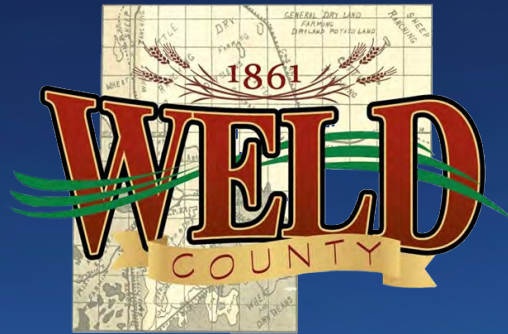




Weld County Safety Action Plan

Adopted October 20th, 2025



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Introduction

In 2023, Weld County, Colorado, received funding through the federal Safe Streets and Roads for All (SS4A) grant program to develop a Comprehensive Safety Action Plan. The Weld County Safety Action Plan (SAP) is centered around a thorough safety analysis, looking at existing conditions and historical trends to identify areas of systemic and specific safety needs. Engagement and collaboration with the residents of Weld County and key stakeholders, including the Safety Task Force (STF), will educate the public on safety efforts and seek public feedback that will help shape and inform the SAP.

This plan, which builds upon the efforts of the Weld County 2045 Transportation Plan, will align with the principles of the U.S. Department of Transportation’s Safe System Approach. The SAP will lay out a framework of actionable, measurable, and innovative strategies that emphasize design enhancements or improvements, including a method of measuring progress over time, to enhance safety for all roadway users and help reduce the number of fatal and serious injury crashes across the county’s transportation system.

Commitment to Safety



OFFICE OF BOARD OF COMMISSIONERS
PHONE: 970-336-7204
1150 O STREET
P.O. BOX 758
GREELEY, COLORADO 80632

Dear Weld County Residents,

The board of commissioners is excited to introduce Weld County’s Safety Action Plan. Developed over the past year, this plan is based on community input and data-driven analysis. It offers guidance, strategies and policies on how to make our transportation system – which stretches more than 2,800 miles – safer for all road users. We firmly believe that every life is valuable, and improvements and enhancements to increase safety and efficiency for the traveling public is a top priority.

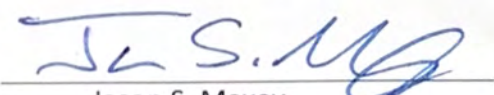
The intent of the Safety Action Plan is to identify problem areas on roadways throughout Weld County’s transportation system as well as the contributing factors that lead to fatal and serious injury traffic crashes. This plan is intended to serve as a guiding document to reduce those risks, informing decision-makers as the county balances multiple competing needs and objectives with limited funds. Having as much information possible to make informed decisions helps us allocate taxpayer resources – and pursue transportation grants – to have the greatest, most beneficial impact.

Everyone in Weld County has a role to play in making our roads safer. Whether you’re an expert in transportation or simply care about your community, your contribution counts. That’s why we’re proud that this plan is informed with public feedback, something gathered online and in person, to reflect the needs and desires of Weld County residents.

We thank you for your participation in this process and encourage you to read through this plan as we continue our effort to make Weld County’s transportation system the best it can be, reaffirming our commitment to safety and efficiency for all who travel throughout Weld County.



Scott K. James, Pro-Tem



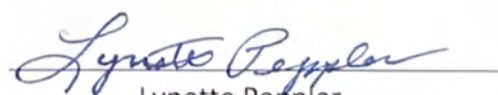
Jason S. Maxey



Perry L. Buck, Chair



Kevin D. Ross



Lynette Peppier



Resolution



Approve Adoption of Safety Action Plan for Unincorporated Weld County and Authorize Department of Public Works to Submit Electronically

Whereas, the Board of County Commissioners of Weld County, Colorado, pursuant to Colorado statute and the Weld County Home Rule Charter, is vested with the authority of administering the affairs of Weld County, Colorado, and

Whereas, the U.S. Department of Transportation (USDOT) launched the “Safe Streets for All (SS4A)” Program to support local, regional, and Tribal initiatives to prevent roadway fatalities and serious injuries, and

Whereas, on May 13, 2024, the Board of Weld Commissioners approved Resolution #2024-1169, Grant Agreement for Safe Streets for All (SS4A) Planning Grant Program, which was amended on November 4, 2024, by Resolution #2024-2921, between the Department of Public Works, and the U.S. Department of Transportation and Federal Highway Administration, and

Whereas, on September 4, 2024, the Board of Weld Commissioners approved Bid #B2400084, and awarded funds to WSP USA, Inc., for Professional Engineering and Consultant Services, in coordination with planning and engineering professionals, local stakeholders, and members of the public, to develop a complete data-driven, community-informed Safety Action Plan, and

Whereas, the Safety Action Plan outlines specific strategies, projects, and policy recommendations to improve roadway safety for all users, including pedestrians, cyclists, and motorists, and

Whereas, adoption of the Safety Action Plan demonstrates Weld County’s commitment to improve public safety and support eligibility for future demonstration project and implementation funding through the SS4A Program and other funding sources, and

Whereas, the Safety Action Plan is aligned with the Weld County 2045 Transportation Plan and is in support of Colorado’s Vision Zero, the Colorado Strategic Highway Safety Plan, and other statewide efforts to reduce fatalities and serious injuries on Colorado’s roadways, with the ultimate goal of reducing 25% of fatal and serious injury crashes per million miles traveled by 2045, and

Whereas, the Board has been presented with a Safety Action Plan for Unincorporated Weld County, and through the Board of County Commissioners of Weld County, on behalf of the Department of Public Works, with further terms and conditions being as stated in said plan, and

Whereas, after review, the Board deems it advisable to approve and adopt said plan, a copy of which is attached hereto and incorporated herein by reference, and finds that it is in the best interest of public health, safety, and welfare.

Adoption of Safety Action Plan for Unincorporated Weld County - Page 2

Now, therefore, be it resolved by the Board of County Commissioners of Weld County, Colorado, that the Safety Action Plan for Unincorporated Weld County, by and through the Board of County Commissioners of Weld County, on behalf of the Department of Public Works, be, and hereby is, approved and adopted.

Be it further resolved by the Board that Curtis Hall, Director of the Department of Public Works, or his designee, is authorized to electronically submit the adopted Safety Action Plan for Unincorporated Weld County to the U.S. Department of Transportation (USDOT) in fulfillment of SS4A grant requirements.

The Board of County Commissioners of Weld County, Colorado, approved the above and foregoing Resolution, on motion duly made and seconded, by the following vote on the 20th day of October, A.D., 2025:

Perry L. Buck, Chair: Aye
Scott K. James, Pro-Tem: Aye
Jason S. Maxey: Aye
Lynette Peppler: Aye
Kevin D. Ross: Aye

Approved as to Form:
Bruce Barker, County Attorney

Attest:
Esther E. Gesick, Clerk to the Board



2025-2844
EG0083



Acknowledgments

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Pro-Tem, District 2
(Seated-Left)

Lynette Peppler,
District 3
(Standing-Left)

Perry Buck,
Chair, At-Large
(Seated-Center)

Jason Maxey,
District 1
(Standing-Right)

Kevin Ross,
At-Large
(Seated-Right)



Executive Summary

Weld County, one of Colorado’s original 17 counties, is the largest county in northeastern Colorado. Weld County has over 5,800 miles of roadway (of which the county maintains a little over 2,800 miles) providing access to 4,017 square miles of land. Weld County is a hub for agriculture and home to the University of Northern Colorado, located in its county seat, Greeley. Weld County’s Safety Action Plan aims to create safer speeds, safer roads, and safer people for everyone who works, studies, and plays in Weld County.

