


What CDOT Does For You

YOUR DEPARTMENT OF TRANSPORTATION AT A GLANCE

MONITORS



278 of 522


AVALANCHE PATHS

MAINTAINS, & REPAIRS

MORE THAN 23,000

HIGHWAY LANE MILES

SPENDS \$69 MILLION PER YEAR ON




SNOW REMOVAL


KEEPS 35 MOUNTAIN PASSES

OPEN YEAR-ROUND

ADMINISTERS ABOUT \$14.3 MILLION IN FEDERAL GRANTS FOR TRANSIT OPERATORS




OVERSEES 3,460 BRIDGES




\$41 MILLION IN FEDERAL AVIATION GRANTS FOR AIRPORTS


MAINTAINS 32 BILLION ANNUAL VEHICLE MILES TRAVELED



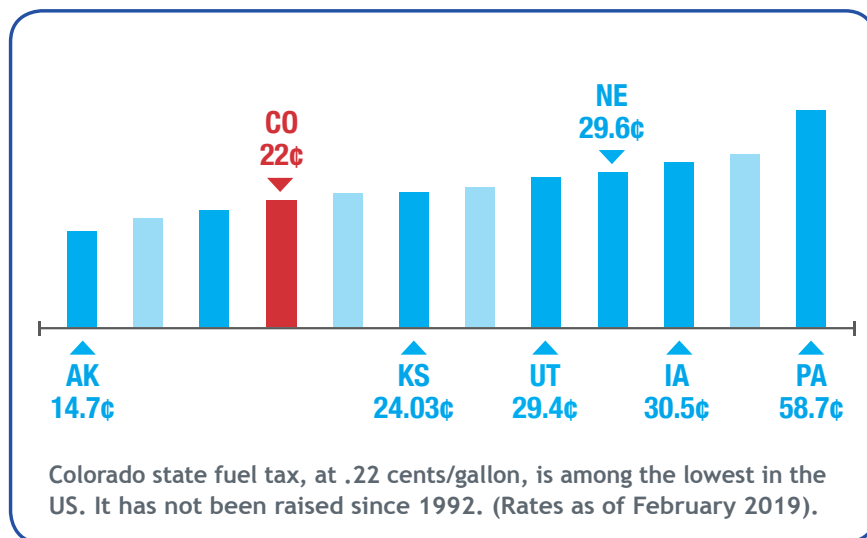
OVERSEES 32 BILLION ANNUAL VEHICLE MILES TRAVELED



MANAGES OVER \$5 MILLION IN FEDERAL GRANTS FOR SAFE DRIVING PROGRAMS



FUEL TAX AMOUNTS IN OTHER STATES



Colorado has some of the most costly maintenance challenges, given the snow and ice control and extreme weather on our high mountain passes. Still, our fuel tax is lower than other states that have no mountain highways, such as Kansas and Iowa.

Who CDOT Is

OUR MISSION

To provide the best multi-modal transportation system for Colorado that most effectively and safely moves people, goods and information.

OUR VISION

To enhance the quality of life and the environment of the citizens of Colorado by creating an integrated transportation system that focuses on safely moving people and goods by offering convenient linkages among modal choices.

OUR VALUES

Every day, we work hard to live our six CDOT values.

A BRIEF HISTORY OF CDOT

- 1909:** The first highway bill was passed by forming a three-member Highway Commission to approve work and allocate funds.
- 1917:** The State Highway Fund was created and the State Highway Department (CDOH-Colorado Department of Highways) was formed.
- 1968:** Legislation reorganized matters related to highways and created the Division of Highways.
- 1991:** CDOH became Colorado Department of Transportation (CDOT).

CDOT | Values

SAFETY

We work together to achieve a high performing safety culture. We promote and apply consistent and sustainable safe work behaviors in everything we do.

PEOPLE

We value our employees. We acknowledge and recognize the skills and abilities of our coworkers and draw strength from our diversity and commitment to equal opportunity.

INTEGRITY

We earn Colorado's trust. We are honest and responsible in all that we do and hold ourselves to the highest moral and ethical standards.

CUSTOMER SERVICE

We strive to provide the highest level of customer satisfaction and experience. With a can-do attitude, we work together and with others to respond effectively to our customers' needs.

RESPECT

We treat everyone with respect. We are kind and civil with everyone, and we act with courage and humility.

EXCELLENCE

We are committed to quality. We are leaders and problem solvers, continuously improving our products and services in support of our commitment to provide the best transportation systems for Colorado.

Message from the Executive Director



Shoshona Lew, Executive Director

We all rely on our transportation system for virtually every aspect of daily life—getting to work, getting to school, accessing affordable health care or the grocery store, or ordering goods online. Indeed, issues like access to good schools, health care options and multimodal transportation options—some of Governor Polis’ and this Administration’s key priorities—are deeply interconnected.

Whether or not we can do these kinds of things safely, efficiently and sustainably are the measures of our success or failure. That perspective constantly motivates my perspective on transportation, and I feel that the commonalities of our experiences with transportation can bring us together to make good decisions, even when they are hard and come with tradeoffs, which they always do.

I would note that, right now, we are in the midst of a particularly dynamic moment for infrastructure and transportation—with forces like population growth and movement, technology and expanding mobility options,

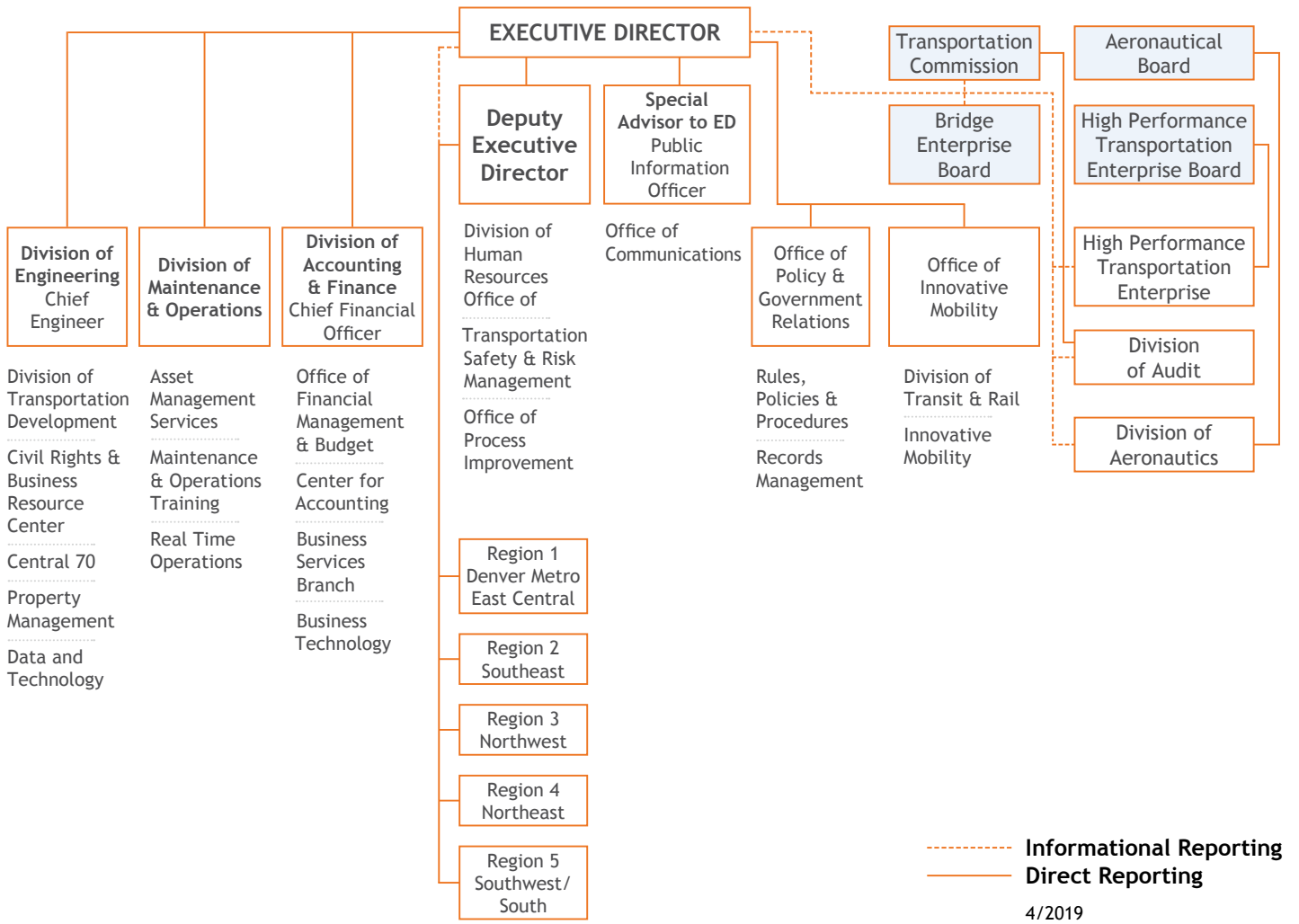
and climate change placing rapidly evolving pressures on the systems that connect people and economies. We see these forces coming to a head in Colorado, and, as stewards of much of the state’s transportation network and cumulative budget, we have unique opportunities to prepare for them. I believe that CDOT will play a pivotal role in managing the transition towards a future that meets those demands.

Indeed, CDOT’s operational responsibilities for resource allocation and land use bring critical questions and tensions to a head at transportation departments: how do we manage the infrastructure that we have to achieve and maintain a state of good repair, while also recognizing that investments made in today’s dynamic environment can last nearly a century? How do we successfully pair traditional road maintenance and expansion projects with strategic investments in new technologies and different transportation modes to keep up with our growing population and equip our infrastructure for the 21st century?

