

APPENDIX C

PHASE 2 COMMUNITY ENGAGEMENT SUMMARY

Boulder Vision Zero

Phase 2 Outreach Summary

Phase 2 Methods

City staff implemented a second phase of public outreach in February 2023. This second phase of outreach consisted of:

- A virtual public meeting on February 7, 2023 (Spanish interpretation was offered)
See attached public meeting slides
- Preparation and posting (on bouldercolorado.gov/projects/vision-zero-action-plan) of a one-page plan summary in English and Spanish
See attached one-page plan summary
- Preparation and posting (on bouldercolorado.gov/projects/vision-zero-action-plan) of short, approximately five-minute, plan summary videos in English and Spanish
- A short, online questionnaire (in English and Spanish) with the following questions:
 - What do you think about the Vision Zero Action Plan?
 - What do you like best about the proposed actions and recommendations?
 - What recommendations should staff prioritize for implementation?
- Office hours with city staff
- Lastly, staff presented the draft plan to the Transportation Advisory Board, Community Cycles, and the Center for People with Disabilities to solicit their feedback

Office Hours & Online Questionnaire Responses

The public provided feedback on the draft plan by attending city staff office hours or by completing a project questionnaire hosted on the city's BeHeard Boulder engagement platform (open from January 20 through March 13). Feedback received focused on respondent's feelings about the plan, what they liked best about the plan and what they wanted staff to prioritize as the plan was implemented.

Many respondents to the questionnaire had mixed feelings about the plan (46% of respondents), while others liked (31%) or didn't like (23%) the plan. Respondents wanted to lower vehicles speeds; provide safer travel through more protection for those walking, biking, and driving; increase enforcement; and have more action taken sooner to achieve Vision Zero. Respondents also pointed to the importance of routine maintenance of sidewalks and roadways, elimination of right-turn slip lanes, traffic signal timing that supports more vehicular flow and reduced visual clutter to achieving Vision Zero.

Boulder Vision Zero
Phase 2 Outreach Summary

Public Meeting PowerPoint

Welcome to the

Boulder Vision Zero Action Plan

public meeting. We will begin shortly.



Boulder Vision Zero Action Plan

Public Meeting #2

February 7, 2023



Vision Zero Background & Project Purpose

- Vision Zero is Boulder's goal to eliminate all crashes that result in a serious injury or fatality – since 2014
- Between 2018 and 2020...
 - **14,500** people were involved in a crash
 - **Nine** people were killed
 - **150** people were seriously injured
- Current Vision Zero Action Plan: 2019-21
- Creating a new five-year Vision Zero Action Plan for 2023-27
 - Community engagement
 - New analysis methods
 - Improvements from the 2019-21 plan
 - Project list and implementation strategy
 - Funding opportunities

2019-2021 Action Plan Success

 Made changes at **49** intersections

Leading Pedestrian Intervals – reduce vehicle/ pedestrian crashes

Left-turn arrows – reduce left-turn crashes

Red light cameras – reduce red light running crashes

Signing/markings – reduce multiple crash types

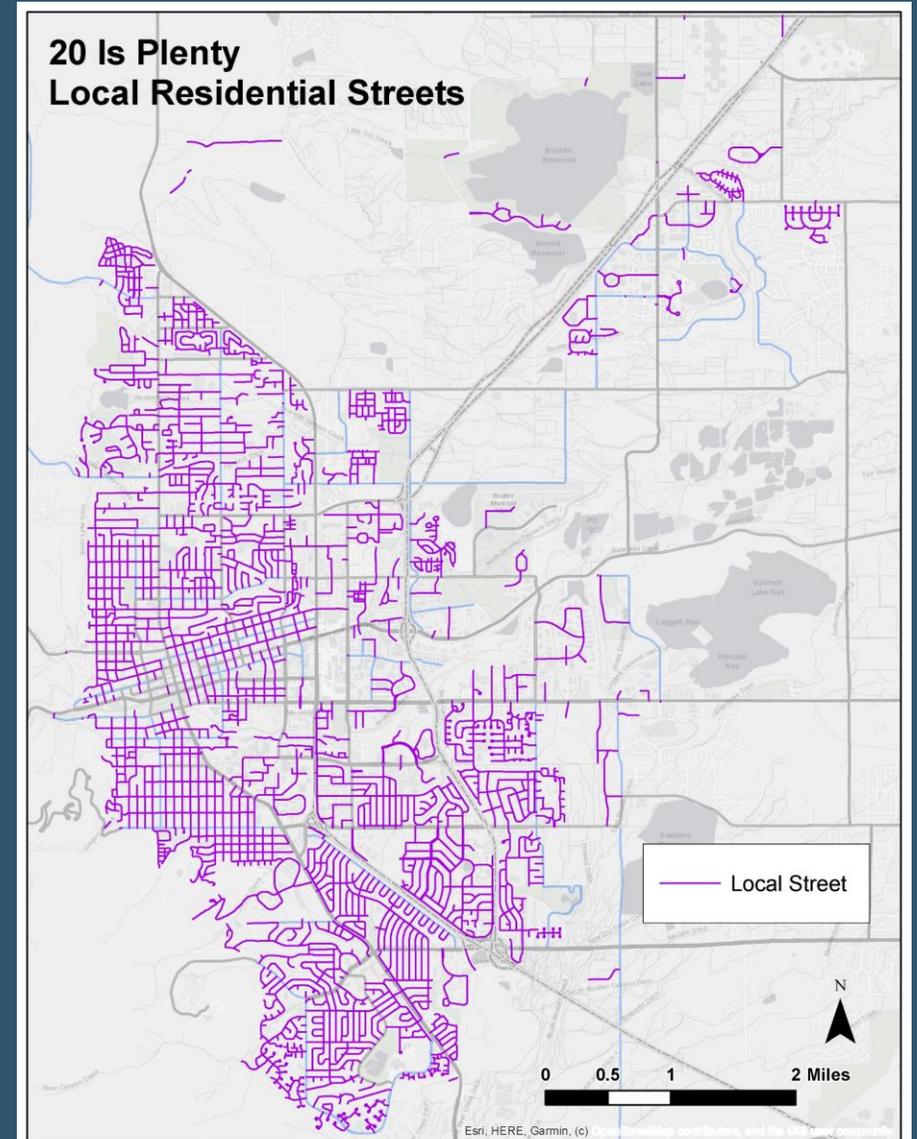


2019-2021 Action Plan Success

Implemented

20 Is Plenty

20 mph residential street
speed limit



2019-2021 Action Plan Success



Advanced Vision Zero improvements, like separated bicycle lanes, with planned annual paving through the pavement management mobility enhancements program:

- Table Mesa Drive
- Lehigh Street
- Pine Street
- Folsom Street
- 17th Street

2019-2021 Action Plan Success

Won **\$4.8M**

In grant funding through the Highway Safety Improvement Program, Safe Routes to School, and other regional, state, and federal sources

- Mesa Elementary Safe Routes to School improvements
- Pedestrian crossings
- 47th Street sidewalks
- New traffic lights
- Speed limit setting
- Other street design upgrades

How We Developed the 2023-2027 Plan

We developed the Vision Zero Action Plan by incorporating:

