



COLORADO
Department of
Transportation

DATE: March 16, 2022

TO: Transportation Commission

FROM: Herman Stockinger, Deputy Director
Rebecca White, Director, Division of Transportation Development
Theresa Takushi, Greenhouse Gas Program Specialist

SUBJECT: Policy Directive Development - GHG Mitigation Measures &
Update on Compliance with GHG Pollution Reduction Standard

Purpose

This memo provides an update on the status of the development of the Policy Directive on GHG Emissions Mitigation Measures and an update on the progress towards compliance for the Greenhouse Gas (GHG) Pollution Reduction Standard for Transportation Planning.

Action

Discussion only.

Background

As outlined in the Rule, approved by the Commission in December: “By May 1, 2022, CDOT in consultation with the MPOs shall establish an ongoing administrative process and guidelines, through a public process, for selecting, measuring, confirming, verifying, and reporting GHG Mitigation Measures.” CDOT staff intend to bring a “Mitigations Policy Directive” to the Transportation Commission for approval at the April Commission meeting. This workshop, and a planned March workshop, are intended to share progress on the development of this important policy.” (Section 8.02.4)

Details

CDOT staff has been working with the Ad Hoc Agency Coordination Committee to develop the GHG Mitigation Policy Directive. Staff has also been continuously working

with the Metropolitan Planning Organizations and other stakeholders to discuss modeling and GHG Mitigation measures/methodology.

CDOT has made significant progress since the GHG Rule adoption, including modeling work, formation of the Interagency Coordination Team (IACT), and working with other states who are interested in learning more about the GHG Rule.

Additionally, with the leadership of the Ad Hoc Agency Coordination Team, CDOT has developed a Draft Policy Directive which provides an overarching framework which explains the process for determining, validating and tracking mitigations. A parallel Procedural Directive will list the specific mitigations and calculation procedures.

The four main sections of the Draft Policy Directive include:

1. Process for Establishing GHG Mitigation Measures
2. Proposing New GHG Mitigation Measures
3. Broad overview of scoring approach for GHG Mitigation Measures
4. Developing a Mitigation Action Plan & Status Report

Next Steps

Development of this Policy Directive is an important piece of implementing the GHG Rule. By October 1, 2022, CDOT must update their 10-Year Plan, DRCOG and NFRMPO will update their Regional Transportation Plans (RTP) pursuant to the requirements of the rule and demonstrate compliance with the GHG reduction levels. Each agency must submit a GHG Transportation Report to the Commission, demonstrating the emissions analysis for their regions and, if necessary, a Mitigation Action Plan which details mitigation measures used to help them meet their reduction levels.

Attachments

Slide presentation
Draft GHG Policy Directive

Version 4 - DRAFT
3/3/22

COLORADO DEPARTMENT OF TRANSPORTATION		<input checked="" type="checkbox"/> POLICY DIRECTIVE <input type="checkbox"/> PROCEDURAL DIRECTIVE
Subject Greenhouse Gas Emissions Mitigation Measures		XXX
Effective 5/01/22	Supersedes New	Originating Office Division of Transportation Development

I. PURPOSE

The purpose of this Policy Directive is to address the requirements of 2 CCR 601-22, which directs the Colorado Department of Transportation (CDOT), in consultation with the Metropolitan Planning Organizations (MPOs), to establish an ongoing administrative process and guidelines for selecting, measuring, confirming, verifying, and reporting Greenhouse Gas (GHG) Mitigation Measures. CDOT and MPOs may use GHG Mitigation Measures in order to assist them in meeting the Regional GHG Planning Reduction Levels in 2 CCR 601-22. This Policy Directive sets forth the intent and principles of GHG mitigations along with high-level guidance for the Procedural Directive which will set forth the process for establishing, verifying, and tracking such measures.

II. AUTHORITY

Transportation Commission pursuant to § 43-1-106 (8)(a), C.R.S.
§ 43-1-128, C.R.S.
2 CCR 601-22, Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (the “Rule”).

III. APPLICABILITY

This Policy Directive shall apply to all CDOT Divisions, Regions, Branches, and Offices, the state’s current five MPOs: DRCOG, NFRMPO, PPACG, GVMPO, and PACOG, as well as any MPOs created during the lifetime of the Rule.

