



COLORADO
Transportation Commission

2829 W. Howard Place
Denver, CO 80204

DATE: October 5, 2018

FROM: Ryan Rice, Director, Transportation Systems Management & Operations Division
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SUBJECT: CDOT Safety Programs

Purpose

At the August 2018 Transportation Commission Meeting, the Commission requested a more in depth presentation of the CDOT safety programs.

Action

Information only

Background

Not Applicable

Details

At the August 2018 Transportation Commission Meeting, an overview of Colorado's transportation safety performance was given as it related to transportation funding investment under Policy Directive 14. While CDOT is required to monitor and report statewide transportation safety performance, CDOT has direct influence on transportation safety in a variety of programs. A presentation will be given that features the safety programs at CDOT, explaining their purpose, funding, effectiveness, performance, strategies, and projects.

Key Benefits (if applicable)

Information Only

Options and Recommendations (if applicable)

Not Applicable

Next Steps (if applicable)

Not Applicable

Attachments

Presentation - TC CDOT Safety Programs In Depth





COLORADO
Department of
Transportation



MOVING TOWARDS
ZERO
DEATHS

Transportation Commission Workshop

Transportation Safety: A Colorado and CDOT Approach

October 2018



Today's Overview

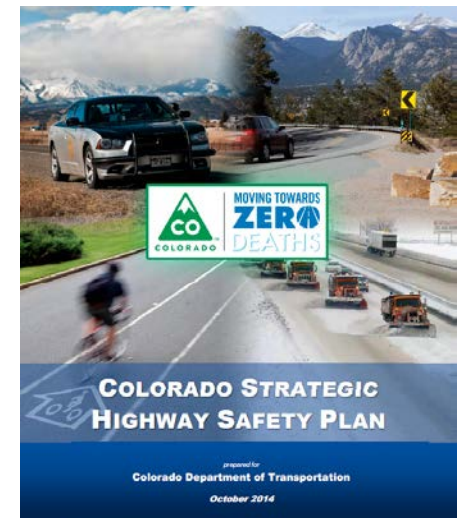
- Colorado Statewide Safety Strategic Planning
- CDOT Safety Programs
 - Education
 - Enforcement
 - Engineering
- Future of Improving Safety in Colorado

- Appendix: Current State



Statewide Strategic Planning

- CDOT responsibility through FHWA, 23 USC 148
 - “statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads”
 - “An SHSP identifies a State's key safety needs and guides investment decisions towards strategies and countermeasures with the most potential to save lives and prevent injuries.”
- Multi agency and stakeholders executive, steering, and focus teams
- Partners
 - Federal and State
 - Local Agencies
 - Citizen, Advocacy, Interest Groups
- Result:
 - Vision, Targets, Measures, Goals, Strategies





Strategic Highway Safety Plan

- SHSP Emphasis Areas and Implementation Plan - 5 E's
- Emphasis areas:
 - Aging Road Users, Bicyclists and Pedestrians, Data, Distracted Driving, Impaired Driving, Infrastructure, Motorcyclists, Occupant Protection, Young Drivers
- Next steps -
 - Implementation status
 - Update 2019-2024 SHSP
 - Implementation process





CDOT Response/Programs:

- Behavioral
- Engineering and Infrastructure
- Performance measures, program objectives, effectiveness, example projects, funding and resource needs
- Lead measures - program delivery, effective project selection, effectiveness prediction, actual effectiveness
- Investment - dollar spent in programs effectiveness



Highway Safety Office

Education and Enforcement

- Overall Performance objective- Reduce the number of traffic fatalities and serious injury crashes in the areas of impaired driving, speeding, distracted driving, occupant protection, and pedestrian safety.

- Project Selection -
 - Education (grantee partners) are selected utilizing CDOT's Problem Identification Report, historical performance; prior year funding allocations, CDOT's Problem Identification Report, historical performance, agency capacity, correlation to NHTSA best practices and ability to address the target population(s)

 - Law enforcement agencies are selected utilizing CDOT's Problem Identification Report, historical performance; prior year funding allocations, contact hours, and number of citations and/or arrests



Enforcement – Impaired Driving, Speed, etc.

