



COLORADO
Department of Transportation

Office of the Chief Engineer
Performance and Asset Management Branch
Multimodal Planning Branch
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MEMORANDUM

DATE: July 18, 2018
TO: Transportation Commission
FROM: Joshua Laipply, Chief Engineer
Debra Perkins-Smith, Director, Division of Transportation Development
William Johnson, Performance and Asset Management Branch Manager
Tim Kirby, Multimodal Planning Branch Manager
SUBJECT: Policy Directive 14 Current Performance Update

Purpose

To report on progress made towards meeting the objectives in Policy Directive 14 (PD 14) in the areas of Safety, Transit, System Performance, and Maintenance for fiscal/calendar year 2017. Future months will report on Infrastructure Condition (Asset Management).

Action

No action requested this month. Review of current performance and objectives for System Performance, Transit, Maintenance and Safety goal areas. To better align the annual budget setting process with PD 14, the Commission reviews the performance of PD 14 objectives to determine if there is a need to modify objectives or realign resources to meet an objective(s).

Background

PD 14 provides a framework for development of the Statewide Transportation Plan (SWP) and guides the distribution of resources in the SWP, the Statewide Transportation Improvement Program (STIP), and the annual budget.

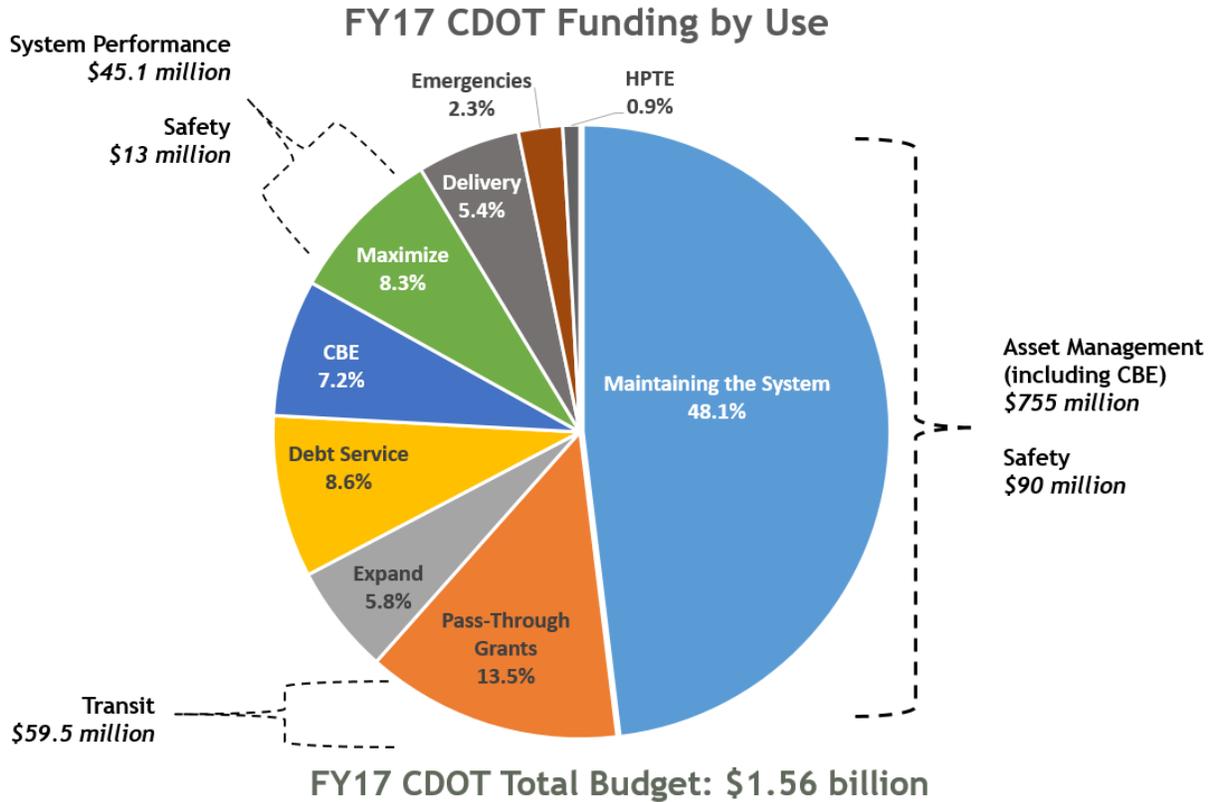
Details

The PD 14 Scorecard report has been updated with performance achievement data for calendar/fiscal year 2017. Attachment A: 2017 PD 14 Scorecard graphically summarizes the performance of PD 14 objectives for 2017 and the prior year. Attachment A also includes information on the dedicated funding sources and funding levels associated with each objective. The notes column provides additional background and technical details, where applicable.

The July Transportation Commission workshop will include a review of highway performance measures for Safety, and Maintenance (Infrastructure Condition will be reviewed in later months). As shown in Chart 1, PD 14 performance areas comprise roughly 60% of CDOTs total Budget (excluding Senate Bill 228 transfers).



Chart 1.



