California has long been a local domain, but many State actions and laws, such as Regional Housing Needs Assessment (RHNA) allocations and the California Environmental Quality Act (CEQA) influence outcomes. The State also provides subsidies, such as the Affordable Housing and Sustainable Communities (AHSC) program, which can assist localities that are pursuing infill development. State policy, and the link from state policy to local policy, is important. Yet the evidence is most clear on the strategy effect, the effect from land uses associated with infill development to VMT.

Many land use policies have the potential to reduce VMT. The ARB policy briefs discuss the effect of residential density, employment density, land use mix, street connectivity, distance to transit, regional accessibility to jobs, and jobs-housing balance. The literature provides strong evidence that persons who live in more centrally located, dense, mixed use developments with walkable infrastructure and near transit options will drive less. The effect of land use on reducing driving is, at least in part and possibly in largest part, causal, meaning that when persons move to a mixed-use transit-oriented or walkable neighborhood, the land use causes them to drive less (Cao, Mokhtarian, and Handy, 2009; National Research Council, 2009; Duranton and Turner, 2016.)

We will first discuss that body of evidence on the effect of land use and infill development on VMT (i.e. the strategy effect), then turn to the upstream question of the effect of state and local policy on infill development (i.e. the strategy extent). Note that policies to promote infill development are policies that will place more residents in locations that are more accessible to jobs and transit, with higher densities, more mixed land uses, and better street connectivity. Hence we use “infill development” as a summary measure of land use, both because it is a meaningful measure and because it clarifies policy approaches to metropolitan area planning. State policies can affect the prospects for infill development, and recent state actions (e.g. SB 743) are attempts to measure impacts in ways that change the attributed traffic/transportation impact of infill versus outlying development to more appropriately give environmental credit to infill projects that will reduce VMT in large metropolitan areas.

Strategy Effect: Impact of Infill Development on Individual or Household VMT

The first question is how to measure the effect of infill development on individual or household travel behavior.⁹ We suggest that the best proxy measure for infill development is regional access to jobs. Both lay audiences and policy-makers often think about residential density when measuring land use, because density is intuitive (persons or dwelling units per land area) and easy to measure. Yet residential density is among the land use variables with the weakest links to VMT. The strategy effect size of residential density on VMT has an elasticity from -0.05 to -0.12, meaning that if density doubled, household VMT would be reduced by from 5 to 12 percent. The strategy effect size of regional job access is twice as large – an elasticity of from -0.13 to -0.25.¹⁰ This implies that density alone is a less meaningful metric for VMT reduction than proximity to job centers. However, in practice, increased density is likely also needed to increase the number of households near job centers.

Not only is the strategy effect of density smaller than the strategy effect of regional job access, regional job access is a policy with a potentially broader strategy extent. Doubling residential density would be, in most locations, outside of the realm of feasible policy changes. As we show in the appendix, infill policies can double a household's regional job access in California's urban areas simply by providing housing options that are closer to job concentrations, and are likely feasible in ways that doubling density is usually not. Overall, regional job access is a much better measure of the strategy effect and the policy possibility (strategy extent) of infill development.

Improving regional access to jobs implies a planning focus on where, in the metropolitan area, new growth occurs. Would new growth be near the center, where more jobs are located and hence where access to jobs is good, or on fringe, where access to jobs is weaker?

A typical measure of jobs access is called a “gravity variable.” Most gravity variables are a sum of the jobs that a resident can reach from their household, multiplying jobs by the inverse of the distance from a household's home to the job. Jobs that are closer to where a household lives count for more, and jobs farther away count for less. There are different mathematical formulations in the literature. Some authors sum only jobs within five miles of a household (for an application, see Salon, 2014, or Boarnet and Wang, 2016.) Other studies (e.g. Zegras, 2010) use distance from the downtown by itself, noting that a household's distance from downtown is strongly correlated with gravity variable measures of job access. For now, note that distance from downtown (e.g., whether a household live 10 miles from downtown, or 20 miles from downtown) is easier to measure than a gravity variable that sums all jobs in the metropolitan

⁹ Often times the academic literature looks at household travel, because family members within a household can trade trips, such that one person might go to the store while the other does the banking, or vice versa. Using household data allows researchers to treat the household as the behavioral unit. When the overall literature is summarized, as we do here, the disaggregate data are typically from studies of individual travelers or drivers, or from households.

¹⁰ See the ARB Research Briefs on residential density and regional access to jobs, at https://www.arb.ca.gov/cc/sb375/policies/density/residential_density_brief.pdf and https://arb.ca.gov/cc/sb375/policies/regaccess/regional_accessibility_brief120313.pdf, respectively.

area weighted by the inverse of the distance from the household to those jobs. Having said that, much of the literature has used gravity variables, and so we discuss gravity variables first.

Figure 1 shows gravity variable measures of job access for the greater Los Angeles region, in five categories, or quintiles. Figure 1 shows that locations near downtown have the best job access, and job access declines as one moves further from downtown. The ARB policy brief for regional job accessibility suggests an elasticity of VMT with respect to job access ranging from -0.13 to -0.25, meaning that if job access were doubled (a 100 percent increase), household VMT would decline by from 13 to 25 percent. Note that high end of the range of this strategy effect is almost exactly the same as what you would get if you used a simpler measure of distance from downtown, for which the ARB policy briefs suggest an effect size of 0.22 to 0.23, meaning that if a household moves from 10 to 20 miles away from downtown (a 100 percent increase in their distance to downtown), their VMT would increase by 22 to 23 percent.¹¹

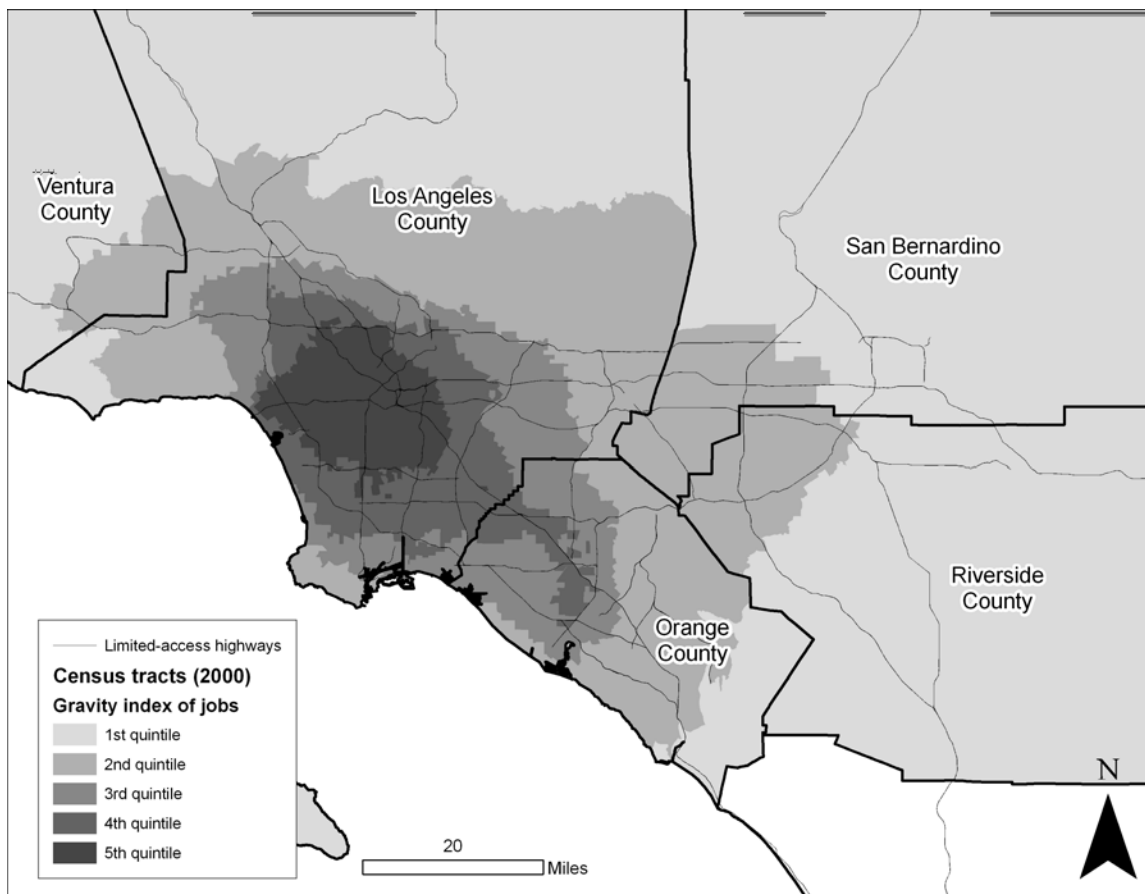


Figure 1. Gravity Variable of Regional Access to Jobs, metropolitan Los Angeles, 2000 (reprinted from Boarnet, Houston, Ferguson, and Spears, 2011, Figure 7.3)

¹¹ See the ARB Research Briefs on regional access to jobs, https://arb.ca.gov/cc/sb375/policies/regaccess/regional_accessibility_brief120313.pdf.

The strategy effect would measure moving persons (or changing the location of new development) from places with poor to better job access. As an example, the Southern California Association of Governments has proposed to focus almost half of the region’s future growth and new development in high quality transit areas, defined as places within a half-mile of fixed-route transit or bus transit with peak-period transit service of 15 minutes or less.¹² Many other metropolitan areas have engaged in scenario planning exercises to simulate changes in growth patterns that would favor infill development. Referring back to the map in Figure 1, the darkest shaded areas have the best job access (they are in the fifth, or highest, quintiles of access.) The next darkest areas are in the fourth quintile, and the next highest areas are in the third quintile, and so forth. Example communities in those areas are shown in Table 3 below.

Table 3: Examples of Municipalities in 3rd, 4th, and 5th Quintile of Regional Access to Employment

Job access quintile ^a	Example neighborhood/municipality
5 th quintile (highest job access)	Downtown Los Angeles Hollywood West Los Angeles Crenshaw Echo Park
4 th quintile	Santa Ana Orange Fullerton Lakewood La Mirada Southern San Fernando Valley
3 rd quintile	North Orange County Covina

An ideal measure of the effect of infill development would measure the effect of changing the location of development on VMT – for example, what would happen if, instead of building new residences near Covina (the third quintile of job access in Figure 1), the Los Angeles region added new residences in communities such as Santa Ana (the fourth quintile of job access) or Echo Park (the fifth or highest quintile of job access.) One method would be to assess, numerically, how much a measure of a household’s job access would increase when they locate in, for example, Santa Ana or Echo Park as opposed to Covina. Such a method is outlined in the appendix. This approach would require several computational steps, and for simplicity we do

¹² SCAG’s 2016 Regional Transportation Plan projects that 46 percent of new residential growth and 55 percent of new employment growth will be on the three percent of the region’s land that is in high quality transit areas. See Southern California Association of Governments, 2016 RTP/SCS, Executive Summary, p. 8, http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_ExecSummary.pdf.

not go over that here, although we note that the estimated strategy effect computed in the appendix is similar to what we present here using simpler methods.

Rather than use a gravity variable for regional access to jobs, one could use distance from the downtown to approximate the change in the job access measure. Following the example, Covina is approximately 24 miles (driving distance) from downtown Los Angeles, while Echo Park is approximately 4 miles from downtown Los Angeles, a reduction in distance from downtown of 83 percent if infill development could allow a household to locate in Echo Park rather than Covina. Multiplying that change in distance by the 0.22 effect size of distance from downtown, this implies that moving households from Covina to Echo Park could reduce their driving by 18 percent. Using more sophisticated regression techniques, Boarnet and Wang (2016, Table 12, p. 36) predict that a household move across similar distances in the Los Angeles region could be associated with even larger VMT reductions – as large as 33 percent.¹³

We can use the literature, with effect sizes drawn from changes in gravity variables or simpler changes to distance from downtown, to predict the effect of increased infill development. Table 4 gives an illustration of the steps and the data and assumptions needed.

¹³ See Marlon G. Boarnet and Xize Wang, Urban Spatial Structure and the Potential for Reducing Vehicle Miles Traveled, National Center for Sustainable Transportation research report, April, 2016, available at http://ncst.ucdavis.edu/wp-content/uploads/2014/08/04-18-2016-NCST-Urban-Spatial-Structure-Boarnet-4_10_16.pdf, accessed Sept. 24, 2016.

Table 4: Assumptions and Data Needed to Estimate Effect of Infill Development on Household VMT

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Measure land use patterns associated with infill development	Choose a measure that will proxy location in the region, and hence infill policies: Regional job access measures as a gravity variable or distance from downtown	Validity = 3 (fair) to 4 (good) If access to transit and access to non-auto transportation are included elsewhere in the analysis, evidence indicates that remaining land use patterns are correlated with regional job access; the evidence suggests that the size of the strategy effect is very similar whether measured by gravity variables or distance from downtown, even in highly sub-centered metro areas	Develop statewide GIS measures of land use characterized by either (1) distance from metropolitan area downtown, (2) gravity measure of regional access to jobs, or (3) the land use categories developed in research by Salon (2014) which can likely be analogs to regional job access
2. Use data across different locations to proxy infill development – translate infill to changes in a job access gravity variable or changes in distance from downtown.	Need assumptions or information from scenario models about different growth scenarios for metropolitan areas to understand how regional job access would change, and for how many households	Validity = 2 to 3 (poor to fair) There are several scenario tools, but all such tools are possible policy futures. There will be uncertainty regarding the amount of infill development, and we suggest modeling several possible future infill growth scenarios, from aggressive use of infill to somewhat less aggressive, to bound possibilities.	Recommend using or updating the scenario tool developed as part of Salon (2014) for statewide simulations of moves across development types.
3. Use an elasticity of household VMT with respect to regional job access to calculate percentage changes in household VMT	Use regional job access elasticity from ARB regional accessibility brief.	Validity = 4 (good) Job access elasticities vary within metropolitan areas, as demonstrated by Boarnet et al. (2010) and Salon (2014), but regional averages give a good mid-point or average effect.	Use ranges of elasticities from, e.g., Boarnet et al. (2010) or Salon (2014), or adapt and use the scenario tool from Salon (2014)
4. Apply predicted percentage change in household VMT to a base-year measure of household VMT to obtain predicted change in household VMT.	Apply predicted percentage change in household VMT to average household VMT for a metropolitan area or the state.	Validity = 2 to 3 (poor to good) The CHTS has data on household VMT in different locations. These data are available and reliable. The difficulty is understanding where households might have located absent infill policies, a point currently not sufficiently addressed in the literature. Scenario models can be used to assess where households would have lived absent infill policies.	More research on how changes in housing supply in specific locations (e.g. infill) affect residential location choices of households.

Table 4 illustrates four steps, (1) measuring land use patterns, (2) simulating changes in development patterns (e.g. from infill development) and translating those changes in development patterns into changes in a measure of regional job access or distance from downtown, (3) using elasticities in the literature to measure the impact of a change in regional access to jobs (or distance to downtown) on VMT, and (4) apply the predicted change in VMT to a base year level of household VMT.

Table 4 starts with a first step of measuring land use, either with gravity variables or with simpler measures of distance from downtown. Note that the Air Resources Board recently funded research by Salon (2014) which developed statewide categories of neighborhood types, and those neighborhood types might be close approximations to regional job access, and so we add those neighborhood types developed by Salon (2014) to the list of possible regional job access measures. A complementary approach could be based on the California Statewide Travel Demand Model, which has employment data for zones statewide.¹⁴ The second step would assess how changes in the amount of infill development would lead to changes in job access and how many persons (households) would be affected by those changes. We suggest bounding possible amounts of new development in this second step, from a modest amount of infill to aggressive use of infill, relying on local policy expertise to inform how modest and aggressive would be quantified in terms of number of new housing units and hence the number of households affected. Step 3 in Table 4 applies elasticities from the ARB job access policy brief. We note that there is a nascent literature (Boarnet, 2011; Salon, 2014) that gives evidence that the strategy effect of regional job access on VMT varies depending on where, in the metropolitan area, a household lives, but we also note that mid-point or average estimates of the policy effect will both work well and, if anything, understate the VMT effect of infill development.¹⁵ The last step would be to apply the strategy effect (percent reduction in VMT) to the number of households affected by the strategy.

The evidence is consistent and very strong that households that live in more central locations in urban areas drive less. That relationship is very common in the data, and sophisticated studies that attempt to control for household location choices suggest that more central locations with better multi-modal transportation access cause households to drive less (e.g. Duranton and Turner, 2016; Spears, Houston, and Boarnet, 2016.) While we suggest, in Step 4 of Table 4, that the state continue to research *how* different households choose their residential location, and hence which households would move into infill developments, we note that such information will be more important to understand questions of equity (e.g. gentrification and displacement)

¹⁴ See the SB 743 Impact Assessment Web page, at <http://www.dot.ca.gov/hq/tpp/offices/omsp/SB743.html>. The data available there can provide a basis for measures of employment in zones throughout California, and hence for measures of employment access.

¹⁵ The strategy effect of regional access to jobs might be larger in centrally located areas, implying that using the metropolitan-wide average effects from the ARB policy briefs might understate the VMT-reducing effect of infill development. For a discussion and evidence, see Boarnet et al. (2010) and Salon (2014).

rather than to understand whether households in central locations drive less. The literature provides strong evidence that households in more central parts of urban areas drive less.

Strategy Extent: Impacts of State Policies on Infill Development

While there is strong, evidence-based correlation between infill development and VMT reduction, estimating state-wide VMT effects of State policies to encourage infill development requires additional assumptions about the effectiveness of state policies in making infill development happen. There is still a lack of empirical literature on *how* state policies lead to more (or less) infill development, but the state's existing policy framework, including but not limited to SB 375, provide an opportunity to study how state goals and requirements influence development activity. For now, we note that the state has many policy tools that can influence development.

State Policy Considerations for Infill Development

The state has interests in increasing infill development, and the literature demonstrates that doing so will advance State VMT reduction goals (as well as multiple other State policy priorities). SB 743 changed the traffic impact metric in CEQA, and Governor Brown recently proposed a by-right housing proposal which was not acted upon by the legislature. The state has also recently taken action on auxiliary dwelling units.

More could be done by continued changes in the measurement of impacts required by state legislation (e.g. CEQA), or with legislation that allows (or even requires) streamlined development approval when certain conditions (possibly infill location and/or providing affordable housing) are met. The state could also subsidize infill development, or provide tax reductions, which could incentivize increased infill development, although we note that such tools, in isolation, would not get around restrictive local land use regulations. Additionally, the State could add to the "toolbox" of existing financing tools for infill development and also the financing that is available for critical, infill-supportive infrastructure, which would also likely incentivize an increased share of infill development. Financing tools are likely to be particularly critical in shaping future development patterns in areas of the state where infill is at an economic disadvantage compared to greenfield or more remote development due to market conditions and/or distressed conditions in infill areas. Finally, the State could directly incentivize consumer choice, for example through low-VMT housing rebates or "live where you work" incentive programs. The location of infrastructure, including highways, transit, schools, and major public buildings, can also influence growth patterns.¹⁶ Aligning state infrastructure spending with infill goals, e.g. through performance metrics or other criteria, would be one way to ensure better leverage these investments to further VMT and GHG reduction goals.

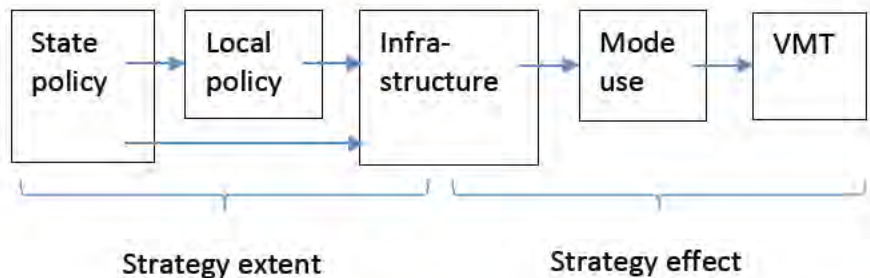
¹⁶ For evidence of the effect of highways on growth patterns, see Funderburg, et al. (2010) and Baum-Snow (2007).

While evidence suggests that state intervention to increase infill development is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 4 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

3. Transportation Investments

In this section, we separately consider the VMT impacts of three categories of transportation investments: bicycle and pedestrian infrastructure, transit service, and highway capacity. Although the impacts of bicycle infrastructure are distinct from the impacts of pedestrian infrastructure, the methods for projecting their impacts are similar, so we consider them together. The subsection on transit focuses on the impact of expansions in transit service rather than infrastructure per se, given the nature of the research available. We consider only intra-regional transit service, rather than inter-regional service such as high-speed rail, the potential GHG impacts of which have been quantified using an ARB-approved methodology.¹⁷ The subsection on highway capacity differs from the first two in that the available research provides evidence on *increases* in VMT resulting from increases in capacity.

3.1 Bicycle and Pedestrian Infrastructure



Strategy Effect: Impact of Bicycle and Pedestrian Infrastructure on Individual or Household VMT

Investments in bicycle and pedestrian infrastructure have the potential to reduce VMT by encouraging a shift from driving to these active travel modes. A growing body of research shows a strong connection between the extent of bicycle and pedestrian infrastructure and the amount of bicycling and walking in a community. Many of the available studies focus on commute trips rather than active travel for all purposes; some studies do not separate active travel from recreational walking and bicycling. Most studies measure infrastructure investments in terms of miles of facilities or percentage increases in miles of facilities without accounting for the quality of the new facilities or their impact on the connectivity of the bicycle or pedestrian network, though current studies are beginning to provide insights into the effects of facility characteristics and network connectivity, not just extent (e.g. Monsere, et al. 2014).

As summarized in the ARB Research Briefs, differences between the studies do not enable a consensus estimate of the strategy effect, though results from individual studies could be used. A relatively recent study of 24 California cities found that a 1% increase in the percent of street length with bike lanes in a city was associated with an increase of about 0.35% in the share of

¹⁷ <https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/hsrinterimqm.pdf>

workers commuting by bicycle (Marshall and Garrick, 2010). These results suggest that in a city where 1% of commuters bicycle, a 100% increase (i.e. a doubling) in the percent of streets with bike lanes would increase the bicycle commuter share to 1.35%. For walking, a North Carolina study found that a 1% increase in the portion of the route with sidewalks was associated with a 1.23% increase in the share of walk commuting (Rodriguez and Joo, 2004), though other studies suggest a much more modest effect.

While the literature strongly suggests that bike and pedestrian infrastructure increase biking and walking and therefore decrease VMT, quantifying the precise reductions in VMT is tricky. First, studies suggest that the effects of investments depend on the context, including the adoption of other strategies to promote walking and bicycling, such as educational programs or promotional events (Pucher, et al., 2010). Comprehensive efforts that combine strategic and high-quality infrastructure investments with promotion and education over a period of time have been shown to produce substantial increases in bicycling. In addition, investments in facilities that connect important destinations and contribute to the overall connectivity of the network will have more impact than stand-alone facilities that do not serve important destinations or help to build a larger network. Second, new walking and biking trips do not necessarily replace driving trips; they may replace transit trips, for example, or they may be entirely new trips. The degree to which walking and biking trips substitute for driving trips is difficult to pinpoint, as discussed by Piatokowski, et al. (2015). Third, when these trips do substitute for driving, they may be shorter than the trips they replace, particularly for non-commute trips. For example, an individual may choose to bike to a nearby store rather than driving to a store across town, in which case a measure of the increase in bicycling distance would underestimate the reduction in driving distance. Fourth, reductions in VMT from non-commute trips are also likely to occur. Thus, projected reductions in VMT based on the commute effects are almost certainly lower than the probable reductions. Projecting statewide reductions in VMT resulting from investments in bicycle and pedestrian infrastructure requires assumptions about each of these possibilities, as outlined in Table 5.

Strategy Extent: Impact of State Policy on Bicycle and Pedestrian Infrastructure

Investments in bicycle and pedestrian infrastructure are mostly made at the local level by cities and sometimes counties. State policy can influence such investments through grant programs, for example, Caltrans' Active Transportation Program. The state can (and indeed does) encourage such investments by allowing Metropolitan Planning Organizations to develop their own grant programs using the state and federal funds allocated to the MPO. However, research shows that simply allowing MPOs to spend federal funds on bicycle and pedestrian infrastructure does not guarantee that they will (Handy and McCann, 2011).

Estimating statewide reductions in VMT resulting from State policies and programs that support the expansion of bicycle and pedestrian infrastructure requires an estimate of the increase in bicycle and pedestrian infrastructure over a specified period of time (see Table 5, Step 2). This increase depends on what policies the state adopts, how MPOs and local governments respond

to these policies, and how State actions influence the investments that local governments choose to make with their own funds – all very difficult to predict with precision. One approach to estimating the percent increase in bike/ped infrastructure is to estimate the funding available for these investments for the specified period of time, then convert this amount to miles of bike facilities and sidewalks using data on the per mile costs of such facilities. Another approach is to analyze increases in infrastructure for selected cities where good data on the extent of infrastructure at two or more points in time is available. San Francisco, for example, is planning to double its miles of protected bike lanes (from 15 to 30 miles) in the next 15 months.¹⁸ Because bicycle facilities are less ubiquitous than pedestrian facilities, a given length of new facility will represent a larger percentage increase for bicycle infrastructure.

State Policy Considerations for Bike/Ped Infrastructure

The available evidence shows a strong connection between the extent of bicycle and pedestrian infrastructure and the amount of walking and bicycling. Although projecting the VMT impacts of new investments in such infrastructure involves a number of critical assumptions, given limitations in the available evidence, this strategy shows strong potential for reducing VMT, in addition to producing other benefits for the community (see Sallis, et al. 2015 for a discussion of co-benefits).

Research suggests that state actions to increase bicycle and pedestrian infrastructure would be most effective in reducing VMT if implemented in conjunction with promotional and educational programs (Pucher, et al. 2010). In addition, emerging evidence suggests that higher quality infrastructure, such as protected bicycle lanes, are more effective in promoting increases in active travel (e.g. Monsere, et al. 2014), so state actions could prioritize such high-quality infrastructure to ensure maximum VMT reduction per mile of infrastructure. Network connectivity is also now recognized as a critical consideration in prioritizing investments in bicycle and pedestrian infrastructure (Mekuria, et al. 2012), so state actions that prioritize connectivity improvements could again help to ensure the highest VMT reductions per mile of infrastructure.

State policy currently encourages such investments in bicycle and pedestrian infrastructure through grant programs and by giving MPOs flexibility in how they spend their state and federal funds. Stronger state measures could require MPOs to spend a certain share of state funding on these modes or set performance standards for walking and bicycling that MPOs must meet in order to receive funding. Additionally, the State could allocate a greater portion of state transportation funds to direct investments in pedestrian and bicycle infrastructure. Any of these measures can help ensure maximum VMT reduction per mile created by incorporating the considerations in the paragraph above into guidelines for the allocation of funds.

¹⁸ <https://www.sfmta.com/about-sfmta/blog/new-generation-bikeways-coming-san-francisco>

While evidence suggests that state intervention to increase bicycle and pedestrian infrastructure is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 5 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

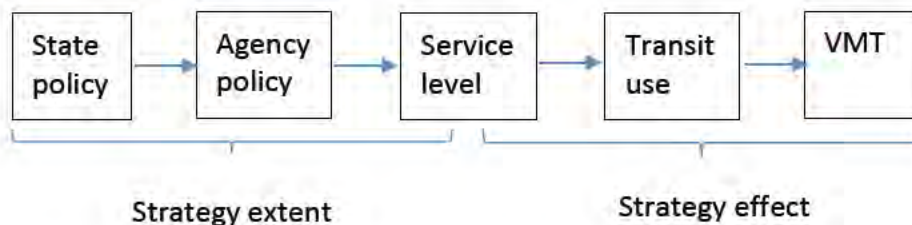
Table 5. Suggested Steps for Calculating VMT Impacts of Bicycle and Pedestrian Infrastructure Investments

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Measure existing bicycle/pedestrian infrastructure	Most common measure is percent of street length with bike/ped facilities	Validity = 3 (fair) Most common measure does not account for quality of facilities or the connectivity of the network.	Develop statewide GIS database of bike/ped facilities, including characteristics of facilities. Develop measures of network connectivity.
2. Measure <i>changes in bicycle/pedestrian infrastructure as percentage of current infrastructure</i>	Estimate additional bike or ped infrastructure that could be constructed given funding available, for state or by region.	Validity = 3 (fair) Costs of infrastructure vary by facility type and context.	
3. Use an elasticity of % bike/ped commuting with respect to bike/ped infrastructure to calculate <i>percentage increase in %bike/ped commute trips</i>	Use bike or ped elasticity from ARB bicycle or pedestrian infrastructure brief.	Validity = 3 (fair) Bike/ped elasticities may vary by context. Available elasticities account only for bike/ped commuting, not bike/ped travel for other purposes.	Conduct studies of the impacts of bike/ped infrastructure investments that measure changes in all bicycling or walking trips, by trip purpose.
4. Apply predicted percentage change in %bike/ped commute trips to a base-year measure of annual statewide or regional bike/ped commute trips to estimate <i>increase in total annual bike/ped commute trips</i>	Use estimate of annual statewide bike/ped commute trips or estimates by region.	Validity = 4 (good) The CHTS has data on bike/ped commute trips statewide and by region. Bike/ped trips may be underreported. (Note that American Community Survey data reports only usual commute mode.)	Improve survey design to better capture bike/ped trips by purpose.

Table 5. Suggested Steps for Calculating VMT Impacts of Bicycle and Pedestrian Infrastructure Investments (Continued)

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
5. Adjust number of trips to reflect switching from modes other than driving to estimate <i>reduction in total annual driving commute trips</i>	Apply driving commute mode share for state or by region.	Validity = 2 (weak) Propensity to shift to bike/ped commuting may vary by current mode and by context.	Conduct studies of the impacts of bike/ped infrastructure investments that measure shifts between modes. Conduct such studies in different contexts.
6. Convert reduction in total annual driving commute trips to <i>reduction in total annual commute VMT</i>	Use estimate of average commute distance for bike/ped commuters statewide or by region.	Validity = 3 (fair) The CHTS has data on average commute distance for bike/ped commuters statewide and by region. Driving commute trips eliminated by new bike/ped trips may be longer (or shorter) than current bike/ped commute distances.	Conduct studies of the impacts of bike/ped infrastructure investments that measure commute distance for new bike/ped commuters.

3.2 Transit Investments



Strategy Effect: Impact of Transit Investments on Individual or Household VMT

Investments in transit service have the potential to reduce VMT by encouraging a shift from driving to transit. Many different types of investments are possible, including improved access to bus stops and rail stations, coordinated schedules and transfers between systems, real-time information about arrivals and departures, and electronic farecards. As summarized in the ARB Transit Service research brief, however, most research focuses on the effects of changes in fares, changes in service frequency (or changes in headways), or changes in miles of service. Most studies examine the effects of these changes for bus systems, though some report effects

for rail systems. Outcomes are measured in terms of changes in transit ridership, i.e. the number of transit trips made for the specified period of time.

According to the ARB research brief, the available research shows that a 1 percent increase in service frequency will lead to a ridership increase of approximately 0.5 percent and that a 1 percent increase in service hours or miles could lead to a higher increase of around 0.7 percent. Effect sizes are likely to be higher in cases where the investments target “choice” riders who are not dependent on transit, higher-income riders, off-peak and non-commute trips, and small cities and suburban areas. These findings are applicable to metropolitan areas but not necessarily to rural areas where transit service is sparse.

As with bicycle and pedestrian investments, although transit investments are likely to reduce VMT, quantifying the effects of transit investments on VMT is not straightforward. First, studies suggest that the effects of investments depend on the context, as noted above. Second, not all new transit trips replace driving trips; they may instead replace bicycling or riding in a carpool, or they may be entirely new trips that would not otherwise have been made. Third, new transit trips may be shorter (or longer) in length than any driving trips they replace. For example, an individual may choose to take the bus to the nearest store rather than driving to a store across town, in which case a measure of the increase in transit distance would underestimate the reduction in driving distance. Projecting statewide reductions in VMT resulting from investments in transit service requires assumptions about each of these possibilities, as outlined in Table 6.

A recent study of the opening of the Expo Line in Los Angeles provides some of the most direct evidence available of the impact of transit investments on VMT (Spears, et al. 2016). This study, which measured VMT for households living near the new light-rail line before and after the opening of the line, found that households living within 1 mile of a new Expo station drove almost 11 miles less per day because of the new line 18 months after its opening. The authors conclude that large investments in light rail, coupled with supportive land use policies, have “the potential to help achieve climate policy goals.”

Strategy Extent: Impact of State Policy on Transit Investments

Because much of the funding for intra-regional transit flows directly from the US DOT to transit agencies, the state role in promoting transit investments is more limited than it is for other modes. In addition, transit improvements are increasingly funded through county and regional sales tax measures, such as the upcoming ballot measures in Sacramento, the Bay Area and Los Angeles. The state provides transit funding through State Transit Assistance¹⁹, bond measures such as Prop 1B²⁰, and more recently, through the California Climate Investments Fund (cap and trade proceeds).

¹⁹ http://www.sco.ca.gov/Files-ARD-Payments/Transit/statetransitassistanceestimate_1617_january16.pdf

²⁰ <http://www.dot.ca.gov/hq/transprog/ibond.htm>

Estimating statewide reductions in VMT resulting from improvements in transit service requires an estimate of the increase in transit service over a specified period of time (see Table 6, Step 2). This increase depends on what policies the state adopts, how transit agencies respond to these policies, and the investments that transit agencies choose to make with their own funds – all very difficult to predict with precision. One approach to estimating the percent increase in transit service is to estimate the funding available for service improvement for the specified period of time, then convert this amount to hours or miles of service using data on the per mile costs of such service. Another approach would be to compile proposed transit investments in the Regional Transportation Plans for the Metropolitan Planning Organizations in the state and assume this level or a proportionately higher level (to reflect new state policy) of investment in transit service.

State Policy Considerations for Transit Investments

The available evidence shows a strong connection between the extent of transit service and transit ridership. Although projecting the VMT impacts of new investments in transit service involves a number of critical assumptions, given limitations in the available evidence, this strategy shows strong potential for reducing VMT.

Service expansions are likely to have more impact when combined with other strategies such as improved access to bus stops and rail stations, coordinated schedules and transfers between systems, real-time information about arrivals and departures, and electronic farecards. The impacts of transit investments on VMT are likely to be higher in cases where the investments target “choice” riders, higher-income riders, off-peak and non-commute trips, and small cities and suburban areas. The State can increase the VMT-reduction impact of state actions to increase transit ridership by considering these conditions when, for example, developing guidelines for funding allocations, along with other considerations that achieve other policy goals, e.g. prioritizing investments in disadvantaged and low-income communities.

Although the bulk of transit funding comes from federal and local sources, the State does provide transit funding to regional and local transit agencies through a number of different programs. The state could ensure larger reductions in VMT by targeting this funding to areas and investments that are likely to have larger impacts. The State could also consider programs that directly encourage transit use, including tax breaks for employer-provided transit passes modeled on federal policy.²¹ State policies that promote infill development around transit stations can also help to increase transit use (see section on Infill Development). Efforts to coordinate services among regional and local agencies could prove valuable as well.

While evidence suggests that state intervention to improve transit service is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for

²¹ <http://www.nctr.usf.edu/programs/clearinghouse/commutebenefits/>

the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 6 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

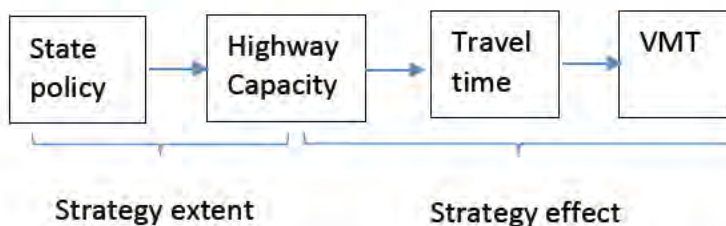
Table 6. Suggested Steps for Calculating VMT Impacts of Transit Investments

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Measure current transit service in metro areas	Most common measures is service hours or miles.	Validity = 3 (fair) Measure does not account for quality of service or connectivity of the transit network.	Extract statewide data on transit service from National Transit Map and add data as needed. Develop measures of network connectivity.
2. Measure <i>increases in transit service</i> as percentage of current service by metro area	Compile planned increases in transit service from RTPs and assume proportionate increase based on proportionate increase in funding	Validity = 4 (good) Costs of expansion vary by service type and context.	Develop a GIS database of funded transit service increases
3. Use an elasticity of ridership with respect to transit service to calculate <i>percentage increases in transit ridership</i> by metro area	Use transit ridership elasticity from ARB transit brief	Validity = 3 (fair) Transit ridership elasticities may vary by type of improvement and context.	Conduct studies of the impacts of transit improvements of different types and in different contexts.
4. Apply predicted percentage change in transit ridership to a base-year measure of annual transit trips by metro area to estimate <i>increase in total annual transit trips</i> by metro area	Use estimate of transit trips by region	Validity = 5 (excellent) Transit agencies report annual ridership.	

Table 6. Suggested Steps for Calculating VMT Impacts of Transit Investments (Continued)

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
5. Adjust increase in total annual transit trips to reflect switching from modes other than driving to estimate <i>reduction in annual driving trips</i> by metro area	Apply driving mode share by metro area.	Validity = 2 (weak) Propensity to shift to transit may vary by current mode and by context.	Conduct studies of the impacts of transit improvements that measure shifts between modes.
6. Convert change in total annual driving trips to <i>change in total annual VMT</i> by metro area	Use estimate of average trip distance for transit riders by metro area.	Validity = 3 (fair) The CHTS has data on average distance for transit trips by metro area. Driving trips eliminated by new transit trips may be longer or shorter than current transit trip distances.	Conduct studies of the impacts of transit improvements that measure trip distance for new transit trips.

3.3 Highway Capacity



Strategy Effect: Impact of Highway Capacity on Aggregate VMT

Increased highway capacity is sometimes proposed as a strategy for reducing GHG emissions, following the logic that increased capacity will reduce congestion, smooth traffic flow, and thereby reduce GHG emissions through improved efficiency of vehicle operation. A strong body of evidence, however, supports the conclusion that increases in highway capacity do not

measurably reduce congestion in the long-run. This phenomenon is referred to as “induced travel” or “induced traffic”: the increase in capacity in effect reduces the (time) price of driving, and when the price goes down, consumption goes up.

The most recent and arguably most rigorous study shows an elasticity of around 1 after 10 years (Duranton and Turner, 2011). In other words, a 1% increase in highway lane miles leads to a 1% increase in VMT. Conversely, studies show that reductions in highway capacity, in the few places they have occurred, have not resulted in an increase in congestion, suggesting that VMT either disperses widely or decreases overall, though these effects have not been quantified. Estimating increases in VMT resulting from increases in highway capacity would be relatively straightforward (Table 7).

It is important to note that transportation systems management (TSM) strategies, such as eco-driving programs, incidence-clearance programs, roundabouts, and various other systems operations approaches²² also have the potential to increase the effective capacity of the highway system. To the degree that they reduce travel times, they may induce additional vehicle travel that could offset whatever improvements in fuel efficiency or reductions in GHG emissions they produce. The VMT-inducing potential of these strategies has not been rigorously assessed.

Strategy Extent: Impact of State Policy on Highway Capacity

Over nearly a century, the State has built a highway system that now totals nearly 25,000 lane-miles of Interstates, freeways, and expressways.²³ In 2014 alone, the California Transportation Commission programmed \$2.2 billion in projects for the State’s highway system for a two-year period.²⁴ The Regional Transportation Plans adopted by the MPOs together with the State Transportation Plan outline continued expansions to the highway system, drawing on federal, state, and local funding sources, despite a growing share of the available funding going towards maintenance of the existing system. The projects listed in these plans could be compiled to project the percentage increase in highway capacity over a specified period. An important caveat is that proposed projects are often delayed, sometimes by decades, as priorities change or because of legal challenges to such projects, usually as a part of the environmental review process.

State Policy Considerations for Highway Capacity

As the owner-operator of the highway system, the State has direct control over projects that expand or reduce its capacity. Although county sales tax measures now account for a significant share of highway spending in the State, Caltrans and the California Transportation

²² See the ARB Research Briefs on EcoDriving, Traffic Incidence Clearance, Roundabouts, and Traffic Operations, available at: <https://arb.ca.gov/cc/sb375/policies/policies.htm>

²³ Highway Statistics 2014. Table hm60. Available: <https://www.fhwa.dot.gov/policyinformation/statistics/2014/>

²⁴ http://www.catc.ca.gov/programs/STIP/2016_STIP/Rev_Fund_Estimate_Jan_16.pdf

Commission must approve these projects. Under current practices, the VMT-inducing potential of these projects is not generally accounted for in the decision-making process. Such analyses could very well show that state investments in highway capacity are at odds with state goals for reducing GHG emissions.

The State could use the California Transportation Plan, or another platform, to establish new policies that limit capacity expansion, e.g. through performance criteria for state funding that take VMT increases into account. The current plan continues to focus on capacity expansion as important for addressing congestion, though it acknowledges that such investments alone will not solve the congestion problem.²⁵ A state-level “fix-it-first” policy would ensure that maintenance needs are met before funding is approved for projects that expand capacity. New guidelines on analyzing the environmental impacts of proposed highway projects could ensure that potential VMT increases are adequately assessed.²⁶

While evidence suggests that state intervention to increase highway capacity is highly likely to yield increases in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 7 presents an outline of suggested steps for gaining more precision and clarity in this estimation

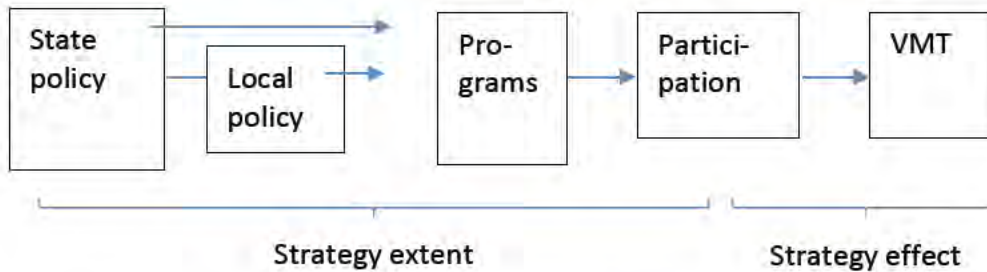
²⁵ <http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/index.shtml>

²⁶ http://www.dot.ca.gov/ser/cumulative_guidance/ceqa_guidelines.htm

Table 7. Suggested Steps for Calculating VMT Impacts of Highway Capacity Expansion

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Measure current highway lane miles statewide	Caltrans data	Validity = 5 (excellent)	
2. Measure <i>increases highway capacity</i> as percentage of current capacity statewide	Compile planned highway capacity expansion from state and MPO plans	Validity = 4 (good) Timing of future highway projects beyond those currently programmed in a Transportation Improvement Program is uncertain. Proposed projects can be added or dropped when plans are updated.	Develop GIS database of existing highways, funded highway expansion projects, and proposed but unfunded highway expansion projects
3. Use an elasticity of VMT with respect to highway capacity to calculate <i>percentage increase in VMT</i>	Use capacity elasticity from ARB capacity brief	Validity = 4 (good) Evidence is consistent	
4. Apply predicted percentage increase in VMT to a base-year measure of annual statewide VMT to estimate <i>increase in total annual VMT</i>	Use VMT measure from Caltrans	Validity = 5 (excellent)	

4. Transportation Demand Management Programs



Transportation demand management programs encompass a variety of strategies, including employer-based trip reduction (EBTR) programs, telecommuting programs, and voluntary travel behavior change programs. Car-sharing services might also play a role in managing demand. While the literature provides strong evidence on the effects of participation in these programs on travel behavior, it provides limited insights into factors affecting the extent to which individuals choose to participate in these programs.

