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Statewide Transportation Plan Appendix G - Performance Measures

February 2021

COLORADO
Department of Transportation

YOUR TRANSPORTATION PLAN
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Table of Contents

List of Tables

Section 1
Performance Framework

CDOT measures its progress in achieving the goals and objectives of the Statewide Transportation Plan (SWP) through a series of quantitative performance measures both at the state and federal level. CDOT's Performance and Asset Management Branch within the Division of Transportation Development oversees the development, implementation, and tracking of these performance measures.

1.1 Policy Directive 14

1.1.1 Background

As its name suggests, Policy Directive 14 (PD 14) "Policy Guiding Statewide Plan Goals and Objectives" provides a framework for the development of goals and objectives for the multimodal comprehensive SWP and focuses the distribution of resources in the SWP, the Statewide Transportation Improvement Program (STIP), and the annual budget. PD 14 is a Colorado Transportation Commission directive. In 2020, CDOT developed a framework for the annual review of PD 14, which incorporates goals from the Department's Wildly Important Goals (WIGs), the Transportation Commission Principles, the Governor's "Bold Four" Goals, and objectives required under the Fixing America's Surface Transportation (FAST) Act of 2015.

This framework creates a cadence of review of the objectives within the policy directive, allowing for continuous improvement of the main goals for the Department, informing funding decisions and projects, and measuring success of these initiatives. Using this framework, and input provided by the Transportation Commission at prior Commission workshops, CDOT developed an updated PD 14, which the commission adopted in November 2020.

PD 14 has three goal areas: safety, asset management, and mobility. For each of these goal areas, a series of performance measures and objectives are also identified. PD 14 also details how CDOT measures progress toward meeting each goal through the attainment of these objectives by 2045. As PD 14 guides Statewide Transportation Plan goal areas and performance objectives, the objectives and goal statements for the three goal areas align with the most current Statewide Transportation Plan (2045).

1.1.2 Updated PD 14 Summary

Section 1.1.3 provides a copy of the updated version of PD-14, adopted in November 2020. The following is a summary of the updated PD-14.

(1) Safety Goal Area:

The goal statement for the Safety goal area is: *The future of Colorado is zero deaths and serious injuries so all people using any transportation mode arrive at their destination safely.* The metrics associated with the objectives in the Safety goal area are outlined below, based on a planning horizon of 2021-24, and full detail for Safety metrics and objectives is included in PD-14.

a) Highway Safety Measures:
   - Vehicle crash rate per 100 million vehicle miles traveled
   - Traffic fatality rate per 100 million vehicle miles traveled
   - Traffic serious injury rate per 100 million vehicle miles traveled
   - Traffic fatalities and serious injuries involving vulnerable users (pedestrians and bicyclists)

b) Employee Safety Measures:
   - On-the-Job injuries
   - Vehicle crashes involving CDOT Employees

(2) Asset Management Goal Area:

The goal statement for the Asset Management goal area is: *Maintain a high-quality transportation network by working to maintain a state of good repair for all assets and a highly traversable road network*. The objectives in this goal area are intended to be achieved or maintained over the first 10 years of the planning horizon (2021-30). The highway pavement, bridge, and maintenance metrics from the Asset Management goal area are outlined below, and full detail for Asset Management metrics and objectives is included in PD-14.

a) Highway Pavement Measures:
   - Pavement condition of the Interstate System
   - Pavement condition of the National Highway System (NHS), excluding Interstates
   - Pavement condition of the state highway system

b) Bridges Measures:
   - Bridge deck area of the National Highway System in good condition
   - Bridge deck area of the National Highway System in poor condition
   - Bridge deck area of the state highway system in good condition
   - Bridge deck area of the state highway system in poor condition
   - Bridge lead measures, risk measures, and freight movement measures

c) Maintenance Measures:
   - Overall Maintenance Levels of Service (MLOS) for the state highway system
   - Level of Service (LOS) for snow and ice removal

d) Other Highway Assets Measures and Transit Assets Measures:
   - Asset Management program measures for other highway assets (measures for buildings, Intelligent Transportation Systems (ITS) equipment, fleet, culverts, geohazards, tunnels, traffic signals, walls, and rest areas) are outlined in Appendix A of PD-14.
   - Transit asset measures related to revenue vehicles and facilities are detailed in Appendix B of PD-14.

(3) Mobility Goal Area:

The goal statement for the Mobility goal area is: *Reduce travel time lost to congestion and improve connectivity across all modes with a focus on environmental impact, operations, and transportation choice statewide*. The objectives in this goal area are intended to be

achieved in the planning horizon 2021-30. These measures are outlined below, and full detail for Mobility metrics and objectives is included in PD-14.

a) Reliability and Congestion Measures:
   - Incident Clearance Time for highways covered by Safety Patrol and Heavy Tow Vehicles
   - Operations Levels of Service (OLOS) of the state highway system
   - Vehicle Miles Traveled (VMT) and Vehicle Miles Traveled per capita (VMT/capita)

b) Environmental Impact Measures:
   - Greenhouse gas (GHG) pollution from the transportation section (in Carbon Dioxide equivalents)
   - Zero emission vehicle (ZEV) registrations
   - Percent and quantity of state transit fleet that are zero-emission vehicles
   - Percent of state highway miles within a thirty-mile buffer of direct-current (DC) fast-charging stations
   - Percent of Scenic and Historic Byways classified as electrified byways

c) Multimodal Options Measures:
   - Percent of Coloradans commuting to work with multimodal options, including telecommuting
   - Bustang bus service ridership
   - Unlinked transit passenger trips for Colorado small urban and rural transit agencies

1.1.3 Latest Version of PD 14

For reference, the current PD 14 is attached below.

COLORADO DEPARTMENT OF TRANSPORTATION	■ POLICY DIRECTIVE □ PROCEDURAL DIRECTIVE
Subject **Policy Guiding Statewide Plan Goals & Objectives**	**14.0**

Effective	Supersedes	Originating Office
11/19/2020	10/19/2017	**Division of Transportation Development**

I. PURPOSE

This Policy Directive provides performance goals and objectives to measure the success of the Department's efforts to improve in the following key areas:

- Safety,
- Asset Management, and
- Mobility.

The performance objectives and targets in these goal areas will help implement the Statewide Transportation Plan by focusing transportation investments in the Statewide Transportation Improvement Program (STIP) and the annual budget. The Transportation Commission will revise this Policy Directive, as needed, with updated performance objectives or targets.

II. AUTHORITY

- 23 United States Code (U.S.C.) 134, 135 and 450, PL 114-94 ("Fixing America's Surface Transportation Act" or "FAST Act")
- 23 Code of Federal Regulations (C.F.R.) Part 420 (Planning & Research Program Administration), 450 (Planning Assistance and Standards), and 490 (National Performance Management Measures)
- § 43-1-106(8)(a), C.R.S. Transportation Commission
- § 43-1-1103, C.R.S. Transportation planning
- Transportation Commission Rules Governing the Statewide Transportation Planning Process and Transportation Planning Regions (2 CCR 601-22; effective September 14, 2018)

III. APPLICABILITY

This Policy Directive applies to all CDOT Divisions and Regions.

IV. DEFINITIONS

"Carbon Dioxide Equivalents (CO_2e)" means the number of metric tons of CO_2 emissions with the same global warming potential as one metric ton of another greenhouse gas, and are calculated using Equation A-1 in 40 C.F.R. Part 98.

"Colorado DOT Transit Asset Management Group Plan" (Group TAM Plan) is the CDOT-sponsored asset management plan, required by the FTA's Transit Asset Management (TAM) Rule, for 49 U.S.C. Chapter 53 funding recipients and subrecipients that own, operate, or

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

manage capital assets in the provision of public transportation. The Group TAM Plan is a tool for guiding the prioritization of pass-through funds. Approximately 53 small urban and rural transportation providers participate in the current Group TAM Plan to maintain and/or improve the State of Good Repair (SGR) of transit assets.