Current performance in these areas are described below. No changes to performance measures and objectives for any of the goal areas are proposed at this time.

Safety - All Highways: Safety performance data and economic impact of crashes for 2017 is preliminary and will not be finalized until December 31, 2018 (this is due to delayed reporting of some crashes, data incompleteness due to data system upgrade and transition, and 2017 data not being official until late 2018). Performance objectives for fatalities were not met in 2017. Fatalities continue on an upward trend, increasing to 648 in 2017 as compared to a target of 440. Colorado has seen an increase in fatalities that is greater than the increase in population and vehicle miles of travel (VMT), leading to an increase in fatality rate.

Objectives were not met for serious injuries, with an increase in the number of serious injuries from 2,994 in 2016 to 3,031 in 2017 (still preliminary). The rate per 100 million VMT also increased from 5.66 in 2016 to 5.83 in 2017. While the significant increase in fatalities in recent years is concerning, staff are not recommending changes to the performance objective at this time. The current objectives still reflect the statewide and CDOT commitment to Toward Zero Deaths and to Colorado's 2015-19 Strategic Highway Safety Plan to halve fatalities by 2030 and reduce fatalities to single digits by 2050. While safety targets have not been met, rapid improvements in vehicle technology and CDOT's plan for connected vehicle and infrastructure technology have the potential to improve vehicle safety in the future.

Recommended next steps - Improve safety solutions, develop new technology, deploy targeted safety improvements, continue corridor specific traffic incident management, improved public information, conduct more research, implement best practices, and other strategies to reduce crashes.

Safety - Bike & Pedestrian: 2017 performance data is preliminary and is not final until December 31, 2018. Several factors may be contributing to growth in both fatal and severe crashes, including distracted driving, increasing motorized vehicle congestion and speeding.

Recommended next steps - Perform a bicycle and pedestrian crash data analysis to identify problem corridors and the common factors contributing to bicycle and pedestrian crashes on those corridors. Identify cost effective countermeasures or campaigns that can be applied to target problem areas. Staff are also looking at



making refinements to existing safety programs to direct more funding to projects that address safety concerns and improve infrastructure for bicycles & pedestrians.

In addition, staff are updating the Bicycle and Pedestrian Facility Design classes and guidance to ensure that designers understand how design decisions can lead to the common factors which contribute to crashes for bicyclists and pedestrians (e.g. excessive motor vehicle speed, inadequate separation, conflicts at crossings).

System Performance - Highways: The 2017 PD 14 Scorecard results demonstrate target achievement in slowing the rate of the spread of congestion, measured through the Planning Time Index (PTI) on Colorado's interstates, NHS and Colorado Freight Corridors. While the results look promising, it is important to remember that the PD 14 Objectives for System Performance are to slow the spread of congestion, not to necessarily reduce it. In 2017, CDOT improved travel time reliability in some corridors with the Tolled Express Lanes, expanded Safety Patrol services, enhanced winter operations coordination and improved Traffic Incident Management with corridor first responders. As Colorado's population grows, and demand on the system increases the travel reliability performance of both interstate corridors, National Highway system (NHS) corridors, and Colorado Freight Corridors will continue to decline.

Recommended next steps - Continue deployment of operational solutions, new technology, targeted capacity improvements, improved signal phase and timing, corridor specific traffic incident management, improved public information, and other strategies to incrementally mitigate the speed at which congestion growths on the interstate and NHS.

Transit: The target reflects a five-year rolling period from 2012-2017, a 7.7% overall increase. The source of ridership data is from the National Transit Database. Results reflect data only from agencies supported by CDOT programs in 2012 and not the additional agencies who have since become CDOT rural awardees. Although 2017 results are exceeding the 2017 target, staff need to analyze more years of data to inform any potential changes to the target.

The 2017 results for percentage of fleet operating in fair, good, or excellent condition reflects data as of August 2017. A new inventory of transit fleet condition is expected in mid-to-late 2018. Asset data in CDOT's Transit Asset Inventory System was inadequate prior to this date to provide a 2016 summary result. Positive performance in 2017 can be attributed to a grant selection process that strategically prioritizes replacing older and higher-mileage vehicles.

Recommended next steps - DTR has retained consultant support to assist with revenue service miles data collection, reporting, and other tasks. Refinement of revenue service miles data will continue. Separately, DTR will continue to encourage rural Colorado transit agencies to update inventory and condition of their fleet annually, according to the Federal Transit Administration (FTA) guidelines on age and mileage of vehicles.

Maintenance: This is part of our Transportation Asset Management (TAM) Program. Maintenance has two performance objectives in PD 14: to maintain an overall Maintenance Levels of Service (MLOS) B minus for the statewide system, and to maintain an LOS B minus grade for snow and ice removal. For 2017, both performance objectives were not met. The cost of achieving a B minus for MLOS requires an average annual budget of \$315M compared to FY2016-17 funding of \$272.6M. The level of current funding and staff resources limits the ability to achieve the current maintenance performance objectives.

Recommended next steps - Staff are developing a new Preventive Maintenance Program that will better position CDOT to plan and track maintenance work, thereby reducing the need for costly emergency repairs. In addition, the program will establish enhanced staff development and training, which will improve performance and increase cost saving innovations.

