

COLORADO DEPARTMENT OF TRANSPORTATION		<input checked="" type="checkbox"/> POLICY DIRECTIVE <input type="checkbox"/> PROCEDURAL DIRECTIVE	
Subject			Number
Policy Guiding Statewide Plan Development			14.0
Effective	Supersedes	Originating Office	
2.27.15	14.0: 3.20.08 13.0: 12.14.06	Division of Transportation Development	

I. PURPOSE

This Policy Directive provides an overall framework for the transportation planning process through which a multimodal, comprehensive Statewide Transportation Plan will be developed and implemented. With limited funding available, the Colorado Department of Transportation (CDOT) has developed a vision for the Statewide Transportation Plan that guides investment for Colorado’s multimodal transportation system and that balances:

- Preservation and maintenance, and incorporation of risk-based asset management,
- Efficient system operations and management practices,
- Capacity improvements, and
- Incorporation of safety in all areas

Policy Directive 14.0 performance objectives will guide the distribution of resources in the Statewide Transportation Plan, the Statewide Transportation Improvement Program, and the annual budget. This Policy Directive will be revised, as needed, to update performance objectives or incorporate additional goal areas.

II. AUTHORITY

23 United States Code (U.S.C.) 134, 135 and 450, PL 112-141 (“Moving Ahead for Progress in the 21st Century” or “MAP-21”), and its implementing regulations.

§ 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)

III. APPLICABILITY

This Policy Directive applies to all CDOT Divisions and Regions involved in implementing the Statewide Transportation Plan in cooperation with CDOT’s planning partners: the 10 rural Transportation Planning Regions and the five Metropolitan Planning Organizations.

IV. DEFINITIONS

“Aspirational Objectives” are those objectives, or targets, toward which CDOT may strive if CDOT receives revenues beyond those projected.

“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 volume based categories, and associated category drivability condition standards and allowed pavement treatments. Unacceptable driving condition is specific to each traffic volume based 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).

“Geohazards” are geologic hazards that affect the transportation system and include debris flow, embankment distress, landslides, rockfall, rockslides, and sink holes.

“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 Level of Service” (MLOS) is a qualitative measure describing operational conditions on the roadway. Overall maintenance level 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.

“Performance Measures” are the ways that direction toward a goal is measured.

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

“Planning Time Index” (PTI) is a measure of travel time reliability. For this performance measure it is defined as the 95th percentile travel time divided by travel time at free-flow speed. In general terms, it identifies the extra time needed to arrive on-time for a trip 19 times out of 20. For example, for a PTI₉₅ of 1.5, a worker should plan 45 minutes for a trip that takes 30 minutes in free flow conditions ($30 \text{ minutes} \times 1.5 = 45 \text{ minutes}$) to be on-time 19 out of 20 times (which would mean the worker would be late only one of the 20 work days in a month).

“Revenue Service Miles” are the miles of service operated by transit vehicles and available to the general public.

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

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

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 four goal areas: safety, infrastructure condition, system performance, and maintenance. Financial resources should be directed toward achieving the objectives within the first 10 years of the planning horizon (2016-2025). Projects should be selected to support the goals and objectives and will be included in the Statewide Transportation Improvement Program (STIP). Annual budget decisions will be guided by these performance objectives as well as CDOT’s Risk Based Asset Management Plan. Prior to funding new initiatives, funds should be directed to achieving the objectives in each area while recognizing constraints on some funding sources. Aspirational objectives guide the use of funds received that are above baseline revenue projections.

2. Goals. PD 14.0 goals guide development of the multimodal Statewide Transportation Plan and of performance objectives. The goals are:

- SAFETY – Moving Colorado toward zero deaths by reducing traffic-related deaths and serious injuries by one-half by 2030.
- INFRASTRUCTURE CONDITION – Preserve the transportation infrastructure condition to ensure safety and mobility at a least life cycle cost.
- SYSTEM PERFORMANCE – Improve system reliability and reduce congestion, primarily through operational strategies and secondarily through the addition of capacity. Support opportunities for mode choice.
- MAINTENANCE – Annually maintain CDOT’s roadways and facilities to minimize the need for replacement or rehabilitation.