 Successes and lessons learned from the 2019-2021 Vision Zero Action Plan



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 specific countermeasures at high crash locations (peds, bikes, vehicles)		Ongoing	Transportation, PD	% of intersections addressed on an annual basis Target: 45 intersections with specific mitigation identified for implementation
2. Continue to pursue federal funding for and construct Highway Safety Improvement Program projects		Ongoing	Transportation	# of projects funded and completed Target: 3 projects per funding cycle
3. Proactively implement new signal timing practices 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 Target: 50 intersections identified for changes in left turn phasing, 20 intersections identified for pedestrian head-start/leading pedestrian interval (LPI)
4. Always employ proven effective, safe, and innovative intersection and corridor designs 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 pedestrian, bicyclist, and driver safety education outreach on types of severe injury crashes through existing and future multimedia campaigns and include topics on dangerous effects of speeding, impaired, and distracted travel		Ongoing	Transportation	# of people reached through outreach events and social media engagement on an annual basis
6. Update the city's Design and Construction Standards and Pedestrian Crossing Treatment Guidelines to reflect best practices to improve safety		2019-20	Transportation, PD	Revised standards and guidelines
7. Proactively install green pavement markings in advance and through select intersections to improve bicycle safety		Ongoing	Transportation	# of intersections mitigated on an annual basis
8. Install signing and markings 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 >](#)

How We Developed the 2023-2027 Plan

We developed the Vision Zero Action Plan by incorporating:

-  The city's 2022 Safe Streets Report, which analyzed crash data and identified crash trends



How We Developed the 2023-2027 Plan

We developed the Vision Zero Action Plan by incorporating:

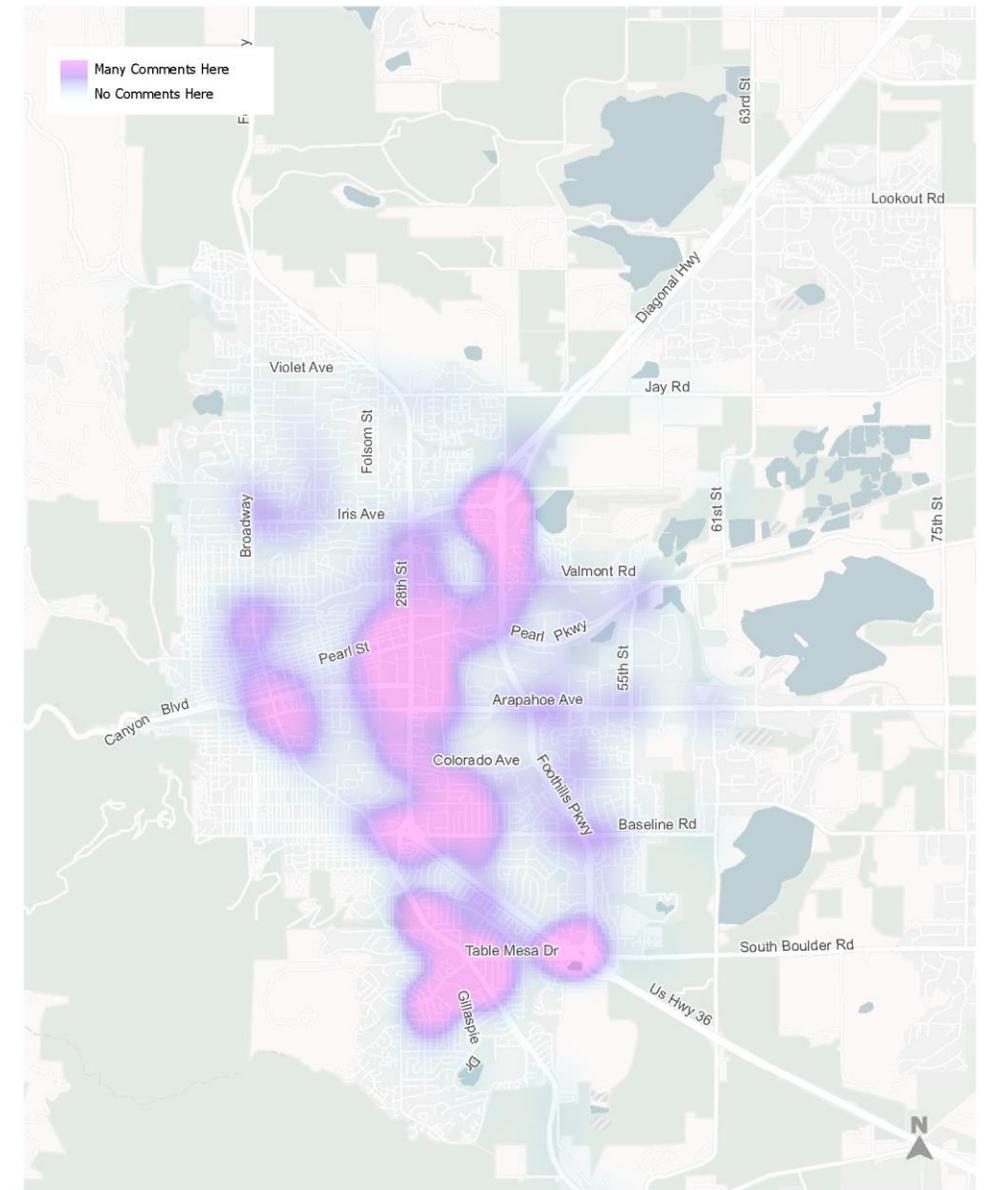


Phase 1 community engagement in summer and fall of 2022

- Virtual public meeting
- BeHeardBoulder survey and Web map
- English and Spanish language options
- Meetings with Community Cycles, the Center for People with Disabilities, and Community Connectors-in-Residence
- Participated in Spanish language Resource Fair at San Lazaro Park Properties

Boulder Vision Zero Action Plan

Density of Be Heard Boulder Comments



Phase 1 Community Engagement

700 surveys and Web map comments provided through BeHeardBoulder



37% of respondents had either been or knew someone who had been seriously injured or killed in a traffic crash



The **top 4 traffic safety concerns** among respondents: distracted driving, drivers not yielding to pedestrians or bicyclists, speeding, and drivers and bicyclists not sharing the road



66% of respondents stated that traffic safety affects whether they walk, bike, take transit, or drive



The **top corridors that respondents were**

concerned about: Broadway/South Broadway, Table Mesa Drive/South Boulder Road, Arapahoe Avenue, and 28th Street