Next Steps

- Transportation Commission workshop on Pavement and Bridge Asset Programs PD-14 Update
- Consideration of PD 14 in development of FY 2020 CDOT Budget

Attachments

- Attachment A: 2017 PD 14 Scorecard
- Attachment B: Presentation





2017 Policy Directive 14 Scorecard

Safety

All Highways

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Reduce fatalities by 12 per year from 548 in 2008 to 344 in 2025	\$103.2 million	440	648		\$88.7 million	452	608		FASTER Safety HSIP Highway Safety Education Hot Spots	<p>Safety performance data and economic impact of crashes for 2017 is preliminary and will not be finalized until December 31, 2018 (this is due to delayed reporting of some crashes, data incompleteness due to data system upgrade and transition, and 2017 data not being official until late 2018). Performance objectives for fatalities were not met in 2017. Fatalities continue on an upward trend, increasing to 648 in 2017 as compared to a target of 440. Colorado has seen an increase in fatalities that is greater than the increase in population and vehicle miles of travel (VMT, leading to an increase in fatality rate.</p> <p>Objectives were not met for serious injuries, with an increase in the number of serious injuries from 2,994 in 2016 to 3,031 in 2017 (still preliminary). The rate per 100 million VMT also increased from 5.66 in 2016 to 5.83 in 2017. While the significant increase in fatalities in recent years is concerning, staff are not recommending changes to the performance objective at this time. The current objectives still reflect the statewide and CDOT commitment to Toward Zero Deaths and to Colorado's 2015-19 Strategic Highway Safety Plan to halve fatalities by 2030 and reduce fatalities to single digits by 2050. While safety targets have not been met, rapid improvements in vehicle technology and CDOT's plan for connected vehicle and infrastructure technology have the potential to improve vehicle safety in the future.</p> <p>Recommended next steps - Improve safety solutions, develop new technology, deploy targeted safety improvements, continue corridor specific traffic incident management, improved public information, conduct more research, implement best practices, and other strategies to reduce crashes.</p>
Reduce the fatality rate per 100 million VMT by 0.025 per year from 1.03 in 2013 to 0.79 in 2025		0.95	1.21			0.97	1.17			
Reduce the serious injuries by 90 per year from 3,200 in 2013 to 2,120 in 2025		2,840	3,031			2,930	2,994			
Reduce the serious injury rate by 0.2 per 100 million VMT per year from 6.86 in 2013 to 4.46 in 2025		6.06	5.83			6.26	5.66			
Reduce the economic impact of crashes annually by 1% over the previous calendar year		\$5.68 B	\$5.63 B			\$4.76 B	\$5.74 B			

Bike & Pedestrian

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Reduce the number of bicyclist and pedestrian fatalities involving motorized vehicles, from 67 in 2013 to 47 in 2025	N/A	60	108		N/A	62	100		N/A	<p>2017 performance data is preliminary and is not final until December 31, 2018. Several factors may be contributing to growth in both fatal and severe crashes, including distracted driving, increasing motorized vehicle congestion and speeding.</p> <p>Recommended next steps - Perform a bicycle and pedestrian crash data analysis to identify problem corridors and the common factors contributing to bicycle and pedestrian crashes on those corridors. Identify cost effective countermeasures or campaigns that can be applied to target problem areas. Staff are also looking at making refinements to existing safety programs to direct more funding to projects that address safety concerns and improve infrastructure for bicycles & pedestrians.</p> <p>In addition, staff are updating the Bicycle and Pedestrian Facility Design classes and guidance to ensure that designers understand how design decisions can lead to the common factors which contribute to crashes for bicyclists and pedestrians (e.g. excessive motor vehicle speed, inadequate separation, conflicts at crossings).</p>
Reduce the number of bicyclist and pedestrian serious injuries involving motorized vehicles by 14 per year from 469 in 2013 to 311 in 2025		413	498			430	449			

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

System Performance

Highways

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Prevent the spread of congestion by maintaining a Planning Time Index (PTI) of 1.05 or less on 90% or greater of Interstate centerline miles	\$45.1 million	90%	93.8%		\$34.5 million	90%	92.6%		ITS Maintenance ITS Investments TSMO Performance Program Congestion Relief ROADX	The 2017 PD 14 Scorecard results demonstrate target achievement in slowing the rate of the spread of congestion, measured through the Planning Time Index (PTI) on Colorado's interstates, NHS and Colorado Freight Corridors. While the results look promising, it is important to remember that the PD 14 Objectives for System Performance are to slow the spread of congestion, not to necessarily reduce it. In 2017, CDOT improved travel time reliability in some corridors with the Tolled Express Lanes, expanded Safety Patrol services, enhanced winter operations coordination and improved Traffic Incident Management with corridor first responders. As Colorado's population grows, and demand on the system increases the travel reliability performance of both interstate corridors, National Highway system (NHS) corridors, and Colorado Freight Corridors will continue to decline. Recommended next steps - Continue deployment of operational solutions, new technology, targeted capacity improvements, improved signal phase and timing, corridor specific traffic incident management, improved public information, and other strategies to incrementally mitigate the speed at which congestion growths on the interstate and NHS.
Prevent the spread of congestion by maintaining a PTI of 1.16 or less on 90% or greater of National Highway System (NHS) centerline miles, excluding Interstates		90%	92.6%			90%	95.9%			
Prevent the spread of congestion by maintaining a PTI of 1.12 or less on 90% or greater of Colorado Freight Corridor centerline miles		90%	94.2%			90%	95.6%			

