


# Colorado Problem Identification Report

FY2014

Jan Hart, CDPHE

# Objectives

- Review of the Data Sources
- Orientation to FY2014 Problem Identification Report
  - Executive Summary
  - Report Highlights
  - Introduction
  - Statewide Perspective
  - County Maps
  - County Pages
  - County Comparison Map
  - Glossary
- Using the Problem ID in your CDOT grant application



Is this report going to be different than last year???

**YES!**

# Data Sources

- **Electronic Accident Reporting System (EARS)** – crash data from the Department of Revenue where there was at least one motor vehicle in motion on a traffic way (public road) that resulted in an injury or unintentional property damage
- **Fatality Analysis Reporting System (FARS)** – data from crashes involving a motor vehicle traveling on a trafficway customarily open to the public, where person died within 30 days of the crash (includes drivers, passengers, bicyclists, pedestrians, motorcyclists)
- **Hospital Discharge Data** – data where injury mentioned as a discharge diagnosis and mechanism of injury was motor vehicle, traffic for CO residents treated in non-federal, acute care hospitals as reported to the Colorado Hospital Association

# Data Sources, (continued)

- **Seat belt use, car seat use, and booster seat use & Distracted Driver Data**
  - observational surveys conducted by the Institute of Transportation Management at Colorado State University and posted on the CDOT website
- **With the exception of the CSU surveys, the data presented go through 2012 because 2013 data are not finalized until mid-2014**

**\*\*\*For a full list of data sources, please see the Introduction of the 2014 Problem Identification Report**

# Executive Summary

- One page
- Identifies 3 key problem areas:
  - 1.) Speeding fatalities
  - 2.) Unrestrained fatalities
  - 3.) Alcohol impaired fatalities
- These 3 account for largest proportion of fatalities in State

## EXECUTIVE SUMMARY

In 2012, the total number of motor vehicle fatalities in Colorado increased for the first time in six years, after steadily declining between 2007 and 2011. There were 472 motor vehicle fatalities in 2012, a 5.6 percent increase in fatalities from 2011. The increase in motor vehicle fatalities was not unique to Colorado, as the United States overall experienced a 3.3 percent increase in motor vehicle fatalities from 2011 to 2012.

In order to reach the goals set forth in the Colorado Department of Transportation's 2014 Integrated Safety Plan, it is imperative to stop the recent increases in fatalities and then once again decrease fatalities. Data from 2012 indicate that Colorado has the following three key problem areas:

- Speeding-related fatalities;
- Unrestrained passenger vehicle occupant fatalities; and
- Alcohol impaired driver fatalities.

In 2012, speeding-related fatalities, unrestrained passenger vehicle occupant fatalities, and fatalities with a driver impaired by alcohol accounted for the three largest proportions of the 472 motor vehicle deaths at 162 (34 percent), 156 (33 percent), and an estimated 133 (28 percent), respectively. Though the five year trend data show these areas to be improving, focusing prevention efforts on these areas still provides the greatest opportunity to impact the total number of fatalities.

Additionally, this report identifies an emerging area of interest for Colorado.

- **Driving while impaired by marijuana:** In 2013, voters approved a state constitutional amendment legalizing the recreational use of marijuana for people at least 21 years old in Colorado. Since recreational marijuana sales began January 1, 2014, Coloradans are concerned about the impacts of driving while impaired by drugs. While there is minimal data on driving while impaired by drugs available to present in this report, and none specific to marijuana, the Colorado Department of Transportation is actively monitoring this issue.

The traffic safety problems identified in this report guide the Colorado Department of Transportation's Highway Safety Office in the distribution of resources and development of prevention programs.

# Report Highlights

- Two page summary for the state:
  - Fatal Crashes
  - Injury Crashes
  - Occupant Protection
  - Impaired Driving
  - Motorcycles
  - Young Drivers
  - Pedestrian and Bicycle Safety
  - Distracted Driving

Number of people affected in 2012 and how that increased or decreased from the previous year.

# Moving into the body of the report

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Text, Tables, Figures, and Maps!