4.1 Employer-Based Trip Reduction Programs

Strategy Effect: Impact of EBTR Programs on Individual or Household VMT

Employer-based trip reduction programs, also known as commute-trip reduction programs, use various approaches to reduce single-occupant car travel to work. Employers may provide services that promote carpooling, such as carpool matching services, preferential parking for carpoolers, subsidized vanpools, or guaranteed rides home for carpoolers. Some programs include financial incentives for participants. Employers sometimes provide worksite facilities for employees who commute by active travel modes. Telecommuting programs and alternative work schedules are often offered as well.

Available studies, as summarized in the ARB research brief, suggest that commute VMT declines by 4% to 6% on average for employees at worksites participating in EBTR programs, including employees who switch from drive-alone to other modes and those who don't. Reductions are likely to be higher when programs offer a broad array of assistance and incentives and at sites with high levels of transit access.

Strategy Extent: Impact of State Policies on EBTR Programs

EBTR programs are implemented voluntarily or as a requirement of local, regional, or state policy. For example, Southern California's Regulation XV, implemented in 1988, required employers with work sites of more than 100 employees to develop employee trip reduction plans. In 1995, State legislation prohibited air districts or other public agencies from mandating employer trip reduction programs unless such mandates are required by federal law. But the State allowed the San Joaquin Valley Air District to adopt a commute-trip reduction

program in 2009, and the Bay Area Air Quality Management District adopted a program in 2013. Several Silicon Valley cities have capped single-occupancy auto trips as part of entitlements for new tech company campus expansions.

The extent to which EBTR programs are implemented in the future depends on requirements for such programs as established by state or local policy. Projecting the state-wide VMT reduction potential of such programs requires an assumption about these requirements, for example, that they would apply to all worksites with 100 or more employees. The strategy effect would apply only to commute VMT for employees at the worksites with EBTR programs rather than to all commute VMT. Statewide reductions in VMT could be projected as outlined in Table 8.

Policy Considerations for EBTR Programs

The available evidence shows a strong connection between employer-based trip reduction programs and reductions in commute VMT. The statewide impact on VMT of state policies that require or encourage the adoption of EBTR programs depends on the total number of employees at worksites that adopt such programs. This strategy shows strong potential for reducing VMT depending on the aggressiveness of the state policy.

California could adopt an EBTR program requirement modeled on Washington State's, which requires employers with 100 or more employees in 9 of 39 counties to adopt trip-reduction programs. Such programs are traditionally implemented in metro areas with high levels of congestion, but programs like vanpooling and telecommuting could work in rural areas with long commute distances.

While evidence suggests that state intervention to increase employer-based trip reduction programs is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 8 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

Table 8. Suggested Steps for Projecting VMT Impacts of Employer-Based Trip Reduction Programs

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Use effect size for work sites to estimate <i>percentage decrease in commute VMT for participating worksites</i>	Use effect size from ARB EBTR brief	Validity = 3 (fair) Elasticities will vary by program and context	Conduct studies of the impacts of EBTR programs of different types and contexts.
2. Estimate <i>the number of employees at worksites of the size specified in the EBTR policy</i> by metro area	Data is collected by CA Franchise Tax Board	Validity = 5 (excellent)	
3. Use the average commute distance by metro area to estimate <i>the annual commute VMT for employees at worksites required to adopt EBTR programs</i> by metro area	Use commute VMT estimates from MPOs and/or Caltrans	Validity = 4 (good) American Community Survey and CHTS provide data on commute VMT	
4. Apply predicted percentage decrease in commute VMT to estimated annual commute VMT for EBTR worksites to estimate <i>decrease in total annual commute VMT</i> by metro area	Calculation		

4.2 Telecommuting Programs

Strategy Effect: Impact of Telecommuting Programs on Individual VMT

Telecommuting is the practice of working from home by employees who have a regular work place. Telecommuting may be encouraged as a part of an employer-based trip reduction program (see Section 4.1) or as a stand-alone program. The available research shows strong evidence that telecommuting reduces VMT. As summarized in the ARB Telecommuting research brief, reductions in commute VMT may be as high as 90% on telecommuting days, and personal VMT may decline by roughly 55 to 75% on telecommuting days. Annual VMT reductions for telecommuters depend on how frequently these workers telecommute. Available studies show that telecommuters average 1.2 to 2.5 days per week.

It is important to note that most of the research on the VMT impacts of telecommuting was conducted in the 1990s. With the advent of the Internet, wireless services, and smart phones, today's patterns of telecommuting may be quite different than in the past, and the impacts on driving may be more or less than previously. Anecdotally, it appears that work is increasingly done in places other than the office or home, the VMT implications of which are uncertain.

Strategy Extent: Impact of State Policy on Telecommuting Programs

State and local requirements for employer-based trip reduction programs may encourage the adoption of telecommuting programs. The State might also encourage employers to adopt telecommuting programs through tax incentives and other policies.

Projections from the 1990s as to the share of workers who would be telecommuting by now have not panned out, though telecommuting levels are not insignificant. Measuring the extent of telecommuting is challenging, given increasing flexibility in work sites and work hours. Statewide reductions in VMT could be projected as outlined in Table 9.

Policy Considerations for Telecommuting Programs

The available evidence shows a strong connection between telecommuting programs and reductions in VMT. The statewide impact on VMT of state policies that require or encourage the adoption of telecommuting programs depends on the total number of employees who choose to telecommute and how frequently they telecommute. This strategy shows strong potential for reducing VMT depending on employee demand for telecommuting.

California could encourage telecommuting by adopting a requirement for employer-based trip reduction programs that include a telecommuting program (see Section 4.1). Such programs are traditionally implemented in metro areas with high levels of congestion, but telecommuting programs could work in rural areas with long commute distances.

While evidence suggests that state intervention to increase telecommuting programs is highly likely to yield reductions in VMT, estimating a more precise degree of impact from state actions – for the purposes of modeling by ARB and others to quantify anticipated VMT reductions from specific strategies – would require further analysis. Table 9 presents an outline of suggested steps for gaining more precision and clarity in this estimation.

Table 9. Suggested Steps for Projecting VMT Impacts of Employer-Based Trip Reduction Programs

Step	Assumptions or Data Needed	Validity of Assumption (Scale: 1 = poor, 5 = excellent)	Future research tasks to strengthen assumptions and data
1. Use effect size to estimate <i>percentage decrease in personal VMT on telecommuting days</i>	Use effect size from ARB Telecommuting brief	Validity = 3 (fair) Available research is dated, and effect size may now be different	Conduct new studies of telecommuting patterns and impacts
2. Estimate the average number of telecommuting days per week	Use average telecommuting days from ARB Telecommuting brief	Validity = 3 (fair) Available research is dated, and telecommuting frequency may now be different	Conduct new studies of telecommuting patterns and impacts
3. Use the average daily VMT for workers by metro area to estimate <i>the annual commute VMT for employees who telecommute</i> by metro area	Use VMT estimates from MPOs and/or Caltrans	Validity = 4 (fair) American Community Survey and CHTS provide data on commute VMT. Telecommuters may have longer commutes than the regional average	Conduct new studies of telecommuting patterns and impacts
4. Apply predicted percentage decrease in daily VMT and average number of telecommuting days to estimate <i>decrease in total annual VMT for average telecommuter</i> by metro area	Calculation		
5. Multiply estimated decrease in total annual VMT for telecommuters by estimated number of telecommuters by metro area to get <i>decrease in total annual VMT</i> by metro area	Use telecommuter estimates from MPOs and/or Caltrans	Validity = 4 (fair) American Community Survey and CHTS provide data on share of workers telecommuting usually or on any given day, respectively	Develop improved survey questions to measure extent of telecommuting in travel surveys

Conclusions

The available evidence shows that the strategies considered in this paper are likely to reduce VMT if promoted by state policy. The connection between state policy and VMT reduction is more direct for some strategies than others (see Table 10), but the available evidence in all cases points to VMT reductions, even if projections of the magnitude of the statewide effects depend on a number of assumptions. The framework we have outlined for generating statewide projections of VMT reductions for these strategies helps to illuminate the sequence of causal events that would produce VMT reductions and highlights important gaps in knowledge that increase the uncertainty of the projections. Despite uncertainties, the evidence justifies state action on these strategies.

Most of the strategies discussed here are complementary: VMT reductions are likely to be greater if strategies are adopted in combination. For example, infill development coupled with investments in transit service and bicycle and pedestrian infrastructure will have more of an impact than infill development or transportation investments on their own. Pricing strategies will have more impact on VMT (with less impact on household budgets) if good alternatives to driving are available. The one exception to this complementarity rule is highway capacity: new highway capacity (whether from construction of additional lanes or implementation of transportation systems management strategies) is likely to increase VMT through the “induced travel” effect and will at least partly offset reductions in VMT achieved through other strategies.

The timeframe of the strategies is another important consideration. Some pricing strategies can be implemented quickly, if the State has the political will to do so, with direct impacts on the travel choices of Californians. Transportation investments may be a longer term proposition, requiring a series of investments over many years before transit or bicycle networks are extensive enough to attract substantial numbers of drivers. Infill development is also a longer term proposition, as new development represents a small increment of all development in any one year. But these longer term strategies are essential for providing and improving alternatives to driving that enable more painless VMT reductions; they also produce many other benefits for communities as discussed in the ARB research briefs (see also Sallis, et al. 2015).

We have also outlined the need for improved data and additional studies to reduce the uncertainty in projections of the statewide reductions in VMT that state policy might produce. Investments in data and research are well justified by the significance of the policies under consideration and the seriousness of the problem they would address. However, the State does not need to wait for new data or research to act. In fact, the State is already acting through numerous policies that directly and indirectly influence VMT whether that was their purpose or not. The existing evidence is strong enough to point the State in the right direction to achieve the needed reductions in VMT starting now and over the decades to come.

Table 10. Summary of State Policy Options

Strategy Category	State Policy to VMT Link	Effect on Individual VMT	Potential for Statewide Implementation and Adoption – Strategy Extent
Pricing	Most direct	Strong effect Solid evidence	Can be applied state-wide (fuel taxes, VMT fees) and in targeted areas (link pricing, cordon pricing, parking pricing). Most effective where individuals have good alternatives to driving. Strategies have equity implications. Generates revenues that can be invested in transportation system.
Infill Development	Direct and indirect	Moderate effect Solid evidence	Most applicable in metro areas. Will affect populations living and working in infill areas. May depend on changes in local land use policy. May require financial incentives. Land use changes and VMT effects accrue over the long term.
Transportation Investments			
<i>Bike/Ped</i>	Direct and indirect	Small effect Moderate evidence	Most applicable in metro areas. Will affect populations living and working where investments are made. May depend on changes in local investments. May require financial incentives. May require package of strategies. Many co-benefits.
<i>Transit</i>	Direct and indirect	Small effect Moderate evidence	Most applicable in metro areas. Will affect populations living and working where investments are made. May depend on changes in transit agency action. May require financial incentives. May require package of strategies. Many co-benefits.
<i>Highways</i>	Direct	Strong <i>induced</i> VMT effect Solid evidence	New capacity that reduces travel times leads to VMT growth. Effect is greatest in congested areas. Operational improvements that reduce travel times can also induce VMT.
Transportation Demand Management	More indirect	Moderate effect Solid evidence	Most applicable in metro areas. Generally implemented by large employers in response to state or local requirements or financial incentives. Some applications appropriate for rural areas.

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Appendix: Linking Scenario Planning Models of Infill Development to Fine-Grained Data on the Effect of Infill Strategies

Table A1 shows an example calculation of the effect size of moving from the third to fourth quintile of regional job access or from the fourth to fifth quintile of regional job access in the Los Angeles region, as shown in Figure 1 in the text. The data in Table 2 show mid-points of the gravity variable quintile from the ranges that are reported in Boarnet et al. (2011).

Following across columns in Table 2, moves from the mid-point of the third quintile of job access to the fourth quintile increase the gravity job access variable by 38.72 percent, based on the values reported in Boarnet et al. (2010). Using an elasticity range of -0.13 to -0.25 from the ARB briefs, the resulting change in household VMT is 38.72 percent multiplied by -0.13 or -0.25, or a reduction of from 5.03 to 9.68 percent in household vehicle travel. Similarly, moving from the fourth quintile of job access (e.g. in Lakewood, per Table XX) to the top quintile (e.g. near downtown) is a 102.65 percent increase in the job access measure, which when multiplied by the low and high values for the elasticity imply a reduction in household VMT ranging from 13.34 to 25.66 percent. These estimates bound the 18 percent VMT reduction that we obtained in the body of the report from distance measures rather than gravity measures, suggesting that using distance to the metropolitan area downtown can be a good approximation for more complex measures of job access.

Table A1: Example Calculation of Effect of Moves Across Job Access Quintiles on Daily Household VMT

						from ARB regional accessibility brief	
			elasticity from ARB brief			% change VMT	
Access quintile (from Boarnet et al. 2010)	mid-point of gravity variable range	% change mid-point access across adjacent quintiles	Low estimate	High estimate	HH VMT miles/day (from Boarnet et al. 2010)	Low estimate	High estimate
5th	524.75	102.65	-0.13	-0.25	47.81	-13.34%	-25.66%
4th	258.94	38.72	-0.13	-0.25	47.81	-5.03%	-9.68%
3rd	186.67		-0.13	-0.25	47.81		

Sources: Calculated from data in Boarnet et al. (2011) and ARB regional accessibility policy brief

(https://arb.ca.gov/cc/sb375/policies/regaccess/regional_accessibility_brief120313.pdf.)

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Preface

This report was developed by a consultant team based on interviews with approximately 50 Caltrans staff and a review of a wide range of documents. The report is the final product of a consultant project with the following purpose: “document current Caltrans activities that reduce greenhouse gas (GHG) emissions and to identify future opportunities for further reducing GHG emissions.” This document is intended for informational purposes only. The assertions and recommendations contained in this report were developed by the consultant team and do not necessary reflect the views of all Caltrans staff involved in the development of this report.

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Executive Summary

Motor vehicles are a major contributor to the greenhouse gas (GHG) emissions that are causing global climate change, with potentially catastrophic effects on California and the planet. California is already feeling the effects of climate change. Evidence is mounting that climate change has contributed to a variety of recent problems plaguing the state including drought, wildfires, pest invasions, heat waves, heavy rains, and mudslides. Projections show these effects will continue and worsen in the coming years, with major implications for our economy, environment, and quality of life.¹

In response, the State of California and many local governments have adopted policies to reduce GHG emissions. Given the large contribution of the transportation sector to California’s GHG emissions, Caltrans and other state transportation agencies have an important role to play in fostering solutions. Caltrans has influence over a large share of the state’s GHG emissions – particularly emissions from persons and vehicles utilizing the State Highway System. As shown in Table 1, vehicles traveling on the State Highway System are responsible for roughly 89 million metric tons (MMT) of GHG emissions annually, equivalent to 21 percent of all California GHG emissions.

Caltrans also has influence over the materials and equipment used by its contractors. The activities associated with the materials and equipment used for Caltrans highway construction and maintenance projects account for roughly 2.5 MMT of GHG emissions per year, or 0.6 percent of statewide emissions.

The emissions from Caltrans internal operations include those produced by Caltrans vehicles and equipment, buildings, highway lighting, and other Caltrans facilities. These emission sources under Caltrans direct control produce roughly 120,000 metric tons of GHG emissions per year – not a trivial amount, but only 0.03 percent of California’s total statewide inventory. GHG emissions under Caltrans direct control have declined 45 percent since 2010 due to a variety of factors including improved energy efficiency of buildings and roadway lighting, introduction of more fuel-efficient vehicles, and reductions in the carbon intensity of California’s grid electricity and transportation fuels.

Table 1. Caltrans and California GHG Emissions

Source Category	MMT of CO ₂ -equivalent emissions per year
All California emissions (CARB 2017 inventory) ^a	424
Vehicle travel on the State Highway System (2017) ^b	89
Embodied emissions from Caltrans project materials (2017) ^c	2.5
Caltrans GHG Inventory (2017) ^d	0.12

Sources: a) CARB 2017 GHG inventory. b) On-road vehicle total from CARB 2017 GHG inventory; split of SHS vs. non-SHS travel based on VMT totals as described in Section 2. c) Material usage data from Caltrans 2017 Contract Cost Data; emission factors from literature as described in Section 2. d) Caltrans data submitted to The Climate Registry.

¹ California Air Resources Board, *California’s 2017 Climate Change Scoping Plan*, November 2017.

Reducing Emissions from State Highway System Users

It is essential to address the emissions produced by vehicles traveling on the State Highway System if the state is to meet the GHG reduction goal established under AB 32, SB 32, and Executive Order S-3-05. The state's climate change policies recognize that most of the needed transportation sector GHG emission reductions will come from improved vehicle technologies and low carbon fuels, but also that vehicle miles of travel (VMT) reductions are necessary to achieve the targets. The State's Climate Change Scoping Plan identified that some of the necessary VMT reductions would result from the MPO-level GHG reduction actions to meet regional targets established under SB 375, but also that "there is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals."² Moreover, recent data shows that statewide VMT and VMT per capita are growing, and that SB 375 is not producing the desired GHG reductions, as made clear in a recent California Air Resources Board (CARB) assessment.³

Historically, Caltrans focused its investments towards expanding the highway system to meet the demands of a growing population and economy and increased vehicle ownership and use. Today, expansion of the highway system has slowed, and the focus has shifted to managing the system effectively. This paradigm calls for evaluating new highway projects in terms of their ability to move people rather than vehicles, and to support a multimodal system that offers travel choices and better reliability. The shift in focus away from maximizing vehicle throughput is also reflected in the passage of SB 743, which calls for replacing vehicle delay and level of service as the mechanism for evaluating transportation impacts under the California Environmental Quality Act (CEQA).

Because it plans, builds, and operates most of the state's highway system, Caltrans has some unique opportunities to influence on-road vehicle travel in the state. These opportunities include the provision of multimodal transportation systems that provide viable alternatives to vehicle travel, roadway pricing and other approaches to manage demand, and avoiding new highway capacity additions that result in substantial induced vehicle travel, leading to higher VMT and GHG emissions. The phenomenon of induced vehicle travel is widely accepted and well documented^{4,5}, and it can often lead to an increase in VMT and GHG emissions when highway capacity is expanded, including through the addition of HOV and express lanes.

² *California's 2017 Climate Change Scoping Plan*, California Air Resources Board, November 2017.

³ California Air Resources Board, *2018 Progress Report: California's Sustainable Communities and Climate Protection Act*, November 2018.

⁴ Handy, Susan and Boarnet, Marlon, G., "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions," prepared for the California Air Resources Board, 2014. https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf

⁵ Caltrans, Draft Transportation Analysis Framework: Induced Travel Analysis, March 2020. <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-04-13-taf-a11y.pdf>

Reducing Emissions from Caltrans Internal Operations

In terms of the emissions from Caltrans internal operations, the Department has long been a leader in resource conservation and energy efficiency, and in recent years has implemented numerous strategies to further reduce GHG emissions from its internal operations. These actions include:

- Installation of more than 70 solar power photovoltaic (PV) energy systems at Caltrans buildings
- Purchase and use of more than 250 plug-in electric and fuel cell vehicles
- Reducing water consumption by more than 65 percent compared to 2013 baseline levels
- Converting more than 80 percent of overhead “cobra head” highway lights to light-emitting diode (LED) lights

Pavement strategies appear to offer the most promising opportunities for additional GHG reductions related to internal operations. Use of alternative materials and modifications to construction and maintenance practices can reduce emissions associated with asphalt and concrete pavements as well as structures. Because of the large volume of pavement and structural materials used by Caltrans and its contractors, even small changes in policy can result in significant GHG reductions for the state. However, decisions to promote specific pavement materials and methods in the name of GHG reduction must be supported by careful analysis that considers not only the materials, transport, and construction phases, but also any effects on vehicle fuel economy (pavement smoothness) and durability and lifetime of the pavement.

Some of the other promising opportunities for further reducing Caltrans internal operations emissions include:

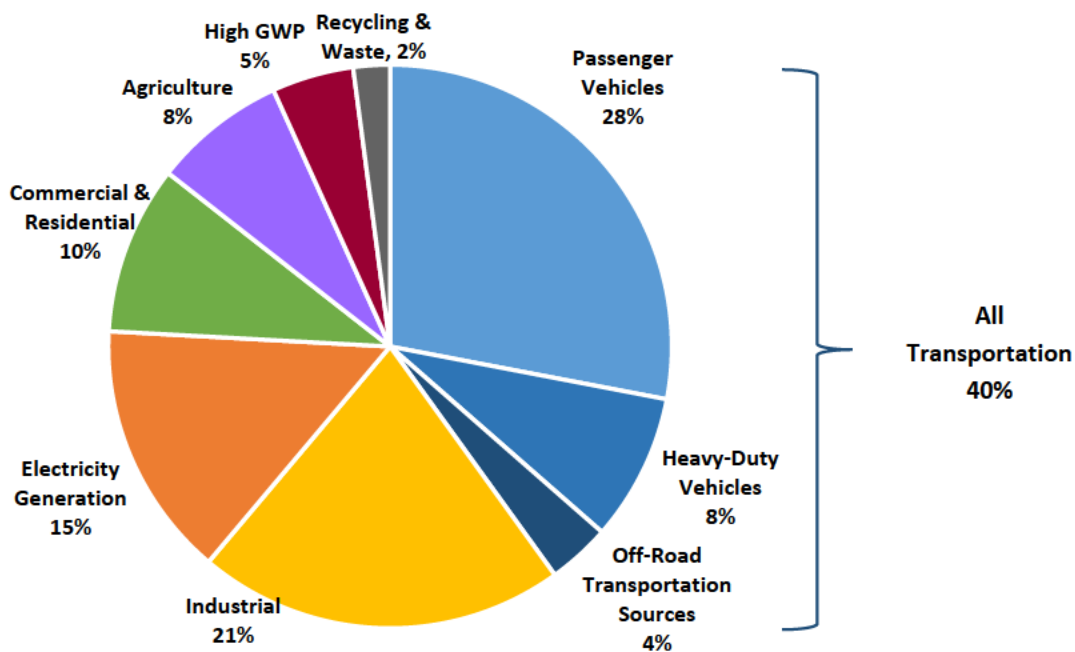
- Increasing renewable energy generation by installing solar power projects in the highway right-of-way
- Purchasing fuels with lower carbon intensities for Caltrans fleet, such as renewable natural gas
- Providing additional programs and incentives to increase transit use, ridesharing, and bicycling for Caltrans employee commuting

Changes to Caltrans’ internal operations strategies will not reduce GHG impacts much compared to reducing highway system user emissions. However, they are important because they set an example for other agencies and can help to advance emerging technologies and practices.

1 Introduction

Transportation is a major contributor to greenhouse gas (GHG) emissions in California. In 2017, the transportation sector accounted for 40 percent of the state’s total GHG emissions, as shown in Figure 1. On-road vehicles alone accounted for 36 percent of the state total. This reflects just the tailpipe emissions resulting from vehicle fuel combustion. The next largest contributors to the state’s GHG emissions were the industrial sector (21 percent) and electricity generation (15 percent). Some emissions associated with transportation, such as refining and processing of fuels and production of asphalt and concrete, are included in these non-transportation sectors.

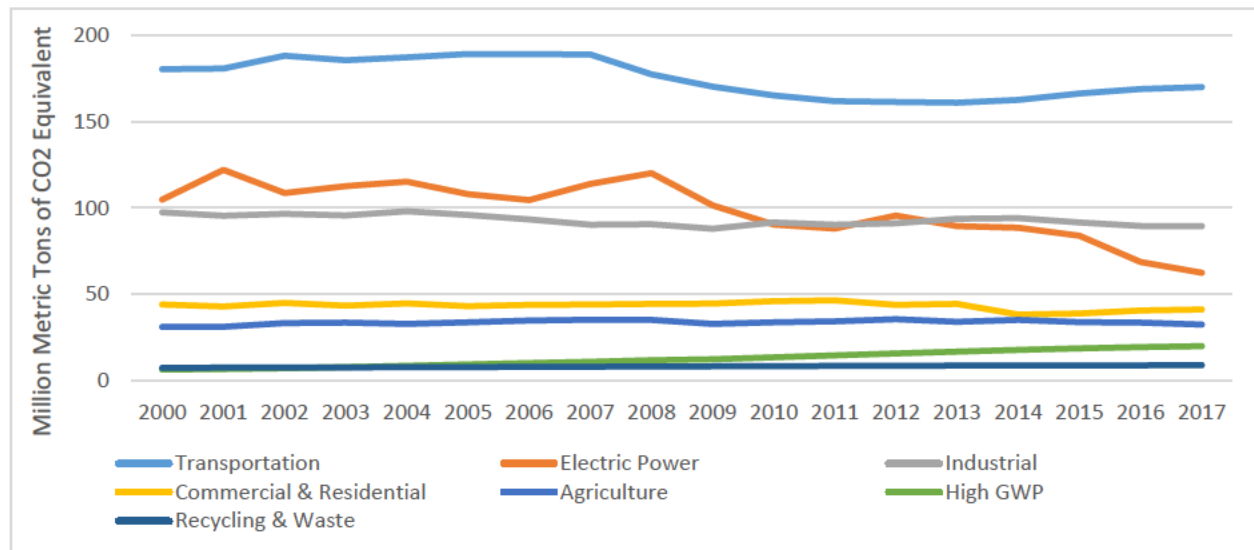
Figure 1. California GHG Emissions by Sector, 2017



Source: California Air Resource Board, California Greenhouse Gas Emission Inventory - 2019 Edition, Available at <https://www.arb.ca.gov/cc/inventory/data/data.htm>

Moreover, after declining over the period 2007-2013, transportation GHG emissions are increasing again, as shown in Figure 2. Transportation emissions increased 5.6 percent during the period 2013 – 2017. With the exception of high global warming potential (GWP) gases and recycling & waste, all other major economic sectors saw a decline in GHG emissions during this period.

Figure 2. California GHG Emissions by Sector, 2000-2017



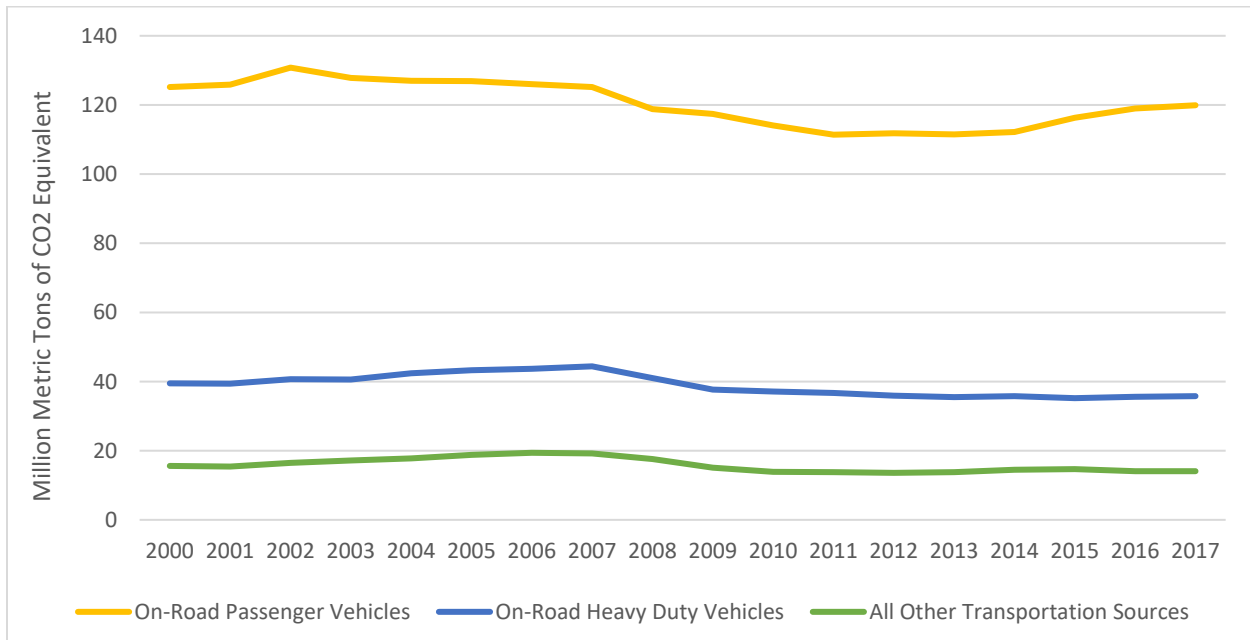
Source: California Air Resource Board, California Greenhouse Gas Emission Inventory - 2019 Edition, Available at <https://www.arb.ca.gov/cc/inventory/data/data.htm>

Within the transportation sector, about 70 percent of GHG emissions come from on-road passenger vehicles (i.e., light-duty vehicles). Another 21 percent comes from on-road heavy-duty vehicles (i.e., freight trucks and buses). The other sources of transportations emissions each account for a relatively small fraction of the state’s GHG emission inventory. Note, however, that the state’s GHG emission inventory includes only in-state movement of aircraft and marine vessels; ships and planes engaged in international transport of people and goods are not counted in the inventory.

The figure below shows that the recent growth in transportation GHG emissions has primarily occurred with passenger vehicles. Between 2013 and 2017, passenger vehicle GHG emissions increased nearly 8 percent, while GHG emissions from heavy-duty vehicles were essentially flat. These trends are the result of a number of different factors. Passenger vehicle travel has been increasing due to population growth and the state’s robust economic activity. Between 2013 and 2017, this VMT growth outpaced the improvements in fuel efficiency of the vehicle fleet, leading to a rise in emissions. With heavy-duty vehicles, the percent of biodiesel and renewable diesel in the total diesel blend has grown rapidly in recent years, due in part to the implementation of the Low Carbon Fuel Standard. The increasing market penetration of biodiesel and renewable diesel was able to offset the increase in on-road heavy-duty truck activity and diesel use.⁶

⁶ California Air Resources Board, California Greenhouse Gas Emissions for 2000 to 2016: Trends of Emissions and Other Indicators, Available at: www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf

Figure 3. California Transportation GHG Emissions, 2000-2017



Source: California Air Resource Board, California Greenhouse Gas Emission Inventory - 2019 Edition, Available at <https://www.arb.ca.gov/cc/inventory/data/data.htm>

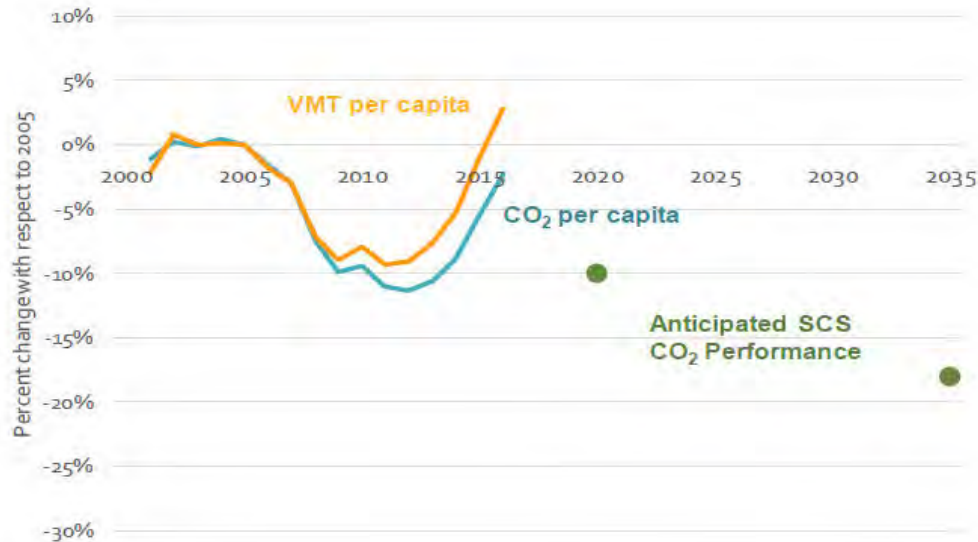
Looking ahead, it is expected that the state will continue to make considerable progress to curb transportation GHG emissions through improvements in fleet-average fuel economy and support for electric vehicle and other alternative fuels. But other developments related to transportation GHG emissions are potentially troubling. Although numerous models of electric vehicles (EVs) are now available, a variety of factors will likely limit their market penetration for some time. Trucks are a large contributor to GHG emissions, and the growth of e-commerce and trade is contributing to increasing heavy-duty vehicle VMT. Many promising technologies to reduce truck emissions are in development, but it may be years before these technologies are cost effective. In addition, while new and emerging technologies related to vehicles, fuels, and system management offer significant potential for reducing GHG emissions from transportation, some other new technologies and services could work against this trend. For instance, recent studies suggest that at least 40 percent of trips by transportation network companies (TNCs) are replacing transit, bicycle, and walk trips, thus generating additional VMT.⁷ And autonomous vehicles are widely expected to create additional new vehicle trips and extend the length of trips.

The State’s 2017 Climate Change Scoping Plan charts a course for meeting California’s 2030 GHG reduction targets. The Scoping Plan recognizes that most of the GHG reductions in the transportation sector will come from vehicle technologies and low carbon fuels, but notes that VMT reductions also are

⁷ Rodier, Caroline, “The Effects of Ride Hailing Services on Travel and Associated Greenhouse Gas Emissions,” A White Paper from the National Center for Sustainable Transportation, April 2018. https://ncst.ucdavis.edu/wp-content/uploads/2016/07/NCST-TO-028-Rodier_Shared-Use-Mobility-White-Paper_APRIL-2018.pdf

necessary to achieve the 2030 target. Much of this VMT reduction was expected to occur as a result of the transportation and land use planning changes required by SB 375, the Sustainable Communities and Climate Protection Act of 2008. Yet a recent California Air Resources Board (CARB) assessment makes clear that the state “is not on track to meet greenhouse gas reductions expected under SB 375,” as illustrated in the figure below.⁸

Figure 4. Statewide CO₂ and VMT Per Capita Trend with Respect to Anticipated Performance of Current SB 375 Sustainable Communities Strategies



Source: California Air Resources Board, 2018 Progress Report: California’s Sustainable Communities and Climate Protection Act, November 2018.

Given the large contribution of the transportation sector to California’s GHG emissions and the emerging opportunities and challenges associated with GHG emissions from motor vehicles, Caltrans has an important role to play in fostering solutions. Because it plans, builds, and operates most of the state’s highway system, Caltrans has some unique opportunities to influence on-road vehicle travel in the state. These opportunities include the provision of multimodal transportation systems that provide viable alternatives to vehicle travel, roadway pricing and other approaches to manage demand, and minimizing highway capacity expansion projects that result in substantial induced vehicle travel and lead to higher VMT and GHG emissions. These efforts align well with broader Caltrans goals of safety, health, sustainability, and system performance.

In addition to influencing the users of the transportation system, Caltrans has numerous opportunities to reduce GHG emissions through its own internal operations and contractors’ operations. The maintenance and operation of the State Highway System requires extensive resources such as paving materials, electricity for lighting, water for landscaping, and a large fleet of vehicles. There are proven options for making these resources more energy efficient and less carbon-intensive, many of which

⁸ California Air Resources Board, 2018 Progress Report: California’s Sustainable Communities and Climate Protection Act, November 2018.

Caltrans has adopted. Changes to the materials used for roadway construction and maintenance appear to offer the most opportunity for internal operations GHG reduction.

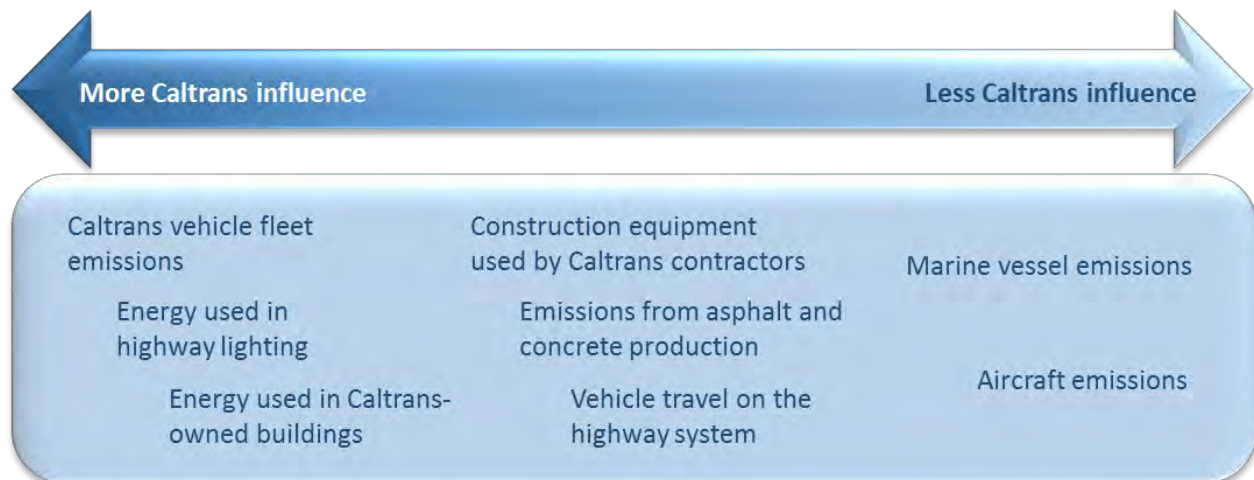
This report describes recent Caltrans actions that reduce GHG emissions, quantifies the magnitude of reductions where possible, and identifies opportunities for the Department to achieve greater emission reductions. Section 2 reviews the sources of emissions that Caltrans can control or influence. Section 3 focuses on reducing emissions from vehicles on the SHS. Section 4 focuses on reducing emissions from Caltrans internal operations. GHG reduction activities are described for the major functional units at Caltrans, which generally align with steps in transportation project delivery – planning, programming, environmental review, design, construction, maintenance, and operations. The identification of recent actions was done primarily through interviews with Caltrans staff and a review of Caltrans publications. Twelve group interviews were conducted at Caltrans Headquarters involving approximately 50 Caltrans staff, along with follow-up telephone interviews and email correspondence. GHG reductions were estimated by gathering data on Caltrans activities and applying standard quantification methods and emission factors.

The assessment of GHG reduction actions provides the foundation for an evaluation of the ways that Caltrans can better support State climate change goals. This report focuses on the GHG reduction strategies that would be most impactful, recognizing that a variety of barriers may currently prevent the implementation of these strategies, such as cost, technology readiness, lack of data for monitoring, staff familiarity, regulatory or policy prohibitions, and potential conflict with other Caltrans goals. The report discusses these barriers and ways to overcome them. The report provides a roadmap for Caltrans as it seeks to align its policies, procedures, plans, and investments so as to maximize the Department's contribution to State GHG reduction efforts.

2 Overview of GHG Emission Sources Influenced by Caltrans

To identify the best opportunities for Caltrans to contribute to California’s GHG emission reduction goals and help to mitigate the impacts of climate change, it is important to understand the range of influence Caltrans has on sources of GHG emissions and the magnitude of those emissions sources. As illustrated in the figure below, Caltrans’ influence over sources of GHG emissions reflects a continuum. Caltrans has strong influence over the fuel use and emissions from its vehicle fleet and its buildings, although these sources account for only a small fraction of total GHG emissions in California. Caltrans has varying degrees of influence, but less direct control, over a variety of other emission sources, some of which are quite large. These include the emissions from vehicles traveling on the State Highway System and the materials and equipment used by Caltrans contractors. Caltrans has little to no influence over some other sources of transportation emissions, such as marine vessels and aircraft.

Figure 5. Illustration of Range of Influence Caltrans Has on Sources of GHG Emissions



The rest of this section discusses the major sources of emissions that Caltrans can influence.

2.1 Roadway System User Emissions

Because of its role in planning, designing, and operating the State Highway System, Caltrans can influence emissions from vehicles driving on the state’s roadways – one of the largest sources of GHG emissions in the state. Fundamentally, travel occurs because of the desire of individuals to reach destinations – for employment, schooling, shopping, recreation, etc. The choice of where, when, and how to travel is based on numerous factors that vary for each individual. When the choice involves traveling by motor vehicle using gasoline or diesel fuel, the result is GHG emissions from fuel combustion. Similarly, businesses make decisions to use the transportation system for the movement of supplies and finished products, which results in GHG emissions.

CARB's statewide GHG inventory shows that on-road vehicles produced 156 million metric tons of CO₂-equivalent emissions in 2017, 37 percent of the state's total emissions. Some of these emissions occur on the State Highway System (SHS) that is owned and operated by Caltrans, and some emissions occur on other roadways.

According to Caltrans, travel on the State Highway System resulted in 195 billion VMT in 2016.⁹ For the same period, FHWA estimates 340 billion VMT on the state's entire roadway network.¹⁰ Thus, State Highway System VMT represents about 57 percent of all VMT in California. As a rough order-of-magnitude estimate, applying this ratio to the statewide on-road transportation GHG inventory suggests that State Highway System travel results in 89 million metric tons of directly emitted CO₂-equivalent emissions.

Caltrans influences travel on the SHS through its activities related to planning, programming, design, and highway operations. For example, projects that change the capacity of highways can affect near-term decisions about travel mode as well as longer term land development decisions that can generate or redistribute automobile and truck trips. Investments in bicycle or transit system improvements can encourage travel by non-automobile modes. Activities that change traffic operations can affect roadway congestion levels and the associated vehicle emission rates, as well as decisions about the mode and time-of-day of travel. Section 3 discusses opportunities for Caltrans and partner agencies to reduce highway system user emissions.

Caltrans activities also influence travel on facilities beyond the SHS. Although Caltrans does not own or operate local roadways, personal and business travel decisions are based on the performance of and accessibility offered by the entire transportation system, of which the SHS is a major component. For example, in a built-out urbanized area, projects that improve highway system performance will affect travel on local roadways that are used to access the highway system. On the perimeter of an urbanized area, construction of a new SHS interchange could improve access to the surrounding land, which can spur new development and influence travel to and from the development, even if the travelers do not use the SHS. In addition, Caltrans Local Development-Intergovernmental Review (LD-IGR) program advises other agencies regarding land use and infrastructure plans and projects that may impact the SHS.

