



# VISION ZERO BOULDER SAFE STREETS REPORT



# CONTENTS

Contributors .....	1
Introduction .....	2
The Vision Zero Approach .....	2
Planning Context .....	3
Snapshot of Key Findings .....	4
Evaluating What We've Done to Date .....	6
Severe Crashes .....	10
People Walking .....	10
People Bicycling .....	12
People Traveling Under the Influence of Alcohol or Drugs .....	14
People Speeding .....	16
People Making Left Turns .....	18
Other Areas of Concern .....	20
Other Vision Zero Objectives .....	22
Next Steps .....	23
Vision Zero Action Plan .....	AP-1

For an electronic version of this document and the  
Technical Appendix, please visit:  
<https://bouldercolorado.gov/transportation/vision-zero>

*The crash data reported in this document comes from the City of Boulder's Transportation Division database, which is derived from the Police Department's Record Management System. The information contained in these databases is updated periodically and may change over time.*





# CITY OF BOULDER

## **PUBLIC WORKS – TRANSPORTATION DIVISION**

David Kemp, Senior Transportation Planner\*

Amy Lewin, Senior Transportation Planner\*

Michelle Melonakis, Transportation Operations Engineer for Signals and Lighting\*

Mark Shisler, Transportation Engineer\*

Kathleen Bracke, Interim Co-Director of Public Works for Transportation, GO Boulder Manager

Bill Cowern, Interim Co-Director of Public Works for Transportation, Principal Traffic Engineer

Mike Gardner-Sweeney, Transportation Operations Engineer

Joe Paulson, Transportation Operations Engineer for Signals and Lighting

Reese Shaw, GO Boulder Planning Specialist

Mary Ann Weideman, Interim Director of Public Works, Deputy City Manager

\* *Project Management Team*

## **BOULDER POLICE DEPARTMENT**

Chief Greg Testa

Deputy Chief Carey Weinheimer

Commander Kerry Yamaguchi

Traffic Sergeant Robyn VanDerLeest

Traffic Sergeant Fred Gerhardt

## **INFORMATION RESOURCES**

Joe Simpson, GIS Analyst

Kate Gregory, GIS Technician

## **COMMUNICATIONS TEAM**

Meghan Wilson, Communication Manager

Samantha Glavin, Communication Specialist

## **MUNICIPAL COURT**

Linda Cooke, Presiding Judge

## **TRANSPORTATION ADVISORY BOARD MEMBERS**

Johnny Drozdek

Tila Duhaime

Mark McIntyre

Bill Rigler

Alex Weinheimer

Jennifer Nicoll (former member)

# CONSULTANT SERVICES

Jessica Hernandez, Apex Design

Stephanie Ball, Apex Design

Elaine C. Erb, Consultant

Tim Giesen, Straightline Design

Pete d'Oronzio, Pd' Programming, Inc.





# Introduction

Over the last nine years, there was an average of 59 people seriously injured or killed each year in traffic crashes in Boulder. These people aren't just numbers. They are our mothers, fathers, brothers, sisters, children, and friends. They've been seriously injured or killed in the course of the everyday act of moving from place to place. The impact on their families, friends, and communities is immense and permanent.

The City of Boulder is dedicated to creating and maintaining a safe transportation system through capital improvements, traffic control, education, targeted enforcement, and evaluation. These traffic injuries and deaths tell a story at odds with Boulder's core community values to ensure travel safety for people using all modes, as defined in the Transportation Master Plan (TMP). Safety concerns such as drivers speeding; impaired or distracted drivers; and conflicts among vehicles, pedestrians, and bicyclists challenge our national reputation as a walkable, bikeable, and livable city.

Vision Zero is Boulder's bold goal to eliminate all severe traffic crashes involving people using all modes of travel. Protecting the health of our community members means addressing risky behaviors through the 4 E's—Engineering, Education, Enforcement, and on-going Evaluation—to design and operate a transportation system focused on travel safety and comfort.

# 21,000+

Between 2015 and 2017, more than 21,000 people were involved in a crash in Boulder.

## 7 people were killed



3 walking



1 on a bike



3 in a car

## 161 people were seriously injured



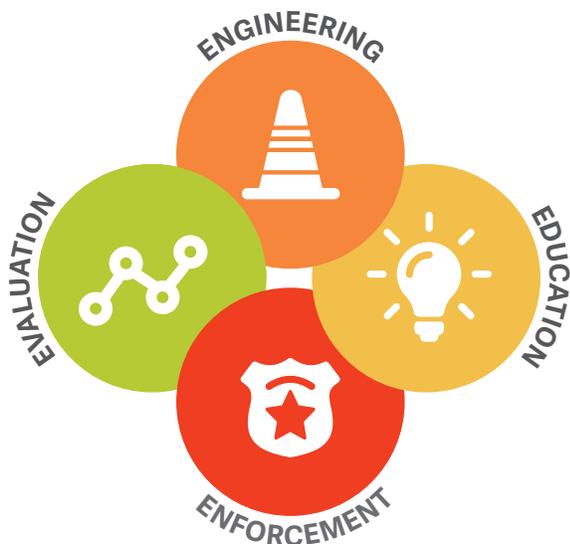
35 walking



61 on a bike



65 in a car



## THE VISION ZERO APPROACH

Vision Zero employs both a location-specific and a systemwide approach that is targeted, responsive, and proactive through a transformative set of actions that prioritizes travel safety for everyone. Vision Zero includes a holistic 4 E's approach to eliminate severe crashes and reduce other types of traffic crashes. This approach also focuses on our community's perception of travel safety and comfort with the idea that no one should be discouraged from traveling by any mode because of fears about safety.



## **Vision Zero** is Boulder's goal to eliminate all severe traffic crashes involving people using all modes of travel.

Boulder defines **severe crashes** as traffic crashes that result in a serious or fatal injury.

### Vision Zero guiding principles:

- Use a people-focused, data-driven, action-oriented, and interdisciplinary approach to carrying out the 4 E's.
- Proactively employ effective crash countermeasures, with a focus on continuous improvement.
- Practice a Safe Systems approach that recognizes:
  - ▶ People make mistakes that lead to road crashes.
  - ▶ The human body has limited physical ability to tolerate crash forces.
  - ▶ The responsibility for making the mobility system safe is a shared responsibility across all stakeholders and requires personal responsibility.
  - ▶ All parts of the system must be strengthened to multiply the impact of interventions and provide a safety net when any one part of the system is deficient.

### There are five Vision Zero objectives:

- 1 Eliminate crashes resulting in serious injuries and fatalities.
- 2 Reduce other types of crashes.
- 3 Improve travel comfort and security.
- 4 Enhance awareness of and community engagement with Vision Zero.
- 5 Improve data and be transparent.

## PLANNING CONTEXT

Vision Zero is a priority of the *Transportation Master Plan (TMP)* and also informs our other city transportation plans—including the *Design and Construction Standards*, *Pedestrian Crossing Treatment Installation Guidelines*, *Traffic Signal Practices*, *Low-Stress Walk and Bike Network Plan*, and the *Curbside Management Plan*. Vision Zero is an overarching commitment to prioritizing travel safety in our projects, programs, and decision-making.

The *Vision Zero Boulder: Safe Streets Report* is the city's comprehensive traffic crash analysis to understand where and how crashes are occurring, whom they involve, and to identify actions to improve safety. The report was first published in **2012** (2009-11 crash data), with the next version released in **2016** (2012-14 crash data). This version includes a detailed analysis of crash data for the years 2015-17, as well as a new *Vision Zero Action Plan* detailing the specific action items that will be conducted over the next three years (2019-21) and beyond. Ongoing evaluation and reporting will be done in support of the *Transportation Report on Progress* every two years.

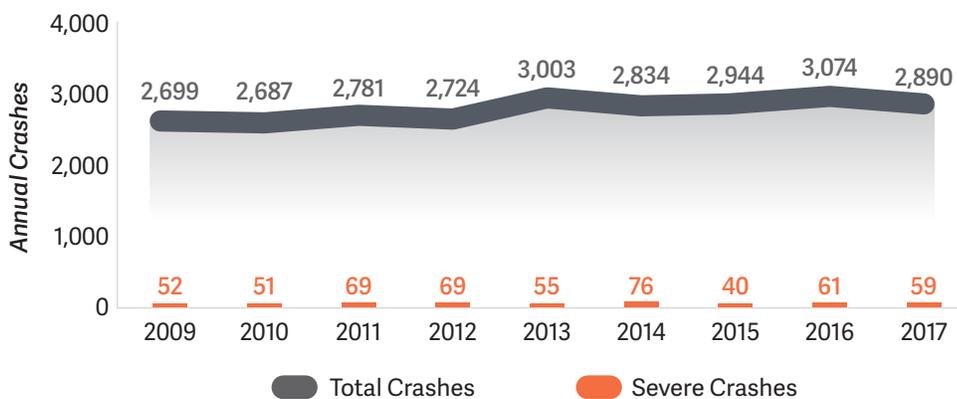




# Snapshot of Key Findings

The 2019 Vision Zero: Safe Streets Report includes a review of the crash data for the years 2015 through 2017, as well as a comparison of these data trends with those developed in prior reports (for years 2009 through 2014). This section provides an overview of traffic crashes and associated trends for this crash data and identifies key findings to help us understand where and how crashes are occurring and to whom. While the number of total crashes within the city grows annually, the number of severe crashes has remained constant. Further, while pedestrians and bicyclists are involved in a small percentage of total crashes, they are overrepresented in terms of crashes resulting in fatal and serious injuries.

## TOTAL AND SEVERE CRASHES (2009-17)



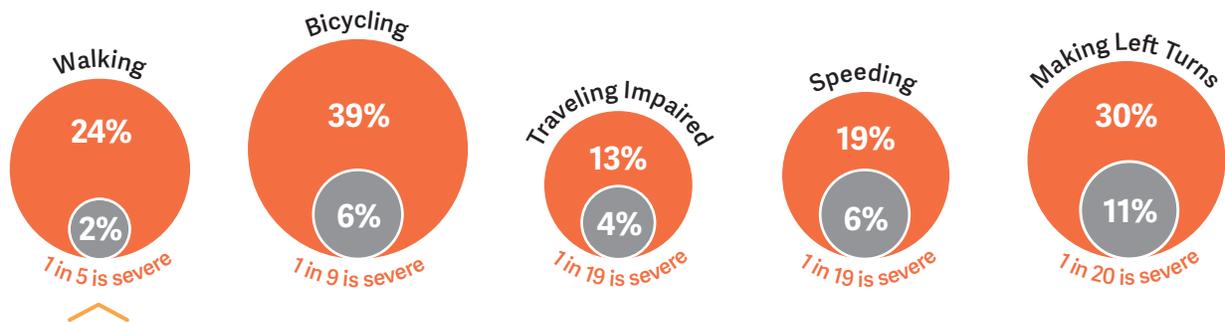
**Between 2015 and 2017 there were an average of 2,970 crashes per year, 53 (2%) of which were severe.**

**The total number of crashes in Boulder is growing.**

► With an increase in population along the Front Range and Boulder as a regional employment center, vehicle miles traveled are increasing, thereby increasing exposure to crashes.