# Introduction

- Mission of the Office of Transportation Safety – Highway Safety Office
- Overview of 2014 Problem ID and new items
  - Data by age and sex
  - Serious injury data
  - Law enforcement officer's opinion of whether or not suspected driver of being impaired by alcohol or drugs
  - Pedestrian map
  - Glossary
- Data Sources
- Acknowledgements



# Statewide Perspective

- Table – 1 Colorado crash data at a glance
  - Organized by performance measure
  - 5 years of data
  - Percent change from 2008-2012 and 2011-2012
    - Green = improving
    - Red = did not improve

\*\*Fatalities in crashes with a driver/motorcycle operator with a BAC of .08 and above

Table 1: Colorado traffic crash data at a glance

	2008	2009	2010	2011	2012	Percent Change 2011-2012	Five Year Percent Change
Total crashes	104811	101153	99715	103195	101533	↓ 1.61%	↓ 3.13%
Colorado population (millions)	4.90M	4.98M	5.05M	5.12M	5.19M	1.37%	5.92%
Licensed drivers (millions)	3.61M	3.71M	3.78M	3.67M	--	--	--
Seatbelt use	81.7%	81.1%	82.9%	82.1%	80.7%	↓ 1.71%	↓ 1.22%
<b>Core Performance Measures – to reduce the number of:</b>							
Traffic fatalities	548	465	450	447	472	↑ 5.59%	↓ 13.87%
Serious injuries in traffic crashes	14240	13357	12328	12664	12564	↓ 0.79%	↓ 11.77%
Fatalities per 100 million vehicle miles traveled (VMT)	1.15	1.01	0.96	0.96	1.01	↑ 5.21%	↓ 12.17%
Unrestrained passenger vehicle occupant fatalities, all seat positions	173	168	162	185	156	↓ 15.68%	↓ 9.83%
+Fatalities in crashes with a driver or motorcycle operator with a BAC of .08 and above	176	158	120	160	133	↓ 16.88%	↓ 24.43%
	130	133	104	138	109	↓ 21.01%	↓ 16.15%
Speeding-related fatalities	210	171	162	183	162	↓ 11.48%	↓ 22.86%
Motorcyclist fatalities	98	88	82	78	79	↑ 1.28%	↓ 19.39%
Unhelmeted motorcyclist fatalities	68	60	55	49	53	↑ 8.16%	↓ 22.06%
Drivers age 20 or younger involved in fatal crashes	87	64	64	63	66	↑ 4.76%	↓ 24.14%
Pedestrian fatalities	43	47	36	45	76	↑ 68.89%	↑ 76.74%

# Statewide Perspective

- Remaining format similar to 2013 report:
  - Fatal Crashes, Injury Crashes, Occupant Protection, Impaired Driving, Motorcycles, Young Drivers, Pedestrian and Bicycle Safety, Distracted Driving
  - Include U.S data where applicable to compare Colorado with the entire country
  - Provide a list of the 3-5 star effectiveness countermeasures that work for each subheading (i.e occupant protection, young drivers, impaired driving, etc.)
  - So, what's new....

# Data by Age and Sex

- Helps identify “Who” to target prevention efforts to
- Used the same age groups throughout entire report
- By slicing the data, cells become small. Created 3 year groups

**Table 2: Traffic fatalities in Colorado, by age and sex**

Age Group	2007-2009 Fatalities			2010-2012 Fatalities		
	Male	Female	Total	Male	Female	Total
<5	10	5	15	6	5	11
5-8	12	10	22	4	7	11
9-15	27	21	48	24	9	33
16-20	103	62	165	94	46	140
21-34	300	122	422	270	101	371
35-54	368	123	491	303	93	396
55-69	158	74	232	188	64	252
70+	99	73	172	86	69	155
<b>All Ages</b>	<b>1077</b>	<b>490</b>	<b>1567</b>	<b>975</b>	<b>394</b>	<b>1369</b>

