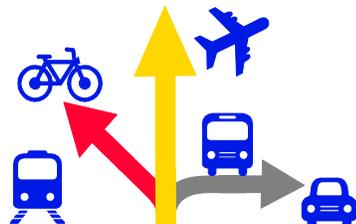


POLICY DIRECTIVE 14 DEVELOPMENT TECHNICAL MEMORANDUM

March 11, 2015



STATEWIDE TRANSPORTATION PLAN



COLORADO
Department of
Transportation

Purpose

This technical memorandum describes how Policy Directive 14.0 was updated in close coordination with the Statewide Plan Committee and other committees of the Transportation Commission and with CDOT staff over the past two years.

Introduction

Policy Directive (PD) 14.0 is a Transportation Commission directive typically reviewed and revised at the beginning of each planning cycle to guide Statewide Transportation Plan development. The updated PD 14.0 wasn't adopted at the beginning of the planning cycle in 2012 because many of the statewide objectives were still being developed to align with the performance-based federal surface transportation authorization bill, MAP-21 (Moving Ahead for Progress in the 21st Century), that became law in July 2012. In early discussions with the Statewide Plan Committee of the Transportation Commission, the purpose of PD 14.0 was expanded to also include guiding the distribution of financial resources toward accomplishment of objectives (targets). Goal areas and objectives were updated to align with the national goals in MAP-21: safety, infrastructure condition (also includes maintenance in PD 14.0), and system reliability and congestion reduction (combined as system performance in PD 14.0).

The other MAP-21 goals of freight movement and economic vitality, environmental sustainability, and reduced project delivery delays were not included as specific goal areas in PD 14.0. Freight movement was added as a system performance measure and objective for the Colorado Freight Corridors. Measures and objectives for the new goal areas of environmental sustainability and economic vitality will be included in PD 14.0 once they are developed. Reduced project delivery delays was excluded from PD 14.0 because it is already covered in various other CDOT reports (annual Chief Engineer's Objectives, Annual Performance Plan, and the CDOT-FHWA Stewardship Agreement) and does not affect resource distribution, one of the primary purposes of PD 14.0. Measures and objectives also are anticipated for inclusion in PD 14.0 for bicycle and pedestrian, truck freight, and freight rail.

PD 14.0 guides the distribution of resources in Program Distribution. Program Distribution is a part of the Statewide Transportation Plan (SWP) and outlines the assignment of projected revenues to various program areas for the time period of the SWP (2016-2040). Program Distribution was developed in the summer and fall of 2013 and adopted by the Transportation Commission in February, 2014. Although PD 14.0 was not yet finalized at that time, many of the measures and objectives had already been established and were used to guide the distribution of resources in Program Distribution. Most notably, Program Distribution allocations for Maintenance, Surface Treatment, and Bridge are based on estimates of the level of funding required to meet PD 14.0 objectives for those assets.

Background

The Transportation Commission first adopted PD 14.0 at the beginning of the planning cycle for the 2030 Statewide Transportation Plan. This version, dated October 16, 2003, included a purpose, vision, mission, and goals and objectives for five investment categories: system quality, safety, mobility, program delivery, and strategic projects. Strategic projects included the 28 high-priority statewide transportation projects identified as the "7th Pot". PD 14.0 was revised on December 14, 2006 to guide the statewide and regional planning process at the beginning of the planning cycle for the 2035 Statewide Transportation Plan. In 2006, PD 14.0's strategic projects investment category was removed as a separate category but added to the other investment

categories where appropriate. PD 14.0 was revised again and passed March 20, 2008 toward the end of the planning process for the 2035 Statewide Transportation Plan. The 2008 revision added some “aspirational” goals toward which CDOT could strive and a few quantifiable objectives that could be achieved with projected available revenues.

The 2003, 2006, and 2008 versions of PD 14.0 had less quantifiable objectives than the 2015 version. Some examples of less quantifiable objectives are:

- Preserve transportation choices as part of an integral statewide transportation planning process
- Reduce the rate and severity of transportation related incidents
- Seek external customer feedback to improve functional and regional delivery of services

The safety investment category had far more specific, time-bound objectives, reflecting the federal emphasis on highway safety.

The 2015 PD 14.0 update includes elements not in previous policy directives. It articulates how success will be measured, defines terms, has multimodal objectives, and connects the goal areas with appropriate sections of the annual budget.