## Overrepresented Severe Crashes (2015-17)

The severe crash data analysis has identified five overrepresented categories of travel where there is a disproportionate number of **severe crashes** (●) in comparison to **overall crashes** (●). These areas are our focus to eliminate fatal and serious injury crashes and include people:



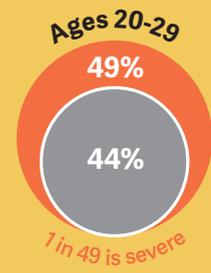
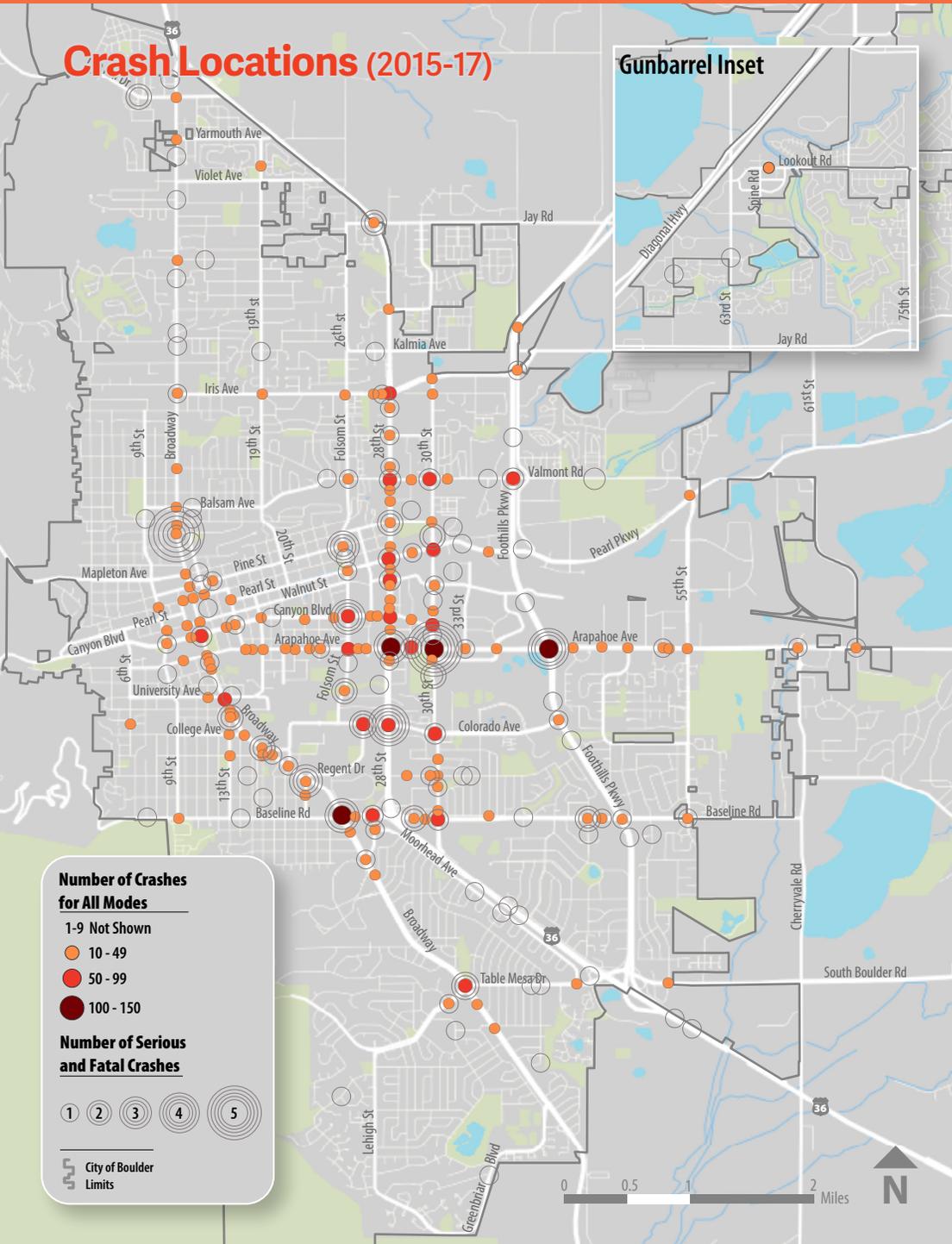
Between 2015 and 2017, people walking were involved in 2% of all crashes and 24% of all severe crashes. One out of every five pedestrian-related crashes is severe.



**Vision Zero also focuses on reducing other types of crashes**, for example, rear-end crashes, sideswipe crashes, and crashes where a vehicle hits a stationary object. The city wants to mitigate the inconvenience, frustration, and costs of being involved in a minor injury or property damage crash. Less frequently, these crash types will also have severe outcomes.



# Crash Locations (2015-17)



People ages 20-29 years old were involved in 44% of all crashes and 49% of all severe crashes.

## AGES 65+

Since 2009, crashes involving an older adult have increased by 59%, while the older adult population has increased by 29%.

## MALE

Males are overrepresented in many categories: speeding, distracted, under the influence, etc.

**Nationwide, motor vehicle-related deaths increased 14% from 2011 to 2017.**

- ↑ **9%** Vehicle miles traveled
- ↑ **8%** Number of registered vehicles
- ↑ **4%** Population

**In Boulder, motor vehicle-related deaths have remained relatively constant from 2011 to 2017. Serious injury crashes have also remained relatively constant.**

- ↑ **4%** Vehicle miles traveled
- ↑ **9%** Number of registered vehicles
- ↑ **10%** Population

## ECONOMIC IMPACT OF CRASHES (2015-17)

Crash Severity	Number of Crashes	Cost Per Crash*	Societal Cost
Property Damage	6,870	\$10,400	\$71,448,000
Possible Injury Crashes	1,281	\$64,200	\$82,240,200
Non-Incapacitating Injury Crashes	597	\$114,000	\$68,058,000
Incapacitating Injury (Severe) Crashes	154	\$312,000	\$48,048,000
Fatal (Severe) Crashes	6	\$5,894,500	\$35,367,000
<b>TOTAL</b>	<b>8,908</b>		<b>\$305,161,200</b>

\*Source: Federal Highway Administration, Highway Safety Manual

*Additional analysis of crashes in Boulder can be found in the **Technical Appendix**.*



# Evaluating What We've Done to Date

Evaluating the effectiveness of engineering improvements, enforcement tactics, and educational outreach is essential to making real strides to improve travel safety, comfort, and security. To achieve Vision Zero, the 4 E's approach helps ensure we are addressing travel safety from all angles. As an example, dangerous travel behaviors, such as impaired or distracted bicycling and driving, can be countered through enforcement efforts and safety education outreach, while engineering treatments can help prevent intersection conflicts. In many cases, applying all 4 E's is the most comprehensive way to help prevent crashes. The following are key Vision Zero actions which the City of Boulder is already taking or will be experimenting with in the future. These actions provide the greatest opportunity for Vision Zero success.

## ENGINEERING

- ▶ Revised **Traffic Signal Practices** to incorporate TMP goals including Vision Zero.
- ▶ Will continue to implement **pedestrian head-starts** (leading pedestrian intervals) to let pedestrians start crossing at an intersection before vehicles can go.
- ▶ Will continue to implement **protected left-turn phasing** at locations with high volumes of turning vehicles and crossing bicyclists and pedestrians.
- ▶ Tested two different **right-turn bypass island signing and pavement marking** configurations to determine which is most effective at eliminating crashes.
- ▶ Added more **green pavement markings** to highlight conflict areas between bikes and turning vehicles and will continue to add through the **Low-Stress Walk and Bike Network Plan** and other projects.
- ▶ Will develop **new signing and marking treatments** for locations where there are conflicts between turning vehicles and pedestrians/cyclists.
- ▶ Will continue to implement appropriate **pedestrian crossing treatments** at locations at which they are needed.
- ▶ Will update **Pedestrian Crossing Treatment Installation Guidelines** to ensure appropriate pedestrian crossing treatments are recommended for installation.
- ▶ Designed and implemented **protected bike lanes** (bike lanes separated from vehicular traffic by physical barriers) on Folsom Avenue, Baseline Road, and the Diagonal Highway to eliminate mid-block conflicts between motor vehicle traffic and bicycles and provide greater comfort for people bicycling.



### Snapshot of Vision Zero Engineering Treatments Implemented since 2016

**141** distinct treatments at a total of **83** locations





- ▶ Add additional **protected bicycle facilities**, planned for 30th Street, Colorado Avenue, Canyon Boulevard, and Arapahoe Avenue, and identify additional protected bicycle facilities through the city's Low-Stress Walk and Bike Network Plan.
- ▶ Will continue to install **"No Right-Turn on Red" signs** based on our updated Traffic Signal Practices guidance and will develop additional proactive criteria for use of Right-Turn on Red restriction.
- ▶ Will experiment with **protected intersections** at 30th Street & Colorado Avenue and Regent Drive & Colorado Avenue intersections in 2019.
- ▶ Implemented revamped **Neighborhood Speed Management Program (NSMP)** to reduce speeding on neighborhood streets. Will continue to refine and enhance the program.
- ▶ Will host a workshop with staff from the Federal Highway Administration, the Colorado Department of Transportation, and other local jurisdictions to identify and implement approaches to **reduce speeds on arterials**.

### What have we learned about the effectiveness of treatments?

Evaluating our work is important so we can continuously improve. The engineering treatments listed here have been evaluated to varying degrees for a decrease in crashes at locations already having a crash trend. In many cases, the treatments are also perceived to increase travel comfort. Here's our current assessment, and we will continue to monitor effectiveness moving forward:

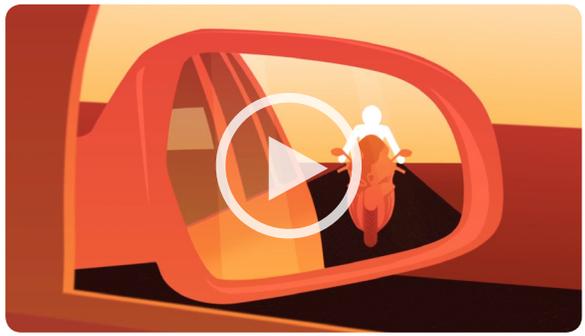
Treatment	Evaluation of Effectiveness
 <p>Green Pavement Markings Left-Turn Phasing:</p> <ul style="list-style-type: none"> <li>• Conversion of green ball to Flashing Yellow Arrow</li> <li>• Conversion of permitted<sup>1</sup> left turn to combination of protected<sup>2</sup> and permitted left turn</li> <li>• Conversion of protected/permitted left turn to protected-only left turn</li> </ul> <p>Right-Turn Bypass Island: Signing (stop sign or yield) and Markings</p>	<p><b>Effective</b></p>
 <p>Pedestrian Head-Start Right-Turn Bypass Island: Raised Crossing "No Right-Turn on Red" Signs</p>	<p><b>Inconclusive—needs further study</b></p>
 <p>Protected Bicycle Lanes Protected Intersections Neighborhood Speed Management Program (NSMP)</p>	<p><b>To be implemented &amp; studied</b></p>
 <p>Enhanced Pedestrian Crossing Treatments</p>	<p><b>Variable*</b></p>
<p><i>* Includes a variety of treatments, with the appropriate treatment depending upon the conditions. Pedestrian Crossing Treatments will be evaluated further during the upcoming update to Pedestrian Crossing Treatment Installation Guidelines (2019-2020).</i></p>	
 <p><b><sup>1</sup>Permitted:</b> You turn left when there is a gap in opposing traffic (vehicles, cyclists, pedestrians)</p>	 <p><b><sup>2</sup>Protected:</b> You turn left while opposing traffic is stopped</p>





## EDUCATION

- ▶ Developed and cross-promoted multimedia and safety education campaigns to encourage safe travel behaviors, in collaboration with the **Vision Zero Community Partnership (VZCP)**.
- ▶ Shared educational **Vision Zero animated videos and targeted safety messaging** on social media to increase community awareness of Vision Zero and safe travel behaviors.
- ▶ Improved crosswalk safety through the **Heads Up** campaign that focused education and enforcement efforts at intersections and crosswalks that have high crash rates. Piloted the use of Snapchat advertising to engage young community members through University of Colorado Boulder (CU Boulder) student events.



- ▶ Teamed up annually with Community Cycles and CU Boulder to encourage the use of bike lights for nighttime riding by **giving out free lights** starting in early November through the bike light safety program, **Lighten Up Boulder**.



- ▶ **Partnered with CU Boulder** to play Vision Zero animated videos at Buffs home games during the 2018 season and created Vision Zero-branded Snapchat filters to accompany videos.