IV. BACKGROUND

Subject GHG Policy Directive	Number XXX
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The broad purpose of this Policy Directive is to provide guidance to achieve the objectives of the Rule, which is intended to reduce greenhouse gas (GHG) emissions from the transportation sector.

Separately, CDOT will be developing a Procedural Directive, which shall include procedures for implementation of the Rule and the goals of this Policy Directive.

Together, the Policy Directive and the Procedural Directive are intended to be consistent with the following requirement within 2 CCR 601-22, Section 8.02.4: “By May 1, 2022, CDOT in consultation with the MPOs shall establish an ongoing administrative process and guidelines, through a public process, for selecting, measuring, confirming, verifying, and reporting GHG Mitigation Measures. CDOT and MPOs may incorporate one or more GHG Mitigation Measures into their plans in order to assist in meeting the Regional GHG Planning Reduction Levels in Table 1. Such a process and guidelines shall include, but not be limited to, how CDOT and MPOs shall determine the relative benefits and impacts of GHG Mitigation Measures, and measure and prioritize localized benefits to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both regional and community benefits.”

V. DEFINITIONS

“Applicable Planning Document” are MPO Fiscally Constrained Regional Transportation Plan (RTP), Transportation Improvement Program (TIP) for MPOs in Non-Attainment Areas, 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.

“Disproportionately Impacted Communities” is 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%).

“Greenhouse Gas (GHG)” are pollutants that are anthropogenic (man-made) emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride

Subject GHG Policy Directive	Number XXX
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“Greenhouse Gas (GHG) Mitigation Measures” are non-Regionally Significant Project strategies that reduce transportation GHG pollution and help meet the GHG Reduction Levels.

“GHG Transportation Report” is the report that is required to be submitted as part of the Rule which shows compliance toward meeting the reductions levels.

“Metropolitan Planning Organization” or “MPO” is an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the Regional Transportation Plans (RTPs) and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134. Colorado currently includes five designated MPOs: Denver Regional Council of Governments, Pikes Peak Area Council of Governments, Pueblo Area Council of Governments, Grand Valley Metropolitan Planning Organization and the North Front Range Metropolitan Planning Organization.

“Mitigation Action Plan” is an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.

“Off-Model” means that it is better suited to use calculation methodology, instead of modeling, in order to show the effects of GHG reductions.

“Procedural Directive” is a document adopted by the Executive Director that specifies how organizational goals, policies and departmental decisions are to be implemented.

“Policy Directive” is a document adopted by the Transportation Commission that specifies organizational and Commission goals and policies.

“Regionally Significant Project” is 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. Modifications of this definition shall be allowed if approved by the State Interagency Consultation Team. If the MPOs have received approval from the Environmental Protection Agency (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

Subject GHG Policy Directive	Number XXX
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MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team.

“State Interagency Consultation Team” (IACT) 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, the Director of each MPO or their designee, and the Colorado Energy Office Director or Director’s designee. The Division Director may appoint additional member(s) from outside of these organizations. The State Interagency Consultation Team works collaboratively and consults appropriately to approve modifications to Regionally Significant definitions, to address classification of projects as Regionally Significant, and to consult on issues that may arise regarding modeling assumptions and projects that reduce GHG emissions.

VI. POLICY

The Transportation Commission adopts the processes and priorities stated herein to guide the selection of GHG Mitigation Measures, the scoring of GHG Mitigation Measures, the development of a Mitigation Action Plan, the submission of a GHG Status Report, the approval of new GHG Mitigation Measures, and the analysis of the efficacy of existing Mitigation Measures, which shall all be accomplished pursuant to the process set forth in the Procedural Directive adopted by CDOT.

A. Process for Proposing New Mitigation Measures

This policy recognizes the balance between ensuring appropriate analytical rigor around the expected GHG reductions of mitigation measures with the need to encourage new ideas and adapt to new modeling and/or measurement methodologies. To that end, any one individual or organization may nominate new GHG Mitigation Measures; however, such measures must be submitted, reviewed, and approved in accordance with the Procedural Directives and consistent with the Policy Directive before incorporation as an approved Mitigation Measure. This section guides this process.

1. Overall Process for Establishing Mitigation Measures

CDOT shall develop and maintain a master list of approved Mitigation Measures that have been reviewed, vetted, and scored by the Department’s subject matter experts and approved by the Interagency Coordination Team. The process for approval and an approved list of Mitigation Measures shall be included in an associated GHG Mitigation Measure Procedural Directive approved by CDOT. The Procedural Directive shall be published to MPOs and available on the website, and

may be amended from time to time by CDOT staff to improve efficient implementation of the Rule.