2.2 Lifecycle GHG Emissions from Materials and Fuels

In addition to travel by roadway system users, Caltrans can influence emissions associated with the materials and fuels used in highway construction, maintenance, and operation. To describe these emissions requires understanding the concept of a life-cycle assessment (LCA). LCA is an environmental assessment used to determine impacts throughout a product or process's entire lifetime. This holistic approach is often referred to as assessing materials use from "cradle" (e.g., raw materials extraction and

⁹ Caltrans. 2018. Historical Monthly Vehicle Miles of Travel.

¹⁰ U.S. Department of Transportation, FHWA. Highway Statistics 2016, 2018. www.fhwa.dot.gov/policyinformation/statistics/2016/

refining) to “grave” (i.e., recycling, reuse, or disposal). Traditionally, an environmental assessment would only incorporate impacts directly related to a product or process’s use-phase, such as fuel combusted in operations. LCA ensures that researchers can capture all relevant impacts in associated supply chains both upstream and downstream of use.¹¹

LCA is a valuable method for identifying sources of GHG emissions throughout Caltrans asset design and material procurement activities. The large volumes of materials used in construction and maintenance activities can have significant climate change impacts in production, supply, and disposal. Some of the materials used most extensively on highway projects include concrete, asphalt, aggregates, and steel. These materials all have unique supply chain characteristics, but have similar general steps in production and supply. Table 2 summarizes the general life-cycle stages and how each stage relates to common transportation infrastructure materials. When applying LCA, researchers can quantify the associated GHG emissions from energy or material requirements at each life-cycle stage to generate a complete picture of how emissions accumulate throughout a material’s lifetime.

Table 2. Typical life-cycle assessment stages for highway materials

	Raw Materials Extraction	Production and Manufacturing	Construction and maintenance	Highway Use	End-of-Life
Concrete	Limestone quarrying	Cement, aggregates, pyroprocessing, batching	Highway construction, maintenance	Vehicle operations by highway users ^a	Material disposal, recycling
Steel	Ore mining	Secondary/primary steel production			
Asphalt	Bitumen extraction and refining	Bitumen feedstock production			
Aggregates	Limestone quarrying	Crushing, sorting			

Note a: Materials influence the fuel economy of vehicles traveling on the highway system. For example, pavement smoothness affects rolling resistance and therefore fuel combustion.

Large volumes of materials are used on Caltrans projects in any given year, offering potential for significant GHG reduction. For example, in 2017 Caltrans projects used more than 1 million cubic yards of concrete, which involved approximately 325,000 tons of Portland cement, a highly GHG-intensive material. Similarly, Caltrans projects used more than 4 million tons of hot mix asphalt and 1 million cubic yard of aggregate in 2017.

¹¹ U.S. EPA. 2006. Life Cycle Assessment: Principles and Practice. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P1000L86.PDF?Dockey=P1000L86.PDF>

Developing a LCA-based estimate of the GHG emissions associated with all materials used in Caltrans projects would require an extensive effort and has not been conducted to date. However, a rough order-of-magnitude estimate can focus on the four materials that likely make up the vast majority of roadway construction materials: asphalt, concrete, aggregate, and steel. The amount of these materials used on Caltrans projects can be obtained from the annual Caltrans *Contract Cost Data* report. Recent literature provides lifecycle GHG factors for these materials for the raw materials extraction, materials processing, material transport, and construction phases.¹² This approach suggests that Caltrans highway projects are responsible for roughly 2.5 million metric tons per year of GHG emissions during these extraction, processing, transport, and construction phases – sometimes termed the “embodied” emissions in these materials.

Like the materials used in highway projects as described above, motor vehicle fuels also involve lifecycle impacts beyond the emissions released from the vehicle tailpipe during the use phase. For example, gasoline and diesel fuel require the extraction and transport of petroleum, refining processes, and distribution to retail fuel stations – all of which contribute to GHG emissions. Biofuels create emissions due to the harvesting of feedstocks (e.g., corn or soy), processing, and fuel distribution. Battery electric vehicles produce no tailpipe emissions but require generation of electricity, which typically produces GHG emissions. Estimating the GHG impacts of using alternative fuels requires a life-cycle perspective that considers both tailpipe and “upstream” emissions.

Based on carbon intensity values used by CARB for the Low Carbon Fuel Standard (LCFS) program, the upstream emissions from gasoline and diesel fuel used in California account for about 27 percent of the total lifecycle emissions associated with these fuels. Thus, vehicles operating on the SHS are associated with roughly 32 million metric tons of upstream GHG emissions in addition to the 89 million metric tons of directly emitted tailpipe emissions. These upstream emissions are generally captured under the “Industrial” sector for the purpose of developing a GHG inventory. Note that some of these fuel upstream emissions occur outside California and therefore are outside the boundaries of CARB’s statewide GHG inventory summarized in Figures 1 and 2.

2.3 Emissions from Caltrans Internal Operations

The emissions associated with Caltrans internal operations are included in the annual emission inventory that Caltrans prepares and submits to The Climate Registry. In doing so, Caltrans follows standard conventions for defining the organizational and operational boundaries that establish the framework the GHG emission inventory. These conventions recognize the following three types of emissions:

- **Scope 1** emissions include direct emissions from operations, facilities, and sources under Caltrans’ operational control. Scope 1 emissions result from activities such as on-site combustion of fossil fuels to generate electricity or heat, use of fleet vehicles, and fugitive GHG emissions from Caltrans-owned refrigeration and air-conditioning equipment.

¹² Lawrence Berkeley National Laboratory, *Life-Cycle Assessment and Co-Benefits of Cool Pavements*, Prepared for the California Air Resources Board and the California Environmental Protection Agency, April 2017.

- **Scope 2** includes indirect emissions from purchased electricity, steam, and chilled water that are consumed within the organizational boundaries of Caltrans. Caltrans can directly control the purchase of electricity but not the process used to generate electricity that results in GHG emissions.
- **Scope 3** includes all indirect emissions that are not included in Scope 2. Similar to Scope 2, Scope 3 emissions are indirect emissions that are a consequence of the Caltrans activities, but the actual emissions are generated by sources not controlled by Caltrans. There are many Scope 3 emission sources. Scope 3 emission sources are typically more difficult to estimate and may be more challenging to reduce due to the lack of direct control over the emission source, but they are often significantly larger than Scope 1 or 2 emission sources and thus provide greater emission reduction potential. Examples of Scope 3 emission sources could include employee commute activity, employee business travel, materials and equipment used by Caltrans contractors, and vehicle travel on the State Highway System.

Like most DOTs and other government organizations, Caltrans includes only Scope 1 and Scope 2 emissions in its submission to The Climate Registry. Also, like most organizations, Caltrans elects to omit small sources of emissions because it is too costly or resource-intensive to gather the necessary data. Some GHG guidance documents, such as the World Resources Institute’s *GHG Protocol: Corporate Accounting and Reporting Standard*, define a *de minimis* threshold that allows organizations to exclude small emission sources that together account for no more than 5 percent of their total operational emissions.¹³

Table 3 shows Caltrans’ reported GHG inventory for three recent years and 2010. Emissions from all source categories have dropped substantially, with total emissions declining 45 percent since 2010. These reductions are due to a variety of factors including improved energy efficiency of buildings and roadway lighting, introduction of more fuel efficient vehicles, and reductions in the carbon intensity of California’s grid electricity and transportation fuels. Caltrans use of renewable diesel in particular has contributed to a decline in vehicle emissions.

Table 3. Caltrans GHG Emission Inventory, metric tons CO₂e

Source Type	2010	2015	2016	2017	Change, 2010-17
Natural Gas	7,585	5,003	5,140	5,000	-34%
Vehicles	118,042	110,998	82,474	76,725	-35%
Purchased Electricity	89,356	48,172	40,829	36,957	-59%
Total Emissions	214,983	164,173	128,443	118,682	-45%

Source: The Climate Registry

Table 3 excludes some Scope 3 emissions sources that are sometimes included in an organization’s emission inventory, such as business travel, employee commuting, contracted solid waste, and

¹³ Available at: <https://ghgprotocol.org/corporate-standard>

contracted wastewater treatment. Some of these sources can be as large as or larger than the Scope 1 and Scope 2 emissions included in Caltrans GHG inventory. For example, commuting by Caltrans employees produces roughly 50,000 metric tons of GHG emissions per year, more than purchased electricity emissions (see below for emissions estimates and sources). Including employee commute emissions in future Caltrans GHG inventories would help to focus attention on opportunities to reduce this source of emissions.

2.4 Summary of Emissions Sources and Caltrans' Influence

Table 4 lists major sources of emissions that Caltrans can influence, and a rough order-of-magnitude estimate of the size of these emission sources. Emission sources under Caltrans direct control or strong influence total roughly 120,000 metric tons of GHG emissions per year – not a trivial amount, but only about 0.03 percent of California’s total statewide GHG emission inventory. Caltrans has some influence over much larger sources of emissions – particularly direct emissions from travel on the State Highway System (89 million metric tons[MMT]) and local roads (67 MMT), upstream emissions from State Highway System travel (32 MMT), and embodied emissions in materials used in highway construction and maintenance (2.5 MMT).

Table 4. Summary of Emissions Sources and Caltrans' Influence

Emissions Source Category	Emissions Source	Caltrans Influence		Rough order of magnitude annual GHG emissions (thousand metric tons CO ₂ e)	Source
		← More	Less →		
Direct emissions from California transportation sources	On-road vehicles in Caltrans fleet	●		64	a
	On-road vehicles used in Caltrans projects		●	N/A	
	On-road vehicles for Caltrans employee commuting		●	53	b
	Off-road equipment in Caltrans fleet	●		13	a
	Off-road equipment used in Caltrans projects		●	N/A	
	All on-road vehicles operating on SHS		●	89,000	c
	All on-road vehicles operating on local roads		●	67,000	c
	All off-road equipment operating in CA		●	2,700	d
	Rail locomotives operating in CA		●	1,800	d
	Marine vessels operating in CA		●	3,300	d
	Aircraft operating in CA		●	4,700	d
Unspecified transportation sources		●	1,500	d	
Upstream emissions from on-road vehicle fuels used on SHS	Mining/extraction of feedstocks		●	32,000	e
	Processing/refining of fuels		●		
	Electricity generation (for EVs)		●		
	Distribution of fuels		●		
Caltrans building energy emissions	Electricity used in Caltrans buildings	●		20	f
	Natural gas used in Caltrans buildings	●		5	f
	Electricity for pumping water to Caltrans buildings	●		<1	g
CA highway operations energy emissions	Electricity for roadway lighting	●		17	f
	Electricity for pumping irrigation water	●		10	h
Embodied emissions from materials used in Caltrans projects	Mining and extraction		●	2,500	i
	Production processes		●		
	Transport of materials		●		

CARB Total Transportation Sector GHG Inventory

Sources for GHG emissions estimates:

- a. Vehicle total from Caltrans data submitted to The Climate Registry. Split of on-road vs. off-road calculated by ICF based on Caltrans fleet 2016 annual mileage and fuel use data.
- b. ICF estimate using assumptions for average commute length and vehicle fuel economy. Number of Caltrans employees commuting by non-auto modes based on data provided by Districts.
- c. On-road vehicle total from CARB 2017 GHG inventory. Split of SHS vs. non-SHS travel based on VMT totals as described in text.
- d. CARB 2017 GHG inventory.
- e. ICF estimate. On-road vehicle tank-to-wheel (TTW) total for SHS based on CARB 2017 GHG inventory, with split of SHS vs. non-SHS travel based on VMT totals as described in text. Well-to-wheel carbon intensities from CARB Low Carbon Fuel Standard values: CARBOB tailpipe 73.94 g/MJ, CARBOB WTW 100.58 g/MJ, Diesel tailpipe 74.86 g/MJ, Diesel WTW 102.82 g/MJ.
- f. Caltrans data submitted to The Climate Registry. Caltrans Fact Booklet, June 2017.
- g. ICF estimate based on data originally collected for *Caltrans Activities to Address Climate Change*, 2013, with updates.
- h. ICF estimate using annual water consumption provided by Caltrans. Assumes energy intensity of water as an average of 5.4 kWh/1000 gal (Northern California) and 13.0 kWh/1000 gal (Southern California).
- i. Annual material usage data for steel, concrete, asphalt, and aggregate from Caltrans, 2017 Contract Cost Data: A Summary of Cost by Items for Highway Construction Projects. Lifecycle GHG emission factors from CARB, Life-Cycle Assessment and Co-Benefits of Cool Pavements, Prepared by Lawrence Berkeley National Laboratory, Contract # 12-314, April 2017.

3 Reducing Emissions from California Highway System Users

Caltrans can influence the emissions from highway system users through its involvement in planning, programming, environmental analysis, design, and operation of the highway system. As discussed in Chapter 2, use of the State Highway System is by far the largest source of emissions that Caltrans can influence. On-road vehicles in California emit approximately 156 million metric tons of GHG emissions annually, and roughly 57 percent of those emissions occur on the State Highway System owned and operated by Caltrans. These emissions dwarf the emissions that result directly from Caltrans internal operations. Given the sheer magnitude of highway system user GHG emissions, it is critical that Caltrans carefully assess all of its opportunities to reduce this emissions source while enabling the movement of people and goods, and prioritize the implementation of strategies that are most effective.

There are three general approaches for Caltrans to reduce GHG emissions on the State Highway System:

- Limit demand for travel by single-occupant vehicles (SOVs), primarily by minimizing induced vehicle travel and through the use of pricing
- Improve facilities that provide alternatives to travel by carbon-intensive modes, particularly SOVs
- Maximize the operating efficiency of vehicles traveling on the State Highway System

Section 3.1 discusses the best opportunities for Caltrans to reduce highway system user emissions. Section 3.2 describes the numerous related on-going activities at Caltrans that support highway user GHG reductions but are unlikely to have major GHG impacts.

3.1 Best Opportunities for Reducing Highway System User Emissions

Caltrans' best opportunities to reduce highway system user emissions would be to focus on revising current planning, programming, and project development procedures to minimize induced vehicle travel, promote greater use of roadway pricing, and facilitate the multimodal system improvements that shift travelers away from automobiles.

Minimize Induced Vehicle Travel

Caltrans, in partnership with local governments and transportation agencies, has a strong influence on the performance of the highway network, which in turn can influence the demand for SOV travel. As a general rule, SOV drivers will shift to an alternative mode only if the alternative is equal to or better than SOV travel in terms of factors such as convenience, travel time, reliability, perceived safety, and cost. Every individual makes travel choices based on these and other decision factors, with variation in the relative importance of each factor. However, even if multimodal options such as transit, rideshare, bicycling, and walking are developed and improved, they are unlikely to attract significant use so long as SOV travel remains faster and cheaper. This explains why more than three quarters of all trips in California are still taken by motorized vehicles.

Highway Capacity Expansion and Induced Vehicle Travel

As population and VMT grow, the roadway network becomes more congested, particularly in urban areas. Projects that expand highway capacity where conditions are congested will induce additional vehicle travel. Capacity additions effectively reduce the “price” of driving, which leads to more driving than would otherwise occur as individuals and businesses become aware of changed conditions. Induced vehicle travel is closely related to the concept of “latent demand,” which refers to the travel that would occur if the price were lower (i.e., travel times were faster), or in other words, the travel that does not occur because price is high (i.e., travel times are slow).

The phenomenon of induced vehicle travel is widely accepted and well documented.¹⁴ In the short term, expansion of highway capacity can cause new vehicle trips that would otherwise would not be made, longer vehicle trips to more distant destinations, shifts from off-peak to peak travel hours, and shifts from other modes to driving. Longer term changes can include an increase in more dispersed, low density development patterns that are dependent on automobile travel. As far back as the 1960s, researchers have identified this phenomenon, sometimes dubbed the “Fundamental Law of Road Congestion,” which asserts that the amount of vehicle travel will increase in exact proportion to the highway capacity expansion, so that traffic speeds will revert to their pre-expansion levels.¹⁵

Researchers typically seek to identify induced vehicle travel effects in terms of an “elasticity”, which is the ratio of the percentage change in one variable associated with the percentage change in another variable. For example, an elasticity value of 0.5 suggests that a 1 percent increase in roadway capacity is associated with a 0.5 percent increase in VMT, or a doubling (100 percent increase) in roadway capacity is associated with a 50 percent increase in VMT. Table 5 summarizes the results of research on induced vehicle travel, with the elasticity values in the rightmost column. While some of the most well-known studies in this field are 20 years old, more recent research has produced similar findings.

The research has found elasticity values ranging from 0.1 to 0.6 in the short term (typically defined as one year or less) and 0.4 to 1.06 in the long term (5 to 10 years or more). The most recent and comprehensive research (Hymel, 2019) suggests that long-run elasticity is close to 1.0, which means that a 10 percent expansion of highway capacity will lead to a 10 percent increase in VMT. This VMT increase can negate any near-term congestion relief and potentially lead to an increase in GHG emissions, particularly in urbanized areas.

Quantifying induced vehicle travel elasticity is challenging, in part because researchers must account for all the other factors that affect vehicle travel and isolate the effects of capacity expansion. The range of results shown in Table 5 is indicative of different methods and data sources used to study this phenomenon. Induced vehicle travel effects will also vary from region to region and corridor to corridor,

¹⁴ Handy, Susan and Boarnet, Marlon, G., "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions," prepared for the California Air Resources Board, 2014. https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf

¹⁵ Downs, Anthony, “The law of peak-hour expressway congestion,” *Traffic Quarterly*, Vol 16, No. 3, 1962.

because of differences in land uses and socioeconomic conditions, the availability of transit and other alternatives to driving, growth rates, and other factors.

Table 5. Research on the Impact of Capacity Expansion on Induced Vehicle Travel

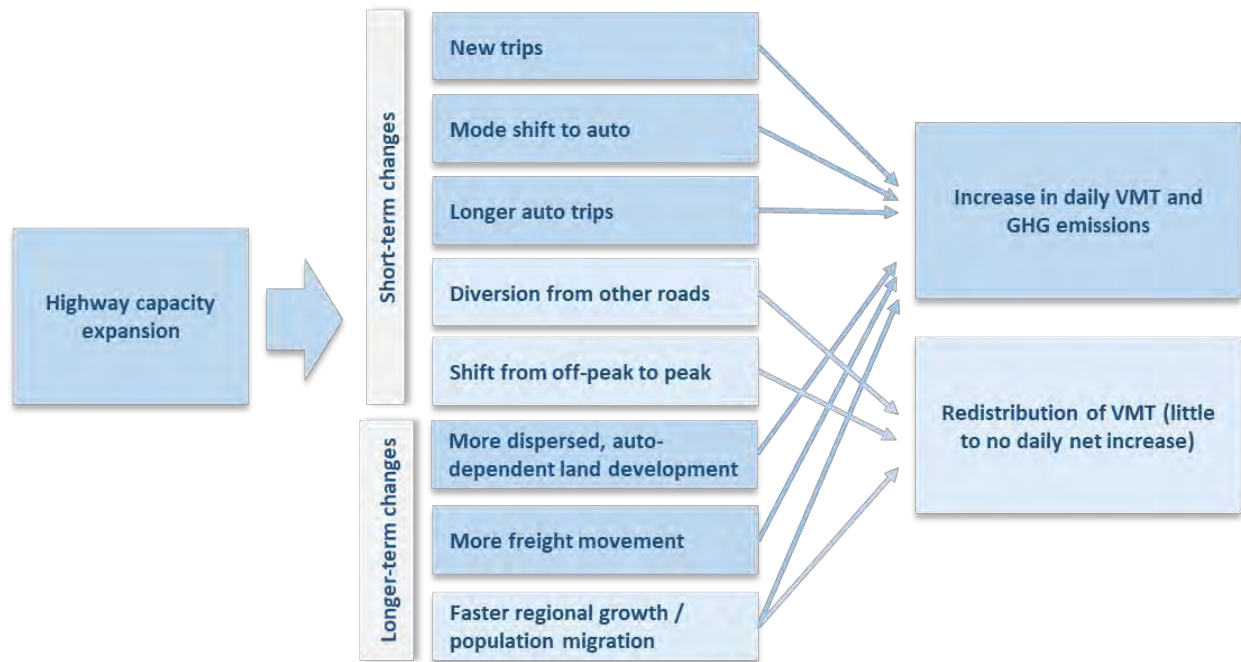
Study	Study Location (and Type)	Study Years	Time Period	Elasticity (change in VMT / Change in Lane-Miles)
Hymel (2019)	U.S (States)	1981-2015	long-term	0.89 to 1.06
Duranton and Turner (2011)	U.S. (MSAs – Interstates)	1983-2003	10 years	0.93 to 1.03 ^a
Cervero (2003)	California (Freeway Corridors)	1980-1994	short-term long-term	0.10 0.39
Cervero and Hansen (2002)	California	1976-1997	short-term intermediate term	0.59 0.79
Noland (2001)	U.S. (States – all roadway types)	1984-1996	short-term long-term	0.30 to 0.60 0.70 to 1.00
Noland and Cowart (2000)	U.S. (Metro Areas – Freeways and arterials)	1982-1996	short-term long-term	0.28 0.90
Hansen and Huang (1997)	California	1973-1990	short-term long-term	0.20 0.60 to 0.90

Source: Handy, Susan and Boarnet, Marlon, G., "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions," prepared for the California Air Resources Board, 2014; Duranton, G., & Turner, M. A., "The Fundamental Law of Road Congestion: Evidence from US Cities," *American Economic Review*, 101 (6), 2011; Hymel, Kent, "If You Build It, They Will Drive: Measuring induced demand for vehicle travel in urban areas," *Transport Policy*. Volume 76, pp. 57-66, 2019.

Note a: Duranton and Turner developed several models and elasticities but report 1.03 as the "most defensible estimate." This total elasticity includes contributions from traffic diversion, which the authors estimate to account for 0 – 10 percent of the total. Because diverted traffic does not generally reflect a net increase in induced vehicle travel, the range shown in Table 5 reflects only the induced vehicle travel that is not diverted traffic.

It is important to recognize that the induced vehicle travel observed on a single highway following capacity expansion is not necessarily equal to a net system-wide increase in VMT and corresponding increase in GHG emissions, as discussed in several of the papers listed above. In the short term, effects such as new trips, mode shift to automobile travel, and longer automobile trips all contribute to a net increase in VMT, while diversion from other roads and shifts from off-peak to peak-period travel primarily redistribute VMT rather than cause a net increase in VMT. In the longer term, effects such as more dispersed, auto-dependent development patterns and freight logistics process reorganization contribute to a net increase in VMT; population migration can at least partially redistribute VMT, potentially from other states, although it can also cause a net increase. The figure below illustrates the short-term and longer-term changes that can result from highway capacity expansion and their relationship to a net increase in VMT and GHG emissions.

Figure 6. Changes Resulting from Highway Capacity Expansion



Recent induced travel research has attempted to distinguish between these different impacts and isolate the net increase in VMT. The research suggests diverted traffic effects are likely small. One of the most comprehensive studies, Duranton and Turner (2011), concludes: “Increasing lane kilometers for one type of road diverts little traffic from other types of road.”¹⁶ And a review of literature commissioned by CARB concludes: “Capacity expansion leads to a net increase in VMT, not simply a shifting of VMT from one road to another.”¹⁷ The research listed in Table 5 generally seeks to quantify the net increase in VMT.

Proponents of highway capacity expansion often claim that the project will reduce emissions because of a reduction in congestion and an increase in vehicle speeds. Vehicle GHG emission rates are lowest between 35 and 55 miles per hour, as show in the figure below. If there is no change in VMT, then a project that increases average vehicle speeds from less than 35 mph to the 35-55 mph range will reduce emissions. However, most highway capacity expansion projects in urban areas will cause an increase in VMT, and the induced vehicle travel can offset some or all emission reduction benefits of congestion reduction. Moreover, any congestion reduction benefits that improve traffic flow and reduce *per vehicle* emission rates are likely to be short-lived, because induced vehicle travel will lead to a return of congested conditions.

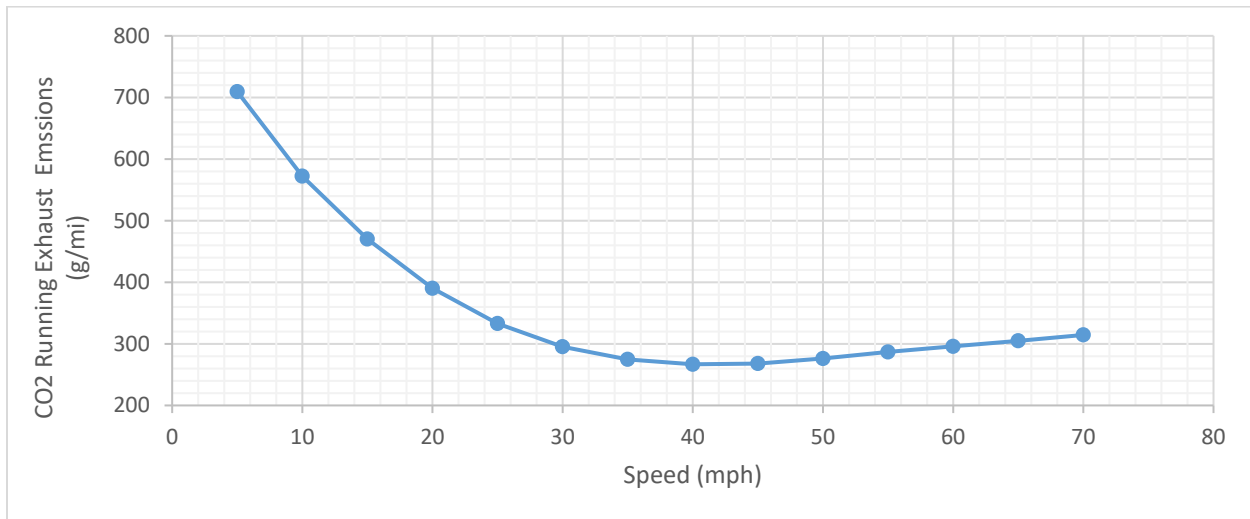
This is not to imply that all highway capacity expansion projects will increase GHG emissions. In some circumstances, the emissions benefits of smother traffic flow may be greater than the emissions

¹⁶ Duranton, G., & Turner, M. A., “The Fundamental Law of Road Congestion: Evidence from US Cities,” *American Economic Review*, 101 (6), 2011.

¹⁷ Handy, Susan and Boarnet, Marlon, G., "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions," prepared for the California Air Resources Board, 2014.

increase from induced vehicle travel, at least in the short term. The relative magnitude of these two factors will vary by project and vary over time. However, the evidence is clear that induced vehicle travel effects can be substantial, and ignoring induced vehicle travel will produce misleading conclusions about emissions impacts.

Figure 7. California Average Light Duty Vehicle CO₂ Emission Factors by Speed, 2018



Source: EMFAC 2017

Rather than add new highway lanes in name of congestion reduction, operational improvements can sometimes deliver system performance (congestion reduction) benefits at far less cost. These can include ramp metering, reconfigurations to highway ramps to reduce weaving and merge impacts, incident management, and traveler information systems. The GHG impacts of these types of operational strategies are highly context-specific and not well understood, in part because nearly all the research does not consider induced vehicle travel. Traffic operations strategies are discussed in Section 3.2.

Caltrans and its local partners have an opportunity to limit VMT growth and the associated GHG emissions by avoiding highway capacity expansion projects that are likely to result in substantial induced vehicle travel. This approach is consistent with State, regional, and local efforts to mitigate VMT and GHG impacts, and with the Caltrans Strategic Management Plan, which established a goal of reducing statewide per capita VMT by 15 percent relative to 2010 levels.

To limit VMT growth and GHG emissions, consideration of induced vehicle travel is applicable throughout the decision-making process. The development of a highway project begins with identification of the need for the project, which is often framed as a structural or operating deficiency of the existing transportation system. Project needs are identified through Caltrans management systems, master plans, system and regional plans, and prioritizing processes, or by other sponsoring agencies.¹⁸ The project need is documented in a Project Initiation Document (PID). Based on a review of PIDs by the research team, “congestion” is often identified in a PID as a system deficiency, and the identified need for a highway capacity expansion project is to “reduce congestion.” Some capacity expansion projects

¹⁸ Caltrans, “How Caltrans Builds Projects,” August 2011.

also identify “reduce emissions” as an objective. In some cases, this practice ignores the evidence on induced vehicle travel, since statements in the PID assume that highway capacity expansion will reduce congestion, while the evidence suggests that in urbanized areas, the project may result in little or no congestion relief. The ultimate impact on GHG emissions will depend on the relative speed impacts and induced vehicle travel impacts, as noted above.

Transportation projects must be analyzed for their impacts under the California Environmental Quality Act (CEQA). Despite the evidence documented in literature, the planning and environmental analysis processes have often failed to adequately account for induced vehicle travel.¹⁹ The Governor’s Office of Planning and Research provides guidance on the general steps for this analysis.²⁰ Caltrans has developed the “Transportation Analysis Framework” is to assist Caltrans Districts in identifying the best approach for analyzing VMT (induced travel) under CEQA in various settings and for projects on the SHS.²¹ This document identifies two general approaches for assessing induced vehicle travel for SHS projects:

- Use the Induced Travel Calculator developed by the National Center for Sustainable Transportation (NCST) at UC Davis, which applies elasticities from empirical studies discussed above.
- Use a travel demand model, potentially supplemented with off-model post-processing or other adjustments as necessary.

The Caltrans Transportation Analysis Framework discusses in which circumstances these approaches are most appropriate.

HOV Lanes and Express Lanes

Induced vehicle travel and GHG impacts are also important considerations in decisions regarding high-occupancy vehicle (HOV) lanes and express lanes. Caltrans maintains a network of nearly 1,400 miles of HOV lanes, primarily in the Los Angeles and San Francisco Bay Area metropolitan areas. California law states that the purpose of HOV lanes is “to stimulate and encourage the development of ways and means of relieving traffic congestion on California highways and, at the same time, to encourage individual citizens to pool their vehicular resources and thereby conserve fuel and lessen emission of air pollutants.” In theory, HOV lanes can potentially reduce emissions in two ways: (1) by enabling smoother traffic flow that results in a lower rate of fuel use and emissions per vehicle, and (2) by encouraging SOV travelers to shift to carpools, thereby reducing VMT. In reality, however, there is little evidence that expanding highway capacity by adding HOV lanes will reduce GHG emissions, and some research, as discussed below, suggests that HOV lane additions will increase GHG emissions.

In recent years, some HOV lanes have been modified or newly constructed to allow SOVs to use the facility by paying a toll. These facilities were initially termed high occupancy toll (HOT) lanes and are now

¹⁹ Volker, Jamey M. B., Amy E. Lee, and Susan Handy, “Induced Vehicle Travel in the Environmental Review Process,” *Transportation Research Record*, Vol. 2674(7), 468–479, 2020.

²⁰ Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018. <http://opr.ca.gov/ceqa/updates/sb-743/>

²¹ Caltrans, Draft Transportation Analysis Framework: Induced Travel Analysis, March 2020.

frequently referred to as “express lanes”. California currently has 214 miles of express lanes, with many more facilities in development or planning phases. Express lanes can be a way to introduce the concept of roadway pricing, and pricing can be an effective mechanism for limiting SOV travel demand in some circumstances, as discussed in the following sub-section. Express lanes can also be used by transit vehicles to increase travel time reliability, especially when coupled with dynamic pricing.

Studies have shown that vehicles traveling in HOV lanes emit fewer pollutants than vehicles in mixed-flow lanes, because of smoother traffic flow.²² However, most of this research simply compares HOV lanes with mixed-flow lanes at a single point in time, rather than looking at travel changes that were caused by the addition of the HOV or express lane. Virtually all the HOV lanes in California have been constructed as new highway capacity, rather than conversion of existing mixed-flow lanes to HOV. Thus, by adding capacity, HOV and express lanes induce new vehicle travel in urbanized areas as described above. The additional VMT will at least partially offset any emissions benefits resulting from smoother traffic flow, and in many cases will completely offset the emissions benefits from traffic flow improvements. These conclusions are supported by regional simulation modeling studies.^{23 24} They are also supported by project-level analyses of emissions impacts of HOV and express lane additions reported in recent project environmental documents.^{25 26}



The impact of HOV lane additions on carpool formation and average vehicle occupancy is uncertain. Surveys of HOV lane carpoolers and vanpoolers conducted in the 1980s and 1990s found that 40 to 50 percent reported previously driving alone.²⁷ Observations of Southern California freeways that added HOV lanes in the 1990s found that average vehicle occupancy across the entire facility generally increased following the HOV lane opening, although some of the carpools may have simply diverted

²² “Modeling the Effectiveness of High Occupancy Vehicle (HOV) Lanes at Improving Air Quality,” Prepared by Bourns College of Engineering, Center for Environmental Research and Technology, University of California, Riverside, Prepared for Caltrans, 2006.

²³ Johnston, Robert A and Raju Ceerla, “The Effects of New High-Occupancy Vehicle Lanes on Travel and Emissions,” Transportation Research Part A, Volume 30, No. 1. 1996.

²⁴ Dowling, Richard et al, 2005. NCHRP Report 535, Predicting Air Quality Effects of Traffic-Flow Improvements: Final Report and User’s Guide. Transportation Research Board. www.trb.org/Publications/Blurbs/155398.aspx

²⁵ Air Quality Study Report, SR 65 Capacity and Operational Improvements Project, State Route 65, Cities of Roseville, Rocklin, and Lincoln, Placer County, 03-PLA-65-PM R6.2 to R12.8, EA 03-1F170, September 2016.

²⁶ Sac 50 Phase 2 High Occupancy Vehicle Lanes Project, Draft Initial Study [with Proposed Mitigated Negative Declaration]/ Environmental Assessment with Finding of No Significant Impact. September 2016.

²⁷ Turnbull, K. H. Levinson and R. Pratt. HOV Facilities – Traveler Response to Transportation System Changes. Transportation Cooperative Research Program Report 95, Chapter 2. 2006.

from other facilities.²⁸ But other studies have found that an individual's decision to drive as an HOV rather than a SOV is not very sensitive to travel time savings, casting doubt on the impacts of HOV lane additions on vehicle occupancy. Forming a new carpool can require additional travel or waiting time, and for most drivers, the time savings afforded by HOV lane travel are not significant enough to overcome the extra burden of forming a new carpool. A 2007 study of California's HOV lanes concluded: "Travel time savings do not provide a statistically significant carpooling incentive."²⁹

Other research has shown that most carpool vehicles consist of family members riding together. For example, a study using 2001 data found that 83 percent of carpools for home-based work trips contained only members of the same household.³⁰ This suggests that carpool formation for work trips depends almost entirely on the work locations of members of the same household.³¹

Observed trends also suggest that HOV lanes have limited influence on carpool formation, or that their influence is countered by other trends, such as the increased spatial dispersion of workplaces. As shown in the figure below, the number of workers commuting by carpool in California has declined from a peak of 2.1 million in 1990 to around 1.85 million today, a 10 percent reduction, while the number of HOV lane miles in the state has greatly increased. During the same period, the number of SOV commuters in California has increased 36 percent, to 13.5 million. Note, however, that a variety of factors have contributed to the decline in ridesharing, such as the elimination of some mandates for employee trip reductions by larger employers and continued low gasoline prices, so the influence of HOV lanes on broader ridesharing trends is unclear.

²⁸ Turnbull, 2006.

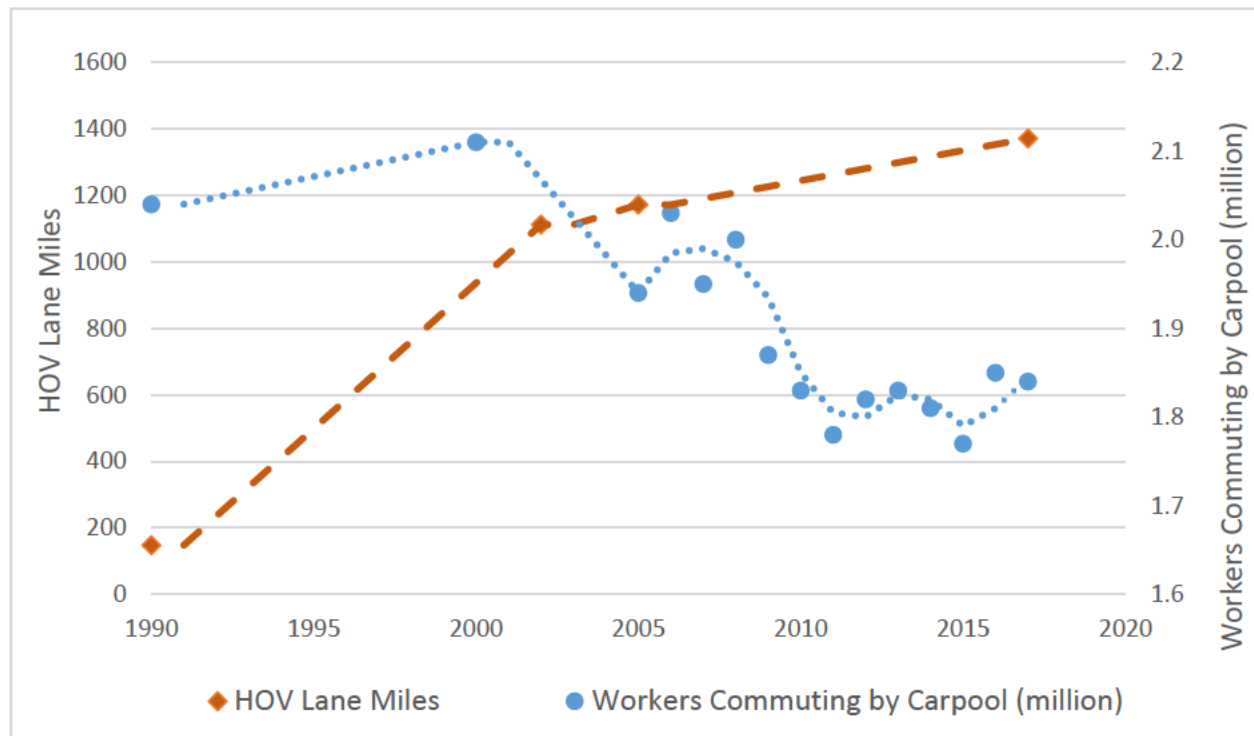
²⁹ Variaya, Pravin, "Effectiveness of California's High Occupancy Vehicle (HOV) System," UCB-ITS-PRR-2007-5, California PATH Research Report, May 2007.

³⁰ McGuckin, N. and N. Srinivasan. "The Journey-to-Work in the Context of Daily Travel," Paper prepared for the Census Data for Transportation Planning Conference.

<http://onlinepubs.trb.org/onlinepubs/archive/conferences/2005/censusdata/resource-journey-to-work.pdf>

³¹ Variaya, 2007.

Figure 8. Change in California HOV Lane Miles and Workers Commuting by Carpool, 1990 – 2017



Source: Commute data from US Census Bureau, Decennial Census & American Community Survey; HOV lane mile data from Caltrans, *High Occupancy Vehicle Guidelines* (various years) and May, Adolf D., Lannon Leiman, and John Billheimer, “Determining the Effectiveness of HOV Lanes,” California PATH Research Report, UCB-ITS-PRR-2007-17, November 2007.

The impacts on carpooling of converting HOV lanes to express lanes appears to vary widely. One recent study concluded that HOV to HOT lane conversion generally reduces the prevalence of carpooling.³² However, previous research came to different conclusions. In San Diego, for example, the number of HOVs increased significantly in the seven years after the I-15 HOV lanes were modified to allow SOV buy-in.³³

For HOV lanes to effectively encourage carpooling, they must offer a significant travel time savings and better reliability as compared to general purpose lanes. Yet the free-flow conditions on the state’s HOV lane system has been declining. More than half of HOV lanes in the state exhibit “degraded” performance, defined as having average traffic speed during the morning or evening weekday peak commute hour is less than 45 miles per hour for more than 10 percent of the time.³⁴ Improving HOV lane performance through better enforcement and potentially higher occupancy requirements (e.g., 3+

³² Burris, Mark, “The impact of HOT lanes on carpools,” *Research in Transportation Economics*, Volume 44, June 2014.

³³ Turnbull, K. H. Levinson and R. Pratt. HOV Facilities – Traveler Response to Transportation System Changes. Transportation Cooperative Research Program Report 95, Chapter 2. 2006. www.trb.org/Publications/Blurbs/158237.aspx

³⁴ Caltrans, “2016 California High-Occupancy Vehicle Lane Degradation Determination Report,” October 2017.

occupants) can help to maximize their potential to boost ridesharing. Use of dynamic pricing can also significantly improve travel time reliability on express lanes, making them more attractive to carpoolers.

HOV lanes are most effective when they carry large numbers of transit buses and vanpools. In these cases, the passenger throughput of the HOV lane can be significantly higher than general purpose lanes. For example, the I-395 HOV lanes in the Northern Virginia and Washington DC area carry large numbers of buses and vanpools. The observed average vehicle occupancy on this facility in the AM peak was 3.1, and HOV lane peak-hour person throughput was approximately 5,600, compared to 2,000 for the general purpose lanes.³⁵ Buses that use properly functioning HOV lanes can see reduced travel times and better schedule adherence, which can help to attract new bus riders and enhance transit cost effectiveness.

It should be noted that HOV lanes have played a role in encouraging adoption of low emission vehicles in California. Since 2000, the State has issued decals that allow HOV lane access by certain low- or zero-emission vehicles. There is evidence that, for some vehicle owners, this HOV lane access has been a motivating factor in the choice of purchasing a low- or zero-emission vehicle.³⁶

Because most California highway capacity projects today involve HOV or express lanes, and because the GHG impacts of building these facilities are uncertain, it is important to carefully study the likely impacts of proposed projects and avoid premature assumptions about VMT or emission reductions. This acknowledgement should begin during planning and programming when projects are first proposed for congestion reduction purposes. Based on interviews conducted for this report, many Caltrans and local partner staff continue to believe that all HOV lane projects reduce emissions. For example, a recent Caltrans website for a proposed project to add HOV lanes in a major metro area stated: “This project will also benefit transit ridership/ ridesharing by providing less delay and a more reliable traveling option and air quality is expected to improve due to decrease in delay and vehicle miles traveled (VMT).” These types of assertions, made before careful traffic and emissions studies have been performed, can contradict the findings of research on induced vehicle travel effects and the simulation modeling performed for recent Caltrans projects. Without properly recognizing the uncertainty and potential for induced vehicle travel and GHG emissions increases, projects may be advanced that are inconsistent with State and local GHG reduction targets and do little to alleviate congestion.

Roadway Pricing

As an alternative to capacity expansion, roadway pricing provides a mechanism for reducing the demand for SOV travel and improving network performance. Roadway pricing in the form of tolls has been in place for many years. Examples include the tolled bridges in the Bay Area and tolled highways in California and other states. Road pricing is being introduced widely as part of the development of

³⁵ Turnbull, K. H. Levinson and R. Pratt. HOV Facilities – Traveler Response to Transportation System Changes. Transportation Cooperative Research Program Report 95, Chapter 2. 2006.