- ▶ Encouraged more walking and biking to school through the **Safe Routes to School program**, which included education, engagement activities, and infrastructure review. With funding from a recent two-year Colorado Department of Transportation (CDOT) grant (2017-19), the city worked with three Boulder elementary schools to develop maps of recommended walking and biking routes to school; conduct in-school bike safety education; identify potential infrastructure improvements in a one-mile radius of each school; and implement Walk and Bike to School Days and a new "Hug n' Go" program at Mesa Elementary School.



**Outreach and education events** such as the Boulder Farmers Market, Bike to Work Day, and other Walk and Bike Month events allowed for engagement about travel safety with over a thousand residents, employees, and visitors to the city.





## ENFORCEMENT

- ▶ **Collaborate on traffic enforcement** with local and regional enforcement agencies to identify locations that would benefit from additional **targeted officer enforcement** and, where allowed by state law, photo radar (speed) and photo red light enforcement.
- ▶ **Use Boulder Police Department resources strategically** to achieve results, given limitations to where each type of enforcement can be used. For example, use photo radar in local neighborhoods to issue warnings, which will allow additional officer resources to be used for arterial speed enforcement, flexible red-light running enforcement, and other high-risk traffic control violations.
- ▶ Focus on **anti-DUI enforcement** in key locations to address alcohol- and drug-impaired drivers, bicyclists, and pedestrians.
- ▶ Target police enforcement for **speeding, red-light running, and other unsafe and unlawful activities**, such as failing to yield at crosswalks.
- ▶ Expand the use of **photo red-light enforcement** as a highly effective mitigation for the serious and sometimes deadly right-angle crashes that can occur when a driver runs a red light. The city will install photo red-light camera technology at two new intersections in 2019.
- ▶ Track **state and federal legislation** related to travel safety goals, such as supporting state legislation to retain the ability of local governments to deploy photo red-light and speed enforcement technology, to prohibit the use of mobile phones while driving, and to protect vulnerable users, such as pedestrians and bicyclists.



### Types of Enforcement

#### TRAFFIC UNIT



**Two**  
sergeants



**Five** motorcycle  
police officers



**Eight** police  
officers



**Four** limited  
commissioned accident  
report specialists (ARSs)

#### PHOTO ENFORCEMENT PROGRAM



**Cameras**  
Eight at six intersections



**Photo Enforcement Vans (speeding)**  
**Two primary vans** and one backup  
**146 locations** where vans may be  
used (limited by state law and other  
characteristics of the roadway)

**Red Light Violations**  
2017: **27,791** summonses  
issued (payment rate: 81.5%)

**Photo Speeding Violations**  
2017: **13,065** summonses  
issued (payment rate: 86.4%)

### BOULDER POLICE DEPARTMENT AND TRANSPORTATION COORDINATION

Regular department  
communication, monthly meetings

Focus on Vision Zero  
and NSMP

Participate in VZCP

Participate in Heads Up

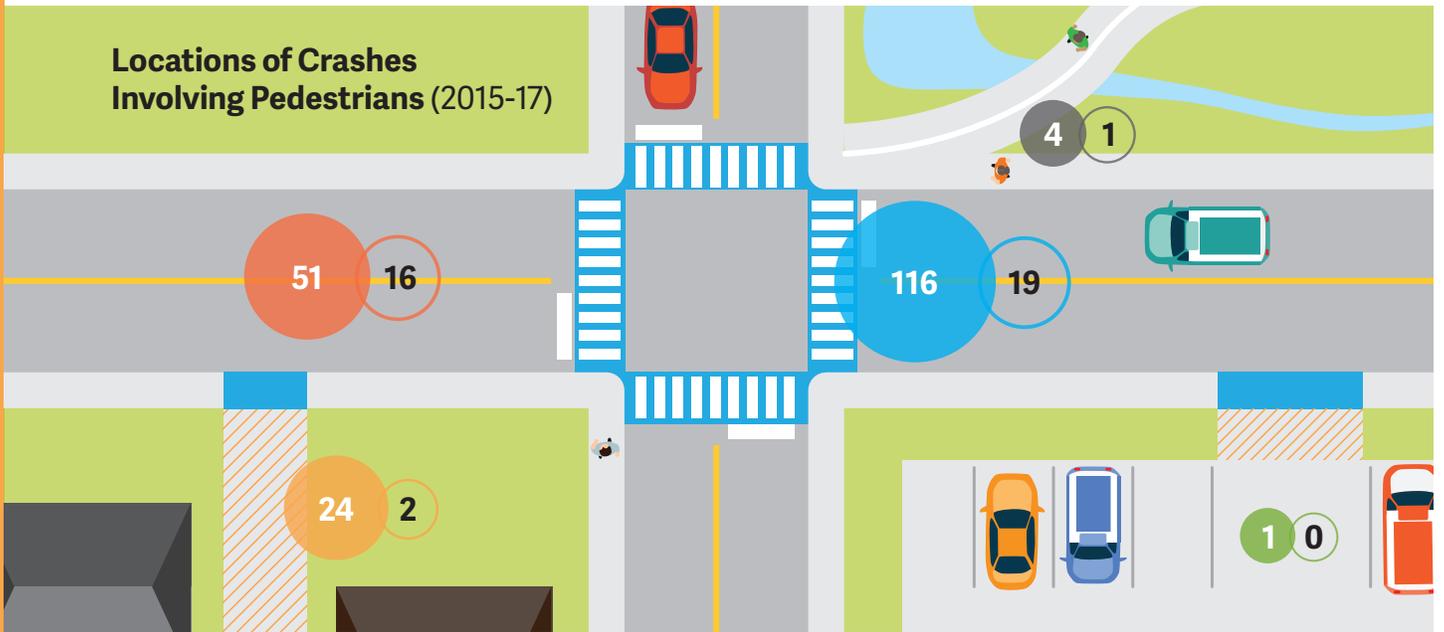


# People Walking

People walking are among the most vulnerable users of Boulder’s transportation network. **Although pedestrians were involved in only 2% of all crashes from 2015 to 2017 (about 66 per year or more than one per week), they were involved in 24% of all severe crashes in that timeframe.** The city has seen an increase in the overall number of pedestrian-related crashes (about two crashes per year, or on average a 4% increase annually between 2009 and 2017). However, the number of pedestrian-related severe crashes has remained constant.



Locations of Crashes Involving Pedestrians (2015-17)



	Total	Severe
Within Crosswalk	116	19
Within Roadway	51	16
Parking Lot	24	2
Along Sidewalk/Multi-Use Path	4	1
Along Driveway/Alley	1	0
<b>TOTAL CRASHES*</b>	<b>199</b>	<b>38</b>

**OVER HALF** of pedestrian-related crashes occurred within crosswalks (e.g., intersections, driveways, marked mid-block crossings), and just over a quarter occurred at other roadway locations.

\*3 crash locations were unknown, and are not shown on the above graphic.

The three most common — and more harmful — types of crashes involving pedestrians include:

**1 Pedestrians being hit by left-turning vehicles**  
24% of all pedestrian crashes, with one out of five severe.

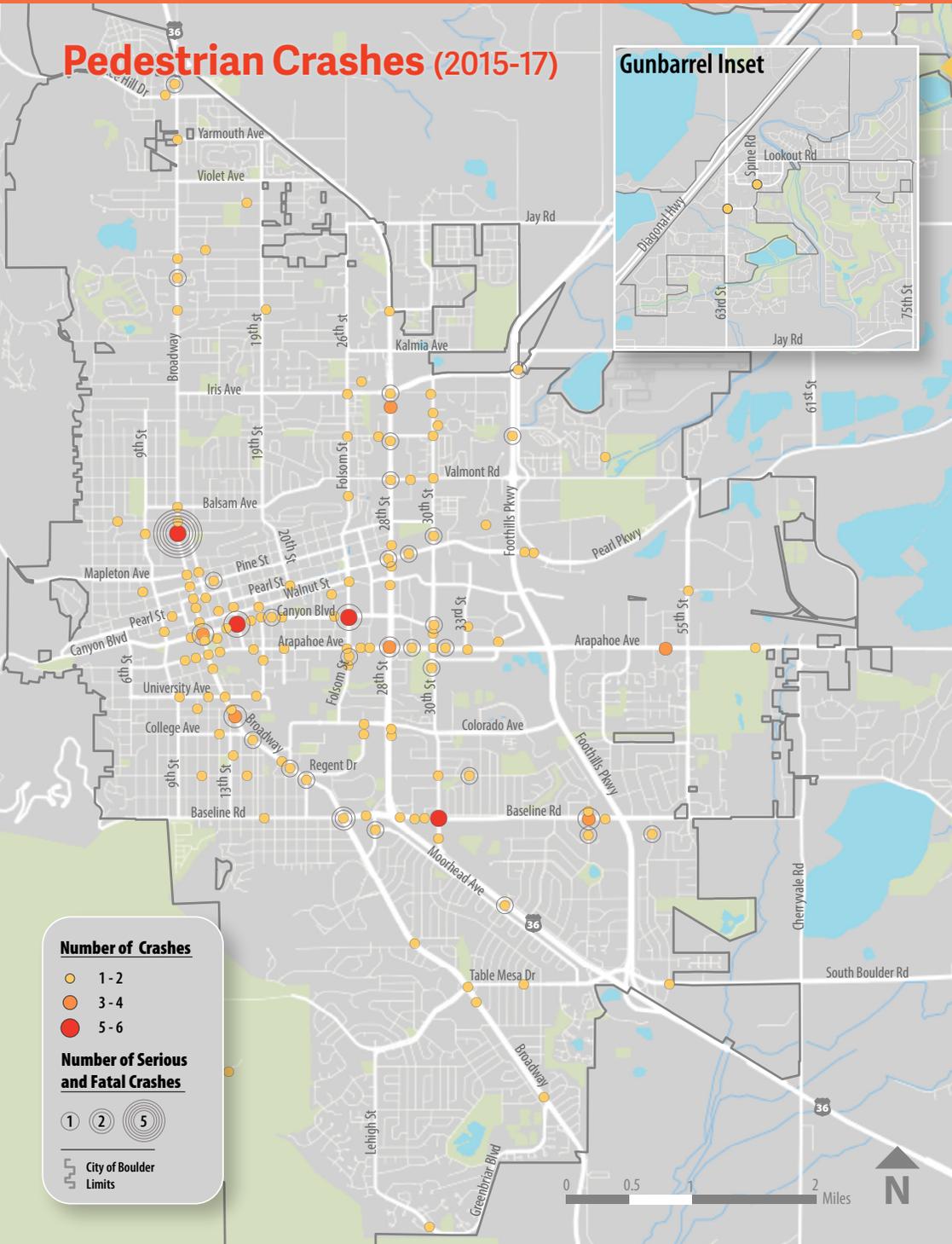
**2 Pedestrians dashing out into the street and being hit by a vehicle**  
14% of all pedestrian crashes, with one out of four severe.

**3 Pedestrians walking across an intersection being hit by a motorist who failed to yield**  
10% of all pedestrian crashes, with one out of five severe.