Transit

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Increase ridership of small urban and rural transit grantees by at least an average of 1.5%, per year, statewide over a five-year period beginning in 2012	\$59.5 million	15,652,200	17,769,742		\$54.5 million	15,419,690	17,212,856		FTA Programs FASTER Transit SB-228	The target reflects a five-year rolling period from 2012-2017, a 7.7% overall increase. The source of ridership data is from the National Transit Database. Results reflect data only from agencies supported by CDOT programs in 2012 and not the additional agencies who have since become CDOT rural awardees. Although 2017 results are exceeding the 2017 target, staff need to analyze more years of data to inform any potential changes to the target. Recommend next steps - We have retained consultant support to assist with revenue service miles data collection, reporting, and other tasks. Refinement of revenue service miles data will continue.
Maintain or increase the total number of revenue service miles of CDOT-funded regional, inter-regional, and inter-city passenger service over that recorded for 2012		TBD	TBD	TBD		N/A	N/A	N/A		

Infrastructure Condition

Transit

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Maintain the percentage of vehicles in the rural Colorado transit fleet at no less than 65% operating in fair, good, or excellent condition, per Federal Transit Administration Guidelines	\$59.5 million	65%	68.7%		\$54.5 million	65%	N/A	N/A	FTA Programs FASTER Transit SB-228	The 2017 results for percentage of fleet operating in fair, good, or excellent condition reflects data as of August 2017. A new inventory of transit fleet condition is expected in mid-to-late 2018. Asset data in CDOT's Transit Asset Inventory System was inadequate prior to this date to provide a 2016 summary result. Positive performance in 2017 can be attributed to a grant selection process that strategically prioritizes replacing older and higher-mileage vehicles. Recommended next steps -DTR will continue to encourage rural Colorado transit agencies to update inventory and condition of their fleet annually, according to the Federal Transit Administration (FTA) guidelines on age and mileage of vehicles.

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

Maintenance

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Maintain a LOS B grade for snow and ice removal	\$86.1 million	B	B-		\$83.4 million	B	B		Snow and Ice Control Snow and Ice Reserve	Maintenance has two performance objectives in PD 14: to maintain an overall Maintenance Levels of Service (MLOS) B minus for the statewide system, and to maintain an LOS B minus grade for snow and ice removal. For 2017, both performance objectives were not met. The cost of achieving a B minus for MLOS requires an average annual budget of \$315M compared to FY2016-17 funding of \$272.6M. The level of current funding and staff resources limits the ability to achieve the current maintenance performance objectives.
Maintain an overall MLOS B minus grade for the state highway system	\$272.6 million	B-	C+		\$254.4 million	B-	C+		Maintenance	Recommended next steps - Staff are developing a new Preventive Maintenance Program that will better position CDOT to plan and track maintenance work, thereby reducing the need for costly emergency repairs. In addition, the program will establish enhanced staff development and training, which will improve performance and increase cost saving innovations.

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

Infrastructure Condition

Buildings

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Statewide letter grade (Percent C or better) of CDOT Buildings	\$21.4 million	85% C or better	83%		\$12.9 million	90% C or better	74%		Property Allocation Program RAMP Funding	Given the current planning budgets, buildings will not achieve its target between now and 2027. In 2027 the expected performance is 73%. \$46.5 million per year is needed annually beyond FY 2022 to achieve the target of 85% C or better by 2027. Staff has worked to improve awareness of preventive maintenance as a priority, and the importance of completing annual building assessments in an effort to determine level of funding needed for building preventive maintenance. Changed target last year due to analysis that indicated that, due to fiscal constraints, old target is not achievable.

ITS

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Average Percent Useful Life of ITS Equipment	\$24.5 million	90% or less	TBD	N/A	\$21.4 million	90% or less	115%		ITS Maintenance RAMP Funding	Given the current planning budgets, ITS will not achieve its target between now and 2027. In 2027, the expected performance is 220%. \$41 million per year is needed annually beyond FY 2021 to achieve the target by 2026. Staff to refine inventory by breaking down devices into manageable maintenance pieces that can be tracked individually for cost savings advantages. Staff will also investigate the benefits of preventive maintenance for select devices, and further refine device useful life parameters by tracking asset service life to compare to manufacturer estimates.

Fleet

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Average Percent Useful Life of Fleet Equipment	\$26.4 million	75% or less	66%		\$18.4 million	70% or less	87%		Road Equipment Program RAMP Funding	Given the current planning budgets, road equipment will not achieve its target in 2027. In 2027 the expected performance is 76%. \$22 million per year is needed annually beyond FY 2022 to achieve the target of 75% by 2027. Staff will communicate the importance of fleet planning and develop regional fleet optimization recommendations, develop a fleet performance measure that reflects cost effectiveness rather than asset life, and monitor implementation of fleet preventive maintenance work orders. Changed target last year due to analysis indicating that, due to fiscal constraints, the old target is not achievable.