- Impaired Driving- 20 Federal Projects - 85 State Projects
- Speed - 6 High Volume Projects
- Pedestrian & Bicycle-Projects - 2 Project
- Distracted Driving - 4 Projects

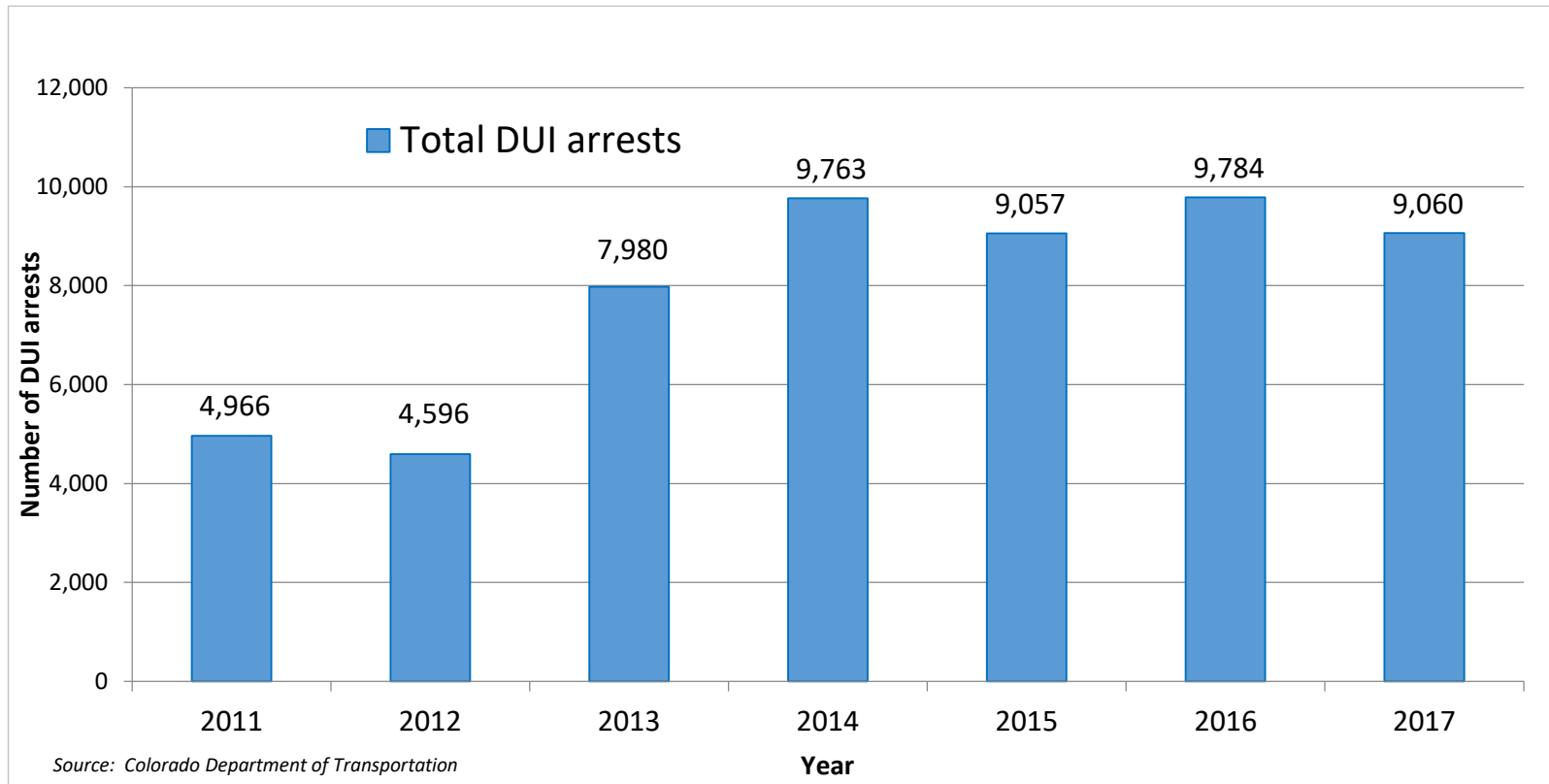
- Annual Investment - Approximately \$2.7 million in Federal dollars and \$1.2 million in State funding (Total - \$ 4million)