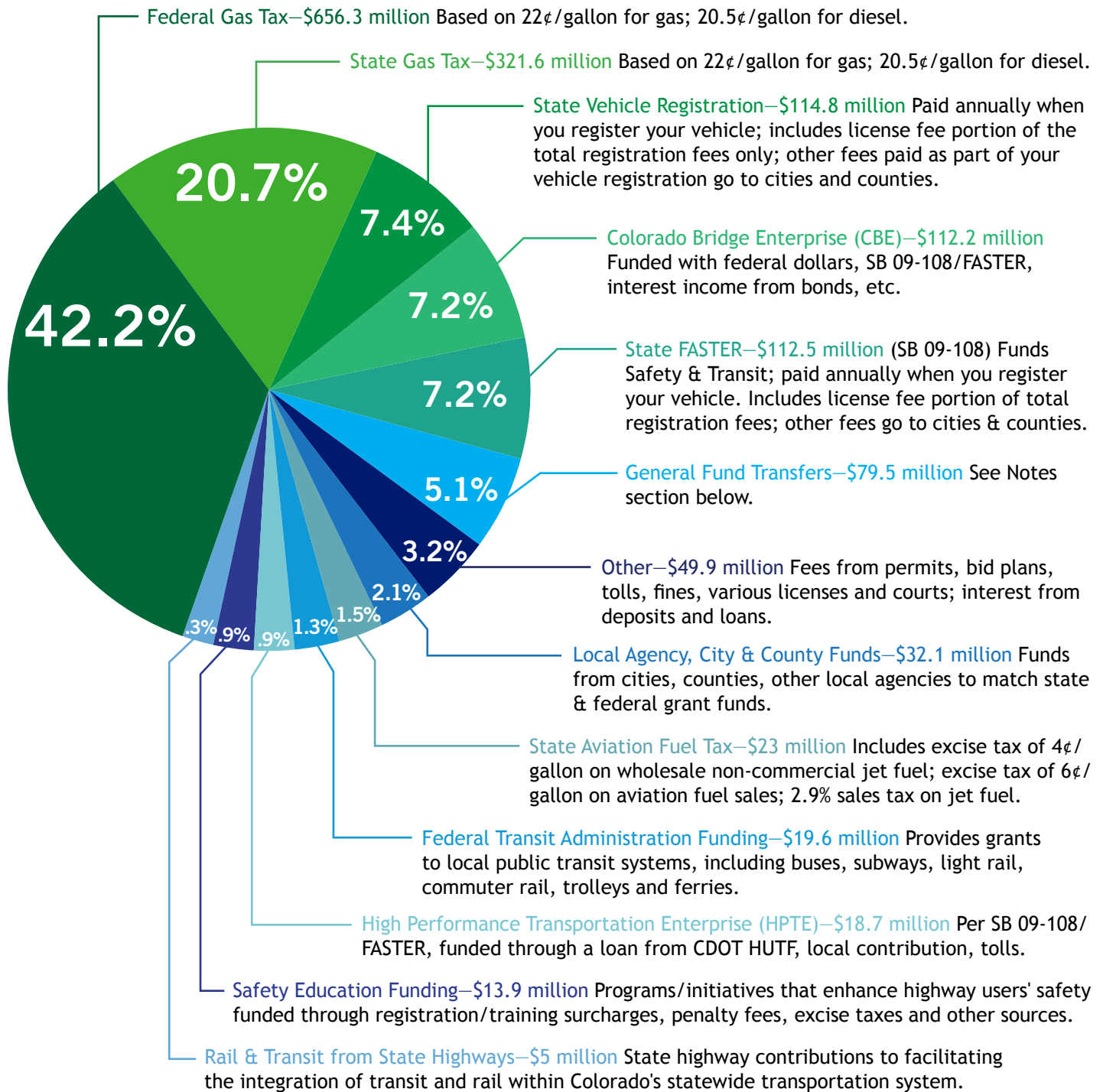
I look forward to working together with CDOT staff, Colorado’s elected officials and our stakeholders over the coming months and years, as we continue to grapple with these kinds of questions—none of which have easy answers—so that we can build and support transportation that provides better opportunity for the citizens of Colorado.

Shoshona Lew became CDOT’s Executive Director in January 2019. Before coming to Colorado, Lew served as Chief Operating Officer of the Rhode Island Department of Transportation. Prior to that role, she served for eight years in the Obama Administration in a number of capacities, including Chief Financial Officer for the US Department of Transportation.

How CDOT Is Organized



CDOT Funding Sources [Total \$1.55 BILLION]*



* Notes

In 2009 the General Assembly enacted Senate Bill 09-228, which:

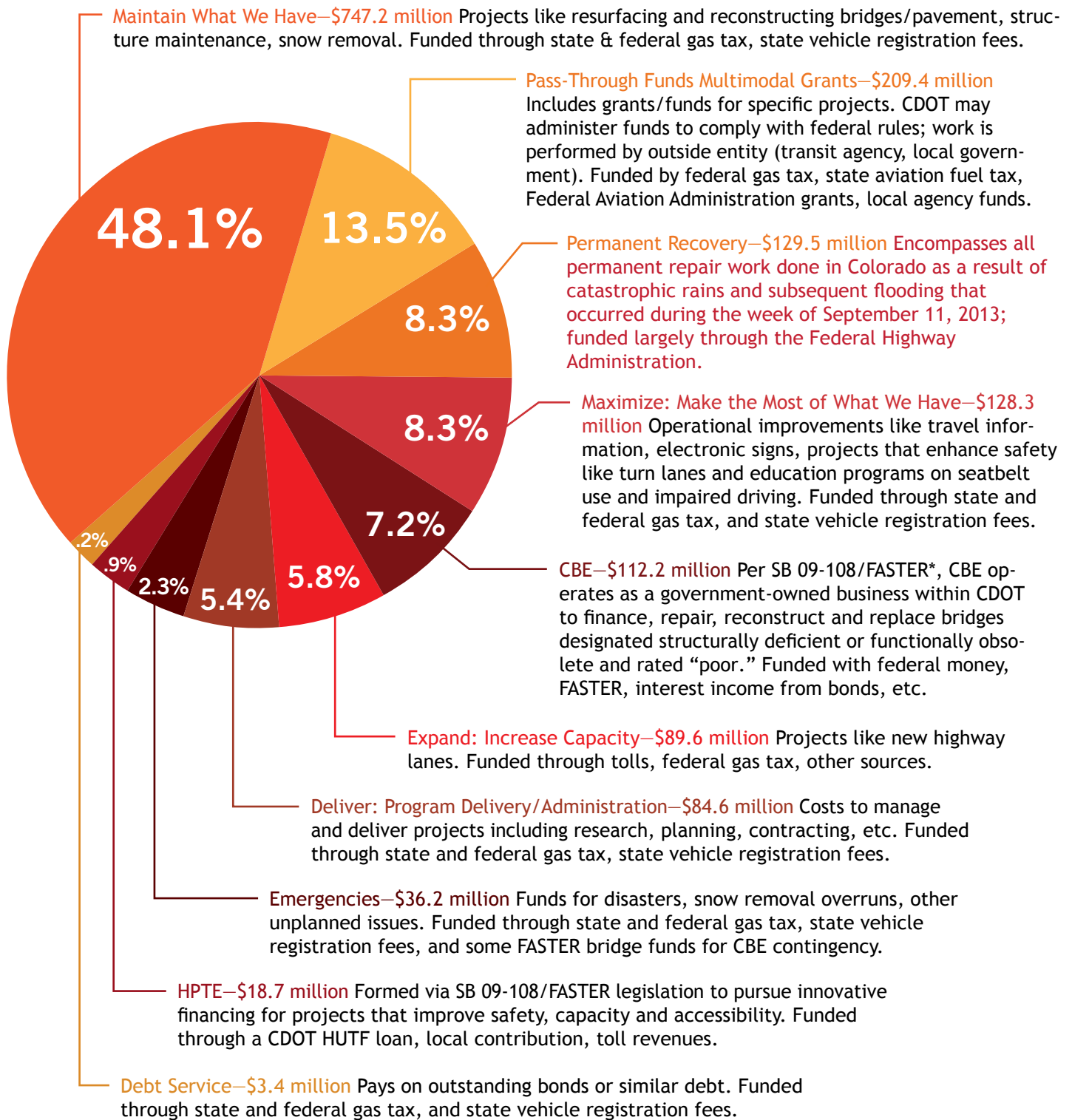
- Repealed a statutory limit on the annual growth of certain appropriations from the General Fund;
- Repealed S.B. 97-001, a conditional transfer of General Fund revenue of up to 10.35% of state sales and use tax receipts to the State Highway Fund;
- Repealed H.B. 02-1310, a conditional transfer of excess general revenue above the General Fund appropriations limit to the State Highway Fund and the Capital Construction Fund;
- Increased the statutory General Fund reserve contingent upon economic and fiscal conditions; and
- Authorized a five-year sequence of General Fund transfers to the State Highway Fund and the Capital Construction Fund contingent upon economic and fiscal conditions.

General Fund Transfers to Transportation

SB 09-228 authorized a five-year sequence of General Fund transfers to the State Highway Fund of up to 2.0% of gross General Fund Revenues. HB 16-1416 replaced the SB 09-228 transfer for FY 2016-17 with a fixed amount of \$158.0 million. SB 17-262 replaced all of the General Fund transfers from HB 16-1416 and SB 09-228 with fixed amounts, and reduced the General Fund transfers for FY 2016-17 and FY 2017-18 to \$79 million.

Total revenue amount (\$1.55 billion) does not include a \$4.77 million HPTE fee for service that is incurred as an expense to CDOT, but is recognized as revenue for HPTE.

CDOT Funding Usage [Total \$1.55 BILLION]*



* Notes

All figures on pages 6 and 7 are based on FY 2017–18 budget. Does not include \$127.4M of 2013 Flood Recovery Funds. State fiscal year is July 1–June 30.

SB 09-108/FASTER = Funding Advancements for Surface Transportation and Economic Recovery

Total usage amount (\$1.55 billion) does not include a \$4.77 million HPTE fee for service that is incurred as an expense to CDOT, but is recognized as revenue for HPTE.

Your CDOT Dollar and How Far It Goes

CDOT gets the majority of its funding from Colorado vehicle drivers through the Highway Users Tax Fund. When we all buy gas and register our vehicles in this great state, a portion of the state and federal fuel taxes we each pay goes to CDOT, and the rest goes to cities and counties throughout the state.

Each of us, as individual drivers, contributes annually to support the transportation system we all use—and it's not much, when compared to many other monthly

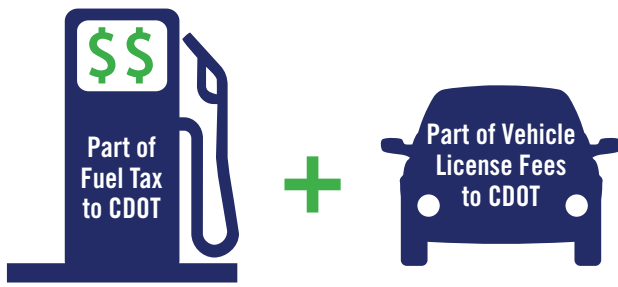
expenses. We know that the average Colorado driver travels about 13,476 miles per year. If we apply an average of 24 miles per gallon to that, we find that the average driver spends about \$17 a month to use Colorado's roadways, likely less than a monthly cell phone bill, and certainly less than grocery or utility bills.

We've illustrated here how a Colorado driver contributes to our state's highway system and how we at CDOT use that revenue to maximize each dollar spent.