⚠️ **This trend is increasing!**



# Pedestrian Crashes (2015-17)



**THIS MAP** shows the locations of pedestrian crashes, with the larger and darker dots representing a higher number of crashes. Locations with the highest numbers of pedestrian-related crashes include:

- Broadway & North St.
- 15th St. & Canyon Blvd.
- Folsom St. & Canyon Blvd.
- Baseline Rd. & Broadway
- Rings show locations with severe crashes (e.g., Broadway & North St. and Baseline Rd. & Broadway)



**Key approaches to achieving the Vision Zero goals for pedestrians include:**

- Pedestrian Head-Starts (e.g., implemented at Broadway & North St.)
- "No Right-Turn on Red" restrictions (e.g., implemented for the southbound right-turn at Folsom St. & Arapahoe Ave.)
- Left-turn protected phasing (see p. 16) (e.g., implemented for all left-turn movements at Foothills Pkwy & Arapahoe Ave.)
- Education for motorists and pedestrians (e.g., educating pedestrians on the danger of jaywalking or trying to dart between traffic)

## WORK COMMUTE TRIPS • WALKING (2013-17)

<b>Boulder</b>	<b>11.3%</b>
<b>Denver Metro</b>	<b>2.1%</b>
<b>United States</b>	<b>2.7%</b>

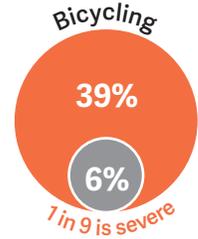
Source: ACS 5-year (2013-17)



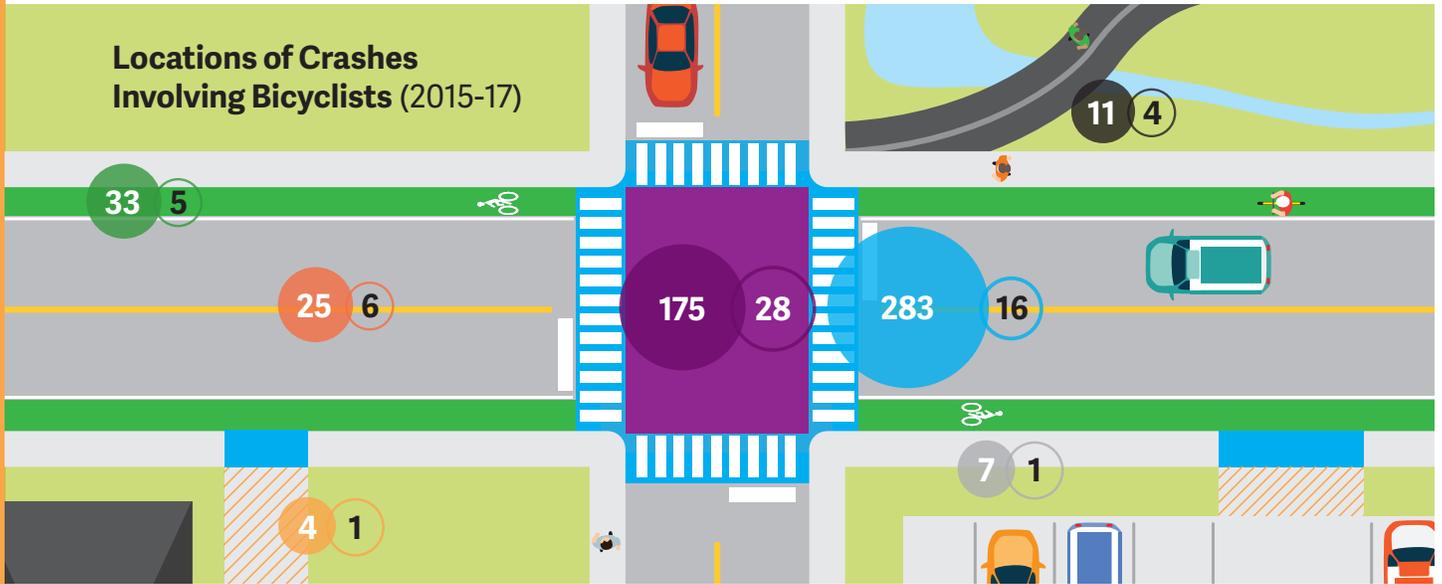


# People Bicycling

People bicycling are also among the most vulnerable users of Boulder's transportation network. **Although bicyclists were involved in only 6% of all crashes from 2015 to 2017, they were involved in 39% of all severe crashes.** The number of people involved in bicycle-related crashes has remained steady between 2009 and 2017.



## Locations of Crashes Involving Bicyclists (2015-17)



	Total	Severe
Within Crosswalk	●	○
Intersection	●	○
Bike Lane/Paved Shoulder	●	○
Travel Lane	●	○
Multi-Use Path	●	○
Driveway/Alley	●	○
Sidewalk	●	○
<b>TOTAL CRASHES*</b>	<b>554</b>	<b>62</b>

**THE MAJORITY OF BICYCLE CRASHES** occur within a crosswalk or at another part of an intersection. Of crashes on a multi-use path or sidewalk, the bicyclist is riding against traffic about 70% of the time with one out of 28 of crashes involving this behavior being severe.

\*17 crash locations were unknown, one of which was severe, and are not shown on the above graphic.



A person driving a car on a street with a stop sign who fails to yield for a person bicycling on the cross-street is the most common crash type involving a person bicycling (making up 17% of all bicycle crashes) and has been increasing since 2009.

## LEFT- AND RIGHT-HOOKS ARE ALSO PROMINENT BICYCLE CRASH TYPES

**14%**

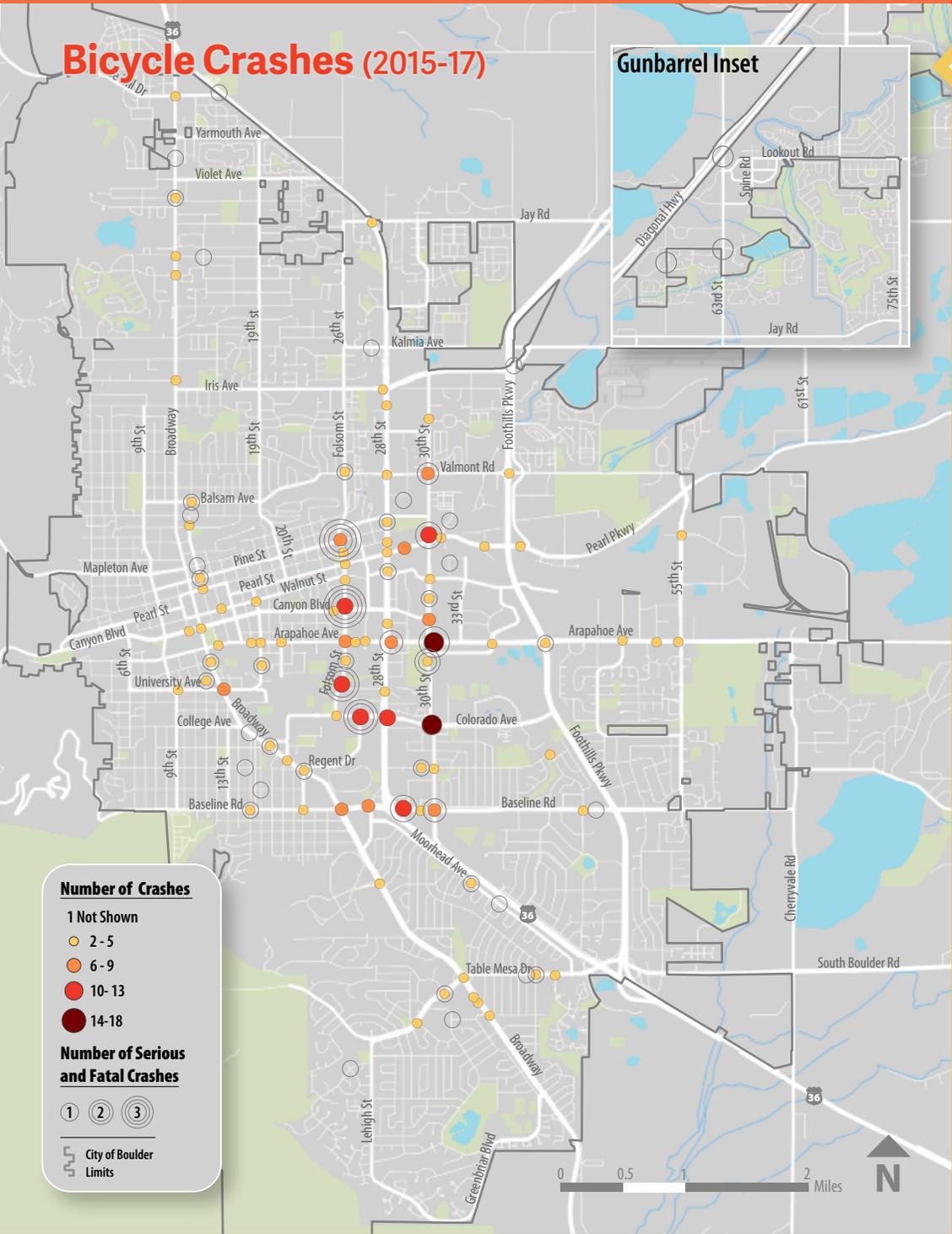
**Motorists turning left** and hitting bicyclists traveling in the opposite direction (one out of four severe).

**14%**

**Motorists turning right** and hitting bicyclists traveling in the same direction (one out of nine severe).



# Bicycle Crashes (2015-17)



**THIS MAP** shows the locations of bicycle crashes, with the larger and darker dots representing the higher number of crashes. Locations with the highest number of crashes include:

- Arapahoe Ave. & 30th St.
- Colorado Ave. & 30th St.
- Rings show locations with severe crashes (e.g., Folsom St. & Pine St. and Folsom St. & Canyon Blvd.)



**Key approaches to achieving the Vision Zero goals for bicyclists include:**

- Green markings (e.g., to be implemented at locations such as Broadway & Juniper Ave. and Broadway & Union Ave.)
- Protected intersections (e.g., to be implemented at locations such as Colorado Ave. & 30th St.)
- "No Right-Turn on Red" restrictions (e.g., implemented for the southbound right-turn at Conestoga St. & Arapahoe Ave.)
- Left-turn protected phasing (see p. 16) (e.g., implemented for the southbound left-turn at Broadway & Table Mesa Dr.)
- Education for motorists and bicyclists (e.g., Bicycle-Friendly Driver curriculum)

## WORK COMMUTE TRIPS • BICYCLING (2013-17)

<b>Boulder</b>	10.4%
<b>Denver Metro</b>	0.8%
<b>United States</b>	0.6%

Source: ACS 5-year (2013-17)



# People Traveling Under The Influence of Alcohol or Drugs

People traveling while impaired continues to be a safety challenge. **Although impaired travelers were involved in only 4% of all crashes from 2015 to 2017, they were involved in 13% of all severe crashes.** From 2009 to 2013 the annual number of crashes involving a person suspected of or charged with a DUI was steady.



## IMPAIRED CRASHES (2009-17)

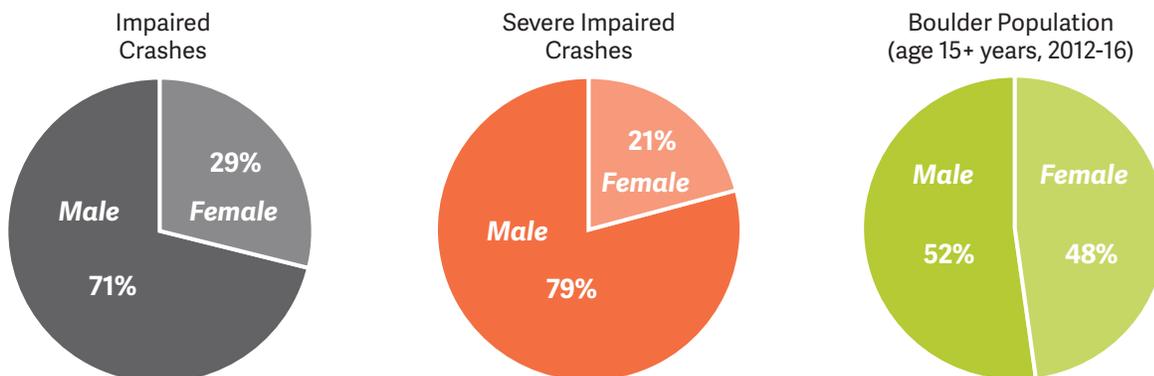


There were an average of 125 impaired crashes per year between 2015 and 2017. Most of these crashes (68%) involved alcohol alone, while 13% involved drugs<sup>1</sup> alone, and 19% involved a combination of alcohol and drugs. Since 2015, the number of impaired crashes involving a combination of alcohol and drugs has increased.