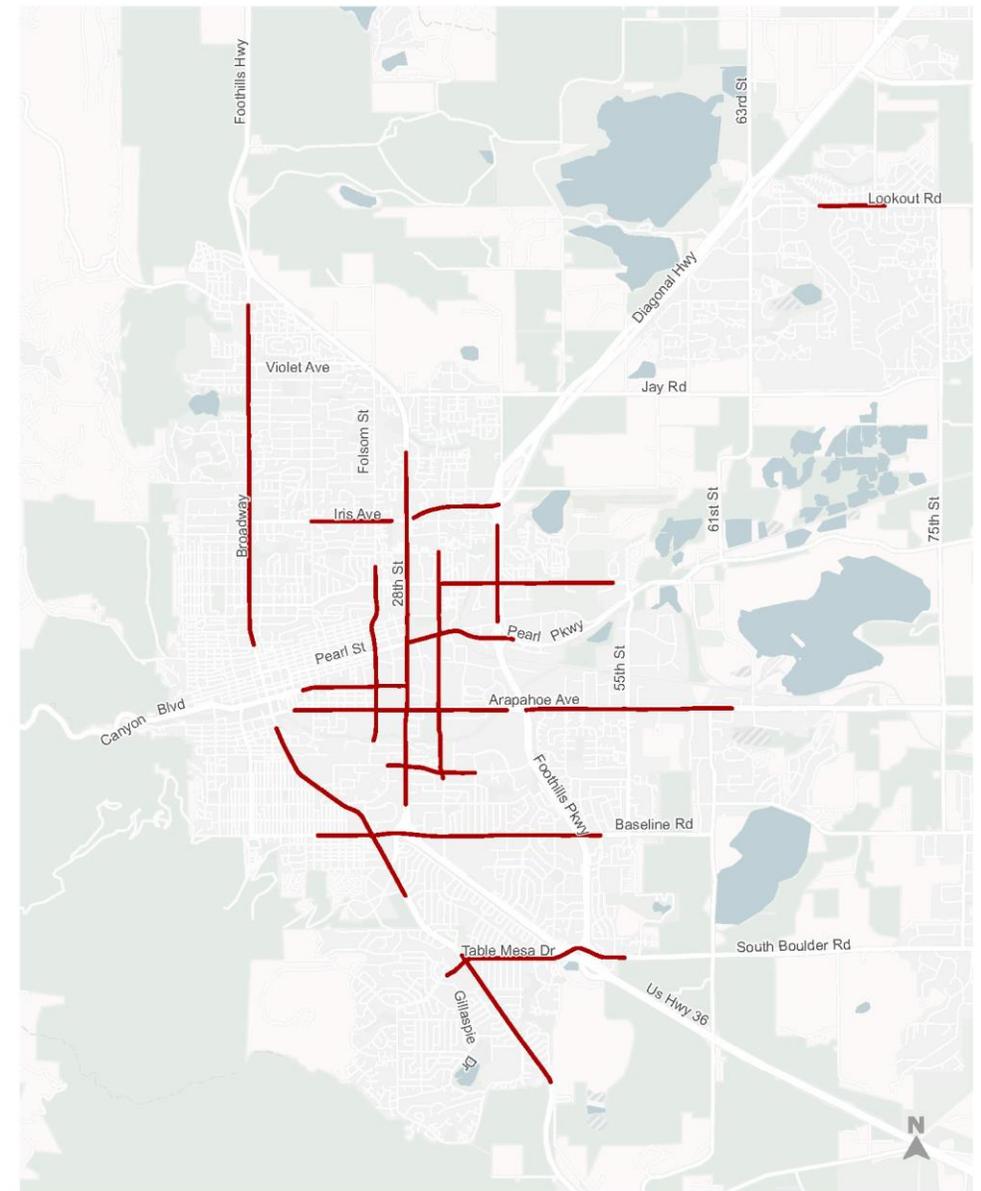
How We Developed the 2023-2027 Plan

We developed the Vision Zero Action Plan by incorporating:

 New analysis to identify locations with the most risk for crashes, the High Risk Network, and proactive ways of eliminating crashes

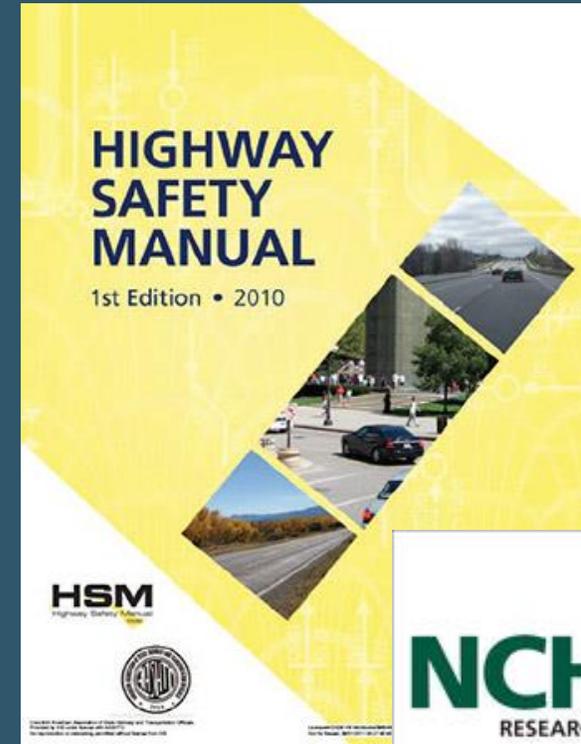
Boulder Vision Zero Action Plan

High Risk Network (HRN)



Systemic Safety Analysis

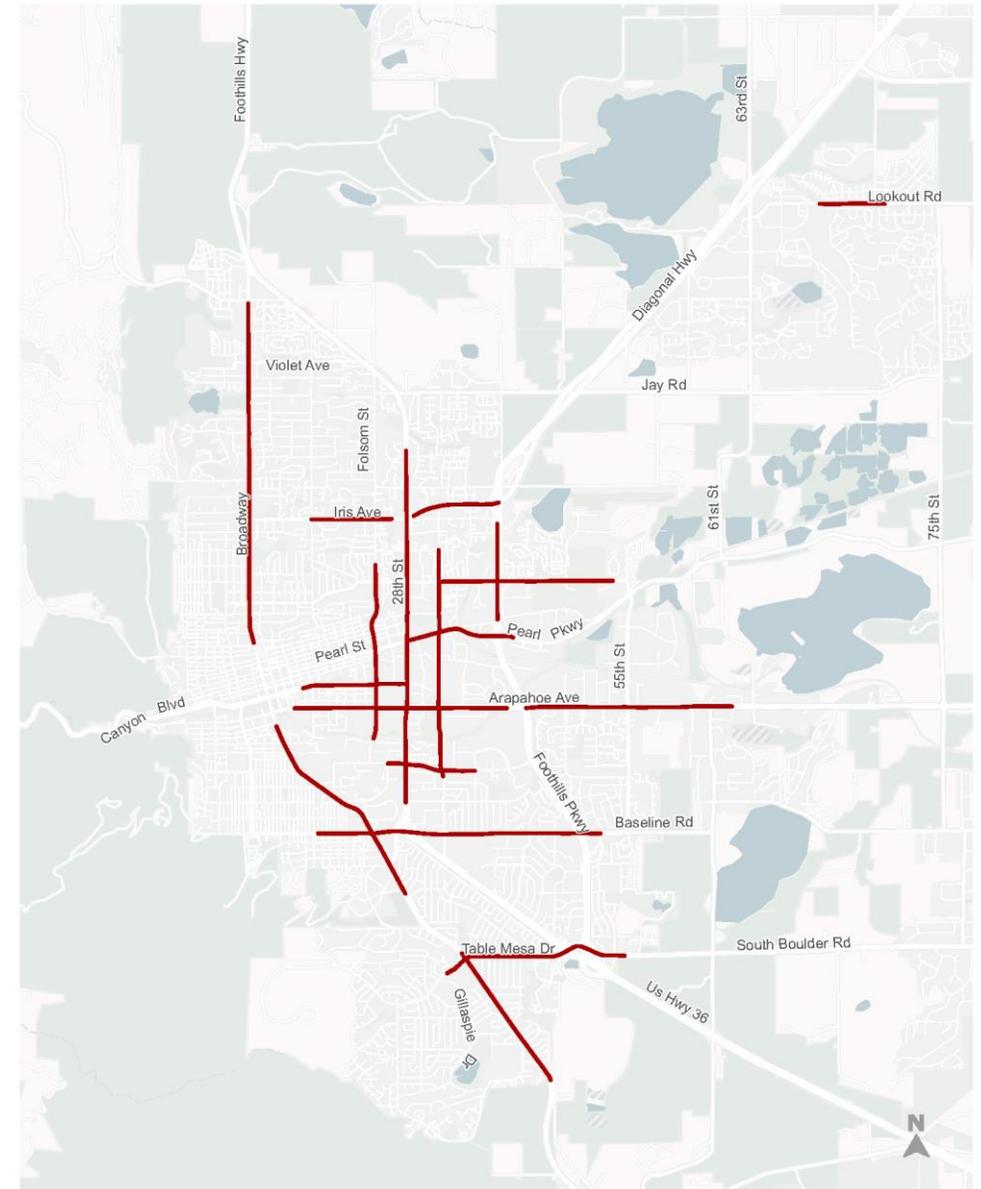
- Analyzing historic crash data alone leads to managing risk only at certain locations
- Systemic Safety evaluates risk across the entire roadway system
- This approach shifts from reactive to proactive crash reduction strategies