"Drivability Life" is an indication in years of how long a highway will have acceptable driving conditions based on an assessment of smoothness, pavement distress, and safety. Drivability Life implements traffic based highway categories, and associated category drivability condition standards and allowed pavement treatments. Unacceptable driving condition is specific to each traffic based highway category and means drivers must reduce speeds to compensate for poor conditions, navigate around damaged pavement, or endure intolerably rough rides. The Risk-Based Asset Management Plan identifies three categories of Drivability Life: High (greater than 10 years of Drivability Life remaining); Moderate (4-10 years); and Low (3 or fewer years).

"Greenhouse Gas Emissions" in the scope of this directive refer to pollution from the transportation sector (though these emissions are not exclusive to this sector), and may refer to both start emissions and running exhaust emissions from vehicle tailpipes. These emissions are calculated and expressed in terms of CO_2e. Greenhouse gas or GHG included in this equivalency encompasses carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated greenhouse gases.

"Geohazards" are geologic hazards that affect the transportation system and include debris flow, embankment distress, landslides, rock fall, rockslides, and sinkholes.

"National Highway System" (NHS) is a federally designated system of roadways important to the nation's economy, defense, and mobility. The NHS includes Interstate highways as well as other roadways. Not all NHS roadways are part of the state highway system.

"Maintenance Levels of Service" (MLOS) is a qualitative measure describing operational conditions on the roadway. Overall, Maintenance Levels of Service is a combined grade for nine maintenance program areas. For snow and ice control, the LOS B level includes maintaining high levels of mobility as much as possible, and proactive avalanche control.

"Operations Levels of Service" (OLOS) is a qualitative measure describing operational conditions on the state highway system that is utilized to demonstrate travel-time reliability on the roadway. This measure is calculated during AM and PM weekday peak periods, then aggregated and reported monthly to track year-to-date performance. Operations Levels of Service are travel-time multipliers equated to a grading system of A through F. For example, an OLOS grade of C or better means that the time required to plan for a trip is 1.5 times the free-flow travel time, or less.

"Performance Measures" are the ways that direction towards a goal is measured.

"Performance Objectives" are the specific targets for a performance measure that an organization intends to meet to make progress towards a goal.

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

"Revenue Service Miles" are the miles operated by transit vehicles when such vehicles are used for providing public transportation and there is an expectation of carrying passengers.

"Serious Injuries" are evident incapacitating injuries that prevent injured persons from walking, driving, or normally continuing the activities they were capable of performing before they were injured in traffic crashes.

"State of Good Repair" (SGR), as defined by the Federal Transit Administration (FTA), is the condition in which a capital asset is able to operate at a full level of performance.

"Telecommuting" is working at home or at an alternate location and communicating with the usual place of work using electronic or other means, instead of physically traveling to a more distant work site, as defined by the Transportation Research Board.

"Transit Economic Requirements Model" (TERM) is the FTA's 5-point scale for subrecipients/transit providers to assess the condition of their transit facilities. A facility assessed below 3.0 is considered to be out of, or beyond, a state of good repair and should be prioritized for repair or replacement.

"Unlinked Passenger Trips" also referred to as 'boardings,' are a measurement of the number of passengers who board public transit vehicles. A passenger is counted each time they board a transit vehicle no matter how many vehicles they use from their origin to their destination.

"Vehicle Miles Traveled" (VMT) are a measurement of miles traveled by vehicles obtained by multiplying the Annual Average Daily Traffic (AADT) count by the length of the roadway segment.

"Vulnerable Users" are pedestrians and bicyclists.

"Zero-Emission Vehicles" are vehicles that produce zero or near-zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes or conditions.

V. POLICY

1. Policy. It shall be the policy of CDOT that the Statewide Transportation Plan and statewide performance objectives stated herein will guide distribution of financial resources to meet or make progress toward objectives in three goal areas: safety, asset management, and mobility. The Transportation Commission should direct financial resources toward achieving the safety objectives within the first 4 years of the planning horizon (2021-2024), the asset management objectives within the first 10 years (2021-2030), and the mobility objectives within the first 10 years (2021-2030). Projects should be selected to support the goals and objectives and will be included in the Statewide Transportation Improvement Program (STIP). These performance objectives will guide annual budget decisions. Prior to funding new initiatives, the Transportation Commission will direct funds toward achieving the objectives in each area while recognizing constraints on some funding sources.

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

2. Goals. PD 14.0 goals guides the implementation of the multimodal Statewide Transportation Plan and the performance objectives that measure attainment of these goals. The goals are:

   - SAFETY – The future of Colorado is zero deaths and serious injuries so all people using any transportation mode arrive at their destination safely.
   - ASSET MANAGEMENT – Maintain a high-quality transportation network by working to maintain a state of good repair for all assets and a highly traversable road network.
   - MOBILITY – Reduce travel time lost to congestion and improve connectivity across all modes with a focus on environmental impact, operations, and transportation choice statewide.

   Goals for PD 14.0 and 2045 Statewide Transportation Plan are in alignment with and complement the national goals for surface transportation in the Fixing America's Surface Transportation (FAST) Act of 2015.

3. Performance Measures and Objectives. Performance measures describe how CDOT will evaluate statewide success, and performance objectives establish statewide achievement levels that are used to direct investment decisions during the different planning horizons for each goal area. Within CDOT's Annual Budget, the budget categories that fund programs within the goal areas are the following: Construction, Maintenance & Operations, Multimodal Programs, Sub-allocated Programs, and Other Programs. Explanations of how the objectives will be measured are listed below with the appropriate goals.

   a) SAFETY:

   The highway safety objectives are aligned with the objectives of the 2020-23 Colorado Strategic Transportation Safety Plan (STSP), an extensive and cooperative planning effort by a multidisciplinary partnership of public agencies, private sector organizations, and advocacy groups representing transportation and safety interests statewide. This collaborative and data-driven process identifies achievable highway safety objectives for the planning horizon of 2021-24. These objectives (with the exception of objectives related to employee safety) apply to *all* roads in the State.

   (1) Highway Safety

   MEASURES:

   - Vehicle crash rate per 100 million vehicle miles traveled (VMT)
   - Traffic fatality rate per 100 million vehicle miles traveled (VMT)
   - Traffic serious injury rate per 100 million vehicle miles traveled (VMT)
   - Traffic fatalities and serious injuries involving vulnerable users (pedestrians and bicyclists)

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

OBJECTIVES:

- Reduce the rate of vehicle crashes per 100 million VMT by eight percent (8%) over the next four years from current levels.
- Reduce the rate of traffic-related fatalities per 100 million VMT by fifteen percent (15%) over the next four years from current levels.
- Reduce the rate of traffic-related serious injuries per 100 million VMT by fifteen percent (15%) over the next four years from current levels.
- Reduce traffic-related fatalities and serious injuries involving vulnerable users (pedestrians and bicyclists) by fifteen percent (15%) over the next four years from current levels.

ASPIRATIONAL OBJECTIVES:

- Reduce traffic-related fatalities and serious injuries to zero for all users of Colorado's multimodal transportation system.

(2) Employee Safety

MEASURES:

- On-the-Job injuries
- Vehicle crashes involving CDOT Employees

OBJECTIVES:

- CDOT is committed to ensuring a safe and healthy work environment for all of its employees through its fundamental mission of "Excellence in Safety." CDOT also is committed to reducing on-the-job injuries and vehicle incidents involving CDOT employees.

(3) Safety Goal Area Considerations

- The safety goal area and objectives are aligned with the Colorado Strategic Transportation Safety Plan (STSP). Additionally, CDOT and the Transportation Commission support implementation of the STSP Tier 1 strategies. (See Appendix C for explanation of the Tier 1 strategies.)
- In addition to the statewide (all roads) metrics, Staff will provide annually to the Transportation Commission additional highway safety data. Examples include:
  - Urban and rural safety data
  - Safety data on the state highway system
  - Safety data for freight transportation
- CDOT and the Transportation Commission provide the lead on transportation safety efforts in Colorado.

b) ASSET MANAGEMENT:

The asset management objectives for highway related assets are intended to be achieved or maintained over the first ten years of the planning horizon (2021-30). The

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

objectives identified align with the Department's Risk-Based Asset Management Plan, a federally-required plan that outlines risk-mitigation, identifies performance gaps, and lists a financial plan over the planning horizon. Additionally, the objectives related to highway asset management are used to help determine funding levels for each of the twelve assets within CDOT's asset management program.