Safer Speeds: Reducing speeds across Weld County is a crucial factor, as it is often the deciding factor that separates fatal and serious injury crashes from minor injury or property damage. The plan includes several strategies to reduce speeds, such as traffic calming devices, lane reconfiguration, and speed management strategies.

Safer Roads: These strategies are intended to make Weld County’s roadways safer and more accessible to people of all ages and abilities. These strategies include enhancing delineation at the center and edges of the roadway and other measures that improve infrastructure on and along the roadway.

Safer People: The plan includes several strategies to make Weld County safer for drivers, motorcyclists, pedestrians, cyclists, and other road users. These strategies include traffic safety education, enhanced police enforcement, and additional outreach efforts.

The goal of the Weld County Safety Action Plan is to reduce fatal and serious injury crashes across the county’s roadway network, with a specific target of reducing such crashes on unincorporated Weld County roads by 25% per million vehicle miles traveled (MVMT) by 2045. Since Weld County only has authority over county-maintained facilities, it is recommended that the incorporated jurisdictions included in this plan establish their own targets aligned with the broader goal of reducing fatal and serious injury crashes.



Glossary

Term	Meaning		
ADT	Average Daily Traffic	LRSP	Local Road Safety Plan
BCR	Benefit-to-Cost Ratio	MOST	Motorcycle Operator Safety Training
BUILD	Better Utilizing Investments to leverage Development	MUT	Median U-Turns
CDC	Center for Disease Control and Prevention	MUTCD	Manual on Uniform Traffic Control Devices
CDOT	Colorado Department of Transportation	MPDG	Multimodal Project Discretionary Grant Opportunity
CHR&R	County Health Rankings and Roadmaps	MPH	Miles Per Hour
CIP	Capital Improvement Plan	MVMT	Million Vehicle Miles Traveled
CMAQ	Congestion Mitigation and Air Quality	NFRMPO	North Front Range Metropolitan Planning Organization
DCWS	Dynamic Curve Warning System	NHTSA	National Highway Traffic Safety Administration
DOLA	Department of Local Affairs	PCN	Positive Community Norms
DRCOG	Denver Regional Council of Governments	PHB	Pedestrian Hybrid Beacon
EADT	Entering Average Daily Traffic	RCUT	Reduced Collision U-Turns
FYA	Flashing Yellow Arrow	ROW	Right-of-Way
FHWA	Federal Highway Administration	RRFB	Rectangular Rapid Flashing Beacon
GOCO	Great Outdoors Colorado	RSA	Road Safety Audit
HII	High Injury Intersection	SAP	Safety Action Plan
HIN	High Injury Network	SMP	Speed Management Plan
HRN	High Risk Network	STBG	Surface Transportation Block Grant
HFST	High Friction Surface Treatment	STF	Safety Task Force
HSIP	Highway Safety Improvement Program	SRTS	Safe Routes to Schools
ICE	Intersection Control Evaluation	SS4A	Safe Streets and Roads for All
ICWS	Intersection Conflict Warning System	TAP	Transportation Alternatives Program
INFRA	Infrastructure for Rebuilding America	TMO	Transportation Management Organization
KSI	Killed or Seriously Injured	UFR TPR	Upper Front Range Transportation Planning Region
LPI	Leading Pedestrian Interval	VMT	Vehicle Miles Traveled





Why the Safe System Approach?

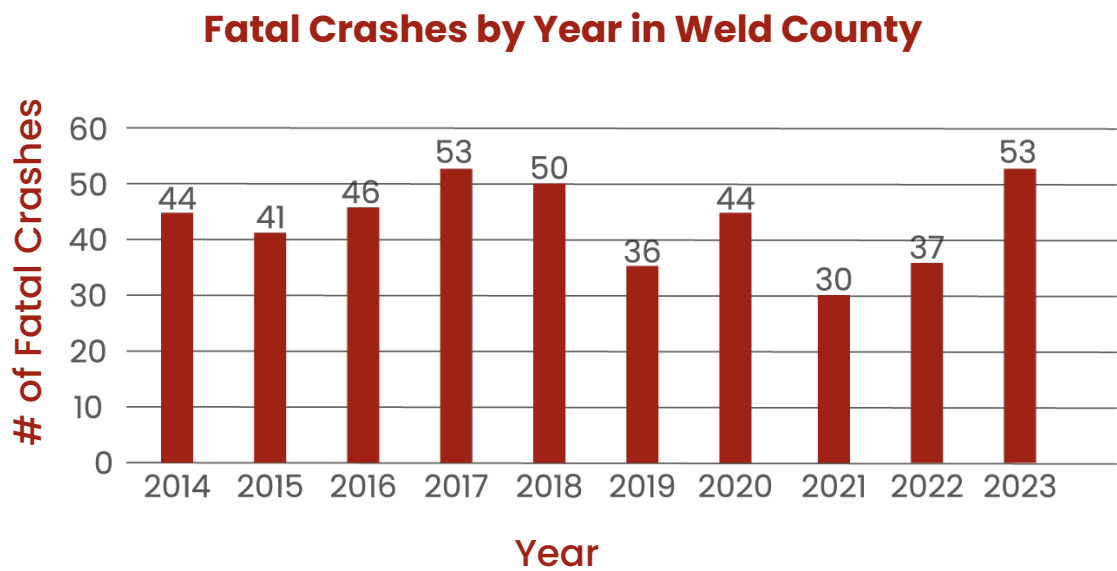
Between 2014 and 2023, Weld County experienced 434 fatal crashes, resulting in 561 lives lost. During this 10-year period, fatalities peaked in 2017 before beginning to decline; however, that trend has begun to reverse, with 2023 experiencing the same level of fatal crashes as six years prior.

Why the Safe System Approach?