Culverts

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Percent of culverts in poor condition (have culvert rating of 4 or less)	\$11.9 million	5%	5.09%		\$8.2 million	5%	4.87%		Structures On-System RAMP Funding	Although the target is currently being met, given current planning budgets, it is expected that the target will not be met in the future. In 2027 the expected performance is 8%. \$14 million per year is needed annually beyond FY 2022 to achieve the target by 2027. Metric description was updated last year (from "structurally deficient" to "poor") for clarification purposes.

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

Infrastructure Condition

Geohazards

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Percent of geohazard segments at or above risk grade B	\$11.8 million	85%	84%		\$9.2 million	80% (Risk Grade C or above)	N/A	N/A	Rockfall Mitigation RAMP Funding	Increased data collection efforts have provided a better picture of actual performance. Current performance results in a \$40.5M annual risk from Geohazard events. \$27.7 million per year is needed annually beyond FY 2022 to achieve the updated of 85% risk grade B or above by 2027. Target and metric adjusted last year based on better inventory data. Focusing investment based on the new target will result in a reduction in statewide risk exposure.

Tunnels

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Percentage of network tunnel length with all elements in equal or better condition than 2.5 Weighted Condition Index	\$10.5 million	75%	70%		\$5.2 million	80%	91%		Structures On-System RAMP Funding	Target is currently not being met, given current planning budgets, it is expected that the target will meet in 2022. In 2027, the expected performance is 100%. \$9.4 million per year is needed annually beyond FY 2022 to achieve the target of 75% by 2027. Though the existing condition is 70%, elements at the Eisenhower-Johnson Memorial Tunnel (EJMT) could bring condition down back to 47%, because systems were assigned to one bore structure that in fact affected both. Initial 2017 model and future models need refinement to better predict the cost of treatments. Target was changed last year (2017 target = 75%; 2016 target = 80%) due to condition being worse than originally projected.

Traffic Signals

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Percent of signal infrastructure in severe condition (Dollar weighted)	\$16.9 million	2%	8%		\$5.7 million	N/A	N/A	N/A	Traffic Signals Program	Given the current planning budgets, signals is expected to achieve the target by 2026. In 2027, the expected performance is 2.69%. \$15.1 million per year is needed annually beyond FY 2022 to achieve the target of 2% or less by 2027. The metric was changed last year. The new metric and target allows the program to focus on signals with the greatest performance deficiencies as opposed to all signals without regards to performance.

Walls

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Percentage of CDOT-owned walls, by square foot, that are poor (have a rating of 4 or less)	\$10.2 million	2.5%	3.10%		\$2.4 million	1%	4.15%		Structures On-System RAMP Funding	Given the current planning budgets, walls is not expected to meet its target between now and 2027. In 2027 the expected performance is 12%. \$21.3 million per year is needed annually beyond FY 2022 to achieve the target of 2.5% by 2027. Metric description and target were updated last year. Description of the metric was changed for clarification purposes. Updated inventory found more walls with lower than desirable conditions. Current funding is unable to keep with the rate of decline, thus the target was updated to reflect these issues.