The majority of transit assets in Colorado are not owned, operated, or maintained by CDOT. Rather, CDOT passes through federal and state funds to assist subrecipients with transit asset acquisition, construction, and refurbishment projects. Thus, it is the Department's responsibility to oversee subrecipients' participation in the required planning and reporting processes, to guide the prioritization of pass-through funds to maintain and/or improve the state of good repair of transit assets, and to fulfill annual reporting and targeting requirements.

Performance measures and objectives for transit assets were established by the Federal Transit Administration (FTA) in its 2016 Transportation Asset Management (TAM) Rule and incorporated into the 2018 Group TAM Plan. As required, the Group TAM Plan covered a four-year planning horizon and will be updated no later than the fall of 2022. The TAM Rule also outlined annual reporting requirements about the state of good repair of transit assets and requires CDOT, as the Group TAM Plan sponsor, to set annual performance targets across several asset class types. See Appendix B for a more detailed discussion of this process.

The CDOT-owned Bustang and Bustang Outrider fleet vehicles (operated by subrecipients/contractors) are not subject to the TAM Rule reporting requirements but Staff will use the FTA performance measures for consistency in tracking and reporting.

(1) Highway Pavement

MEASURES:

- Pavement condition of the Interstate System
- Pavement condition of the National Highway System (NHS), excluding Interstates
- Pavement condition of the state highway system

OBJECTIVES:

- Achieve or maintain eighty percent (80%) high or moderate Drivability Life for Interstates based on condition standards and treatments set for traffic volume categories.
- Achieve or maintain eighty percent (80%) high or moderate Drivability Life for the National Highway System, excluding Interstates, based on condition standards and treatments set for traffic volume categories.
- Achieve or maintain eighty percent (80%) high or moderate Drivability Life for the state highway system based on condition standards and treatments set for traffic volume categories.

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

(2) Bridges

MEASURES:

- Bridge deck area on the National Highway System in good condition
- Bridge deck area on the National Highway System in poor condition
- Bridge deck area on the state highway system in good condition
- Bridge deck area on the state highway system in poor condition
- Asset management program metrics related to bridge lead metrics, risk metrics, and freight movement metrics (See Appendix A for additional bridge metrics)

OBJECTIVES:

- Achieve or maintain the percent of National Highway System total bridge deck area in good condition at or above forty percent (40%).
- Achieve or maintain the percent of National Highway System total bridge deck area in poor condition below ten percent (10%).
- Achieve or maintain the percent of state highway system total bridge deck area in good condition at or above forty percent (40%).
- Achieve or maintain the percent of state highway system total bridge deck area in poor condition below ten percent (10%).
- Meet asset management program objectives related to bridge lead, risk and freight movement metrics (See Appendix A for additional bridge objectives).

(3) Maintenance

MEASURES:

- Overall Maintenance Levels of Service (MLOS) for the state highway system
- Level of Service (LOS) for snow and ice removal

OBJECTIVES:

- Achieve or maintain an overall MLOS B minus grade for the state highway system.
- Achieve or maintain a LOS B grade for snow and ice removal.

(4) Other Highway Assets

MEASURES:

- Asset management program metrics for other highway assets (See Appendix A for metrics for buildings, Intelligent Transportation Systems (ITS) equipment, fleet, culverts, geohazards, tunnels, traffic signals, walls, and rest areas)

OBJECTIVES:

- Meet or maintain asset management program objectives related to other highway assets (See Appendix A for buildings, ITS equipment, fleet, culverts, Geohazards, tunnels, traffic signals, walls, and rest areas objectives).

(5) Transit Assets: Small Urban & Rural Agency Assets

MEASURES:

- Rolling Stock: Percentage of revenue vehicles within an asset class that have either met or exceeded their useful life benchmark (ULB).
- Facilities: Percentage of facilities within an asset class rated below a 3.0 on the FTA TERM 5-point scale.

OBJECTIVES:

- Achieve or maintain performance of rolling stock and facilities to less than or equal to the percent performance calculated by the FTA for report year 2019. See Table 2 in Appendix B.

(6) Transit Assets: Bustang & Bustang Outrider Assets

MEASURES:

- Rolling Stock: Percentage of revenue vehicles within an asset class that have either met or exceeded their useful life benchmark (ULB).

OBJECTIVES:

- Achieve or maintain performance in each asset class that have either met or exceeded their ULB at no more than ten percent (10%).

c) MOBILITY:

The mobility goal area is intended to be achieved in the planning horizon from 2021 to 2030. A portion of the objectives within the goal area are aligned with the Greenhouse Gas Pollution Reduction Roadmap, detailing early action steps the state can take toward meeting near-term greenhouse pollution reduction targets, and HB19-1261 – *Climate Action Plan to Reduce Pollution,* statutorily required goals to reduce 2050 greenhouse gas pollution by ninety percent (90%) from 2005 levels. Some objectives within the goal area help increase reliability of the state highway system and increase the use of multimodal travel statewide.

(1) Reliability and Congestion

MEASURES:

- Operations Levels of Service (OLOS)
- Incident Clearance Time
- Vehicle Miles Traveled (VMT) and Vehicle Miles Traveled per Capita

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

OBJECTIVES:

- Achieve or maintain an Operations Levels of Service (OLOS) grade of C or better for eighty percent (80%) or greater of the state highway system.
- Achieve or maintain an annual average incident clearance time of twenty (20) minutes or less for highways covered by CDOT Safety Patrol and Heavy Tow vehicles.
- Manage congestion on our roads by reducing Vehicle Miles Traveled (VMT) and VMT per capita by ten percent (10%) on or before 2030, relative to current levels.

(2) Environmental Impact

MEASURES:

- Greenhouse gas (GHG) pollution from the transportation sector (in Carbon Dioxide Equivalents - CO_2e)
- Zero-emission vehicle (ZEV) registrations
- Percent and quantity of state transit fleet that are zero-emission vehicles
- Percent of state highway miles within a thirty-mile buffer of direct-current (DC) fast-charging stations
- Percent of Scenic and Historic Byways classified as electrified byways

OBJECTIVES:

- CDOT will work collaboratively with other state agencies and local partners to reduce statewide GHG pollution from the transportation sector by twenty-six percent (26%) by 2025, fifty percent (50%) by 2030, and ninety percent (90%) by 2050 relative to 2005 statewide GHG pollution levels.[1]
- Collaborate with other state agencies to increase electric vehicle registrations to support a future fleet of at least nine-hundred forty thousand (940,000) light-duty zero-emission vehicles by 2030.[2]
- Work with other state departments, transit agencies, and electric utilities to meet the transit vehicle goals specified the state's 2020 Electric Vehicle Plan to convert the state transit fleet to one-hundred percent (100%) zero-emission vehicles by 2050, with an interim target of at least one-thousand (1,000) zero-emission vehicles by 2030.[3]
- Collaborate with other state agencies, local governments, and private companies to increase the percentage of total state highway miles within a thirty-mile travel buffer of direct-current (DC) fast-charging stations from forty percent (40%) in fiscal year 2020 to one-hundred percent (100%) by 2030.[4]
- Coordinate with other state agencies, the Colorado Scenic & Historic Byways Commission, local governments, and individual site hosts to increase the number of Colorado Scenic & Historic Byways classified as electrified byways from three (3) currently to twenty-six (26) by the end of fiscal year 2025.[5]

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

OBJECTIVE NOTES:

1. CDOT will focus on the transportation greenhouse gas reduction elements of the Greenhouse Gas Pollution Reduction Roadmap, specifically vehicle electrification, VMT reduction, and the closer integration of greenhouse gas reduction measures and considerations in the planning, environmental, construction, and maintenance/operations elements of the project lifecycle. Other state agencies will simultaneously work to tackle issues related to the electricity generation, buildings, oil & gas, and agricultural sectors for a holistic statewide approach.
2. The Colorado Energy Office (CEO) will lead this effort in collaboration with CDOT, Colorado Department of Public Health and Environment (CDPHE), Colorado Department of Revenue (DOR), and other key stakeholder agencies while also coordinating with automakers, dealerships, utilities, nonprofit entities, and the general public to achieve this ambitious target by 2030. CDOT's role is to support and amplify this work, not to lead it.
3. CDOT is uniquely positioned to provide unified leadership in the transit electrification space given its statewide perspective and access to state, federal, and Volkswagen Settlement grant funding. CDOT will work to educate transit agencies on their options, support their fleet transition planning, and offset some of the incremental costs of going zero-emission. However, agencies themselves will play the central role in adopting new vehicle options when and where they make sense for their organizations and their riders.
4. CEO will lead this effort to ensure that sufficient public charging infrastructure is available through a combination of public and private investments. The State of Colorado does not intend to own or operate its own charging sites (beyond those at public facilities) but can provide grant support to ensure coverage in areas of the state that are not yet economically advantageous for private companies to serve. CDOT provides support for this effort through mapping, modeling, and data analysis that helps to identify prime locations while also funding limited infrastructure buildout along scenic byways, state parks, and other key areas of the rural charging network.
5. CDOT will play a coordinating role between the CEO, the Colorado Tourism Office, and the Scenic & Historic Byways Commission to educate individual byway groups on the benefits and opportunities associated with electric vehicle charging infrastructure while directing them to existing state grant and utility incentive programs to help facilitate this emerging market.

(3) Multimodal Options

MEASURES:

- Percentage of Coloradans commuting to work with multimodal options, including telecommuting
- Bustang bus service ridership

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

- Unlinked transit passenger trips for Colorado small urban and rural transit agencies

OBJECTIVES:

- Increase the percentage of Coloradans commuting to work using multimodal options, including those using telecommuting options, to thirty-five percent (35%) in 2030.
- Restore Bustang (I-25 and I-70 corridors) bus service ridership to pre-COVID-19 levels by the end of FY 2020-21 and grow it five percent (5%) per year thereafter. A pre-COVID-19 level is defined as June 2021 ridership being equivalent to June 2019 ridership, knowing that an equivalent annual number is not attainable while COVID-19 is currently affecting service. June 2019 ridership was 19,189 passengers for the month, with a FY 2018-19 total annual ridership of 238,000 riders.
- Increase unlinked passenger trips from small urban and rural transit agencies proportional to population growth levels from 2019 levels.

(4) Mobility Goal Area Considerations

- Staff will provide additional data for the mobility objectives when updates to PD 14.0 objectives are presented annually to the Transportation Commission. Examples include:
  - Operations Levels of Service (OLOS) grades in rural areas.
  - Operations Levels of Service (OLOS) grades in urban areas.
  - Operations Levels of Service (OLOS) grades for Colorado Freight Corridors.
- CDOT and the Transportation Commission will coordinate and collaborate with internal and external CDOT partners in efforts to achieve mobility goals in Colorado. Through this collaborative approach, CDOT will take actions to fulfill the goals outlined within the Administration's Greenhouse Gas Pollution Reduction Roadmap.
- VMT, GHG pollution levels, EV adoption, and multimodal options objectives will be aligned with the goals outlined in the Administration's Greenhouse Gas Pollution Reduction Roadmap and HB19-1261 (Climate Action Plan to Reduce Pollution).

VI. DOCUMENTS REFERENCED IN THIS POLICY DIRECTIVE

Appendix "A" CDOT Asset Management Metrics and Performance Targets

Appendix "B" CDOT Transit Asset Management

Appendix "C" Strategic Transportation Safety Plan (STSP) Tier 1 Strategies

Administration's Greenhouse Gas Pollution Reduction Roadmap

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

CDOT's Risk-Based Asset Management Plan

CDOT Transit Asset Management Group Plan

Colorado Strategic Transportation Safety Plan (STSP)

HB19-1261 (Climate Action Plan to Reduce Pollution)

Statewide Transportation Plan (2045)

VII. IMPLEMENTATION PLAN

The Division of Transportation Development, with the Division of Accounting and Finance, the Division of Maintenance and Operations, and the Office of Innovative Mobility, and in collaboration with other CDOT Divisions and CDOT Regions, will implement this Policy Directive. The Transportation Commission will direct funds to budget categories to support accomplishment of the objectives. The Division of Transportation Development will report annually on performance of the transportation system to track progress toward objectives, before the submission of the Department's annual budget. At a minimum, the Division of Transportation Development will review and update or reaffirm this Policy Directive with each Plan update cycle in collaboration with the Office of Policy and Government Relations, Division of Accounting and Finance, Division of Maintenance and Operations, Office of Innovative Mobility and other CDOT Divisions and CDOT Regions.

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

VIII. REVIEW DATE

This directive shall be reviewed on or before December 2022.

Herman F. Stockinger III
SECRETARY, TRANSPORTATION COMMISSION

11/19/2020
Date of Approval

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

Appendix "A"
CDOT Asset Management Metrics and Performance Targets

Asset	Objective	Objective Target	2019 Performance
Pavement	Achieve or maintain 80% high or moderate Drivability Life for Interstates based on condition standards and treatments set for traffic volume categories	80%	88.3%
	Achieve or maintain 80% high or moderate Drivability Life for the National Highway System, excluding Interstates, based on condition standards and treatments set for traffic volume categories	80%	84.0%
	Achieve or maintain 80% high or moderate Drivability Life for the state highway system based on condition standards and treatments set for traffic volume categories	80%	80.4%
Bridge Asset Condition	Achieve or maintain the percent of National Highway System total bridge deck area in good condition at or above 40%	40%	46.4%
	Achieve or maintain the percent of National Highway System total bridge deck area in poor condition below 10%	10%	6.1%
	Achieve or maintain the percent of state highway system total bridge deck area in good condition at or above 40%	40%	46.4%
	Achieve or maintain the percent of state highway system total bridge deck area in poor condition below 10%	10%	6.3%
Bridge Lead, Risk, and Freight Metrics	Percentage of expansion joints in fair, poor, or severe condition (by length) on CDOT-owned bridges	26% or less	37.6%
	Percentage of CDOT-owned bridge deck area that is unsealed or otherwise unprotected	35% or less	36.8%
	Percentage of CDOT-owned bridges over waterways that are scour critical	5.0%	6.2%
	Percentage of bridge crossings over Interstates, U.S. Routes and Colorado state highways with a vertical clearance less than the statutory maximum vehicle height of 14 feet-6 inches	1.0%	2.1%
	Percentage of bridge crossings over Interstates, U.S. Routes and Colorado state highways with a vertical clearance less than the minimum design requirement of 16 feet-6 inches	18.0%	20.3%
	Percentage of CDOT-owned bridges with a load restriction	0.9%	2.2%
	Percentage of CDOT-owned bridges posted for load	0.1%	0.4%
MLOS	Achieve or maintain an overall MLOS B minus grade for the state highway system	B-	B
	Achieve or maintain a LOS B grade for snow and ice removal	B	B
Buildings	Achieve or maintain an average statewide letter grade for CDOT-owned buildings at or above 85% C or better	85%	80%
ITS	Maintain or decrease the average percent useful life of ITS equipment at or below 90%	90%	82%
Fleet	Maintain or decrease the average percent useful life of CDOT fleet vehicles at or below 75%	75%	69%
Culverts	Maintain or decrease the percent of culverts in poor condition (have a culvert rating of 4 or less) at or below 5%	5%	5.2%
Geohazards	Achieve or maintain the percent of geohazard segments at or above risk grade B at or above 85%	85%	77%
Tunnels	Achieve or maintain the percent of network tunnel length with all elements in equal or better condition that 2.5 weighted condition index at or above 75%	75%	91%
Traffic Signals	Maintain or decrease the percent of signal infrastructure in severe condition at or below 2%	2%	7%
Walls	Maintain or decrease the percent of CDOT-owned walls, by square foot, in poor condition (have a rating of 4 or less) at or below 2.5%	2.5%	4.2%
Rest Areas	Achieve or maintain an average statewide letter grade for CDOT rest areas at or above 90% C or better	90%	61%