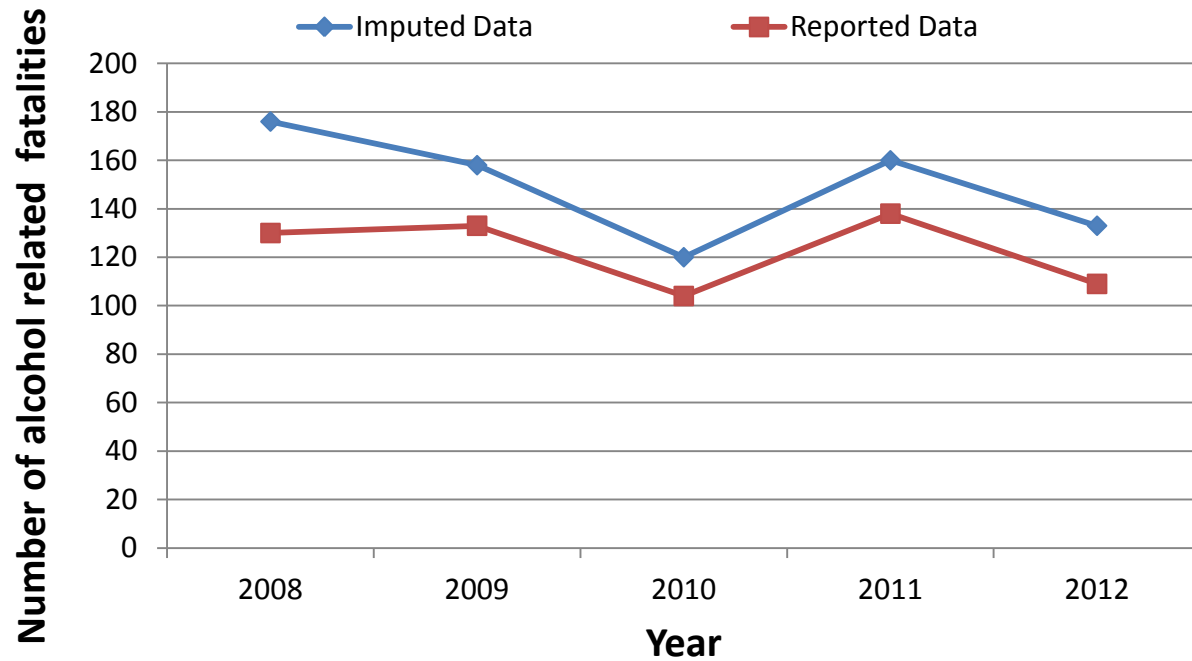
# Data by age and sex & Serious Injuries

(Portion of Table 6 from Statewide Perspective)

Age Group	Sex	2007-2009		2010-2012	
		Unrestrained Fatalities	Unrestrained Serious Injuries	Unrestrained Fatalities	Unrestrained Serious Injuries
5-8	Male	1	65	1	55
	Female	2	59	2	44
	Unknown	0	0	0	0
	<b>Unrestrained/Total</b>	<b>3/15 (20%)</b>	<b>124/580 (21%)</b>	<b>3/8 (38%)</b>	<b>99/542 (18%)</b>
9-15	Male	12	190	8	134
	Female	8	199	4	157
	Unknown	0	0	0	0
	<b>Unrestrained/Total</b>	<b>20/27 (74%)</b>	<b>389/1435 (27%)</b>	<b>12/25 (48%)</b>	<b>291/1207 (24%)</b>
16-20	Male	49	897	50	676
	Female	28	659	26	479
	Unknown	0	11	0	11
	<b>Unrestrained/Total</b>	<b>77/133 (58%)</b>	<b>1567/5952 (26%)</b>	<b>76/115 (66%)</b>	<b>1166/4616 (25%)</b>
21-34	Male	135	1692	141	1258
	Female	44	833	55	731
	Unknown	0	33	0	24
	<b>Unrestrained/Total</b>	<b>179/312 (57%)</b>	<b>2558/10565 (24%)</b>	<b>196/279 (70%)</b>	<b>2013/9031 (22%)</b>
All Ages	Male	370	4350	352	3249
	Female	164	2726	151	2140
	Unknown	0	115	0	71
	<b>Unrestrained/Total</b>	<b>534/1049 (51%)</b>	<b>7191/34337 (21%)</b>	<b>503/895 (56%)</b>	<b>5460/28815 (19%)</b>