³⁶ Tal, Gil and Michael A. Nicholas, “Evaluating the Impact of High Occupancy Vehicle (HOV) Lane Access on Plug-In Vehicles (PEVs) Purchasing and Usage in California,” Institute of Transportation Studies, University of California, Davis, Working Paper UCD-ITS-WP-14-01, 2014.

express/HOT lanes, as discussed above. Tolls or pricing in these examples have been implemented in part to raise revenue for facility construction and/or maintenance.

Roadway pricing can be applied explicitly for the purpose of reducing congestion in urban areas and for mitigating associated adverse environmental impacts. For example, London, Stockholm, and Singapore impose a charge for vehicles entering the city center. In all these cities, vehicle travel and congestion dropped significantly following the implementation of the pricing scheme. For example, the central London congestion charging scheme, coupled with transit service improvements, resulted in a 20 percent reduction in vehicle traffic and a 30 percent reduction in peak-period congestion delay, while transit ridership increased.³⁷ These cities have robust public transit systems, and the introduction of roadway pricing was typically coupled with transit service improvements. Also, the price level necessary to significantly deter vehicle travel must be relatively high, as compared to the lower price level of tolling as typically applied for the purposes of funding roadway construction and maintenance.

Increasingly, roadway pricing is being considered as an alternative to roadway capacity expansion and a mechanism to curb congestion and reduce VMT. For example, the investment strategy for the Metropolitan Transportation Commission's *Plan Bay Area 2040* includes a new cordon pricing zone in downtown San Francisco. A study by the Southern California Association of Governments found that implementing a cordon pricing scheme for the Los Angeles Westside area ("Mobility Go Zone") would reduce daily VMT by 8 percent, increasing transit and non-motorized travel, and yield a benefit-cost ratio of 3:1.³⁸ Other metropolitan areas that are actively considering urban area roadway pricing include New York City, Seattle, Portland, Oregon, and Vancouver, British Columbia.

Caltrans has identified expanding the use toll lanes or development of other pricing strategies as one type of project alternative that can potentially minimize, or avoid altogether, the additional VMT from capacity-increasing projects.³⁹

By increasing the cost of SOV travel, roadway pricing will encourage travelers to consider other modes, most of which are less carbon intensive such as walking, bicycling, transit, and ridesharing. Thus, road pricing works best when paired with improvements to non-SOV travel options, discussed in the next section. Like many forms of behavior change, the most effective approaches to changing travel choices involve both "carrots" (more attractive alternative modes) and "sticks" (SOV price increases).

Impacts on VMT

The potential for road pricing to reduce VMT depends on the magnitude of the charges, among other factors. As the price of driving increases, VMT will decrease as drivers shift to other modes, shorten trips, or forego discretionary trips altogether. Research on fuel price elasticity can provide a starting point for

³⁷ Litman, Todd, "London Congestion Pricing: Implications for Other Cities," Victoria Transport Policy Institute. November 24, 2011. www.vtpi.org/london.pdf

³⁸ Southern California Association of Governments, *Mobility Go Zone & Pricing Feasibility Study: Final Report*, March 2019.

³⁹ Caltrans, Draft Transportation Impacts Analysis under CEQA for Projects on the State Highway System, March 1, 2020.

estimating VMT effects. A report published by the Federal Highway Administration (FHWA) synthesized several prominent studies on travel demand relative to fuel cost, finding a wide range in elasticities, ranging from -0.1 to -0.63.⁴⁰ These values imply that doubling the cost of driving would reduce VMT by 10 to 63 percent. However, motorists' response to roadway pricing may differ from the response to a change in fuel price. On one hand, roadway pricing could result in a larger VMT reduction because the impacts are more immediate and closely tied to the vehicle trip as compared to fuel prices. On the other hand, in some situations, some drivers may be able to avoid highway charges by using surface streets, limiting impacts of roadway pricing on VMT. Actual impacts are likely to vary widely depending on the context.

A study of increased peak period tolls on the San Francisco-Oakland Bay Bridge in 2010 estimated a traffic elasticity of -0.23, meaning that doubling toll rates would reduce traffic by 23 percent. The study notes that this relatively low elasticity value is "an indication that peak period motorists were fairly insensitive to pricing and a reflection of the nondiscretionary nature of many peak hour journeys." The study also showed a high reduction in carpool vehicles once carpools change from free to tolled, even at a discounted rate.⁴¹

In the absence of real-world examples of comprehensive roadway pricing schemes in the United States, modeling studies provide the best estimates of impacts. As one example, the City of Seattle commissioned in 2009 a study of various regional tolling options. The study estimated a drop in per capita VMT from 24.1 (2009) to 22.7 (2030), a 6 percent reduction, with the variable priced tolling on all freeways in the Seattle metropolitan area. Such a tolling scheme would collect \$1.9 billion in revenue annually.⁴²

Where possible, the application of roadway pricing to existing travel lanes can be an effective strategy for Caltrans and partner agencies to manage congestion and reduce VMT, rather than highway capacity expansion that will include new vehicle travel. At present, however, Caltrans and its partner agencies have only limited ability to implement road pricing. Federal law prohibits tolling of Interstate highway general purpose lanes, with the exception of a small number of pilot programs. Federal law does allow charging of tolls for SOV use of HOV lanes.

Equity Concerns

Objections to roadway pricing are often centered around equity concerns. Pricing road travel could make it too expensive for low-skilled workers to get to their jobs. Tolls or other forms of road user charges would consume a larger share of income for poor drivers as compared to wealthy drivers. The actual social equity impacts of any specific roadway pricing scheme are complex and depend on many

⁴⁰ Dong, J., Davidson, D., Southworth, F., Reuscher, T. 2012. *Analysis of Automobile Travel Demand Elasticities with Respect to Travel Cost*. FHWA. www.fhwa.dot.gov/policyinformation/pubs/hpl-15-014/TCElasticities.pdf

⁴¹ Cervero, Robert, "Traffic Impacts of Variable Pricing on the San Francisco-Oakland Bay Bridge, California," *Transportation Research Record*, No. 2278, 2012.

⁴² Seattle Department of Transportation, *Seattle Variable Tolling Study*, 2009.

www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/Reports/FINALTollingStudyreportrevised6.25.10.pdf

factors. While equity concerns should in no way be dismissed, it is worth noting that much of the literature on the subject finds that road pricing is not as inequitable as commonly believed.

Observations of existing priced highway lanes in urban areas finds that a large portion of users of these facilities are low- and middle-income drivers. When examining HOT lanes, researchers have found that, even if they don't use the facility regularly, lower income drivers value the option to bypass congestion because they may have less flexibility in their schedules and pay a greater penalty for arriving late. This is borne out in public opinion surveys, which consistently find that support for road pricing does not vary substantially by income group.⁴³

When pricing is used to generate revenue for roadway improvements, it must be compared against alternative revenue generation approaches. In California, sales taxes are often used to fund highway improvements, and research finds that a transportation sales tax "disproportionately favors the more affluent at the expense of the lower-income."⁴⁴

Roadway pricing equity concerns can potentially be addressed in several ways. "Lifeline" programs could be used to provide discounted access to toll roads, similar to utility programs available to low-income households. The distribution of road pricing revenue can also be used to fund services that benefit low-income travelers. If equity is a prominent factor in the design and implementation of a roadway pricing program, the results can benefit disadvantaged communities through improved public transit, safer pedestrian and bicycle routes, and reduced environmental burdens.⁴⁵

Improve Alternatives to SOV Travel

Caltrans plans, designs, constructs, and operates facilities that provide alternatives to SOV travel. Caltrans decisions can support these alternatives even when Caltrans does not directly control the facilities. As shown in the table below, SOVs typically produce the highest emissions per passenger mile among major modes surface of transportation, although the results depend on vehicle fuel type, vehicle occupancy, and other variables. The emission factors shown below were developed using fuel-based carbon intensity values from CARB's LCFS program, which account for the emissions resulting from the production and distribution of the various fuel types and all associated tailpipe exhaust emissions.⁴⁶

⁴³ FHWA, "Income-Based Equity Impacts of Congestion Pricing: A Primer," 2008.

https://ops.fhwa.dot.gov/publications/fhwahop08040/cp_prim5_00.htm

⁴⁴ Schweitzer, Lisa, and Brian D. Taylor, "Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes," *Transportation*, Vol 35, No. 6, 2008.

⁴⁵ TransForm, *Pricing Roads, Advancing Equity*, January 2019. www.transformca.org/transform-report/pricing-roads-advancing-equity

⁴⁶ California Air Resources Board. 2018. California Climate Investments Quantification Methodology Emission Factor Database. Available at: www.arb.ca.gov/cc/capandtrade/auctionproceeds/cci_emissionfactordatabase.xlsx

Table 6. GHG Emissions by Surface Transportation Mode

Transportation Mode	Fuel Type	Grams CO ₂ e per vehicle mile	Assumed Vehicle Occupancy	Grams CO ₂ e per passenger mile ^a
Single-occupancy vehicle	Gasoline	492 ^b	1	492
	Electric	123 ^c	1	123
Carpool	Gasoline	492 ^b	3	164
	Electric	123 ^c	3	41
Vanpool	Gasoline	1,292 ^b	8	161
Transit Bus (80% occupied)	Diesel	2,512 ^b	36	66
	Electric	893 ^d	36	25
Transit Bus (20% occupied)	Diesel	2,512 ^b	9	263
	Electric	893 ^d	9	99
Passenger Rail	Diesel	24,954 ^e	203	123
	Renewable Diesel	8,696 ^e	203	43
Light Rail	Electric	7,795 ^e	121	65
Streetcar	Electric	8,297 ^e	29	285

Notes:

^a Grams per passenger mile calculated by dividing the grams per vehicle mile by the assumed vehicle occupancy for each mode.

^b GHG emission factors developed by multiplying vehicle fuel consumption rates from CARB’s EMFAC2017 model by CARB’s LCFS fuel-based carbon intensity values. The following vehicle types were assumed to represent the transportation modes: light-duty automobile (LDA)/light-duty truck (LDT)/medium-duty vehicle (MDV) = SOV and carpool; light-heavy duty vehicle (LHD1) = vanpool; and urban bus (UBUS) = transit bus. The EMFAC modeling was performed at the statewide level for calendar year 2016.

^c Assumes an electricity consumption rate of 0.326 kilowatt-hours per vehicle mile, based on the average efficiency for top selling U.S. electric vehicle brands in 2015 (U.S. Department of Energy 2016). This rate was multiplied by CARB’s LCFS carbon intensity for grid electricity (CARB 2018).

^d Assumes an electricity consumption rate of 2.36 kilowatt-hours per vehicle mile, based on the average efficiency of King County Metro 40-foot battery electric buses (Federal Transit Administration 2018). This rate was multiplied by CARB’s LCFS carbon intensity for grid electricity (CARB 2018).

^e GHG emission factors were obtained directly from CARB (2018).

VMT Reduction Strategies

A variety of programs and services are available to encourage alternatives to SOV travel, reduce reliance on the private automobile, and thereby reduce VMT and GHG emissions. Examples are listed in the table below. Many of these strategies are categorized as transportation demand management (TDM). In some cases, Caltrans can lead the implementation of these strategies, while in other cases, Caltrans would play a supporting role to MPOs, local governments, large employers, or other organizations.

Table 7. Examples of VMT Reduction Strategies

Strategy Category	Strategies for which Caltrans has a Support Role	Strategies for which Caltrans has a Lead or Support Role
Bicycle, Pedestrian, and Urban Design Strategies	Bikeshare	Bikeway network expansion Bike lane/path development Pedestrian facility network expansion Pedestrian facility development Street connectivity
Transit Strategies	Transit system expansion Transit frequency improvements Transit travel time improvements Transit reliability improvements Transit fare reduction	
Land Use and Parking Strategies	Land use mixing Higher density development Transit oriented development Destination accessibility Parking management and pricing	
Transportation Demand Management Strategies	Employer alternative commute option programs Rideshare Carsharing programs Telework Community-based travel marketing	Park and ride lots

California’s 18 MPOs lead the planning for VMT reduction measures at the regional scale. Most MPOs have been pursuing these types of strategies for decades due to air quality planning requirements, often working with regional air quality management districts. The passage of SB 375 added the requirement that MPOs demonstrate that their long-range transportation plan will achieve light-duty vehicle per-capita GHG emission reduction targets set by CARB. In some cases, the GHG reduction targets can be achieved through future land use plans that result in VMT reduction. However, most MPOs have also analyzed and adopted additional TDM strategies for VMT and GHG reduction. For example, MTC’s Plan Bay Area 2040, adopted in 2017, includes the following strategies to reduce VMT⁴⁷:

- Commuter Benefits Ordinance
- Car Sharing
- Vanpools and Employer Shuttles
- Smart Driving Program
- Targeted Transportation Alternatives (i.e., community-based travel marketing)

⁴⁷ Metropolitan Transportation Commission. 2017. Plan Bay Area 2040: Final Travel Modeling Report. http://2040.planbayarea.org/sites/default/files/2017-07/Travel_Modeling_PBA2040_Supplemental%20Report_7-2017_0.pdf

- Trip Caps
- Bike Share
- Bicycle Infrastructure

The MTC plan also includes three strategies to promote accelerated deployment and use of clean vehicles: a Regional Electric Vehicle Charger Network, a Vehicle Buyback and EV Incentive Program, and a Clean Vehicles Feebate Program.

Bicycle System Improvements

Walking and cycling are forms of active transportation that do not generate any GHG emissions. Caltrans can support active transportation by expanding bike and pedestrian infrastructure and improving the safety of existing facilities. New bicycle lanes can reduce GHG emissions by encouraging the replacement of auto trips with bicycle trips, which reduces VMT.^{48,49} The amount of emission reductions achieved by new bicycle facilities depends on many variables, including regional connectivity, length of the facility, average daily traffic (ADT) on the parallel roadway, proximity to activity centers, and the extent to which cycling trips are replacing auto trips. Bicycle facilities are most effective at reducing VMT and GHG emissions when they improve the connectivity of a regional bicycle network, improve access to popular destinations, and are perceived as safe and convenient by cyclists.

The table below presents an illustrative example of potential GHG and VMT reductions that may be achieved by three hypothetical Class 2/Class 4 bike lane projects. The research team assumed the three facilities have different characteristics, as described below, in order to identify a range of low, medium, and high GHG reductions. GHG and VMT reductions for each facility were quantified by the research team using CARB's Active Transportation Program GHG Emission Reduction Calculator.

- Facility 1: less than 1-mile bike lane parallel to a roadway with less than 12,000 ADT located in a town with less than 250,000 people. The new facility would be within 0.5 mile of three activity centers.
- Facility 2: 1- to 2-mile bike lane parallel to a roadway with 12,000 to 24,000 ADT located in a university town with less than 250,000 people. The new facility would be within 0.5 mile of three to seven activity centers.
- Facility 3: longer than 2-mile bike lane parallel to a roadway with 24,000 to 30,000 ADT located in a town with more than 250,000 people. The new facility would be within 0.25 mile of more than seven activity centers.

⁴⁸ Matute, Juan, Herbie Huff, Jamie Lederman, Diego de la Peza, and Kevin Johnson (2016). Toward Accurate and Valid Estimates of Greenhouse Gas Reductions from Bikeway Projects. California Department of Transportation, Report CA 17-2919.

www.lewis.ucla.edu/wp-content/uploads/sites/2/2016/08/UCCONNECT-Matute-Final-Report-with-Appendices.pdf

⁴⁹ Handy, S., Tal, G., and Boarnet, M. (2014). Impacts of Bicycling Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief. California Air Resources Board.

www.arb.ca.gov/cc/sb375/policies/bicycling/bicycling_brief.pdf

Table 8. Potential VMT and GHG Reductions from New Bicycle Lanes

Facility	Auto VMT Reduction (miles per year)	GHG Reduction (metric tons CO ₂ e per year)
Facility 1	8,100	4
Facility 2	64,260	30
Facility 3	127,980	59

Notes: The calculator uses CARB’s “Methods to Find the Cost-Effectiveness of Funding Air Quality Projects for Evaluating Motor Vehicle Registration Fee Projects and Congestion Mitigation and Air Quality Improvement Projects” to quantify VMT and GHG reductions. The GHG reductions account for emissions resulting from the production and distribution of the displaced fuel, as well as all associated tailpipe exhaust reductions.

While new bicycle facilities can reduce auto VMT and associated emissions, the GHG reduction potential is relatively low, in part because any resulting mode shift tends to replace only short automobile trips. Based on the analysis presented above, more than 15,000 bicycle lanes with characteristics like “Facility 3” would need to be constructed to reduce 1 percent of annual GHG emissions on the State Highway System (89 million metric tons, as shown in Table 1).

Transit System Improvements

System improvements that make transit more reliable and attractive as an alternative to SOV travel can increase transit ridership and reduce automobile VMT and GHG emissions.⁵⁰ There are a variety of mechanisms for improving transit service, including:

- Increasing the frequency of transit service, which reduces wait times for riders
- Improving transit travel speed and reliability through treatments such as transit signal priority, bus-only signal phases, queue jumps, curb extensions to speed passenger loading, and dedicated bus lanes.
- Expanding transit service by developing new routes, which can improve transit access to residents and businesses
- Reducing transit fares to make transit travel more competitive with auto travel

Caltrans does not operate public transit service so would rely on local partners to lead transit service improvements. However, Caltrans can support public transit in several ways. Caltrans administers a number of transit programs, including the Transit and Intercity Rail Capital Program (TIRCP), created in 2014 to provide grants from the state’s Greenhouse Gas Reduction Fund to fund transit capital improvements that will reduce GHG emissions. Caltrans can also influence transit operations that occur on the State Highway System. For example, Caltrans can permit buses to operate on freeway shoulders to increase transit speeds and reliability, particularly during peak-hours or heavy congestion. Buses are

⁵⁰ Handy, S., Lovejoy, J., Boarnet, M., and Spears, S. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Emissions – Policy Brief. California Air Resources Board. www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf

currently permitted to operate on the shoulders of I-805 in San Diego County. In some situations, Caltrans may also be able to improve transit efficiency by creating dedicated bus-only lanes on the State Highway System.

The table below presents an illustrative example of potential GHG reductions that may be achieved by three hypothetical transit improvement projects under various ridership assumptions. The inputs were developed by the research team, and the GHG reductions were quantified using CARB’s Transit and Intercity Rail Capital Program calculator. These examples assume that because transit-only and transit-priority lanes would likely be implemented in areas with existing transit service, they are not likely to significantly increase bus VMT. Accordingly, the analysis presented below does not assume any expansion to transit operations. There are many other ways to improve transit service, as noted above; some transit improvement options would increase bus VMT which would at least partially offset the GHG benefits of mode shift from autos.

Table 9. Potential GHG Reductions from Improved Transit Service

Project ^a	Additional Annual Ridership to Existing Transit Service ^b	GHG Reduction (metric tons CO ₂ e per year)
Transit Service 1	103,323 (Low)	407
Transit Service 2	206,646 (Medium)	814
Transit Service 3	516,614 (High)	2,035

Notes:

^a All transit projects were analyzed as long-distance bus service in Sacramento County during calendar year 2020. Analysts also assumed all transit vehicles were model year 2015 and an average transit trip length of 10.23 miles (CARB 2017). No changes in transit VMT are assumed.

^b For illustrative purposes, the low, medium, and high ridership levels represent a 1, 2, and 5 percent increase, respectively, in Sacramento Regional Transit’s 2017 annual ridership (SacRT 2017).

Compared to new bicycle facilities, improved and productive transit service has a higher potential to reduce automobile VMT and associated GHG emissions (e.g., mode shift from SOVs to transit), although the illustrative reductions presented above are still relatively low compared to annual GHG emissions on the State Highway System.

Bicycle and Transit Project Impacts in Relation to Induced Vehicle Travel Impacts

Overall, Caltrans investments in projects that improve facilities for transit, bicycles, pedestrians, and other SOV alternatives are important components of the state’s GHG reduction efforts. The co-benefits of these projects can be substantial, including public health improvements from more physical activity and safety improvements for the most vulnerable travelers (e.g., pedestrians and bicyclists). However, it is important to consider the magnitude of the GHG reductions from these projects in relation to the emissions impacts of induced vehicle travel. Typically, GHG emissions increases from induced vehicle travel will far outweigh any reductions from improvements to non-SOV facilities. Thus, based on this

analysis, the inclusion of multi-modal improvements to a highway project will not “offset” the vehicle emissions impacts.

3.2 On-Going and Recent Actions

A variety of recent and on-going activities at Caltrans support reductions in highway system user GHG emissions. These actions, described below, are primarily led by the Division of Transportation Planning, the Division of Environmental Analysis, and Division of Traffic Operations. These actions can complement and support the high impact approaches discussed in the previous section, but are not likely to result in major GHG reductions by themselves.

Statewide Policy and Planning

Transportation planning at Caltrans articulates a long-term vision for California’s transportation system and implements statewide transportation policy through partnerships with state, regional, and local agencies. Transportation planning at Caltrans also includes the first phases of the project delivery process, including the development of project initiation documents (PIDs), which are prepared by the Division of Transportation Planning. The products and services of transportation planning support and guide transportation investment decisions. Programming is the commitment of transportation funds to be available over a period of several years to particular projects. Caltrans supports the preparation of several programming documents as required under State and Federal law, including the State Transportation Improvement Program (STIP) and the State Highway Operation and Protection Program (SHOPP). Nearly all these plans and programming documents can affect VMT in the state and therefore can influence GHG emissions.

Strategic Management Plan

Caltrans adopted a Strategic Management Plan in 2015 in order to provide clear direction for meeting statewide objectives, create and deepen strategic partnerships, and provide performance measures to monitor success. The Strategic Management Plan provides a definition of sustainability by identifying the following objectives for Caltrans Goal #3:

- PEOPLE—Improve the quality of life for all Californians by providing mobility choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods, and services, but also as livable public spaces.
- PLANET—Reduce environmental impacts from the transportation system with emphasis on supporting a statewide reduction of greenhouse gas emissions to achieve 80 percent below 1990 levels by 2050.
- PROSPERITY—Improve economic prosperity of the State and local communities through a resilient and integrated transportation system.

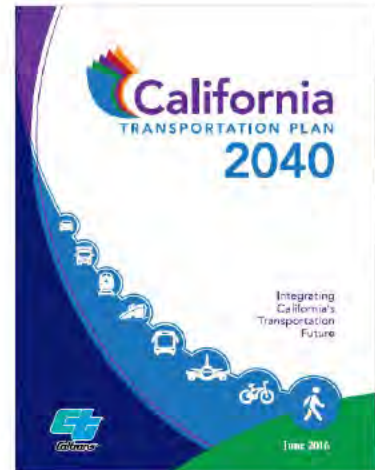
The Strategic Management Plan contains a number of sustainability performance measures and targets, several of which directly or indirectly relate to GHG reduction. These performance measures are shown in the table below.

Table 10. Sustainability Performance Measures in Strategic Management Plan

Performance Measure	Targets
Per capita vehicle miles traveled (Reported statewide by District)	By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District.
Percent reduction of transportation system-related air pollution for GHG emissions	15% reduction (from 2010 levels) of GHG to achieve 1990 levels by 2020.
Percent reduction of GHG emissions from Caltrans design, construction, operation, and maintenance of transportation infrastructure and building	By 2020, reduce Caltrans' internal operational pollutants by District from 2010 levels (from planning, project delivery, construction, operations, maintenance, equipment, and buildings) including: <ul style="list-style-type: none"> • 15% reduction by 2015 and 20% reduction by 2020 of Caltrans' GHG emissions per EO-B-18-12.

California Transportation Plan

Senate Bill 391 (2009) requires Caltrans to develop a statewide long-range transportation plan every five years that aligns with and supports California's GHG reduction targets as specified by AB 32. California Transportation Plan 2040 (CTP 2040), released in 2016, was the first CTP developed under this mandate. As a statewide transportation plan, CTP 2040 provides a framework for meeting the State's mobility and GHG goals and considers all transportation modes. Caltrans incorporated information from the statewide modal plans (described in subsequent sections) and regional transportation plans.



CTP 2040 is California's first statewide transportation plan that included modeling scenarios to measure potential GHG reductions. In the first scenario, Caltrans used the regional transportation plans for the state's four largest metropolitan planning organizations (MPOs), the State modal plans, and California Air Resources Board's Advanced Clean Cars program to model the GHG reductions from key existing plans and policies. The second scenario starts with the first scenario and adds in efficiency strategies (e.g., increased car and rideshare, improved multimodal options, driving pricing, and improved operations) that help reduce transportation-related GHG emissions. The third scenario assumes fuel and vehicle technology improvements (e.g., increased biofuel availability, zero emission vehicle deployment, and rail and aviation efficiencies) on top of the second scenario to help meet the transportation sector's share of the State's GHG reduction target of 80 percent emission below 1990 levels by 2050.

Caltrans has now started the development of the next statewide long-range transportation plan, CTP 2050. This effort will include development of a range of tangible future transportation scenarios, and then modeling of those scenarios to determine their potential impact on GHG emissions and other CTP performance objectives in compliance with adopted CTP Guidelines.

Caltrans Modal Plans

Caltrans develops statewide plans for individual transportation modes. These plans vary in structure and level of detail, but generally describe a vision for improving the performance of modal-specific transportation systems. When successful, improvements to non-highway travel modes can help to reduce travel by on-road vehicles (autos and/or trucks) and associated GHG emissions. Recent modal plans developed by Caltrans include the following:

- Toward an Active California: State Bicycle + Pedestrian Plan
- California State Rail Plan: Connecting California
- California Statewide Transit Strategic Plan
- California Freight Mobility Plan

A description of each of these plans is included in Appendix A.

Sustainable Freight

Caltrans created a Sustainable Freight Branch in 2016, primarily to implement the state's Sustainable Freight Action Plan. The Sustainable Freight Action Plan was produced by a partnership of state agencies in response to Executive Order B-32. The Plan includes 9 major actions and 73 sub-actions; Caltrans is the assigned lead for 25 of the sub-actions. Other key implementation partners are the California Air Resources Board, the California Energy Commission, and the Governor's Office of Business and Economic Development. Several of the actions led by Caltrans can reduce GHG emissions. These include:

- **Truck Parking Availability.** Because of a shortage of truck parking spaces and need for drivers to comply with federal hours of service limits, truckers can spend circling to search for an overnight parking space. This contributes to unnecessary truck VMT and possibly excessive idling. Increasing the availability of truck parking in key locations would improve system efficiency and reduce emissions.
- **Electric Charging Infrastructure for Parked Trucks.** Long-haul freight trucks often need to idle their diesel engines during overnight stops in order to provide truck cab comfort and amenities. With appropriate electrical service at truck parking facilities, trucks can minimize fuel consumption and GHG emissions. In addition, refrigerated trucks can potentially use electrical service instead of diesel engines to operate cooling units. Caltrans is leading coordination and feasibility assessments to encourage investment in electric charging infrastructure for public truck parking facilities along the freight network. A first step is to identify where these type of parking facilities can be located, if possible. Longer term, this infrastructure could also help to shift vehicles to zero emission technologies. District 11 recently worked with a private vendor to provide electric infrastructure at a truck parking facility along SR 76.

- **Truck Platooning.** Several research teams have demonstrated the operation of Class 8 line-haul trucks using semi-automated platooning. UC Berkeley, in partnership with Caltrans, has demonstrated two linked vehicles. Other prominent demonstrations have occurred in Virginia.⁵¹ Using vehicle-to-vehicle communication, radar, and active braking, two or more trucks can operate at high speeds in close proximity, which reduces aerodynamic drag. Recent tests by the National Renewable Energy Laboratory using two trucks in platoon showed fuel savings of up to 5.3% for the lead truck, up to 9.7% for the trailing truck, and a net savings of up to 6.4% for the platooned pair. Caltrans DRISI is supporting pilot projects in California to further explore this strategy.
- **Marine Highway 580.** Caltrans is supporting an assessment of the use of waterways to move freight between the Port of Oakland and Central Valley locations such as the Port of Stockton. Currently many shipping containers imported through the Port of Oakland are transported inland via truck on I-580. If tugs and barges were to transport these containers using the Sacramento River Delta, it could potentially reduce fuel consumption and emissions, while also mitigating highway congestion. The feasibility of this service depends on private sector interest, as barge travel adds significantly to the travel time. Caltrans will be sponsoring a network optimization study for the corridor to assess feasibility. Ultimately, achieving emission reductions through the use of a “Marine Highway 580” may also necessitate efficiency and emission control improvements to the tugs that propel the barges.
- **Supportive Local Development Decisions.** Caltrans is considering how to support sustainable freight movement through the Local Development-Intergovernmental Review (LD-IGR) process, discussed below. Caltrans is also considering how its guidance for complete streets projects can accommodate freight. With the growth of e-commerce and urban package delivery, there may be more conflicts between complete streets features and the parking needs of delivery trucks. Without parking options, double-parked delivery trucks can hinder transit service and contribute to excessive delay and idling among all vehicles using the street.

Smart Mobility and Active Transportation

Complete Streets Program

Caltrans Complete Streets Program promotes roadways that provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. The program responds to Deputy Directive 64-R2, first signed in October 2008 and renewed in October of 2014, which directs Caltrans to implement complete streets:

⁵¹ Loftus, Jeff, “Truck Platooning: The State of the Industry and Future Research Topics,” presentation at the 2018 Transportation Research Board 97th Annual Meeting.
<https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/safety/395146/loftus-tershak-truck-platooning-final-508c.pdf>

“The Department provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System.”

Caltrans efforts that increase use of bicycle, pedestrian, and transit modes will typically result in a reduction in VMT and associated GHG emissions.

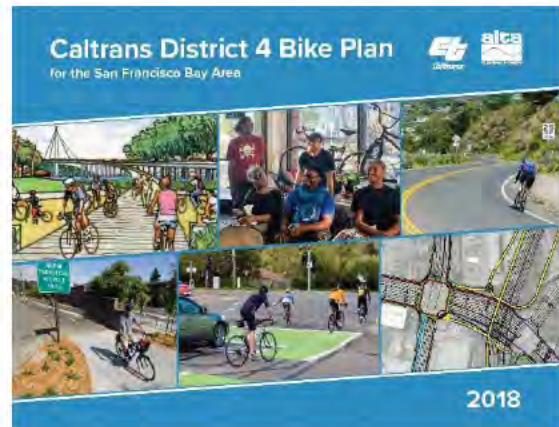
One outcome of this program has been the development of the Complete Streets Elements Toolbox. The Toolbox provides detailed information about specific roadway elements that can be designed and constructed to provide multi-modal mobility and access. Approximately 40 elements are included in the Toolbox, focusing on bicycle, pedestrian, and transit travel. For each of these elements, the Toolbox provides definitions and benefits, links to design guidance, and project examples. In addition, the Toolbox describes how Caltrans staff can quantify each Complete Streets element for entry into the SHOPP Tool. This is a critical step for securing funding for bicycle, pedestrian, and transit improvements as part of SHOPP projects. Project Initiation Documents (PIDs) developed for the 2018 and 2020 SHOPP cycles are required to consider complete streets elements.

Other Caltrans achievements related to Complete Streets include:

- Incorporation of active transportation projects into the Cal-B/C model. The Cal-B/C model is used by Caltrans staff to perform a life-cycle benefit/cost analysis for proposed state highway and public transit projects. The spreadsheet model was enhanced to include bicycle and pedestrian projects. The tool calculates benefit of these projects in terms of journey quality, travel time, safety auto accident and emissions, and public health. The project benefits are monetized (translated into dollar terms), which can then be compared to project costs as part of a benefit-cost analysis.
- Development of a Complete Streets brochure. The full-color brochure describes Complete Streets at a high level and includes examples and photos of Complete Streets projects on Caltrans facilities.
- Complete Streets overview training course. Caltrans contracted with UC Berkeley Tech Transfer to develop and deliver a Complete Streets overview training course specifically for Caltrans employees in all functional units. The course was delivered 12 times in 2014 – 2016.

District-Level Active Transportation Planning

Following on the publication of the statewide bicycle and pedestrian plan, Caltrans Districts are developing plans and leading related active transportation efforts. The first of these plans was released by District 4 in April 2018 – a Bike Plan for the San Francisco Bay Area. In addition to the plan, District 4 created a separate on-line mapping tool that offers a comprehensive interactive map of the projects in the plan.⁵² Clicking on specific projects brings up details of those projects. Other District-level plans are under development.



Smart Mobility Framework

The Smart Mobility Framework (SMF) was introduced in 2010 is an important part of Caltrans efforts to achieve goals such as reduced vehicle travel and GHG emissions, better multimodal accessibility and safety, improved public health, and efficient use of resources. One of the core principles of Smart Mobility is location efficiency, which refers to the integration of transportation and land use at both the neighborhood scale and the regional/statewide scale. When these two dimensions of location efficiency are both strong, communities can achieve the full extent of smart mobility benefits in terms of higher levels of non-motorized travel, reduced vehicle trip making, and shorter vehicle trips. The Smart Mobility 2010 document provides high-level tools for applying the Framework. One is a set of Place Types and corresponding recommendations for planning activities, transportation projects and programs, and land development projects and programs. The second tool is a set of 17 Smart Mobility performance measures, intended for use in decision making at both the planning and project level to evaluate progress toward implementing the Smart Mobility principles and attaining Smart Mobility benefits. More recently, Caltrans developed a Smart Mobility Framework Guide, which provides more detailed instruction to Caltrans staff who are interested in implementing Smart Mobility strategies.

Local Development Intergovernmental Review (LD-IGR) Program

Caltrans coordinates and consults with local jurisdictions and Tribal Governments when proposed local land use planning and development may impact the State Highway System. Through the LD-IGR process, Caltrans advises Lead Agencies on what these impacts might be and ways to avoid, minimize, and/or mitigate adverse impacts. Caltrans also identifies land use and design strategies that may enhance connectivity and access to destinations.⁵³ Caltrans issued LD-IGR Interim Guidance in September 2016 to respond to recent legislation such as SB 743 and recent planning guidance such as the Smart Mobility Framework and the California Transportation Plan 2040. In the past, LD-IGR practices primarily used vehicle Level of Service to identify impacts to the State Highway System, and often limited

⁵² Available at:

<https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=91f1bb4eb7ff418092977b762b459d01>

⁵³ Caltrans, Local Development Intergovernmental Review Program Interim Guidance, Approved – September 2, 2016

recommended mitigation to traditional road improvements. The 2016 Interim LD-IGR Guidance document is intended to ensure that all Caltrans comments on growth plans, development projects, and infrastructure investments align with state policies through the use of efficient development patterns, innovative demand reduction mitigation strategies, and necessary multimodal roadway improvements. Specifically, the Interim Guidance calls for Caltrans reviewers to include the following elements in their reviews:

- Reviewers should comment on vehicle miles traveled resulting from the land use project
- Provide recommendations that strive to reduce VMT generation; improve pedestrian, bike, and transit service and infrastructure; and which don't induce additional VMT.
- Reviewers should use the terms "transportation impact study" rather than "traffic impact study" and note that the study should analyze all modes.
- Comments related to impacts to the State Highway System (SHS) will be focused on VMT impacts not delay or effects on road capacity.

The Interim Guidance includes a flow chart and associated guidance to determine whether to comment on site-specific projects and what types of comments to make based on the type of project and its location. This guidance references the Smart Mobility Framework place types to help reviewers determine which comment guidance is most relevant for a given project.

Climate Change Program

The Climate Change Branch in Caltrans' Division of Transportation Planning is responsible for overseeing the development, coordination, and implementation of the Department's climate change policies. The Branch also serves as a Caltrans-wide resource for technical assistance, training, information exchange, and partnership-building. The Branch is focused on both GHG reduction efforts and climate change impacts and adaptation efforts. In 2013, the Branch published the report *Caltrans Activities to Address Climate Change: Reducing Greenhouse Gas Emissions and Adapting to Impacts*. The Branch also develops Caltrans annual GHG inventory for reporting to the Climate Registry and California EPA.



Project Planning

A transportation need is identified through Caltrans or partner agency planning processes or asset management programs. A transportation need can be a structural or operating deficiency of the existing transportation system or a response to planned land use changes. Caltrans and local agencies use a Project Initiation Document (PID) for determining the type and scope of project that will be developed to address the transportation need. The PID is a record of the purpose and need for the project, and the approach that will be taken to meet or reduce transportation deficiencies. The most important function

of the PID is to establish a project as a viable candidate for Federal, State, regional, and local funds. A Project Study Report (PSR) is the most common type of PID.

For projects recommended for inclusion in the SHOPP, Caltrans requires an estimation of GHG emissions where possible. This requirement stems from Executive Order B-30-15, which states:

7. State agencies' planning and investment shall be guided by the following principles:

-Priority should be given to actions that both build climate preparedness and reduce greenhouse gas emissions;

Caltrans has issued guidance for including GHG emissions calculations in SHOPP PIDs.⁵⁴ The guidance includes the following direction:

“Under the new requirements of Executive Order B-30-15, Caltrans will need to define project-level performance in the Project Initiation Document (PID) work plan and SHOPP Tool, and PIDs must demonstrate project-level performance to be eligible for programming into the 2018 SHOPP. Project level performance needs to include a definition of condition improvement, complete streets components, climate change mitigation/adaptation elements, system performance, operational improvements, safety improvements or other tangible project level benefits.” Kome Ajise, Chief Deputy Director-January 22, 2016

The guidance calls for use of the FHWA Infrastructure Carbon Estimator (ICE) Tool to perform the GHG estimation. The ICE Tool is specifically designed for estimation of GHG emissions at the planning stage, when all that may be known about a project is the type of work, the length of the project, and the number of lanes. The types of infrastructure that can be analyzed using the ICE Tool are:

- Roadway projects, including new facility, lane additions, lane widening, shoulder improvements, pavement rehabilitation and resurfacing.
- Parking facilities
- Bridges
- Rail line construction
- BRT construction
- Bicycle facilities
- Pedestrian facilities

The ICE Tool evaluation is typically performed by a District level project engineer (PE), who must sign off on the PID. The Caltrans guidance strongly encourages the PE to use the mitigation feature of the ICE Tool and document mitigation measures that can be employed in the project. Mitigation measures in the tool include concrete and asphalt pavement alternatives, alternative fuels and vehicle hybridization, and vegetation management. If the PID includes GHG mitigation, then the project with mitigation elements should be advanced to the California Transportation Commission for inclusion in the SHOPP, which increases the likelihood that the mitigation will be carried forward to design and construction.

⁵⁴ Caltrans, District Guidance for Including Greenhouse Gas (GHG) Emissions Calculations For 2018 & Future State Highway Operations and Protection (SHOPP) Project Initiation Documents (PIDs), November 2017- Version 4.

Sometimes at the environmental stage, a more detailed GHG analysis tool is used because there is more project detail by that stage (See Section 3.2 for more information). If so, then that GHG analysis will supersede the ICE analysis.

One of the benefits of GHG quantification and use of the ICE Tool at the SHOPP PID stage is the increased awareness on the part of Project Engineers. Project Engineers may not fully understand the GHG benefits of strategies like alternative concrete mixes, warm mix asphalt, etc. Caltrans has seen a difference in this GHG mitigation awareness in the two years they have been requiring use of the ICE Tool. And once a project is programmed in the SHOPP, these same engineers often do the project design, and they can continue to incorporate GHG mitigation at that stage. One challenge is that Caltrans project engineers often cannot specify a particular asphalt or concrete mix; they can only specify pavement performance characteristics and compliance with Caltrans standard specifications. Thus, there is currently a gap between the knowledge of pavement GHG reduction strategies (discussed in Section 4.2) and the ability of Caltrans to promote those strategies.

Planning Grants

In addition to developing policies and plans, Caltrans provides grants to support local planning for GHG reductions and other sustainability goals. Two current grant programs, Sustainable Communities Grants and Adaptation Planning Grants, were funded through Senate Bill 1 (SB 1, 2017), which allocated funding for transportation improvements. The Strategic Partnership Grant program is funded by FHWA and administered by Caltrans. Descriptions of these grant programs is included in Appendix A.

Environmental Analysis

Caltrans Division of Environmental Analysis administers Caltrans' responsibilities under federal and state environmental law. These laws include the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA), and a variety of other environmental laws and regulations. The Division of Environmental Analysis develops and maintains Caltrans environmental standards, policies, procedures, and practices that are implemented by the 12 District Environmental Branches. Program staff work with the districts to identify and assess the effects of Caltrans projects on California's natural and cultural environments and on the climate, and identify ways to avoid or mitigate those effects.

Caltrans has developed Environmental Document Annotated Outlines in order to provide a consistent document format for the presentation of required content in NEPA and CEQA documents. The actions of the Division of Environmental Analysis do not by themselves reduce GHG emissions. However, the environmental documentation produced by the Division can help to Caltrans staff make more informed decisions about project design in ways that can lead to GHG reductions.

Implementation of SB 743 places a new emphasis on reducing VMT and highlights the nexus between VMT reduction and the State's climate change goals. Governor Jerry Brown signed SB 743 on September 27, 2013, which mandated a change in the way that public agencies evaluate transportation impacts of projects under CEQA, focusing on VMT rather than level of service (LOS) and other delay-based metrics. SB 743 states that new methodologies under CEQA are needed for evaluating transportation impacts that are better able to promote the state's goals of reducing GHG emissions and traffic-related air

pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations. Amendments to the CEQA Guidelines shifting the focus of the transportation impact analysis from automobile delay to VMT were adopted in January 2019.

While the 2019 CEQA Guideline Amendments do not change the GHG impact analysis considerations, they bring CEQA transportation analyses into closer alignment with statewide policies on GHG emissions and smart growth. To facilitate implementation of the 2019 CEQA Guideline Amendments, the Governor's Office of Planning and Research (OPR) published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), which includes recommended VMT thresholds for various types of land use projects. These thresholds connect the level of VMT reduction to the State's emissions goals. The Technical Advisory does not currently provide a numeric VMT threshold for transportation projects, but notes that "a transportation project which leads to additional vehicle travel on the roadway network... would need to quantify the amount of additional vehicle travel in order to assess air quality impacts [and] greenhouse gas emissions impacts".⁵⁵

Caltrans has prepared guidance documents addressing the Department's transportation analysis and CEQA procedures consistent with SB 743. These include:

- **Transportation Analysis Framework (TAF):** This document provides guidance for CEQA transportation/traffic analysis for projects on the SHS, including direction to Caltrans Districts related to selecting methods for VMT analysis (including induced travel demand) in project-level environmental documents reflecting both project type and context (urban vs. rural).
- **Transportation Analysis under CEQA for Projects on the State Highway System (TAC):** The TAC provides methodologies for CEQA practitioners to evaluate the transportation impacts of projects on the SHS, including how to determine significance of those impacts, and identifies potential mitigation measures.

Project-level GHG Analysis for Operational Emissions

For projects that provide congestion relief or otherwise increase roadway capacity (including operational improvement projects that are expected to address future demand volumes), Caltrans guidance calls for developing a quantitative analysis of GHG emissions using either the CT-EMFAC2014 or CT-EMFAC2017 model. The Annotated Outlines provide instructions for this analysis, as follows:

[C] conduct separate model runs for existing/baseline conditions (existing conditions at the time of the Notice of Preparation [NOP] or existing conditions at the time the environmental analysis began), and the design-year for both the build and no-build alternatives. It is also helpful to include an intermediate year such as the open-to-traffic year. Summarize this information in a table that includes the VMT projections used for the CT-EMFAC model run and the resulting annual metric tons of CO₂e. A sample table format is provided for your convenience. Please modify it to fit the proposed project.