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

Appendix "B"
CDOT Transit Asset Management

The Federal Transit Administration's (FTA) October 1, 2016 Transit Asset Management (TAM) Rule established new asset management planning and reporting requirements for 49 U.S.C. Chapter 53 funding recipients and subrecipients that own, operate, or manage capital assets in the provision of public transportation. The TAM Rule requires transit providers to develop a TAM Plan to prioritize and guide investments in transit assets to keep the transit system in a State of Good Repair (SGR), and requires Departments of Transportation (DOTs) to sponsor a Group Plan for all Tier II transit providers (those without fixed-guideway and/or with less than 100 vehicles operating during peak service) who wish to participate. The Colorado DOT Transit Asset Management Group Plan (Group TAM Plan) was completed in the Fall of 2018 and covered a four-year planning horizon. The Group TAM Plan included a capital asset inventory of over $500 million and a prioritized project list of vehicle, equipment, and facilities projects of over $118 million through 2022.

The TAM Rule also outlined annual reporting and targeting requirements about the SGR of transit assets. It requires transit providers to report to FTA the number and type of active assets in each asset class every year. Once reporting is finalized, FTA calculates the percentage performance for the report year[1] and then CDOT, as the Group TAM Plan sponsor, sets realistic and achievable performance targets for each asset class for the next report year.

All active transit assets are required to be reported to FTA, regardless of the original funding source. There are 24 possible rolling stock asset class vehicle types, though the small urban and rural fleet currently includes just 11 of those vehicle types. It has been CDOT practice for nearly four years to prioritize pass-through funds to vehicle/project types that fall within six rolling stock asset classes, to vehicles with Americans with Disabilities Act (ADA) accessibility. In 2019, those vehicles made up around 93% of the rolling stock fleet, as emphasized in Table 1.

For the purposes of annual reporting, FTA defined equipment as non-revenue vehicles, narrowing down the types of reportable equipment to just two asset classes. Because of the practice of prioritizing pass-through funds towards ADA-compliant vehicles, CDOT has not awarded any pass-through funds for that type of equipment project in the last several years. As such, for PD 14.0 reporting purposes, Staff will focus rolling stock performance reporting on the six rolling stock asset classes—over-the-road-bus, bus, cutaway, minivan, aerial tramway, and van—and the two facilities asset classes, since those are the asset categories and classes that are impacted by CDOT's pass-through funds. Additional asset classes may be added in future PD-14 revisions if Staff believes that to be beneficial or necessary. Table 2 shows the performance measured by FTA in report year 2019[2], which Staff will use as baseline performance for annual reporting to the Transportation Commission.

[1] The FTA report year for CDOT and the small urban and rural agencies runs January 1 through December 31.
[2] State FY 2019-20

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

Appendix "B"
CDOT Transit Asset Management (Continued)

Table 1. Small Urban & Rural Transit Assets: Number of Assets per Asset Class, Report Year 2019		
Asset Category	**Asset Class**	**# of Assets**
Rolling Stock	AB – Articulated Bus	1
	AO – Automobile	48
	BR – Over-the-road Bus	**41**
	BU – Bus	**444**
	CU – Cutaway	**317**
	MV – Minivan	**142**
	OR – Other	24
	SB – School Bus	1
	SV – Sports Utility Vehicle	10
	TR – Aerial Tramway	**68**
	VN – Van	**144**
Equipment	Automobiles	43
	Trucks and Other Rubber Tire Vehicles	41
Facilities	Passenger/Parking Facilities	43
	Administrative/Maintenance Facilities	46

Table 2. Small Urban & Rural Transit Assets: Percent of Asset Class Beyond SGR, Report Year 2019		
Asset Category	**Asset Class**	**Performance (%)**
Rolling Stock	BR – Over-the-road Bus	17.95%
	BU – Bus	24.81%
	CU – Cutaway	24.61%
	MV – Minivan	23.85%
	TR – Aerial Tramway	83.82%
	VN – Van	13.79%
Facilities	Passenger/Parking Facilities	2.78%
	Administrative/Maintenance Facilities	8.89%

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

Appendix "C"
Strategic Transportation Safety Plan (STSP) Tier 1 Strategies

A. Name a Safety Champion to Lead a Proactive Safety Program
Name a safety champion to lead an inclusive safety program with the responsibility, resources, and authority to advance safety strategies and monitor effectiveness. This strategy will provide a focused approach to championing, coordinating, and implementing safety programming. *CDOT will lead implementation with support from Colorado State Patrol (CSP), Colorado Department of Public Health & Environment (CDPHE), and Colorado Department of Revenue (CDOR).*

B. Build a Safety Advocacy Coalition
Build a safety coalition of advocacy groups and state and local agencies to function as a lobbying and advocacy group. This group will work toward revisions to laws and policies at all phases of development and enforcement. This strategy will increase the visibility of key safety issues in policy discussions and create a central forum for strengthening relationships among participants and decision-makers in safety initiatives. *CDOT will lead implementation with support from CSP and CDPHE.*

C. Institutionalize Safety Roles and Responsibilities
Establish agreements that define the ways agencies and organizations work together to deliver safety programs, including roles and responsibilities. These will be formal mechanisms such as a memorandum of understanding. Less formal arrangements may be appropriate at local levels. *CSP and CDOT will lead implementation with support from CDPHE and CDOR.*

D. Coordinate with Existing Safety Programs
Coordinate the development and implementation of safety programs, incorporating strategies among agencies at the state and local level (example existing programs include CDOT's Whole System, Whole Safety Program, and regional and local Vision Zero programs). This strategy will improve the reach and impact of the state's safety programs and avoid duplication of safety program development efforts. *CDOT will lead implementation with support from CSP.*

E. Promote Consistent Safety Messaging
Coordinate the efforts of safety agencies and advocacy groups to develop consistent public-facing safety messaging to be distributed to audiences across the state. This strategy will create greater public safety awareness through consistent messaging. *CDOT Highway Safety Office and CDOT Office of Communications will lead implementation with support from CSP, CDPHE, and CDOR.*

F. Develop Education Campaigns for High-Risk Behaviors
Develop outreach campaigns aimed at high-risk groups, such as aggressive, distracted, and impaired drivers, with the goal to enhance and coordinate efforts among statewide education platforms. Occupant protection education campaigns will also be included within this strategy. *CDOT Highway Safety Office and CDOT Office of Communications will lead implementation with support from CSP, CDPHE, and CDOR.*

G. Provide Transportation Safety Education to Students and Families
Establish a culture of safety among young people by expanding existing and developing new transportation safety education programs that engage them over many years. One aim of this strategy is to develop a comprehensive curriculum that can be used for education statewide, including education on how to be a safe pedestrian and bicyclist. *CSP and CDOT will lead implementation with support from CDPHE.*

H. Prioritize Transportation Safety Funding
Increase the importance of safe infrastructure and transportation in transportation funding decisions. Educate funding decision-makers on the importance of safety and how funds could be used to make improvements. *Colorado Transportation Commission will lead implementation with support from CDOT, CSP, CDPHE, and CDOR.*

Subject	Number
Policy Guiding Statewide Plan Goals and Objectives	**14.0**

Appendix "C"
Strategic Transportation Safety Plan (STSP) Tier 1 Strategies (Continued)

I. Prioritize Safety in Transportation Planning, Facility Design, and Project Selection
Review policies and processes of roadway planning, design, and project selection to determine what role safety plays in decision-making. This includes updating existing planning and design guidelines and standards to integrate enhanced safety measures. *CDOT and CSP will lead implementation with support from CDPHE.*