# Impaired Driving

**Figure 16: Fatalities in Colorado crashes involving a driver or motorcycle operator with a BAC  $\geq$  0.08, 2008-2012**



Source: FARS Data - 2012 reported data are preliminary

# Impaired Driving

**Table 7: Drivers with a blood alcohol content  $\geq 0.08$  in fatal crashes and drivers where investigating officer suspects alcohol and drugs in serious injury crashes in Colorado, by age and sex of driver**

Age Group	Sex	2007-2009			2010-2012		
		Drivers with BAC $\geq 0.08$ in fatal crashes	Drivers suspected of alcohol in serious injury crashes	Drivers suspected of drugs in serious injury crashes	Drivers with BAC $\geq 0.08$ in fatal crashes	Drivers suspected of alcohol in serious injury crashes	Drivers suspected of drugs in serious injury crashes
21-34	Male	136	2075	241	119	1670	317
	Female	30	549	98	22	520	125
	Unknown	0	38	7	0	19	3
	<b>Total</b>	<b>166/649 (26%)</b>	<b>2662/18623 (14%)</b>	<b>346/18623 (2%)</b>	<b>141/544 (26%)</b>	<b>2209/16386 (13%)</b>	<b>445/16386 (3%)</b>

# A few more additions

- Mode of Transportation
  - Pie Chart and tables showing the type of motor vehicle (car/van, SUV, Pickup truck, Motorcycle, Other) involved in fatal and serious injury accidents, by Rural, Urban, and Colorado
- Distracted Driving
  - Included information from the Institution of Transportation Management at CSU's Distracted Driver Study