Between 2009 and 2017, over half of all impaired drivers were under the age of 30. Of the 67 severe crashes involving an impaired driver, 41 involved an impaired driver under the age of 30 (62%). Males also tend to be more likely to be involved in impaired crashes (71%).

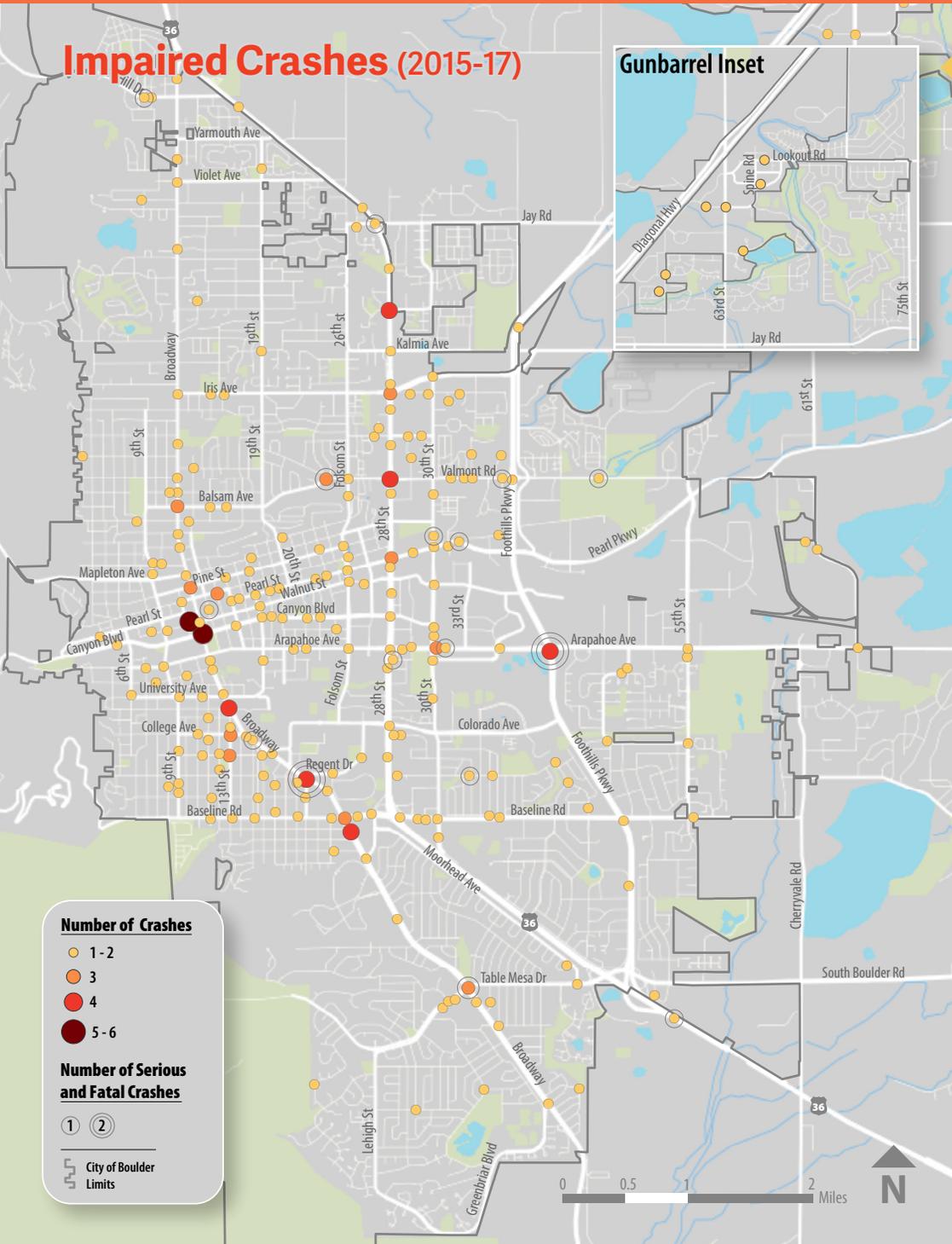
## IMPAIRED CRASHES BY IMPAIRED TRAVELER'S GENDER (2009-17)



<sup>1</sup> Note that the specific type of drugs involved in each crash was not readily available for this analysis, and more detailed tracking on crash reports of types of drugs involved (such as marijuana) is currently being explored.

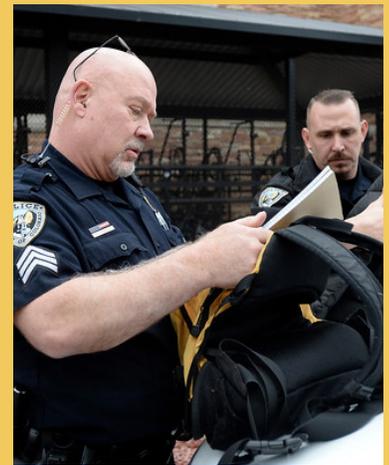


# Impaired Crashes (2015-17)



**THIS MAP** shows the locations of impaired crashes, with the larger and darker dots representing the higher number of crashes. Locations with the highest number of crashes include:

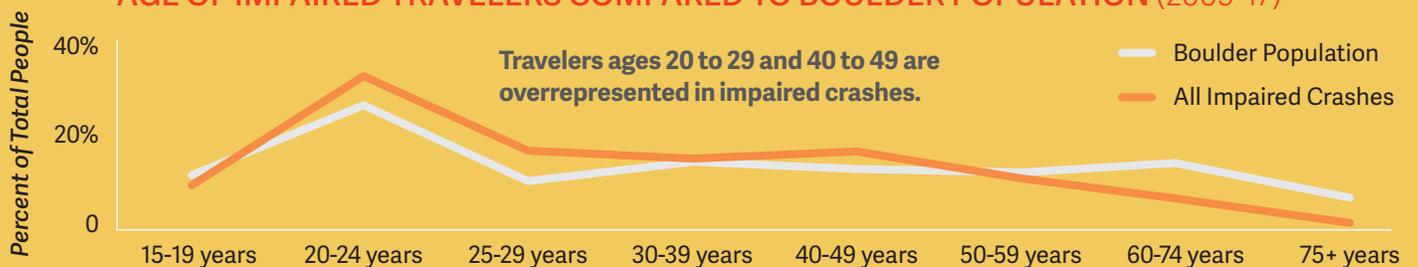
- 11th St. & Walnut St.
- Broadway & Canyon Blvd.
- Rings show locations with severe crashes (e.g., Arapahoe Ave. & Foothills Pkwy. and Broadway & Regent Dr.)



**Key approaches to reduce impaired crashes include:**

- Education for all travelers
- Enforcement
- Alternative options to driving while impaired (e.g., special programs with Transportation Network Companies (TNCs) such as Uber and Lyft)

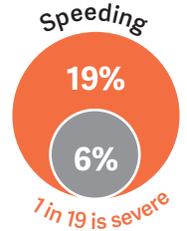
## AGE OF IMPAIRED TRAVELERS COMPARED TO BOULDER POPULATION (2009-17)



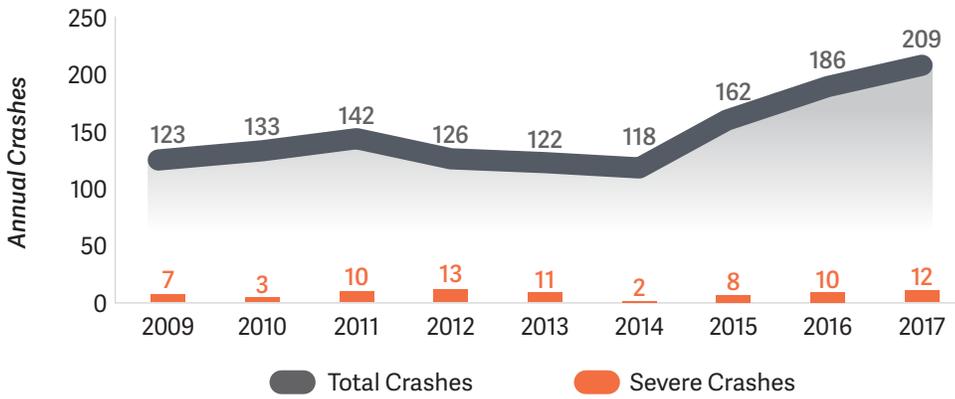


# People Speeding

The number of crashes where an officer noted speeding (people estimated to have been traveling over the speed limit) has increased since 2014, by an average of 30 crashes per year. **Although speeding travelers were involved in only 6% of all crashes from 2015 to 2017, they were involved in 19% of all severe crashes.**



## SPEEDING CRASHES (2009-17)



Between 2015 and 2017, approximately 557 speeding crashes occurred (an average of 186 per year). 30 of these crashes were severe.



**CRASHES ON FASTER ROADWAYS ARE MORE DEADLY.** Roughly **one in 10** pedestrians survive a collision with a vehicle traveling at **40 mph**, versus five in 10 at 30 mph, and nine in 10 at 20 mph.

## SPEED INCREASES THE SEVERITY OF CRASHES (2015-17)



About **30%** of severe crashes were **more severe** because of speed on:

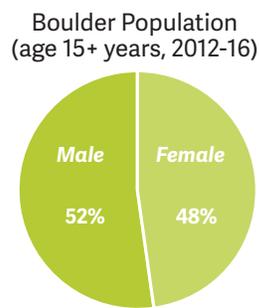
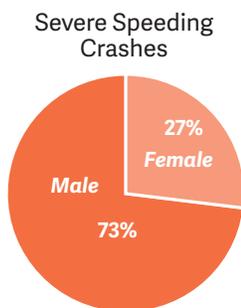
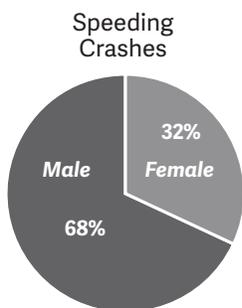
- ▶ Local Roadways (generally 25 mph speed limits)  
*Seven out of 21 severe crashes*
- ▶ Residential Collectors (generally 25-30 mph speed limits)  
*Six out of 17 severe crashes*



About **46%** of severe crashes were **more severe** because of speed on:

- ▶ Arterial Roadways (generally 35 mph or higher speed limits)  
*53 out of 115 severe crashes*
- ▶ Arterial roadways make up **17%** of the street network in Boulder and **72%** of crashes occur on an arterial roadway