2. Approving New GHG Mitigation Measures

The ability to nominate new GHG Mitigation Measures will be open to all MPOs, local governments, community and advocacy groups, and members of the public as an opportunity to creatively engage in the sustainability of our transportation system. New Mitigation Measures can be submitted through an online form on CDOT’s website. New Mitigation Measures must have a nexus with the transportation sector. CDOT reserves the discretion to prioritize newly nominated Mitigation Measures based on the information available and effort required to quantify.

CDOT GHG Program staff will assess the nominations according to the framework listed in Table X. MPOs shall be expected to provide this data upon submittal of a proposed Mitigation Measure. For submissions from members of the public or outside organizations, CDOT staff will conduct this work where feasible. Recommended Mitigation Measures shall be presented to the Interagency Coordination Team on a quarterly basis in order to update the accompanying Procedural Directive.

[Table X: Framework for New Mitigation Measures (Note Table borrowed from CA SCS Document - Modified for CO)]

Off-Model Strategy Component	Description of Off-Model Strategy
Strategy Description	Describe the overall off-model strategy <ul style="list-style-type: none"> ● Identify what the strategy implements ● Identify how the strategy reduces CO2 emissions ● Identify how the strategy is not already reflected in land use and travel modeling tools, thus warranting an off-model estimate of CO2 emission reductions
Objectives	Identify the specific metric(s) targeted and changed by the off model-strategy that would result in CO2 reductions. Examples include, but not limited to: <ul style="list-style-type: none"> ● Decreased VMT/average trip length ● Miles of bike/ped lanes added ● Reduced vehicle trips ● Traffic flow improvements ● Increased transit boardings

Subject GHG Policy Directive	Number XXX
--	---------------

Trip and Emissions Data Needs	<p>Funding/Incentives</p> <ul style="list-style-type: none"> • How much funding is identified for implementing this strategy? • What is/are the source(s) of funding for implementing the strategy? <p>Tracking</p> <ul style="list-style-type: none"> • Is the strategy surplus/additional (e.g., goes beyond existing State programs)? • What metrics must be tracked and met to demonstrate strategy implementation? • How will strategy implementation and metrics be tracked? <p>Trip and Emissions Data</p> <ul style="list-style-type: none"> • What specific data is needed to quantify CO2 emission reductions from the strategy?
Quantification Methodology	<ul style="list-style-type: none"> • Describe the methodology for quantifying CO2 emissions reductions from the strategy • Base methodology on empirical evidence supported by verifiable data sources • Clearly describe and document individual steps in emissions calculations • Clearly document all assumptions, sources of data, and calculations
Co-Benefits	Identify potential co-benefits associated with the mitigation measure, including but not limited to reduction of co-pollutants, energy and fuel savings, VMT reductions, enhanced pedestrian or traffic safety, social equity, and improved public health.
Scoring	Apply estimated range of GHG reductions to scoring point matrix.
Challenges, Constraints, and Strategy Implementation Tracking	<ul style="list-style-type: none"> • Potential challenges and constraints with quantifying and implementing off-model strategies • Define and collect “Metrics of Success” that the MPO plans to collect to track whether a strategy is successfully implemented over time

Additionally, the GHG Program Staff will establish a regular process of inventorying best practices from around the country for review and approval of new Mitigation Measures, with a focus on identifying a range of effective Mitigation Measures for urban, suburban, and rural contexts throughout the state. Staff shall also ensure that CDOT’s Environmental Justice branch is engaged in this process to ensure that Mitigation Measures and policy updates are regularly shared with--and consider the unique needs of--Disproportionately Impacted Communities.

B. Scoring the GHG Mitigation Measure

Subject GHG Policy Directive	Number XXX
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Scoring of Mitigation Measures shall be conducted pursuant to the Procedural Directive and consistent with the Rule and this Policy Directive.

It is likely that over time GHG Mitigation Measures may be folded into modeling. It is important for the Policy and Procedural Directives to account for this likely evolution of GHG Mitigation Measures into standard modeling practices.