- Over 90+ Law Enforcement agencies participate across the state



Enforcement

Driving Under the Influence (DUI) Arrests funded by CDOT Enforcement Programs, Colorado, 2011-2017





Highway Education (grantee's)

- Young, Older & Distracted Drivers -15 Projects
- Child Passenger Safety -8 Projects
- Occupant Protection (seat belt) -11 Projects
- Motorcycle Safety -2 Projects
- Pedestrian & Bicycle-Projects - 1 Project
- Distracted Driving - 2 Projects

- Annual Investment - Approximately \$12 million in Federal dollars.



Education / Public Info Campaigns

Program objective

- Promote safety through awareness campaigns that achieve behavior changes that lead to crash reduction

Performance measure - Lead

- Viewership as measured by paid & earned media impressions
- Tagline recall as measured by phone survey
- Materials distributed as measured by volume

Performance measure - Lag

- Fatality trends as measured by FARS
- Behavior change as measured by annual surveys

2018-19 Campaigns (11 total)

- Marijuana (\$1m), Alcohol (\$770k), Seatbelts (\$720k), Distracted (\$225k), Pedestrians (\$190k), Teens (\$75k), Car seats \$75k, Motorcycle (75K), etc.
- Total Budget: \$3.2m. All federal grants (except MJ)
- Project selection based on NHTSA priorities





Education / Public Info Campaigns

Examples of success (2017-18)

- 469,523,355 earned and paid impressions (2018)
- Motorcycle fatalities down 18% after campaign expansion (2017)
- Seat belt use increase 2% after campaign expansion (2017-18)
- Breathalyzer ownership increasing by 3000 units (2018)

Delivery

- Paid ads - OHH, video, digital, influencers
- Earned media - PR and “stunts”
- Social media
- VMS boards
- Grantees & industry partners





Engineering and Infrastructure

- Dedicated Safety Programs
- CDOT Projects
- Asset Management - safety and traffic control devices
- Local Outreach and Safety Plans
- Technology and Connected Systems



Highway Safety Improvement Program (HSIP)

- Annually:
 - \$30M+, about 40 projects
- FY2018
 - Delivery - 74% expended
 - Effectiveness -
 - Program predicted B/C - 2.62
 - 78% of projects selected LOSS 3 or 4
- FHWA Program Assessment in 2018
 - Noteworthy Practices: Expertise at HQ and Regions, Data Analysis Tools, New Technologies and Innovation, TSM&O Evaluation
 - Recommendations: Local Agency Support, Systemic Analysis
- Example projects
 - Region 1 - SH 83 (Parker Rd) Raised Median and Lighting (\$2.4M, B/C: 3.14)
 - Region 2 - SH 21 and Omaha Blvd Intersection (\$1.0M, B/C: 5.17)
 - Region 3 - I-70 Median Cable Rail (\$1.0M, B/C: 5.97)
 - Region 4 - US 85 and WCR 76 Signal (\$750k, B/C: 7.20)
 - Region 5 - US 160 Wolf Creek Pass Signage and Barrier (\$2.6M, B/C: 1.48)