Top 6 Risk Factors

- Business and mixed-use zoning districts
- Higher traffic volume streets
- Signalized intersections
- Busier intersections without a traffic light
- Streets with a multi-use path
- Higher speed streets

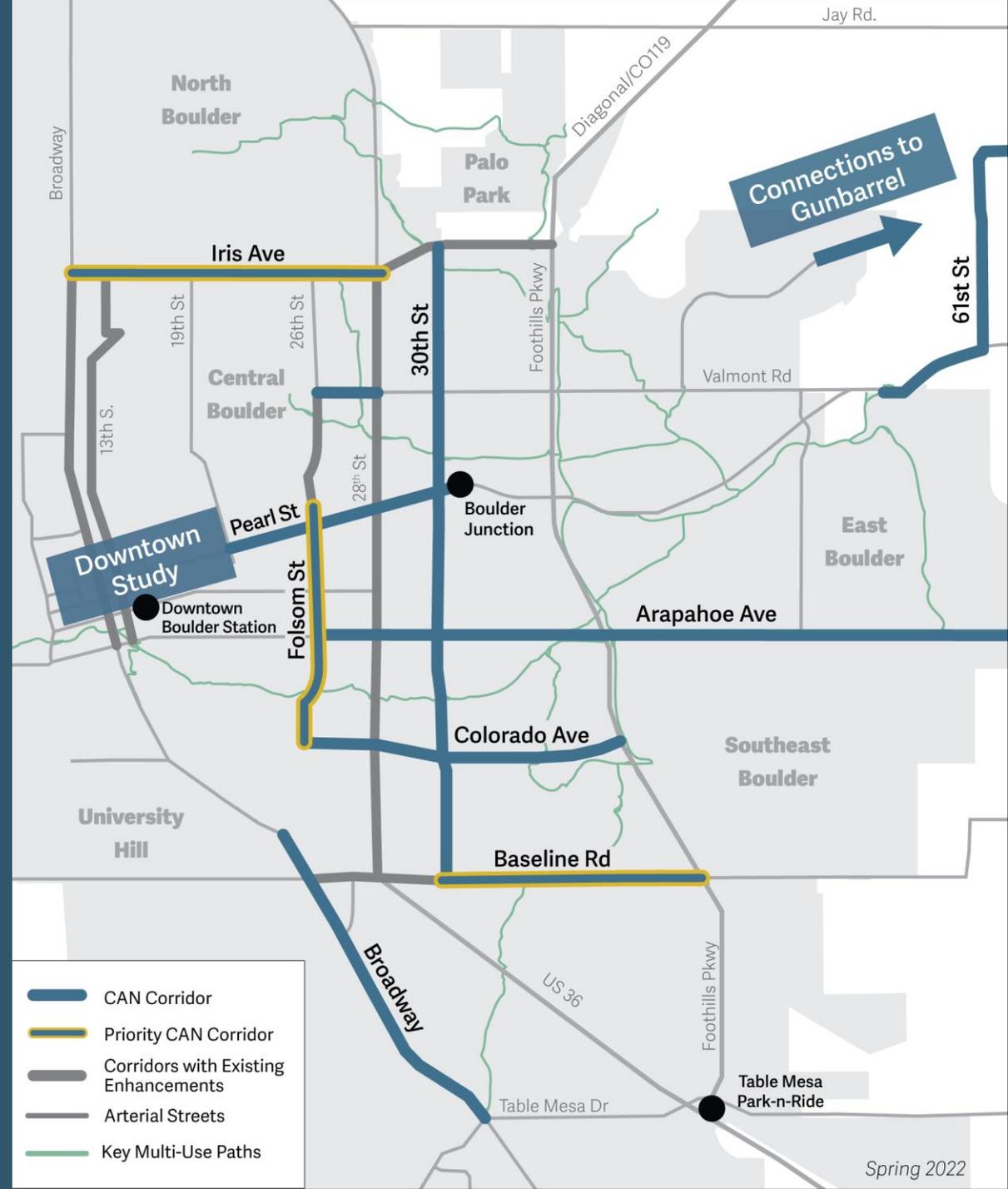
High Risk Network (HRN)



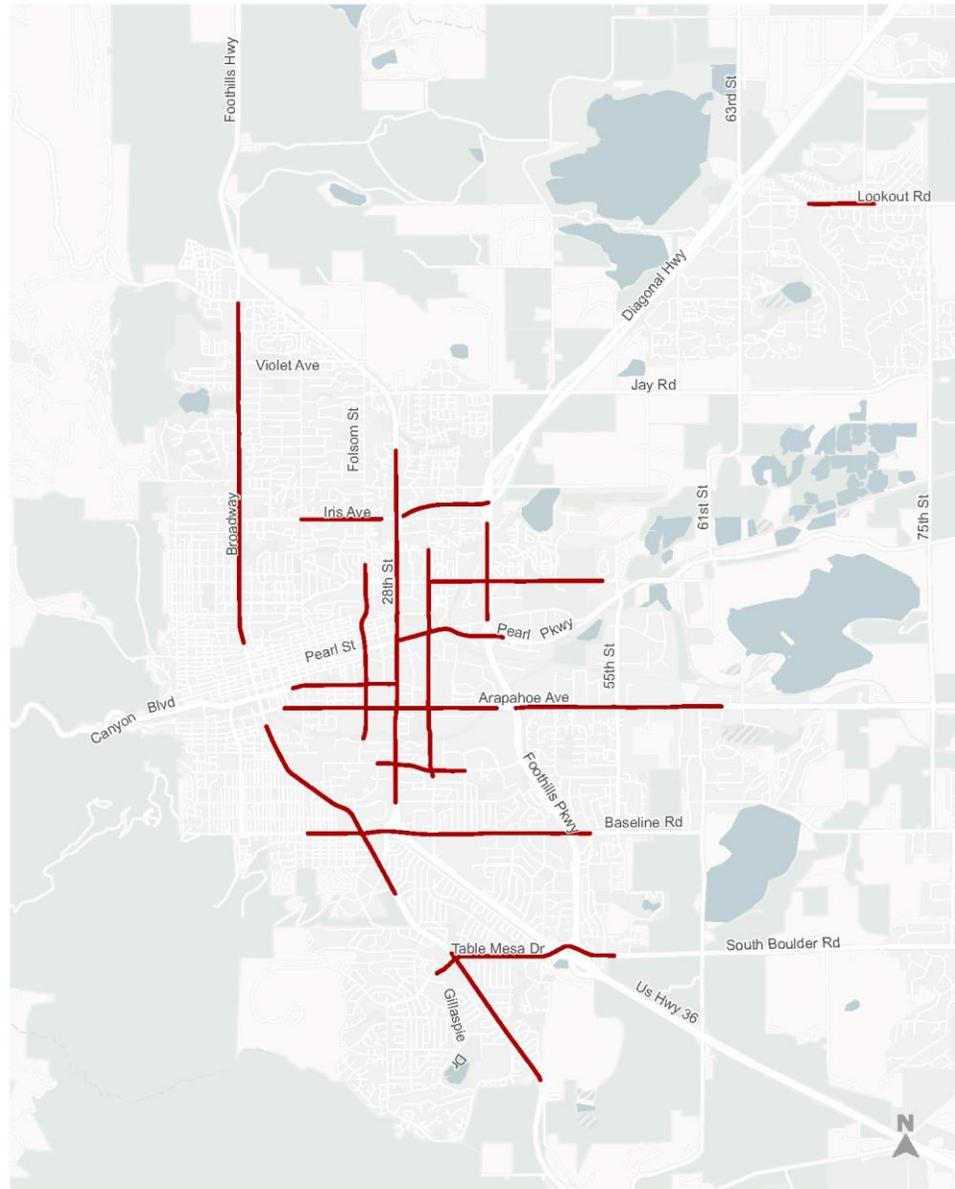
Core Arterial Network Corridors

Elevating work on a connected system of corridors to meet Boulder's transportation goals:

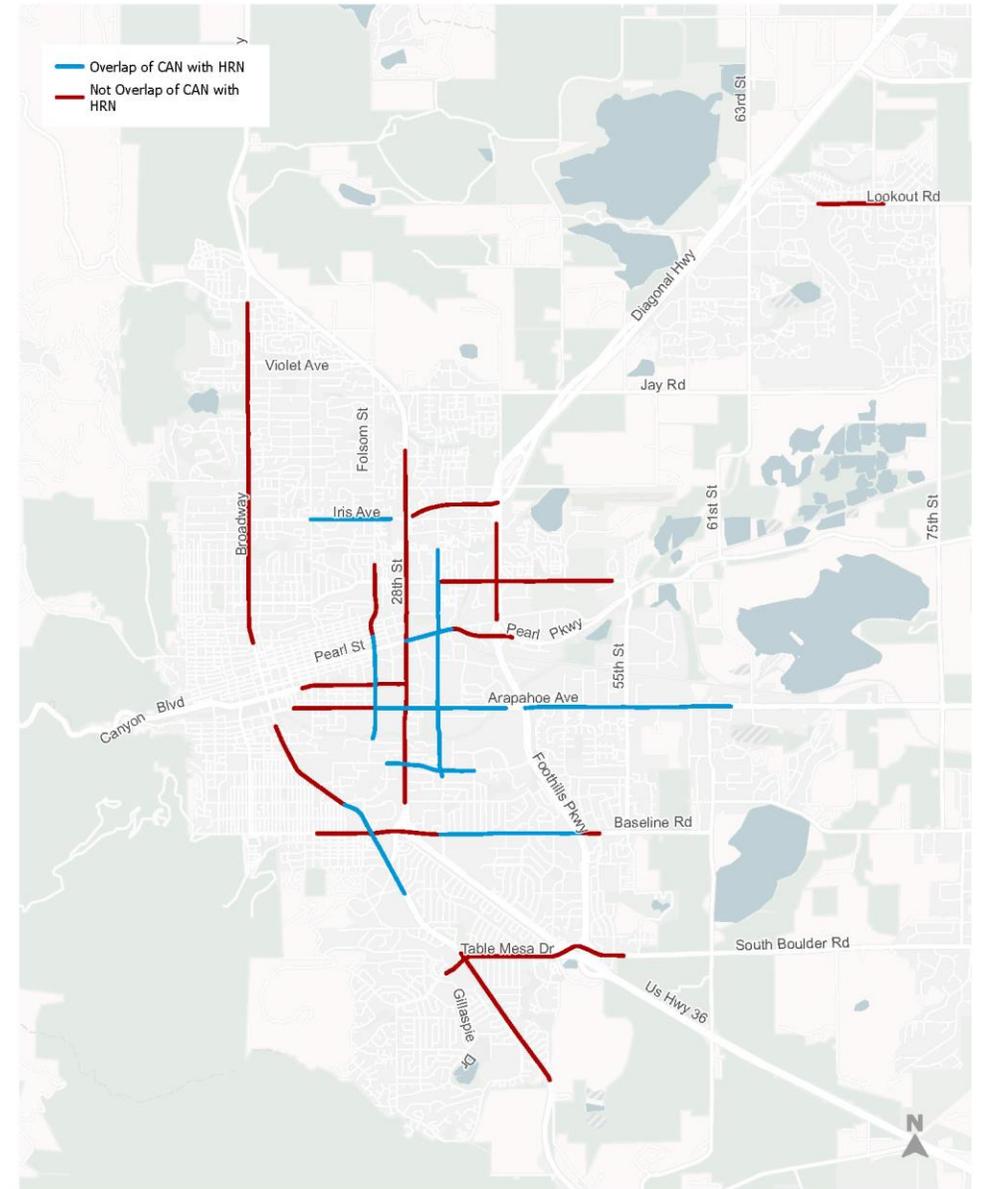
- Protected bike lanes, intersection enhancements, pedestrian facilities, transit facility upgrades
- Reduce potential for severe crashes
- Make travel more comfortable and convenient



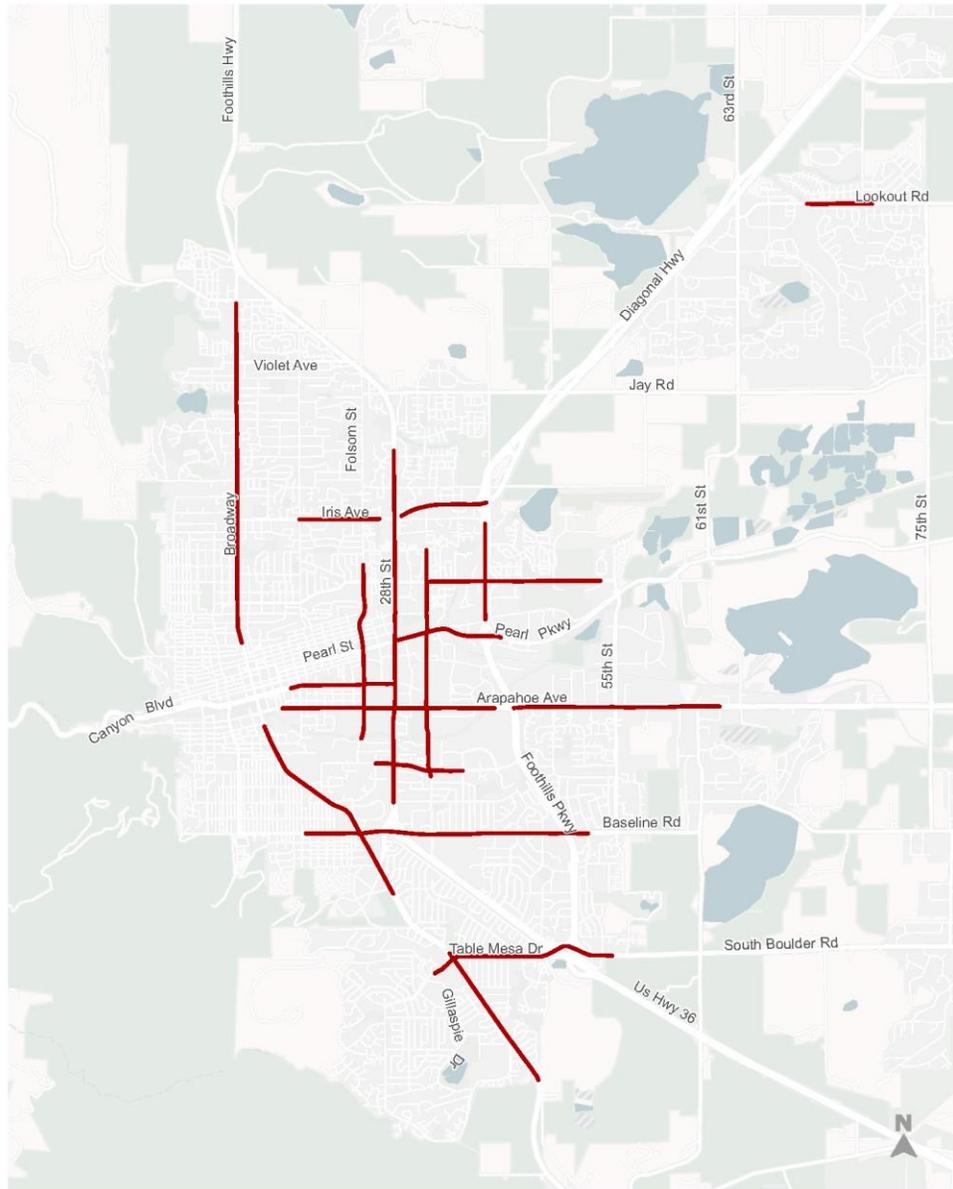
High Risk Network (HRN)