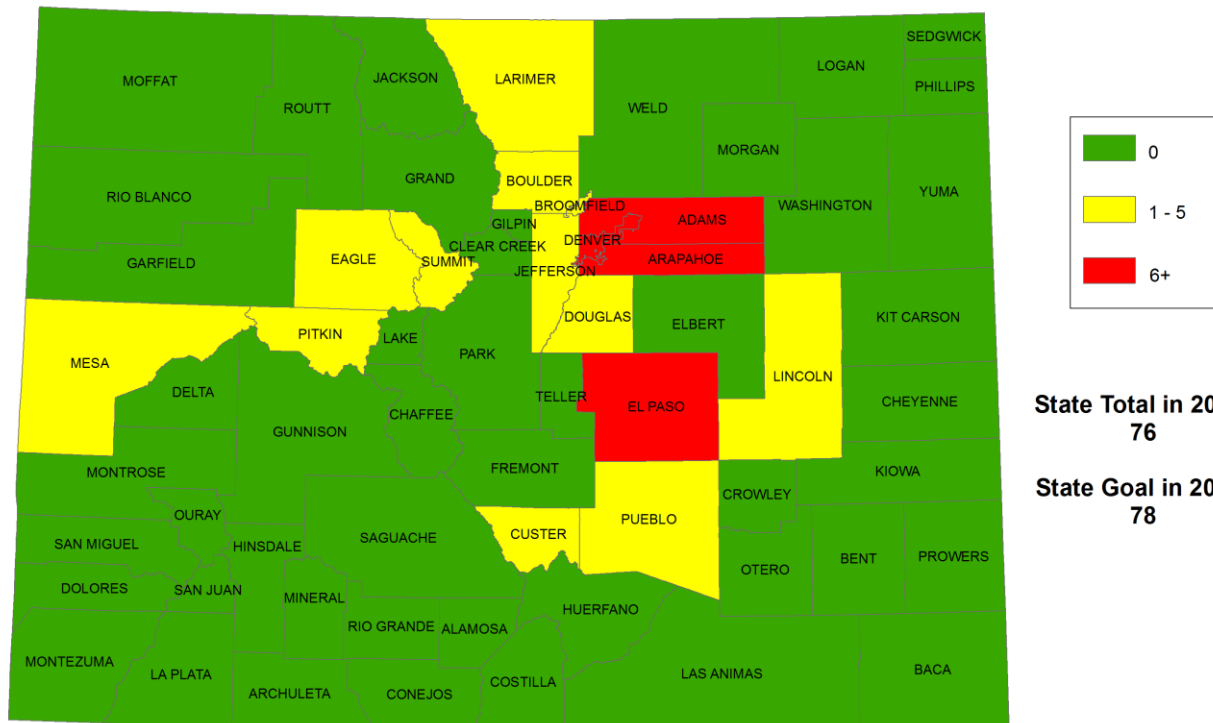
# County Maps

- 8 Maps, covering 7 of the 10 performance measures plus observed seat belt use
- Highlight the contribution counties can make to Colorado reaching the state goals for 2014
- Location is determined by the location of the crash
- Added a new map displaying the location of pedestrian fatalities in 2012



# Pedestrian Fatalities Map

**Map 7: Number of Pedestrian Fatalities  
By County of Crash Location, Colorado, 2012**



**State Total in 2012:  
76**

**State Goal in 2014:  
78**

Source: FARS data

# County Fact Sheets

- Every county has 4 pages
  - 3 Tables
  - 5-7 Figures
  - Side bars with a fact about each of the 8 emphasis areas

Table 13: Adams County Demographics, 2012

Age Group	Female	Male	Total
<5 years	17,857	8,944	36,801
5-8 years	15,037	15,706	30,743
9-15 years	24,336	25,279	49,615
16-20 years	15,228	16,212	31,440
21-34 years	46,704	48,494	95,197
35-54 years	62,686	65,677	128,363
55-69 years	30,920	29,553	60,472
70+ years	15,691	11,234	26,925
<b>Total</b>	<b>228,458</b>	<b>231,097</b>	<b>459,555</b>

# County Fact Sheet Trend Analysis Table

-Performance Measure

-Colorado crude rate

-County numbers, by year

-County crude rate  
(compare your county to the state)

-5 year percent change

\***Green** if the county improved in an area from 2008 to 2012, **red** if the numbers increase

Performance Measure	CO 5 Year Crude Rate Event/100,000 people	Numbers By Year					Adams County Five Year Crude Rate Event/100,000 people	Five Year Percent Change^
		2008	2009	2010	2011	2012		
Reduce the number of:								
Traffic fatalities	9.4	39	22	29	29	27	6.6	↓ 30.8%
Serious injuries in traffic crashes	258.2	1067	1038	939	1085	990	231.0	↓ 7.2%
Fatalities per 100 million VMT	1.02	County data not available for VMT						
Unrestrained passenger vehicle occupant fatalities, all seat positions	3.3	9	4	10	9	10	1.9	↑ 11.1%
Fatalities in crashes with a driver or motorcycle operator with a BAC of .08 and above	2.4	4	6	8	8	4	1.4	0%
Speeding-related fatalities	3.5	10	8	9	12	6	2.0	↓ 40.0%
Motorcyclist fatalities	1.7	4	7	6	5	3	1.1	↓ 25.0%
Unhelmeted motorcyclist fatalities	1.1	3	6	5	5	3	1.0	0%
Drivers age 20 or younger in fatal crashes	16.5	8	3	3	3	4	11.6	↓ 50.0%
Pedestrian fatalities	1.0	10	4	2	5	10	1.4	0%