FASTER Safety Mitigation

- Annually:
 - \$70M+, about 65 projects
- FY2018
 - Delivery - 80% expended of \$63M
 - Effectiveness -
 - 90% of projects address LOSS 3 or 4 location
 - Program predicted B/C - 2.47
- Overall to date - *FY 2010 through FY 2019*
 - 396 projects
 - \$739M, 88% has been spent or obligated.
- 2018 FASTER program update
 - Example projects:
 - Region 1 - C470 & Ken Caryl Ramp Roundabouts (\$2.4M, B/C: 1.43)
 - Region 2 - US 50 Cable Rail (\$2.2M, B/C: 3.57)
 - Region 3 - I-70 Wildlife Mitigation (\$5.0M, B/C: 0.67)
 - Region 4 - US 34 Widening (\$4.0M, B/C: 9.39)
 - Region 5 - Highway 160 & Highway 550 Interchange (\$10.0M, B/C: 0.51)



HSIP & FASTER Safety Effectiveness

- Before and After Studies:
 - Now in 3rd year and conducting annually
 - 48 Projects Evaluated
 - Average Predicted B/C: 2.33
 - Average Actual B/C: 6.08
 - 60% of projects exceeded initial safety benefit expectations

Safety Programs Investment

For every \$2M allocated to HSIP or FASTER, another life will be saved and 60 fewer people will be injured in a crash



Institutionalizing Safety

- Project Development
 - Safety institutionalized into:
 - standards, specifications, policies, procedures, design manuals, best practices, product selection - examples: rumble strips, cable rail, super-elevation, materials, lane widths, shoulders, etc.
 - Safety & Operations Evaluations - NEPA to scoping

- Safety & Traffic Control Devices Asset Programs
 - Safety Features - guardrail, end treatments, cable rail, rumble strips, roundabouts, signal head borders, speed/red light enforcement
 - Traffic Control Devices - signing, striping, markings, signals, delineators
 - Most effective selection and replacing of devices



Work Zone Safety

- Best practices
- Elevating CDOT Policy on WZ Safety
- Elevating CDOT Procedure on Setting WZ Speed Limits
- Connecting our work zones
- Smart WZ technologies



Local Agency Roadway Safety

- Local Road Safety Plans -
 - NACE, FHWA, LTAP, CDOT Partnership
 - Counties: Adams, Archuleta, Garfield, Mesa, Pueblo, Yuma
 - HSIP LRSP - Arapahoe, El Paso
- LRSP Colorado Peer Exchange - Dec 18-19
- [Video](#)



ADAMS COUNTY

Table 99. Adams County Demographics, 2015

Age Group	Female	Male	Total
0-4	11,089	10,779	21,868
5-9	10,233	10,220	20,453
10-14	76,064	77,083	153,147
15-19	26,271	27,273	53,544
20-24	47,969	49,824	97,793
25-29	58,217	59,324	117,541
30-34	70,571	71,074	141,645
35-39	78,220	79,341	157,561
Total	344,044	342,025	686,069

Source: American Community Survey, 2015

TABLE 40. ADAMS COUNTY TREND ANALYSIS 2011-2015

Performance Measure	CO 5 Year Growth Rate	County Numbers By Year	Adams County	Five Year Growth Rate	Five Year Percent Change*			
		2011	2012	2013	2014	2015	Events/100,000	
Reduce the number of traffic fatalities	5.4	29	27	33	32	44	7.1	-11.0%
Reduce injuries on traffic crashes	63.3	274	242	291	243	294	58.5	-7.0%
Unrestrained passenger vehicle occupant fatalities, all seat positions	3.4	9	10	12	11	14	2.4	-13.7%
Fatalities in crashes with a driver or motorcycle operator with a BAC of .08 or above	2.3	8	4	5	12	9	1.6	-13.0%
Spending related fatalities	2.6	12	6	8	10	17	2.5	-19.2%
Motorcyclist fatalities	1.7	5	3	5	7	7	1.1	-18.8%
Unhelmeted motorcyclist fatalities	1.1	5	3	3	5	6	0.9	-14.7%
Children age 10 or younger in fatal crashes	1.3	3	4	7	4	4	0.9	-17.5%
Pedestrian fatalities	1.1	5	10	7	8	6	1.5	-14.7%

*Year-over-year percentage change in the county's numbers for each performance measure from 2011 to 2015, relative to the state's growth rate. Not applicable to counties with no data for the measure.