Performance-based Planning

A number of factors influenced development of the updated PD 14.0.

- Performance-based planning at the federal level: Even before MAP-21 became law, CDOT staff members were aware that the next federal surface transportation authorization bill would likely require performance measures. Under MAP-21, state departments of transportation must develop performance measures and standards to direct investments toward accomplishment of the MAP-21 national goals. These MAP-21 requirements became the organizing framework for PD 14.0. The areas targeted in MAP-21 for state performance measures and standards are:
 - Condition of Interstate and National Highway System (NHS) pavement;
 - Condition of bridges on the NHS;
 - Performance of the Interstates;
 - Performance of the NHS, excluding the Interstates;
 - Serious injuries and fatalities per vehicle mile traveled (VMT);
 - Number of serious injuries and fatalities;
 - Traffic congestion;
 - On-road mobile source emissions; and
 - Freight movement on the Interstates.

Proposed rules for implementation of MAP-21 had not been issued yet when work began on PD 14.0. As of March 2015, proposed rules have been released for highway safety, pavement and bridge, as well as metropolitan and statewide planning. Final rules are expected to be published toward the end of 2015. Changes necessitated by final rulemaking will be incorporated into PD 14.0 as appropriate.

- Other CDOT plans: Several CDOT modal and topic plans were developed or completed at the same time as the regional and statewide transportation plans. Several include performance measures, in line with MAP-21's performance-based planning approach. The plans that influenced the 2015 update of PD 14.0 or will influence the development of future goals and objectives include:
 - *Statewide Transit Plan* - The Statewide Transit Plan details the existing public transit around the state; assesses the capital, operational and financial needs; outlines some approaches to prioritizing transit needs; describes measures used for evaluating transit performance, and lists statewide policies and strategies.
 - *Colorado Bicycle and Pedestrian Plan, Phases I and II* - Unlike many other bicycle and pedestrian plans around the country, these plans were developed specifically around project selection criteria based on proposed performance measures in order to help select among competing projects. Existing conditions for bicyclists and pedestrians are summarized in Phase I to establish a baseline on which to track progress. Further refinement of the performance measures and project selection criteria will be outlined in Phase II.
 - *Colorado State Freight and Passenger Rail Plan* -The rail plan, which will soon be updated, provides a comprehensive picture of the current rail system, outlines policy recommendations to guide and enhance future rail planning in Colorado, and establishes a list of short- and long-range improvement needs developed in concert with the railroads, industry groups, local governmental entities, and others.
 - *Colorado Freight Plan* - Immediate and long-range planning activities and investments for freight are identified in this plan, as well as freight trends, needs or issues; ways to improve the safety and efficiency of the freight system and measure system performance; and what can be done about truck bottlenecks and other factors impeding freight movement.
 - *Statewide Transportation System Management & Operations Plan* -The plan outlines the establishment of the Division of Transportation System Management & Operations and identifies various operational strategies to improve the flow of traffic. Segments of the state highway system considered to have serious congestion problems that could benefit from deployment of the operational strategies are also highlighted. Performance measures to evaluate the effectiveness of the operational strategies for managing traffic incidents, freeways and arterials, work zones, data, and assets are detailed.
 - *Risk-Based Asset Management Plan* - Development of a Risk-Based Asset Management Plan is required by MAP-21. The plan documents current and forecasted condition of transportation assets (pavement, bridges, overall maintenance, buildings, and ITS -Intelligent Transportation Systems) and examines already established asset performance goals, use of analysis and data to inform

asset investment decisions, future investment strategies, and how risk will be included in transportation asset management.

- *Strategic Highway Safety Plan* -This MAP-21-required coordinated plan guides safety investments and decisions toward the overall goal of moving toward zero deaths. It also discusses action plans for these emphasis areas: aging road users, bicyclists and pedestrians, data, impaired driving, rural and urban infrastructure, motorcyclists, occupant protection (seat belts etc.), and young drivers ages 15-20. A task force established during development of the plan will define “distracted driving” and research how to identify countermeasures.

2015 PD 14.0 Update

After meeting with various CDOT managers, staff developed a revised framework for PD 14.0. The PD 14.0 framework included a purpose section, goals, performance measures for the goals, planning principles, and an implementation section. Proposed goals, measures, and objectives then were discussed with Transportation Commission committees over a two-year period beginning in December 2012. The Transportation Committee committees were: Statewide Plan (SWP), Asset Management (AM), and Transit and Intermodal (T&I). A summary of the topics considered for each goal area follows.