J. Educate Decision-Makers on the Effectiveness of Occupant Protection Laws
Research and document the benefits of occupant protection laws, such as seatbelt use, helmet use, and restrictions on personal device use. Using available data, this strategy aims to educate legislators, commissioners, and other decision-makers on the benefits of such laws to aid in the development of new policies. *CDOT will lead implementation with support from CDPHE, CSP, and CDOR.*

K. Increase Requirements for New and Renewal Driver Licensing
Expand the graduated driver licensing (GDL) system to increase education and practice requirements for new drivers to obtain a license, and develop appropriate testing requirements to verify driver competency with increased age. *CDOR will lead implementation with support from CSP and CDPHE.*

L. Establish a Framework for Streamlining Data Management
Improve data gathering, reporting, storage, linkage, processing, analyses, and dissemination throughout the state for traffic records databases following the FHWA measures of quality: timeliness, accuracy, completeness, uniformity, integration, and accessibility. The databases will provide more uniform confidence in crash mitigation for agencies at both the state and local level. *CDOT will lead the implementation with support from Statewide Traffic Records Advisory Committee (STRAC), CSP, and CDPHE, as directed by the newly formed leadership group that will be a liaison between the Executive Directors of the partner agencies and STRAC.*

M. Prioritize and Promote Proven Safety Toolbox Strategies
Educate state and local traffic engineers on existing, known, and, effective safety toolbox strategies in transportation facility design, construction, and operation. This strategy will promote inclusion of proven strategies in design practices and development of Local Road Safety Plans by local agencies. C*DOT will lead implementation with support from CSP.*

N. Implement Systemic Infrastructure Safety Improvement Strategies
Build on existing safety implementation projects and programs. Identify and implement the most effective wide-scale systemic safety mitigation strategies in conjunction with implementing hot-spot improvement projects. Examples of these strategies include, but are not limited to, rumble strips, median barriers, and fully protected left-turn phasing. *CDOT will lead implementation with support from local city and county transportation departments as well as CDOT Region Traffic Engineers.*

O. Increase Education On and Implementation of Data-Driven and Automated Enforcement
Increase implementation of data-driven enforcement for speeding and red-light running at high-crash locations. Educate decision- makers on the effectiveness of automated enforcement as a safety enhancement rather than as a revenue generator. *CDOT will lead implementation with support CSP.*

1.2 Federal Performance Measures

Federal legislation has established a performance and outcome-based program for key elements of the transportation system. The objective is to invest resources in projects that will collectively make progress toward achievement of national goals. These performance measures include:

- Pavement condition on the Interstate System and on the remainder of the National Highway System (NHS);
- Performance of the Interstate System and the remainder of the NHS;
- Bridge condition on the NHS;
- Fatalities and serious injuries: both number and rate per 100 million vehicle miles traveled (VMT) on all public roads;
- Traffic congestion and delay;
- On-road mobile source emissions;
- Freight movement reliability; and
- Transit asset management and system performance.

1.3 Target Setting and First Mid-Point Reporting

Regulations related to the FAST Act (23 CFR 450.216 (f)(2)) require State DOTs to report on the condition and performance of their respective state transportation system. In 2015, the FAST Act established rules regarding nationwide performance measures in three areas: safety, asset management, and system performance. These performance metrics would be evaluated on four-year performance periods, starting in 2018, to determine the overall performance of the NHS.

The rule requires State DOTs to set performance targets in support of these measures in each four-year performance period and coordinate with Metropolitan Planning Organizations (MPOs) and public transportation providers when establishing these targets for each of the performance measures. The Colorado targets were established first in 2017 for metrics related to safety of the transportation system, and in 2018 for metrics related to infrastructure condition and system performance. Progress made in achieving these targets was reported in the Mid-Period Performance Report on September 30, 2020. This report is available on request and the information provided in the report is posted on the Federal Transportation Performance Metrics Information Dashboard Site at:
https://www.fhwa.dot.gov/tpm/reporting/state/state.cfm?state=Colorado

CDOT will continue to report on the federal performance metrics biennially in the future, as statutorily required. Subsequent updates to this reporting will review available information, current conditions, and how CDOT is working to achieve these performance targets. To keep the Transportation Commission informed about progress toward the objectives, CDOT also calculates what the annual targets should be to reach the objectives.

In order to achieve the FAST Act targets, CDOT allocates revenues into seven major investment categories, including Capital Construction, Maintenance & Operations, Multimodal Services,

Suballocated Programs, Other Programs, and two enterprises (Colorado Bridge Enterprise and the High Performance Transportation Enterprise). CDOT's programs fall into one of these major investment categories, from which the program of projects is developed, in consultation with the CDOT's local partners, the public, and through the development of the 10-year strategic pipeline of projects. This plan contains projects within these investments that contribute toward achievement of objectives for the safety, asset management and mobility goal areas, translating into improving performance for the metrics and targets outlined in the FAST Act. CDOT continues to develop models to forecast the relationship between current investment (which includes projects in this plan) and achievement of goals in the FAST Act.

1.3.1 Safety

The FAST Act requires that all states and MPOs annually establish targets for five safety performance measures using five-year averages. These measures are established by CDOT and safety stakeholders; the five-year averages represent the upper limits. Table 1-1 shows the baseline and recent five-year period averages. For each performance measure, there is a baseline, which indicates the region's current status for that measure, and a target, which establishes the desired future outcome for that measure. MPO five-year averages are discussed in Section 1.4 MPO Performance Targets.

Table 1-1 Safety Performance Measure Targets

	Baseline Condition (2018)	5-Year Average (2016-2020)
Number of Fatalities	584.6	618
Fatality Rate per 100 Million VMT	1.126	1.143
Number of Serious Injuries	3,090.6	3,271
Serious Injury Rate per 100 Million VMT	5.982	6.075
Number of Non-motorized Fatalities and Serious Injuries (pedestrian and bicyclists)	544.6	670

Source: Colorado Highway Safety Improvement Program (HSIP) and Statewide Transportation Improvement Program 2020.

1.3.2 Infrastructure Condition

The landmark Funding Advancements for Surface Transportation and Economic Recovery Act of 2009 (FASTER), passed in 2009, made several changes to the funding and operations at CDOT, including the formation of the High Performance Transportation Enterprise and the Colorado Bridge Enterprise. One of the key purposes of FASTER was to generate funding for state bridges lacking sufficient funding for repairs and safety improvements. As a result, the subsequent funding stream led to a significant reduction in Colorado's problematic bridge deck area. Overall, bridge and pavement condition statewide has remained relatively stable since CDOT has adopted an asset management approach to maintain its vital transportation assets. As shown in Table 1-2, CDOT has set updated infrastructure condition targets for a four-year period by rule.

Table 1-2 Infrastructure Condition Performance Measure Targets

	Baseline Condition (2018)	4-Year Target (2022)
Percent of Interstate System Pavement in Good Condition	44.3%	40%
Percent of Interstate System Pavement in Poor Condition	2.5%	5%
Percent of Non-Interstate NHS System Pavement in Good Condition	42.3%	40%
Percent of Non-Interstate NHS System Pavement in Poor Condition	3.0%	5%
Percent of NHS Bridge Deck Area Classified in Good Condition	47.3%	44%
Percent of NHS Bridge Deck Area Classified in Poor Condition	3.8%	4%

Source: Colorado Statewide Transportation Improvement Program 2020.

1.3.3 System Performance

CDOT has been making investments in low-cost, high-value solutions to improve the reliability of the state highway system through operational improvements including ramp metering, deployment of intelligent transportation systems (ITS) devices, coordinated winter operations, public-private partnerships for expansion projects, and expanding traffic operations. For the performance of the Congestion Mitigation and Air Quality (CMAQ) program, CDOT has been coordinating with local partners and the regional air quality council to develop standard guidelines for reporting accurate emission reduction benefits from CMAQ funded projects. As shown in Table 1-3, CDOT set system performance targets for both two- and four-year periods by rule.