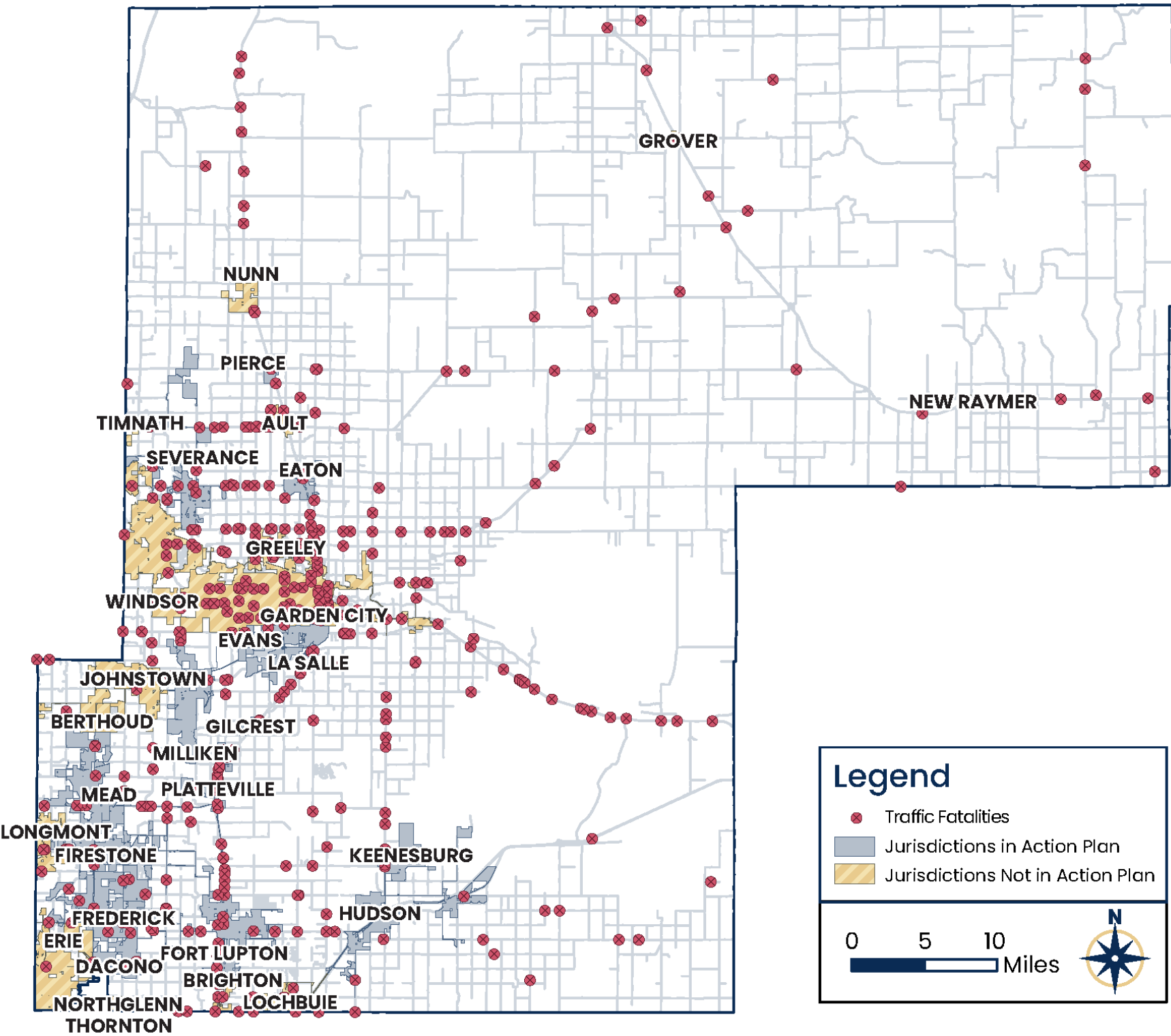
Fatal crashes are the most impactful type of crash. The impact caused by the loss of life on Weld County's roadways is astronomical; according to the U.S. Department of Transportation, Weld County's roadway fatalities equate to a societal impact of approximately \$6.4 billion dollars.

The Safe System Approach addresses the most impactful crashes. This approach prioritizes policies and practices to ensure that human error will not result in a crash causing a traffic fatality.

*It should be noted that interstates, highways, and streets within **Ault**, **Berthoud**, **Brighton**, **Garden City**, **Grover**, **Johnstown**, **Lochbuie**, **New Raymer**, **Northglenn**, and **Windsor** are not part of the Weld County Safety Action Plan. Additionally, **Erie**, **Greeley**, **Kersey**, **Longmont**, **Nunn**, and **Timnath** are completing or have completed their own Safety Action Plans.*



Weld County Fatal Traffic Crashes



What is the Safe System Approach?

The Safe System Approach is a global traffic safety initiative that originated in Sweden in the late 1990s and is now endorsed by the U.S. Department of Transportation. The core principle of Vision Zero is the belief that all traffic fatalities and serious injuries are preventable and that no loss of life is acceptable. The goal of Vision Zero is to create a transportation system that prioritizes safety above all else, using data-driven analysis to identify the root causes of traffic crashes and addressing them with comprehensive strategies rooted in a Safe System Approach.

The Safe System Approach is a comprehensive strategy for managing road safety that is closely aligned with Vision Zero principles; the goal of the Safe System Approach is to create a transportation system that is forgiving of human error and does not rely on individual road users to be perfect. Instead, the approach recognizes that people will make mistakes and that the transportation system must be designed to the extent possible to protect the road user from the consequences of those mistakes.

The Safe System Approach is based on six foundational principles*:

DEATHS AND SERIOUS INJURIES ARE UNACCEPTABLE: A Safe System Approach prioritizes the elimination of crashes that result in death and serious injuries.

HUMANS MAKE MISTAKES: People will inevitably make mistakes and decisions that can lead or contribute to crashes, but the transportation system can be designed and operated to accommodate certain types and levels of human mistakes and avoid death and serious injuries when a crash occurs.

HUMANS ARE VULNERABLE: Human bodies have physical limits for tolerating crash forces before death or serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates physical human vulnerabilities.

RESPONSIBILITY IS SHARED: All stakeholders—including government at all levels, industry, non-profit/advocacy, researchers, and the public—are vital to preventing fatalities and serious injuries on our roadways.

SAFETY IS PROACTIVE: Proactive tools should be used to identify and address safety issues in the transportation system, rather than waiting for crashes to occur and reacting afterwards.

REDUNDANCY IS CRUCIAL: Reducing risks requires that all parts of the transportation system be strengthened, so that if one part fails, the other parts still protect people.

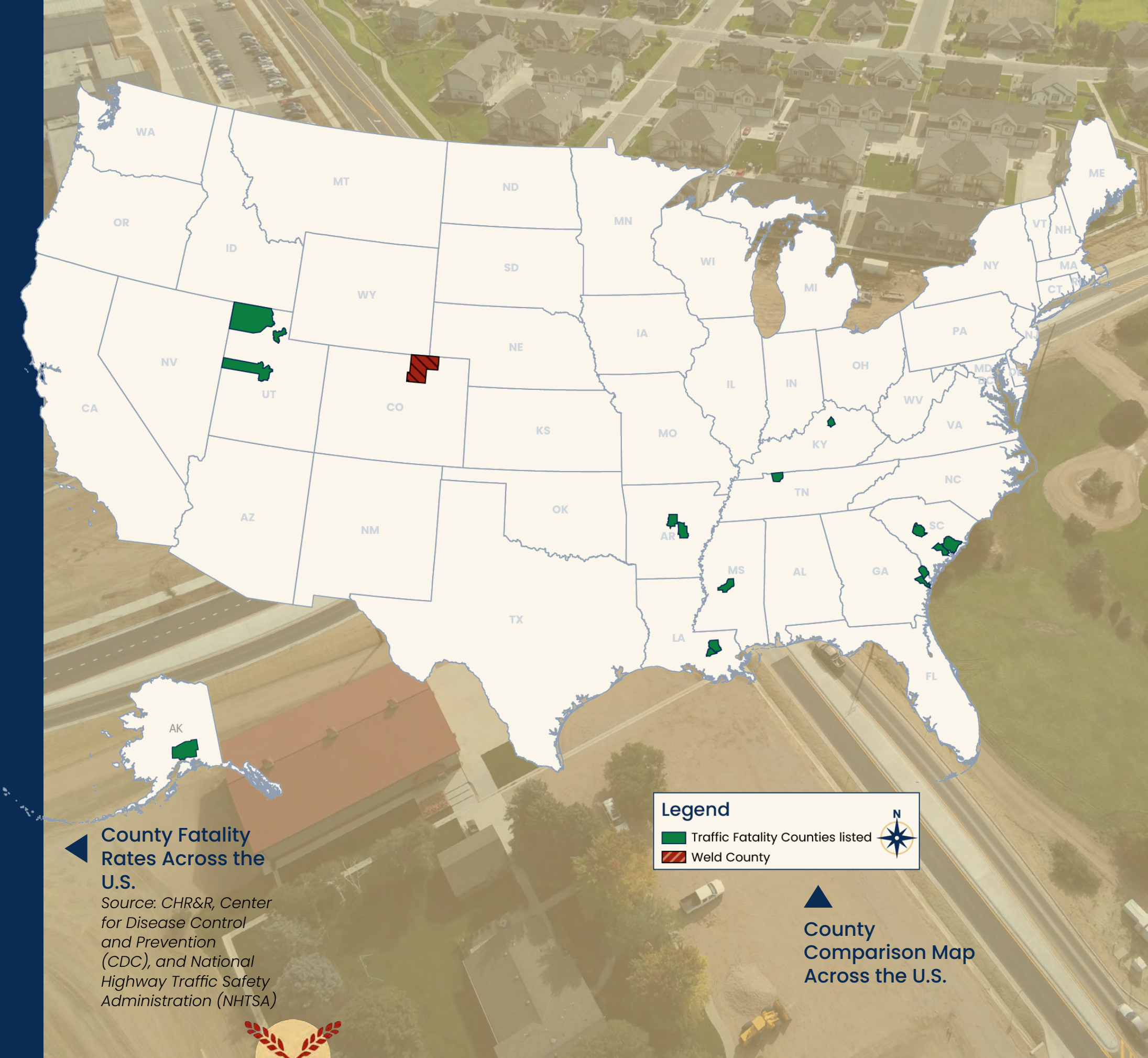
*Source: U.S. Department of Transportation