HOW CDOT RECEIVES FUNDS FROM YOU TO PAY FOR THE STATE HIGHWAY SYSTEM

Based on Annual Vehicle Miles Traveled by Average Colorado Driver

\$201 Your Total Annual Contribution to CDOT



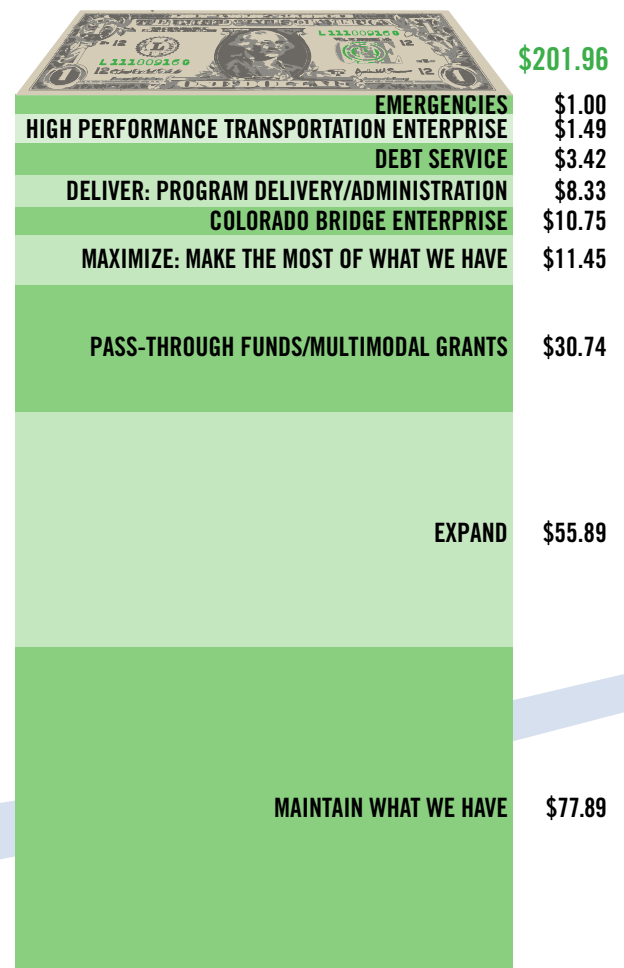
\$102.89 Federal
 + **\$66.27** State

\$169.16 Total

CDOT's portion of FASTER Vehicle Registration Fees
\$31.80

HOW CDOT USED YOUR DOLLARS IN FISCAL YEAR 2018

Based on Annual Vehicle Miles Traveled by Average Colorado Driver



NOTE: The amounts estimated represent a breakdown of your average annual contribution if it were spent the way that CDOT spends its entire budget. Also note, these are only estimates. Your actual costs would depend on your vehicle, how much you drive and other factors.

Alternative Funding

BENEFITTING FROM ADDITIONAL FUNDING FROM SB 17-267

The benefits of Senate Bill 17-267, “Concerning the Sustainability of Rural Colorado,” began this past fiscal 2018-19 year. SB 267 authorized lease-purchase agreements on state facilities totaling \$2 billion to be issued in equal amounts over four years, through FY 21-22. We will receive \$1.88 billion of these proceeds, with the remainder going towards state buildings. CDOT may use the proceeds for “Tier 1” projects in the 10-Year Development Program Plan, with at least 10 percent of the proceeds going towards transit. We must also spend at least 25 percent on projects in counties with a population of 50,000 or less (as of July 2015).



After the state covers payments for the capital construction proceeds, CDOT is responsible for the first \$50 million in lease payments related to state highway projects, with the remainder being paid by the General

Fund or “any other legally available source.” After four years of lease-purchase agreements are executed, the repayment is expected to reach approximately \$150 million per year. Each lease-purchase agreement would have a term of twenty years. While CDOT’s minimum commitment is \$50 million per year, the potential exists for a maximum repayment amount of closer to \$150 million, if the legislature were to subsequently choose to transfer additional repayment liability to our department.

Our staff worked closely with the Office of the State Treasurer in 2018 to move forward with the first issuance of Certificates of Participation (COPs) authorized under SB 267. Despite a complicated path forward, including a legal challenge, the first issuance closed in September 2018, bringing \$425 million in proceeds to CDOT for use on critical highway and transit projects. The Transportation Commission approved ten highway projects for funding under SB 267 in October 2018.

CDOT

Protecting & Prolonging the Life of Our Assets



CDOT maintenance crews resurface CO 291 north of Salida.

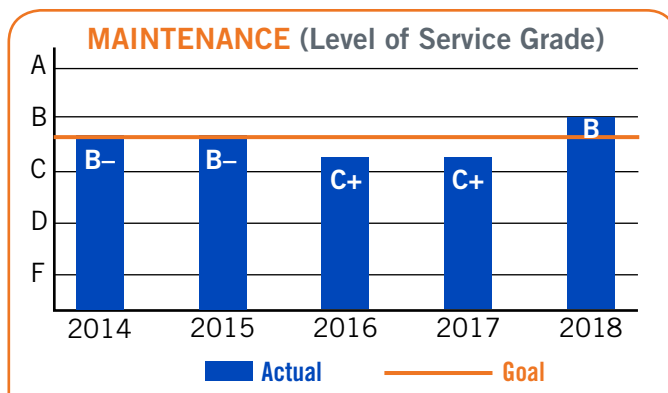
MAINTAINING OUR SYSTEM

Our Highway Maintenance Program accounts for about 20 percent of our annual budget. However, nearly 50 percent is spent on all the many projects designed to maintain our existing highway system, like roadway resurfacing or drainage upgrades.

Of the \$265.8 million spent on maintenance in fiscal year 2018, about \$42.8 million went to roadway surface maintenance, \$68.6 million to snow and ice control and \$71.1 million to traffic devices (signs, striping, and signals). The remainder was spent on planning and scheduling, roadside appearance, bridges, buildings, equipment and our major I-70 tunnels/control centers (Hanging Lake Tunnel and Eisenhower/Johnson Memorial Tunnel).

We spend about 30 percent of our maintenance budget on snow and ice control, which includes our avalanche program. There are more than 522 known avalanche paths in Colorado. Our crews regularly monitor and/or control at least 278 of them. The 2017-2018 total seasonal snowfall was below average for most of the state.

During the 2017-18 avalanche season, there were 990 reported avalanches in paths that threatened our state highways, 141 avalanche hazard reduction missions, 389 triggered avalanches that covered 23,918 feet of the highway's centerline and 129 natural avalanches that covered 9,330 feet of highway centerline. There were 472 triggered avalanches that did not reach a highway.



YEAR	2014	2015	2016	2017	2018
Long Range Goal	B-	B-	B-	B-	B-
Actual	B-	B-	C+	C+	B
Budget (in Millions)	\$249	\$251	\$254	\$273	\$264

The long-range goal was revised in 2013 to reflect budget and performance evaluation.

The Gazex system we installed during the 2015-16 winter on US 40 at Berthoud Pass and US 6 on Loveland Pass operated for a third winter season. Gazex, operated remotely, uses compressed gases to create a concussive blast to trigger a slide while traffic is stopped. This system makes our overall avalanche operations more efficient and effective. Additions to the Gazex system will be made in 2019, with 14 new units at the EJMT on I-70 and two units on US 40 over Berthoud Pass.

OVER 2017-18, OUR MAINTENANCE CREWS:

- Repaired and maintained 48,511 lane miles of roadway
- Utilized 198,001 tons of asphalt and 1,962.50 gallons of liquid asphalt
- Striped 29,271 'stripe miles' and installed 207,324 square feet of pavement markings
- Snow plowed, sanded and/or de-iced 4.3 million lane miles of highway
- Managed 1,598 hours of road closures due to snow
- Applied 173,580 tons of solid deicer and over 11 million gallons of liquid deicer
- Repaired/installed 158,084 feet of snow fence
- Disposed of 69,661 cubic yards of trash with 1,049 Adopt-A-Highway volunteers and another 7,392 bags of trash with the support of 282 corporate sponsors
- Replaced or repaired 44,307 signs and signposts
- Repaired or installed 13.5 linear feet of fencing

Preserving Our Roadway Surfaces, Structures & Systems

Our Transportation Asset Management program focuses on maximizing the condition of our assets (bridges, pavement, tunnels, buildings, traffic signals, etc.) for the least cost over their lifetimes. This approach guides us in developing and implementing risk-based strategies to ensure our limited funding is applied to the right projects at the right times.

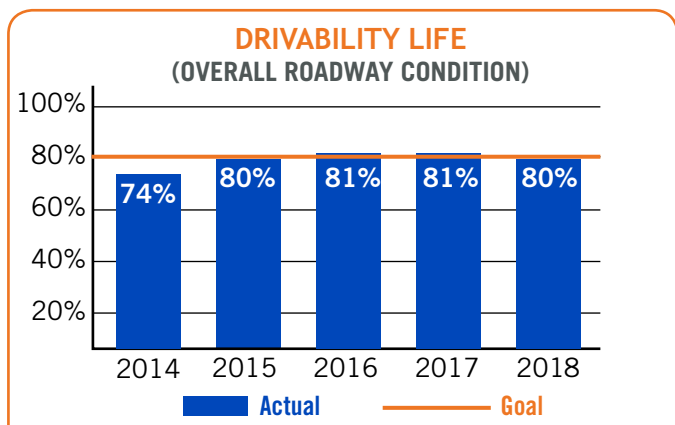
One of the most visible assets we work to preserve is the roadway surface. We maintain a system of state and US highways that spans 9,100 centerline miles (about 23,000 lane miles) and that people depend upon each day to be safe, efficient and accessible.

Some examples of work to maintain or enhance our transportation assets over the past year have included:

I-25: County Line Road to Bellevue Avenue Resurfacing, Arapahoe County

Cost: \$11.2 million

This project milled out existing asphalt and resurfaced I-25 between County Line Road and Bellevue Avenue. Other work included adding overhead sign structures and various bridge deck repairs. Resurfacing of the highway and repairs to existing bridge decks will improve durability, longevity and ride throughout the corridor. (April 2018 to February 2019)



YEAR	2014	2015	2016	2017	2018
Long Range Goal	80%	80%	80%	80%	80%
Actual	74%	80%	81%	81%	80%
Budget (in Millions)	\$239	\$235	\$236	\$242	\$231

Note: Percents based on high/moderate drivability life metric for pavement condition.



Concrete box culverts under I-25, at Monument Creek Branch, were repaired following flooding that left the structures significantly scoured.