PD 14.0 and Statewide Plan Goals are in alignment with the MAP-21 National Goals. For the Statewide Plan, goals are expressed in more public-friendly terms and include: Safety, Mobility (System Performance in PD 14.0), Economic Vitality (not yet identified in PD 14.0), and Maintaining the System (Infrastructure Condition and Maintenance in PD 14.0).

3. Performance Measures and Objectives. Performance measures describe how statewide success will be evaluated and performance objectives establish statewide achievement levels which are used to direct investment decisions primarily focused on a 10-year planning horizon (2016-2025). Explanations of how the objectives will be measured and budget categories-

Maintain, Maximize, Expand, and Pass-Through Funds/Multi-Modal Grants- that fund the four goal areas are listed below with the appropriate goals.

a) HIGHWAY SAFETY:

The highway safety objectives (with the exception of the economic impact of crashes objectives) were set after studying trends from 2008 through 2013. Safety measures and objectives apply to *all* roads in the state. The other safety measures and objectives in this section are subsets of the highway measures and objectives. The budget categories that fund Safety are Maintain, Maximize, and Expand.

(1) All Highways

MEASURES:

- Number of fatalities
- Fatalities per vehicle miles traveled (VMT)
- Number of serious injuries
- Serious injuries per VMT
- Economic impact of crashes

OBJECTIVES:

- Reduce fatalities by 12 per year from 548 in 2008 to 344 in 2025.
- Reduce the fatality rate per 100 million VMT by 0.02 per year from 1.03 in 2013 to 0.79 in 2025.
- Reduce serious injuries by 90 per year from 3,200 in 2013 to 2,120 in 2025.
- Reduce the serious injury rate by 0.2 per 100 million VMT per year from 6.86 in 2013 to 4.46 in 2025.
- Reduce the economic impact of crashes annually by 1% over the previous calendar year.

ASPIRATIONAL OBJECTIVE:

- Reduce the fatality rate per 100 million VMT to 0.75 in 2025.

(2) Bike and Pedestrian

MEASURES:

- Number of bicyclist and pedestrian fatalities involving motorized vehicles
- Number of bicyclist and pedestrian serious injuries involving motorized vehicles

OBJECTIVES:

- Reduce the number of bicyclist and pedestrian fatalities involving motorized vehicles from 67 in 2013 to 47 in 2025.
- Reduce the number of bicyclist and pedestrian serious injuries involving motorized vehicles from 469 in 2013 to 311 in 2025.

b) INFRASTRUCTURE CONDITION:

The infrastructure condition objectives for highways and bridges are intended to be achieved or maintained over the first 10 years of the planning horizon (2016-2025). The budget category that funds Infrastructure Condition is Maintain, except for Transit which is funded with Pass-Through Funds/Multi-Modal Grants.

(1) Bridges**MEASURES:**

- Condition of National Highway System (NHS) bridges
- Condition of state highway bridges
- Risk-Based Asset Management Plan measures for bridges (See Appendix A for additional bridge measures.)

OBJECTIVES:

- Maintain the percent of NHS total bridge deck area that is not structurally deficient at or above 90%.
- Maintain the percent of state highway total bridge deck area that is not structurally deficient at or above 90%.
- Meet bridge objectives in the Risk-Based Asset Management Plan. (See Appendix A for additional bridge objectives.)

ASPIRATIONAL OBJECTIVES:

- Achieve the percent of NHS total bridge deck area that is not structurally deficient at or above 95%.

(2) Highways**MEASURES:**

- Pavement condition of the Interstate System
- Pavement condition of the NHS, excluding Interstates
- Pavement condition of the state highway system

OBJECTIVES:

- Achieve 80% High/Moderate Drivability Life for Interstates based on condition standards and treatments set for traffic volume categories.
- Achieve 80% High/ Moderate Drivability Life for NHS, excluding Interstates, based on condition standards and treatments set for traffic volume categories.
- Achieve 80% High/Moderate Drivability Life for the state highway system based on condition standards and treatments set for traffic volume categories.