⁵⁵ Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Table ##: Modeled Annual CO₂ Emissions and Vehicle Miles Traveled, by Alternative

Alternative	CO₂ Emissions (Metric Tons/Year)	Annual Vehicle Miles Traveled
Existing/Baseline 20XX	XX	XX
Open to Traffic 20XX		
<i>No Build</i>	XX	XX
<i>Build Alternative 1</i>	XX	XX
<i>Build Alternative 2</i>	XX	XX
20-Year Horizon/Design-Year 20XX		
<i>No Build</i>	XX	XX
<i>Build Alternative 1</i>	XX	XX
<i>Build Alternative 2</i>	XX	XX

Project analyses should also identify applicable policies from the local RTP/SCS and analyze whether the project is consistent with regional goals to reduce VMT, congestion and delay, and vehicle-related GHG emissions. The analysis should discuss how modal choice was considered in the early planning phases of the project and explain how transit-only or multi-modal alternatives were assessed and/or eliminated. Existing transit infrastructure and how it connects with the project should also be discussed.

For non-capacity-increasing projects, Caltrans guidance recommends performing a qualitative analysis that describes why an increase in operational GHG emissions is unlikely. Examples of projects that are likely to have minimal or no increase in operational GHG emissions are listed below. OPR’s Technical Advisory includes additional example project types for reference. The Technical Advisory also notes that transit and active transportation projects, including all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects, generally reduce VMT.⁵⁶

- Pavement rehabilitation
- Shoulder widening
- Culvert/drainage/storm water work
- Landscaping
- Closed-circuit television (CCTV)
- Maintenance vehicle pullouts
- Minor curve corrections

Caltrans’ Annotated Outlines further identify ramp metering and signalization projects as potentially eligible for a qualitative assessment of operational GHG emissions. The analysis should discuss traffic-soothing effects and the extent to which the signal or meter provides for smoother traffic flow. However, if the ramp or signal creates lengthy traffic queues, a quantitative emissions analysis should be conducted using CT-EMFAC.

⁵⁶ Governor’s Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

Project-level GHG Analysis for Construction Emissions

Construction GHG emissions must be calculated for all projects per the requirements of EO B-30-15. The Annotated Outlines call for using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model or the Caltrans Construction Emissions Tool (CAL-CET) to quantify the expected construction-related GHG emissions related to a proposed project.

The Road Construction Emissions Model requires users to enter information about the project, including:

- Project type (new road construction, road widening, bridge/overpass construction, or other linear project type)
- Project length and area
- Volume of soil and asphalt brought to or from the construction site
- Use of water trucks (for dust control)

Using these inputs and emission factors from EMFAC, the model calculates emissions resulting from the movement of construction equipment.

GHG Reduction Strategies in Environmental Documents

When environmental analyses determine that a project or program will result in significant GHG impacts, the impacts must be mitigated. Strategies to reduce GHG emissions generated during construction and operation of a transportation project must be specific and enforceable. The environmental analysis must describe, either quantitatively or qualitatively, the expected GHG reduction benefits of each measure. Due to the global nature of GHG emissions, mitigation to reduce an individual project's GHG impacts may be implemented on the project site or at an offsite location. Successfully reducing project-generated GHG emissions requires early consideration of relevant reduction measures and strategies, preferably during the initial project planning and design.

Caltrans Division of Environmental Analysis has developed lists of strategies that could be used for mitigating potentially significant GHG impacts from construction and operation of transportation projects.⁵⁷ Individual projects should carefully evaluate the feasibility of any reduction strategy before it is required as project-specific mitigation. In addition to project-specific reduction measures, Caltrans guidance also recommends discussing all applicable Standard Specifications, Standard Special Provisions, Nonstandard Special Provisions, and measures from other resource topics (e.g., air quality) that will reduce GHG emissions.

GHG Analysis Tools

Because of its responsibility to quantify GHG emissions as part of environmental documents, the Division of Environmental Analysis maintains the most comprehensive understanding of GHG emissions analysis tools and methods within Caltrans. Staff from the Division of Environmental Analysis actively

⁵⁷ Caltrans, GHG Reduction Measures Toolbox for Internal Use in Caltrans Project Development, January 2020.

monitor improvements to existing tools and development of new tools. The Division has compiled a list, summarized below, of GHG analysis tools current used by Caltrans in some form.

Table 11. GHG Emissions Analysis Tools Used by Caltrans

Tool Name	Developer	Description
Cal-B/C Tool	Developed by Caltrans Transportation Economics Branch and consultants	A PC-based spreadsheet model. Can be used to analyze many types of highway construction and operational improvement projects, some Intelligent Transportation System (ITS) and transit projects, bike and pedestrian projects, park-and-ride lots, and intermodal freight projects.
SB-1 Emissions Tools	Developed by Caltrans Transportation Economics Branch and consultants using similar methodology developed by the CARB for California Freight Investment Program	Excel-based tool that estimates emissions from changes in VMT, service-miles, ton-miles, and speeds. Users enter the input data and model will calculate emission reduction results. Tool should only be used to analyze projects that do not fall under any project category types in Cal-B/C tool.
SMAQMD Roadway Construction Emissions Model (RCEM)	Developed by Sacramento Air Quality Management District (SMAQMD)	Excel-based tool to estimate construction equipment emissions for roadway projects. Requires detailed project design and construction inputs to estimate construction equipment usage and the resulting emissions. The required information is mostly only available at the PA&ED or later phases of the project development process. Recommended for use on Caltrans projects for environmental analysis during PA&ED.
FHWA Carbon Infrastructure Estimator (ICE) tool	Developed by U.S FHWA	Excel-based tool that estimates the lifecycle energy and GHG emissions from the construction and maintenance of transportation facilities. Requires limited data inputs and is designed to inform planning and pre-engineering analysis. Allows users to create “ballpark” estimates of energy and GHG emissions using limited data inputs. Tool is current being updated and expanded as part of a pooled fund study. Caltrans uses ICE to calculate GHG Emission for 2018 and future SHOPP PIDS.
EMission FACTors (EMFAC)	Developed by CARB	The mobile source emission tool that CARB developed to assess emissions from on-road vehicles in California. EMFAC provides emission rates to calculate project emissions. EMFAC is required for air quality analyses in compliance with transportation conformity, NEPA, and CEQA as a part of the Environmental Document (PA&ED).

Tool Name	Developer	Description
CT-EMFAC	Developed by Caltrans Headquarter, Division of Environmental Analysis (HQ DEA), Air Quality Program	Caltrans DEA created the CT-EFMAC to expedite and streamline the efforts required to complete project-level emission analyses.
GHG Emissions Calculator	Developed by Caltrans HQ DEA, Air Quality Program	Excel-based tool to estimate GHG emissions from on-road vehicles in California. Because EMFAC2014 includes only CO ₂ and CH ₄ emission rates, the GHG Emission Calculator expand on EMFAC2014 data to include N ₂ O, black carbon, and hydrofluorocarbons (HFCs).
Caltrans Construction Emissions Tool (CAL-CET)	Developed by Caltrans HQ DEA, Air Quality Program	Excel-based tool to estimate construction equipment emissions on Caltrans highway projects. The tool utilizes engineering economic principles based on construction Forced Account calculations to estimate equipment usages and the resulting emissions. CAL-CET was created based on data collected from Caltrans construction projects.
Climate Registry Information System (CRIS)	The Climate Registry	Online emissions calculator that converts energy, material, and fuel consumption into GHG emissions (CO ₂ e) using the latest international reporting protocols and emissions factors (IPCCC's Fifth Assessment Report). The tool includes all seven recognized GHG pollutants in their calculation of CO ₂ e. This is the required tool for Caltrans' annual GHG report to CalEPA – the "State Agency Greenhouse Gas Reduction Report Card".

Promoting Alternative Fuel Use on the State Highway System

In response to the Governor's ZEV Action Plan, Caltrans is installing EV charging for public use along the State Highway System. One part of this program is focusing on installation of DC fast charge stations at Department-owned, publicly accessible locations. Caltrans is developing 11 DC fast charging projects at 37 locations consisting of 49 individual charging units. The projects are located throughout the state at 28 safety roadside rest areas, 5 maintenance stations, 2 District offices, and 2 park-and-ride lots. The proposed DC fast charging locations will address gaps in the state's EV charging infrastructure, since the vast majority of fast charging stations are currently located in urbanized areas and do not serve long-distance travelers. Caltrans estimates that most of the units will be operational by summer or fall of 2020. Operational status will be dependent upon the ability of electric utilities to provide the needed electrical service upgrades.

Traffic Operations

Caltrans Traffic Operations Program performs a variety of activities intended to maximize the mobility and safety of travelers on the State Highway System. While these programs do not reduce VMT, when they result in smoother traffic flow and reduced delay, they can reduce GHG emissions. As discussed in Section 3.1 and illustrated in Figure 6, motor vehicles exhibit their lowest CO₂ emission rates around 40 mph. Vehicles in congested traffic, with queuing and stop-and-go conditions, produce much higher emissions per mile of travel, so systems operations improvements that reduce or eliminate these conditions can reduce GHG emissions. However, emission rates start to increase as speed increases above 40 mph, so not all delay reduction necessarily equates to GHG reduction.

The emissions impacts of traffic operations strategies are complex and not well understood. One reason for this is that evaluating the impacts of traffic operations strategies using controlled field experiments is difficult and costly. Thus, most studies use simulation models, which inherently raises questions about how well these models reflect actual conditions. In addition, when traffic operations strategies succeed in reducing delay, they can also induce new vehicle travel, which can potentially offset the emissions benefits of speed improvements.

The available research is insufficient to make definitive statements about the conditions under which traffic operations strategies will reduce emissions and by how much. Nearly all of the published research does not consider induced vehicle traffic effects, so reports of GHG emissions benefits are generally overstated.⁵⁸ The remainder of this section discusses some specific traffic operations programs at Caltrans and the available research on their GHG impacts.

Traffic Signal Management

Caltrans works to refine signal synchronization to improve traffic flow and reduce idling time. Caltrans Headquarters works with Districts to coordinate their signals. As individual signals are synchronized, they are connected to a central signal control system. Centralized signal control increases efficiency, as a decentralized system requires that GPS units maintain the timing on each individual signal. Using a remote traffic signal management surveillance system, Caltrans aims to control roughly 5,000 of its traffic signals remotely, which reduces the need for staff to physically go to a signal to monitor and improve signal timing, conduct maintenance, or fix failed signals.

The impact of traffic signal coordination on GHG emissions is highly context-specific and has not received extensive research attention. A meta-analysis conducted for CARB identified four studies that estimated GHG impacts of signal coordination, three of them outside the U.S.⁵⁹ The estimated GHG

⁵⁸ Rodier, Caroline, Susan Handy, and Marlon Boarnet, "Impacts of Traffic Operations Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions, Technical Background Document, Prepared for the California Air Resources Board, 2014. https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Traffic_Operations_Strategies_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Technical_Background_Document.pdf

⁵⁹ Rodier, Caroline, Susan Handy, and Marlon Boarnet, "Impacts of Traffic Operations Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions – Policy Brief," 2014. https://ww3.arb.ca.gov/cc/sb375/policies/tsm/tos_brief.pdf

reductions ranged from 1 to 10 percent. Note that none of these studies considered the potential for induced vehicle travel.

Ramp Metering

Caltrans uses ramp metering to improve freeway traffic flow in many congested corridors. Caltrans is currently seeking to increase use of adaptive ramp metering, whereby ramp meters are adjusted dynamically in response to traffic conditions, as opposed to pre-timed or fixed time rates. This feature allows system managers to actively control the rate of vehicles entering the freeway and prevent back-up queues from spilling onto local roads.

The effects of ramp metering on fuel consumption and GHG emissions are complex and not well understood. When ramp metering improves highway traffic flow by eliminating bottlenecks around entrance ramps, the result will be a reduction in GHG emission rates for vehicles on the highway. However, ramp metering can cause an increase in stop-and-go traffic at the ramps, increasing emissions and fuel consumption. Furthermore, by improving highway travel speeds, ramp metering has the potential to induce new vehicle traffic (discussed in Section 3.1), which could offset GHG emissions benefits of traffic flow smoothing. The net GHG emissions impact resulting from these different effects will vary from project to project, making it difficult to generalize about the GHG impacts of ramp metering.



Bay Area Ramp Meter (source: MTC)

Very few research studies have reported on the system-wide GHG emissions impacts of ramp metering. One of the only such studies used simulation modeling to estimate the CO₂ emissions effects of ramp metering on a South Korean highway, finding a 7.3 percent emission reduction.⁶⁰ However, this study

⁶⁰ Bae S., T. Heo, and B. Ryu. "An Evaluation of the Ramp Metering Effectiveness in Reducing Carbon Dioxide Emissions," Society for Modeling and Simulation International, Korea, 2012.

did not consider induced vehicle travel. A meta-analysis conducted for CARB identified no other relevant research and noted that any reported impacts could not be generalized beyond the particular region or time period of the study.⁶¹

Traffic Incident Management

Caltrans works with the California Highway Patrol and local and regional transportation agency and public safety partners to implement traffic incident management programs in the state's large metropolitan areas. Traffic incident management programs are intended to quickly respond to vehicle crashes and other highway incidents. Clearing a freeway following an incident will reduce the associated congestion and vehicle emissions. FHWA estimates that about half of all congestion is non-recurrent congestion attributable to temporary disruptions, and one-quarter is caused by traffic incidents in particular.⁶²

Like other traffic operations strategies, the GHG emissions impacts of traffic incident management programs are not well understood. Research typically relies on traffic simulation models to estimate the impact of incidents on traffic speeds, and the corresponding benefits of more rapid incident clearance. A meta-analysis conducted for CARB identified three studies that estimated GHG impacts of incident management programs, with fuel use or GHG benefits ranging from 0.07 percent to 4 percent.⁶³ The most relevant of these studies examined clearance of lane blockages on a highway corridor in Montgomery County, Maryland, during the AM peak, finding a 4 percent reduction in CO₂ emissions.⁶⁴ MTC claims its freeway service patrol program reduces "auto carbon emissions by approximately 67,000 tons annually".⁶⁵ The existing research on incident management program impacts does not consider induced vehicle travel, and therefore likely overstates GHG benefits.

Roundabouts

Caltrans' Intersection Control Evaluation policy encourages consideration of roundabouts. Historically, if an uncontrolled intersection experienced a history of collisions, the default approach was to install a traffic signal. Now, Caltrans considers the intersection needs more holistically, which could involve a variety of options. One result is the more frequent use of roundabouts. Roundabouts can offer several benefits over signalized intersections in some circumstances. They can reduce the number and severity of crashes, eliminating head-on or broadside collisions.⁶⁶ Roundabouts can also reduce maintenance costs because they do not require periodic retiming or electrician visits in the event of a signal outage.

⁶¹ Rodier, C., Handy, S., and Boarnet, M., Impacts of Traffic Operations Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions – Policy Brief, 2014. https://ww3.arb.ca.gov/cc/sb375/policies/tsm/tos_brief.pdf

⁶² FHWA, https://ops.fhwa.dot.gov/program_areas/reduce-non-cong.htm

⁶³ Rodier, C., Handy, S., and Boarnet, M., Impacts of Traffic Operations Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions – Policy Brief, 2014. https://ww3.arb.ca.gov/cc/sb375/policies/tsm/tos_brief.pdf

⁶⁴ Avetisyan, H. G., Miller-Hooks, E., Melanta, S., & Qi, B. (2014). Effects of vehicle technologies, traffic volume changes, incidents and work zones on greenhouse gas emissions production. Transportation Research Part D: Transport and Environment, 26, 10-19.

⁶⁵ MTC, Bay Area Freeway Service Patrol, www.fsp-bayarea.org/About-us

⁶⁶ FHWA, Office of Safety, "Roundabouts" <https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/>



Roundabout on Route 138 in Palmdale

The GHG emissions impacts of roundabouts depends on how the devices affect traffic flow, particularly traffic speeds, acceleration, and deceleration. The emissions impacts also depend on what a roundabout is compared against: an uncontrolled intersection, stop signs, or traffic signals. Because they create less vehicle delay and idling, roundabouts have the potential to lower fuel use and emissions in some cases. Available research suggests that roundabouts can reduce emissions in some circumstances but increase emissions in others. A study in Sweden found that replacement of a signalized intersection with a roundabout reduced fuel consumption by 28 percent, but a study in Maryland found a 5 percent fuel increase and a 1 percent CO₂ increase from a similar replacement. A meta-analysis conducted for CARB concludes: “Given the wide range of estimated impacts, it is not possible to conclude that roundabouts will reduce fuel consumption and GHG emissions in all cases.”⁶⁷

Other Traffic Operations Strategies

Caltrans has a variety of other strategies to improve traffic flow, including:

- Reversible lanes, which Caltrans is testing along the Coronado Bridge on I-15 in San Diego.
- Work zone strategies to reduce traffic delay.
- Working with a private vendor, Pre-Pass, Caltrans allows heavy vehicles that are preregistered to bypass open weigh stations legally. Doing so reduces truck delay at these stations and the associated emissions.
- Integrated corridor management (ICM), which uses advanced technology to monitor and actively manage traffic through an entire highway corridor. Key features of ICM can include adaptive ramp metering, incident management, enhanced traffic signal control, transit signal priority, and system integration
- Traveler information systems, which enable drivers to select routes and travel times to avoid unnecessary delay. The Caltrans QuickMap is a web page and mobile app that presents several types of real-time traffic information layered on a Google Map, including traffic speed, lane and

⁶⁷ Handy, Susan and Marlon Boarnet, “Impacts of Roundabouts on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief,” Prepared for the California Air Resources Board, 2014.
https://ww3.arb.ca.gov/cc/sb375/policies/rndabt/roundabout_brief.pdf

road closures due to construction and maintenance activities, incident reports, changeable message sign content, camera snapshots, and active chain control requirements.

There is little to no information on the GHG impacts of these types of traffic operations strategies.

4 Reducing Emissions from Caltrans Internal Operations

Caltrans has the vast responsibility of planning, designing, building, operating, and maintaining the State Highway System – a network of more than 50,000 lane miles and more than 12,000 bridges. To carry out these activities, Caltrans employs more than 19,000 workers, many located in the Caltrans Sacramento Headquarters or in one of the 12 District offices. Other staff work from the approximately 250 Caltrans maintenance stations, equipment shops, and transportation management centers. Caltrans operates a fleet of more than 7,000 automobiles and light trucks and more than 1,000 heavy-duty vehicles. Caltrans also operates 86 Safety Roadside Rest Areas across the State. These activities and facilities offer numerous opportunities to reduce GHG emissions resulting from Caltrans own internal operations.

Caltrans has been working to conserve energy and natural resources for more than three decades. The Department has already taken a variety of actions that reduce GHG emissions from its internal operations, including deploying electric vehicles and other alternative fuels in its fleet, installing energy efficient lighting along roadways and in buildings, generating renewable energy with solar power, conserving water, and using recycled materials.

Actions that can achieve additional GHG emission reductions primarily involve expansion of or modification to existing efforts, including:

- Increasing renewable energy generation, focusing on solar power in the highway right-of-way
- Using the latest pavement lifecycle assessment research to modify highway construction and maintenance practices to maximize GHG reduction
- Reducing emissions associated with employee commuting by offering more attractive programs and incentives to encourage travel by less carbon-intensive modes

The remainder of this section describes actions to reduce Caltrans internal operations emissions – both on-going activities and opportunities for additional reductions. The descriptions are organized according to major Caltrans functional areas:

- Design and Construction
- Pavements
- Maintenance
- Vehicle Fleet and Equipment
- Facilities and Administration

Where possible, the report provides estimates of the magnitude of GHG emission reductions associated with recent and on-going activities.

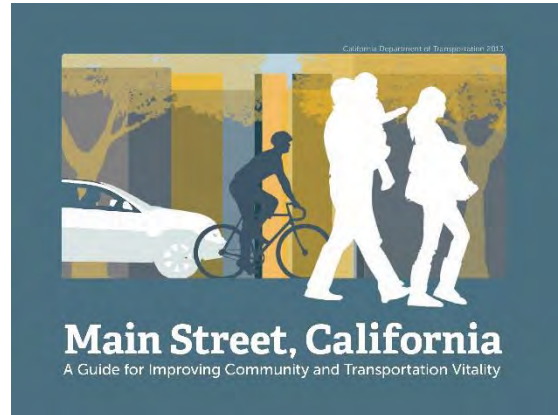
4.1 Design and Construction

Caltrans oversees the design and construction of projects on the State Highway System. The Division of Design develops standards and guidance for highway system improvements, often working closely with

other Caltrans divisions. The Division of Construction administers roughly \$8 billion worth of construction contracts. A variety of design and construction efforts reduce GHG emissions by supporting multi-modal travel that can reduce VMT, promoting the use of construction materials with lower carbon intensity, and encouraging more energy efficient construction techniques.

Design to Encourage Complete Streets

Caltrans Highway Design Manual (HDM) has been updated several times in recent years to facilitate the design of complete streets. The Division of Design also led the creation and update of *Main Street, California: A Guide for Improving Community and Transportation Vitality*. The Main Street guide promotes flexible design of state highways that serve as local main streets. The guide describes planning and design strategies to improve community livability through the creation of a high-quality public realm that supports economic vitality, ecological quality, and community quality of life. *Main Street, California* highlights design options that are compatible with established traffic engineering and design practices, policies, and standards.



Caltrans endorsed the *National Association of City Transportation Officials (NACTO) Urban Street Design Guide* in 2014.⁶⁸ In the endorsement, Caltrans stated that the “endorsement of the NACTO guidelines is part of an ongoing effort to integrate a multimodal and flexible approach to transportation planning and design.”

Caltrans has recently made some changes to its design exceptions process to more overtly encourage flexible design. For example, recent changes to the HDM included replacing the nomenclature for “mandatory” and “advisory” standards with boldface and underlined standards, respectively. The HDM update also replaced the Design Exception Fact Sheet with a Design Standard Decision Document.

Contracting Methods to Encourage Use of Clean Equipment

Caltrans’ Office of Innovative Design and Delivery develops and tests alternative contracting techniques. For instance, contracts could be awarded based on contractors’ ability to meet sustainability criteria such as GHG emission reduction.

As one example of this approach, Caltrans initiated a pilot program to promote Tier 4 low emission construction equipment. Tier 4 is the most stringent U.S. EPA emission standard off-road diesel equipment. The standards took full effect in 2015 and require significant reductions in NOx and PM emissions from new off-road equipment engines. However, most construction equipment in use today

⁶⁸ Caltrans (April 11, 2014). “Caltrans Backs Innovative Street Design Guides to Promote Biking and Walking.”

was manufactured before 2015 and therefore does not meet the Tier 4 standard. Caltrans' pilot program was intended to accelerate deployment and use of Tier 4 equipment.

Under the pilot program, project RFPs were released that asked contractors to respond with one bid that includes Tier 4 equipment and one that does not. This was intended to enable Caltrans to quantify the incremental cost of using Tier 4 equipment. Two projects under this pilot have already been initiated, one in District 6 and one in District 8. The contractors agree to exclusively use Tier 4 equipment on the project, or otherwise pay a penalty of \$2,000 per day per piece of non-compliant equipment operated.

Since the Tier 4 emission standard focuses on NO_x and PM emissions and does not affect GHG emissions, this current pilot program does not achieve significant GHG reductions. However, the pilot serves as a model that, in theory, could be replicated for GHG reductions. For example, Caltrans could issue construction project RFPs that specify use of alternative fuels (e.g., renewable diesel) or battery electric or hybrid-electric equipment (if available).

Construction Methods and Specifications

Caltrans has advanced several construction methods that improve efficiency and thereby reduce fuel consumption and GHG emissions.

Automated Machine Guidance

Caltrans established requirements for contractors to create three-dimensional models of large construction projects. The contractors then use these models to plan how their equipment will be operated and to program the construction equipment. Using GPS, the construction equipment can execute the project, following the 3-D models, with little human intervention. This approach is called Automated Machine Guidance (AMG). AMG results in faster construction of projects and reduced equipment idling time, which reduces GHG emissions. Prior to using AMG, equipment would idle while survey crews were putting stakes in the ground; this is no longer necessary. The model also enables contractors to more efficiently plan for material movement, rather than stockpiling materials in one spot then moving them out to different locations.



Grader equipped with AMG

Intelligent Compaction

When paving roads, Caltrans has historically had an operator running a compactor for pre-specified number of passes. Caltrans has approved a new procedure called Intelligent Compaction that utilizes a GPS system and temperature sensors attached to the compactor rollers, which can determine precisely how many passes are needed to adequately compact the pavement. The result is more efficient use of the compactor equipment compared to the traditional static rollers. This reduces the time associated with compaction, and also reduces fuel consumption and associated GHG emissions. Another benefit of this strategy is that it achieves optimum pavement density to ensure long lasting roadway performance.

In 2014, Caltrans developed two new specifications to allow use of intelligent compaction for construction of hot mix asphalt (HMA) and Cold In Place Recycling (CIR). Since then, dozens of Caltrans projects have used this technique, and it is expected to become standard practice in the near future.



Intelligent Compaction Retrofit Equipment Evaluation- El Dorado Hills, CA 2014

Field Engineer Tablet Pilot Study

Caltrans conducted a pilot project to evaluate the use of mobile devices (tablets) in the construction administration process. Use of tablet computers provides a substitute for hardcopy engineering drawings kept in the project field office, allowing the engineers to spend more time in the field and less time traveling back to an office to retrieve plans, which reduces VMT. For the pilot, tablets were deployed on eight contracts. The goal of the pilot was to evaluate the potential for tablets to improve staff performance, increase transparency, and incorporate sustainability into current construction practices. A report on the pilot estimates that, if tablets were used on all Caltrans construction contracts, the annual GHG savings would total 1,450 tons.⁶⁹

Accelerated Bridge Construction

Accelerated bridge construction (ABC) uses innovative planning, design, materials, and construction methods to reduce the onsite construction time to build new bridges or rehabilitate existing bridges.⁷⁰ The benefits of ABC include: reduced mobility impacts to motorists; enhanced safety to motorists and construction personnel; reduced environmental impacts; reduced construction impacts to local communities; and potential improvement to construction quality. ABC can involve a range of methods that can be categorized as follows:

- Prefabricated Bridge Elements and Systems (PBES), which are bridge structural components that are fabricated offsite, or near-site of a bridge, and include features that reduce the onsite construction time and mobility impact time compared to conventional construction methods.⁷¹
- Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS), which comprises components such as reinforced soil foundation, abutment, and integrated approach, and involves use of alternating layers of compacted granular fill and geosynthetic reinforcement to enable bridge loads that are significantly higher than designed with predictable and reliable performance.⁷²
- Structural placement methods, such as self-propelled modular transporters (SPMT) and slide-in bridge construction, to facilitate rapid placement and positioning of the bridge.⁷³
- Ultra-High Performance Concrete (UHPC) Connections for PBES. UHPC is defined as steel fiber-reinforced, portland cement-based concrete – an advanced composite material that delivers enhanced performance compared to conventional concrete mixtures. Benefits of using field-cast

⁶⁹ Caltrans Division of Construction, “Report on Mobile Device Pilot Project,” April 2017.

⁷⁰ FHWA. Accelerated Bridge Construction. www.fhwa.dot.gov/bridge/abc/.

⁷¹ FHWA. Prefabricated Bridge Elements and Systems. www.fhwa.dot.gov/bridge/prefab/.

⁷² FHWA. Geosynthetic Reinforced Soil-Integrated Bridge System. www.fhwa.dot.gov/innovation/everydaycounts/edc-3/grs-ibs.cfm.

⁷³ FHWA. Structural Placement Methods. www.fhwa.dot.gov/bridge/abc/structural.cfm.

UHPC to create connections between prefabricated concrete components includes improved speed and simplicity of construction.⁷⁴

Since most of the ABC technologies involve partial or complete fabrication of bridge components off-site in a fabrication facility staging area near the site, they eliminate the need for temporary bridges and additional right of way, as well as deep/pile foundations that are abrasive to the environment and could result in increased GHG emissions due to equipment usage. FHWA estimates indicate that since October 2010, more than 800 bridges have been designed or constructed using PBES, and over 80 bridges using GRS-IBS (eight on the National Highway System and 75 off the National Highway System). In addition, several states have successfully completed bridge installations using slide-in bridge construction.⁷⁵

Caltrans has successfully implemented ABC technologies on several projects. Examples include use of SPMTs on the 2014 Highgrove project in San Bernardino County and use of longitudinal launch to facilitate the emergency replacement of the Pfeiffer Canyon Bridge on Highway 1 in Big Sur (pictured below).



Pfeiffer Canyon Bridge Launch

(Source: Monterey Herald)

Precast Concrete Pavement System

Like PBES, Precast Concrete Pavement System (PCPS) technology involves an off-site fabrication approach that allows for construction of lighter, thinner, or more durable pavement sections through more stringent quality control and the use of design details not feasible for in-place construction. The applications of PCPS include isolated intermittent repairs, intersection and ramp rehabilitation, pavement replacement under overpasses, and construction of longer mainline pavement segments. PCPS technology can aid in faster construction while maintaining pavement quality, and help minimize

⁷⁴ FHWA. Ultra-High Performance Concrete Connections for PBES.

www.fhwa.dot.gov/innovation/everydaycounts/edc_4/uhpc.cfm.

⁷⁵ FHWA. www.fhwa.dot.gov/innovation/everydaycounts/edc-2/pdfs/edc_abc.pdf.

lane closures and traffic disruption, in turn reducing GHG emissions. The advantages of PCPS over traditional cast-in-place methods include: shorter installation time; improved concrete curing conditions; reduced weather restrictions on placement; reduced delay before opening to traffic; elimination of construction-related early-age failures; and longer-life performance compared to traditional cast-in-place methods.⁷⁶



Precast Concrete Pavement Installation

(Source: Kirsten Stahl, Caltrans)

PCPS has been effectively implemented across 25 states, including California; however, the technique is still not widely used. To date Caltrans has developed standard plans and specifications for intermittent repairs, jointed precast pavements (PCP), and prestressed PCP. The Department has implemented PCPS across in several Districts, such as the use of a series of 36-ft prestressed panels placed on a rapid-set lean concrete base and posttensioned to replace long sections of I-680 in District 4, and installation of over 2,300 California Rapid Roadway system panels along Highway 101 in District 7 through downtown Los Angeles.⁷⁷

The GHG benefits of PCPS result primarily from the reduction traffic disruption and delay, and therefore are highly context-specific. There is little research available on the GHG impacts of this strategy.

⁷⁶ FHWA. Precast Concrete Pavement Systems.

[www.fhwa.dot.gov/goshrp2/Solutions/Renewal/R05/Precast Concrete Pavement](http://www.fhwa.dot.gov/goshrp2/Solutions/Renewal/R05/Precast_Concrete_Pavement)

⁷⁷ Tayabji, S., and Brink, W. *Precast Concrete Pavement Implementation by US Highway Agencies*. Report No. FHWA-HIF-16-007). FHWA, Washington DC. 2015.

4.2 Pavements Strategies

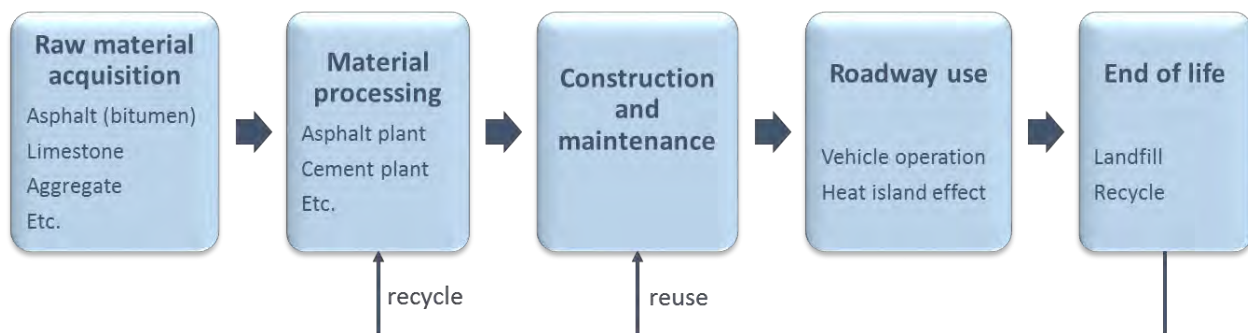
Millions of tons of asphalt and concrete are used in Caltrans roadway and bridge projects every year. As noted in Section 2, the materials used in Caltrans highway construction and maintenance projects account for roughly 2.5 million metric tons of emissions annually, considering raw materials extraction, materials processing, material transport, and construction activities. There are numerous opportunities to reduce the GHG emissions associated with pavements by using alternative materials and modifying construction and maintenance practices. Because of the large volume of pavement materials used by Caltrans, even small changes can result in significant GHG reductions for the state. By virtue of its leadership role in highway design and maintenance, Caltrans also influences the pavement decisions of local transportation agencies, which can lead to additional GHG reductions. This section describes GHG reduction opportunities associated with pavements. Note that some of these opportunities (e.g., alternative concrete mixes) can apply to structures in addition to roadway pavements.

Overview of Pavement GHG Reduction Strategies

A life cycle assessment (LCA) approach is needed to understand the full GHG impacts of pavements. As discussed in Section 2, a LCA for GHG emissions (sometimes called a “carbon footprint”) accounts for all materials, activities, and GHG emissions that result from a pavement decision. The activities can be grouped into the following five phases, illustrated in the figure below:⁷⁸

- **Raw material acquisition** – includes mining or extraction of bitumen, aggregate, and limestone.
- **Material processing** – includes the production of cement, asphalt, steel, and other materials
- **Construction and maintenance** – includes equipment used at the site and transport of material to the site
- **Roadway use** – includes the emissions from vehicles operating on the roadway, which are affected by pavement smoothness
- **End of life** – includes the disposal of pavement at the end of its life, including recycling and reuse

Figure 9. Phases in Pavement LCA



⁷⁸ Harvey, John, Alissa Kendall, and Arash Saboori, “The Role of Life Cycle Assessment in Reducing Greenhouse Gas Emissions from Road Construction and Maintenance,” National Center for Sustainable Transportation, July 2015. <https://ncst.ucdavis.edu/white-paper/ucd-dot-wp1-2/>

Pavement LCA is a complex and active field of research. Until recently, decisions regarding sustainable pavements often focused only on the raw material acquisition, material processing, and construction phases. But the roadway use phase can have major implications for the total GHG impacts, particularly for high-volume roadways. For this reason, a more holistic LCA approach is needed. The UC Davis Pavement Research Center supports Caltrans efforts to better understand pavement sustainability issues and improve pavement decisions.

Federal, state, and local transportation agencies spend millions of dollars annually to reduce or eliminate highway pavement distresses (both functional and structural), and have maintenance strategies and programs in place to ensure highway pavement networks operate at higher smoothness levels. Smoother pavements not only ensure safer highway networks, they also help reduce pavement-vehicle tire friction, and thereby reduce overall fuel consumption and resulting GHG emissions. Effective pavement maintenance and rehabilitation strategies (e.g., overlay, recycling, grinding, sealing) and timely interventions can enable Caltrans to achieve desired pavement smoothness thresholds.

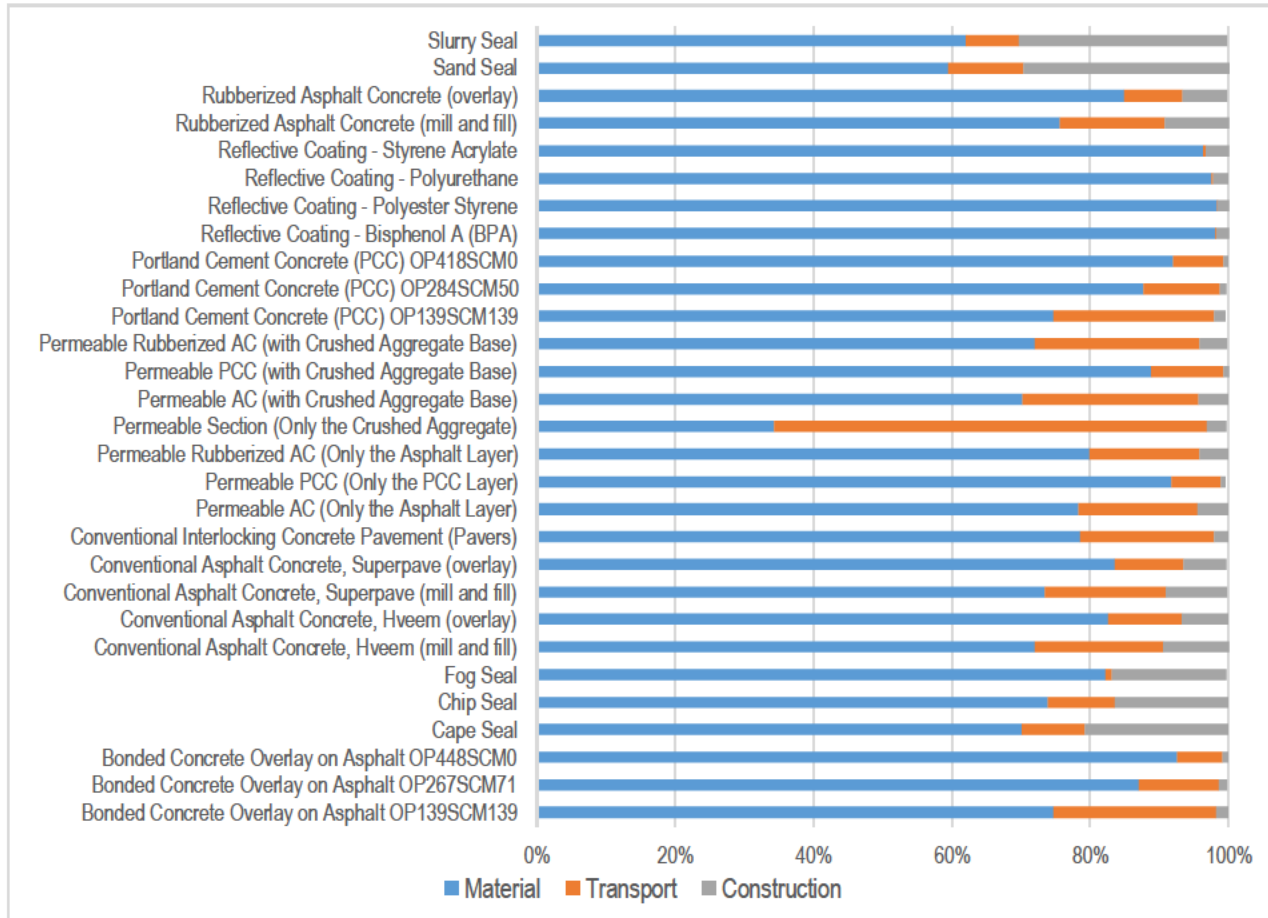
The GHG benefits of pavement smoothness can be substantial. One research study, funded by Caltrans, suggests that Caltrans could achieve an annual GHG reduction of 0.57 to 0.82 million metric tons across the entire State Highway System simply through the strategic application of maintenance and rehabilitation treatments that minimize roughness. This study used a life-cycle analysis approach that considered material acquisition, processing, and construction phases, as well as vehicle use.⁷⁹

Alternative pavement materials and techniques have been shown to yield substantial energy and GHG reduction. The most promising additional GHG reduction opportunity for Caltrans for asphalt pavements appears to be greater use of reclaimed asphalt pavement (RAP). For concrete pavements, the greatest additional GHG reduction opportunities appear to be greater use of supplemental cementitious materials (SCMs). However, the net effect of different pavement options is complex and often dependent on the project context. For example, RAP may not be advantageous if the recycled material is not locally sourced.

Pavement options differ substantially in terms of the contribution of the different lifecycle phases to the total GHG impact, as illustrated in the figure below. Considering just the materials acquisition and processing, materials transport, and construction phases, this figure shows, for a variety of pavement treatments, the portion of lifecycle GHG emissions resulting from each of these three phases. For example, more than 90 percent of GHG emissions for Portland cement concrete comes from the materials phase, while for treatments like chip or slurry seal, only 60 to 70 percent of emissions are associated with materials.

⁷⁹ Wang, T., Harvey, J. and Kendall, A., "Reducing greenhouse gas emissions through strategic management of highway pavement roughness," *Environmental Research Letters*, 9(3), p.034007. 2014.
<https://iopscience.iop.org/article/10.1088/1748-9326/9/3/034007/pdf>

Figure 10. Relative Contribution to Global Warming Potential of Pavement Materials, Transport, and Construction Phases



Source: Levinson, R., Gilbert, H., Ling J., Mandel, B., Millstein, D., Rosado, P., Harvey, J., Kendall, A., Li, H., Saboori, A., Lea, J., Ban-Weiss, G., Mohegh, A., and Santero, N. "Life-Cycle Assessment and Co-Benefits of Cool Pavements," Prepared for the California Air Resources Board and the California Environmental Protection Agency. Contract # 12-314. 2017.

Asphalt Pavements

Asphalt is the most common paving material in the state. Laying asphalt requires a binder—typically bitumen, a petroleum product. It also generally requires heating the asphalt, which requires energy and results in GHG emissions. A variety of alternative asphalt pavement techniques can result in lower GHG emissions.

Warm-Mix Asphalt

Warm Mix Asphalt (WMA) is a group of asphalt concrete mixture technologies that allow for retention of properties and performance of traditional hot mix asphalt (HMA) at reduced production, placement, and compaction temperatures. While production temperatures of traditional HMA range from 280 °F to 320 °F, production temperatures of WMA are typically between 212 °F and 280 °F. WMA technologies could comprise organic additives/waxes, chemical additives/surfactants, and foaming processes that use

water. Reduction in production temperatures using WMA technologies allows for benefits such as energy savings, reduced fuel consumption, reduced GHG emissions, reduced worker exposure, enhanced compactability and durability, improved temperature uniformity, longer hauling distances, and cold weather paving ability. Introduced in Europe in the late 1990s, WMA has since found extensive use across U.S. and Europe, primarily with an intent to reduce energy and provide workers with a safer work environment.⁸⁰



Asphalt Mixtures by Temperature Range

(Source: Fleming, M.H., Introduction to Warm-Mix Asphalt, PennDOT)

Per FHWA estimates, WMA is currently used in more than 40 states.⁸¹ In California, WMA technologies are used for various applications that include field test sections, accelerated pavement testing, and associated laboratory testing. Generally, however, the volume of WMA on Caltrans projects is very small compared to the volume of HMA (less than 5 percent). Caltrans approved WMA technologies include additive and water injection/foamed technologies, which can be used for Type A HMA, RHMA-G (rubberized hot mix asphalt), and OGFC (open graded friction course). Caltrans' inspection process requires that WMA surface temperatures and roller passes be documented and reported to ensure that compaction operations conform to method specification requirements.