GOAL AREA	TOPIC (DATE)	COMMITTEE
SAFETY	Highway safety goals, measures and objectives (February 2013)	SWP
	Highway safety measures and objectives (May 2013)	
	Bike/pedestrian measures and objectives (October 2014)	SWP
	Revised highway safety measures and objectives (October 2014)	T&I SWP
INFRASTRUCTURE CONDITION	Infrastructure condition and relationship to asset management efforts (December 2012)	SWP
	Bridge and highway measures and objectives (January 2013)	SWP/AM
	Transit asset measures and objectives (March 2013)	SWP/T&I
	Bridge objectives (May 2013)	SWP
	Highway measures (June 2013)	TC
	Highway measures and objectives (October 2013)	SWP/AM
	Discussion of other assets not identified in <i>Risk-Based Asset Management Plan</i> (June 2014)	AM
	Discussion of other assets not identified in <i>Risk-Based Asset Management Plan</i> (August 2014)	AM
Additional objectives for bridges and other assets (January 2015)	SWP/AM	
SYSTEM PERFORMANCE	Interstates and NHS measures and objectives (May 2013)	SWP
	Transit measures (June 2013)	T&I
	Transit and highway objectives (August 2013)	T&I
	Transit objectives (September 2013)	SWP
	Bike/pedestrian measures and objectives (October 2014)	T&I
	Revised highway objectives (January 2015)	SWP/AM
MAINTENANCE	Maintenance measures and objectives (January 2013)	SWP/AM
PROGRAM DELIVERY	Removal of Program Delivery goal area (September 2013)	SWP

Development of the objectives is discussed below. For a chronological description of PD 14.0 development, see Attachment A: Transportation Commission Chronology for PD 14.0.

- Safety - Goals, measures, and objectives for safety are based on the Strategic Highway Safety Plan

The highway safety objectives are to reduce by 2025 traffic fatalities by 12 per year to 344, the fatality rate per 100 million vehicle miles traveled (VMT) by 0.02 per year to 0.79, serious injuries by 90 per year to 2,120, and the serious injury rate per 100 million VMT by 0.2 to 4.46. Finally, the economic impact of crashes is to decline by 1% over the previous calendar year. The fatality and serious injury objectives were developed by calculating the reductions in deaths and serious injuries needed to attain the joint Strategic Highway Safety Plan and PD 14.0 goal of halving traffic related deaths and serious injuries by 2030. If these reductions were achieved, staff estimated that the economic impact of crashes could be decreased by 1% over the previous calendar year.

Safety objectives for bicycle and pedestrian travel were developed that would keep the percentage of bicycle and pedestrian fatalities and serious injuries compared to all highway fatalities and serious injuries from rising beyond the levels reported in the Strategic Highway Safety Plan for 2007-2012. They were written as objectives to be attained in 2025: number of bicyclist and pedestrian fatalities involving motorized vehicles to 47 (down from 67 in 2013) and the number of bicyclist and pedestrian serious injuries involving motorized vehicles to 311 (down from 469 in 2013).

- Infrastructure Condition - Goals, measures, and objectives for infrastructure condition are based on the Risk-Based Asset Management Plan and the Statewide Transit Plan.

One of the few targets, or objectives, contained within MAP-21 is that the percentage of bridge deck area on the NHS classified as structurally deficient should not exceed 10 percent. This standard was expressed more positively - as the percent of total bridge deck that is not structurally deficient at or above 90% - and applied to both the NHS and state highway bridges in PD 14.0.

MAP-21 requires states to assess the condition of pavements on the Interstates and on the NHS, excluding the Interstates. In the past, CDOT used Remaining Service Life (RSL) as the measure. During development of PD 14.0, the measure changed from RSL to Drivability Life (DL). DL is intended to get more money to more segments of pavement more quickly than waiting for the pavement to deteriorate enough to warrant reconstruction, as happened using the RSL metric. Based on an assessment of pavement surfaces around the state and available funding, an objective was established to maintain 80% High/Moderate DL for Interstates, NHS, and the state highway system. High DL equates to 10 or more years of DL remaining; Moderate DL to four to 10 years.