I-25 at Monument Creek Branch Flood Repairs, El Paso County

Cost: \$2.4 million

Major repairs of roadway and structures damaged during the flooding in 2013 and 2015. Work involved repairing concrete box culverts and wingwalls, building concrete drop structures, arming channels with boulders (riprap and grouted riprap), placing approximately 6,500 cubic yards of embankment material, excavating 1,550 cubic yards, and protecting habitat.

I-70 Parachute West Resurfacing, Garfield County

Cost: \$5 million

This six-mile resurfacing project improved roadway smoothness and drivability. The project addressed road heave in several sections, replaced guardrail and bridge rail and lined the interiors of several existing culverts with new pipe.

US 85 Resurfacing from Eaton to Ault, Weld County

Cost: \$10.5 million

This was the latest phase dedicated to improving the safety and quality of this highway by resurfacing, enhancing intersections and adding a traffic light at US 85 and Weld County Road 76.

US 160 Treasure Falls Resurfacing, Archuleta County

Cost: \$7.5 million

The project improved a 14-mile stretch just east of Pagosa Springs, between CO Highway 84 and the Treasure Falls scenic turnout, with major roadway repairs and resurfacing. The work improved traveling safety for motorists with new features, such as an enhanced chain-up station with new lighting.



We are proud to announce that we have completed our Flood Recovery Program and met the performance goals set by then Governor John Hickenlooper to be fully recovered within five years of the 2013 historic flooding event. Our program consisted of 174 projects statewide, including CDOT and local agency projects (towns and counties).

Sixty-six of those projects were permanent repair projects, with 58 in Region 4 (north-eastern Colorado), which received the storms biggest impacts. Our Region 4 teams administered all of the local agency projects (100 total) for the 2013 and 2015 events and supported Region 1 (central Front Range) and Region 2 (south and southeastern) in their permanent repair projects.

Our Flood Recovery Program has become a leader nationwide in planning and implementing resilient solutions to infrastructure projects. The Program has spent approximately \$186 million in measurable resilient construction activities out of their \$740 million recovery program.



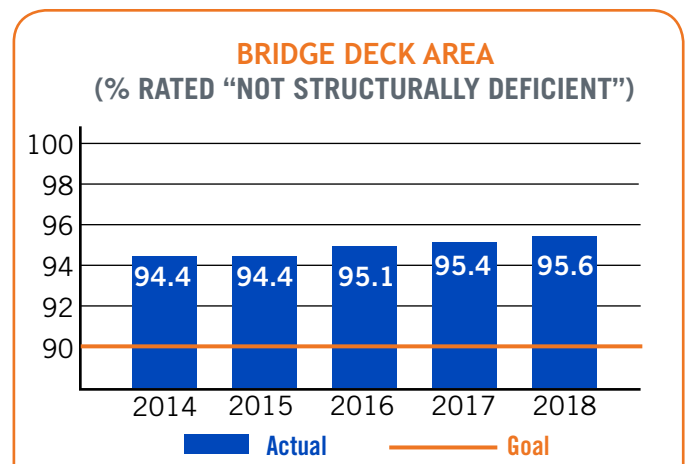
HIGHLIGHTED PROJECT (photo directly above): When the September 2013 storms wiped out a large section of US 34 east of Greeley, it became clear that a better, long-term solution was needed to ensure the road could withstand a major rain event in the future. Post recovery, US 34 is a great example of streamlining our project delivery through creative construction strategies and exceptional coordination with multiple agencies. These efforts reduced construction by two years, allowed for \$50 million to be reinvested into resilient solutions and provided exceptional customer service to those residents impacted by the construction.

Addressing Our Bridges

Similar to our Surface Treatment Program, CDOT’s Bridge Preventive and Maintenance Program goals include addressing risks to our state highway system identified through Asset Management. These risks include:

- Scour, meaning the bridge has a foundation that is at risk of failure due to erosion; this is the most common cause of bridge failure, and CDOT has 144 scour-critical bridges on our state highway system
- Bridge joints not in “good” condition; 33.00 percent of the total length of bridge joints in the state are in fair, poor or critical condition
- Unsealed or otherwise unprotected deck area, which currently includes 1,159 bridges or 11.7 million square feet of total deck area
- A vertical clearance lower than the minimum design requirement of 16 feet; such bridges are at risk of sustaining repeated hits from commercial vehicles; we have identified 57 such bridges
- A vertical clearance lower than the statutory minimum of 14.5 feet; we have identified 14 bridges below this limit
- Load-restricted bridges, whose current capabilities to support extra-legal highway loads (i.e., permitted overweight vehicles) are inadequate, meaning we are restricting commercial trucking movement throughout our state; we have identified 76 such bridges
- Load-posted bridges, which are bridges whose current capabilities to support legal loads are inadequate, restricting commercial trucking movement throughout our state; we have identified 15 such bridges

To address these risks, our Bridge Division designs and prepares projects to be advertised to and constructed by contractors. Our bridge engineers are ultimately responsible for bridge inspection both on and off the state highway system. Over the past fiscal year, they conducted approximately 1,600 inspections for structures on the state highway system and managed approximately 2,300 inspections for those off of our system.



YEAR	2014	2015	2016	2017	2018
Long Range Goal %	90	90	90	90	90
Actual %	94.4	94.4	94.4	95.1	95.6
Budget (in Millions)	\$174	\$168	\$164	\$163	\$155

Budget figures include both CBE and CDOT Bridge funds.

In June 2018, the Colorado Bridge Enterprise (CBE) board adopted a resolution refining Bridge Enterprise eligibility criteria. This resulted in approximately 120 bridges newly eligible for CBE funding. The growth in the eligible population can be characterized as reclassification of previously “fair” bridges based on a policy change, rather than a change in condition resulting from ongoing deterioration. This policy change will allow the CBE board members to make better business decisions. For example, select newly eligible structures may be addressed with major rehabilitation before the structure condition deteriorates to a point where full replacement is required, resulting in significant cost savings.

Of the 334 bridges eligible for Colorado Bridge Enterprise funding (classified in “poor” condition), 142 structures have been replaced or repaired, 22 are under construction, 12 are either in design or have completed design and 158 are not yet programmed (as of December 2018). More on the CBE can be found [here](#).

Addressing Our Bridges



I-70 Colorado River Bridge at Rifle

Here is a sampling of bridge projects that were underway or completed in 2018:

I-70 Bridge Repairs Over Clear Creek and Soda Creek Road, Clear Creek County

Cost: \$1.6 million

Bridge work included repairing the concrete decks, installing new waterproofing membranes, repairing bridge joints and placing new asphalt. This project helps promote the longevity of the bridge decks.

I-25/Rockrimmon Bridge Preventative Maintenance Project, El Paso County

Cost: \$12 million

The project involved maintenance work on 10 interstate bridges surrounding the Rockrimmon/ North Nevada interchange complex, which receives about 120,000 vehicles per day. Work included expansion joint replacement, waterproofing membrane installation and asphalt overlays to protect bridge decks and extend the lifespan of these structures 75 years.

I-70 over the Eagle River / I-70 Colorado River Bridge at Rifle / I-70 DeBeque Overflow Bridge, Eagle, Garfield and Mesa Counties

Cost: \$8 million (for all three structures)

Preventative maintenance included repairing fatigue cracks on the steel girders; repairing concrete bridge decks; and replacing expansion joints, pavement/ waterproofing membrane, bridge rail and roadside guardrail.

I-70 and CO 59 Bridge Reconstruction East of Limon, Kit Carson County

Cost: \$5.1 million

The bridge had been scheduled for reconstruction in the next few years, so when a semi-truck crashed into the support pillars of the CO 59 bridge over I-70 (causing a fatality), the decision was made to remove and rebuild the structure now.

US 50 Agate Creek Bridge Replacement, Saguache County

Cost: \$1.2 million

This project replaced a bridge at Agate Creek, installed new guardrail and resurfaced about one mile of roadway along US Highway 50 just east of the Town of Sargents. The project provided enhanced safety by creating a smoother driving surface and a new, wider bridge structure.

Safer Travel on Our Roadways

REDUCING THE RISKS OF GEOHAZARDS

The mission of our Geohazard Program is to identify and manage geologic hazards by using engineering principles and innovative technology to collaboratively support Colorado's transportation system. Staff manage projects and respond to emergencies involving rockfalls, rockslides, landslides, debris flows, embankment distress and sinkholes. The program is working towards systematically identifying, monitoring and mitigating specific sites within geohazard corridors to effectively reduce the risk of these events on the transportation system. In fiscal year 2018, the program budget was \$9.5 million.

Efforts this past year included:

- Phases I and II of corridor mitigation on US 6 in Clear Creek Canyon
- Corridor mitigation on US 24 Ute Pass west of Manitou Springs
- Anchored mesh repair on CO 133 near Paonia Reservoir
- Emergency retaining wall and rockfall mitigation repair on US 550 Red Mountain Pass
- Emergency scaling on CO 96 near Wetmore
- Final phase of rockfall barrier replacement in on I-70 in Glenwood Canyon
- Feasibility studies for corridor mitigation on CO 133 and CO 74
- Continued remote sensing efforts statewide



Rock bolt installation on US 24 Ute Pass just west of Manitou Springs was part of the corridor mitigation project.



Crews remove a failed anchor mesh section on CO 133 near Paonia Reservoir.

Safer Travel on Our Roadways

TRANSPORTATION SAFETY PROGRAMS – FOCUSING ON BOTH ROAD AND DRIVER

Traffic and Safety Engineering Branch (the Branch)

The Branch, in collaboration with the CDOT Highway Safety Office and many other safety stakeholders, is focused on reducing fatalities and serious injuries resulting from crashes on the transportation system and the associated human and economic loss. Branch staff administer the Federal Highway Administration's (FHWA) Highway Safety Improvement Program (as defined by 23 CFR 924) for CDOT. On average, over 100,000 crash records are reported in a calendar year. The Branch administers federal funding to improve the accuracy, completeness, timeliness and availability of these data, which are so vital to many state agencies for analysis, planning, funding requests and more. These comprehensive crash data are key to helping CDOT work with local agencies and other stakeholders to identify and construct the most cost-effective safety projects.

The Office of Transportation Safety (OTS) administers the state's traffic safety program funded by the National Highway Traffic Safety Administration (NHTSA), which is focused on decreasing impaired driving-related traffic deaths, decreasing motorcycle and pedestrian fatalities, and increasing seatbelt and car seat use. Public information and outreach activities are coordinated through OTS's Highway Safety Office (or HSO, which is further highlighted, below).