Source: ADAS, FHWA, Institute of Transportation Management at CDOT (last last year)

*Note: Data on certain state-level categories is only available annually. Therefore, data may only be shown for the state of Colorado and/or for only one year of data for the county.

Colorado Department of Transportation
2017 Planning Information Report

SAVE THE DATE

Nationally, nearly 80% of all public roads are operated by local or rural governments and approximately 56% of all fatalities occur on these roads.

In 2016, there were 408 fatalities on Colorado roadways, 16% were bikes and pedestrians.

December 18-19, 2018
Douglas County Fairgrounds
 500 Fairgrounds Road
 Castle Rock, CO 80104

For updates on this event, including registration, visit:
<https://www.ColoradoLTAP.org>

To encourage participation from around the state, lodging accommodations will be sponsored for government agencies traveling farther than 60 miles.

Sponsored By



Technology and Innovation

- CDOT Smart Mobility Plan
- ROADX Rural Road Safety Challenge
- ROADX Pedestrian Challenge



Future of Safety

Safety Effective
Strategies
Dec 2018

LRSP Peer
Exchange
Dec 18, 2018

SHSP
Implementation
results
Feb 2019

SHSP Update
Feb – Sept 2019

SHSP
Implementation
Plan and
Implement
Sept 2019 - 2024

CAV safety
effectiveness
CY2019

Local Agency
Plans
2019 and future

Safety Circuit
Rider - local
agency safety
plans
development &
safety liaison,
implementation
accountability

- Dec 2018 - Safety Effective Strategies
- Dec 2018 - LRSP Peer exchange
- Feb 2019 - SHSP Implementation results
- Feb – Sept 2019 - SHSP Update
- Sept 2019 - 2024 - SHSP Implementation Plan and Implement
- 2019 - CAV safety effectiveness
- 2019 and future - Local Agency Plans
- 2019 and future - Safety Circuit Rider – safety liaison, local agency safety plans development, implementation accountability