SUBMITTING A GHG MITIGATION ACTION PLAN:

C. Developing Mitigation Action Plans

1. Components of a Mitigation Action Plan. Subsection 8.02.6.3 of the Rule states as follows: “If Mitigation Measure(s) are needed to count toward the GHG Reduction Levels in Table 1, the MPO or CDOT may submit a Mitigation Action Plan that identifies GHG Mitigation Measures, if any, needed to meet the GHG Reduction Levels within Table 1”.

The Transportation Commission and Air Pollution Control Division will evaluate Mitigation Action Plans and determine their sufficiency in meeting the GHG Reduction Levels needed for compliance.

To support this evaluation, the following information must be included for each proposed GHG Mitigation Measure:

- a. GHG Emissions Reductions Needed: Summary of emissions analysis from GHG Transportation Report, including the estimated gap to achieve the GHG Reduction Levels specified for each horizon year.
- b. Mitigation Measure Summary: A summary table of proposed GHG Mitigation Measures, including mitigation measure title, mitigation measure category, estimated GHG reduction or score per year, and any co-benefits.
- c. Mitigation Measure Description: Each measure shall include the following details:

Metric	Description of information to be submitted with application
Timing	Anticipated start date, completion date, and dates of any other key milestones.
GHG Reductions	An estimate of the annual GHG emissions reductions in million metric tons (MMT) of CO ₂ e achieved by the measure, in each horizon year in Table 1 of the Standard.

Co-benefits	Quantification, where possible, of specific co-benefits including reduction of co-pollutants (PM2.5, NOx, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership, etc. as applicable), for each affected year of the planning which years.
Benefits to Disproportionately Impacted Communities	A description of theDescription of benefits to Disproportionately Impacted Communities, particularly those in close proximity to any capacity expansion projects being mitigated, and stakeholder engagement conducted with those communities. Identify in detail how the DIC will be impacted, including related to project design and construction, as well as access and connectivity upon completion. These communities have historically been impacted unequally by transportation project design and construction, including a lack of access and connectivity. Include an accounting of the amount of mitigation dollars directly spent in--or designed to serve-- Disproportionately Impacted Communities as a subset of total dollars.
Measure Description	A description of the measure, including scale, location, and how it would impact travel activities expected to result in GHG reductions.
Measure History	If a project was specifically identified in a previous plan, it is not eligible as a Mitigation Measure in a new plan UNLESS the new Mitigation Measure is funded from a pool of non-specific projects (and not otherwise modeled in a previous plan), in which case it may be used as a Mitigation Measure in the new plan. If a Mitigation Measure has been recently approved, provide the date of the notice of approval.
Cost	Any capital and operating cost estimates, including any key assumptions used to inform these estimates.
Funding	Funding source(s), including if those funds are confirmed.
Implementing agencies and roles	Partner implementing agencies and roles (if applicable), including letters of support if the GHG Mitigation Measure

Subject GHG Policy Directive	Number XXX
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	includes implementation support from other entities.
Documentation	Documentation of the GHG estimate or score and co-benefits, utilizing the outlined steps in this document, and including all data sources and inputs used.
Implementation tracking	Include a detailed description of how the success of the strategy will be monitored and verified against the estimated benefits.
Other Info As Needed	Any other relevant information that may be needed for thorough review of the proposed Mitigation Measure.

D. GHG Status Reports and Follow-Up Analysis.

1. Submitting a GHG Status Report.

Following the approval and implementation of a GHG Mitigation Action Plan, CDOT and the MPOs are required to submit an annual status report for each Mitigation Measure. The following information shall be included in each status report (as outlined in the Rule):

- The implementation timelines;
- The current status;
- For measures that are in progress or completed, quantification of the annual benefit or impact of such measures; and
- For measures that are delayed, canceled, or substituted, an explanation of why that decision was made and, if located in a Disproportionately Impacted Community, how these measures or the equivalent could be achieved.

2. Analyzing the Efficacy of GHG Mitigation Measures.

On a periodic basis, CDOT shall evaluate the effectiveness of implemented Mitigation Measures against predicted achievement of those measures. Such analysis shall be provided to the Interagency Coordination Team for their review and consideration as to whether this information merits a change to the score applied to relevant measure(s).

Subject GHG Policy Directive	Number XXX
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V. IMPLEMENTATION PLAN

This Policy Directive shall be effective immediately upon approval by the Transportation Commission.

CDOT staff shall develop a Procedural Directive that outlines the process to be followed for submitting proposed Mitigation Measures with substantiation of their benefits, for review and potential approval by CDOT staff, and for publishing updated lists of specific Mitigation Measures and the associated GHG emission reductions/scores on a periodic basis.