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

Infrastructure Condition

Bridges

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Maintain the percent of NHS total bridge deck area that is not structurally deficient at or above 90%	\$167.4 million	90.0%	95.8%		\$164.1 million	90.0%	95.5%		Colorado Bridge Enterprise On-System Bridge RAMP Funding	A structurally deficient bridge is typically one where corrosion or deterioration has resulted in a portion of the bridge being in poor condition; for example, where water leaking through an expansion joint has caused the end of a steel girder to rust. Currently exceeding target and will continue to exceed target through 2027; (\$37.3 million is needed in preventative maintenance to continue meeting the current target and expecting 96.% not poor condition in 2017) however, the bridge program has 7 metrics geared towards mitigation of risks (below), and none of those are not achieving their target.
Maintain the percent of state highway total bridge deck area that is not structurally deficient at or above 90%		90.0%	95.4%			90.0%	95.1%			For the seven risk mitigation metrics not achieving their target, staff are working to identify additional strategies that can be implemented with no additional funding. Current strategies include identifying bridges that can easily be repaired or remedied with the most cost-effective treatment.
Percentage of CDOT-owned bridges over waterways that are scour critical.		5.0%	6.5%			5.0%	6.4%			Scour critical bridges are at risk of failure during a storm event of sufficient size.
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%	2.4%			0.4%	1.7%			A bridge with a vertical clearance of less than 14'-6" --statutory maximum vehicle height--has a high risk of being hit by a tall load or legal load. Changed target last year (2017 Target = 1.0%; 2016 Target = 0.4%) due the number of bridges with vertical clearance issues is greater than projected.
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%	21.8%			4.8%	19.8%			16'-6" is the minimum clearance used when designing new bridges over a roadway. A bridge with a vertical clearance less than 16'-6" but greater than or equal to 14'-6" has a medium to high risk of being hit by a tall load. Changed target last year (2017 Target = 18.0%; 2016 Target = 4.8%) due the number of bridges with vertical clearance issues is greater than projected.
Percentage of CDOT-owned bridges posted for load		0.1%	0.2%			0.0%	0.2%			Vehicles meeting the legal load limits (as defined in C.R.S. 42-4-502 - 42-4-504) can travel on Colorado Interstates, US and State Highways without an approved permit. Older bridges may need to be posted since some of these bridges were not designed for legal loads. Load posted structures impact mobility by restricting both legal and permitted loads. Changed target last year (2017 target - 0.1%; 2016 target = 0.0%) due to updated inventory found more bridges with lower than desirable conditions.
Percentage of CDOT-owned bridges with a load restriction		0.9%	1.7%			3.0%	1.6%			Permit loads (as defined in the Colorado Bridge Weight Limit Map/CDOT Bridge Rating Manual) are typically heavier and longer than the legal loads and require an approved permit in order to travel on Colorado highways. Older bridges may need to be restricted for passage since some of these bridges were not designed for permit loads. Permitted loads have a certain combination of axle weight and spacing that distributes the load in an acceptable combination for crossing over structures. Changed target last year (2017 target = 0.9%; 2016 target =3.0%) due to better conditions that originally projected.
Percentage of expansion joints in fair, poor, or severe condition (by length) on CDOT-owned bridges		26% or less	28.5%			15% or less	25.3%			Leaking expansion joints allow water and deicing chemicals onto superstructure and substructure elements which can accelerate corrosion and lead to early onset of a structural deficiency. Keeping expansion joints sealed slows the rate of bridges dropping into poor condition. Changed target last year (2017 target = 26%; 2016 target = 15%) due to updated inventory found more bridges with lower than desirable conditions.
Percentage of CDOT-owned bridge deck area that is unsealed or otherwise unprotected		35% or less	41.7%			30% or less	44.5%			Unsealed bridge decks deteriorate faster than sealed bridge decks. Changed target last year (2017 target = 35%; 2016 target = 30%) due to updated inventory found more bridges with lower than desirable conditions.