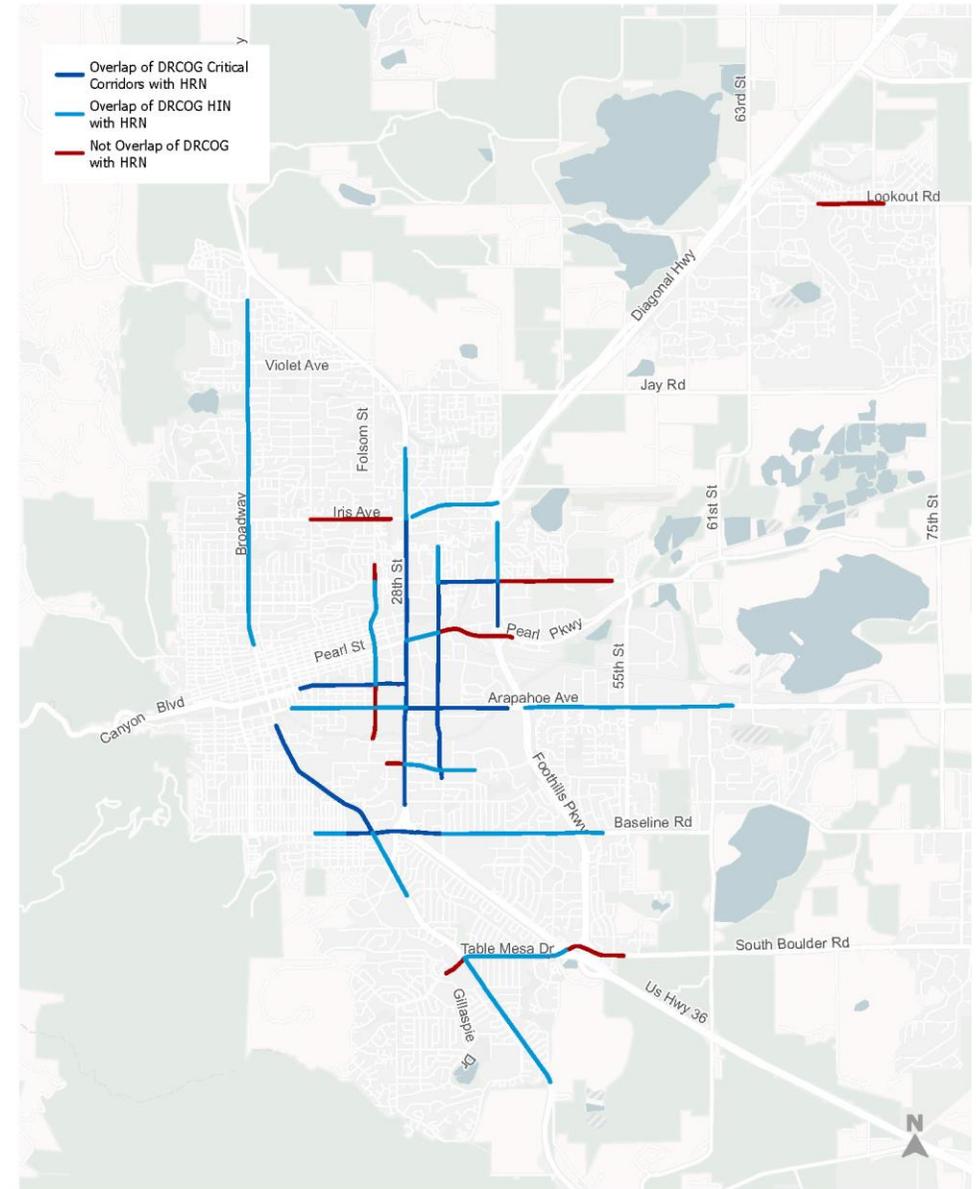
Overlay of the CAN and HRN by Roadway Segment



High Risk Network (HRN)



Overlay of the DRCOG HIN and Critical Corridors with HRN



Project Identification

Along each of the High Risk Network corridors, we identified possible solutions based on:

- Engineer's review of crash data (5 years)
- Highway Safety Manual analysis
- BeHeardBoulder feedback