CDOT asset managers developed objectives for the other transportation assets (buildings, ITS, roadway equipment, culverts, geohazards, tunnels, traffic signals, and walls), as well as additional ones for bridges. The additional bridge objectives primarily address the three main reasons for bridge failure: bridge scour, collisions,

and overloading. All asset condition performance objectives are included in PD 14.0 as a table in an appendix.

By including transit measures and objectives for the first time, the updated PD 14.0 addresses one of the goals in the Statewide Transit Plan: to establish transit as an important element within an integrated multimodal transportation system. The infrastructure objectives are to 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 (FTA) definitions, and to ensure that all CDOT rural transit grantees have asset management plans in place by 2017. Asset management plans are required of transit agencies under MAP-21. The larger urban systems are not included in these measures because they receive their funding directly from FTA and therefore CDOT has little influence over their performance.

- System Performance - Goals, measures, and objectives for system performance are based on the Transportation System Management & Operations Plan and Colorado Freight Plan.

MAP-21 requires measures for performance of both the Interstate and the NHS, excluding the Interstates. The measures relate to the MAP-21 national goals to reduce traffic congestion and improve system reliability. The Planning Time Index (PTI) serves as the primary measure for system performance in PD 14.0. PTI is generally defined as the 95th percentile travel time divided by travel time at free-flow speed.

Limited funding will make achievement of an objective that seeks to reduce congestion difficult. As such, the objectives identified in PD 14.0 are based on limiting the growth in congestion (rather than reducing congestion) and increasing travel time reliability. Objectives were identified at the 90th percentile as follows:

- 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.

The PTI objectives were derived from HERE data, which CDOT has purchased since 2011. HERE, a proprietary company, compiles and weights data from mobile phones, vehicle fleets, in-car navigation systems, Bluetooth enabled systems, and public traffic monitoring systems. The data is provided by month and by day of the week in 15-minute intervals. The base year is 2013. The geography of the data is available by traffic messaging channel (TMC), a system of road segments overseen by a non-profit organization. HERE data is available for the majority of public roadways within the state. All TMCs on Interstates, on-system NHS, and Colorado Freight Corridors are available, making up approximately 2,800 segments. However, some routes, mostly rural, have not been given TMCs.

Travel time data and measurement is advancing rapidly. This may require further updates or refinements to the system performance measures and objectives in the future. Issues that may result in future refinement to PD 14.0 system performance measures and objectives include:

- NHS data refinement: Further refinement of NHS data to address data gaps and inconsistencies may lead to a more accurate PTI measure for the NHS.
- Challenges with PTI: PTI is aggregated and does not encompass all the factors of congestion (duration, magnitude, severity and variation), which makes it difficult to connect PTI with potential improvement strategies. Because not all corridors have the same peak period, the slowest six hours of a day on a corridor become the peak period. An aggregate measure is not a reliability measure because it is not focused on specific time periods. Unique corridor characteristics are masked by the one-size-fits-all methodology. Rural corridors or those that are trafficked most heavily during certain seasons are more likely to have a PTI unrepresentative of its worst conditions. In the future, CDOT may consider moving to Travel Time Index or another measure of travel time.
- New speed data vendor: CDOT is in the process of updating speed data through a new vendor. This will assist CDOT in adopting future measures and objectives that are consistent across program areas. A new dataset, however, may result in an updated baseline requiring the establishment of new objectives.

For transit, system performance objectives are to increase ridership of small urban and rural transit grantees by at least an average of 1.5% statewide and maintain or increase the total number of revenue service miles of all passenger services, both over a five-year period beginning in 2012. (Revenue service miles are the miles transit vehicles are available to the general public.) These system performance objectives are in keeping with another goal in the Statewide Transit Plan: to improve travel opportunities within and between communities. The objectives are intended to encourage transit providers to promote their services and consider connecting them with others in order to offer alternatives to the public. Some major transit system expansions have already occurred, such as bus rapid transit by the Roaring Fork Valley Transportation and by TransFort in Fort Collins, and some are coming, such as the introduction of CDOT's interregional bus service (Bustang) along I-25 and I-70 in the summer of 2015.

- Maintenance - Goals, measures, and objectives for maintenance are based on the Risk-Based Asset Management Plan.