State of Safety in Weld County

County Health Rankings and Roadmaps (CHR&R), a program of the University of Wisconsin Population Health Institute, draws attention to why there are differences in health within and across communities. This program identifies similar counties to Weld County based on key demographic, social, and economic indicators. Looking at Weld County as compared to peer counties for traffic fatalities, Weld County is in the middle of the pack.

County	Fatalities per 100,000 People
Juab County, Utah	39.0
Morgan County, Utah	20.3
Box Elder County, Utah	19.2
Livingston Parish, Louisiana	19.0
Ascension Parish, Louisiana	18.8
Berkeley County, South Carolina	18.0
Matanuska-Susitna Borough, Alaska	17.0
Weld County, Colorado	16.9
Lexington County, South Carolina	16.4
Lonoke County, Arkansas	16.1
Bryan County, Georgia	15.2
Scott County, Kentucky	14.5
Effingham County, Georgia	14.0
Dorchester County, South Carolina	13.8
Montgomery County, Tennessee	13.2
Faulkner County, Arkansas	13.0
Madison County, Mississippi	12.7



County Fatality Rates Across the U.S.

Source: CHR&R, Center for Disease Control and Prevention (CDC), and National Highway Traffic Safety Administration (NHTSA)

Legend

- Traffic Fatality Counties listed
- Weld County



County Comparison Map Across the U.S.



Although Weld County has a higher fatality rate than the state of Colorado overall, many municipalities within the county have a low fatality rate. However, Platteville, Grover, Nunn, Fort Lupton, Mead, Hudson, Ault, and Dacono all experience higher traffic-related fatality rates; these communities are overrepresented due to the proportionally high number of fatal crashes compared to their low populations.

Garden City, Gilcrest, Keenesburg, LaSalle, and New Raymer have experienced no traffic deaths on their roadway but can benefit from the Safe System Approach to maintain this trend.

Municipality (Included in Plan)	Fatalities per 100,000 People	Municipality (Excluded in Plan)	Fatalities per 100,000 People
Platteville	66.7	Grover	62.1
Fort Lupton	32.7	Nunn	40.2
Mead	31.4	Ault	18.8
Hudson	25.3	Weld County	16.9
Dacono	17.5	Kersey	16.7
Weld County	16.9	Brighton	13.2
Colorado	10.9	Colorado	10.9
Pierce	10.7	Greeley	7.2
Severance	6.5	Lochbuie	6.2
Thornton	6.0	Longmont	6.2
Milliken	6.0	Northglenn	5.0
Eaton	5.2	Berthoud	4.8
Firestone	4.3	Timnath	3.1
Frederick	4.1	Windsor	3.1
Evans	2.8	Johnstown	1.2
Gilcrest	0.0	Erie	1.0
Keenesburg	0.0	Garden City	0.0
LaSalle	0.0	New Raymer	0.0



◀ Crash Fatality Rates by Jurisdictions within Weld County
Source: NHTSA, U.S. Census Bureau





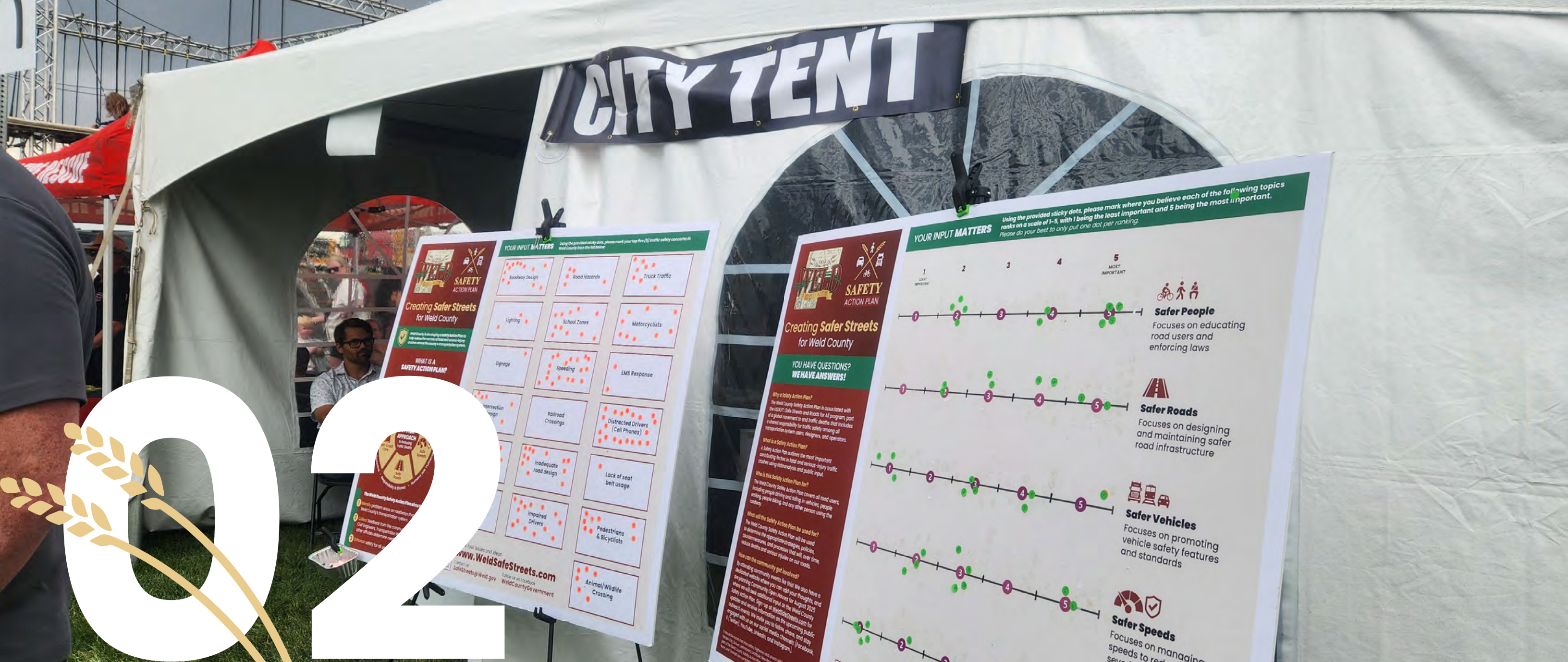
Local, State, and National Resources

As a part of the plan development process, Weld County wanted to draw on the experiences of other municipalities (regionally and nationally) actively taking steps to reduce fatal and serious injury crashes and understand what best practices are working within their communities. Weld County wanted to review existing local, regional, state, and national plans to see the strengths within their plans and policies and where they had opportunities for improvements.

This review looked at safety initiatives in Weld County, the Colorado Department of Transportation (CDOT), the North Front Range Metropolitan Planning Organization (NFRMPO), the Denver Regional Council of Governments (DRCOG), and the Upper Front Range Transportation Planning Region (UFRTPR); additionally, the review identified existing safety targets and performance measures, safety issues, and funding opportunities.