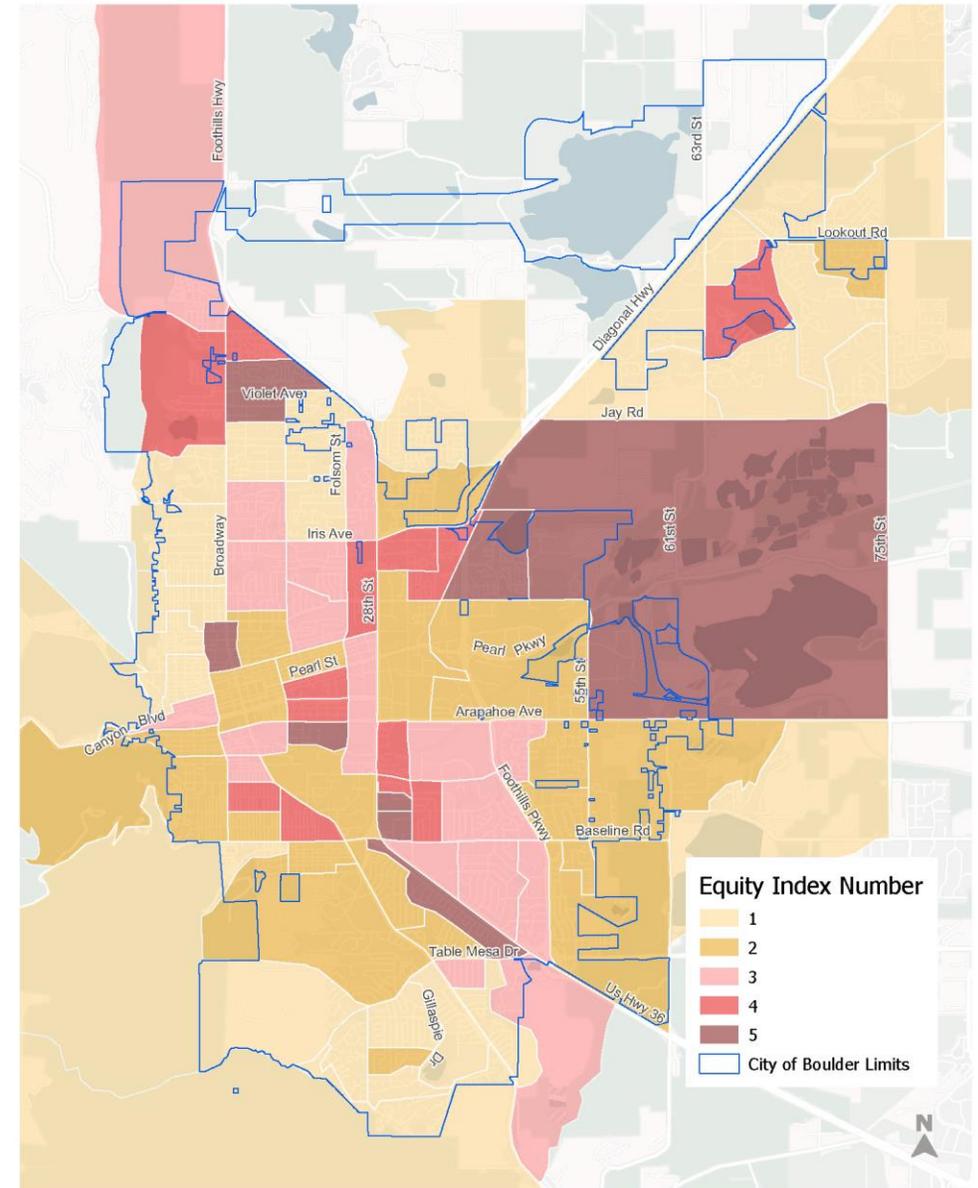
Arapahoe Avenue & 17th Street		HSIP Cat: Signal					
Code	Countermeasure	Unit Cost	Quantity	Project Total	CMF	Benefits	CBR
3	Add retroreflective signal backplates	\$ 6,000.00	1	\$ 6,000.00	0.85	\$ 965,100.00	24
26	Increase intersection sight distance (routine maintenance)	\$ 1.00	1	\$ 1.00	0.85	\$ 965,100.00	144,765
28	Install Leading Pedestrian Interval	\$ 1.00	4	\$ 4.00	0.9	\$ 965,100.00	24,128
8	Change from perm.-prot. to prot.-only on minor approach (operations only)	\$ 1.00	2	\$ 2.00	0.99	\$ 965,100.00	4,826
17	Prohibit right-turn on red	\$ 1,000.00	1	\$ 1,000.00	0.99	\$ 965,100.00	10
29	Install green pavement markings	\$ 5,000.00	1	\$ 5,000.00	0.9	\$ 965,100.00	19
Arapahoe Avenue & 19th Street		HSIP Cat: Signal					
Code	Countermeasure	Unit Cost	Quantity	Project Total	CMF	Benefits	CBR
3	Add retroreflective signal backplates	\$ 6,000.00	1	\$ 6,000.00	0.85	\$ 2,133,000.00	53
30	Upgrade traffic signal heads to 12"	\$ 1,000.00	12	\$ 12,000.00	0.97	\$ 2,133,000.00	5
28	Install Leading Pedestrian Interval	\$ 1.00	4	\$ 4.00	0.9	\$ 2,133,000.00	53,325
7	Change from perm.-prot. to prot.-only on major approach (operations only)	\$ 1.00	2	\$ 2.00	0.58	\$ 2,133,000.00	447,930
Arapahoe Avenue between Folsom Street and Safeway Shopping Center		HSIP Cat: Roadway					
Code	Countermeasure	Unit Cost	Quantity	Project Total	CMF	Benefits	CBR
9	Bend-out shared use path crossing	\$ 20,000.00	1	\$ 20,000.00	0.55	\$ 921,600.00	21
Arapahoe Avenue & Shopping Access		HSIP Cat: Signal					
Code	Countermeasure	Unit Cost	Quantity	Project Total	CMF	Benefits	CBR
7	Change from perm.-prot. to prot.-only on major approach (operations only)	\$ 1.00	2	\$ 2.00	0.58	\$ 2,247,900.00	472,059
17	Prohibit right-turn on red	\$ 1,000.00	2	\$ 2,000.00	0.99	\$ 2,247,900.00	11

How We Developed the 2023-2027 Plan

Racial Equity Index

- % of the population that are people of color
- % of the population that are Hispanic/Latino
- Median income
- % of the population below the poverty line
- % of the population enrolled in Housing & Human Services financial aid programs

Boulder Equity Index



2023-27 Vision Zero Action Plan

Four categories of actions:



1. Implement **engineering solutions** like traffic lights and intersection redesigns



2. **Pair** engineering solutions with **education and**



enforcement



3. Improve the city's **internal Vision Zero practices**



4. Improve Vision Zero **data and transparency**

1. Implement engineering solutions

Key actions

- Implement low-cost solutions on the High Risk Network
- Implement higher cost solutions on the High Risk Network
- Implement corridor-wide solutions on Core Arterial Network corridors
- Upgrade practices/guidelines/policies for pedestrian crossings, speed limit setting, and traffic light operations
- Experiment with and evaluate promising solutions
- Pursue and attract regional, state, and federal funding

Common Crash Types & Engineering Solutions

- Running red lights
- Left-turn crashes
- Right-turn slip lanes
- Right-turn on red crashes
- Right-turn crashes
- Crashes at pedestrian crossings

Running Red Lights

Low-cost solutions:

Review and adjust timings so they are “in sync” with nearby lights

Example location:

28th Street & Pearl Street

Higher cost solutions:

- Traffic light replacement to add more signal heads, backplates, or heads in more visible locations
- Red light cameras



Left-Turn Crashes

Low-cost solutions:

Protect left-turns (left-turn on green arrow only) where traffic light equipment allows

Higher cost solutions:

Protect left-turns where traffic light equipment upgrades are needed

Example location:

Baseline Road & Mohawk Drive

Proactive approaches:

- Protect left-turns when there are many pedestrians or bicyclists
- Apply customized criteria on vertical bike separation corridors



Right-Turn Slip Lanes

Low-cost solutions:

Consistent signing and markings

Evaluation of higher cost solutions:

- Signalizing right-turn slip lanes
- Changing geometry of right-turn slip lanes
- Removing right-turn slip lanes

Example location:

Broadway &
University Avenue
(northbound)



Proactive approach:

Prioritize locations with high vehicle right-turn volumes and high pedestrian/bicyclist volumes

Right-Turn on Red Crashes

Low-cost solutions:

- “No right-turn on Red” signs
- Couple right-turn on red restrictions with enforcement for compliance

Higher cost solutions:

- Protect right-turns (right-turn on green arrow only) with traffic light equipment upgrades
- Blank-out signs for dynamic “No right-turn on Red” prohibitions

Example location:
Broadway &
University Avenue
(eastbound)



Proactive approach:

Prioritize locations with high vehicle right-turn volumes and high pedestrian/bicyclist volumes on the intersecting street

Right-Turn Crashes

Low-cost solutions:

- Leading Pedestrian Intervals

Higher cost solutions:

- Protect right-turns (right-turn on green arrow) with traffic light equipment upgrades
- Protected intersections (on vertical bike separation corridors)

Example location:
Arapahoe Avenue &
17th Street



Proactive approach:

Prioritize locations with high conflicting volumes of right-turning vehicles and pedestrians/bicyclists