PD 14.0 includes a Level of Service (LOS) B grade objective for snow and ice removal and an objective to maintain an overall Maintenance LOS for all nine maintenance programs of B minus (B-). Maintenance refers to annual maintenance in order to minimize the need for replacement or rehabilitation. These objectives represent what can be achieved at projected levels of maintenance funding and represent maintaining existing performance of maintenance activities while increasing performance slightly on snow and ice removal.

- **Program Delivery:** Program delivery, a goal area for expending funds on construction, has been part of PD 14.0 since its inception in 2003. The Transportation Commission accepted the staff recommendation to remove it from PD 14.0 because it does not influence fund distribution to accomplish objectives, one of the main purposes for PD 14.0. Another reason for removing program delivery from PD 14.0 is that it is already the subject of three other reports: annual Chief Engineer’s Objectives, Annual Performance Plan, and the CDOT-FHWA Stewardship Agreement.

Aspirational objectives are objectives toward which CDOT may strive should it receive additional funding. Additional aspirational objectives were also identified for each goal area (safety, infrastructure condition, system performance, and maintenance). These aspirational objectives represent a higher standard of performance should additional funding become available, making attainment of these higher objectives in one or more goal areas feasible.

Conclusion and Next Steps

The Transportation Commission adopted the updated PD 14.0 on February 19, 2015.

Potential future additions to PD 14.0 include bicycle and pedestrian objectives in the system performance goal area and truck freight and freight rail in the safety goal area. The addition of goal areas for economic vitality and environmental sustainability is also anticipated once measures and objectives can be established. Future revisions and refinement may also be needed to address FHWA rulemaking, as well as advances and refinement in data collection and measurement in goal areas such as system performance.

ATTACHMENT A

Transportation Commission Chronology
for PD 14.0

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
NOVEMBER 2012	Statewide Plan	<ul style="list-style-type: none"> ▪ Proposed framework for PD 14.0 ▪ PD 14.0 purpose and relationship to asset management 	<ul style="list-style-type: none"> ▪ Framework for PD 14.0 accepted ▪ Importance of the relationship between transportation and economic vitality should be in Statewide Transportation Plan (SWP) ▪ PD 14.0 needs more emphasis on multi-modalism
DECEMBER 2012	Statewide Plan	<ul style="list-style-type: none"> ▪ PD 14.0 goals, asset management, and resource allocation ▪ <u>Related to PD 14.0</u>: MAP-21 timetable for rulemaking ▪ <u>Related to PD 14.0</u>: Requirements for risk-based asset management plans under MAP-21 	<ul style="list-style-type: none"> ▪ PD 14.0 should be modified to correspond with the national goals in MAP-21 ▪ Asset management program should include tunnels as a priority addition; culverts, retaining walls, and buildings will be added later ▪ PD 14.0 should include data-based transit measures and goals ▪ Economic Toolkit project under way at CDOT should help make informed decisions about establishing economic criteria
January 2013	Joint Meeting: Statewide Plan, Asset Management	<ul style="list-style-type: none"> ▪ Purpose, goal areas, and performance measures for Infrastructure Condition (bridge and highway) and maintenance. ▪ Skeleton of PD 14.0 presented, with goals and measures, and objectives left blank. Goals were Safety, Infrastructure Condition, System Performance, Maintenance and Project Delivery. 	<ul style="list-style-type: none"> ▪ Purpose Statement of PD 14.0 OK'd ▪ Infrastructure Condition and Maintenance goal language changed to more clearly differentiate them (Infrastructure Condition is long-term capital maintenance; Maintenance is annual activities) ▪ Staff was asked to use another term other than “good” for the Maintenance goal ▪ Agreed that bridge performance measures, metrics, and objectives should be cast in a more positive manner: 90% of the NHS bridge deck area should be good/fair ▪ National Highway System (NHS) Infrastructure Condition performance