The findings of both the safety action plans review and the policies and plans reviews are found in Appendix A.



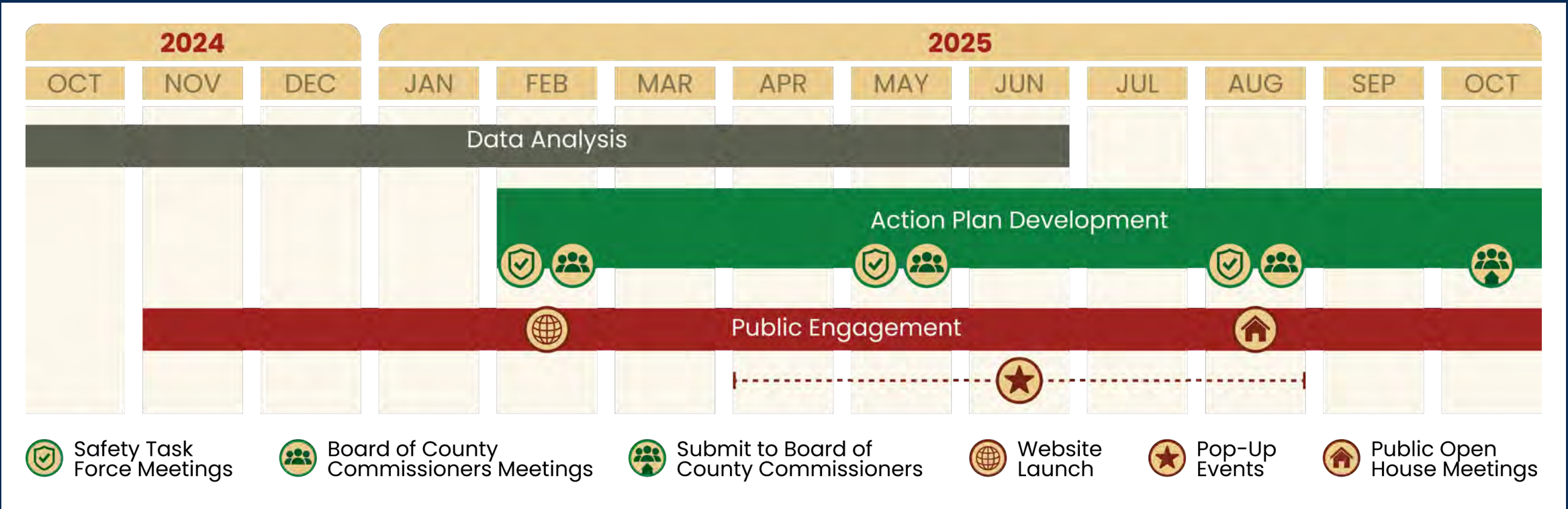


Public Outreach and Feedback Collection

Public engagement is the cornerstone of the foundation of the Weld County Safety Action Plan, guiding the plan’s development and providing community input to define long-term success. The work to meaningfully engage with members of the public and stakeholders was an ongoing effort during the course of the Weld Safe Streets project, informed by the team’s data analysis and structured to best support the development of the action plan.

This planning effort provided multiple opportunities for interactions with members of the public and stakeholders, which helped to build a positive community of support for developing safety-focused solutions. Weld County worked directly with residents, businesses, community partners, and stakeholders to develop a deeper understanding of current perceptions and expectations associated with transportation safety for the county. Weld County includes 32 incorporated communities and 21 unincorporated communities, and the Weld Safe Streets project developed a Public Outreach and Feedback Collection Plan to engage these different audiences using a variety of outreach and engagement strategies to share key messages and gather feedback.

Appendix B includes a dedicated section detailing the project team’s comprehensive public outreach and feedback collection efforts.



▲ Safety Action Plan Timeline



Public Outreach and Feedback Collection Plan

The Public Outreach and Feedback Collection Plan outlines how Weld County and the project team conducted public outreach and collected feedback for the Weld Safe Streets project. This plan outlined Weld County’s strategic approach to involve members of the public and other stakeholders throughout the Safety Action Plan (SAP) development process, detailing the project’s vision, values, challenges, key messages, audiences, outreach tools, and engagement strategies.

The Public Outreach and Feedback Collection Plan outlined two engagement types:



Online Engagement:

Online Engagement occurred through the Weld Safe Streets webpage (including a quick-poll, an engagement map, and an internal survey for county staff) and social media platforms.



In-Person Engagement:

In-person engagement events included Safety Task Force meetings, pop-up events, and open houses.



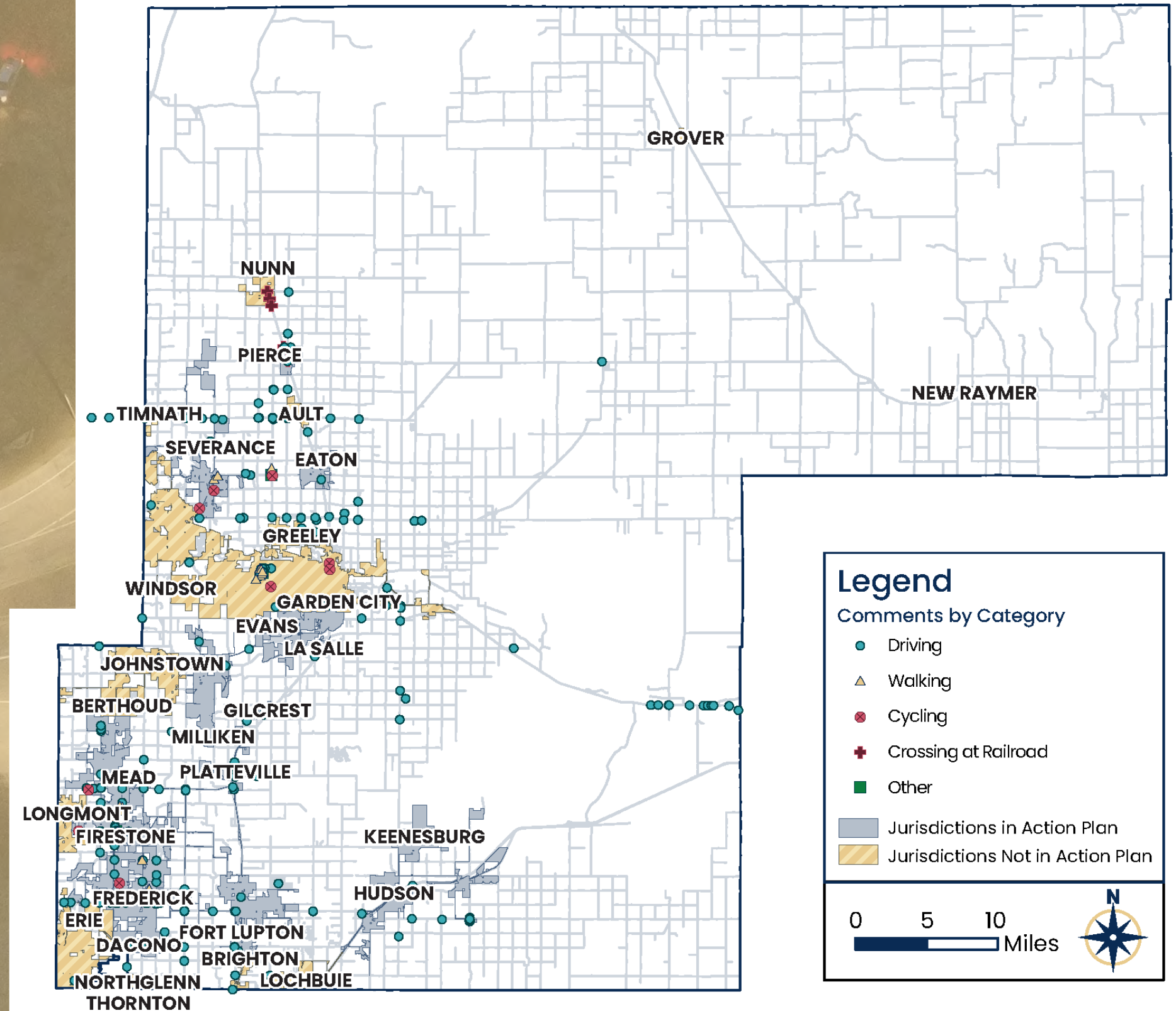


Online Engagement

The Weld Safe Streets team developed a project website that allowed the public and internal and external stakeholders to find updated information about the project, participate in an online quick poll to share more about priorities, and identify locations of safety concern by category on a countywide map. Respondents could leave geo-mapped comments on the engagement map to share safety concerns related to specific areas.