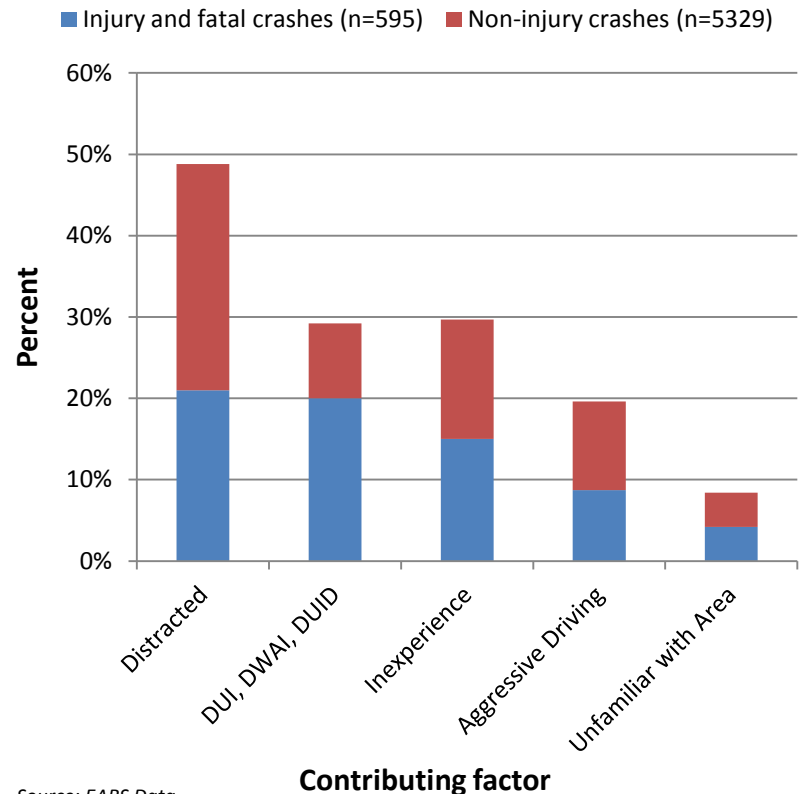
# County Fact Sheets, Figures Displaying:

- Total crashes for the county, 2008-2012
- Fatality Rate in County and Colorado, 2008-2012
- Injury Rate in County and Colorado, 2008-2012
- 2 Mode of Transportation pie charts – 1.) Fatalities and 2.) Serious injuries for the county in 2012
  - Split motor vehicle occupant into car/van, pick-up truck, SUV and other
- Human Contributing Factors among drivers in injury and fatal crashes versus non-injury crashes in 2012

# Contributing Factors among Drivers

- Top 5 human contributing factors for injury or fatal crashes (blue bar) and non-injury crashes (red bar)
- Distracted driving is noted in almost 50% of all crashes with a human contributing factor – 20% of injury or fatal crashes and almost 30% of non-injury crashes
- Distracted = phone, passenger, radio, other (object, pet, food, etc.)
- Not all drivers will have a human contributing factor to the crash

**Figure 29: Contributing factors among drivers in Adams County, 2012 (n= 5924)**



Source: EARS Data

Distracted = Passenger, Cell Phone, Radio Food, Objects, pet, etc.

# Fatalities & Injury Hospitalizations by Age Group

- 3 years of data, 2010-2012
- Intended to assist in identifying populations to target with prevention efforts

**Table 15: Adams County total motor vehicle fatalities, pedestrian fatalities and hospitalizations by age group, 2010-2012**

<b>Age Groups</b>	<b>Total Fatalities</b>	<b>Pedestrian Fatalities</b>	<b>Motorcyclist Fatalities</b>	<b>Hospitalizations</b>
<5	1	0	0	8
5-8	1	0	0	10
9-15	2	0	0	36
16-20	7	1	0	82
21-34	30	3	5	234
35-54	22	6	4	257
55-69	15	5	5	123
70+	7	2	0	54
<b>Total</b>	<b>85</b>	<b>17</b>	<b>14</b>	<b>804</b>

*Source: FARS Data and CHA Discharge Data*

# County Fact Sheets

- Impaired Driving
  - Number and percent of fatalities that involved a driver with a BAC  $\geq$  0.08
- Speed Enforcement
  - Percent of drivers in injury or fatal crashes and non-injury crashes that were marked as exceeding the safe/posted speed on the Traffic Accident Report
- Distracted Driving
  - Percent of drivers in injury or fatal crashes that were marked as distracted
  - Different denominator than human contributing factor figure which is among all drivers with a human contributing factor recorded

## Impaired Driving

Of the 27 fatalities in 2012, 4 (15%) involved at least one driver with a BAC (Blood Alcohol Concentration) above the legal limit (0.08 grams of alcohol per 100 ml of blood).