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
			<p>measures, metrics, and objectives should be deferred until there is more federal guidance</p> <ul style="list-style-type: none"> ▪ Inclusion of Other Roadway Assets (culverts, tunnels, rockfall mitigation, and walls) in PD 14.0 should occur after Risk-Based Asset Management Plan is developed ▪ For Maintenance, snow and ice removal approved as a stand-alone measure and objective, as well as an overall grade for the nine maintenance programs ▪ Requested more joint committee meetings on PD 14.0
February 2013	Statewide Plan	<ul style="list-style-type: none"> ▪ Safety goal, measures and objectives 	<ul style="list-style-type: none"> ▪ MAP-21 Safety performance measures (number of fatalities and serious injuries and number of fatalities and serious injuries per vehicle miles traveled - VMT) should be in PD 14.0, as well as economic impact of vehicle crashes ▪ Staff should set safety measures and objectives that cause CDOT to “stretch” in order to attain them
March 2013	Joint Meeting: Statewide Plan, Transit and Intermodal	<ul style="list-style-type: none"> ▪ Transit asset measures and objectives 	<ul style="list-style-type: none"> ▪ Approved approach of Division of Transit and Rail to have two objectives: <ul style="list-style-type: none"> – Have no less than 65% of the rural transit fleet operating in fair, good, or excellent condition – Require CDOT transit grantees to have asset management plans in place for state or federally funded vehicles, buildings, and equipment by 2017
May 2013	Statewide Plan	<ul style="list-style-type: none"> ▪ System Performance measures and objectives for Interstates and NHS 	<ul style="list-style-type: none"> ▪ Overall PD 14.0 to date OK’d ▪ System Performance goal approved

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
		<p>roadways</p> <ul style="list-style-type: none"> ▪ Proposed objectives for bridges and safety ▪ PD 14.0 provided showing what remained to be done and proposed measures and objectives 	<p>that combined MAP-21 goals of congestion reduction and system reliability</p> <ul style="list-style-type: none"> ▪ Planning Time Index (PTI) measure for System Performance approved for system reliability ▪ Minutes of delay should be measure for congestion reduction ▪ Staff asked to more clearly define the difference between good, fair, and poor condition of bridges used before to the new measure of percent of total bridge deck area that is not structurally deficient
JUNE 2013	Transit and Intermodal, Transportation Commission	<p>Transit and Intermodal:</p> <ul style="list-style-type: none"> ▪ Mobility performance measures for transit presented for transit utilization and transit connectivity; objectives blank <p>Transportation Commission:</p> <ul style="list-style-type: none"> ▪ Related to PD 14.0: Pavement asset management and Drivability Life analysis 	<p>Transit and Intermodal:</p> <ul style="list-style-type: none"> ▪ System Performance measures of Transit Utilization and Transit Connectivity with 2013 as the base year were approved <p>Transportation Commission:</p> <ul style="list-style-type: none"> ▪ Traffic based pavement categories and Drivability Life concepts received general OK
JULY 2013	Asset Management	<ul style="list-style-type: none"> ▪ Related to PD 14.0: Discussion on Asset Investment Management System (AIMS) 	<ul style="list-style-type: none"> ▪ Asset management momentum needs to be kept up for FY15 and FY 16 ▪ Asset management expenditures should be accelerated
AUGUST 2013	Statewide Plan	<ul style="list-style-type: none"> ▪ System Performance objectives for highways (Planning Time Index and daily minutes of delay) and transit (transit utilization and transit connectivity) 	<ul style="list-style-type: none"> ▪ Objectives of 1.23 Planning Time Index (PTI) for both Interstate and NHS approved ▪ Objective of keeping congestion at or below 22 minutes of delay on congested segments of state highways approved ▪ Concern expressed that statewide averages mask problem areas or corridors, such as west I-70 and C-470.

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
			<ul style="list-style-type: none"> ▪ Transit System Performance objectives approved. They were to: <ul style="list-style-type: none"> - Increase ridership of small urban and rural transit grantees an average of 1.5% annually over a 5-year moving average approved - Increase or maintain the total number of revenue service miles of regional, inter-regional, and inter-city passenger service over that recorded for 2012
SEPTEMBER 2013	Statewide Plan, Transit and Intermodal	<p>Statewide Plan:</p> <ul style="list-style-type: none"> ▪ Staff recommendation to remove Program Delivery from PD 14.0 ▪ Discussion on two approaches for handling aspirational goals or elements in PD 14.0 <p>Transit and Intermodal:</p> <ul style="list-style-type: none"> ▪ Discussion on specific System Performance transit objectives and whether they are aggressive enough 	<p>Statewide Plan:</p> <ul style="list-style-type: none"> ▪ Program Delivery should be removed from PD 14.0 because it is already reported in three different CDOT reports and because the Program Delivery goal area does not identify and prioritize funding needs ▪ Recommendations and options requested from staff on inclusion of aspirational elements in all goal areas of PD 14.0 <p>Transit and Intermodal:</p> <ul style="list-style-type: none"> ▪ Questions asked if the 5-year rolling average to increase ridership is compounded and what the actual target would be in 5 years ▪ Staff said it would work on terminology for the next committee meeting ▪ Conclusion: performance transit objectives are aggressive enough
OCTOBER 2013	Joint Meeting: Statewide Plan, Asset Management	<ul style="list-style-type: none"> ▪ Pavement Management implementation of Drivability Life and relationship to proposed PD 14.0 objectives for highways ▪ Two options for including aspirational objectives: one indicating a 	<ul style="list-style-type: none"> ▪ Consensus: CDOT should move from Remaining Service Life as the measure for highways (pavement condition) to Drivability Life ▪ Drivability Life approach praised as a uniform, objective way to measure and