ASPIRATIONAL OBJECTIVES:

- Achieve 90% High/Moderate Drivability Life for Interstates based on

condition standards and treatments set for traffic volume categories.

- Achieve 90% High/ Moderate Drivability Life for NHS, excluding Interstates, based on condition standards and treatments set for traffic volume categories.

(3) Other Assets

MEASURE:

- Risk-Based Asset Management Plan measures for other assets (See Appendix A for measures for buildings, Intelligent Transportation Systems (ITS) equipment, roadway fleet, culverts, geohazards, tunnels, traffic signals, and walls)

OBJECTIVE:

- Meet objectives in the Risk-Based Asset Management Plan (See Appendix A for objectives for buildings, ITS equipment, roadway fleet, culverts, geohazards, tunnels, traffic signals, and walls)

(4) Transit

MEASURE:

- Transit Asset Condition

OBJECTIVES:

- Maintain the percentage of vehicles in the rural Colorado transit fleet to no less than 65% operating in fair, good, or excellent condition, per Federal Transit Administration definitions.
- Ensure that all CDOT transit grantees have Asset Management Plans in place for state or federally funded vehicles, buildings and equipment by 2017.

ASPIRATIONAL OBJECTIVE:

- Increase the percentage of vehicles in the rural Colorado transit fleet to no less than 70% operating in fair, good, or excellent condition, per Federal Transit Administration definitions.

c) SYSTEM PERFORMANCE:

The system performance objectives for Interstates, NHS and State Highway system are intended to be achieved within the first 10 years (2016-2025) of the planning horizon. The system performance objectives for transit begin in 2012 either for a five-year rolling average or as the baseline year. The budget categories that fund System Performance are Maximize, Expand, and Pass-Through Funds/Multi-Modal Grants.

(1) Interstates, NHS and State Highway system

MEASURES:

- Interstate Performance – Planning Time Index (PTI)
- NHS Performance excluding Interstates – PTI
- Colorado Freight Corridors Performance – PTI

OBJECTIVES:

- Prevent the spread of congestion by maintaining a PTI of 1.25 or less on 90% or greater of Interstate centerline miles.
- Prevent the spread of congestion by maintaining a PTI of 1.08 or less on 90% or greater of NHS centerline miles, excluding Interstates.
- Prevent the spread of congestion by maintaining a PTI of 1.25 or less on 90% or greater of Colorado Freight Corridor centerline miles.

(2) Transit

MEASURES:

- Transit Utilization – Ridership statewide for small urban and rural “transit grantees”
- Transit Connectivity – Revenue service miles provided

OBJECTIVES:

- Increase ridership of small urban and rural transit grantees by at least an average of 1.5% statewide over a five-year period beginning with 2012.
- Maintain or increase the total number of revenue service miles of regional, inter-regional, and inter-city passenger service over that recorded for 2012.

ASPIRATIONAL OBJECTIVES:

- Increase ridership of small urban and rural transit grantees by at least an average of 1.7% statewide over a five-year period beginning with 2012.
- Increase the statewide total number of revenue service miles of regional, inter-regional, and inter-city passenger service by at least an average 1.7% over a five-year period beginning with 2012.

d) MAINTENANCE:

Maintenance objectives are established based on annual funding levels and measured annually. The budget category that funds Maintenance is Maintain.

MEASURES:

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

OBJECTIVES:

- Maintain a LOS B grade for snow and ice removal.

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- Maintain an overall MLOS B minus grade for the state highway system.

ASPIRATIONAL OBJECTIVES:

- Achieve a LOS B+ grade for snow and ice removal.
- Achieve an overall Maintenance LOS B grade for the state highway system.