*Source: FARS Data*

## Speed Enforcement

In 2012, 3% of the 1495 drivers in injury and fatal crashes and 2% of the 16,322 drivers in non-injury crashes were speeding.

*Source: EARS Data*

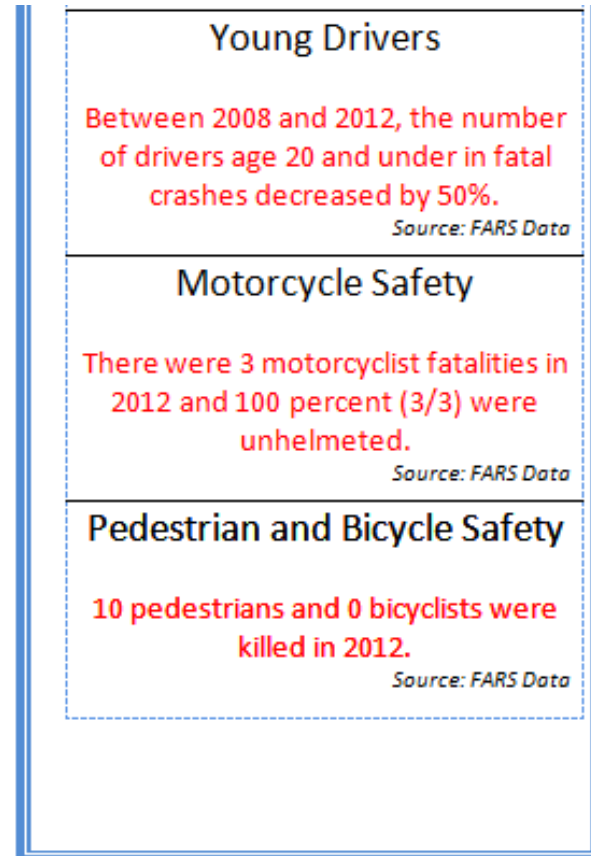
## Distracted Driving

In 2012, law enforcement reported that 8% of the 1495 drivers in injury or fatal crashes were distracted.

*Source: EARS Data*

# County Fact Sheets

- Young Drivers
  - Trend between 2008 and 2012 of drivers age 20 and under in fatal crashes
- Motorcycle Safety
  - Number of fatalities and the percent which were unhelmeted in 2012
- Pedestrian and Bicycle Safety
  - Number of fatalities in 2012





# County Fact Sheets

- Occupant Protection
  - Number and percent of unrestrained fatalities and unrestrained serious injuries
  - 2013 observational seat belt survey results, when applicable

## Occupant Protection

In 2012, 10 of the 13 (77%) motor vehicle fatalities and 138 of the 758 (18%) motor vehicle occupants injured in a crash were not using seat belts or other restraints.

### 2013 Adams County Occupant Protection Usage:

Overall seat belt: 83.5%

Teen seat belt: 67.3%

Front/rear seat (0-4 years): 97.3%

Front/rear booster: 70.5%

Juvenile (5-15 years): 63.0%

*Source: Institute of Transportation Management at CSU, FARS, and EARS Data*

# County Comparison Table

- County fact sheet section ends with a 2 page table listing the 10 performance measures and:
  - The Colorado 2014 Goal
  - State data for 2012
  - Each county's data for 2012
- This is intended to show all county's side by side, without having to flip through every county fact sheet