Traffic Fatalities The mission of both the OTS and the Branch is to "reduce the incidence and severity of motor vehicle crashes and the associated human and economic loss." Unfortunately, again in 2017 (2018 fatality data were still preliminary when this report was completed), Colorado saw a sharp increase in fatalities and serious injuries and marked increases in several categories of fatalities. This increase can in part be attributed to Colorado's popularity, which has led to increases in population (significantly in urban areas) and increases in Vehicle Miles Traveled (VMT) and registered vehicles. Consistently now, for the last three years, Colorado saw urban fatalities surpass rural fatalities, a change in a historic trend. While 2018 crash data are currently being verified and are not yet official, preliminary indications show that the number of fatalities has dropped from 2017, but is still consistent with the increasing trend from 2010.

Many of the most serious transportation safety challenges continue to be driver behavior related: impaired driving and the lack of seat belt use. These driver behaviors are leading to an alarming increase in vulnerable-user fatalities. In fact, seventy-five percent of the increase in fatalities from 2015 to 2016 represented pedestrians, motorcyclists and bicyclists. All categories except head-on fatalities increased from 2014 to 2015. The OTS aggressively addresses these challenges by supporting projects, programs and other measures to educate the public and raise awareness.

National Safety Performance Measures The FHWA requires that all states and Metropolitan Planning Organizations annually establish targets for five safety performance measures using five-year averages. These measures are established by CDOT and safety stakeholders; the five-year averages represent (hopefully) the upper limits. Below are the two most recent five-year period averages for comparison, reflecting the continued expectation of fatality increases and injury decreases in Colorado.

Colorado Safety Targets: Five-Year Averages for 2014-2018

- Fatalities: 610
- Fatality Rate: 1.20
- Serious Injuries: 3,350
- Serious Injury Rate: 6.79
- Non-motorized Users (Pedestrians, Cyclists) Fatalities and Serious Injuries: 586

Colorado Safety Targets: Five-Year Averages for 2015-2019

- Fatalities: 644
- Fatality Rate: 1.21
- Serious Injuries: 2,909
- Serious Injury Rate: 5.575
- Non-motorized Users (Pedestrians, Cyclists) Fatalities and Serious Injuries: 514

While all safety stakeholders in Colorado are striving to reduce crashes and fatalities, we have to be ever more strategic and effective with limited resources. We also understand that without significant changes in funding, legislation, population growth, VMT increase or increased enforcement and education, these trends will continue. We are encouraged by continued safety innovations in the automotive industry, and know that transportation partnerships with them hold promise for future years' reductions in crashes and fatalities.

Safer Travel on Our Roadways

Strategic Highway Safety Plan (SHSP) The SHSP, now in its fifth year, set a bold and visionary goal of zero deaths for Colorado’s transportation network. *Moving Toward Zero Deaths* in Colorado has become a vision for several agencies and safety programs. Given the challenges that Colorado has faced with increases in transportation fatalities, CDOT will be updating the SHSP in 2019 to ensure safety stakeholders are implementing the most effective strategies possible to move Colorado toward zero.

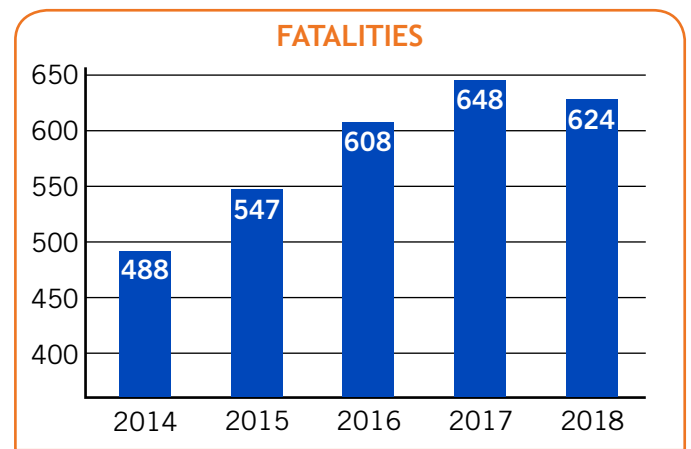
Highway Safety Improvement Program (HSIP) In fiscal year 2018, CDOT delivered \$27.3 million in HSIP funding to our five transportation regions and local agencies around the state for implementing 44 projects that address the significant numbers of fatalities related to infrastructure and the driver interaction (run off road, intersections, speed and pedestrians). These projects are expected to have a safety benefit that has a present value of \$71.4 million for an overall cost-benefit ratio of 2.62. Examples of these projects include highway median cable rail, auxiliary lanes, rumble strips, roundabouts, intersection improvements, traffic signal upgrades, roadway realignments and more. The Branch and our transportation regions are currently programming fiscal year 2019 HSIP, meeting the Special Rule requirements for obligating \$2.8 million to address High Risk Rural Roads (HRRR).

FASTER Safety Mitigation Program (FSM) In fiscal year 2018, we spent \$67.5 million in FSM funds to construct 67 projects across the state. Focusing on the same safety-improvement measures as with our HSIP funding program, these FSM projects are expected to have a safety benefit that has a present value of \$166.8 million for an overall cost-benefit ratio of 2.47.

Work Zone Safety and Mobility (WZSM) The bi-annual WZSM Task Force issued its Process Review report to FHWA in February of 2018. A number of Smart Work Zone strategies were piloted on the Front Range to explore technologies that can improve work zone safety and mobility onsite and also collect performance data. We also participated in a national pilot to collect national work zone data, revised our temporary speed limit setting procedure and enhanced our safety practices and policies. While FHWA decided in 2018 to conduct its own unannounced work zone compliance reviews, CDOT decided to continue our own.

Crash Data CDOT started the development of the Behavioral and Engineering Safety Data for Transportation (BESDT) application. This system is designed to automate the transfer of crash records from the Department of Revenue (which oversees the state’s Safety Enforcement divisions) to CDOT, automate the crash coding processes where feasible, and provide a query and reporting tool for internal and external customers. Completion of the project will improve the speed and accuracy of crash record coding processes, increase the tools for data analyses, and make data available for internal and external customers upon completion. The project is currently scheduled for completion in 2019.

Rail Highway Grade Crossing Program During fiscal year 2018, CDOT apportioned Federal safety funds to approximately 15 individual safety projects entailing improvements to at-grade highway crossing signal equipment. These projects are located in both urban and rural areas and involve local, collector and principal arterial facilities. The program reviews the 2,082 active public crossings in Colorado, including two Class I railroads (giant freight railroads that own the majority of tracks in North America) and several short line railroads. No Class II railroads (“regional railroads”) operate in Colorado.



YEAR	2014	2015	2016	2017	2018
Fatalities	488	547	608	648	629

Safer Travel on Our Roadways

Some examples of safety-improvement projects underway last year included:

CO 85 (Santa Fe Drive), Hampden to Lipan, Denver County

Cost: \$3 million

This project involved roadway widening to accommodate acceleration lanes and two 16-foot travel lanes with shoulders; intersection improvements to include new traffic signals, crosswalks and ADA ramps. This \$2.97 million project will also include installation of new traffic signals and crosswalks, and will replace concrete slabs and ADA ramps.

CO 21 (Powers Boulevard) & Omaha Boulevard Intersection Safety Improvements, El Paso County

Cost: \$773,000 (including some HSIP funding)

The intersection with Omaha Boulevard was the last remaining unsignalized, full-access intersection on CO 21 (Powers Boulevard) north of Milton E. Proby Parkway. The intersection had a high crash rate and a history of serious collisions. The project eliminated left-turn movements to reduce crashes, constructed a median island on Omaha Boulevard to channelize traffic into the new right-in/right-out configuration, and constructed a permanent center median on CO 21, preventing left-turn movements from Omaha to Powers. The northbound left-turn lanes at Palmer Park Boulevard were also extended as part of this project.

CO 133 McClure Pass Slip Repairs, Gunnison County

Cost: \$1.3 million

The project stabilized and reinforced a landslide area below the roadway five miles south of Marble, reducing the risk of further slipping or future rockslide events. Work involved excavating rock material, drilling 60-foot-deep caissons, installing 24-inch diameter rebar cages, constructing a tieback system, and repairing and reconstructing the damaged roadway.



CO 71 at CO 90 in Punkin Center received safety upgrade.

CO 71 & CO 94 at Punkin Center, Lincoln County

Cost: \$456,000

Due to high number of broadside crashes, this project installed rumble strips and flashing stop signs at the intersection. In addition, crews resurfaced and installed the safety edges (these shape the edge of the pavement to 30 degrees, which research shows is the optimal angle that allows drivers to re-enter the roadway safely).

US 285 Nathrop Wildlife Underpass and Lane Improvements, Chaffee County

Cost: \$3.5 million

The project spanned from Nathrop town limits north to the US 285/US 24 junction and featured a wildlife underpass that has the potential to significantly reduce collisions by up to 70 percent. The project also included eight-foot tall wildlife fencing, escape ramps for wildlife trapped within the highway corridor, and deer guards at vehicle access points. The highway was also widened to accommodate a new left-turn lane for southbound traffic turning onto Chaffee CR 301/ Fisherman's Bridge, a busy access for tourists and the rafting industry.

Safer Travel on Our Roadways

Highway Safety Office (HSO) The Highway Safety Office receives over \$10 million annually to fund traffic safety countermeasures, \$8.1 million of which comes from federal resources and \$2 million from state resources. The HSO oversees over 100 federal projects with 80 entities and over 120 state projects with over 100 different entities.

Though impaired driving remains a significant traffic safety challenge, programs developed and overseen by the HSO have had significant impact on the impaired driving environment. Fatalities involving alcohol impaired drivers (BAC .08+) in 2017 were 27 percent of all fatalities. This percentage qualifies Colorado as a low-fatality state for National Highway Transportation Safety Administration (NHTSA) funding. This is attributable to high visibility enforcement and public awareness, including CDOT's innovative BACtrack campaign. See more [here](#).

As part of the 2018 *The Heat Is On* campaign, CDOT launched a program to incentivize the purchase of breathalyzers and ultimately help reduce impaired driving in Colorado. Through a first-of-its-kind partnership with BACtrack, a leading personal breathalyzer company, breathalyzers were offered at an unprecedented 50 percent discount for Colorado residents. Almost 3,000 breathalyzers were purchased in the span of just three months.

This was CDOT's third year promoting breathalyzers, which measure one's blood-alcohol content levels, and the practice seems to be working. Colorado now ranks first in the nation in breathalyzer use, a sign that people are taking a responsible approach to drinking and driving.

As a member of former Governor Hickenlooper's Marijuana Working Group, the HSO was able to secure \$1 million in funding from the Marijuana Cash Tax Fund for Impaired Driving Enforcement efforts. The HSO also funded purchases of the Bactrack devices through private funding sources.