Conclusion



MOVING TOWARDS
ZERO
DEATHS



Appendix: Current State of Safety in Colorado

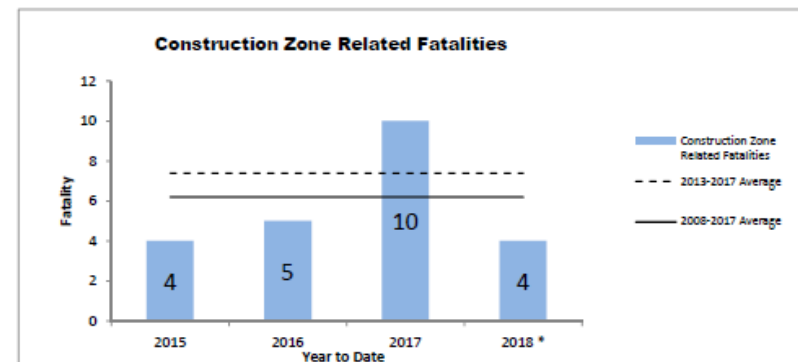
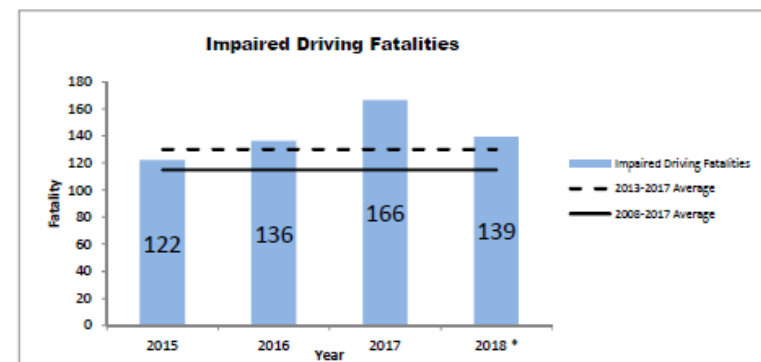
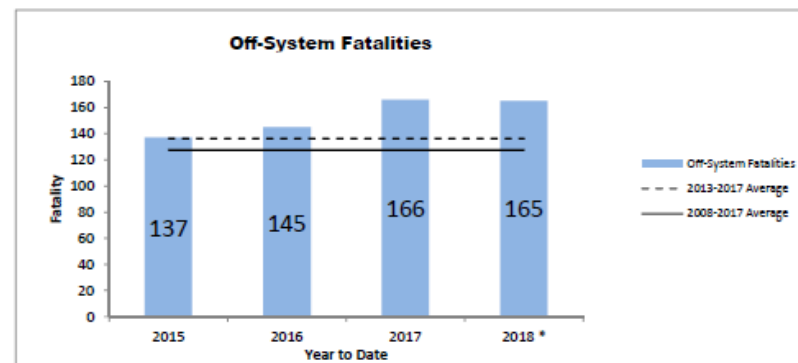
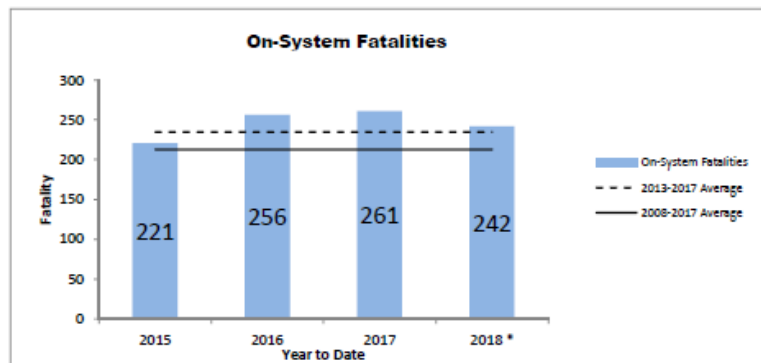
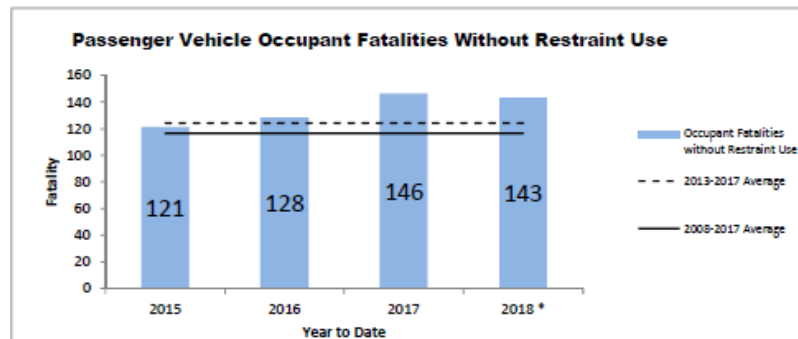
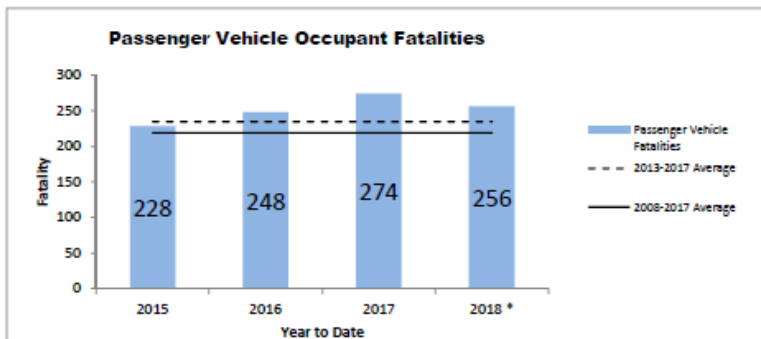
- Fatalities as of October 10th:

472 TRAFFIC
FATALITIES
THIS YEAR

- Trend Analysis



Trends – As of Aug 31





Trends – As of Aug 31