VI. DOCUMENTS REFERENCED IN THIS POLICY DIRECTIVE

Appendix “A” “CDOT Risk-Based Asset Management Plan Performance Measures and Objectives”

VII. IMPLEMENTATION PLAN

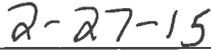
Additional measures and objectives are planned or currently under development. As additional measures and objectives are finalized they will be brought forward for consideration of incorporation into PD 14.0. This includes measures and objectives in the following areas: Bike and Pedestrian, Truck Freight, Freight Rail, Economic Vitality, and Environmental Sustainability.

This Policy Directive will be implemented by the Division of Transportation Development, with the Office of Financial Management and Budget, the Division of Transportation Systems Management & Operations, and the Division of Transit & Rail, and in collaboration with other CDOT Divisions and CDOT Regions. Funds will be directed 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. 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, Office of Financial Management and Budget, Division of Transportation Systems Management & Operations, Division of Transit & Rail, and other CDOT Divisions and CDOT Regions.

VIII. REVIEW DATE

This directive shall be reviewed on or before February 2018.


Secretary, Transportation Commission


Date of Approval

Appendix A: CDOT Risk-Based Asset Management Plan Performance Measures and Objectives

Asset	Measure	Current Performance	Objective (Target)	Aspirational Objective (Target)
Bridges	Percentage of state highway total bridge deck area that is not structurally deficient	94%	90% ^a	95% ^a
	Percentage of NHS total bridge deck area that is not structurally deficient	95%	90% ^a	95% ^a
	Percentage of CDOT-owned bridges over waterways that are scour critical	7.1%	5%	1%
	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	0.4%	0.4%	0%
	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	4.8%	4.8%	2%
	Percentage of CDOT-owned bridges posted for load	0.1%	0%	0%
	Percentage of CDOT-owned bridges with a load restriction	2.6%	3%	1%
	Percentage of leaking expansion joint by length on CDOT-owned bridges	18.8%	15%	5%
	Percentage of CDOT-owned bridge deck area that is unsealed or otherwise unprotected	31%	30%	5%
	Pavement	Percentage high-moderate drivability life for Interstates based on condition standards and treatments set for traffic volume categories	89%	80% ^a
	Percentage high-moderate drivability life for CDOT-owned NHS, excluding Interstates based on condition standards and treatments set for traffic volume categories	78%	80% ^a	90% ^a
	Percentage high-moderate drivability life for the State highway system based on condition standards and treatments set for traffic volume categories	73%	80% ^a	90%
Maintenance	Statewide Letter Grade	B-	B-a	B ^a
Buildings	Statewide Letter Grade	86% C or Better	90% C or Better	100% C or Better
ITS	Average Percent Useful Life	126%	90%	85%
Fleet	Average Percent Useful Life	103%	70%	50%
Culverts ^b	Percentage Critical Culverts	2.9%	5%	2%
Geohazards	Number of Sites with letter grade C or better	47%	60%	90% ^c
Tunnels	Key components of fire/life safety must not exceed 100% of useful life, based on manufacturer's specification, condition inspections and maintenance history.	TBD ^d	100%	100%
Traffic Signals ^e	Percent intersections with at least one component beyond 100% Useful Life	52%	15%	0%
Walls ^f	Percentage of CDOT-owned walls, by square foot, that are in condition state 3 or 4 (poor or severe).	1%	1%	0.5%

Highlighted measures and objectives are those that are identified specifically in the Infrastructure Condition section of PD 14.

^a These measures and objectives are from the Infrastructure Condition section of PD 14.

^b Culverts are minor structures between 4' and 20'.

^c Some sites will always remain in the D category due to traffic volume. And at some sites, to effectively eliminate or significantly reduce the likelihood is beyond the scope of the Geohazards Program.

^d Objective pending data collection.

^e Overall signal infrastructure includes signal assemblies, cabinets and controllers.

^f The walls inventory and condition are being collected under a 2 year project, so the information in this table is based on estimates.