BLOW Campaign graphic

The HSO motorcyclist awareness programs and partnership with CSP motorcyclist training programs contributed to a notable decrease in motorcycle fatalities:

- 18 percent decrease in motorcyclists fatalities (following five years of increased fatalities)
- 13 percent decrease in unhelmeted motorcyclist fatalities

The HSO leads the efforts of the Statewide Occupant Protection Task Force and was a driving force in the introduction of legislation to pass a primary seatbelt law in 2017—these efforts continued in 2018. There were 222 unbuckled fatalities on Colorado roads in 2018—accounting for about half of the 410 total passenger vehicle deaths in the state. CDOT's 2018 State of Colorado Statewide Seat Belt Survey showed seat belt use improved to 86.3 percent, up from 83.8 percent in 2017—the first improvement since 2015. Still, Colorado trails the national seat belt average of 90 percent. The increased use is due in part to the HSO's public outreach and awareness, as well as aggressive occupant protection violation enforcement. (Click [here](#) for more information.)

Relieving Congestion & Enhancing Mobility

TRANSPORTATION SYSTEM MANAGEMENT & OPERATIONS

Optimizing the Travel Experience Providing safe and reliable travel conditions and options is key to maximizing travelers' mobility and allowing them to experience the freedom and connection provided by Colorado's multi-modal transportation network. For every minute a distressed vehicle remains stalled in a travel lane, four minutes are required for the facility to recover to normal traffic flow, which in turn magnifies congestion downstream on the corridor.

Safe and reliable travel on both rural and urban corridors is impacted by: (1) recurrent congestion due to insufficient roadway capacity and bottlenecks, and poor traffic signal timing; and (2) non-recurrent congestion, caused by unplanned and un-predicted traffic incidents and crashes, adverse weather conditions, work zones and special events. More than half of congestion can be attributed to these non-recurring events in urban areas and about 95 percent in rural areas. Even though these incidents and conditions may occur infrequently, their impact is significant when they do occur. Congestion impacts the economy by delayed delivery of freight, unreliable commutes to school and places of employment, and frustrating travel conditions along popular recreational routes like our I-70 mountain corridor.

Our Division of Transportation Systems Management & Operations (TSMO) has a mission to systematically improve travel time reliability and safety on Colorado highways through technology, innovative programs and strategies, targeted traffic management activities, and safety improvements to maximize the return on investment of transportation funds.

TSMO includes the Intelligent Transportation Systems (ITS) Branch, using technology to improve safety and reliability; the Safety & Traffic Engineering Branch, focused on reducing crashes on our system; the Colorado Traffic Management Center (CMTC) Branch, to address the real-time management of traffic, incidents and storms; and the Planning and Performance Branch, which develops and tracks key performance metrics.

Always a Safety Focus Our TSMO staff joined a statewide First Responder Safety Committee focused on safety and quick clearance along our roadways. This committee, lead by the Colorado State Patrol and comprised of CDOT and other federal/local officials, will



CDOT's new Regional Operations Center in Pueblo.

ensure that all responding agencies continue joining together to create a multi-talented, more cohesive and unified team, saving lives together.

To reinforce the Task Force, our TSMO team partnered with Douglas County and the Colorado State Patrol and opened the nation's second Traffic Incident Management (TIM) Training Track, completed in 2018, to provide Colorado's first responders hands-on training. The TIM Training Track provides scenario-based training and an environment for collaboration amongst the multiple disciplines and jurisdictions involved. From a CDOT operations perspective, Colorado is going to a decentralized Operations Center, or Traffic Management Center, model. This means that the operations centers will no longer be handled by a primary statewide center, but to be integrated into our transportation regions. This allows these communication hubs to be intimately involved in communicating and responding to incidents in those given areas.

Some additional safety-focused initiatives that TSMO completed in 2018 are:

- Opening the first two Regional Operation Centers, one in Region 1 located in Golden, and the other in Region 2 located in Pueblo (the Region 2 center is the first to be co-located with Colorado State Patrol)
- Leading efforts to achieve the goal of 40 percent of Colorado's 19,894 first responders completing the Federal Highway Administration's Traffic Incident Management classroom training

Relieving Congestion & Enhancing Mobility

- Hosting the second annual Traffic Incident Management Conference and Awards Banquet to promote responder safety, TIM culture and best practices

The following are examples of projects across the state that were focused on addressing congestion and improving mobility on our roadways in 2018:

Central 70 Project, Denver County

Cost: \$1.2 billion

The Central 70 Project will reconstruct a 10-mile stretch of I-70 between Brighton Boulevard and Chambers Road, add one new Express Lane in each direction, remove the aging 55-year-old viaduct, lower the interstate between Brighton and Colorado boulevards, and place a 4-acre park over a portion of the lowered interstate.



The Central 70 project will help relieve congestion and improve travel times when it is completed.

US 50 Westbound Realignment, Pueblo County

Cost: \$10.2 million

Work focused on the westbound portion of US 50 between Pueblo and Pueblo West, which has a history of heavy commuter traffic. The project added a third lane and provided an extensive reconstruction of existing lanes. Existing westbound lanes were converted into an entrance ramp onto US 50 from CO 45 and new westbound lanes were added.

CO 340 Redlands Roundabout, Mesa County

Cost: \$5 million

This safety-improvement project converted the existing CO 340 (Broadway) and Redlands Parkway in Grand Junction signalized intersection into a roundabout. The roundabout will effectively handle projected traffic volumes, enhances the aesthetics of the intersection and surrounding area and significantly improves safety for all users including cyclists, who use this intersection frequently to access the Colorado National Monument. The project also resurfaced the roadway, reconstructed pavement, improved guardrail and drainage and upgraded sidewalks to comply with ADA* requirements. (*Americans with Disabilities Act)

US 287 to Laporte, Larimer County

Cost: \$21 million

Since early 2016, CDOT has been reconstructing and widening US 287 just north of Fort Collins city limits—between CO 1 (Terry Lake Road) and the intersection of Larimer CR 54G (LaPorte Bypass). The project, scheduled for completion spring 2019, replaces existing lanes with four through-lanes, a center-turn lane, a 10-foot-wide concrete shoulder/bike lane and 7-foot-wide concrete sidewalks. The LaPorte Bypass signalized intersection is being replaced with a safer and aesthetically pleasing 228-foot roundabout.

US 550 & CO 62 Resurfacing and Safety-Improvement Project, La Plata and Ouray Counties

Cost: \$661,000

A section of US Highway 550 popular with tourist and recreation travelers received new lane striping and a new lane configuration. Those accessing the Rockwood Subdivision 17 miles north of Durango now have enhanced safety with a new southbound passing lane and a new southbound left-turn lane into the subdivision. The project also included a chip seal surface on both US 550 and CO 62 to improve and provide longer life of the road surface and installation of rumble strips to provide added safety for motorists.

Relieving Congestion & Enhancing Mobility



Congestion during rush hour on I-25 North (US 36 to 120th Avenue) Express Lane corridor.

HIGH PERFORMANCE TRANSPORTATION ENTERPRISE

During 2018, the High Performance Transportation Enterprise (HPTE) team worked to address some of Colorado’s most pressing transportation challenges. HPTE was created by the General Assembly in 2009 to aggressively pursue innovative ways to efficiently finance important surface transportation infrastructure projects that will improve the safety, capacity and accessibility of the surface transportation system; can feasibly begin in a reasonable amount of time; and will allow more efficient movement of people, goods and information throughout the state. Over the past nine years, HPTE has worked diligently to finance and deliver Colorado’s first innovative and accelerated Express Lane projects on US 36, I-25 Central, I-25 North (US 36 to 120th Avenue) and the I-70 Mountain Corridor.

Highlights for HPTE in 2018 include:

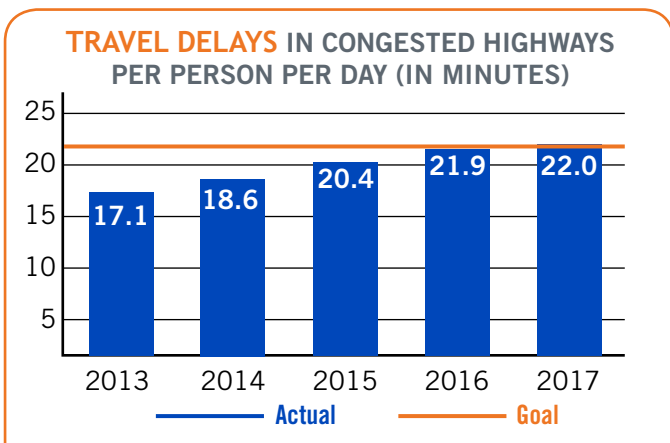
- **Breaking ground on 86 miles of Express Lanes across three major corridors:** Central 70 (Brighton Boulevard to Chambers Road), I-25 North (Johnstown to Fort Collins) and I-25 South “Gap” (Monument to Castle Rock)
- **Making headway on the Express Lanes Master Plan,** with two workshops taking place to gather stakeholder feedback and inform goals, objectives, potential corridors and evaluation criteria. Express Lanes work for everyone. Trip reliability and travel speeds are improved, congestion and delays are better managed, and transit also benefits.

HOV3+: On average, 17 percent of all transactions in 2018 were HOV3+ across the Express Lane Network; an estimated 2.6 million free trips were taken by HOV3+ users in 2018.

Transit: CDOT’s regional bus service, Bustang, reports a 70 percent improvement in on-time arrivals, mostly gained from I-25 North Express Lanes (US 36 to 120th Avenue).

US 36 Express Lanes: The Regional Transportation District’s increased Flatiron Flyer service on the US 36 corridor has led to a threefold increase in ridership (2,000 in 2015 to 6,000 in 2018) during peak periods. US 36 sees more than 3 million annual transit bus trips, which helped reduce 46.5 million vehicle miles traveled—equal to approximately 19,337 metric tons of CO2 emissions.

I-70 Mountain Express Lane: The I-70 Mountain Express Lane saw a 16 percent increase in customer use during the 2017/2018 operating period, when compared to the previous year. Overall, 9 percent of the traveling public chose to pay a toll to use the Express Lane, which relieved congestion for those who traveled the corridor free of charge.



YEAR	2013	2014	2015	2016	2017*
Long Range Goal	22	22	22	22	22
Actual	17.1	18.6	20.4	21.9	22.0

*The most recent data available.