The Office of Policy and Government Relations shall post this Policy Directive on CDOT’s intranet as well as on public announcements.

VI. REVIEW DATE

This Directive shall be reviewed upon motion by two or more Commissioners, and no later than ____ on or before

Herman Stockinger
Transportation Commission Secretary

Date of Approval



GHG Pollution Standard for Transportation Planning: Implementation Update

March, 2022



- Progress since rule adoption
- Approach on Mitigations
 - Policy Directive Outline
 - Procedural Directive Approach
- Feedback
- Next Steps Schedule



- Rule adopted December 2021
 - Formed State Interagency Consultation Team (IACT)
- Established working groups (Modeling, GHG Mitigations)

Upcoming:

- April: TC and STAC Workshops (Mitigation Policy Directive)
- Spring: Procedural Directive
- 10 Yr Plan Update and GHG Report to TC
 - CDOT, DRCOG and NFRMPO must have updated plans in place - before Oct 2022



Approach on Mitigations

Two important components:

- **Policy Directive**
 - Approved by Transportation Commission
 - Overarching framework
 - Explains intent of mitigations and process for scoring
 - Defines regionally significant projects for CDOT
 - High level enough to consider the 30 year life of the rule
- **Procedural Directive**
 - Approved by Executive Director
 - Lists actual GHG Mitigation Measures
 - Scoring matrix
 - Detailed math that can be updated as better ways to measure mitigations are developed



DRAFT Framework for GHG Policy Directive

Balance ensuring appropriate analytical rigor around the expected GHG reductions of mitigation measures with the need to encourage new ideas and adapt to new modeling and/or measurement methodologies.

Four main sections:

1. Process for Establishing GHG Mitigation Measures

- CDOT shall develop and maintain a master list of measures, which will be approved by the Interagency Coordination Team.
- Measures will be listed in accompanying procedural directive.
 - We have found that some of the measures listed in the rule are in fact better put in the travel model (if possible) to capture the combined effects of measures (land use/transit). This also will likely help CDOT/MPO get the best GHG reduction from the combined effects.
 - Over time some measures may be integrated into the modeling protocol

2. Proposing New GHG Mitigation Measures

- Ability to nominate new GHG Mitigation Measures will be open to all MPOs, local governments, community and advocacy groups, and members of the public.
- All new mitigations evaluated against common criteria with IACT ultimately approving those that can be quantified based on available information.



DRAFT Framework for GHG Policy Directive Continued

3. Broadly describes scoring approach for GHG Mitigation Measures
 - Measures will receive a “score” representing their GHG reduction effectiveness.
 - Scores themselves will be included in procedural directive.

4. Developing a Mitigation Action Plan & Status Report
 - Lists required elements of each.



Preliminary Approach DRAFT Procedural Directive

- Procedural Directive
 - List actual GHG Mitigation Measures (approved by IACT)
 - Methodology for quantifying and scoring measures, considering:
 - Context (rural, urban, suburban)
 - Effectiveness over time
 - Incentivizing mitigations in disproportionately impacted communities
 - Appendix with the “math” used to establish the score

DRAFT



Initial Feedback

- Having a large enough set of approved Mitigation Measures to enable CDOT and MPOs to meet the standard
 - Procedural Directive may include nearly 40 mitigation measures
- Allow for new ideas while simultaneously quantifying and proving results
 - Framework for how MPOs can propose and develop alternative off model GHG calculations
- Input from STAC



Current GHG Implementation Timeline

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Review Baseline Projects	█	█										
Coding Baseline Network	█	█										
First round of baseline model runs		█	█									
Baseline GHG Analysis- Moves Runs			█									
TC adopts the GHG Mitigation Policy				█								
TPRs/MPOs submit updated 10 Yrs Plans		█	█	█								
1st round of GHG Compliance model runs				█	█							
1st round of GHG Analysis- Moves Runs				█	█							
Second round of GHG Compliance model runs					█							
2nd round of GHG Analysis- Moves Runs					█							
Submit GHG results to APCD for verification (May 31)					█							
Submit GHG Transportation Report and Mitigation Action Plan (if applicable) to TC						█						
Draft Review 10-Year Plan						█						
STAC Review and TC Approval of 10-Year Plan							█					