The project team received a total of 708 comments due to its online engagement efforts, including quick poll public comments, engagement map pins, and internal survey comments.

Online Comment Type	# of Comments
Internal Survey	76
Quick Poll	349
Engagement Map	359
Total	708





In-Person Engagement

Safety Task Force

The Safety Task Force (STF) played an essential role in the development of the SAP. The STF provided input on the data analysis, public outreach findings, supported the SAP development, and will support the implementation of strategies and activities included in the SAP within their respective roles. To ensure a diverse range of perspectives, the STF included representatives from jurisdictions and governments, community groups, county departments and divisions, as well as county initiatives and programs, and area transportation agencies.

STF Organizations:

- Colorado Department of Transportation
- City of Dacono
- Eaton Police Department
- Town of Erie
- City of Evans
- Firestone Police Department
- City of Fort Lupton
- Fort Lupton Police Department
- Town of Frederick
- City of Greeley
- GoNoCo34 Transportation Management Organization
- Town of Johnstown
- Town of Keenesburg
- Keenesburg Police Department
- Town of Kersey
- Larimer County Sheriff's Office
- Town of Lochbuie
- City of Longmont
- North Front Range Metropolitan Planning Organization
- Town of Platteville
- Town of Severance
- Upstate Colorado
- Weld County Department of Public Health and Environment
- Town of Windsor





Pop-up Events

Pop-up events provided opportunities for the project team to engage with the community by meeting them in places where they already planned to be, leveraging existing venues and events like annual gatherings, festivals, and outdoor events. Eight (8) pop-ups were held at existing events between June and August 2025, which collectively drew more than 10,000 attendees. By convening SAP pop-ups at these kinds of existing community events, the project team was able to connect with more members of the public and key stakeholders, and provide more opportunities for community voices to be heard and to share information about how we all play a part in creating safe streets and roads in the county.

Participants who visited the project team at the pop-up engagement booths had the opportunity to discuss safety in Weld County and their role in it through dialogue and table-top activities. Similar to the online quick poll, the activities at the pop-up events asked participants to indicate their top five traffic safety concerns and to rank the guiding principles of the Safe System Approach in order of priority by placing dot-shaped stickers onto engagement boards.

Pop-up Event Locations

- | | |
|--|--|
| ★ June 6th, 2025:
Severance Summer Kick-off Concert | ★ July 19th, 2025:
LaSalle Days |
| ★ June 21st, 2025:
Frederick in Flight | ★ August 2nd, 2025:
Dacono Music and Spirits Festival |
| ★ July 4th, 2025:
Ft. Lupton Independence Day Celebration | ★ August 5th, 2025:
Mead National Night Out |
| ★ July 12th, 2025:
Eaton Days | ★ August 9th, 2025:
Milliken Beef n' Bean Day |



Open Houses

The project team hosted two open houses in Weld County to share more with the public about the project and its importance in creating safer streets and roads. The open houses also provided background on the Safe System Approach and SAP, and progress results related to the safety plan's development (e.g., current trends of fatal and serious injury crashes, public outreach and feedback collection, data analysis results, draft safety countermeasures, strategy recommendations, and more). The open houses featured several engagement activities, including a "dotmocracy" where attendees identified priority strategy recommendations, as well as a "gold star" voting activity to share which safety countermeasures are most important.

Two open houses were hosted in Weld County: one in Firestone in the southern part of the county and one in Greeley to reach key audiences in the central and northern parts of the county. To provide as many opportunities as possible for all residents of the county to provide their comments, a virtual open house was hosted online, which launched the same day as the first open house in Firestone and remained open for two weeks. Comments, prioritized strategy recommendations, and top safety countermeasures were documented from the open houses.



Key Takeaways

The following were key takeaways from the public outreach and feedback collection process.

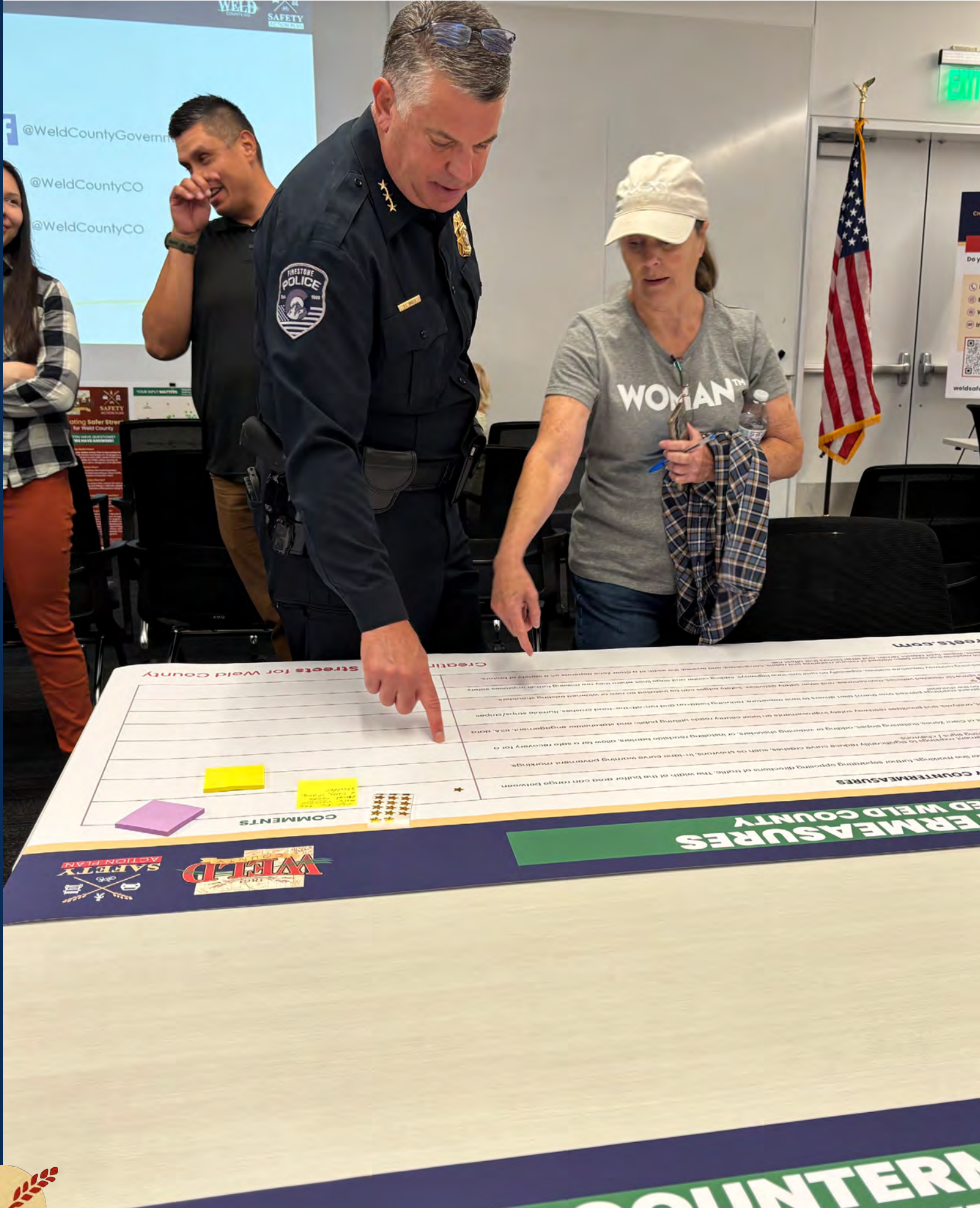
From Online Engagement:

- **Drivers** had concerns especially regarding speeding, street parking reducing visibility, traffic congestion, and unsafe driver behavior.
- **Cyclists** were concerned about vehicles speeding, heavy traffic, poor road conditions, and limited visibility.
- **Pedestrians** mentioned vehicles speeding and running stop signs, poor visibility and street design, lack of crosswalks and sidewalks, and high traffic and congestion.
- For **railroad crossings**, respondents mentioned a lack of safety infrastructure and reports of busier roads due to increased population and growth.
- The top five **traffic safety concerns** include Intersection Design, Speeding, Distracted Drivers (Cell Phones), Roadway Design, and Inadequate Road Design.

From In-Person Engagement:

- **Speeding** and **Distracted Driving** were the biggest concerns across the county, with **60% of participants** selecting these items as top priorities.
- People were concerned with **truck traffic**, especially trucks using local and county roads as cut-through routes.
- The **US-85 corridor** residents are more concerned about railroad crossings, while the residents in the western areas of the county are more concerned about roadway and intersection designs that may not provide sufficient safety or efficient traffic flow.
- Residents shared specific information about **existing poor or dangerous road conditions** by sharing comments in association with the Road Hazards quick-poll item.
- Participant comments were extremely complimentary of the various county **emergency services and management**.
- Overall, people believe **vehicles are safe** and there is not much they can do to affect that item.

Respondents from both online and in-person engagement identified that the top three guiding principles of the Safe System Approach for prioritization include Safer Roads, Safer Speeds and Safer People.





03

Data Analysis and Emphasis Areas

Weld County is a diverse community with numerous unique attributes, ranging from agricultural farmland to densely populated urban areas. To best understand Weld County's current roadway safety environment, it is essential to examine the county through various lenses, including unincorporated Weld County, jurisdictions covered in the action plan, or the county as a whole.

Through the findings of this analysis, which looked at ten years of crash data (2014-2023), focused and data-driven decisions can be applied as guiding support for the implementation of this action plan. Additional data trends can be reviewed in Appendix C.

Crash Mapping

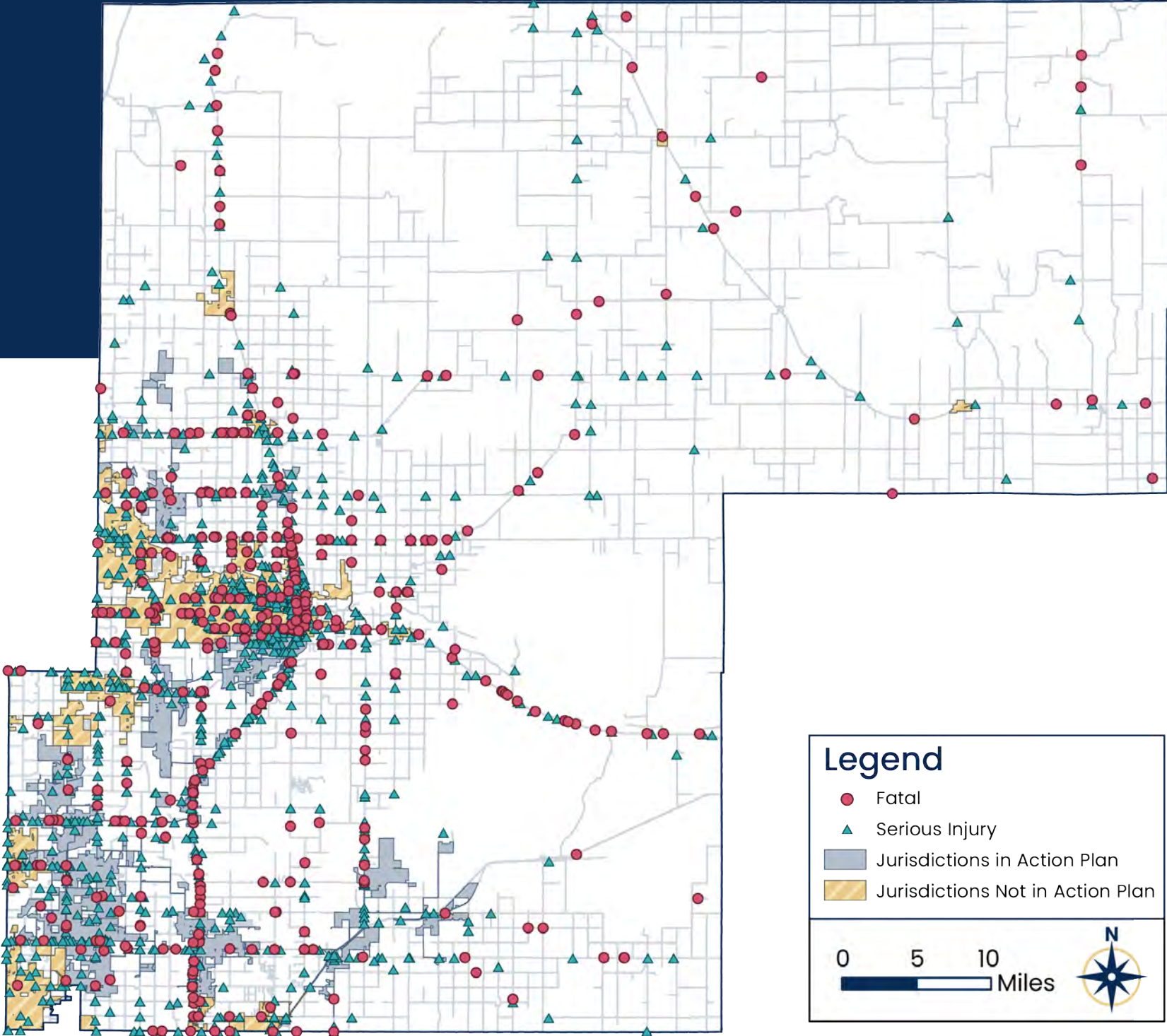
All Fatal & Serious Injury Crashes, 2014–2023

The primary goal of the safety action plan is to reduce crashes that result in people being killed or seriously injured (KSI) in Weld County. A total of 1,828 crashes have resulted in people being killed or seriously injured, with another 10,882 crashes resulting in non-incapacitating (minor) or possible injuries. Although non-injury crashes (aka PDO crashes) make up three-quarters of crashes in the county, this plan is focused on limiting injury crashes, particularly crashes that result in a fatality or serious injury.

Crash Severity	# of Crashes
Fatal	434
Serious Injury	1,394
Non-incapacitating Injury	4,023
Possible Injury	6,859
Property Damage Only	44,462
Grand Total	57,172

By mapping these crashes, it helps frame what roadways should be prioritized to limit KSI crashes. More than half (55%) of all KSI crashes occur in municipal jurisdictions within Weld County (23% being jurisdictions included within this action plan). In unincorporated Weld County, many KSI crashes occur on state highways, such as US 34 and US 85.