Table 1-3 System Performance Measure Targets

	Baseline Conditions (2018)	2-Year Target (2020)	4-Year Target (2022)
Highway Reliability and Truck Travel Reliability			
Percent of Person Miles Traveled on the Interstate System that are Reliable	80.7%	81%	81%
Percent of Person Miles Traveled on the non-Interstate System NHS that are Reliable	85.9%	N/A	64%
Truck Travel Time Reliability (TTTR) Index	1.37	1.50	1.50
Congestion			
Annual Peak Hours of Excessive Delay (PHED) per Capita in the Denver-Aurora Urbanized Area	17.9	N/A	54
Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel in the Denver-Aurora Urbanized Area	23.9%	24%	25%
Emissions Reduction (4-year cumulative)			
Total Emissions Reduction Benefit for Volatile Organic Compounds [VOC] (kg/day) from CMAQ Funded Projects	672.8	86	105
Total Emissions Reduction Benefit for Particulate Matter, 10 Micrometer or Greater [PM10] (kg/day) from CMAQ Funded Projects	590.9	31	152
Total Emissions Reduction Benefit for Carbon Monoxide (CO] (kg/day) from CMAQ Funded Projects	9,998.7	1,152	1,426
Total Emissions Reduction Benefit for Noxious Oxides [NOx] (kg/day) from CMAQ Funded Projects	1,663.5	86	105

Source: Colorado Statewide Transportation Improvement Program 2020.

1.3.4 Transit

The rules for transit asset performance measures established in the FAST Act are implemented by FTA asset rules 49 CFR Parts 625 and 630 and guided by FTA Circular 8100.D on State Planning and Research Grants. FTA's Transit Asset Management (TAM) Rule, 49 CFR Part 625, requires transit providers that own, operate, or manage capital assets in the provision of public transportation to develop a TAM Plan, and requires DOTs to sponsor a Group TAM Plan for all Tier II transit agencies that want to participate. Tier II agencies are those that do not operate a fixed-guideway and have less than 100 vehicles operating during peak service hours. The TAM Plan is a business model that uses the condition of assets to guide the optimal prioritization of investments at transit agencies in order to keep the transit system in a state of good repair.

The CDOT Transit Asset Management Group Plan (Group TAM Plan) was completed in the fall of 2018 and includes approximately 53 small urban and rural public transportation providers who offer a combination of fixed-route, demand response, and other specialized transportation services throughout the State. In accordance with 49 CFR §625.43, the Group TAM Plan identified three broad capital asset categories and related performance measures, as shown in Table 1-4. CDOT has also adopted transit performance measures around system performance.

Table 1-4 Transit Infrastructure Performance Measures

Asset Category	
Rolling Stock	The percentage of revenue vehicles within an asset class that have either met or exceeded their useful life benchmark (ULB). ULB is the age at which an asset has reached the end of its economic useful life, specified in terms of asset age, mileage, and/or other factors.
Equipment	The percentage of service and maintenance vehicles (non-revenue) that have either met or exceeded their ULB.
Facilities	The percentage of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model (TERM) scale.

Source: Colorado DOT Transit Asset Management Group Plan Fall 2018.

1.3.4.1 Infrastructure Condition

As the Sponsor for the Group TAM Plan, CDOT is responsible for setting unified performance targets for achieving and maintaining a State of Good Repair (SGR) on an annual basis. SGR Targets are a measure of the percent of assets in each class that are beyond a state of good repair following the program year's replacements. 2019 was the first program year for which SGR Targets were estimated and reported to NTD and are shown in Table 1-5.

Table 1-5 Transit Infrastructure Condition Performance Targets for Small Urban and Rural Assets

Asset Category	Asset Class	% of Asset Class Beyond SGR	
		2019 Target	2020 Target
Revenue Vehicles	AB - Articulated Bus	18.80	TBD
	AO - Automobile	8.00	TBD
	BR - Over-the-road Bus	18.80	TBD
	BU - Bus	18.80	TBD
	CU - Cutaway	18.00	TBD
	MV - Minivan	2.00	TBD
	OR - Other	13.00	TBD
	SV - Sports Utility Vehicle	8.00	TBD
	TR - Aerial Tramway	41.00	TBD
	VN - Van	2.00	TBD
Equipment	Automobiles	4.00	TBD
	Trucks and Other Rubber Tire Vehicles	11.00	TBD
Facilities	Passenger/Parking Facilities	2.00	TBD
	Administrative/Maintenance Facilities	11.00	TBD

Source: FY2018 State Reporting - Colorado Department of Transportation Form A-90-Transit Asset Management Performance Measure Targets

1.3.4.2 System Performance

The system performance goal is to increase the ridership of small urban and rural transit grantees. The measure was set for a five-year performance period and the latest targets established are shown in Table 1-6. Small urban and rural transit agencies reached 18,112,204 unlinked passenger trips in 2019, significantly exceeding the 2019 Target.

Table 1-6 Transit System Performance Targets

	2018 Target (in millions)	2019 Target (in millions)
Increase the ridership of small urban and rural transit grantees by at least an average of 1.5% statewide over a 5-year period beginning with 2012.	15.55	16.12

Source: Statewide Transportation Improvement Program-FY2021-FY2024.

1.4 MPO Performance Targets

As part of the federal requirements, MPOs must establish performance measures and set targets to track the progress toward the region's desired outcomes. Each MPO in Colorado has worked with CDOT, member communities, transit agencies, and the general public in the target-setting process. For the first performance period, the MPOs in Colorado (Denver Regional Council of Governments [DRCOG], the North Front Range MPO [NFRMPO], Pikes Peak Council of Governments [PPACG], Pueblo Area Council of Governments [PACOG], and the Grand Valley MPO [GVMPO]) have elected to support the state targets for all metrics (with one exception). DRCOG has elected to produce its own targets for the metrics related to transportation safety. In 2018, DRCOG achieved the fatality target.

Future system performance reports will incorporate the progress that MPOs have made in achieving these targets. Reporting frequency is based on data availability. As new information becomes available or circumstances change, targets, or the methodology for measuring success may also be refined.

Table 1-7 provides a summary of five-year safety performance metrics for Colorado's MPOs.

Table 1-7 Five-Year Safety Performance for Colorado MPOs

Denver Regional Council of Governments						
Year	Fatalities	Fatality Rate	Serious Injuries (SI)	Serious Injury Rate	Non-Motorized Fatality and SI	VMT (100M)
2014	236	1.616	2007	13.739	399	146.0795445
2015	276	1.820	1934	12.750	394	151.6893974
2016	315	2.017	1964	12.574	407	156.1894642
2017	318	1.996	1903	11.943	406	159.3383593
2018	297	1.838	2022	12.516	418	161.5533837
Average (2014-2018)	288	1.857	1966	12.704	405	
Grand Valley MPO						
Year	Fatalities	Fatality Rate	Serious Injuries (SI)	Serious Injury Rate	Non-Motorized Fatality and SI	VMT (100M)
2014	13	3.553	74	20.225	13	3.65891695
2015	20	5.403	110	29.717	20	3.70153435
2016	17	4.472	77	20.257	14	3.80119548
2017	16	4.166	50	13.019	12	3.8404643
2018	20	5.098	47	11.981	12	3.9229543
Average (2014-2018)	17	4.539	72	19.040	14	
North Front Range MPO						
Year	Fatalities	Fatality Rate	Serious Injuries (SI)	Serious Injury Rate	Non-Motorized Fatality and SI	VMT (100M)
2014	79	4.584	362	21.004	39	17.2347379
2015	88	4.897	348	19.364	46	17.9716583
2016	99	5.305	323	17.307	46	18.66339774
2017	102	5.241	342	17.572	46	19.4626103
2018	99	5.024	373	18.930	34	19.7040724
Average (2014-2018)	93	5.010	350	18.835	42	
Pikes Peak Area Council of Governments						
Year	Fatalities	Fatality Rate	Serious Injuries (SI)	Serious Injury Rate	Non-Motorized Fatality and SI	VMT (100M)
2014	55	2.507	304	13.856	36	21.94056975
2015	53	2.328	285	12.517	41	22.76884235
2016	51	2.158	283	11.975	58	23.63255412
2017	81	3.324	312	12.805	61	24.3651735
2018	86	3.396	353	13.941	52	25.32056465
Average (2014-2018)	65	2.743	307	13.019	50	
Pueblo Area Council of Governments						
Year	Fatalities	Fatality Rate	Serious Injuries (SI)	Serious Injury Rate	Non-Motorized Fatality and SI	VMT (100M)
2014	19	3.430	63	11.374	5	5.53912685
2015	12	1.819	73	11.064	13	6.59813055
2016	20	2.884	56	8.075	6	6.93473376
2017	34	4.825	54	7.664	14	7.0461498
2018	36	5.119	84	11.943	17	7.0332726
Average (2014-2018)	24	3.615	66	10.024	11	

Table 1-8 provides a summary of the most current infrastructure condition, mobility, and air quality metrics for Colorado's MPOs.