Crashes at Pedestrian Crossings

Low-cost solutions:

- Pedestrian recall (automatic “Walk” signal)
- Leading Pedestrian Intervals

Higher cost solutions:

- Update city’s *Pedestrian Crossing Treatment Installation Guidelines*
- Implementation of traffic lights, Rectangular Rapid Flashing Beacons (at new crossings and upgrading existing crossings)

Example location:

Existing RRFB on
Baseline Road at
Canyon Creek Road



Proactive approach:

Upgrade existing crossings
based on new *Pedestrian
Crossing Treatment
Installation Guidelines*

2. Pair engineering solutions with education and enforcement

Key actions

- Regular collaboration between the Police Department and Transportation & Mobility
- Deploy photo radar van
- Expand the use of red light cameras
- Support legislation to enable expanded use of photo radar van
- Implement campaigns focusing on behaviors of concern
- Combine engineering solutions with public information

3. Improve the city's internal Vision Zero practices

Key actions

- For all capital projects, designate a Vision Zero representative
- Continued participation in the national Vision Zero Cities Network

4. Improve Vision Zero data and transparency

Key actions

- Maintain and update the crash dashboard
- Continue to refine and improve accuracy and utility of crash documentation

Proposed Next Steps

- Complete prioritization (benefit-cost, Equity Index, and BeHeardBoulder feedback) and project lists
 - Present to TAB in March 2023
 - Present to City Council in April 2023
 - Get involved by...
 - Taking our questionnaire
 - Signing up for office hours to provide feedback
- bouldercolorado.gov/projects/vision-zero-action-plan

Questions & Answers

Vision Zero Action Plan Website

<https://bouldercolorado.gov/projects/vision-zero-action-plan>

Staff Contact

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Boulder Vision Zero
Phase 2 Outreach Summary

One-Page Plan Summary

CITY of BOULDER VISION ZERO ACTION PLAN

What is Vision Zero?

Vision Zero is the City of Boulder's goal to eliminate all severe crashes (those that result in a fatality or serious injury).

What is the Vision Zero Action Plan?

The Vision Zero Action Plan identifies a prioritized list of actions that the City of Boulder will take between 2023 and 2027 to reduce severe crashes. The Plan builds on the successes of the last Vision Zero Action Plan (2019-2021), which include:

- Changes at 46 intersections including traffic signal timing that prioritizes pedestrians, left-turn arrows, and signing/markings
- Implemented "20 Is Plenty" speed limits on all residential streets
- Advanced a program to incorporate improvements like protected bicycle lanes with annual pavement work
- Won almost \$5 million in grant funding from state and federal agencies that resulted in Safe Routes to School improvements, pedestrian crossings, sidewalks, new traffic signals, speed limit setting, and other street design upgrades
- Increased enforcement by installing red light cameras at three intersections to address drivers running red lights

How We Developed the Vision Zero Action Plan

The city developed the 2023-2027 Vision Zero Action Plan by incorporating:

- Successes and lessons learned from the prior plan to make the new Vision Zero Action Plan more specific and actionable
- The city's 2022 Safe Streets Report, which analyzed crash data and trends
- Community engagement in summer and fall 2022, including a virtual open house, online survey and web map that received over 700 unique responses
- New analysis to proactively identify locations with the most risk for crashes
- Prioritization of a project list that accounts for project safety benefit, racial equity, and community engagement feedback

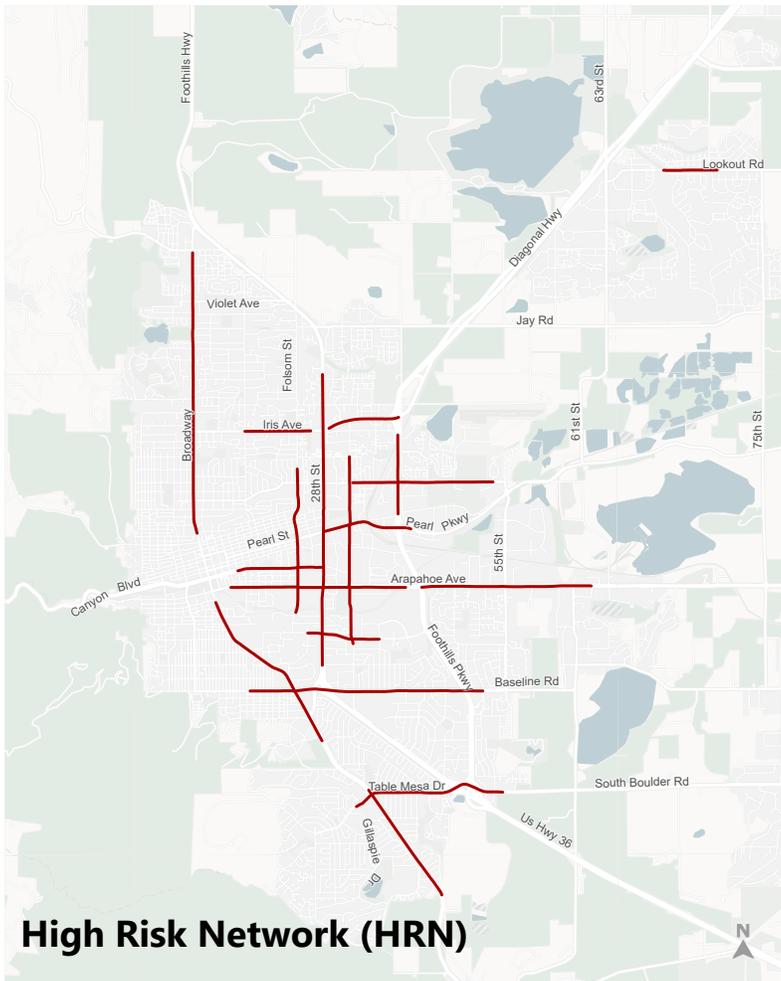
<https://www.beheardboulder.org/vision-zero-action-plan>



CITY of BOULDER VISION ZERO ACTION PLAN

Vision Zero Action Plan Completion

The city will finalize recommendations and project prioritization in February 2023, and present them at a public meeting on February 7, to the Transportation Advisory Board on March 13 and to City Council on April 6.



Vision Zero Action Plan Recommendations

The city will implement Vision Zero in four ways over the next five years:

1. Changing how a street is built or how it operates (traffic lights, vehicle speeds, etc.)

- Focusing improvements on the 18 Boulder corridors with the most risk for crashes, the High Risk Network (map)
- Make changes to intersections and other locations where the most common crash types occur: red light running, left-turn crashes, crashes at right-turn slip lanes, right-turn on red crashes, other right-turn crashes, and crashes at pedestrian crossings
- Coordinating Vision Zero projects with Boulder's Core Arterial Network program, which improves connectivity and safety on key high-traffic routes
- Pursuing regional, state and federal funding
- Updating design practices, guidelines and policies

2. Pairing changes to streets with education and enforcement

- Regular collaboration with the Boulder Police Department regarding enforcement of behaviors of concern (speeding, traveling under the influence of alcohol or drugs, and distracted driving)
- Deploying the photo radar van, and supporting legislation to enable its expanded use
- Expanding the use of red light cameras
- Implementing campaigns focusing on behaviors of concern

3. Improving the city's internal Vision Zero practices

- Ensuring Vision Zero strategies are included in all capital projects
- Participating in the national Vision Zero Cities Network and other regional Vision Zero collaboration

4. Improving Vision Zero data and transparency

- Maintaining and updating the crash dashboard
- Refining and improving the accuracy and utility of crash documentation