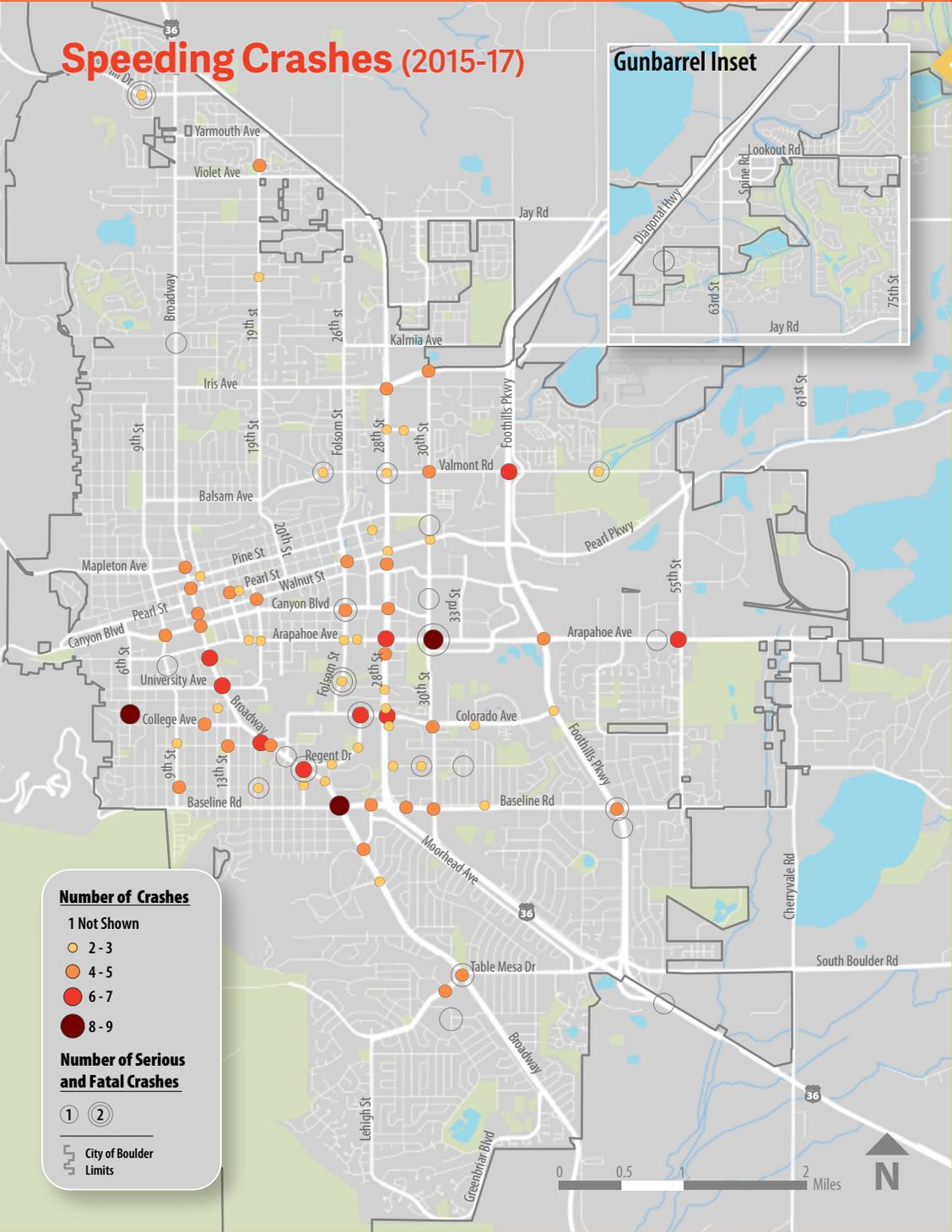
## SPEEDING CRASHES BY TRAVELER'S GENDER (2009-17)



**73%** of speeding travelers involved in severe crashes are male.



# Speeding Crashes (2015-17)



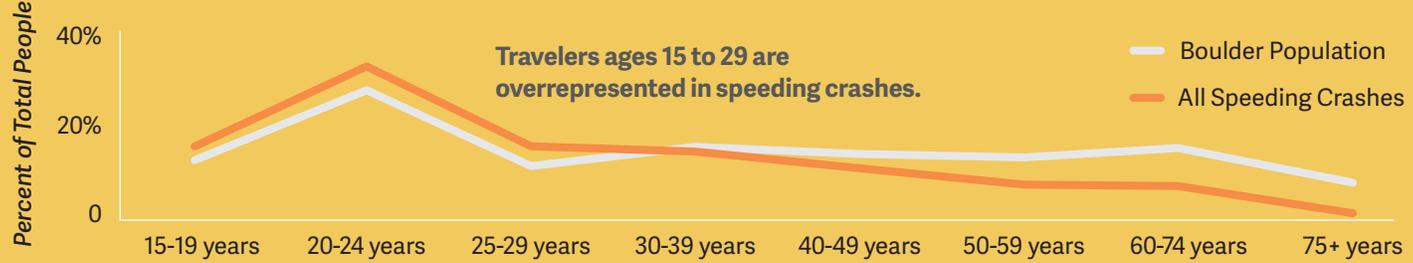
**THIS MAP** shows the locations of speeding-related crashes, with the larger and darker dots representing the higher number of crashes. Locations with the highest number of crashes include:

- Arapahoe Ave. & 30th St.
- Arapahoe Ave. & 55th St.
- Baseline Rd. & Broadway
- Rings show locations with severe crashes (e.g., Lee Hill Dr. & Dakota Blvd. and Folsom St. & Taft Dr.)

**Key approaches to meet the Vision Zero goals for speeding crashes include:**

- Developing an arterial speed management program
- Reducing vehicle speeds via the Neighborhood Speed Management Program (NSMP) and the Low-Stress Walk and Bike Network Plan
- Education for all travelers
- Enforcement

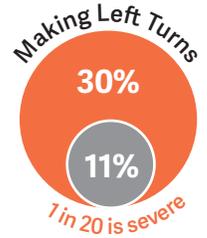
## AGE OF SPEEDING DRIVERS COMPARED TO BOULDER POPULATION (2009-17)





# People Making Left Turns

The most common cause of a severe crash is a driver improperly making a left turn—typically not yielding to oncoming traffic or bicyclists and pedestrians in the crosswalk. **Although people making left turns were involved in only 11% of all crashes from 2015 to 2017, they were involved in 30% of all severe crashes.**



# 48

**Number of severe crashes involving a left-turn movement (2015-17):**

**30** involved vehicles making a permitted left-turn at intersections with a traffic signal



9 walking



7 on a bike



14 in a car

# 15

**occurred at intersections without a traffic signal**



1 walking



11 on a bike



3 in a car

# 3

**occurred at signalized intersections related to protected left turn phasing where a vehicle ran a red light.**

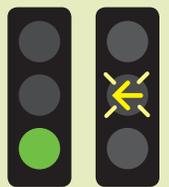
## WHAT ARE THE DIFFERENT TYPES OF LEFT-TURN PHASING?

- ▶ **Protected:** You turn left while opposing traffic is stopped
- ▶ **Permitted:** You turn left when there is a gap in opposing traffic (vehicles, cyclists, pedestrians)

In some cases we use a combination of protected and permitted operations at the same signal, and sometimes the signal timing even varies by time of day to accommodate varying levels of usage.



Protected



Permitted



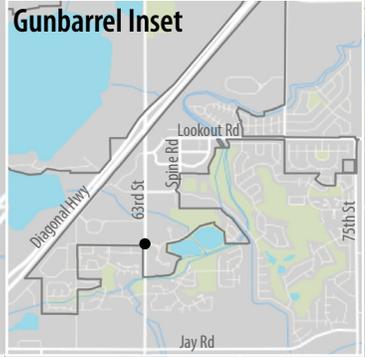
### Why Do We Use a Flashing Yellow Arrow (FYA)?

Research has shown that a Flashing Yellow Arrow is safer than a green ball due to its color (yellow = caution!) and due to the flashing movement, which catches the eye and the attention of motorists. The FYA is now the federal standard and is generally preferred over the use of a green ball.

The city typically uses protected phasing under certain geometric conditions (e.g., limited sight distance) or if there is already a crash trend occurring at a particular intersection. The city also uses protected-only phasing proactively to reduce potential crashes in instances where there are high volumes of bicyclists and/or pedestrians or higher speed vehicles regularly using the intersection.



# Left Turn Severe Crashes (2015-17)

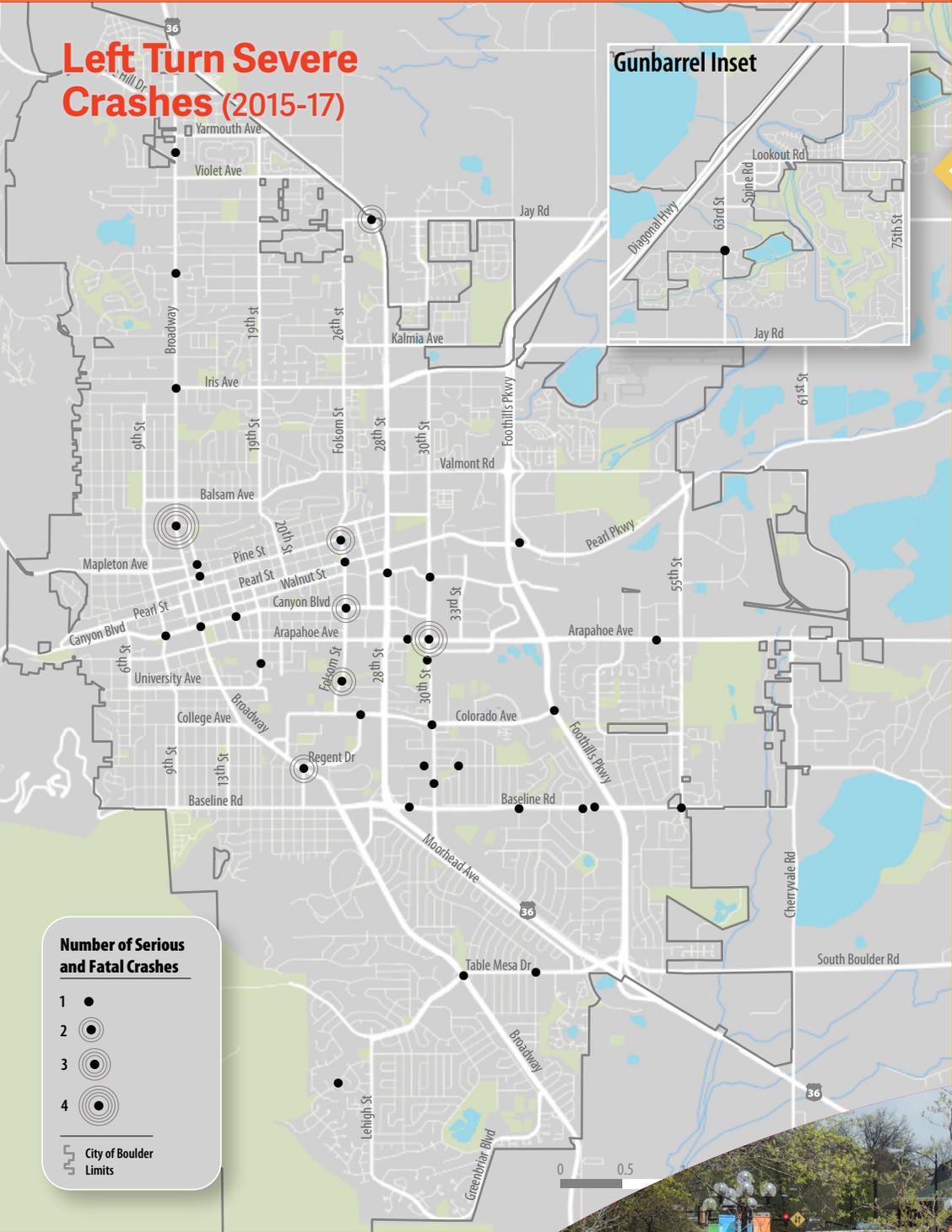
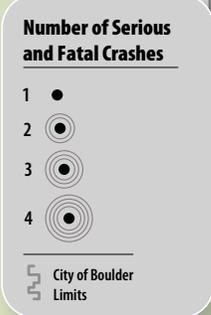


**THIS MAP** shows the locations of severe (serious injury and fatal) left-turn-related crashes, with the number of rings representing serious or fatal crashes. Locations with the highest number of severe crashes include:

- Broadway & North St.
- Arapahoe Ave. & 30th St.