Table 1-8 Current Infrastructure Condition, Mobility and Air Quality Metrics for Colorado's MPOs

	DRCOG	NFRMPO	PPACG	PACOG	GVMPO
Percent of Interstate System Pavement in Good Condition	28.7%	63.0%	61.6%	59.8%	82.1%
Percent of Interstate System Pavement in Poor Condition	0.6%	1.5%	0.3%	0.0%	0.0%
Percent of Non-Interstate NHS Pavement in Good Condition	25.8%	48.7%	29.9%	32.9%	26.4%
Percent of Non-Interstate NHS Pavement in Poor Condition	7.7%	2.9%	9.8%	4.8%	4.0%
Percent of NHS Bridge Deck Area Classified in Good Condition	50.7%	45.8%	51.2%	38.0%	35.6%
Percent of NHS Bridge Deck Area Classified in Poor Condition	3.0%	5.8%	2.9%	14.8%	0.0%
Percent of Person Miles Traveled on the Interstate System that are Reliable	65.3%	100.0%	94.4%	100.0%	100.0%
Percent of Person Miles Traveled on the non-Interstate NHS System that are Reliable	80.2%	97.8%	85.4%	93.0%	94.1%
Truck Travel Time Reliability (TTTR) Index	1.93	1.53	1.36	1.18	1.16
Annual Peak Hours of Excessive Delay (PHED) per Capita	17.9	N/A	N/A	N/A	N/A
Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel	23.9%	N/A	N/A	N/A	N/A
Total Emissions Reduction Benefit for Volatile Organic Compounds [VOC] (kg/day) from CMAQ Funded Projects	508.75	171.68	-	N/A	N/A
Total Emissions Reduction Benefit for Particulate Matter [PM] (kg/day) from CMAQ Funded Projects	84.99	0.58	-	N/A	N/A
Total Emissions Reduction Benefit for Carbon Monoxide [CO] (kg/day) from CMAQ Funded Projects	9,674.75	34.07	125.47	N/A	N/A
Total Emissions Reduction Benefit for Noxious Oxides [NOx] (kg/day) from CMAQ Funded Projects	1,407.14	73.45	-	N/A	N/A

Additional information on MPO progress toward supporting the state targets for all performance metrics can be found in their individual MPO plans.

Section 2
Performance Metrics Reporting

Performance reporting and monitoring is used to communicate progress and performance to the public and planning partners, identify the need to make changes to performance objectives, and inform investment decisions including the development of the annual budget. The following is a brief description on various ways that CDOT tracks and reports the progress towards the goal areas of mobility, safety, and asset management.

2.1 Federal Reporting Mechanisms

The Transportation Commission approves performance metrics and targets. CDOT provides an annual update to the Transportation Commission on the objectives and targets set in PD 14. CDOT also reports on the National Performance Measures biennially to the Federal Highway Administration (FHWA). CDOT collects information on the performance of bridges, pavement, maintenance, buildings, Intelligent Transportation Systems (ITS), vehicle fleets, culverts, geohazards, tunnels, traffic signals, and walls, along with performance targets. On an annual basis, CDOT and the Tier II transit agencies report to the Federal Transit Administration (FTA), through the National Transit Database (NTD), about the type and number of transit vehicles and equipment in active use, the condition of transit facilities, and performance targets for the next year.

The safety metrics are reported annually through the Highway Safety Improvement Plan (HSIP), as it establishes safety performance measures to carry out the HSIP and to assess serious injuries and fatalities on all public roads. The regulations will improve data, foster transparency and accountability, and allow safety tracking of progress at the national level. These metrics will inform CDOT and MPO planning, programming, and decision-making for the greatest possible reduction in fatalities and serious injuries.

The infrastructure condition and system performance metrics are reported biennially to FHWA, which allows it to determine whether CDOT is making sufficient progress towards attaining its four-year performance period goals. CDOT last reported September 30, 2020 as required, with the next report in 2022. The Highway Performance Monitoring System (HPMS) was developed as a systematic measure encompassing the scope, condition, performance, use and operating characteristics of the nation’s highways. Every year, CDOT's Division of Transportation Development compiles analyzed data from Colorado’s highway system and submits it to the FHWA for review. Various branches within CDOT have a program responsibility to administer and report performance measures for the Division of Transportation Development. HPMS data is critical to planning and funding the nation's roadways. Additionally, the federal rule has minimum condition levels for interstate pavements and overall bridge deck area condition, penalties of which include reallocating funds to address condition. CDOT currently is under the limits for “poor” interstate pavement and bridge deck area condition.

In addition, the Stewardship and Oversight Agreement Annual Report serves as the principal instrument by which CDOT informs FHWA of its performance across several mutually agreed-upon indicators associated with the administration of the Federal Aid Highway Program.

2.2 Performance Plan

The State Measurement for Accountable, Responsive, and Transparent Government (SMART) Act requires CDOT to develop a performance plan and routinely report on its performance. CDOT publishes its Performance Plan annually and describes departmental organization and functions, as well as major transportation considerations and strategic policy initiatives. These initiatives in fiscal year 2020 focus on improving safety, developing a clean transportation system through multimodal options, and developing and executing the CDOT's 10-year strategic pipeline of projects. The plan is published on July 1 each year by the Governor's Operations Office, in addition to quarterly metric updates. In January, CDOT's Executive Director provides the Joint Transportation Committee with an update of the Performance Plan and the progress towards achieving its performance goals.

2.3 Risk-Based Asset Management Plan

The Risk-Based Asset Management Plan communicates CDOT's commitment to asset management to transportation shareholders and the public and identifies risks to its asset management program. Additionally, the Risk-Based Asset Management Plan identifies performance measures, targets, and gaps covering pavement and bridge conditions on all interstates, bridges, and NHS/state highways in Colorado to ensure they are safe and capable of meeting travel demands.

2.4 Governor's Dashboard

The Governor's Dashboard communicates the state's performance goals and metrics across key policy priority areas. The dashboard specifies the four priority areas set by Governor Jared Polis (Tax Reform and Economic Development, Energy and Renewables, Health, and Education and Workforce); related goals and targets to be achieved; and performance metrics to assess whether the set goals and targets have been achieved. The priorities and goals listed in the dashboard were also linked to the administration's final budget request. This statewide dashboard is part of a national trend by governments to better communicate policy priorities and provide transparency into performance by publicly setting goals and using metrics to illustrate progress.

2.5 Other Required and Voluntary Reports

Every fall, the PD 14 Scorecard report shows how well CDOT is meeting the annual targets. It graphically summarizes the performance of PD 14 objectives for the current calendar/fiscal year and the prior year. In addition, the Annual Report, published by the Office of Communications, outlines performance information and statistics. Information related to First Mid-Point Reporting is in Section 1.3. Progress in implementing plan strategies is continuously monitored and reported on CDOT's website: https://www.codot.gov/performance.

CDOT's Office of Transportation Safety also issues a Safety Annual Report, which reports on transportation related citations and arrests, fatalities, and fatal crashes, and includes the success of transportation safety-related projects throughout Colorado, with performance targets for each metric.

Performance on mobility metrics is tracked annually using a Congestion Report Card, which tracks average travel-time delay. Transit ridership and daily visitors to the trip-planning website COTrip.org are also tracked.

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