Supporting Multimodal Travel

ENJOYING COLORADO – OUTSIDE THE AUTOMOBILE

CDOT's Bicycle/Pedestrian and Scenic Byways (BPSB) programs continue to push Colorado forward in providing multimodal options and improved traveler experiences. Here are just a few of the highlights from 2018:

Bicycle/Pedestrian Program In an effort to further understand bicycle and pedestrian transportation movement, CDOT has teamed up with STRAVA Metro to collect enhanced bicycling and walking trip information. STRAVA is a free mobile app and website that allows users to track their human-powered travels via GPS. STRAVA anonymously compiles route information so transportation planners and engineers can learn more about intersection wait times, origin/destination information and cycling and pedestrian counts. The data will be used to improve planning, safety and infrastructure for cyclists and pedestrians throughout Colorado.

Our BPSB unit also completed an electronic pilot inventory project of the bicycle facilities in Region 2 (south-central and southeast). The pilot was very successful and is now being replicated in the remaining four CDOT regions. The information will be used to inform the development of CDOT's High Priority Bicycle Corridors, as well as general planning and design decisions.



Colorado's 26 scenic byways were the focus of a Denver International Airport (DIA) art exhibit, which ran from May to October 2018 and featured "breathtaking color photography of several unique, majestic and rare Colorado locations." The exhibit, according to DIA's description, "represented each of the byways located in 48 of Colorado's 65 counties, 11 of which are nationally recognized for their outstanding scenic and historic attributions. Colorado has the most designated byways in the US, so this venturesome exhibit along highways and backroads reveals more than just suggested road trips. It's a true Colorado experience."

Colorado's Scenic and Historic Byways (CSHB) Program CSHB staff, working in coordination with the 15-member, governor-appointed Byways Commission, continued implementation of the program's three-year strategic plan (developed in 2017). The plan outlines three main goals: maintain a Byways system that is second to none; elevate the Byways system to become an important state asset for economic development and livability; and ensure that each local byway is a fully functioning part of an excellent statewide system. In 2018, CSHP staff participated in numerous trainings and presentations including: the Colorado State University's Masters of Tourism Management Program; the Northwest Colorado Cultural Heritage Summit; the Preserve America Youth Summit; Colorado Parks & Wildlife's Partners in the Outdoors Conference; and, as host to US Travel's IPW (International Pow Wow) in Denver, along with the National Scenic Byways Foundation. See the Colorado Byways' promotional information [here](#).

Colorado Safe Routes to School (CSRTS) Program The Colorado Transportation Commission's commits \$2.5 million annually to support the CSRTS program, a federally-funded program administered by CDOT. CSRTS projects enable and encourage children to walk or bicycle to and from school, focusing on infrastructure, education and encouragement. According to SRTS Program Manager Leslie Feuerborn, "Communities across Colorado are continuing to make a commitment to support safe routes to school for their school children. There continues to be strong interest in getting more students walking and biking to and from school, teaching children pedestrian and bicycling safety, encouraging healthy living, and improving the built environment to support active transportation." In 2018, CDOT administered grants for projects in some 15 communities across Colorado. Read more about the program, projects and strategic plan [here](#).



**Colorado
Safe Routes
to School**

The strategic plan recommended updating the CSRTS logo to make it more vibrant, customized to the Colorado program, and reflect an adult target (since they are the decision-makers regarding whether or not their children walk and bike).

Supporting Multimodal Travel

Here are a few projects around the state that supported multimodal travel in 2018:

ADA Curb Ramp Packages, Metro-wide

Cost: Approximately \$3 million

This project will install over 200 ADA (Americans with Disabilities Act) curb ramps throughout the metro area, assuring that the transportation network is accessible to all users.

CO 96 High Intensity Activated Crosswalk Beacon, Pueblo County

Cost: \$100,000

CDOT, in partnership with the City of Pueblo, installed a modified High Intensity Activated Crosswalk (HAWK) beacon at the intersection of Lincoln Street (CO 96) and Belmont Ave. The new traffic signal, which helps pedestrians safely cross the busy street, is the first of its kind in Pueblo. The modified HAWK will provide better visibility, improve safety and allow more direct access to Heritage Elementary School.

CO 9/Summit Boulevard in Frisco, Summit County

Cost: \$3.3 million

The project rehabilitated approximately one mile of CO 9 (Summit Boulevard) in Frisco by reconstructing concrete curb ramps to meet ADA requirements. Crews also repaired the roundabout at the westbound I-70 ramps and the bridge over I-70 by waterproofing the bridge deck membrane and repaving the structure.

Greeley ADA Curb Ramps— Phase 1, Weld County

Cost: \$741,000

The project replaced over 50 ADA curb ramps on US 34 and US 85 within the City of Greeley to better accommodate pedestrians with visual and mobility disabilities.



A modified High Intensity Activated Crosswalk (HAWK) beacon increases pedestrian safety at the intersection of Lincoln Street (CO 96) and Belmont Ave in Pueblo County.

Region 5 Intersection and Accessibility Improvement Project, Chaffee and Rio Grande Counties

Cost: \$3.6 million

This regionwide project improved intersections in four communities in south-central Colorado: Salida, Buena Vista, Del Norte and Monte Vista. Key intersections received upgraded light signals with enhanced technology for vehicles, bicyclists and pedestrians (vehicle detection and timing technology, pedestrian push buttons with audio to activate protected crossing). The work also reconstructed ADA curb ramps.

*Americans with Disabilities Act

Supporting Multimodal Travel



Bustang, CDOT's regional bus service, reports a 70 percent improvement in on-time arrivals, mostly gained from the I-25 North Express Lanes (US 36 to 120th Avenue).

TRANSIT & RAIL – STRENGTHENING OUR PLATFORMS

Asset Inventory and Group Asset Management Plan

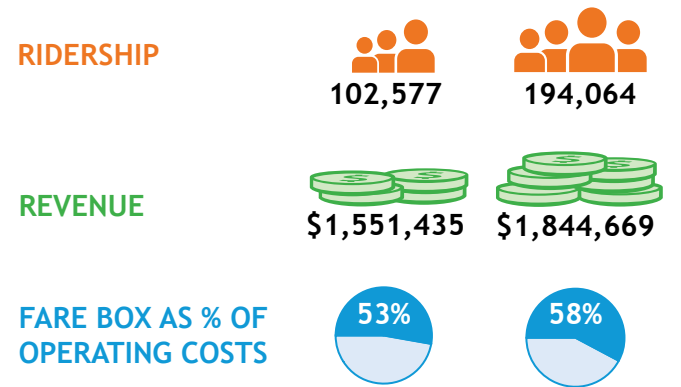
Our Division of Transit & Rail (DTR) continues to develop tools to maximize the effective use of public funds for the benefit of Colorado's transit services. Over the past year, DTR completed a comprehensive statewide inventory of transit assets. The asset inventory includes all the facilities, equipment and vehicles used to deliver transportation services by over 90 agencies throughout the state. The inventory data enables CDOT to perform sophisticated analysis on the condition of transit assets, informing better decision making about the investment of scarce public funds. With this information, we were also successful in developing the state's first Federal Transit Authority-required Group Transit Asset Management Plan (TAMP) on behalf of Colorado's smaller agencies, providing a valuable tool for CDOT and transit agency decision makers to prioritize asset replacements and improve the safety of transit riders statewide.

Rail In 2018, Colorado's State Freight & Passenger Rail Plan was accepted by the Federal Railroad Administration, thereby maintaining CDOT's eligibility for federal rail funding. The Rail Plan provides a comprehensive look at current challenges and emerging opportunities across all rail transport in Colorado and guides future rail investments. The top five priorities identified in the 2018 plan are: 1) advance Front Range passenger rail; 2) strengthen rail coordination; 3) integrate planning processes; 4) enhance economic connections; and 5) address freight rail needs and issues.

FTA Grants The DTR Grants Unit staff managed over \$48 million in federal, state and local funds impacting local economies through grants in fiscal year 2018.



By the Numbers



Supporting Multimodal Travel

DIVISION OF AERONAUTICS - ABOVE & BEYOND

Colorado's system of 73 public-use airports and one seaplane base serve our state's local communities with a variety of services ranging from commercial air transportation, emergency medical evacuation, aerial firefighting, flight training and high-altitude flight testing. The mission of our Division of Aeronautics is to support Colorado's multimodal transportation system by advancing a safe, efficient and effective statewide air and space system through collaboration, investment and advocacy. At the top of the Division's list of accomplishments in 2018 are the Remote Air Traffic Control Tower Program and the strategic plan.

Remote Air Traffic Control Tower Program In 2018, the Division's innovative Remote Air Traffic Control Tower (RATCT) initiative at the Northern Colorado Regional Airport (FNL) continued to advance. The Division of Aeronautics is collaborating closely with FNL, the Federal Aviation Administration (FAA) and Searidge Technologies to implement a RATCT solution at FNL. This pioneering project will be the first in the world to integrate both ground-based video and aircraft track-based/radar components to provide necessary air traffic data to air traffic controllers working in a remote facility. The high-tech array will provide an enhanced level of efficiency and aviation safety at capital and operational costs dramatically lower than what is needed to construct and staff a traditional air traffic control tower.

After significant efforts to develop the project requirements and scope, the FAA selected Searidge Technologies to design, install, test and certify the remote tower equipment at FNL. Our Aeronautics Division-led initiative to test RATCT technology in Colorado will further solidify CDOT and the Division as a national leader in airspace technology innovation, enhancing aviation safety, capacity and efficiency, while significantly reducing the overall capital and operating costs associated with a traditional air traffic control tower. The \$8.8 million in funding for the test phase of this monumental project has been provided by the Colorado Aviation Fund, unanimously approved by the Colorado



Remote Air Traffic Control Room at the Northern Colorado Regional Airport.

Aeronautical Board (CAB). The remote tower facility and equipment have been installed and, as of November 2018, the first of three testing and evaluation phases is underway. In 2019, the system will be further optimized and tested in actual air traffic control tower use, all with the goal of achieving system certification in 2020. Frequent project updates, photos and videos will be posted [here](#).

Charting Our Course – Strategic Plan In 2018, the Division developed and implemented its first-ever strategic plan, an inclusive and collaborative endeavor that will help the CAB and the Division chart a clear course forward. Many of the Division's responsibilities, such as fuel tax disbursements and our discretionary grant program are mandated by statute, and they will always be part of our mission. However, the CAB and the Division have significant latitude and flexibility to leverage the Division's resources for initiatives and programs that benefit our statewide air and space system. The Strategic Plan will be an invaluable tool to focus our efforts and prioritize our resources, and it will be revisited regularly to ensure its ongoing value and relevance. Read more [here](#).

Smart Roads, Smart Vehicles, Smart Travel

ROADX - ACCELERATING TECHNOLOGY



It's been three years since CDOT launched RoadX, our program through which we explore and implement 21st century technology and ingenuity to solve our infrastructure challenges.