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



2017 Policy Directive 14 Scorecard

Infrastructure Condition

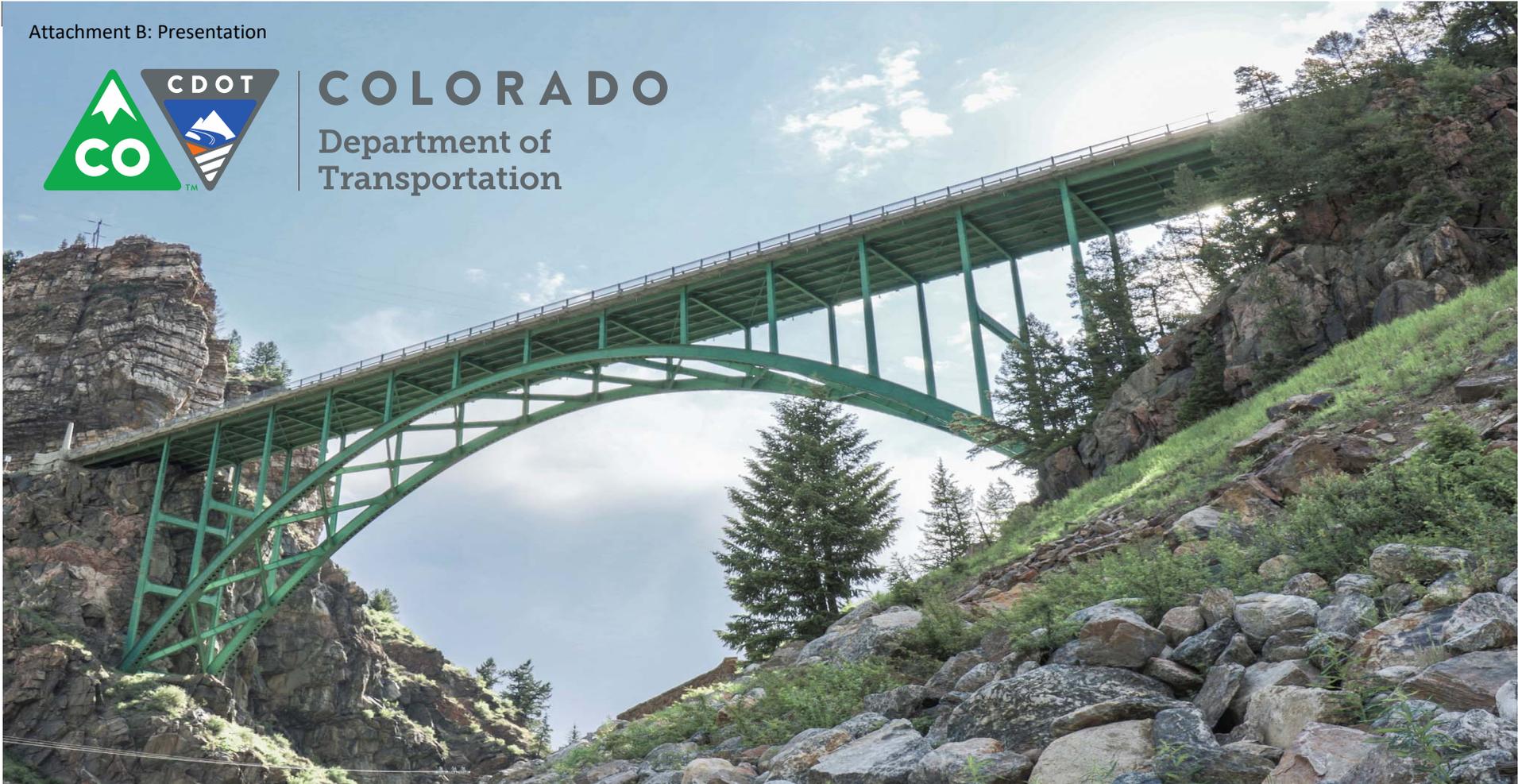
Highways

PD 14.0 Objectives	2017				2016				Dedicated Funding Sources ¹	Notes
	Budget	Target	Results	Target Met?	Budget	Target	Results	Target Met?		
Achieve 80% High/Moderate Drivability Life for Interstates based on condition standards and treatments set for traffic volume categories	\$252.1 million	80%	88%		\$235.9 million	80%	94%		Surface Treatment Program RAMP Funding	<p>Although targets were met in 2017, given the current planning budgets, it is anticipated that targets for pavement condition will not be met beginning next year, and will continue to remain below the target through 2027. In 2027 it is anticipated that only 68% of the state highway system will have high or moderate Drivability Life. \$307 million per year is needed annually beyond FY 2022 to achieve the target by 2027.</p> <p>Staff will work to improve/tighten the link between pavement maintenance and pavement model recommendations, and evaluate the effect of pavement preventive maintenance on DL to identify strategies. Additionally, continuing work to align current DL metric with new NPM metrics of Good/Fair/Poor pavement condition of the NHS System.</p>
Achieve 80% High/Moderate Drivability Life for NHS, excluding Interstates, based on condition standards and treatments set for traffic volume categories		80%	84%			80%	85%			
Achieve 80% High/Moderate Drivability Life for the state highway system based on condition standards and treatments set for traffic volume categories		80%	80%			80%	80%			

¹ Additional flexible funding sources with a wide range of eligibility could be used to address multiple objectives. Examples include RPP, STP-M, CMAQ, and TAP



COLORADO
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Policy Directive 14 Reporting

Colorado Department of Transportation

July 18, 2018

- Debra Perkins-Smith (Director - Division of Transportation Development)
- Tim Kirby (Multimodal Planning Branch Manager)