**Key approaches to meet Vision Zero goals related to left-turn crashes include:**

- Pedestrian Head-Starts (e.g., implemented at Broadway & North St.)
- Left-turn protected phasing (e.g., implemented for the southbound left-turn at Broadway & Table Mesa Dr.)
- Education for all travelers (e.g., the Flashing Yellow Arrow)
- Enforcement





# Other Areas of Concern

Other areas of concern are largely addressed through specific education efforts and include:

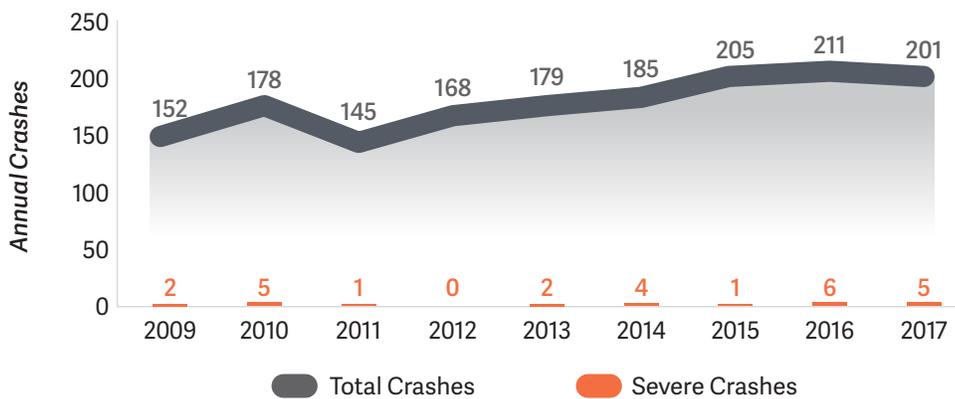
- ▶ **Distracted Travelers**
- ▶ **Ages 15-19**
- ▶ **Ages 20-29**
- ▶ **Ages 65 and older**
- ▶ **People riding motorcycles**



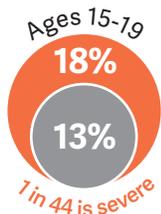
## Distracted Travelers

Distracted traveling includes texting or talking on the phone, as well as other activities such as adjusting the radio, using a GPS device, and eating or drinking.

### DISTRACTED CRASHES (2009-17)

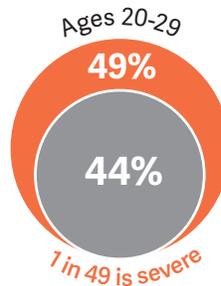


Between 2015 and 2017 about 200 distracted crashes occurred annually (7% of all crashes). About one out of every 51 of those crashes resulted in a severe crash (8% of all severe crashes). Since 2009 the number of distracted crashes has grown an average of about six crashes per year.



### Ages 15-19

People ages 15-19 (representing 11% of the population) were involved in 13% of overall crashes and 18% of severe crashes (2015-17).



### Ages 20-29

People ages 20-29 (representing 30% of the population) were involved in 44% of all crashes in Boulder and 49% of severe crashes (2015-17).

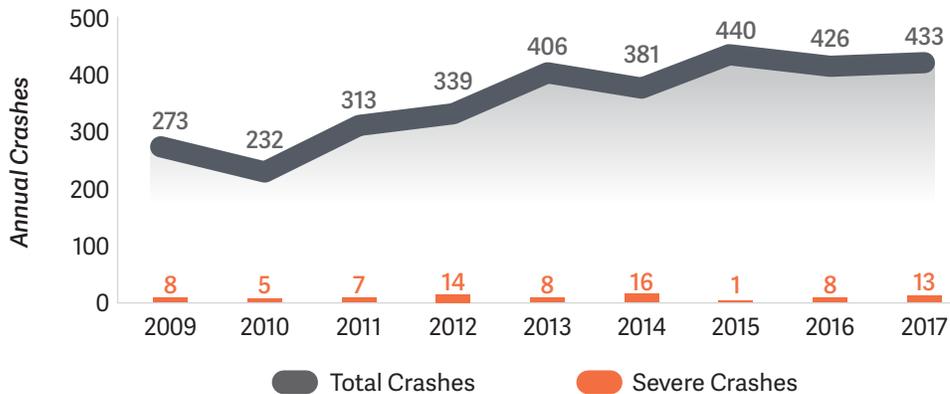




## Ages 65 and Older

Since 2009, crashes involving an older adult have increased by 59%, while the older adult population has increased by 29%. Adults age 65 or older represent 11% of the Boulder population and were involved in 15% of overall crashes and 14% of severe crashes (2015-17). One in every 59 crashes involving an older adult is severe.

### CRASHES INVOLVING A PERSON AGE 65 AND OLDER (2009-17)



## People Riding Motorcycles

Between 2015 and 2017, there were 46 motorcycle crashes and eight severe crashes on average each year (2% of total and 14% of severe crashes).





# Other Vision Zero Objectives

## Improve Travel Comfort and Security

Although Boulder already has a well-developed network of facilities for people walking and bicycling relative to many U.S. cities, it is important to recognize that even one small “high-stress” location can change a person’s choice of routes or could deter them from choosing to walk or bicycle at all, especially if children are involved.

Feeling secure plays a role in how people choose to travel. The city’s Low-Stress Walk and Bike Network Plan identifies stressful walking and bicycling conditions and provides recommendations for specific types of facilities, programs, and routes that would help to improve people’s comfort levels when getting around Boulder. For instance, this could be adding sidewalks and bicycle lanes to fill in gaps in the existing network or adding lighting to multi-use paths to increase safety.

## Enhance Awareness of and Community Engagement with Vision Zero

Prioritizing and growing a robust Vision Zero program requires ongoing monitoring and continuous refinement to city processes, strategic partnerships, community engagement, and resource investment. It means enhancing social media engagement and strengthening relationships with local and regional community organizations and other municipalities and agencies so that we are integrated and strategic in sharing our best practices and messaging around Vision Zero. Committing to Vision Zero means dedicating resources to improve travel safety and ensuring the program continues to grow in terms of community understanding and adoption.



## Improve Data and Be Transparent

We collect, analyze, and use data to prevent crashes and improve overall safety. By providing clear, straightforward data in a timely manner, community members will understand how and where crashes occur and how to prevent them from happening. Good data also allows us to tell a compelling story to the public and helps us inform community leaders about the progress we’ve made and the challenges that still need to be tackled.



# Vision Zero Action Plan

Vision Zero marks a shift in traditional transportation engineering and planning approaches and is intended to act as a transformative set of actions to prioritize travel safety.

## The intended outcomes of this action plan include:

- ▶ **Slower vehicle speeds (lower speed limits through design changes on some roadways and reduced speeding overall).**
- ▶ **More equitable allocation of the public right-of-way for vulnerable users.**
- ▶ **Dedicated priority low-stress (high-comfort) network of facilities for bicyclists and pedestrians.**
- ▶ **Specific capital and operational improvements at high-crash locations to eliminate crash trends.**
- ▶ **Proactive capital and operational improvements to prevent crashes (the Safe Systems approach).**

The Vision Zero Action Plan was developed to identify and implement a comprehensive list of actions to make our streets safe while providing accountability, a timeframe for completion, and specific performance measures to gauge effectiveness. Specifically, the draft Vision Zero Action Plan includes descriptions of each action and is organized under each Vision Zero objective, which “E”(s) (Engineering, Education, Enforcement, Evaluation) it supports, its timeframe (specific year(s) or ongoing), community partners, and performance metric(s) for tracking progress.

## Next Steps

This report includes a Vision Zero Action Plan, which is a to-do list of actions we can take the next three years (2019-21) to work toward achieving the five Vision Zero objectives. Elements from this report will also be incorporated into the ongoing *Transportation Master Plan (TMP)* update and future *Transportation Master Plan Reports on Progress*.

The city is committed to travel safety and to implementing the Vision Zero Action Plan.

Elements from the Action Plan and other parts of this report will also be incorporated into the ongoing Transportation Master Plan (TMP) update and future Transportation Reports on Progress.

Achieving Vision Zero takes all of us. Community members played an important role in creating the goals, principles, and action items and will continue to be integral to realizing safe transportation in Boulder.

## THE VISION ZERO ACTION PLAN IS ORGANIZED BY THE FIVE VISION ZERO OBJECTIVES

1

Eliminate crashes resulting in serious injuries and fatalities

2

Reduce other types of crashes

3

Improve travel comfort and security

4

Enhance awareness of and community engagement with Vision Zero

5

Improve data and be transparent



# Vision Zero Action Plan, 2019-21

## ELIMINATE CRASHES RESULTING IN SERIOUS INJURIES AND FATALITIES (OBJECTIVE #1)

Vision Zero goes beyond the traditional means of traffic engineering and employs both a location-specific and Safe Systems approach that is targeted, responsive, and proactive. The action items below identify the primary severe crash types and efforts to eliminate these crash types by 2030, including pedestrian, bicycle, left-turn, speed, and impaired-related focus areas.

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
1. Implement <b>specific countermeasures</b> at high crash locations (peds, bikes, vehicles)		Ongoing	Transportation, PD	% of intersections addressed on an annual basis <b>Target:</b> 45 intersections with specific mitigation identified for implementation
2. Continue to <b>pursue federal funding</b> for and construct Highway Safety Improvement Program projects		Ongoing	Transportation	# of projects funded and completed <b>Target:</b> 3 projects per funding cycle
3. Proactively implement <b>new signal timing practices</b> at identified intersections to improve pedestrian, bicyclist, and driver safety (e.g., pedestrian head-start/leading pedestrian interval (LPI), no right turn on red (to develop standard), and left turn phasing)		Ongoing	Transportation	% of intersections addressed on an annual basis <b>Target:</b> 50 intersections identified for changes in left turn phasing. 20 intersections identified for pedestrian head-start/leading pedestrian interval (LPI)
4. <b>Always employ proven effective, safe, and innovative intersection and corridor designs</b> to improve safety for all modes (e.g., protected bike lanes/intersections and quick-build solutions)		Ongoing	Transportation	# of projects funded and constructed featuring innovative design aspects on an annual basis
5. Continue and enhance <b>pedestrian, bicyclist, and driver safety education</b> outreach on types of severe injury crashes through existing and future multimedia campaigns and include topics on <b>dangerous effects of speeding, impaired, and distracted travel</b>		Ongoing	Transportation	# of people reached through outreach events and social media engagement on an annual basis
6. Update the city's <b>Design and Construction Standards</b> and <b>Pedestrian Crossing Treatment Guidelines</b> to reflect best practices to improve safety		2019-20	Transportation, PD	Revised standards and guidelines
7. Proactively install <b>green pavement markings</b> in advance and through select intersections to improve bicycle safety		Ongoing	Transportation	# of intersections mitigated on an annual basis
8. <b>Install signing and markings</b> to mitigate crashes involving bicyclists and pedestrians on multi-use path system		2019	Transportation	# of locations of signing and markings installed along multi-use path network on an annual basis

Engineering  
 Education  
 Enforcement  
 Evaluation  
 High Impact  
 Funding

\* Partners defined on page AP-6

**Objective #1 Continues >**

## OBJECTIVE #1 / continued

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
<b>9. Improve routine facility maintenance</b> for all modes, particularly pedestrians and bicycles, such as crosswalks and bike lanes		Ongoing	Transportation, COMM	# of complaints reduced on an annual basis from 2018 baseline
<b>10. Require Bicycle Friendly Driver education</b> to drivers of city, county, and Via fleet vehicles		2019-20		# of classes provided and # of participants attended on an annual basis
<b>11. Identify and enforce specific unsafe travel behaviors</b> at problem locations		Ongoing	Transportation, PD	# of warnings and citations on an annual basis
<b>12. Develop and Implement Speed Management Plan/Program</b> to decrease travel speeds on arterial roadways (e.g., Summer Workshop w/FHWA, CDOT, Boulder, Denver, and Fort Collins)		2019 – 21	Transportation, PD, VZCP	# of collectors and arterials addressed on an annual basis
<b>13. Replace existing identified signed school zones with school zone flashing beacon displays</b>		2019 – plan 2020-21 – implement	Transportation, PD	# of school zones identified % of school zones modified # of citations and warnings issued in school zones on an annual basis
<b>14. Strategically deploy photo radar van</b> along high-speed corridors		Ongoing	Transportation, PD	# of locations, # of citations on an annual basis Reduction in number of speeding vehicles
<b>15. Expand the number of red-light camera locations</b>		Ongoing	Transportation, PD	# of locations identified % of locations implemented on an annual basis
<b>16. Cross-promote “safe ride home”</b> programs with CU Boulder and local establishments that serve alcohol while implementing policies for ride hailing services to not block travel lanes (Curbside Management Plan)		Ongoing	Transportation, CU	# of people reached through outreach events and social media engagement
<b>17. Increase patrols and enforcement</b> along corridors that experience impaired-related crashes.		2019	Transportation, PD	Location and # of issued summons on an annual basis
<b>18. PD to dedicate one staff and patrol car to enforcing DUI-related offenses</b> Thursday through Saturday from 7:00 p.m. – 5:00 a.m.		2019	PD	Overall # of DUI arrests on an annual basis

 Engineering

 Education

 Enforcement

 Evaluation

 High Impact

 Funding

\* Partners defined on page AP-6

## REDUCE OTHER TYPES OF CRASHES (OBJECTIVE #2)

In addition to eliminating severe injury crashes, we strive to also reduce other types of common crashes, including distracted driving, age-related, rear-ends, motorcycles, parked vehicles, and fixed object related crashes.