Some RoadX Accomplishments in 2018 included:

Smart Truck Parking We contracted and installed four Truck Parking Information Systems (TPIS) on I-70, two on public truck parking locations (at Burlington and Arriba) and two on private locations. These systems monitor and report parking availability on the TPIS website for access by commercial motor vehicle drivers. Additionally, parking space availability is communicated in real time on two variable message signs on I-70.

In 2019 we will work to stream the parking space availability data to CDOT's Traffic Management Center's database.

Smart Pavement We completed a test section of smart pavement panel installation on Brighton Boulevard in Denver; these precast, interlocking concrete slabs, embedded with weight sensors that track location and speed, can alert special software that emergency personnel need to be dispatched to the scene of a traffic incident.

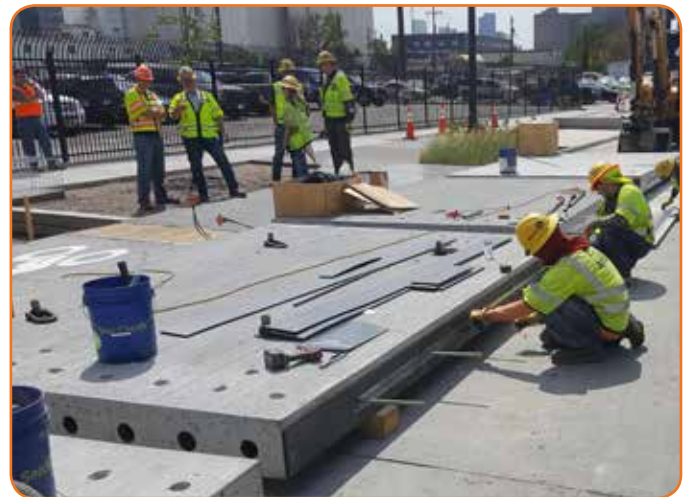
Rapid Speed Transportation Our RoadX program completed the State Benefits and Opportunities Study for Rapid Speed Transportation, which looked at technologies, safety certification, planning and environmental clearances, funding strategies, project construction, delivery, ownership and operations; the study examined Hyperloop, Arrivo and SkyTrans technologies.

Smart 25 Project Construction begins on this project in spring 2019; 14 miles of northbound I-25 between Ridgeway and University will have integrated ramp meters.

Visit our website for more information on the above initiatives, updates on additional projects in motion, our partnerships and more.



Smart pavement panels being fabricated.



CDOT completed smart pavement panel installation on Brighton Boulevard in Denver.

Planning, Research & Environmental Stewardship

Our Planning, Environmental and Research projects may not be as easily recognized by the public as a new traffic signal, a passing lane or a plowed road. But Division of Transportation Development projects and programs protect the environment, as well as saving time and money, as we support, protect and improve our 21st century transportation system. The following are just a few highlights of this program and our 2018 accomplishments.

Measuring our Performance The State Measurement for Accountable, Responsive, and Transparent Government (SMART) Act (C.R.S. 2-7-204) requires CDOT to develop a performance plan and routinely report on the Department's performance. We publish the Performance Plan annually with our top four to five strategic policy initiatives, or goals, using one-year and three-year targets. The Plan includes output measures of performance towards these goals, as well as the strategic initiatives we are implementing to achieve the goals. The Plan is published on July 1 each year by the Office of State Planning and Budgeting, in addition to quarterly metric updates. See Plan [here](#). In January, CDOT's executive director provides the Joint Transportation Committee with an update of the Department's Performance Plan and our progress towards achieving its performance goals.

Policy Directive 14 Where do we need to focus more of our resources? An answer to this question helps the Transportation Commission develop the annual budget. To assist in that decision-making, the Transportation Commission uses Policy Directive (PD) 14 "Policy Guiding Statewide Plan Development." PD 14 has four goals: safety, infrastructure condition (preservation), system performance (mobility) and maintenance. PD 14 details how CDOT measures progress toward meeting each goal through the attainment of certain objectives by 2025. To keep the Transportation Commission informed about progress toward the objectives, we calculate what the annual targets should be to reach the 10-year objectives. Every fall, a PD 14 scorecard shows how well we are meeting the annual targets. Using that information, the Transportation Commission may decide where flexible funds—those without designated uses—should be spent. Looking ahead, CDOT staff is considering whether PD 14 should be revised to reflect the national performance measures.



Planning, Research & Environmental Stewardship

Protecting the Environment CDOT's environmental functions at headquarters are integrated within the Environmental Programs Branch (EPB), which is part of the Division of Transportation Development (DTD). To assist the Transportation Commission, the Division of Transportation Engineering, each CDOT region and CDOT executive management, EPB manages the following to inform the planning and project development process: environmental policy; environmental procedures; programmatic agreements; and environmental data. Read more on our EPB division [here](#).

Partnering to Improve Air Quality CDOT is continuing to coordinate with the Colorado Department of Public Health & Environment (CDPHE) and other agency partners to manage the state's \$68.7 million portion of the national Volkswagen Settlement environmental mitigation fund. The first call for alternative-fuel transit vehicle grants went out as a part of CDOT's Consolidated Call for Capital Projects in the fall of 2018 and awards will be announced in early 2019. Our staff will manage these transit grants and participate in the revision of the Beneficiary Mitigation Plan to focus all remaining state funds on transportation electrification, in alignment with Executive Order B 2019-002 "Supporting a Transition to Zero Emission Vehicles."

Air Quality Many of CDOT's roles, responsibilities, programs, initiatives and actions have a positive effect on air quality, even if they are primarily carried out for another reason. Here are some examples of what our staff do:

- Accomplish mitigation actions and strategies for greenhouse gas reduction as outlined in the transportation chapter of the Colorado Climate Plan, published by Colorado state government.
- Coordinate on air quality issues with our planning partners (five Metropolitan Planning Organizations and 10 rural regional planning commissions).
- Improve travel time reliability and safety through technology, innovative programs and strategies, targeted traffic management activities and safety improvements.
- Plan, develop, operate and integrate transit and rail into the statewide transportation system.
- Support the purchase of alternative fuel vehicles and charging infrastructure statewide.

In 2018, some of our initiatives that supported improved air quality for Colorado included expanding an original three-state partnership to form an eight-state Regional Electric Vehicle Plan for the West (REV West). We collaborated with seven surrounding states to identify key interstate corridors and establish voluntary minimum standards for EV charging station development across the intermountain west region. Read more about air quality and transportation [here](#).



This EV charging station at CDOT's headquarters in Denver is one of 26 chargers at 11 CDOT locations statewide. In June 2018, CDOT's headquarters & Region 1 building received a "Wired Workplace" award from the Governor in recognition of its leadership in this area. Notes the Colorado Department of Energy, "Workplace charging is one of the most effective ways to promote the adoption of electric vehicles."

Strengthening Partnerships

OUR LOCAL AGENCY PARTNERSHIPS

Each year, we announce a call for Transportation Alternatives Program (TAP) projects from local agencies across the state. Federal funds are allocated under TAP to transportation improvement projects that expand travel choice, strengthen the local economy, improve quality of life and protect the environment. Many TAP projects enhance non-motorized forms of transportation like biking and walking. TAP was authorized in 2012 by federal transportation legislation, Moving Ahead for Progress in the 21st Century Act (MAP-21), and is now continued under the current federal transportation legislation, Fixing America's Surface Transportation Act (FAST). More about TAP can be found here. <https://www.codot.gov/programs/planning/tap-cfp>

A Sampling of Partnership Projects Underway in 2018:
(Not all of these utilized TAP funding)

I-25 South Gap: Monument to Castle Rock, Douglas County

Cost: \$350 million

This project received support and contributions from El Paso and Douglas counties and the Pikes Peak Rural Transportation Authority. The I-25 South Gap project will widen 18 miles of I-25 from two lanes to three, widen shoulders, reconstruct four bridges, and build new wildlife crossings.



The I-25 South Gap project received contributions and support from El Paso and Douglas counties, as well as the Pikes Peak Rural Transportation Authority.

US 24/Ute Pass Corridor, El Paso County

CDOT and El Paso County partnered to make a series of transportation, safety and technology improvements along the corridor, between 31st Street and Woodland Park.

Projects included:

- US 24 Fiber-Optic Installation for Transportation Management, Manitou Springs to Woodland Park (\$2.4 million)
- US 24 Intersection Improvements at 31st Street and Ridge Road (\$1.7 million)
- US 24 Rockfall Mitigation, Cascade to Manitou Springs (\$2.2 million)
- Stone Wall Flood Damage Repairs Near Former Montessori School (\$240,000)

CO 82 Over-Length Vehicle Detection System, Pitkin County

Cost: \$160,000

A system was installed that notifies drivers to turn around if their vehicles exceed 35 feet in length on the popular, seasonal Independence Pass (which is narrow and winding) that connects Aspen and Twin Lakes and US 24. The technology consists of in-pavement loop detection, traffic counters, a controller cabinet and warning signs with flashing beacons.

I-25 North, Segment 6 BUILD Grant

Cost: \$20 million

Since 2013, the North I-25 Coalition has been working with Weld and Larimer counties, CDOT, the North Front Range Metropolitan Planning Organization (and its outstanding partnerships), the Fix North I-25 Business Alliance and the North Area Transportation Alliance (NATA) to improve the entire I-25 corridor through northern Colorado. Environmental Impact Statement advocacy groups have formed and the North I-25 Funding Committee actively works to obtain funding for this critical corridor. The NFRMPO received a \$20 million USDOT BUILD grant to leverage resources from funding partners and to deliver project solutions.

Strengthening Partnerships

San Miguel County Lawson Hill Park and Ride Cost: \$1.2 million

CDOT’s Division of Transit and Rail funded this San Miguel County Park and Ride project near the towns of Telluride and Mountain Village. CDOT Region 5 provided oversight throughout design and construction. The parking lot includes approximately 110 parking spaces, a bus shelter, restrooms and charging stations for plug-in electric vehicles. The facility will be used by CDOT’s *Bustang Outrider* bus service for pick-up and drop-off of riders on the Durango to Grand Junction route.



The new 110-space San Miguel County park and ride, located on Lawson Hill off CO 145, between Telluride and Mountain Village.

How to Reach Us / Get Involved



CUSTOMER SERVICE

Denver Metro (Region 1)	303.759.2368
Southeast Colorado (Region 2)	719.562.5568
Northwest Colorado (Region 3)	970.243.2368
Northeast Colorado (Region 4)	970.350.2368
Southwest Colorado (Region 5)	970.385.1423
CDOT Headquarters	303.757.9011



CDOT Website	codot.gov
Highway Information	COtrip.org
Road Conditions	511 (303.639.1111)