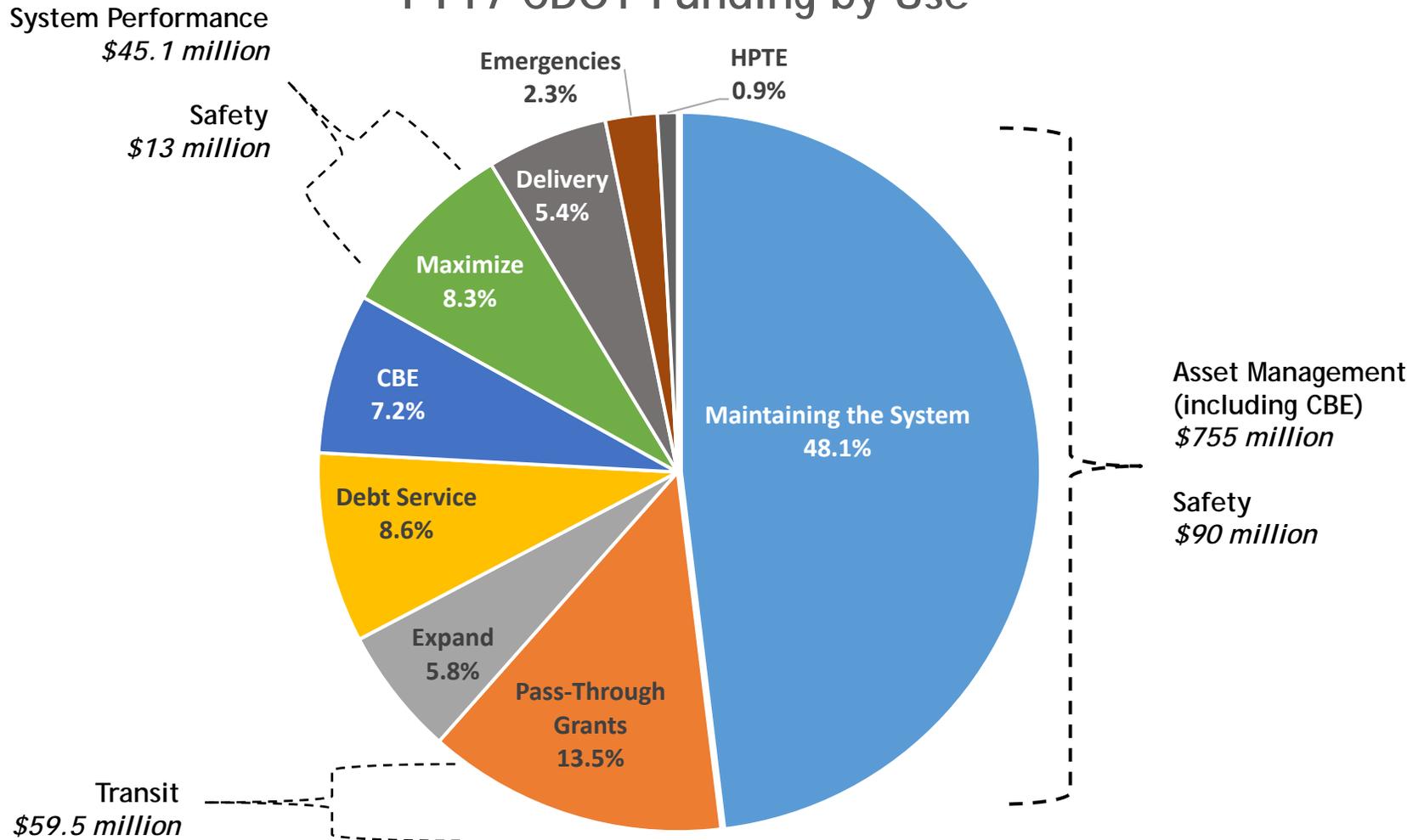


1. CDOT Funding Allocation
2. Safety Goal Area
3. System Performance Goal Area
4. Transit Goal Area
5. Maintenance Goal Area
6. Next Steps



CDOT Funding Allocation

FY17 CDOT Funding by Use



FY17 CDOT Total Budget: \$1.56 billion



Goal Area: Safety (Highways)

Safety					
All Highways					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Reduce fatalities by 12 per year from 548 in 2008 to 344 in 2025	\$103.2 million	440	648		FASTER Safety HSIP Highway Safety Education Hot Spots
Reduce the fatality rate per 100 million VMT by 0.025 per year from 1.03 in 2013 to 0.79 in 2025		0.95	1.21		
Reduce the serious injuries by 90 per year from 3,200 in 2013 to 2,120 in 2025		2,840	3,031		
Reduce the serious injury rate by 0.2 per 100 million VMT per year from 6.86 in 2013 to 4.46 in 2025		6.06	5.83		
Reduce the economic impact of crashes annually by 1% over the previous calendar year		\$5.68 B	\$5.63 B		



Goal Area: Safety (Bike and Pedestrian)

Bike & Pedestrian					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Reduce the number of bicyclist and pedestrian fatalities involving motorized vehicles, from 67 in 2013 to 47 in 2025	N/A	60	108	●	N/A
Reduce the number of bicyclist and pedestrian serious injuries involving motorized vehicles by 14 per year from 469 in 2013 to 311 in 2025		413	498	●	



Goal Area – System Performance (Highways)

System Performance					
Highways					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Prevent the spread of congestion by maintaining a Planning Time Index (PTI) of 1.05 or less on 90% or greater of Interstate centerline miles	\$45.1 million	90%	93.8%		ITS Maintenance ITS Investments TSMO Performance Program Congestion Relief ROADX
Prevent the spread of congestion by maintaining a PTI of 1.16 or less on 90% or greater of National Highway System (NHS) centerline miles, excluding Interstates		90%	92.6%		
Prevent the spread of congestion by maintaining a PTI of 1.12 or less on 90% or greater of Colorado Freight Corridor centerline miles		90%	94.2%		



Goal Area – Transit (System Performance/Infrastructure Condition)

System Performance					
Transit					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Increase ridership of small urban and rural transit grantees by at least an average of 1.5%, per year, statewide over a five-year period beginning in 2012	\$59.5 million	15,652,200	17,769,742		FTA Programs FASTER Transit SB 228
Maintain or increase the total number of revenue service miles of CDOT-funded regional, inter-regional, and inter-city passenger service over that recorded for 2012		TBD	TBD	TBD	
Infrastructure Condition					
Transit					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Maintain the percentage of vehicles in the rural Colorado transit fleet at no less than 65% operating in fair, good, or excellent condition, per Federal Transit Administration Guidelines	\$59.5 million	65%	69%		FTA Programs FASTER Transit SB 228



Goal Area – Maintenance

Maintenance					
PD 14.0 Objectives	2017				Dedicated Funding Sources
	Budget	Target	Results	Target Met?	
Maintain a LOS B grade for snow and ice removal	\$86.1 million	B	B-		Snow and Ice Control Snow and Ice Reserve
Maintain an overall MLOS B minus grade for the state highway system	\$262.6 million	B-	C+		Maintenance



Next Steps

- Commission Workshop focusing on Infrastructure Condition/Asset Management Policy Directive 14 Metrics in August 2018
- Consideration of Policy Directive 14 in the development of the FY2019-20 CDOT Budget



COLORADO
Department of
Transportation

QUESTIONS?