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
<b>19. Support state legislation to improve travel safety</b> , including the Vulnerable User Law, lower BAC (DUI) levels, unmanned speed camera installations, red-light-camera operations, and <b>propose local "hands free mobile device" ordinance</b>		Ongoing	CAO, CMO	# of state and local ordinance proposed and passed annually
<b>20. Deliver enforcement campaigns</b> aimed at reducing distracted driving		Ongoing	Transportation, PD, COMM	# of citations on an annual basis
<b>21. Implement school safety programs (SRTS) and identify projects and funding to improve walk/bike infrastructure</b> near schools and explore driver's education requirement for high school students		Ongoing	Transportation, BVSD	# of people reached through outreach events and social media engagement # of projects funded for construction
<b>22. Review and address school bus stop operations</b> relative to child safety with BVSD		Ongoing	Transportation, BVSD	# of modifications performed on an annual basis
<b>23. Provide travel safety education to 18- to 24-year-olds</b> in conjunction with CU Boulder		Ongoing	Transportation, COMM, CU	# of people reached through outreach events and social media engagement on an annual basis
<b>24.</b> Work with Senior Centers/housing developments and children of aging adults to <b>provide senior travel safety</b> education		Ongoing	Transportation, VZCP	# of people reached through outreach events and social media engagement on an annual basis
<b>25.</b> Continue implementation of <b>Neighborhood Speed Management Program, including a potential reduction of vehicle speeds to 20 mph</b>		Ongoing	Transportation, PD, COMM,	# of streets graduated from NSMP Reduced # of speeding vehicles
<b>26.</b> Examine, <b>refine, and implement right-turn bypass</b> signing and marking standards		2020	Transportation	# of bypass intersections modified in 2020-21
<b>27.</b> Provide education and enforcement campaign related to <b>motorcycle travel</b>		Ongoing	Transportation, COMM, PD	# of people reached through outreach events and social media engagement
<b>28.</b> Provide education regarding <b>other types of crashes and avoidance techniques</b> for all modes, including vehicular cycling techniques (e.g., taking the lane)		Ongoing	Transportation, COMM	# of people reached through outreach events and social media engagement

Engineering  
 Education  
 Enforcement  
 Evaluation  
 High Impact  
 Funding

\* Partners defined on page AP-6

## IMPROVE TRAVEL COMFORT AND SECURITY (OBJECTIVE #3)

In addition to eliminating severe injury crashes, we strive to also reduce other types of common crashes, including distracted driving, age-related, rear-ends, motorcycles, parked vehicles, and fixed object related crashes.

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
29. Implement <b>Low-Stress Walk and Bike Network Plan, including a potential reduction of 20 mph vehicle speeds on Neighborhood GreenStreets</b> while utilizing innovative, quick-build techniques to achieve lower traffic stress levels	   	Ongoing	Transportation	# of corridors/miles Low-Stress Routes installed on an annual basis (e.g., protected bike lanes, buffered bike lanes, and neighborhood greenways)
30. Implement <b>longer pedestrian crossing count-down times at select intersections</b> identified as high-stress by community members	 	Ongoing	Transportation	# of intersections reviewed and modified on an annual basis
31. Assist community members with <b>route planning guidance</b> to access and navigate Boulder's existing low-stress network		Ongoing	Transportation, VZCP	# of engaged community members through one-on-one contact, special events and website visits
32. Develop and implement <b>cycling and walking groups</b> to encourage children to walk and/or bike to school		2019	Transportation, BVSD	# of organized groups
33. Develop and implement a plan for <b>multi-use path lighting at underpasses</b> and key intersections	  	Ongoing	Transportation, VZCP	# of maintained underpasses on an annual basis
34. Conduct <b>path patrols on bicycle</b> by PD and stewards of Shared Paths Boulder		Ongoing	Transportation, PD, VZCP	# of path stewards and patrols on an annual basis



Engineering



Education



Enforcement



Evaluation



High Impact



Funding

\* Partners defined on page AP-6

## ENHANCE AWARENESS OF AND COMMUNITY ENGAGEMENT WITH VISION ZERO (OBJECTIVE #4)

Prioritizing and growing a robust Vision Zero program requires ongoing monitoring and continuous refinement to city processes, strategic partnerships, community engagement, and resource investment.

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
<b>35. Bolster social media engagement</b> with proactive information on travel safety and recent actions; and <b>respond in a timely manner</b> to concerned community members	 	2019	Transportation, COMM, TAB	# of posts, responses, and impressions on an annual basis
<b>36. Conduct before and after questionnaire</b> of community understanding and awareness of Vision Zero	 	2019 – baseline data	Transportation, COMM	Questionnaire released, # of respondents + results
<b>37. Research, develop, implement, and evaluate new, effective methods to reach target audiences</b> (e.g., surveys, focus groups, testimonials)	 	2019-20	Transportation, COMM, CU	Results from focus groups and other research methods
<b>38. Install signing</b> highlighting Vision Zero logo at site of <b>capital improvement projects</b>		Ongoing	Transportation	# of project locations that include reference to Vision Zero
<b>39. Expand Vision Zero Community Partnership</b> and encourage district attorney participation to explore diversion programs and higher fines associated with careless driving infractions		2019	Transportation, PD, DA, BC	# of members/participation on an annual basis # of and type of new safety initiatives involving stakeholders
<b>40. Continue participation and contribution</b> in the national <b>Vision Zero Cities Network</b> and share new ideas and approaches with community leaders		Ongoing	Transportation	Contribute to best practices research and participate regularly in webinars
<b>41. Encourage and support leaders of nearby communities, Boulder County, and the Denver Regional Council of Governments</b> to adopt Vision Zero plans	 	Ongoing	Transportation, TAB, CC	# of additional municipalities, plus Boulder County to adopt Vision Zero
<b>42. Host a regional/Front Range Vision Zero Summit</b>		2020-21	Transportation, COMM, VZCP, TAB	Held in 2021
<b>43. Explore an increase in transportation funding</b> for Vision Zero administration, projects, and programs through TMP update	 	Ongoing	Transportation, CMO, TAB, CC	Annual amount dedicated to administration/projects/programs
<b>44. Pursue additional resources through grants and partnerships</b> to develop and fund new projects and programs		Ongoing	Transportation, COMM	# of grants and additional \$ amounts secured on an annual basis
<b>45. Develop cost-sharing opportunities</b> with community partners, such as CU Boulder and Boulder County, to improve travel safety through projects and programs.	 	Ongoing	Transportation, BC, BVSD, CU, VZCP	# of \$'s contributed by community partners on an annual basis



Engineering



Education



Enforcement



Evaluation



High Impact



Funding

\* Partners defined on page AP-6

## IMPROVE DATA AND BE TRANSPARENT (OBJECTIVE #5)

We collect, analyze, and use data to prevent crashes and improve overall safety. Vision Zero holds the City of Boulder and its partners accountable for its commitment. By providing clear, straightforward data in a timely manner, community members will understand how and where crashes occur and how also to prevent them from happening. Good data also allows us to tell a compelling story to the public.

Action	4 E's	Timeframe	Partners*	Performance Metric(s)
46. Continue to refine and improve <b>accuracy in crash documentation</b>		Ongoing	Transportation, PD	Refined crash data
47. Cross-reference police crash data with area hospital and first responder data to check for discrepancies		Ongoing	Transportation, PD, BC, VZCP	# of discrepancies discovered on an annual basis
48. Track Vision Zero Action Plan implementation and post quarterly updates to <b>Boulder Measures Dashboard</b>	  	Ongoing	Transportation, IT, TAB, CC, VZCP	Quarterly updates performed to Boulder Measures Dashboard
49. Provide <b>quarterly progress reports</b> to Vision Zero Community Partnership, TAB, City Council	 	Ongoing	Transportation, TAB, CC, VZCP	Quarterly updates provided and Transportation Report on Progress (2020)
50. Conduct <b>evaluation studies</b> to measure effectiveness of VZ treatments and capital improvement projects	  	Ongoing	Transportation	Specific performance measures determined on a per project basis



Engineering



Education



Enforcement



Evaluation



High Impact



Funding

### Partners Key:

#### City of Boulder

Transportation = Public Works-Transportation (Capital Projects, GO Boulder, Transportation Maintenance, Transportation Operations)

CMO = City Manager's Office

CAO = City Attorney's Office

COMM = Communications

DA = District Attorney's Office

IT = Information Technology

PD = Police Department

CC = City Council

TAB = Transportation Advisory Board

#### Other Organizations

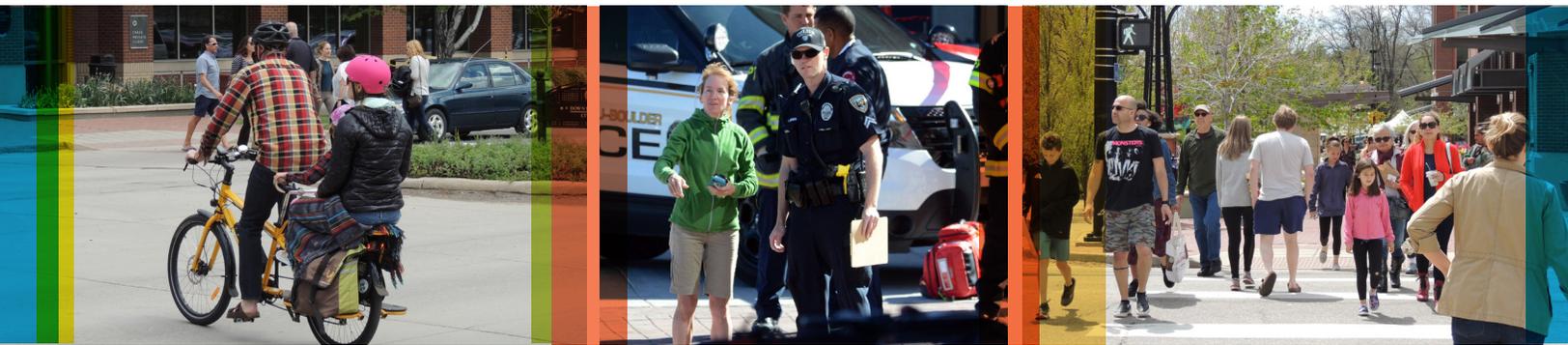
BC = Boulder County, including Public Health, Transportation, and Sherriff's Office

BVSD = Boulder Valley School District

CU = University of Colorado

CDOT = Colorado Department of Transportation

VZCP = Vision Zero Community Partnership, additional members: Community Cycles, Cyclists 4 Community, Shared Paths Boulder, Boulder Walks, Boulder Transportation Connections, Chamber of Commerce, Boulder Community Health



City of Boulder Department of Public Works — Transportation Division  
1739 Broadway • Boulder, CO 80302 • 303-441-3200  
[www.bouldercolorado.gov/transportation](http://www.bouldercolorado.gov/transportation)