As mentioned, one of the significant benefits associated with use of WMA is GHG emissions reduction. Estimates indicate that WMA production results in 25 to 50 percent energy savings, and that 20 to 35 percent energy savings in WMA production translates to a reduction of 4.1-5.5 kg of CO₂ equivalent per

⁸⁰ Bonaquist, R.F. *Mix Design Practices for Warm Mix Asphalt*. NCHRP Report 691. Transportation Research Board, 2011. www.trb.org/Publications/Blurbs/165013.aspx

⁸¹ Williams, B.A., Copeland, A., and Ross, C.T. *Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2017*, Informational Series 138 (8th edition). FHWA, 2017.

ton of WMA.^{82 83 84} A reduction of HMA production temperature by 68°F (i.e., production temperature of WMA) could potentially reduce combined CO₂ emissions resulting from fuel and asphalt binder use by about 44 percent.⁸⁵

Reclaimed Asphalt Pavement

Reclaimed asphalt pavement (RAP) refers to recycled or reprocessed pavement material components (asphalt binder and aggregates) that are used to partially replace virgin materials within asphalt concrete mixtures. FHWA estimates indicate that in 2017, more than 76 million tons of RAP was used in asphalt mixtures, which translates to over 3.8 million tons (21.5 million barrels) of asphalt binder conserved, and more than 72 million tons of virgin aggregate replaced.⁸⁶ Aggregative savings through use of RAP provides benefits such as conservation of natural resources, lower material and transportation costs, reduced waste disposal, reduced haul distances, reduced energy consumption, and reduced GHG emissions.

In 2009, Caltrans started to allow up to 15 percent RAP in HMA (by aggregate weight), which was increased to 25 percent by aggregate weight in 2013, along with a maximum binder replacement of 25 percent for the surface course (upper 0.2 foot of HMA, exclusive of the open-graded friction course) and 40 percent for lower courses. Caltrans currently allows for use of up to 100 percent RAP in pavement base layers (asphalt treated bases), and is evaluating options to allow 30-40 percent RAP usage to replace HMA in pavement surface layers.

Estimates indicate that use of 15 percent or higher RAP in traditional HMA reduces asphalt binder requirement by about 12 percent and virgin aggregate by about 15 percent, thus resulting in GHG emission reduction at a rate of 5 pounds GHG per ton of RAP used in HMA.⁸⁷ Use of RAP, particularly in WMA (since WMA allows for increased use of RAP compared to traditional HMA), is found to yield significant GHG emission reduction benefits. Adding 15 percent RAP for a 2-inch surface course of WMA and 25 percent RAP for a 4-inch base course layer of WMA can result in significant energy savings related to reduced fuel usage (approximately a quarter gallon of diesel fuel per square meter of pavement), which translates to a GHG reduction of 2.4 kg CO₂ per square meter of pavement.^{88 89} It is

⁸² European Asphalt Pavement Association (EAPA) (2010) EAPA Position Paper on the Use of Warm Mix Asphalt. www.eapa.org/usr_img/position_paper/the_use_of_warm_mix_asphalt_january_2010.pdf

⁸³ Croteau, J.-M. and Tessier, B. (2008) Warm Mix Asphalt Paving Technologies: A Road Builder's Perspective. www.colascanada.ca/uploads/colascanada/File/expertise/WarmMixAsphaltPavingTechnologies.pdf

⁸⁴ Tutu, K.A. and Tuffour, Y.A. Warm-mix asphalt and pavement sustainability: a review. *Open Journal of Civil Engineering*, 6(02), p.84. 2016.

⁸⁵ Keches, C. and LeBlanc, A., Reducing Greenhouse Gas Emissions from Asphalt Materials. BSc. Thesis, Worcester Polytechnic Institute, Worcester, 2007.

⁸⁶ Williams, B.A., Copeland, A., and Ross, C.T. Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2017, Informational Series 138 (8th edition). FHWA, 2017.

⁸⁷ Pavement Management Report 2015. County of Riverside Transportation Department

⁸⁸ Croteau, J.-M. and Tessier, B. (2008) Warm Mix Asphalt Paving Technologies: A Road Builder's Perspective. <http://www.colascanada.ca/uploads/colascanada/File/expertise/WarmMixAsphaltPavingTechnologies.pdf>

⁸⁹ Tutu, K.A. and Tuffour, Y.A. Warm-mix asphalt and pavement sustainability: a review. *Open Journal of Civil Engineering*, 6(02), p.84. 2016.

estimated that a use of 25 percent RAP in WMA could result in lifecycle GHG emissions reduction of around 15-20 percent.⁹⁰

Rubberized Asphalt Pavement

Since 1960s, recycled tire rubber has been used in asphalt paving. Rubberized asphalt pavement includes use of recycled tire rubber as a modifier for asphalt binders and as an additive for asphalt concrete mixtures. The rubberized asphalt production process is carried out at higher mixing temperatures, but use of WMA technology along with rubberized asphalt can help reduce mixing temperatures and improving mixture compaction and workability, resulting in approximately 20–25 percent of fuel savings. In addition, energy consumption for rubberized asphalt is typically lower than the traditional HMA during maintenance phase. Benefits of using rubberized asphalt pavement include reduced pavement noise levels, cold temperature paving, safer worker environment, reduced waste disposal, energy savings, and reduced GHG emissions. GHG emissions from the production and construction of rubberized asphalt mixtures are akin to HMA.^{91 92} According to staff in the Caltrans pavement program and UC Davis researchers, the net lifecycle GHG impact of using rubberized asphalt in Caltrans projects is unclear and requires further research.



Terminal Blending Process for Rubberized Asphalt

Caltrans has been using rubberized hot mix asphalt (RHMA) to resurface roadways since the 1970s, and state policy has turned best practices into requirements. AB 338 requires Caltrans to use at least 15 percent crumb rubber in 35 percent of asphalt pavements, as illustrated in the figure below. Caltrans works to implement AB 338 in partnership with CalRecycle, which works to keep tires out of the waste stream.⁹³ Per Public Resource Code section 42703(a)(3) requirements, Caltrans is required, on average, to annually use no less than 11.58 pounds of crumb rubber modifier (CRM) per metric ton of the total amount of asphalt paving materials used.⁹⁴

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⁹⁰ National Asphalt Paving Association (NAPA) (2009) Black and Green: Sustainable Asphalt, Now and Tomorrow. Special Report Number 200. National Asphalt Paving Association, Lanham.

http://www.hotmix.org/images/stories/sustainability_report_2009.pdf

⁹¹ FHWA. The Use of Recycled Tire Rubber to Modify Asphalt Binder and Mixtures. Technical Brief. FHWA-HIF-14-015. FHWA, Washington DC. 2014.

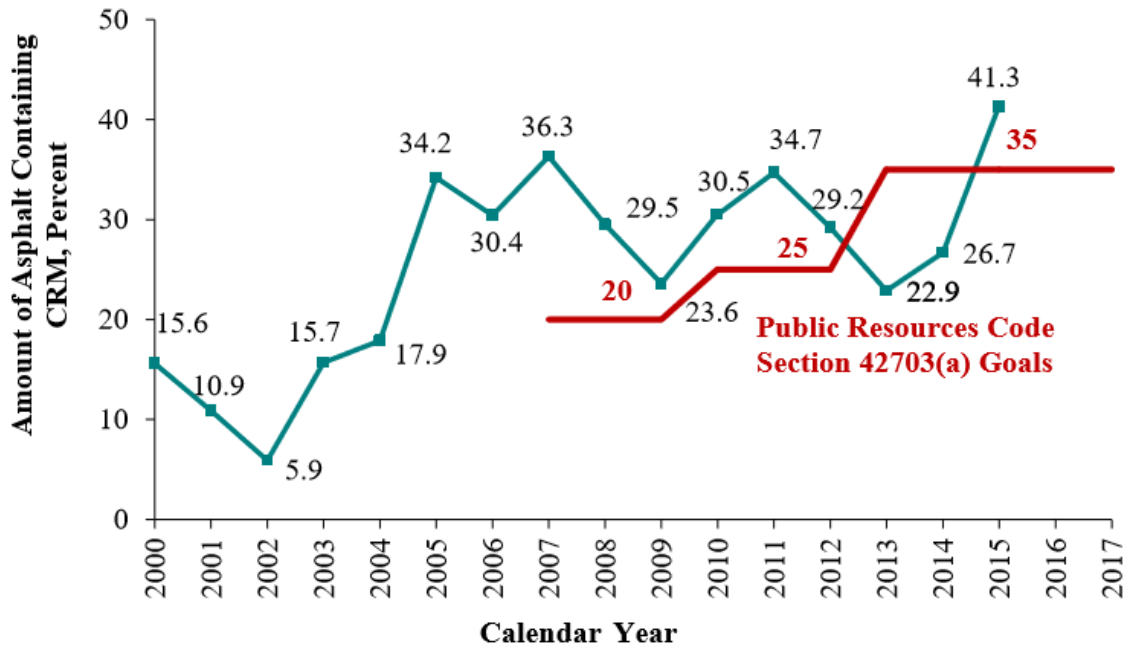
⁹² Wang, T., Xiao, F., Zhu, X., Huang, B., Wang, J. and Amirhanian, S. Energy consumption and environmental impact of rubberized asphalt pavement. Journal of Cleaner Production, 180, pp.139-158. 2018.

⁹³ California Legislative Information, AB 338 – Recycling: crumb rubber.

http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=200320040AB338

⁹⁴ 2015 Crumb Rubber Report. Public Resources Code Section 42703. California Department of Transportation.

Figure 11. Caltrans Annual Use of Asphalt Containing Crumb Rubber Modifier



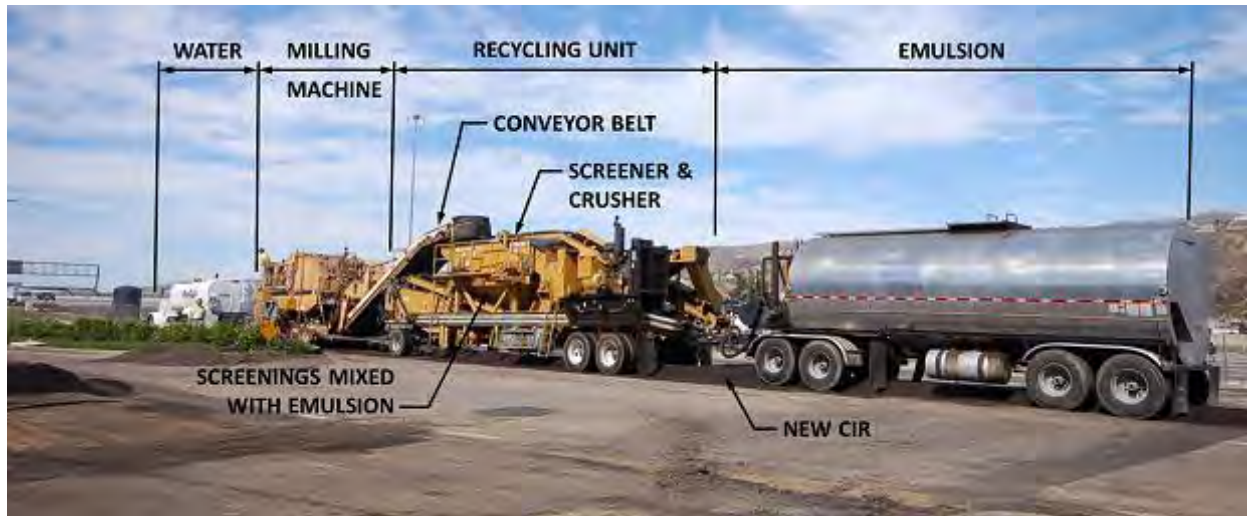
Cold In-Place Recycling

Cold in-place recycling (CIR) involves partial depth removal of pavement surface, including pulverization of a portion of the asphalt pavement layers, mixing with a recycling agent (e.g., foamed asphalt emulsion), and compacting and in-place repaving. CIR utilizes 100 percent of the RAP generated during the process, and involves typical treatment depths of around 3 to 4 inches. Typically suited for low to moderate volume roadways, CIR involves recycling of existing pavement, resulting in material and energy savings, and reduction in GHG emissions.

Estimates indicate that CIR process emits an equivalent of 5 to 20 kg of CO₂ per ton of material laid, as compared to 45 to 50 kg of CO₂ with traditional HMA (even when recycled asphalt is utilized).⁹⁵ Using the UC Berkeley PaLATE model, CIR was found to reduce CO₂ emissions by 52 percent compared to a traditional rehabilitation procedure with 6 inches of HMA laid across a 1 km of pavement section at a width of 7.5 meters.⁹⁶

⁹⁵ Dorchie, P. T. The Environmental Road of the Future: Analysis of Energy Consumption and Greenhouse Gas Emissions. The 2008 Annual Conference of the Transportation Association of Canada. Toronto, Ontario. 2008.

⁹⁶ Alkins, A., Lane, B. and Kazmierowski, T. Sustainable pavements: environmental, economic, and social benefits of in situ pavement recycling. *Transportation Research Record: Journal of the Transportation Research Board*, (2084), pp.100-103. 2008.



CIR Process

(Source: Los Angeles Public Works Department)

Concrete Pavements

Concrete is commonly used as pavement for Caltrans roadways, particularly in urban areas where highways experience high traffic volumes. Concrete is typically composed of four materials: aggregates such as sand or gravel, cement to bind the aggregate together, water, and admixtures that help give the concrete specific properties. The most common cement is Portland cement, produced by heating crushed limestone to high temperatures in a kiln. Producing Portland cement is highly GHG intensive, so alternative mixes that reduce the use of Portland cement yield GHG reductions. Other approaches to reducing GHG emissions from concrete pavements involve reduction in virgin aggregate or other materials.

Supplementary Cementitious Materials

Supplementary cementitious materials (SCMs) are inorganic materials or mineral admixtures that enhance concrete mixture properties and reduce the use of Portland cement. Examples of SCMs include fly ash, slag cement (ground, granulated blast-furnace slag), silica fume, rice husk ash, and natural pozzolans (e.g., calcined clay/shale, volcanic ash). Use of SCMs typically improve concrete performance through improved mixture workability, durability, and strength. As SCMs aid in reduced consumption of Portland cement per unit volume of concrete, they help with reduced material consumption and waste disposal, along with energy savings and GHG emission reduction.⁹⁷

Increased use of SCM or ground limestone is estimated to reduce 0.918 tons of CO₂ emitted on average per ton of AASHTO M 85 Portland cement manufactured.⁹⁸ Ground granulated blast furnace slag

⁹⁷ FHWA. Supplementary Cementitious Materials Best Practices for Concrete Pavements. Technical Brief. FHWA-HIF-16-001, 2016.

⁹⁸ Dam, V.T., "Supplementary cementitious materials and blended cements to improve sustainability of concrete pavements. Tech Brief," National Concrete Pavement Technology Center, Iowa State University Institute for Transportation, 2016.

(GGBFS), an SCM, could reduce approximately 0.5 tons of CO₂ at a 50 percent replacement rate per ton of Portland cement.⁹⁹ By another estimate, at a worldwide level, a 15 percent replacement of Portland cement in concrete by SCMs could potentially reduce CO₂ emissions by 250 million tons annually, while a 50 percent replacement could reduce CO₂ emissions by 800 million tons.^{100 101}

Amendments to Caltrans Standard Specifications in 2010 removed a requirement that at least 75 percent of the cement used in concrete be Portland cement. The change in specifications also offered contractors more options for alternatives to Portland cement by removing limits on the amount of fly ash and allowing up to three materials to be used in cement mixes. Caltrans now requires use of at least 25 percent SCMs, and allows up to 50 percent. Based on a review of pavement mix design samples, it appears that concrete producers for Caltrans projects are typically using only minimum 25 percent fly ash. In line with ASTM C977 standards, Caltrans also allows up to 5 percent limestone (high calcium quicklime or dolomite quicklime) in Portland cement concrete, although Caltrans estimates that 3 percent limestone is typical for Caltrans projects. Thus, there are opportunities to substantially increase SCM use on Caltrans projects and achieve larger GHG reductions.

Subgrade Enhancement (Subgrade Stabilization)

Subgrade, per Caltrans Standard Specifications, refers to the “roadbed portion on which pavement, surfacing, base, subbase, or a layer of any other material is placed”. For increased foundation support and strength, subgrade soils can be stabilized by improving the subgrade properties either mechanically, chemically, or both. Subgrade stabilizations can serve as alternatives to thicker pavements, which can yield material (aggregate) cost savings, increased pavement strength, extended pavement service life, energy savings, and reduced GHG emissions. The stabilization methods include:¹⁰²

- Mechanical stabilization, which is achieved by interlocking of soil particles using compaction, blending, and/or geosynthetics (geogrids/geotextiles).
- Cementitious stabilization, which involves treating subgrade soils using cementitious stabilizers such as soil cement, lime, fly ash, cement kiln dust, lime kiln dust, or ground-granulated blast furnace slag.
- Asphalt stabilization, using asphalt emulsion, foamed asphalt, cutback/liquid asphalt, and coal tar.
- Additive stabilization, using materials such as petroleum resins or sulfonated oils.

⁹⁹ Owaid, H.M., Hamid, R.B., and Taha, M.R. A review of sustainable supplementary cementitious materials as an alternative to all-Portland cement mortar and concrete. *Australian Journal of Basic and Applied Sciences*, 6(9), pp.287-303. 2012.

¹⁰⁰ Malhotra, V.M. 2004. Role of supplementary cementing materials and superplasticizers in reducing greenhouse gas emissions. In *Fiber composites, high-performance concrete, and smart materials*; Proc. ICFRC intern. conf., Chennai, India, January 2004: 489 - 499.

¹⁰¹ Naik, T.R. and Moriconi, G. Environmental-friendly durable concrete made with recycled materials for sustainable concrete construction. In *International Symposium on Sustainable Development of Cement, Concrete and Concrete Structures, Toronto, Ontario, October* (pp. 5-7). 2005.

¹⁰² Jones, D., Rahim, A., Saadeh, S., and Harvey, J.T. Guidelines for the stabilization of subgrade soils in California. No. UCPRC-GL-2010-01. California Department of Transportation. 2010.

Similar to Portland cement concrete, Caltrans allows up to 5 percent limestone (high calcium quicklime or dolomite quicklime) for soil stabilization purposes, in line with ASTM C977 standards. Caltrans estimates that 3 percent limestone is typical for Caltrans projects. It is unclear why contractors are not going to 5 percent limestone; possible reasons include limited supply of limestone and increased costs of transporting limestone from manufacturing plants to project locations.

Recycled Concrete Aggregate

Recycled concrete aggregate (RCA) is the granular aggregate material generated through recycling of used concrete. FHWA estimates indicate that over 140 million tons of concrete is annually recycled within the U.S., and 44 states use RCA for various applications, including on concrete pavement mixtures, pavement base and subbase layers, and embankments and shoulders. Like RAP, RCA helps offset the need for quarry virgin aggregates, thus leading to reduced material and hauling/transportation costs, landfill, energy consumption, waste disposal, and GHG emissions.¹⁰³



Concrete Recycling Process

(Source: Van Dam et al., Towards Sustainable Pavement Systems: A Reference Document, FHWA, 2015)

¹⁰³ FHWA. Accelerated Implementation and Deployment of Pavement Technologies. Annual Report. 2016-2017.

Aggregate production involves several processes such as quarrying, hauling, crushing, and screening, with its GHG emissions ranging from 2.5 to 10 kg of CO₂ per ton of aggregate.¹⁰⁴ Because recycling allows for reduced use of virgin aggregates, thus lowering aggregate production levels, GHG emissions can be considerably reduced. In addition, on-site recycling can help reduce hauling and material transportation activity, thus further lowering GHG emission levels. One project that documented the environmental impacts of RCA is the Beltline Highway project in Madison, Wisconsin, where a life-cycle assessment indicated 13 percent reduction in CO₂ emissions and 9 percent reduction in hazardous waste materials.^{105 106}

Returned Plastic Concrete

Returned plastic concrete (RPC) refers to underutilized or excess concrete, which is in unhardened/plastic state and suitable for recycling and reuse. Since RPC reduces the need for production of new batches of fresh concrete, its potential benefits include reduction in energy consumption, landfill areas and disposal costs, depletion of coarse and fine aggregates, construction, hauling, and transportation costs, and GHG emissions.

Caltrans' Revised Standard Specifications Section 90-9, "Returned Plastic Concrete," allows for the addition of up to 15 percent returned plastic concrete to fresh concrete, with RPC not to exceed 100 °F at any time. Typically, RPC is used for minor jobs and not roadway pavement, so the overall GHG benefits of RPC are limited compared to other pavement strategies.

Applying Pavement Research to Reduce GHG Emissions

The research and examples described above make clear that there are numerous opportunities to reduce GHG emissions through pavement strategies. And as described in Section 2, the large volume of material used on Caltrans roadway projects means that implementation of these strategies can yield significant benefits statewide. Caltrans projects in 2017 used more than 1 million cubic yards of concrete, which involved approximately 325,000 tons of Portland cement, more than 4 million tons of hot mix asphalt, and 1 million cubic yard of aggregate.

The main challenge is that decisions to promote specific pavement materials and methods in the name of GHG reduction must be supported by careful analysis that considers not only the materials, transport, and construction phases, but also any effects on vehicle fuel economy (use phase) and durability and lifetime of the pavement. This challenge can be address by working closely with the UC Davis Pavement Research Center and other experts to improve understanding of pavement lifecycle GHG impacts, and then incorporating the research and understanding into Caltrans pavement decision support tools.

¹⁰⁴ Chehovits, J. and Galehouse, L. Energy usage and greenhouse gas emissions of pavement preservation processes for asphalt concrete pavements. In *Proceedings on the 1st International Conference of Pavement Preservation* (pp. 27-42). 2010.

¹⁰⁵ Snyder, M.B., Cavalline, T.L., Fick, G., Taylor, P., and Gross, J. Recycling Concrete Pavement Materials: A Practitioner's Reference Guide. FHWA, 2018.

¹⁰⁶ Bloom, E. F., G. J. Horstmeier, A. P. Ahlman, T. B. Edil, and G. Whited. 2016a. Assessing the Life-Cycle Benefits of Recycled Material in Road Construction. Paper presented at Geo-Chicago 2016: Sustainability, Energy, and the Geoenvironment, August 14–18, Chicago, IL.

Because of the complexity of pavement LCA research, some degree of uncertainty about the magnitude of these impacts is likely to remain for some time. However, the urgency to reduce GHG emissions calls for taking steps quickly to put into practice more pavement strategies for which at least the directionality of GHG benefit is clear.

Caltrans also needs better procedures to track the use of GHG-reducing pavement strategies. Currently Caltrans has data only for the annual use of standard materials such as hot-mix asphalt and concrete. Caltrans also tracks use of rubberized HMA because this is a state requirement. However, no centralized records exist to monitor the use of other alternative asphalt or concrete mixes that can reduce GHG emissions. As a result, Caltrans does not have good estimates of the current use of pavement strategies such as WMA, CIR, and SCMs, nor does Caltrans have reliable information to indicate trends in use of these strategies.

4.3 Maintenance

In addition to pavement repair and resurfacing, described above, Caltrans performs a wide variety of other activities to maintain the State Highway System including vegetation management and maintenance of roadside lighting and signage. These activities offer numerous opportunities to reduce GHG emissions through use of alternative materials and more efficient practices.

Material Recycling and Re-use

AB 74 and SB 1016 require that state agencies track how much waste they generate, and establish a target for recycling or diverting waste. Use of recycled materials typically reduces GHG emissions by minimizing the production of new materials, which can be GHG-intensive. Caltrans employs a variety of approaches to recycle and reduce the use of materials during the construction and maintenance of highway facilities.

- In landscape architecture and highway maintenance, Caltrans uses urban green waste as a compost. This not only diverts waste, but also enhances soil structure and increases water conservation.
- Caltrans recently created a standard that allows the use of recycled mats to control weeds that grow under and obscure guard rails and posts. Historically, Caltrans paved the ground under guard rails and around posts with concrete.
- Caltrans requires the use of recycled paint to abate graffiti. Specifically, unused paint is mixed together to create a grey or brown color, which is painted over graffiti.
- Caltrans uses recycled motor oil and lubricants, recapped tires, and recycled solvents. Steel posts and metal guard rail used along highways are also recycled.
- A pilot project is recycling lead acid batteries (discussed in Section 4.4).

Standard specifications require that contractors submit data on their waste stream each year. Generally, Caltrans has recycled roughly 50 percent of construction materials, and 75 percent if pursuing LEED

certification.¹⁰⁷ While contracts do not typically require this, construction material recycling is a CalGreen and a LEED requirement, and is only slightly more costly for the contractor.

Lighting Energy Efficiency

Caltrans has undertaken energy efficiency improvements for a variety of lighting used in the highway system and associated maintenance facilities.

Signal Lighting

Historically, traffic signals were one of the largest uses of electricity for Caltrans. Incandescent lights were originally used for the roughly 76,000 traffic signals along the State Highway System. Starting in 1999, Caltrans began converting traffic signals from incandescent lights, which use 85-155 watts of electricity, to light-emitting diode (LED) lights, which use only 22 watts on average. Caltrans has now converted nearly all signal lighting, and requires LEDs in all new traffic signals. Caltrans' early adoption of the technology helped lead to the nationwide standardization of LEDs for traffic signals.

Highway Lighting

In addition to reducing highway lighting to points of conflict (e.g., ramps, lane merges), Caltrans has been improving the energy efficiency of the lighting by retrofitting roughly 80 percent of its overhead "cobra head" highway lights with LEDs. In an earlier pilot phase, District 11 found that LEDs for highway lighting consume up to 66 percent less energy than the traditional high-pressure sodium (HPS) lights. In addition to the improved energy efficiency, LEDs last 15 to 20 years, four to five times longer than HPS lights, thus reducing the need for maintenance.

Changeable Message Signs

Caltrans operates more than 700 changeable message signs (CMS) along the State Highway System to inform travelers about road conditions and provide other information. Initially, Caltrans replaced the traditional incandescent light bulbs in these signs with xenon bulbs, which consume 72 percent less energy than incandescent bulbs. However, updated Caltrans' specifications require that all new signs use LEDs, which use 71 percent less energy than xenon fixtures (and 92 percent less than incandescent). Caltrans has now converted approximately 90 percent of its CMS to LEDs. However, Caltrans has also increased its inventory of CMS, so the energy savings from LEDs may be partially offset by the increased number of signs.



¹⁰⁷ U.S. Green Building Council, Construction and demolition waste management, <https://www.usgbc.org/credits/reqmrc21r1-0>; <https://www.usgbc.org/credits/reqmrc22r1-3?view=language>

Roadway Signage Lighting

Caltrans has more than 600,000 signs for the highways it manages, many of which require lighting for nighttime visibility. In 2003, Caltrans implemented energy savings guidelines that required the use of more energy efficient magnetic induction light fixtures for highway signs in place of more conventional mercury vapor (MV) fixtures to reduce the energy demand of sign lighting. Subsequently, Caltrans has been replacing 85-watt induction lamps with 60-watt LED lamps.

Retroreflective Sheeting on Signs

In addition to replacing fixtures for highway signs with more energy efficient lighting, Caltrans has been eliminating the need for lighting altogether by replacing lit roadway signs with retroreflective signs. Retroreflective sheeting materials feature a prismatic background that makes them highly visible under vehicle headlights. In addition to saving energy, these signs improve safety for Caltrans staff engaged in sign maintenance, and they decrease vandalism and copper-wire theft because they do not require maintenance catwalks. Caltrans specifications now require that all new green-background (directional) and yellow-background (warning) signs have this retroreflective sheeting, and existing signs are being replaced. Eventually, Caltrans plans to eliminate 70 to 85 percent of sign lighting, although the ultimate number depends on engineering requirements. For instance, lighting may be required in areas that are very foggy or where road curvature reduces sign reflectivity. In the future, Caltrans could reduce the amount of time that the signs are lit, or only turn the sign lighting on when fog is present or when traffic volumes are high.

Yard Lighting

Lighting has accounted for 70 percent of energy consumed at Caltrans maintenance yards, which require lighting for regular maintenance work that occurs at night. The maintenance yards and buildings previously used high-pressure sodium (HPS) and fluorescent lights. Caltrans is targeting to change these lighting systems to LED by the end of 2018. In addition to improved energy efficiency, LEDs do not need to warm up as compared to HPS lights, enabling a more refined control system to turn off lights when they are not in use, which can help reduce lighting energy consumption.

Summary of Roadway Lighting GHG Reductions

The table below shows a 2017 inventory of Caltrans highway system lighting by type. The vast majority of lights have been converted to LED.

Table 12. Caltrans Highway Lighting by Type, 2017

Lighting Type	Number
Traffic light fixture LED - Intersections	72,799
Traffic light fixture LED - Ramp Meters	5,147
Flasher LED	2,207
Ped Signal LED	37,736
Changeable Message Sign Xenon	183
Changeable Message Sign LED	545
Roadway LED	63,846
Roadway HPS	8,144
Roadway MV	1,419
Induction Sign Lighting (85W)	~15,000

Source: Caltrans

The table below shows the estimated GHG reductions that result from Caltrans lighting energy efficiency efforts.

Table 13. Annual CO₂ Emission Reductions Associated with Lighting Efficiency Strategies, 2017

Lighting Type	Fixtures Replaced	GHG Reduced (tons CO ₂ per year)
Roadway		
Signals	117,889	12,065
Highway	63,846	13,246
CMS	728	2,745
Signage	~15,000	~2,000
Facilities		
Office	12,356	595
Yard and maintenance bay	13,778	1,536
Total (approximate)	224,000	32,000

Source: ICF calculations using lighting inventory provided by Caltrans.

Water Conservation

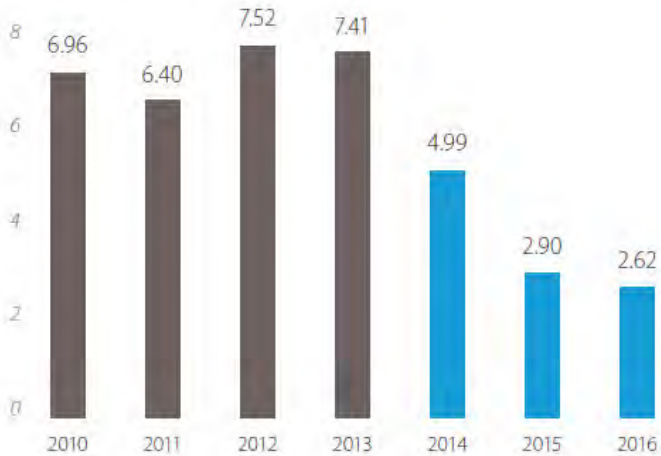
Caltrans conserves water in roadside irrigation, at rest areas, and elsewhere. A reduction in the use of water means less energy devoted to pumping and treating water, which contributes to a reduction in GHG emissions.

Water Conservation in Irrigation

In response to the severe 2011-2015 drought, Caltrans adopted a goal of a 50 percent reduction in water use based on a 2013 baseline. Because Caltrans is responsible for 33,000 acres of landscaping,

targeting this irrigation for reduction makes a substantial contribution to overall statewide water conservation efforts. Caltrans exceeded its water conservation goal; water use in 2016 was 65 percent below 2013 levels.

Figure 12. Caltrans Statewide Water Use (billions of gallons)



Source: Caltrans, MileMarker, September 2017

Water use reductions have been achieved through several strategies. Caltrans has invested in increased installation of “smart controllers” for roadside irrigation systems around the State. These smart controllers sense soil moisture levels and adjust water irrigation accordingly; they also receive weather reports via satellite. If the irrigation system is broken or faulty, the smart controllers quickly notify Caltrans maintenance staff, and shut off water flow if a line breaks.

Caltrans has also increased its use of recycled water for activities like cleaning vehicles and irrigation. Between 2014 and June 2017, Caltrans increased recycled water use statewide from 14 to 23 percent by converting 48 irrigation water sources to recycled water. Deputy Directive 013 requires that Caltrans irrigate landscapes exclusively with recycled water by 2036.

Caltrans has also taken steps to limit water use in its buildings. Several Caltrans district offices have installed low-flow water fixtures to reduce water use. Some districts have modified the watering of landscaping around their offices and have committed to washing vehicles only when they become too dirty to operate. District 8, as an example, cut water usage by 58 percent over roughly four years by implementing such strategies.

Water Conservation at Rest Areas

Caltrans operates 86 Safety Roadside Rest Areas across the state, most of which are in rural areas that are not part of municipal water and wastewater systems. Irrigation accounts for the majority of water use at these locations, particularly during summer months. Some rest areas use recycled water to flush toilets, reducing their discharges, which are regulated and must be treated. For example, Dunnigan rest area, located on Interstate 5 in Yolo County, recycles toilet water for non-potable uses. Caltrans is also exploring treatment options that can handle the volume and quality of the remaining rest area wastewater. At the Sunbeam Rest Area, located in Imperial County on Interstate 8, Caltrans has installed a system that treats wastewater from toilets and sinks. The treated water is suitable for use in the drip irrigation lines used for grass lawns at the rest area. At the Ereca rest area on Interstate 5 near Fresno, Caltrans is building a water recycling system to recycle toilet water.



Sunbeam Rest Area on Interstate 8

4.4 Vehicle Fleet and Equipment

Caltrans reduces GHG emissions from its vehicle fleet through alternative fuels, advanced technologies, and efficient vehicle operation.

Alternative Fuels for Caltrans Light-duty Vehicles

Caltrans supports State initiatives to reduce GHG emissions by expanding use of alternative fuels in the light-duty vehicle (LDV) fleet, which includes automobiles and pickup trucks. The focus of its alternative fuel efforts is on replacing gasoline and diesel LDVs with zero emission vehicles (ZEVs), which consist of electric vehicles (EVs) and fuel cell vehicles (FCVs). Executive Order B-16-12 created a target of 1.5 million ZEVs in California by 2025, and required that the State vehicle fleet increase its number of ZEVs so that at least 10 percent of LDV purchases are ZEV by 2015, and at least 25 percent of fleet LDV purchases are ZEV by 2020. The State adopted a ZEV Plan in 2016, which outlines a path for achieving this goal. Executive Order B-48-18 created a target of 5 million ZEVs in California by 2030, and 250,000 electric vehicle charging stations and 200 hydrogen fueling stations in California by 2025. The DGS Management Memo “Zero-Emission Vehicle Purchasing and Electric Vehicle Service Equipment Infrastructure Requirements” directs agencies to purchase ZEV charging equipment to further Executive Order B-16-12.

Caltrans has implemented a ZEV Action Plan, which created a generalized schedule for light-duty vehicle ZEV purchases as a part of overall fleet replacement. Each year’s actual ZEV purchasing is based on vehicle condition and scheduled turnover; therefore, if none of the LDVs in the fleet require replacement, no ZEVs will be purchased that year.

Caltrans has exceeded the EO B-16-12 ZEV fleet requirement, as ZEVs accounted for approximately 20 percent of LDV purchasing in FY 2017-18. Because some state departments can accommodate ZEVs more easily than others, compliance with EO B-16-12 will eventually be on a State basis rather than a Departmental basis, and Caltrans may be required to increase their ZEV LDV fleet beyond the executive order requirements to help the statewide goal. However, one challenge that Caltrans faces is that nearly half of its LDV fleet is composed of pickup trucks, and currently there are no ZEV pickups available from original equipment manufacturers.

Electric Vehicles

There are two main categories of electric vehicles. Battery electric vehicles (BEVs) have no internal combustion engine and run on electricity supplied by the onboard battery alone; current BEVs typically have a range of approximately 60 to 250 miles, with most models limited to less than 150 miles. Plug-in hybrid electric vehicles (PHEVs) have both an internal combustion engine and a battery that can be charged via plug; PHEVs run on the battery's electricity for the first 10 to 50 miles and then switch to using the gasoline-powered engine after the battery is depleted, allowing PHEVs to travel distances comparable to conventional gasoline-fueled cars.

To date, Caltrans has largely met and exceeded its ZEV fleet requirements by replacing conventional and hybrid LDVs with battery electric and plug-in hybrid electric vehicles. In 2017, the Department operated 80 BEVs and 136 PHEVs.

Electric Vehicle Charging Equipment

In addition to purchasing electric vehicles, Caltrans has been actively installing EV charging equipment. State agencies are mandated to provide EV charging at five percent of their workplace parking spaces, with the intent that State employees will use the EV charging for their commute vehicles during the day, and the agency's fleet will use the EV charging at night. Caltrans is in the process of meeting this goal. Currently, Caltrans has 142 electric vehicle charges, 128 of which are dual-port. Fifteen of these are solar electric charging stations.



Solar powered EV charging station at Caltrans Headquarters

Caltrans will contribute funding to DGS for the installation of EV charging infrastructure. Significant funding will be required. While EV charging equipment is relatively inexpensive, preparing and installing equipment at charging locations can be much more expensive, as it can require trenching, installing conduit and wiring, upgrading electrical panels, and acquiring a fire marshal’s permit.

Fuel Cell Vehicles

While Caltrans has largely replaced its older LDV fleet with EVs, the Department is also interested in procuring hydrogen fuel cell vehicles, as they hold a number of advantages over electric vehicles. Hydrogen FCVs have a longer range than typical EVs and can be fueled more quickly. Furthermore, hydrogen fueling is more resilient in a disaster as it does not depend on the electrical grid and backup generators can be used to produce additional hydrogen fuel if necessary. To date, Caltrans has purchased 50 Toyota Mirai FCVs. Because Caltrans does not yet have its own hydrogen fueling infrastructure, these vehicles refuel at public fueling stations located in Districts 3, 4, and 7.



Toyota Mirai Fuel Cell Vehicles at Caltrans District 7

The GHG benefits of the fuel cell vehicles can vary widely depending on the production and transportation processes of the hydrogen used to fuel the FCVs. Larger GHG reductions can be achieved if the hydrogen is liquefied for transport of the fuel; GHG reductions can be ten times larger if the hydrogen is produced locally using a renewable energy source such as solar or wind.

Summary of Light Duty Vehicle Emissions Benefits

The table below shows the number of Caltrans hybrid, electric, and fuel cell vehicles in operation in 2017, the total mileage of these vehicles, and the resulting annual GHG reductions. In total, Caltrans alternative fuel light duty vehicles generated approximately 200 tons of GHG reduction in 2017. This reduction has subsequently increased as Caltrans has added more of these vehicles to its fleet.

Table 14. Number of Hybrid, Electric, and Fuel Cell Vehicles and Total Mileage, 2017

Vehicle Type	GHG Reduction per Vehicle	Number of Fleet Vehicles (2017)	Total Mileage (2017)	Total Annual Fleet GHG Emission Benefits (tons)
Hybrid Electric Vehicle	18%	91	831,467	56
Plug-In Hybrid Electric Vehicle	38%	136	500,116	73
Battery Electric Vehicle	67%	80	197,385	50
Fuel Cell Vehicle	38%	37	181,953	26
Total		344	1,710,920	204

Source: ICF calculation using vehicle mileage data from Caltrans. All vehicles compared to a conventional gasoline vehicle, assumed to be a Chevrolet Cruze. PHEVs assumed to operate 40% in electric mode (EMFAC). Fuel cell vehicles assumed to use compressed gaseous hydrogen from central reforming of fossil natural gas.

Additional Light Duty Vehicle GHG Mitigation Opportunities

Caltrans has aggressively added EVs and FCVs to its light duty vehicle fleet, as described above, and will continue to integrate more as part of regular fleet turnover. Opportunities to use EVs and FCVs for Caltrans’ light truck (e.g., pickup) fleet vehicle fleet are currently limited by commercial availability. If viable battery electric or fuel cell options become available for light-duty trucks, Caltrans expects to consider adding these vehicles to its fleet. Otherwise, there are limited opportunities for Caltrans to further reduce fleet GHG emissions through vehicle electrification beyond the planned vehicle replacements.

Alternative Fuels for Caltrans Heavy-duty Vehicles and Off-road Equipment

State agencies have also started to explore opportunities to use alternative fuels in heavy-duty vehicles, which include construction, maintenance, and utility trucks. Caltrans has used alternative fuels for many decades, but applications were limited because of the operational and power requirements for these large vehicles. However, alternative fuels and newer technologies are increasingly available for heavy-duty applications. Options that reduce GHG emissions include:

- Biodiesel fuel
- Renewable diesel
- Compressed natural gas (conventional and renewable)
- Hybrid electric and full electric vehicles
- Hydrogen fuel cell vehicles

Through 2015, Caltrans was widely using biodiesel blended with conventional diesel in nearly all HDVs. As a fuel made from animal and vegetable fats, biodiesel has a lower GHG emission rate on a life-cycle basis compared to conventional diesel. However, to meet the petroleum reduction goals set by Executive Order B-30-15, the Department of General Services (DGS) released Management Memo 15-07

“Diesel, Biodiesel, and Renewable Hydrocarbon Diesel Bulk Fuel Purchases,” which instructs state agencies to purchase renewable diesel in lieu of bulk conventional diesel and biodiesel. Renewable diesel is a product of fats or vegetable oils refined by a hydro treating process, which results in a fuel that meets the same standards as conventional diesel and thus, unlike biodiesel, does not need to be blended with conventional diesel. Renewable diesel can therefore be a “drop-in” fuel that generates 50 to 60 percent less GHG emissions than conventional diesel. The adoption of renewable diesel has become a more feasible alternative to other forms of diesel in recent years because of the improved cost competitiveness that have resulted from credits generated under the federal Renewable Fuel Standard and state Low Carbon Fuel Standard (LCFS).

Caltrans also employs compressed natural gas (CNG) engines for some heavy-duty vehicles, such as sweepers and refuse trucks. Because CNG also has significantly lower ozone precursor emissions than diesel, many of these vehicles are deployed in the South Coast Air Basin (Districts 7, 8, and 12) where ozone pollution is most severe. The GHG emissions associated with natural gas vehicles partly depend on the source of the gas; natural gas can be produced from renewable sources, which have lower life-cycle GHG emissions than conventional natural gas from fossil fuel sources. For example, natural gas from landfills has a carbon intensity that is roughly half that of natural gas from conventional fossil sources.



CNG Fueling Infrastructure at Caltrans Foothill Maintenance Station, District 7

Assembly Bill 739 (2018) requires that, by 2025, at least 15 percent of newly purchased vehicles with a gross vehicle weight rating (GVWR) of 19,000 lbs. or more be zero emission vehicles (ZEVs), and that by 2030, at least 30 percent of these vehicles be ZEVs. However, because available electric trucks have limited ranges and long charge times, electric trucks cannot currently meet Caltrans’ operational requirements for most construction and maintenance activities, particularly emergency maintenance response.