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
		<p>priority among the goal areas and another setting aspirational objectives for each goal area for more flexibility</p> <ul style="list-style-type: none"> PD 14.0 presented showing that all objectives were selected but Drivability Life for highways 	<p>improve pavement condition</p> <ul style="list-style-type: none"> Aspirational objectives should be developed for each goal area so that the Commission will have flexibility in deciding how funds beyond what is needed to accomplish objectives should be spent
NOVEMBER 2013	Statewide Plan	<ul style="list-style-type: none"> Review of aspirational objectives for each goal area General structure and highlights of PD 14.0 described Adoption of PD 14.0 proposed in December PD 14.0 presented with blank aspirational objectives for each goal area 	<ul style="list-style-type: none"> Aspirational objectives for each goal area approved
DECEMBER 2013	Joint Meeting: Statewide Plan, Asset Management	<ul style="list-style-type: none"> Review of PD 14.0 as it guides program distribution for the Statewide Transportation Plan and possible impact of MAP-21 rulemaking <u>Related to PD 14.0:</u> Additional funds needed for Maintenance, Surface Treatment and Bridge to reach PD 14.0 objectives 	<ul style="list-style-type: none"> General approval of the way staff proposes to use PD 14.0 to guide program distribution for the Statewide Transportation Plan
JANUARY 2014	Statewide Plan, Asset Management	<p>Statewide Plan:</p> <ul style="list-style-type: none"> Reviewed revised wording in Purpose and Policy sections, changing “direct” to “guide” and “will” to “should” to make PD 14.0 less directive. <p>Asset Management:</p> <ul style="list-style-type: none"> <u>Related to PD 14.0:</u> Overview of Risk-Based Asset Management Plan, future role for committee. 	<p>Statewide Plan:</p> <ul style="list-style-type: none"> Approved changing “direct” to “guide” and “will” to “should” in Purpose and Policy sections CDOT Executive Director Don Hunt suggested adoption of PD 14.0 might be premature because FHWA rule making to enact MAP-21 not completed and some of the CDOT plans weren’t done either Statewide Plan Committee members seemed to agree with Don Hunt <p>Asset Management:</p>

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
			<ul style="list-style-type: none"> ▪ Risk-Based Asset Management Plan is a good resource, but needs a few changes before it goes to FHWA for review. The changes include: <ul style="list-style-type: none"> - Redo the organizational chart so that it's clear that the Asset Management Committee is directing asset management at CDOT - Prepare a separate synopsis of the plan for the TC - Rewrite the Executive Summary so that it clearly states what the plan includes and recommends - Include latest program distribution information ▪ Agreed that the purpose of the committee - to oversee asset management activities at CDOT - is more important than ever
JUNE 2014	Statewide Plan, Asset Management	Statewide Plan: <ul style="list-style-type: none"> ▪ Status of PD 14.0 and potential revisions Asset Management: <ul style="list-style-type: none"> ▪ Refinements of PD 14.0 coming 	Statewide Plan: <ul style="list-style-type: none"> ▪ Question asked about why PD 14.0 doesn't include rail, which is one of the transportation modes Asset Management: <ul style="list-style-type: none"> ▪ Staff requested to develop a level of effort analysis and timeline for developing asset management objectives that are currently missing from PD 14.0: walls, tunnels, rockfall/geohazards, signals, and a fiscally constrained target for road equipment)
AUGUST 2014	Asset Management	<ul style="list-style-type: none"> ▪ <u>Related to PD 14.0:</u> Update on performance metrics and targets not listed in Table 4.1 in Risk-Based Asset 	<ul style="list-style-type: none"> ▪ Request made for an AIMS budget recommendation for pavement, bridge, buildings, ITS, road equipment, and