**Table 205: Colorado state performance measures by county, 2012**

Reduce the number of:	Traffic fatalities	Serious injuries in traffic crashes	Unrestrained passenger vehicle occupant fatalities, all seat positions	Fatalities in crashes with a driver or motorcycle operator with a BAC of .08 and above	Speeding related fatalities	Motorcyclist fatalities	Unhelmeted motorcyclist fatalities	Drivers age 20 or younger involved in fatal crashes	Pedestrian fatalities
<b>Colorado 2014 Target</b>	<b>463</b>	<b>11,953</b>	<b>160</b>	<b>160</b>	<b>159</b>	<b>79</b>	<b>51</b>	<b>62</b>	<b>78</b>
<b>COLORADO</b>	<b>447</b>	<b>12523</b>	<b>194</b>	<b>142</b>	<b>183</b>	<b>78</b>	<b>50</b>	<b>63</b>	<b>45</b>
Adams	27	990	10	4	6	3	3	4	10
Alamosa	4	38	2	0	2	0	0	1	0
Arapahoe	29	1268	7	8	6	6	3	4	7
Archuleta	1	44	1	0	0	0	0	0	0
Baca	2	11	2	0	1	0	0	0	0
Bent	0	13	0	0	0	0	0	0	0
Boulder	26	776	6	5	11	7	4	4	3
Broomfield	4	120	0	0	0	0	0	1	2
Chaffee	4	45	0	1	2	2	0	0	0
Cheyenne	4	8	0	0	0	1	1	0	0
Clear Creek	2	64	1	1	2	0	0	0	0
Conejos	0	21	0	0	0	0	0	0	0
Costilla	1	23	0	0	1	0	0	0	0

# Glossary

ALR/ALS = Administrative License Restraint/Administrative License Suspension

BAC = Blood Alcohol Content

CDOT = Colorado Department of Transportation

CHA = Colorado Hospital Association

DOLA = Department of Local Affairs

DUI = Driving Under the Influence

DUID = Driving Under the Influence of Drugs

DWAI = Driving While Ability Impaired

EARS = Electronic Accident Reporting System

FARS = Fatality Analysis Reporting System

GDL = Graduated Driver Licensing

MLDA = Minimum Legal Drinking Age

NHTSA = National Highway Traffic Safety Administration

OTS = Office of Transportation Safety

PBT = Preliminary Breath Test

SUV = Sport Utility Vehicle

VMT = Vehicle Miles Traveled

## **Definitions:**

Rural versus Urban – Counties were classified as rural or urban based upon the Colorado Rural Health Center Definition. Counties classified as urban include: Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Elbert, Jefferson, Larimer, Mesa, Park, Pueblo, Teller and Weld. The remaining 48 counties were classified as rural.

For more information, please visit:

<http://www.coruralhealth.org/resources/images/2013ColoradoCountyDesignations.pdf>

# Problem ID & Your CDOT Grant Application

- Problem ID is organized by the **performance measures** and the **emphasis areas**
  - Grant application must show how your project impacts at least one of the 10 core performance measures
  - Grant application must pick **one** emphasis area that best describes the focus of the project:
    - Impaired driving
    - Young drivers
    - Motorcycle safety
    - Speed enforcement
    - Child passenger safety
    - Pedestrian safety, or
    - Distracted Driving

# Problem ID & Your CDOT Grant Application

- Use Table 1 at the beginning for the State Perspective to get an overall ideal of Colorado's strengths and weaknesses
- Use your county pages!
  - Look at the results for each performance measure in 2012 and the years leading up to it
  - If the numbers are improving and the table shows green, then you are doing well in that area
    - If the numbers show improvement, but your county rate is much higher than the State's, you may be able to make a case that while improving, you have continued work to be done
    - Use the age groups to identify specific age populations that might be best to target

# Problem ID & Your CDOT Grant Application

Include data from the Problem  
Identification report and/or local data  
sources you have access to

# Upcoming Technical Assistance

- **Grant Writing Technical Assistance Modules**
  - By February 14, seven 10-15 minute grant writing modules will be posted on CDOT's website.
  - Modules will walk applicants through the seven sections of the application narrative and provide grant writing guidance
- **Grant Applications Q&A Webinar**
  - February 27, 1-2:30
  - Opportunity to ask questions about the grant writing modules

**\*\*This information is in the CDOT Request for Proposal**



# Contact Information

- Jan Hart
  - [Jan.Hart@state.co.us](mailto:Jan.Hart@state.co.us)
  - 303-692-2045
- Lindsey Myers
  - [Lindsey.Myers@state.co.us](mailto:Lindsey.Myers@state.co.us)
  - 303-692-2589