While electric vehicle options to replace Caltrans heavy-duty vehicle are limited, fuel cell vehicles offer the range and rapid fueling that match conventional diesel powered counterparts. As a result, Caltrans is examining fuel cell vehicle options for various heavy-duty applications. Fuel cells have been used in forklifts and heavy-duty trucks at ports, where the range requirement is lower. In 2018, Caltrans funded the development and deployment of the world's first fuel cell freeway sweeper in District 7 as a demonstration project. Caltrans is also purchasing a gasoline-electric hybrid and a diesel-electric hybrid sweeper. These vehicles use an average of 45 percent less fuel than a conventional diesel sweeper. The University of California, Riverside is currently evaluating the performance of these advanced technology sweepers and will assess the feasibility of expanding the use of these vehicles. If the vehicles perform adequately, Caltrans intends to place hydrogen sweepers in the South Coast Air Basin and other locations where hydrogen fueling infrastructure exists, and place the hybrid-electric sweepers elsewhere.



Caltrans fuel cell sweeper

The table below shows the use of heavy-duty vehicle alternative fuels by Caltrans in 2017 and the resulting GHG reductions, as compared to conventional diesel fuel. Renewable diesel can come from different sources (pathways) which vary in their carbon intensity. Because the source of Caltrans renewable diesel was not known at the time of this analysis, the GHG reduction calculation conservative assumes a relatively high carbon intensity pathway. Thus, the actual GHG reduction from renewable diesel could be greater than shown here.

Table 15. Heavy Duty Vehicle Alternative Fuel Use and GHG Reductions, 2017

	Annual fuel use, 2017 (gallons or dge)	Annual GHG reduction, 2017 (tons)
CNG	145,022	456
Renewable diesel	3,772,536	23,637
Total	3,917,558	24,093

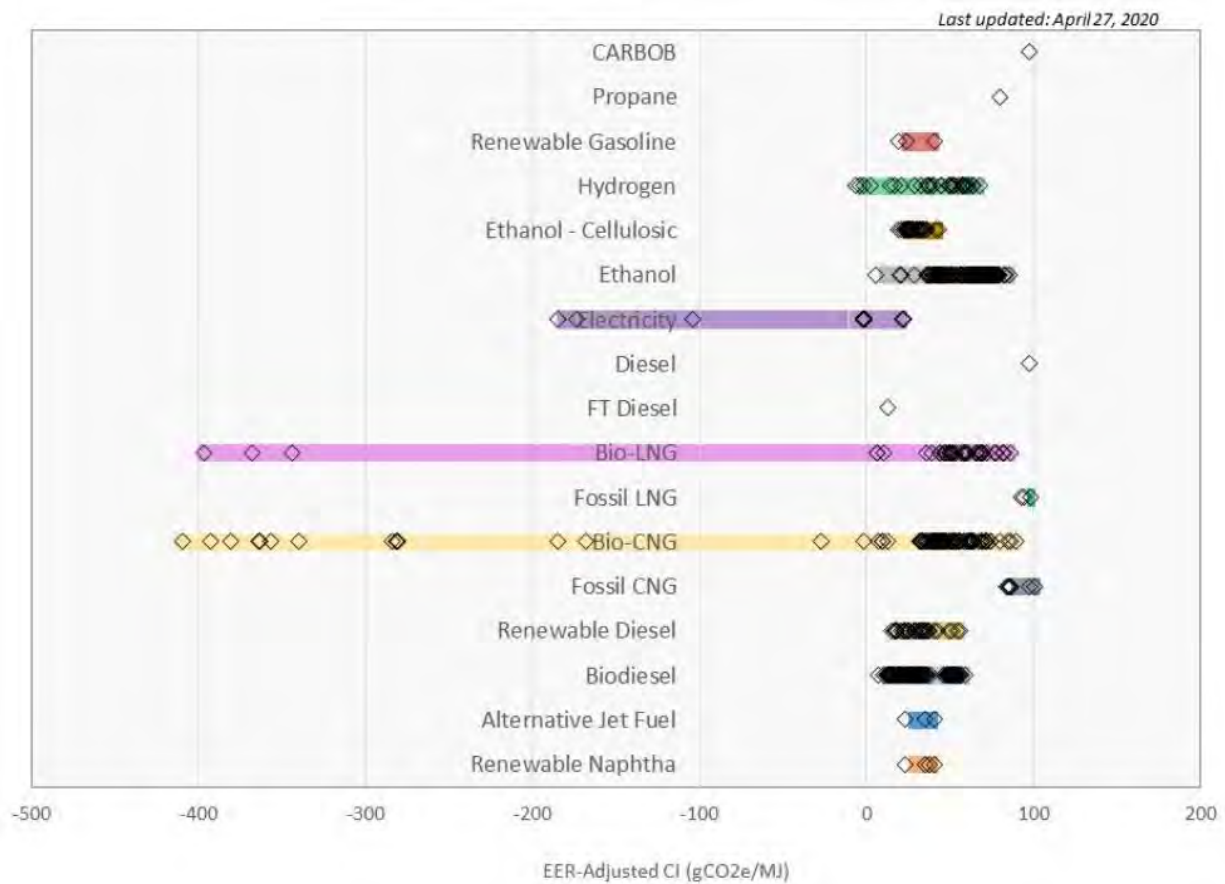
Source: ICF calculation using fuel use data from Caltrans. Emission factors from CARB LCFS pathways.

Additional Heavy-Duty Vehicle GHG Mitigation Opportunities

Similar to light duty trucks, the ability to reduce GHG emissions by using electric or fuel cell technology for heavy-duty vehicles is currently limited by the commercial availability these vehicles. In the future, when electric or fuel cell options become more widely available, Caltrans can likely achieve additional GHG reductions through these technologies.

Presently, low carbon fuels other than electricity offer more immediate potential for additional GHG reductions in Caltrans heavy duty fleet. California’s LCFS mandates a 10 percent reduction in the carbon intensity of California’s transportation fuels and is helping to drive the introduction of many low carbon fuel options. The figure below shows the carbon intensity (CI) for fuel pathways that have been certified under the LCFS program. Conventional gasoline (CARBOB) and diesel have carbon intensities of approximately 100 grams of CO₂-equivalent per megajoule (MJ). Renewable diesel, already used by Caltrans, is available with CI values of 20-55 g CO₂e/MJ, or 45 to 80 percent lower than conventional diesel. Even lower carbon intensities are available for some forms of renewable natural gas (Bio-CNG). Caltrans can achieve larger fleet GHG reduction by purchasing these low carbon fuels where they are available.

Figure 13. Carbon Intensity Values of Certified LCFS Pathways (2020)



Source: California Air Resources Board

Efficient Operation of Caltrans Vehicles

In addition to replacing gasoline and diesel with alternative fuels, Caltrans has implemented a wide range of strategies to reduce the consumption of fuels in general.

Idling consumes fuel for other purposes besides propulsion. Caltrans Deputy Directive 096 “Unnecessary Idling of the Department’s Fleet Vehicles and Equipment” supports efforts to reduce unnecessary energy consumption from vehicle idling. However, some idling can serve important functions that support Caltrans work. For example, drivers sometimes run their engines to keep their cabs heated. In four yard trucks purchased recently, Caltrans added heaters that draw a smaller amount of fuel than running the vehicle engine to keep the cab warm; however, Caltrans has found that drivers are not always using this heater in place of idling.

In some cases, Caltrans has deployed more energy efficient vehicles and equipment. Caltrans maintenance vehicles operate amber warning lights for driver and worker safety. While older vehicles must run the engine to shine warning lights, newer vehicles use LED warning lights which require very little power, reducing the load on the vehicle engine. To reduce vehicle air conditioning needs and evaporative emissions, DGS Management Memo 12-03 mandates that all State agency LDVs be white,

silver metallic, or gold metallic, which are solar reflective colors that reduce the amount of vehicle cabin heating.

Caltrans also has improved vehicle and equipment efficiency by implementing GPS-based tools to assist the operators. Caltrans has added GPS to all vehicles but offload trailers. In addition to helping recover stolen vehicles, GPS devices track driving speeds; speeding reports are sent to administrative deputies and District discipline services, who follow up with drivers to encourage slower, more fuel efficient driving speeds. GPS also eliminates the need for drivers to manually log their vehicle data, thereby increasing organizational efficiency. Caltrans has also installed automated vehicle locators (AVLs) on their snow plows, which help operators improve overall efficiency by indicating when plows are down and tracking the amount of material (sand, salt, etc.) that has been deployed.

Recycled Vehicle Batteries

In California, 160,000 tons of lead acid batteries must be recycled per month. Currently, many of these batteries go to the Exide plant in the City of Industry, California. This creates a toxic hazard for the community, as lead has been found in the community's ground and water and in residents' blood tests. These batteries are also often sent abroad where the waste is managed poorly. Assembly Bill 2832 calls for creation of an advisory group to develop recommendations to ensure sustainable recycling of vehicle batteries.

To help reduce lead waste, Caltrans has engaged in a pilot partnership with a private company called AquaMetals. AquaMetals extracts lead from batteries to produce 99.9 percent pure lead ingots, which it can then resell. This lead is not only higher quality, but it is also lighter, stronger, and holds a charge for longer than using lead that is typically available.

4.5 Facilities and Administration

Caltrans reduces GHG emissions through its programs for purchasing supplies, procuring renewable energy and improving the efficiency of its workplace offices for employees, and supporting employee commute travel.

Purchasing and Contracting

Caltrans is currently pursuing several methods to purchase products and create projects that are less GHG-intensive. This includes analyzing the lifecycle emissions of purchases, and using sustainable purchasing, environmentally preferred purchasing, and environmental product declarations, and alternative contracting methods.

Sustainable Purchasing

Caltrans Division of Procurement and Contracts is currently establishing a Sustainable Purchasing Program. The Division will identify opportunities to incorporate sustainability, including both environmental and social components, into products carried in Caltrans supply warehouses, such as wood posts, sign posts, and related equipment. Notably, this does not include purchasing related to construction, facilities, or the vehicle fleet, which are handled by other divisions.

As part of the development of this program, Caltrans plans to conduct an economic input-output lifecycle analysis to quantify the GHG emissions embedded in all of Caltrans' purchases. This analysis will provide a baseline of GHG emissions and help identify areas where Caltrans could improve. For instance, the analysis will provide the zip codes of suppliers and purchasers, associated transportation emissions, and whether those emission could be reduced by using a local supplier or at least a supplier that is closer to the purchaser.

Environmentally Preferred Purchasing

Caltrans indirectly incorporates environmentally preferred purchasing (EPP) under Department of General Services (DGS) procurements. While Caltrans lacks the authority to incorporate EPP when selecting a contractor, Executive Order B-18-12 requires that state agencies conduct environmentally preferred purchasing, including DGS. Therefore, when Caltrans uses a DGS-developed procurement agreement, the agreement considers EPP. For instance, many state departments and entities use tires; DGS has contracted with numerous vendors to provide tires, and the contract tire specifications include EPP. As a result, when Caltrans purchases tires through this contract, they indirectly incorporate EPP into the tire purchase.

While Caltrans provides input into DGS specifications, the Department does not lead the development of the specifications.

Environmental Product Declarations

In 2016, Caltrans began pursuing the use of environmental product declarations (EPDs). An EPD is an internationally recognized environmental impact label, similar to a nutrition label on food. EPDs are developed in accordance with specific standardized methods for quantifying the environmental impacts of manufacturing a particular product on a lifecycle (cradle to grave) basis. Caltrans has contracted with the University of California, Davis Pavement Research Center helped to assemble a roadmap for Caltrans use of EPDs.

In 2017, the Buy Clean California Act (AB 262) was passed. AB 262 directs the Department of General Services (DGS) establish and publish standardized methods for calculating the lifecycle GHG emissions (called global warming potential) of four commonly purchased products: carbon steel rebar, flat glass, mineral wool board insulation, and structural steel. Potential suppliers of these materials to the state will then be required to report the global warming potential of their products using an EPD. DGS will also establish and publish in the State Contracting Manual a maximum acceptable global warming potential for each category of product. Caltrans purchases these products will results in lower GHG emissions once the program requirements take effect July 1, 2019.

Purchase of Recycled Material

Caltrans purchases a variety of products containing recycled content. Caltrans reports annually regarding progress toward the State Agency Buy Recycled Campaign (SABRC), which is a joint effort between CalRecycle and DGS to implement state law requiring state agencies to purchase recycled-content products and track those purchases. The table below shows Caltrans reporting for fiscal year

2016-17 in 11 categories of materials.¹⁰⁸ Caltrans generally meets the SABRC targets unless suppliers of suitable recycled-content products are not available.

Table 16. Caltrans Purchases of Recycled Content, 2016-17

Product Category	Total Purchases	SABRC Compliance Purchases	Percent Compliant	Minimum Post-Consumer Recycled Content
Antifreeze	\$190,412	\$101,661	53%	70%
Compost, Co-Compost, Mulch	\$2,484,684	\$2,484,684	100%	80%
Glass Products	\$342,424	\$342,089	100%	10%
Lubricating Oils	\$1,086,722	\$906,338	83%	70%
Paint	\$1,918,341	\$980,834	51%	50%
Paper Products	\$237,847	\$131,119	55%	30%
Plastic Products	\$3,209,642	\$824,044	26%	10%
Printing & Writing Paper	\$490,816	\$240,431	49%	30%
Metal Products	\$42,758,715	\$38,483,777	90%	10%
Tire-Derived Products	\$21,008	\$5,087	24%	50%
Tires	\$4,050,226	\$725,956	18%	Retread/Recapped

Source: Caltrans

One challenge in requiring the use of recycled or sustainable materials is that when using federal funds, Caltrans cannot necessarily create material restrictions as this can restrict trade with other states.

Renewable Energy

Electricity produced by renewable sources such as solar power displaces electricity used from the grid, which is comes from more GHG-intensive sources. To date, Caltrans’ primarily renewable energy projects have been conducted under the Clean Renewable Energy Bonds solar program. As discussed below, Caltrans has opportunities for achieving additional GHG reductions by pursuing solar power projects in the highway right-of-way (ROW).

Clean Renewable Energy Bonds Solar Program

Caltrans has participated in the Clean Renewable Energy Bonds (CREBs) program to finance the installation of photovoltaic (PV) energy systems. The CREBs program was created by the Federal government in 1995 as a way to finance renewable energy projects. Caltrans initially received approval for CREBs projects in 2006. Caltrans was the only state agency to participate significantly in the CREBs program. Caltrans has completed installation of 70 PV projects financed through CREBs. The projects are located at a variety of Caltrans facilities, as summarized in the table below.

¹⁰⁸ Memorandum, To Angela Shell, Chief, Division of Procurement and Contracts, “State Agency Buy Recycle Annual Report Fiscal Year 2016-17,” October 25, 2017.

Table 17. Caltrans CREBS Solar Projects by Facility Type

Facility Type	Number of Projects
Maintenance Facilities	46
Equipment Shops	9
Safety Roadside Rest Areas	3
Office Buildings	4
Materials Laboratories	2
Transportation Management Centers	2
Toll Bridge Facilities	2
Truck Inspection Facilities	2
Total	70

Source: Caltrans

In total, these projects generate 2.38 MW of renewable energy, enough to power 500 homes, which is more than the 2.1 MW used by Caltrans’ 344 maintenance stations. Caltrans has noted that in some cases, energy production performance of PV installations could be improved. In some locations, the PV panels and inverters have needed repair; others do not receive frequent cleaning, which can degrade their performance.

To improve tracking of performance and issues in real-time, Caltrans uses telematics (remote tracking) to monitor most of the CREBs installations (61 out of 70). The remaining 9 locations lack internet capabilities or have equipment incompatibility issues, but Caltrans is identifying potential tools to track energy production and display information on a user-friendly dashboard for all 70 sites.

Other Solar Projects at Caltrans Facilities

In addition to the CREBs projects, Caltrans has been developing several other solar projects. In District 8, Caltrans installed a 1 MW solar facility – Caltrans’ largest solar installation – at its Southern Regional Lab and traffic management center in Fontana. Other projects include:

- District 3 – A solar canopy in the Marysville office parking lot (in progress)
- District 4 – Solar facilities at the San Francisco-Oakland Bay Bridge Maintenance, Warehouse, and Training Complex
- District 5 – Mobile EV chargers with solar panels at three locations
- District 6 – Solar panels at the northbound and southbound Philip Raine Rest Areas on SR99
- District 7 – A solar pavement pilot project at a district office building, working with a company from the Netherlands on the technology
- District 12 – Mobile EV chargers with solar panels (installed); and solar canopies/EV charging stations at Park and Ride lots



Solar panels at the Caltrans Traffic Management Center in Fontana, District 8

Summary of GHG Reductions from Renewable Energy

The table below shows the estimated GHG reductions in 2017 that result from Caltrans renewable energy efforts.

Table 18. Annual CO₂ Emission Reductions Associated with Solar Projects, 2017

Solar Project Type	Estimated Electricity Produced (kWh)	GHG Reduced (tons CO ₂ per year)
Clean Renewable Energy Bonds (CREBs)	3,617,400	955
Other projects	3,282,000	866
Total	6,899,400	1,821

Source: ICF calculation using electricity production data provided by Caltrans

Although nearly all of Caltrans’ solar projects were previously developed through the CREBs program, other projects are now estimated to produce nearly as much electricity as the CREBs solar installations. Actual electricity production – and associated GHG reductions – at each site may vary considerably, depending on system design, weather, and other factors that impact solar generation.

Solar PV Arrays in Highway ROW

While Caltrans has achieved energy savings and reduction in GHG emissions using through successful installation of PV energy systems on various Caltrans facilities (e.g., maintenance facilities, equipment shops, etc.), the Department can further reduce GHG emissions by targeting other types of underutilized spaces for renewable energy technologies such as solar PV. Many transportation agencies have been exploring installation options for decentralized renewable energy technologies on spaces that are not

conventionally considered for energy generation, including use of the highway ROW.¹⁰⁹ The highway ROW and other land areas used by transportation agencies are often in proximity to electrical infrastructure, which can make these locations ideal for renewable energy applications.¹¹⁰ California's aggressive renewable portfolio standard, expanded in 2015 as part of SB 350, requires all utilities in the state to source half of their electricity sales from renewable sources by 2030, so the demand for renewable energy is growing rapidly.

Renewable energy generation in the ROW can come from solar, wind, and other technologies. Solar PV is the most promising immediate option for the highway ROW. California has some of the best conditions for solar power in the U.S. PV arrays are formed by modules of connected individual PV cells that typically produce 1 to 2 watts (W) of solar power. They can utilize two types of PV systems: traditional flat-plate PV systems (which use conventional solar cells) or concentrating photovoltaic systems (in which solar power is captured in more expensive high-efficiency solar cells, using lenses/mirrors, which reduces required cell area and increases the cell efficiency).

Countries such as Canada, Austria, France, Germany, the Netherlands, Switzerland, and the United Kingdom have implemented solar cell applications (including PV noise barriers) along highways and railways within existing ROW. State DOTs in the U.S. are increasingly exploring solar-related initiatives and technologies for highway ROW. Oregon DOT piloted the first highway ROW solar PV installation in 2008 at the interchange of I-5 and I-205 near Portland. Recent examples are shown in the figure and table below.¹¹¹

Caltrans is currently researching the potential of using highway ROW for solar energy, with a goal of developing a ROW pilot solar project in 2019 and the potential to expand to other Caltrans sites after that.

¹⁰⁹ FHWA, Renewable Energy in Highway Right-of-Way, www.fhwa.dot.gov/real_estate/right-of-way/corridor_management/alternative_uses.cfm

¹¹⁰ Poe, C. and Filosa, G., 2012. Alternative uses of highway rights-of-way: accommodating renewable energy technologies. *Transportation Research Record: Journal of the Transportation Research Board*, (2270), pp.23-30.

¹¹¹ FHWA. Renewable Energy Generation in the Highway Right-of-Way Briefing. FHWA-HEP-16-052. January 2018. www.fhwa.dot.gov/environment/sustainability/energy/publications/row/fhwahep16052.pdf

Figure 14. Examples of Solar PV in Highway ROW or other State DOT Property



MassDOT-installed solar panels in the ROW at Exit 13 North on I-90 in Framingham, MA



Oregon DOT-installed 1.75 MW solar array at the French Prairie Rest Area on I-5



Oregon DOT-installed solar array at the interchange of I-5 and I-205 near Portland



Solar panels along Northwest Parkway near Denver, Colorado

Sources: Oregon DOT; Massachusetts DOT; Northwest Parkway LLC, www.northwestparkway.org/road-info.html#Sustainability

Table 19. Use of ROW by State DOTs to Accommodate Solar Energy Technologies

Project	Purpose	Size
Arizona: I-10, Riverpoint Solar Research Park (in progress)	Generate energy through compression air storage underground	
Colorado: Northwest Parkway Solar (I-25/U.S. 36/State Highway 128) (2008)	Electric power from PV arrays (20-year ROW lease)	26 PV arrays
Oregon: I-5/I-205 Interchange Solar Demonstration Project (2008)	Illuminate adjacent interchange	594 panels, 104 kW, 0.2-acre footprint
Ohio: I-280 Veterans Glass City Skyway Bridge (2010)	Test flexible and rigid solar panels' abilities to offset demand and operating costs of LED bridge structure.	115.6 kW
Oregon: Baldock Safety Rest Area (2012)	Generate/retain Renewable Energy Certificates	6,994 panels, 1.75 MW, 7-acre footprint
Massachusetts: State Route 44 (2012)	Power nearby water treatment facility	99 kW, 1.26-acre footprint
Massachusetts: Solar PV Program	Purchase electricity generated through low, 20-year rate schedule	Minimum 6 MW (from multiple locations)
Various States (e.g., FL, HI, MI, MO, NY, WY)	Solar at rest areas and other highway facilities	

Source: FHWA. Renewable Energy Generation in the Highway Right-of-Way Briefing. FHWA-HEP-16-052. January 2018. www.fhwa.dot.gov/environment/sustainability/energy/publications/row/fhwahep16052.pdf

Green Buildings

Caltrans is pursuing various green building initiatives, including LEED certification, Zero Net Energy buildings, energy efficient lighting, and others.

LEED Certification

Three district offices and a Caltrans Transportation Management Center are certified to Leadership in Energy and Environmental Design (LEED) Gold standards, and two other district offices are LEED Silver. In compliance with Executive Order B-18-12, Caltrans is pursuing LEED-EB (Leadership in Energy and

Environmental Design for Existing Buildings) certification for its office buildings that exceed 10,000 square feet. Seven of Caltrans' buildings meet this criterion, including:

- Three buildings that have submitted their application to the U.S. Green Building Council
- Two buildings that are in the application process
- One building that is working to improve its Energy Star rating before applying
- One building that is in the process of installing submetering to qualify before applying



District 3 Headquarters, Marysville, CA

Additionally, Caltrans requires that buildings at rest areas be LEED certified.

Recently, the Phillip Raine Safety

Roadside Rest Area along SR99 near Tipton was built and certified as LEED Platinum.

Zero Net Energy Buildings

Executive Order B-18-12 also requires new or existing State buildings to achieve zero net energy, offsetting any energy consumed with renewable energy production. Buildings can achieve zero net energy both by implementing energy efficiency measures and by installing renewable energy sources. The order requires that half of all new facilities beginning after 2020 be zero net energy, and that all new State buildings and major renovations beginning after 2025 be zero net energy. Additionally, half of State agencies' building square footage must be zero net energy by 2025.

In response, Caltrans has begun assessing their buildings to determine how to achieve these goals. Caltrans plans to assess which buildings can most feasibly become zero net energy. It may not be possible to convert some buildings to zero net energy due to limitations. For instance, District 4 facilities in Oakland lacks enough physical space for solar panels; therefore, they may look into installing panels elsewhere.

To meet the energy performance targets, Caltrans has made a concerted effort to replace office lighting in all administrative buildings with more energy efficient options. In 2015, the Department upgraded 9,000 bulbs in the headquarters building, replacing T12 fluorescent lights with T8 lights, which use 20 percent less energy. For each District's office buildings, Caltrans purchased LED light fixtures, which use significantly less energy than traditional fluorescent lights. Some Districts have completed the replacements while others are still working to finish replacing their fixtures; one District has been unable to replace the bulbs because the LEDs were not compatible with the light fixtures.

Employee EV Charging

Executive Order B-18-12 requires state agencies to identify and pursue opportunities to provide electric vehicle charging stations at employee parking facilities in new and existing buildings. The state's 2016

ZEV Action Plan calls on each state agency to develop a workplace charging plan that will result in EV charging availability at a minimum of 5% of workplace parking spaces at state-owned facilities. In response, Caltrans is developing a new Policy regarding the provision of EV charging infrastructure for use by Caltrans employees. Caltrans currently has 413 EV charging ports for employee vehicles, with a goal of 1,000 EV charging ports within three years.

Employee Commute Options

Commute travel by Caltrans employees generates approximately 50,000 tons of GHG emissions annually. While this figure is small in relation to the emissions from all roadway system users, Caltrans recognizes its role as the state's leader in transportation to reduce the GHG emissions from employee commuting to set an example for other state agencies and the traveling public. While Caltrans has a number of programs in place to encourage less carbon intensive commuting, there are opportunities to increase the effectiveness of these efforts.

Caltrans offers or supports a number of programs to encourage Caltrans employees to utilize alternative transportation modes and reduce the amount of solo driving trips to and from work. To improve employee alternative transportation options, Caltrans provides bicycle parking and lockers for some Caltrans buildings, subsidizes transit passes, and supports vanpool programs.

With more than 4,000 employees in the Sacramento area, which offers a number of transportation options, Caltrans Headquarters has a distinct opportunity to influence travel and GHG emissions from employee commuters. Data was collected from Caltrans administration and self-reported information submitted through the Commuter Club portal of the Sacramento Transportation Management Association. More than 1,300 employees at Headquarters take a transit subsidy or payroll deduction to pay for transit. Another 50 Headquarters employees receive reimbursements for participating in the vanpool program. Additionally, 141 employees report biking to work.

Headquarters and each District administered a survey of employees about their commute patterns. The Districts that collected and shared data showed a large variance in the share of employees commuting by different modes. The adoption of alternative modes is largely a reflection of the mode options available and the land use patterns around each office.



Caltrans District 9 Employees Celebrate Bike to Work Month

The table below shows the estimated GHG reductions that result from employee commute programs administered or supported by Caltrans.

Table 20. Annual CO₂ Emission Reductions Associated with Employee Commute Programs, 2017

Mode	Number of Participants	GHG Reduced (tons CO ₂)
Transit	2,570	3,754
Carpool	1,041	1,829
Vanpool	455	1,207
Bicycle	277	255
Total	4,342	7,175

Source: Calculations by ICF using employee commute data gathered from Districts. GHG reduction calculations follow the methods described in Caltrans Activities to Reduce GHG emissions, 2013, with updated emission factors.

Even though robust transit options for commuters are largely limited to large urban areas (i.e., Headquarters, District 4, and District 7), transit makes up the largest share of alternative commute trips and associated GHG reductions. The reductions associated with carpool and vanpool are roughly half that of transit. A small portion of employees bike to work, with about half of the reported bicyclists commuting to Headquarters. Note that District 11 did not report commute data, which could represent significant additional reductions given the variety of transportation options in the San Diego area and the proximity of the District 11 office to a light rail stop.

Additional programs and incentives could further increase transit use, ridesharing, and bicycling among Caltrans employees. For example, in some Districts, the Department could consider offering subsidized or free bikeshare memberships to encourage bicycling. The District of Columbia Department of Transportation and some federal agencies in Washington D.C. offer this benefit to employees.¹¹²

Guaranteed Ride Home programs encourage non-vehicle commute by providing a safety net for employees who may be concerned about getting home quickly in case of an emergency, late at night, or when transit may not be running. While some Caltrans offices offer this service through partnerships with transportation management associations (TMAs), such programs could be expanded Department-wide. The Washington State DOT administers a Guaranteed Ride Home program for WSDOT employees, offering up to eight taxi rides for employees from work to home per year. WSDOT contracts with taxi companies and manages a hotline to coordinate rides.¹¹³

Location Efficiency

Location efficiency refers a combination of land use and transportation system characteristics that provide efficient access to destinations via a multimodal transportation system. Areas with high location efficiency typically are adjacent to bicycle and pedestrian infrastructure and are accessible by frequent transit service. In addition, neighborhood characteristics, such as density, mixed land uses, and equitable access among income groups are also important features that encourage non-vehicle travel.

Caltrans can help to GHG emissions associated with employee commuting by ensuring that any new office facilities are located in areas with high location efficiency. In 2016, the California Strategic Growth Council adopted the *Resolution on Location Efficiency in Strategic Growth Council Agency Leased Facilities*.¹¹⁴ Under this resolution, the Council set a goal to increase the average location efficiency score of new leased facilities for infill-compatible uses among Strategic Growth Council agencies. Location efficiency scores come from the US General Services Administration's Smart Location Calculator, which uses a scale of 0-100 based on a number of accessibility factors.¹¹⁵ Factors include accessibility via transit, walking and bicycling, land use mix, regional mode share, retail, residential, and office density, intersection density and street design, and vehicle ownership, among others. Locations with high location efficiency scores are likely to exhibit less vehicle travel and emissions. Each score is relative to its own metro region. This means that high scoring locations in metropolitan areas with lower overall accessibility may generate more VMT than lower scoring locations in metropolitan areas with higher overall accessibility.

For example, the Caltrans District 4 office has a location efficiency score of 81. This office has a relatively high numbers of transit and bicycle commutes, likely in part due to transit access and bicycle infrastructure, and also a high number of carpoolers. District 1 has fewer transit options but has a

¹¹² DC Government Department of Human Resources website. <https://dchr.dc.gov/page/capital-bikeshare-membership-discount>

¹¹³ Washington State Agencies Commute Trip Reduction website. www.ctr.wa.gov/employees/saferide.htm

¹¹⁴ State of California Green Buildings website. Retrieved from: <https://green.ca.gov/buildings/resources/les/>

¹¹⁵ Smart Location Calculator. Retrieved from: <https://www.slc.gsa.gov/slc/#>

location efficiency score of 89, higher than District 4, because the score compares characteristics of the office location to other locations in the Eureka metropolitan area. Again, these scores cannot be compared across regions; they represent the location efficiency relative to their own metropolitan region. The table below shows the location efficiency score of each Caltrans District headquarters office.

Table 21. Location Efficiency Score of Caltrans District Offices

District	Address	Location Efficiency Score
HQ	1120 N Street, Sacramento CA	98
1	1656 Union Street, Eureka CA	89
2	1657 Riverside Drive, Redding CA	75
3	703 B Street, Marysville CA	79
4	111 Grand Avenue, Oakland CA	81
5	50 Higuera Street , San Luis Obispo CA	75
6	1352 W. Olive Avenue, Fresno CA	81
6	2015 E Shields, Fresno CA	89
6	855 M Street, Fresno CA	94
7	100 S. Main Street, Los Angeles CA	88
8	464 West 4th Street, San Bernardino CA	73
9	500 South Main Street, Bishop CA	89
10	1976 Dr. M.L.K. Jr Blvd, Stockton, CA	65
11	4050 Taylor Street, San Diego CA	64
12 (former location)	3347 Michelson Drive, Irvine CA	57
12	1750 E 4th St, Santa Ana, CA	69

Source: ICF calculation using US General Services Administration’s Smart Location Calculator

While Caltrans has not leased any new properties since the time the directive was issued through the Strategic Growth Council’s initial reporting period, Caltrans can encourage employee travel by modes with low carbon intensity by ensuring that any new facilities (owned or leased) be located in areas with high location efficiency.

5 Summary

This report documents the numerous ways that Caltrans is helping to reduce GHG emissions through its planning, programming, design, construction, maintenance, traffic operations, and administrative activities, and also identifies opportunities for Caltrans to further contribute to GHG reduction efforts.

By far the greatest opportunities for Caltrans to reduce GHG emissions relate to influencing vehicle travel on the State Highway System. Vehicle travel on the State Highway System produces roughly 89 million metric tons of GHG emissions annually, or 21 percent of California's total GHG inventory. The primary opportunities for Caltrans to reduce these emissions are:

- **Limit demand for travel by SOVs.** Caltrans can limit the demand for SOV travel that accounts for the bulk of transportation GHG emission in the state by avoiding highway capacity expansion projects that induce new vehicle travel. Adding highway capacity in urbanized areas, including HOV and express lanes, often will induce new vehicle travel, limiting long-term congestion reduction benefits and leading to increased VMT and potentially higher GHG emissions. As an alternative to capacity expansion, roadway pricing provides a mechanism for reducing the demand for SOV travel and improving network performance, although Federal law currently prohibits Caltrans from imposing tolls on Interstate highway general purpose lanes.
- **Support transportation system improvements that to provide alternatives to SOV travel.** Caltrans can lead the development of new facilities for bicyclists, pedestrians, and carpoolers. For example, Caltrans develops bicycle lanes on state highways and constructs park-and-ride lots that encourage ridesharing. Caltrans can also support demand management strategies that are implemented by other organizations. For example, Caltrans supports public transit service by enabling bus operations on the highway shoulder where possible and facilitates exceptions to highway design standards that support local complete streets efforts. By promoting mode shift, these activities have been demonstrated to reduce GHG emissions, although the magnitude of GHG impacts is typically small as compared to those from vehicles on the highway system.

Caltrans highway construction and maintenance projects result in substantial GHG emissions, particularly when considering the emissions associated with the extraction, processing, and transport of materials such as concrete, asphalt, and aggregates. A variety of strategies are available to reduce emissions from paving and other highway construction and maintenance projects, including use of reclaimed asphalt pavement and use of supplemental cementitious materials (such as fly ash) in concrete. Because of the large volume of roadway construction materials used on Caltrans projects, and Caltrans influence among partner agencies and the pavement and road construction industry, the Department can achieve significant GHG reductions through its design and construction process specifications. However, the impact of pavement choices on GHG emissions is complex, and any decisions to promote pavement or other materials strategies for GHG reduction should be informed by experts in the field of LCA research.

Caltrans is directly responsible for approximately 120,000 tons of CO₂-equivalent emissions per year due to its own internal operations, which is about 0.03 percent of California's total statewide GHG emission

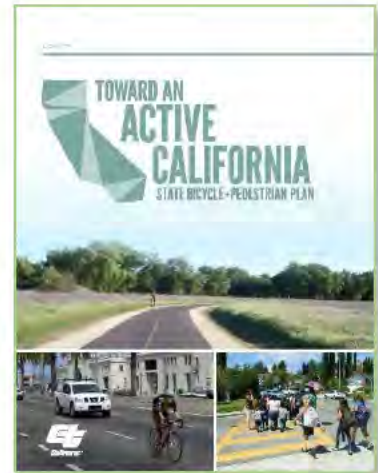
inventory. Sources of these emissions include the fuel used to power Caltrans vehicle fleet, energy used for lighting on the State Highway System, and energy used in Caltrans buildings. The internal operations emissions under direct Caltrans control have declined 45 percent since 2010, and are expected to continue to decline as more energy efficiency measures are implemented, low carbon vehicle fuels gain market share, and California's grid electricity becomes cleaner. Opportunities to further reduce Caltrans internal operations emissions include increasing renewable energy generation by installing solar power projects in the highway right-of-way, purchasing fuels with lower carbon intensities for Caltrans fleet such as renewable natural gas, and expanding programs and incentives to increase transit use, ridesharing, and bicycling for Caltrans employee commuting.

Appendix A

Caltrans Modal Plans

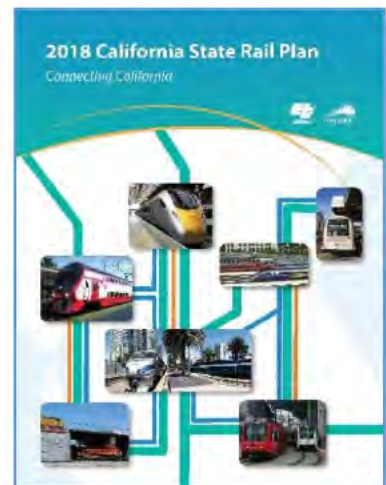
Toward an Active California: State Bicycle + Pedestrian Plan

In 2017 Caltrans released *Toward an Active California: State Bicycle + Pedestrian Plan*, which describes Caltrans' overall approach for non-motorized transportation facilities. The plan describes statewide transportation system goals that can be supported by the development of bicycle and pedestrian facilities, such as improved mobility and social equity, and strategies for achieving those goals. To the extent they shift travel from motorized modes, measures that encourage bicycling and walking have clear GHG benefits, as these modes have no direct GHG emissions. An appendix to the plan provides an estimate the environmental benefits, including CO₂ emissions reduced, of achieving the active transportation mode share targets established in the Strategic Management Plan. The study estimates 2.2 million more bicycling trips and 11.4 million more walk trips; some factor of these would replace motorized trips, resulting in a reduction of 1.2 million tons of CO₂ per year. This equates to roughly 1 percent of the state's current annual CO₂ emissions from passenger vehicles.



California State Rail Plan: Connecting California

The *California State Rail Plan* was released in September 2018. The plan includes an expansive overview of rail system in California, including the State's goals for the rail system, policies driving rail service, and funding and financing. Rail investments can impact both passengers and freight movement. The plan envisions faster service and improved connectivity across the entire transportation network as a result of the rail plan elements. Improvements in rail can result in GHG emission reductions by shifting both passenger travel and freight shipping from on-road vehicles and from improvements in rail locomotives, including the electrification of rail lines. According to the plan documentation, there are currently 115,000 intercity rail passenger trips per day; in 2040, the plan forecasts 151,000 daily trips without the projects outlined in the plan to improve capacity and operations and over 1.3 million daily passenger trips if the 2040 plan is fully implemented as envisioned. While improvements in freight rail and grade crossings can encourage shifting of freight shipments from on-road trucks to rail and reduce congestion for all vehicles on shared roadways, the plan does not include these potential shifts in its emission benefit estimates. The emissions analysis instead focuses on the shift from personal vehicles to passenger rail. If the elements of the rail plan are not implemented,



the plan estimates that on-road vehicles and locomotives will emit over 416,000 tons of CO₂ per day in 2040; with the plan fully implemented, CO₂ emissions will be reduced by 12,778 tons per day.

California Statewide Transit Strategic Plan

The *Statewide Transit Strategic Plan* consists of three separate reports from 2012: an assessment of baseline transit conditions and trends; a summary of outcomes from stakeholder engagement activities; and recommendations for Caltrans Division of Mass Transportation.

Caltrans is in the process of updating the transit plan, with new baseline and stakeholder engagement reports released in 2017 and a new set of recommendations scheduled to be released in 2018. Unlike newer modal plans (and the new recommendations report not yet released) which discuss efforts and strategies for all relevant state and local government agencies, the 2012 transit plan focuses narrowly on efforts that Caltrans Division of Mass Transportation could implement.

These recommendations include: sponsoring vanpools; supporting station vans to provide last-mile trips; supporting bus-only lanes; allowing buses on shoulders of controlled access highways; and supporting local efforts to implement congestion pricing mechanisms. Statewide strategies and investments in public transportation systems have the potential to reduce VMT by encouraging travelers to replace private vehicle trips with transit trips, especially when considering transit systems have a key role in network connectivity which can improve travel across the broader multimodal transportation system. The 2012 transit plan does not include estimates of VMT or GHG emission reductions related to its recommendations.



California Freight Mobility Plan

The 2014 *California Freight Mobility Plan* describes the state's long-range plan for a sustainable freight transportation system. The plan recognizes the threat that GHG emissions impose and includes objectives for environmental stewardship and congestion relief and describes general strategies to achieve those goals. The plan describes the many local (port) and state programs that are in action to reduce emissions related to maritime, rail, on-road trucking, and air freight movement, and the associated reductions in criteria pollutant emissions. The plan describes the many local (port) and state programs that are in action to reduce emissions related to maritime, rail, on-road trucking, and air freight movement, and the associated reductions in criteria pollutant emissions. The Freight Mobility Plan does not include an estimate of the GHG impacts of the plan. However, the plan includes a list of potential projects, both financially constrained and unconstrained, in an appendix.



Planning Grants

Sustainable Communities Grants

Sustainable Communities Grants are intended to help local and regional agencies achieve or improve GHG reductions through their multimodal transportation and land use planning efforts. SB1 provides \$250 over ten years, or \$25 million per year, for this grant program, with half being allocated to competitive grants and the other half through formula grants. For fiscal year 2017-2018, Caltrans received 127 applications requesting a total of \$34.1 million in the for competitive grant program. Caltrans awarded 43 grants, totaling \$12.4 million, and work has started on those projects. Under the formula program, 13 MPOs were awarded a share of the grant funding as they met minimum program requirements, which include having a Regional Transportation Plan Sustainable Communities Strategy (RTP-SCS) in place and meeting environmental justice standards. As of May 2018, Caltrans had awarded \$12.8 million for 47 competitive grants and \$12.5 million for 17 MPOs.

Adaptation Planning Grants

Adaptation Planning Grants are awarded to agencies to support local and regional planning to prepare for and reduce the impacts associated with climate change. This is a competitive grant program that is funded for \$20 million split over three years (FY 2017/2018 through FY 2019/2020). Grant projects should identify climate risks to multimodal transportation infrastructure, vulnerabilities, and actions to mitigate vulnerabilities, in addition to developing potential designs, cost estimates, and cost analyses. Furthermore, these grant projects must involve partnerships across sectors and jurisdictions and identify co-benefits associated with adaptation efforts (e.g., air quality, public health, natural environment, economic, and equity improvements). Caltrans awarded 21 grants worth \$7 million in fiscal year 2017-2018 and 22 grants for \$7 million in fiscal year 2018-2019.

Strategic Partnerships Grants

Strategic Partnerships Grants are awarded to MPOs and Regional Transportation Planning Agencies (RTPAs) to encourage engagement of local and regional planning agencies with Caltrans to ultimately improve the State Highway System. Projects have included studies of corridors and multimodal or intermodal facilities; state-level research and modeling; and sustainable freight planning. The grant funding is provided by FHWA (FHWA State Planning and Research, Part I) and administered by Caltrans. In fiscal year 2017-2018, \$1.5 million was available for the program; \$4.3 million is available for fiscal year 2018-2019, with awards ranging from \$100,000 to \$500,000. Also in FY 2018/2019, the program newly directs funding for transit planning projects to address multimodal transportation gaps.

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Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel budget

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Keywords: transportation, energy, electrification, automation, climate change, decarbonization

Abstract

The transportation sector is at the beginning of a transition represented by electrification, shared mobility, and automation, which could lead to either increases or decreases in total travel and energy use. Understanding the factors enabling deep decarbonization of the passenger vehicle sector is essential for planning the required infrastructure investments and technology adoption policies. We examine the requirements for meeting carbon reduction targets of 80% and higher for passenger vehicle transport in the United States (US) by midcentury under uncertainty. We model the changes needed in vehicle electrification, electricity carbon intensity, and travel demand. Since growth in fleet penetration of electric vehicles (EVs) is constrained by fleet stock turnover, we estimate the EV penetration rates needed to meet climate targets. We find for a base case level of passenger vehicle travel, midcentury deep decarbonization of US passenger transport is conditional on reducing the electricity generation carbon intensity to close to zero along with electrification of about 67% or 84% of vehicle travel to meet decarbonization targets of 80% or 90%, respectively. Higher electricity generation carbon intensity and degraded EV fuel economy due to automation would require higher levels of fleet electrification and/or further constrain the total vehicle travel allowable. Transportation deep decarbonization not only depends on electricity decarbonization, but also has a total travel budget, representing a maximum total vehicle travel threshold that still enables meeting a midcentury climate target. This makes encouraging ride sharing, reducing total vehicle travel, and increasing fuel economy in both human-driven and future automated vehicles increasingly important to deep decarbonization.