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
		Management Plan (walls, traffic signals; metrics for walls, geohazard both expected to be complete in September)	culverts at the next committee meeting
OCTOBER 2014	Transit and Intermodal, Statewide Plan	Transit and Intermodal: <ul style="list-style-type: none"> ▪ Proposed bicycle and pedestrian measures and objectives for Safety and System Performance goal areas Statewide Plan: <ul style="list-style-type: none"> ▪ Revisions to Safety measures and objectives due to new definition of serious injuries and safety data analyses of Strategic Highway Safety Plan 	Transit and Intermodal: <ul style="list-style-type: none"> ▪ Safety objectives for bike and pedestrian approved ▪ Agreement that moving to annual, rather than 5-year moving averages, a good approach due to the complexity of communicating the averages and lack of data ▪ General agreement to proposal to develop data for System Performance bike-ped objectives through facility inventory, bike travel model, and Level of Service categorization for bike/ped facilities Statewide Plan: <ul style="list-style-type: none"> ▪ Approved these revisions to safety objectives: <ul style="list-style-type: none"> – Annual reduction objectives rather than 5-year averages – 2008 as the baseline for number of fatalities – 2013 as the baseline for the other safety objectives (fatality rate, number and rate of serious injuries)
JANUARY 2015	Joint Meeting: Statewide Plan and Asset Management	<ul style="list-style-type: none"> ▪ Proposed additional objectives for bridges and other assets (buildings, ITS, roadway equipment, culverts, geohazard sites, tunnels, traffic signals, and walls) ▪ New or revised sections of PD 14.0.0 reviewed <ul style="list-style-type: none"> – Infrastructure Condition for incorporation of additional measures and objectives 	<ul style="list-style-type: none"> ▪ Agreed that other assets table updated from Risk-Based Asset Management Plan should be attached to PD 14.0 ▪ Agreed that Planning Principles section should be removed from PD 14.0 ▪ Agreed to revised objectives for System Performance ▪ PD 14.0 should have something about freight rail, if only that it will be added

DATE	TC COMMITTEES	TOPICS	DECISIONS REACHED/DIRECTION GIVEN
		<ul style="list-style-type: none"> - Revised objectives for System Performance - Deletion of planning principles ▪ Future adoption of PD 14.0 	<ul style="list-style-type: none"> later under Safety ▪ Statewide Plan Committee recommended adoption of the updated PD 14.0 by the full Transportation Commission in February 2015
FEBRUARY 2015	Full Transportation Commission	<ul style="list-style-type: none"> ▪ Adoption of PD 14.0 ▪ Repeal of PD 13.0 “Colorado Department of Transportation Statewide Transportation Operating Principles” 	<ul style="list-style-type: none"> ▪ PD 14.0 unanimously adopted. ▪ PD 13.0 unanimously repealed because the operating principles were either incorporated in PD 14.0 or were included in the Statewide Transportation Plan.

ATTACHMENT B

Policy Directive 14.0

COLORADO DEPARTMENT OF TRANSPORTATION		<input checked="" type="checkbox"/> POLICY DIRECTIVE <input type="checkbox"/> PROCEDURAL DIRECTIVE	
Subject Policy Guiding Statewide Plan Development			14.0
Effective	Supersedes 03/20/08	Originating Office 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:

OBJECTIVES:

- Reduce fatalities by 12 per year from 548 in 2008 to 344 in 2025. Bullet 2
- 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.
- 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.

Herman J. Stoeckinger III
Secretary, Transportation Commission

2-27-15
Date of Approval

Appendix A

CDOT RB-AMP Asset Management Metrics and Performance Targets

Asset	Measure	Current Performance	Fiscally Constrained Target	Aspirational Target
Bridges	Percentage of state highway total bridge deck area that is not structurally deficient	94%	90% ^a	95%
	Percentage of NHS total bridge deck area that is not structurally deficient	95%	90% ^a	95%
	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%
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-
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%

Asset	Measure	Current Performance	Fiscally Constrained Target	Aspirational Target
Culverts ^e	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 ^b	100%	100%
Traffic Signals ^f	Percent intersections with at least one component beyond 100% Useful Life	52%	15%	0%
Walls ^d	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.