1. Introduction

Deep decarbonization of human activities is necessary to increase the likelihood of avoiding global temperature increases of greater than 1.5 or 2 °C in this century [1]. The Intergovernmental Panel on Climate Change (IPCC) examined emissions scenarios likely to maintain warming below 2 °C in the 21st century relative to pre-industrial levels. These scenarios are characterized by global anthropogenic greenhouse gas (GHG) emissions reductions of 40%–70% by midcentury compared to 2010 [2]. More recently, the IPCC concluded that reaching net zero CO₂ emissions globally around 2050 would likely be required for limiting global warming

to 1.5 °C above pre-industrial levels [3]. Because of traditionally long infrastructure turnover timelines, the committed emissions from existing energy and transportation infrastructure across sectors would jeopardize meeting this 1.5 °C climate target, without accelerated policy efforts [4]. Deeply decarbonizing the transport sector is an essential element in any climate stabilization scenario, and requires a major transition in energy use, vehicles, and enabling infrastructure [5]. While there is some progress in reducing emissions from electricity generation, emissions from transportation, representing 23% of global energy-related CO₂ emissions, continue to grow [2, 6]. The transportation sector is at the beginning of an age of ‘advanced mobility’ represented by

electrification, advanced mobility, and automation [7]. Electric vehicle (EV) cost declines, IT-enabled vehicle ridesourcing, public and personal transport innovations, and partial and full personal vehicle automation systems will fundamentally change transportation. These technologies could improve efficiency, affordability, mobility, and accessibility, however the impacts of these technologies on total travel, energy use, and emissions remain uncertain [8–14]. Thus, any decline of transportation emissions is dependent on use, deployment, and importantly, electricity emissions. Still, transportation deep decarbonization by midcentury under the uncertainty that advanced mobility brings requires policy actions, and identifying robust pathways to achieving climate policy objectives.

The US transport sector represents about 33% of total US CO₂ emissions, approximately 1800 million metric tons [15]. Light-duty vehicles (LDV) comprised of passenger cars and light trucks are responsible for about 60% of these transport emissions [15]. The US Energy Information Administration (EIA) projects that due to increases in vehicle efficiency and about a 12% penetration of EVs, mostly Battery Electric Vehicles (BEVs), total US transportation sector CO₂ emissions in 2050 will be slightly less than current levels, despite a total passenger vehicle travel increase [16]. This is due to the improved fleet average fuel economy which EIA projects to increase by more than 60% by 2050, driven by the penetration of alternative fuel vehicles and overall technology advancement [16]. While these projections do not consider the impact of future policies and may underestimate technology advancement, achieving deep US GHG emissions reductions by midcentury will still require much larger changes in the transportation sector [17, 18].

As the LDV fleet represents the majority of transport demand, energy use, and emissions [16], potential modal shifts away from personal vehicles to public and active transport should be one of the strategies for transport GHG reduction. However, the growth of shared mobility through ridesourcing and vehicle automation may increase public transit use through providing last and first mile accessibility [19], or result in a modal shift from public transport to passenger vehicles [12], or a combination of these effects. Therefore, a robust strategy for deep decarbonization under technology and behavioral uncertainty must address LDVs as a primary component. While there are aggressive transition projections to achieve GHG reductions in the LDV sector [20–27], the incumbency of vehicle and refueling technologies as well as the time required for fleet compositional changes can constrain options and strategies. Potential alternative fuels include hydrogen made from low-carbon sources used in fuel cell vehicles, advanced low-impact biofuels, and carbon neutral hydrocarbons (CNHCs) that re-use CO₂ extracted

from the atmosphere via biomass use or direct air capture and hydrogen from carbon-free sources to create to a useable fuel. All of these fuels are under development with known and unknown challenges to overcome that include cost, infrastructure, land use, and uncertainty in life cycle emissions [28–34]. What remains is electricity, which has the ability to use a variety of existing low-carbon technologies for generation and distribution such as wind, solar, hydro, and nuclear, providing a diverse portfolio of clean energy sources that could ensure a reliable and low cost transition to a near-zero emissions grid [35]. It is therefore, the independent pace and scale of both vehicle electrification and electricity decarbonization that will ultimately determine the energy and environmental outcomes of the transportation sector through 2050.

In 2018, the global EV stock exceeded 5.1 million, and close to 2 million new EVs were sold worldwide [36]. But EVs remain a small percentage of new sales (2.2%) and the total fleet of vehicles (0.43%) [36, 37]. China, the US, and Europe comprised over 90% of global EV stock [36]. Policy incentives can increase the pace of a transition to EVs. In 2017, China announced a policy to phase out production and sales of conventional fossil fuel-powered vehicles [38, 39]. This policy in the world's second largest economy and largest auto market has considerable implications for the global oil market, the automobile industry, and the rate of EV technology penetration and advancement. India and many European countries such as France, the United Kingdom, and others have discussed setting targets to phase out sales of gasoline and diesel vehicles [39].

Along with vehicle electrification, advanced mobility services represented by the emergence of individual and shared ridesourcing offered by Transportation Network Companies (TNCs) such as Uber and Lyft, as well as potential vehicle automation, could reshape passenger transport [7, 12]. TNC options could increase ride sharing, but also could increase total vehicle kilometers traveled (VKT) (or vehicle miles traveled (VMT)) or shift demand away from public transit [12, 40]. Partial and full vehicle automation could offer synergies with electrification, and could either increase or decrease fuel economy, vehicle travel, and energy use, depending on how these vehicles are deployed and used [10, 11, 41–43]. However, coupling an increase in shared ridesourcing with electrification and optimizing automation strategies to reduce vehicle travel and energy use could increase the likelihood of meeting climate mitigation targets [7]. LDV transport deep decarbonization under advanced mobility will depend in part on this total travel demand, which represents a mitigation frontier of what is possible in the next few decades.

It is critical to characterize and manage uncertainties across the multiple facets of the

electricity and transport systems when analyzing decarbonization pathways [44, 45]. Here we assess the bounds of EV adoption, the pace of electricity decarbonization, and total travel demand for decarbonizing the US LDV sector to achieve GHG emissions reduction targets by 2050. For the base case, we use an 80% reduction by 2050 compared to emissions in the reference year of 2005—a common midcentury decarbonization benchmark target [17, 45]. We also examine a 90% reduction target to understand the sensitivity of decarbonization requirements to this policy goal. To enable comparisons with national projections, inventories, and other studies, we only include direct CO₂ emissions and exclude life cycle impacts [15, 16]. We include CO₂ emissions from electric power generation units for the EVs and fuel use for internal combustion engines, but not upstream impacts from producing fuels, vehicles, and batteries, which are assessed in other studies and introduce additional model and scenario uncertainties [46, 47], although we comment on the life cycle implications in the discussion section. Similar to a robust decision making approach [48], we assess the conditions that enable meeting a mitigation target (e.g. an 80% reduction in 2050) for the passenger vehicle transportation sector by understanding the factors affecting deep decarbonization. This enables public and private stakeholders to make choices on the required enabling infrastructure, investments, policies, and technologies.

2. Method and data

We considered the 1134 million metric tons of CO₂ from 2005 US LDV travel as a reference value [15]. Reducing the 2005 value by 80% results an emissions target of 227 million metric tons in 2050 [15], and we use 250 million metric tons to simplify the analysis and visualization. For a more aggressive target of 90% reduction, the target would be 113 million metric tons, and we use 120 million metric tons as an approximate target. Our results can also assess reaching a 100% reduction target, which requires a zero GHG electricity sector and full vehicle electrification. However, it is important to stakeholders to understand the

implications of the 80% and 90% reduction targets to enable policy planning under uncertainty.

In order to characterize the requirements to reduce US LDV CO₂ to 250 and 120 million metric tons in 2050, we model: the share of LDV travel from EVs, the carbon intensity of electricity, the fuel economy of EVs and ICEVs, and the total travel from LDVs using equation (1). Using this equation with EIA reference case projections resulted in comparable CO₂ emissions to EIA's (See Supporting Information (SI) tables S1–S7 and calculations). Ranges of possible values for these variables are used to find combinations that meet the target emissions in 2050. The US electricity carbon intensity (CI) has decreased by about 30% since 2001 and is expected to further decrease with a continued shift from coal to natural gas and increased renewables [49, 50]. The EIA's projected vehicle travel in 2050 is about 3.3 trillion miles (or 5.28 trillion km) [16]. In this paper, we use VMT instead of VKT in order to be consistent with US regulatory agency reporting. All the metrics and their associated units in the analysis are shown in the SI table S1, as well as the calculation of the targets and the current and historical levels of annual LDV CO₂ (table S2) and parameters used (table S3).

Hybrid electric, diesel, and ethanol powered vehicles were modeled as part of the ICEV fleet in addition to conventional gasolines, and their weighted average fuel economy was estimated using EIA's projected 2050 composition of the ICEV fleet [16]. We refer exclusively to BEVs as EVs since they are projected to be the major electric vehicle technology in 2050 (more than 80% of the EV fleet) with the remaining 20% from Plug-in Hybrid Electric Vehicles (PHEVs), hence we provide a conservative estimate of the required travel electrification [16]. We considered ranges for EV adoption represented as the EV share of LDV travel ranging from 0% to 100%. We also considered the charging, transmission and distribution losses in the CO₂ emissions estimation. We assumed an 88% charging efficiency to account for the plug-to-wheels losses [51, 52], and approximately 4.5% for the losses in the power transmission and distribution system [53].

$$TotalLDVCO_2(kg) = \frac{\alpha \times (1 + L) \times totalVKT \times EV_CI \left(\frac{kg}{kWh} \right)}{EV_FE \left(\frac{km}{kWh} \right)} + \frac{(1 - \alpha) \times totalVKT \times ICEV_CI \left(\frac{kg}{l} \right)}{ICEV_FE \left(\frac{km}{l} \right)} \quad (1)$$

where α represents the fraction of the LDV travel by EVs, and $(1-\alpha)$ represents the fraction that is traveled by ICEVs. Total VKT represents the total km traveled by the LDVs in the US for one year. The loss factor (L)

used was calculated as $(L = 0.12 + 0.045)$ to include the charging and grid inefficiencies.

The EIA projects a 2050 US net generated electricity carbon intensity of 329 g CO₂ kWh⁻¹, and the 2018 level was 428 g CO₂ kWh⁻¹ [16, 50].

This AEO-projected electricity carbon intensity is incompatible with the climate targets under consideration. We focus on lower levels of electricity net generation carbon intensity representing the US national average electricity generation mix, which would be associated with charging EVs in 2050. Urbanization and driving patterns vary by region, as do electricity emissions which also vary by season and time of day. Yet here we model the entire US to illustrate the scale of emissions reductions and fleet technology change required at the national level. EV charging initially represents new demand served by marginal generators. Yet electrifying the vast majority of LDV travel for deep decarbonization will require both the average and the marginal emissions of the generation fleet to be deeply decarbonized. If states such as California continue to make progress on vehicle electrification and electricity decarbonization ahead of other states, this provides some room for other states to increase efforts somewhat more slowly. However, what matters for climate policy is the total amount of CO₂ from the transportation sector, and an 80% or 90% or greater emissions reduction will require a substantial fleet and electricity grid transition across all regions.

The EV and ICEV fuel economy (FE) values represent the weighted average fuel economy of the technology fleet in a given year. The assumed fuel economy value for ICEVs is based on the base case projections of its technology mix (i.e. by blended gasoline, diesel, ethanol, and hybrid) of vehicles in the fleet from the Argonne National Laboratory VISION 2018 Model which uses the EIA's Annual Energy Outlook, as shown in SI table S4 [16, 54]. These fuel economy values are expressed in miles per gallon of gasoline equivalent (mpgge) (and converted to km/l) and represent the weighted average value of the vehicle measured fuel economy based on standardized test cycles. However, these laboratory-measured fuel economy values are generally higher than fuel economy observed in actual vehicle operations. Hence we used a road degradation factor for each technology to better capture real on-road fuel consumption [54]. We use a 2050 EV FE base case level of 6 miles kWh⁻¹ (9.67 km kWh⁻¹) given the ongoing and future technology improvement. We test the sensitivity of the results to this assumption by considering EV FE levels of 3 and 9 miles kWh⁻¹ (4.8 and 14.5 km kWh⁻¹, respectively) as shown in tables S8–S10.

The ICEV CI term is the weighted average combustion carbon intensity (emission factors) of the fuels burned by the ICEVs vehicles in the fleet. The emission factors for the liquid fuels such as gasoline and diesel were taken from the Environmental Protection Agency (EPA) and used to calculate the weighted average CI for ICEVs [55]. We assumed about 12% ethanol content by volume in the 2050 blended gasoline used by conventional cars and light trucks [54]. The EV carbon intensity here is the direct

CO₂ emissions of combustion of fuels for electricity generation.

The LDV survival curves for cars and light trucks from the Transportation Energy Data Book were used to estimate the lifetime of EVs and ICEVs entering the fleet [56]. Overall, our data source for this analysis was the EIA 2018 Annual Energy Outlook (AEO) [16]. The base case values for the projected LDV travel demand (VMT) and future annual sales were all taken from the AEO. Also, the projected base case EV sales and fleet stock from AEO and VISION were used in modeling the fleet turnover [16, 54].

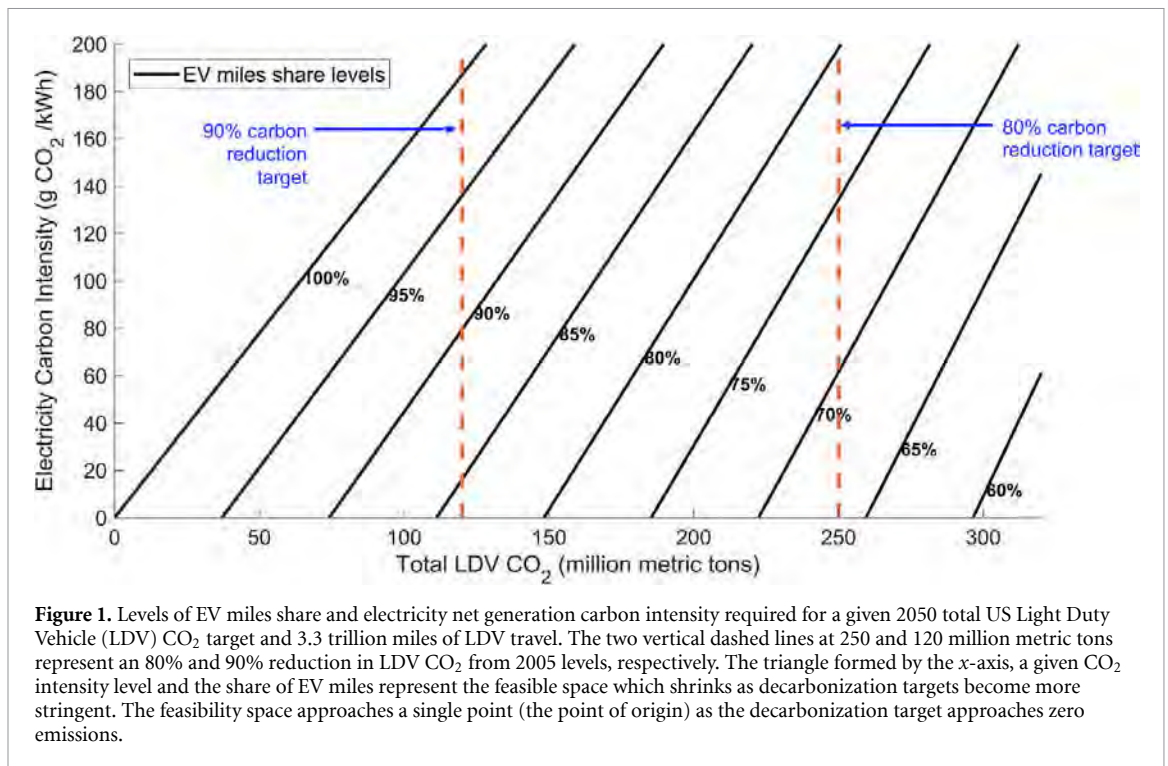
3. Results and discussion

3.1. Meeting a climate mitigation target in transportation

We show in figure 1 a range of possible total US LDV CO₂ emissions in 2050 ranging from zero to 300 million metric tons to illustrate the sensitivity of the results to different decarbonization policy targets. Figure 1 shows the required electricity net generation carbon intensity and EV travel share of the total US LDV miles to meet a given total CO₂ emissions target in 2050. The targets of 80% and 90% reduction from 2005 levels are indicated by the two vertical dashed lines. We find that reducing LDV CO₂ emissions to 250 million metric tons is attainable if the electricity carbon intensity is reduced to zero and about 67% of LDV travel is electrified. For the 90% reduction target, about 84% travel electrification would be needed. These targets could also be met with somewhat higher electricity carbon intensity but would require more electrification of LDV miles. The feasibility space for this trade off shrinks as the climate target becomes more stringent. Ultimately, meeting the IPCC target of net zero CO₂ emissions [3] for LDVs implies zero carbon electricity and full electrification, hence reducing the feasibility space to a single point. Therefore, decarbonizing electricity is the major constraint and opportunity for meeting climate targets through transportation electrification. The 2050 EV fleet average fuel economy assumed in figure 1 is 6 miles kWh⁻¹ given potential future improvements in efficiency, battery specific energy, lighter vehicle weight, and other improvements. However, with the potential additional energy required for vehicle automation (e.g. computing, sensing, additional weight) [43], the EV fleet average FE could be lower. Figure S1 shows how figure 1 would change if the 2050 EV fleet average FE is reduced to 3 miles/kWh.

3.2. The travel budget frontier

Next, we examine the effect of the travel budget frontier, which is the maximum total miles that can be traveled without exceeding the targeted maximum emissions, for a given EV share and electricity carbon intensity. Figure 2 shows the space of the possible combinations of the electricity carbon intensity and



travel electrification that meet the 80% target for different levels of LDV total VMT. Figure S2 shows that the more aggressive 90% target results in increasing the required electricity decarbonization and travel electrification. We emphasize that for a given EV miles share, reducing the electricity carbon intensity stretches the travel budget and increases the maximum total VMT that can be traveled while meeting the target. Behavioral changes can lead to travel demand reductions, but given historical trends and current projections [16, 57] it is prudent to consider cases where total demand does not fall. Assuming no travel demand reduction, there is only a narrow region of EV miles and electricity carbon intensity combinations that can meet the climate target. Further decarbonization of the electric power sector could increase the travel budget or reduce the travel electrification requirement. These findings highlight the window of feasible conditions to meet LDV decarbonization targets, when constrained by the total travel demand. For example, if automation or other factors increase total LDV travel to 4 trillion miles, the minimum EV miles share would increase by about one fifth.

We further examined the effect of an upper limit of 9 miles kWh⁻¹ for EV FE, reflecting a scenario when potential operational effects of connected automated vehicles (e.g. eco-driving, platooning, and intersection connectivity) coupled with improved batteries enhance the average fuel economy of EVs [43]. As tables S8-S10 show, improved FE of EVs, and more importantly limiting any total travel increase (through means of modal shift and shared mobility), hedge against any shortfall from electricity not being

able to achieve zero GHGs by 2050. While the impact of EV FE on the required travel electrification and total emissions becomes irrelevant with zero carbon electricity, improved ICEV FE (50 mpg) can considerably reduce the minimum required EV miles share as shown in SI figures S3 and S4.

There are opportunities to reduce total VMT and associated emissions while maintaining mobility and passenger miles traveled (PMT). These opportunities include shared traditional or automated ridesourcing, carpooling, and lower impact modes such as transit, bicycles, scooters and walking [8, 11–13, 60]. If VMT is reduced through mode shifting and advanced mobility approaches, the possibility frontier of meeting the carbon reduction target expands, and fewer EV miles are required. However, the opposite would occur if advanced mobility technologies result in increased total VMT. For example, reducing VMT to 2 trillion miles in 2050 would require a minimum of 45% EV travel, while increasing VMT to 4 trillion miles results in minimum of 73% EV travel to meet the 80% target as shown in figure 2.

Because transportation CO₂ emissions are directly coupled to total distance traveled, figure 2 addresses the feasibility space for meeting the climate target through decreased VMT, whether through demand reduction (less travel), a shift to transit or other modes, or increased ride sharing (i.e. increased PMT). The long-term historical trends in the US could continue and traditional privately-owned LDV travel could dominate passenger travel while public transit remains a small portion of passenger travel. Previous work also expects a limited contribution to emission reductions from activity reduction and

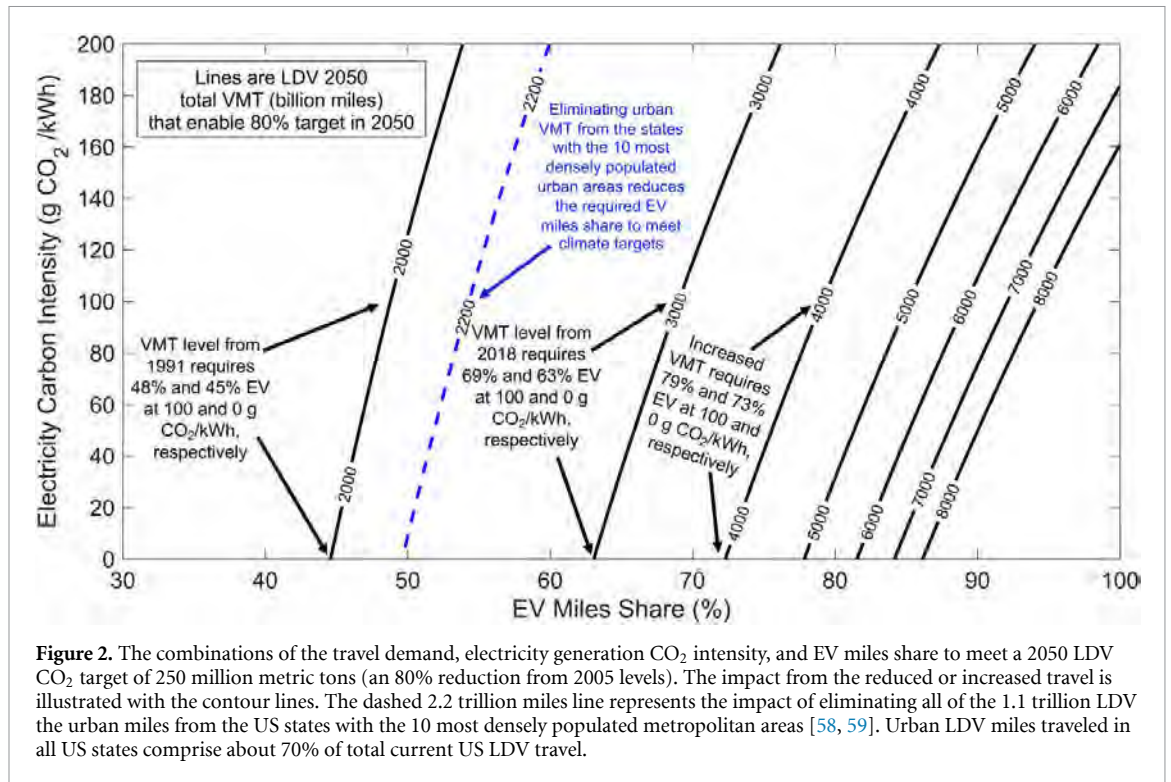


Figure 2. The combinations of the travel demand, electricity generation CO₂ intensity, and EV miles share to meet a 2050 LDV CO₂ target of 250 million metric tons (an 80% reduction from 2005 levels). The impact of the reduced or increased travel is illustrated with the contour lines. The dashed 2.2 trillion miles line represents the impact of eliminating all of the 1.1 trillion LDV the urban miles from the US states with the 10 most densely populated metropolitan areas [58, 59]. Urban LDV miles traveled in all US states comprise about 70% of total current US LDV travel.

modal shifting compared to fuel switching and further enhancements in energy efficiency [61, 62].

However, there is an opportunity to reduce and shift US urban LDV VMT, which comprises about 70% of total LDV VMT [58]. Further, urban VMT in the 13 states that have the top ten metropolitan areas in terms of population density, comprise almost one trillion VMT, or one-third of current US LDV VMT (See SI table S11–S13). In figure 2 we illustrate the impact of eliminating this urban VMT on the miles budget (further cases in figure S5), which can help bound the large improvements possible through VMT reduction. Synergy between public transport and shared, automated and connected vehicles, as well as bicycle, scooter, and pedestrian modes could provide mobility that enables PMT while reducing VMT. Shared EVs could be responsible for the last mile delivery of passengers to and from destinations and public transit stops. This means public transit and advanced mobility could serve some of the PMT demand and help meet a climate target under a total travel budget. Shifted miles from LDVs to public transit would still emit CO₂ emissions, whether shifted to rail, conventional buses, or electric buses (with electricity greater than 0 g GHG kWh⁻¹). The additional emissions from these shifted miles, when coupled with LDV emissions, will need to remain below the climate target to prevent emissions leakage from the LDV sector to the transit sector. This highlights the importance of a deeply decarbonized electricity system and electrification of transit modes in addition to electric LDVs. Yet, others did find that achieving large efficiency improvements and fuel

switching makes it possible to meet CO₂ emission reduction targets without large shifts to public and non-motorized transport [63].

Ride sharing impacts can be quantified through an increase in the load factor (LF) of trips, computed as person miles of travel per vehicle mile [64]. The load factor of the US LDV sector was estimated as the VMT weighted average of the load factors for cars and light trucks from the 2017 National Household Travel Survey (NHTS) [64]. The estimated average load factor is about 1.60 based on the recent NHTS, slightly lower than the 2009 level of 1.63 passengers averaged across VMT that was used in previous studies [11] (see SI table S14 for historical values of the load factor) [57, 64]. We note that the NHTS is a survey, and actual load factors may be different both spatially and temporally. To examine the effect of the load factor on meeting the emissions target level, we varied the load factor in our model from 1 to 2.5 as shown in figure 3. Using the EIA projected total VMT for 2050 and the current load factor of 1.60, the projected 2050 PMT would be about 5.3 trillion miles, while the current PMT is about 4.6 trillion miles [16, 57, 64]. We show three cases of high travel electrification and low electricity CI in figure 3. Other combinations including lower EV miles share (50%) and higher electricity CI (100 and 150 g CO₂ kWh⁻¹) are shown in SI figures S6 and S7. In all cases, as load factor increases, total VMT declines while PMT demand is met. Figure 3 shows increase ride sharing enabled by advanced mobility effectively reduces the minimum electricity decarbonization and fleet electrification requirements to meet a climate target. While ride

sharing could increase load factors, increased miles traveled by ridesourcing vehicles cruising between pickups or potentially automated vehicles traveling without a driver could decrease load factors and policies would be needed to reduce cruising and reduce the impact of decreased load factors [8].

3.3. The impact of fleet turnover timelines

The share of EVs in the LDV stock is affected by vehicle turnover, which is constrained by the penetration rate of the new vehicle technology as well as the rates and ages when vehicles exit the fleet (see table S16). New ICEVs that enter the stock will effectively delay a transition to a predominately electrified fleet unless the ICEVs exit early [65]. Stock turnover limitations and the timing of the new vehicle technology deployment will affect total emissions and fuel economy [65, 66]. Additionally, more automated features could likely reduce crashes [67, 68], and also extend vehicle lifetimes and stock turnover time as fewer vehicles retire due to crashes. Based on current LDV survival curves, it takes about three decades for all of the current LDV stock to retire [56]. We show the effect of EV penetration rate and stock turnover on meeting the climate target in figure 4. Using current projected rates of total vehicle sales and retirements, getting to a 100% EV fleet in 2050 requires all LDV sales to be only EVs starting in 2020. To find the year when all LDV sales need to be EVs to reach a specific stock share in 2050, we conservatively examine if the sales of EVs follow the EIA reference case trajectory and vary the starting year of 'only EV' sales until the target level is met. Since about 67% EVs is the minimum EV share that can meet the 80% climate target with decarbonized electricity without reducing projected baseline VMT (See figure 2), the lower bound case shows that 2040 is the latest possible year to start EV only sales and reach 67% EVs by 2050. For the 90% target, 2037 would be the starting year for selling only EVs to reach about 80% EVs in the fleet by 2050. We include additional hypothetical cases for the starting years that would be required to meet the Bloomberg New Energy Finance (BNEF) 2019 Electric Vehicle Outlook projection of 42% EVs in the US in 2040 [69]. These results also highlight the effect of the long tail of the vehicle survival curve, as it takes more time to retire the last 10% of the replaced technology [56] and the likely need for policies to induce the early retirement of petroleum-powered vehicles. Considering that new vehicles are on average driven more than older ones, the targeted travel share could be reached earlier than the physical stock share of vehicles. We used a typical annual miles by age distribution [54] for passenger cars and light trucks to calculate the difference between the miles share and stock share. As shown in figure S8, the miles share always exceeds the stock share and the annual difference can be up to 7%, depending on the number of years since starting to sell only EVs. This indicates the

benefit of early introduction of EVs at large market shares along with targeting higher utilization of EVs and designing policies to decrease the average annual miles driven by ICEVs.

Further, the high EV travel share required to meet the decarbonization target can be met with an even lower stock share through increasing the utilization of those vehicles beyond the annual miles of typical new vehicles. For example, a vehicle stock that has 50% EVs could have considerably greater than 50% of annual travel by EVs, if these EVs are highly utilized (i.e. driven more over the year than the annual LDV average). Figure S9 shows the impact of decoupling the EV travel share from the EV fleet share. High utilization of the EV fleet could effectively offset some of the fleet electrification requirement for meeting transport carbon reduction targets. Thus, vehicles with high utilization rates such as taxis, ridesourcing vehicles, and service fleets could be the early adopters of EVs during the transition and can accelerate the climate benefits, but this would require carefully designed policies such as additional subsidies for highly utilized EVs, EV-only access zones in urban areas, or other incentives for EV ride sharing or fees for single occupancy vehicles in urban zones.

The potential of high EV utilization through ride sharing despite low EV fleet share could also be constrained by the spatial and temporal distribution of passenger demand. It will likely require higher capacity EV shuttles in dense urban areas. In the suburbs, exurbs, and rural areas, the density of the demand is much lower, and trips are usually longer, thus reducing the opportunities for ride sharing and increasing the need for focused policies. Despite these challenges, given the increased urbanization and advancements in vehicle automation, and ride sharing optimization by TNCs, the urban areas might be able to partially offset limited ride sharing in other areas. Urban areas currently comprise about 70% of total miles of road transport in the US, which is dominated by LDVs [58, 73]. Therefore, urban areas need to achieve higher levels of electrification and ride sharing, to offset a potentially more limited transition in rural areas to reach the targeted load factor, EV travel share levels, and emissions reductions.

4. Pathways for passenger transport decarbonization

We presented the required changes to passenger vehicle travel demand, electricity generation carbon intensity, and vehicle travel electrification to meet 80% and 90% decarbonization targets for the US light-duty vehicle transport sector. Among these changes, deep decarbonization of electricity generation to near zero is required, unless a severe reduction in vehicle travel occurs. These actions need to be concurrent with achieving a considerably high EV

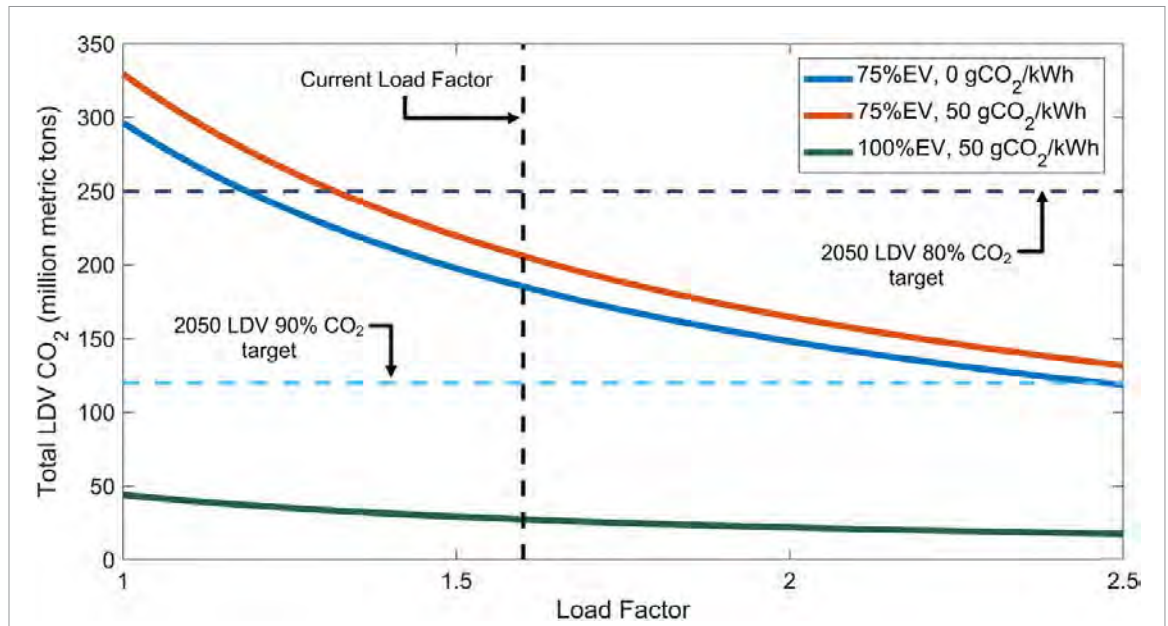


Figure 3. 2050 US LDV total CO₂ emissions as a function of the load factor for different levels of electrification and electricity generation carbon intensity (75% EV and 0 g CO₂ kWh⁻¹, 75% EV and 50 g CO₂ kWh⁻¹, 100% EV and 50 g CO₂ kWh⁻¹). The vertical line indicates the current load factor of 1.6 [57, 64]. The two horizontal dashed lines indicate the 80% and 90% midcentury decarbonization targets.

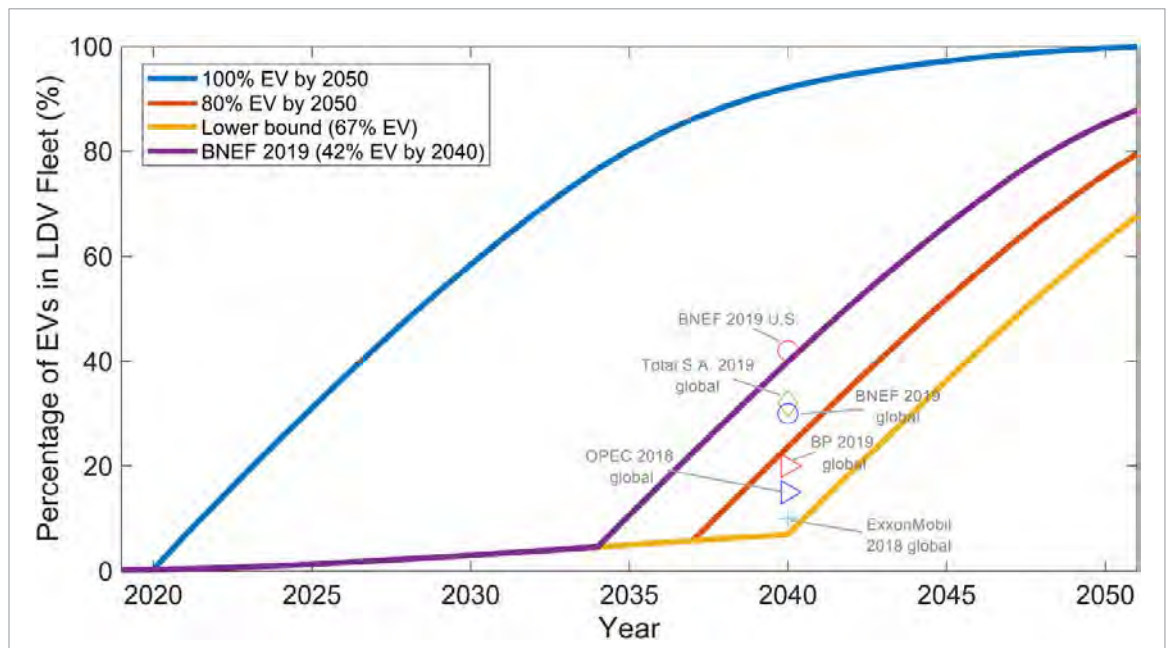


Figure 4. Projections of EV fleet share up to 2050 under different forecasts for the US and global LDV fleets. The lines represent the main cases considered in this analysis that are 100%, 80%, 67%, and the case matching the BNEF 2019 forecast of 42% EVs in US LDV by 2040 [69]. Points with US and global projections by others are shown for comparison [69–72].

travel share by 2050. With the current projected travel demand, the EV share of LDV travel cannot be lower than about 67% with a zero-carbon electricity grid to meet an 80% climate target in 2050. Therefore, deep decarbonization of the passenger transport sector during the transition to electrification and automation has a travel budget frontier, and the rates of electricity decarbonization, vehicle travel demand reductions, and travel electrification will determine success.

There are interconnected policy options that can increase the likelihood of a decarbonized passenger transportation sector, but require large scale implementation across several sectors. These policies can be a combination of subsidies to pull technologies to the market, research, development, demonstration, and deployment (RDD&D) to advance technology maturity, regulatory actions, and strategic infrastructure investments. First, rapidly transitioning the power sector to near zero emissions

is the foundation of any transportation decarbonization plan. There are myriad options and pathways to low-carbon electricity, but a national power sector carbon portfolio standard, coupled with carbon pricing, technology subsidies, energy efficiency efforts, and advanced technology RDD&D would speed up the transition.

Similarly for the passenger vehicle fleet, EV subsidies for purchases as well as RDD&D to enable technology breakthroughs in batteries, EV driving ranges, efficiencies, costs, and charging times could increase the market penetration of EVs. But this is unlikely to be sufficient under a time constraint. We show that turnover rate is a barrier to the vehicle fleet transitioning to EVs, due to the long tail of the age distribution of vehicles [56, 65]. The transition of highly utilized public and private fleets enables a higher EV travel share, and helps alleviate a slower fleet penetration rate that is constrained by time and market forces. But the vast majority of the more than 250 million passenger cars and SUVs in the US are owned by individuals, and a rapid transition will require accelerated policies encouraging older gasoline-powered vehicles to exit the fleet. Yet if conventional vehicles were scrapped before the end of their useful lives, there is an asset value for these vehicles and incentives would be needed. For example, a policy inspired by the former Car Allowance Rebate System ('Cash for Clunkers') program, potentially could convince ICEV owners to retire their older vehicles and purchase new EVs [26, 27], but would have a high cost. Over 700 000 relatively more fuel-efficient vehicles were sold under the CARS program [74] which resulted in rebate applications of \$2.88 billion submitted, under the \$3 billion budget provided by Congress to administer the program [75]. If new car sales were restricted to EVs starting in 2021, more than half the fleet would be electrified by 2030. But between 110 and 125 million ICEVs would still be on the road. Using the Cash for Clunkers average tax credit of about \$4200 [76] in 2010 and converting it to 2018 real dollars, the resulting estimated cost of scrapping these ICEVs in 2030 would be approximately \$550–600 billion. In addition, while the potential for existing partially-automated crash avoidance technologies to substantially reduce crashes is very important for safety [68], the average age of the vehicle fleet may continue to increase, further extending the time for existing cars to exit the fleet. EVs could have shorter service lives and/or be driven less as they age relative to similarly-aged ICEVs due to battery degradation. However, electrification could potentially extend the vehicle lifetime since many of the ICEV powertrain parts are no longer needed and primarily a battery replacement would be required to keep an EV in good operating condition. Improvements in the fuel economy of ICEVs as well as lightweight material bodies for all vehicles will help accelerate transport decarbonization, improved vehicle

fuel economy, electrification, and automation could lead to a rebound effect of increased travel due to lower fuel cost and increased convenience [11, 41, 77, 78]. Another potential impact on fuel economy could be the energy required to power the vehicle automation computing and sensing hardware as well as the additional weight [43]. The range of automated EVs could decline under automation and either enhanced battery capacity, increased vehicle efficiency, or an auxiliary energy source will be needed. However, when potential operational effects of connected automated vehicles are included (e.g. eco-driving, platooning, and intersection connectivity), fuel economy and emissions can be improved [43]. Further investigation of the interplay between these effects is a critical area of future work.

We note that we did not consider the life cycle impacts of producing fuels, batteries, vehicles, and infrastructure, which would result in GHG emissions from the industrial sector. Although estimates vary depending on assumptions, the production of an electric vehicle and its battery can generate about 7 to 10 metric tons of CO₂-eq, the production and distribution of gasoline generates an additional 2.66 kg CO₂-eq/gallon, and deploying even very low-carbon electricity infrastructure generates some GHGs [79]. Without both deeply decarbonizing the electricity and industrial sectors in the countries of the supply chains, the CO₂ impacts from producing the millions of EVs required for a large EV fleet would erode some of the climate benefits of an EV transition—requiring the US electrification and miles targets we outlined here to become more stringent. Even if vehicle and battery production GHGs dropped to 3 metric tons, every 10 million EVs sold would generate a GHG pulse of 30 million metric tons before they drove their first mile. This further highlights the need for cross-sectoral deep decarbonization efforts during a transition to EVs.

Finally, to increase the likelihood of achieving deep decarbonization of the passenger vehicle sector, the policies around the future of travel demand deserve more attention. Much of the structural space is determined locally with similar long-term timelines for change—land use and housing policy, walkability and community design, and the historical prioritization of parking. Federal policy can incentivize low-impact outcomes, as well as invest in expanded intercity and intracity electrified transit options, encourage congestion and road pricing, cycling, walking, and other methods to shift and reduce travel demand. Vehicle automation brings another layer of new challenges and opportunities to transportation decarbonization. Prioritizing electric, shared, and low-impact automation that leverages public transit enables the potential for maintaining or enhancing existing passenger mobility while reducing total vehicle miles traveled. Using prices, subsidies, or regulations, to encourage higher levels

of ride sharing and mode shifting to electrified public transit or other alternatives could extend the travel budget under decarbonization, and acts as a hedge in case LDV travel electrification and electric power decarbonization take longer than expected. However, a future where vehicle automation increases total travel and is not primarily electrified creates an environment where deep decarbonization becomes a lot more difficult. Electrification and automation will also change the spatial and temporal aspects of air pollutant emissions from vehicles and power plants, including across urban and rural areas. Continued research and focused policies are needed to ensure equity and environmental justice is improved during a low-carbon transportation transition.

While deep decarbonization of transport remains challenging, we have illustrated that possible pathways exist. A mix of targeted policy interventions to encourage the concomitant objectives of EV adoption, ride sharing and travel demand reduction, low-impact automation, and grid decarbonization increases the likelihood of meeting a deep decarbonization target for US passenger vehicle transport.

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