Area	# of KSI Crashes	% of KSI Crashes
Jurisdictions in Action Plan	428	23%
Unincorporated Weld County	819	45%
Jurisdictions Not in Action Plan	581	32%
All Weld County	1,828	100%

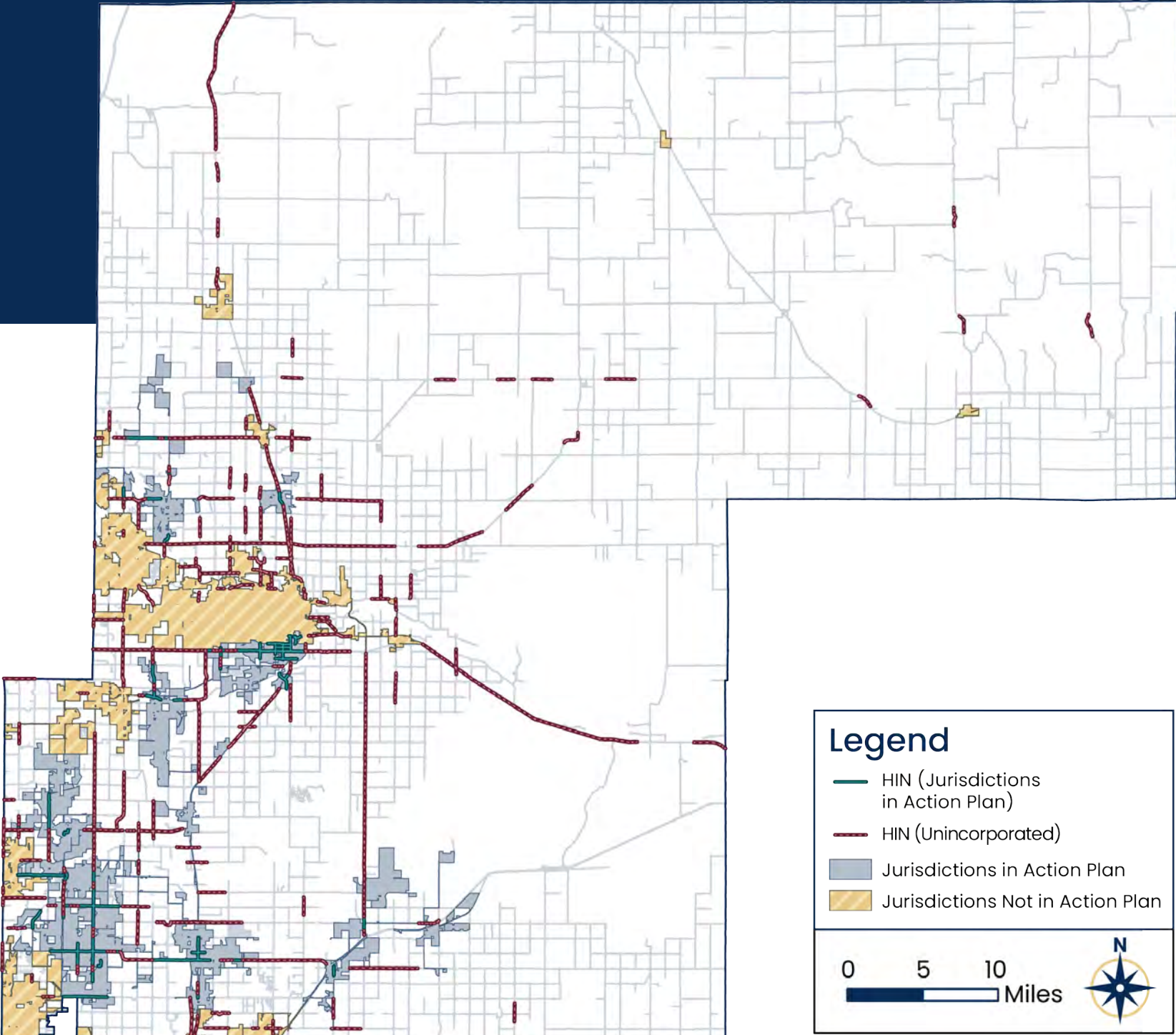
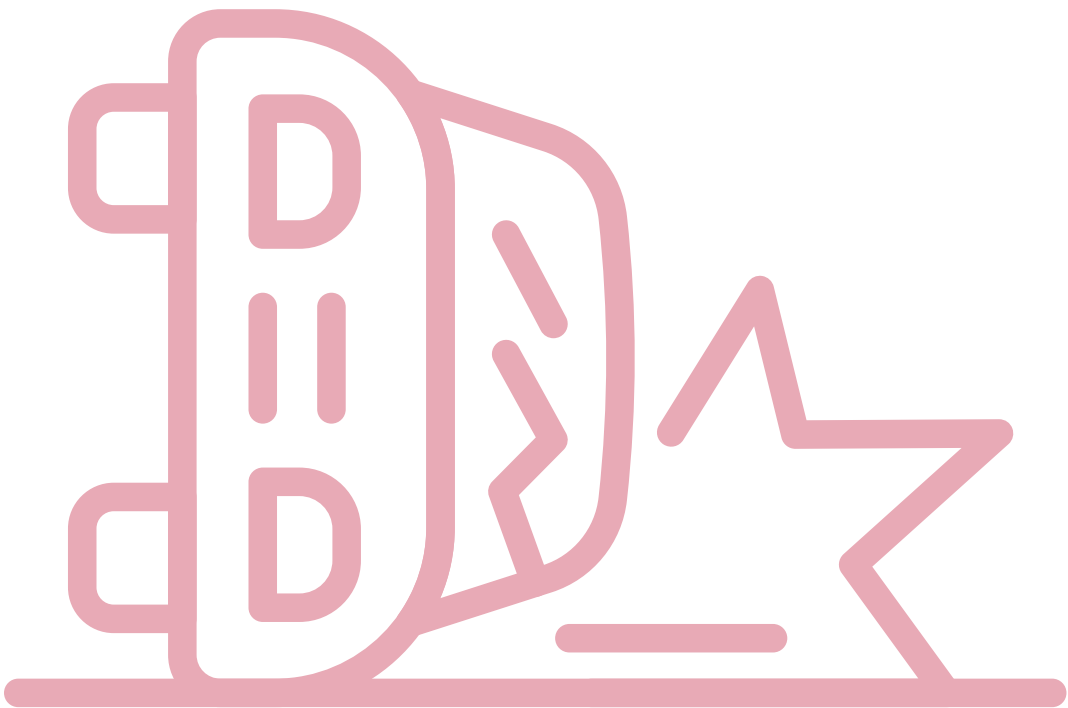


High Injury Network

The High Injury Network (HIN) is a mapping tool to help identify where people are being killed or seriously injured within Weld County. This data-driven approach helps focus on using resources in areas of greatest need. The most recently available ten years of crash data (2014–2023) were used to create the HIN.

The HIN (including jurisdictions within the plan and unincorporated Weld County) accounts for 9.5% of the county’s total roadway miles, but accounts for 65.0% of all KSI non-intersection related crashes. This shows that on these 426 miles of roadway, KSI crashes are nearly seven times more likely to occur.

Category	# of KSI Crashes	% of KSI Crashes	# of Roadway Miles	% of Roadway Miles	Rep. Ratio
HIN (Jurisdictions in Action Plan)	143	68.4%	102	9.8%	7.0
HIN (Unincorporated Weld County)	304	63.5%	324	9.4%	6.8
HIN (Combined)	447	65.0%	426	9.5%	6.8



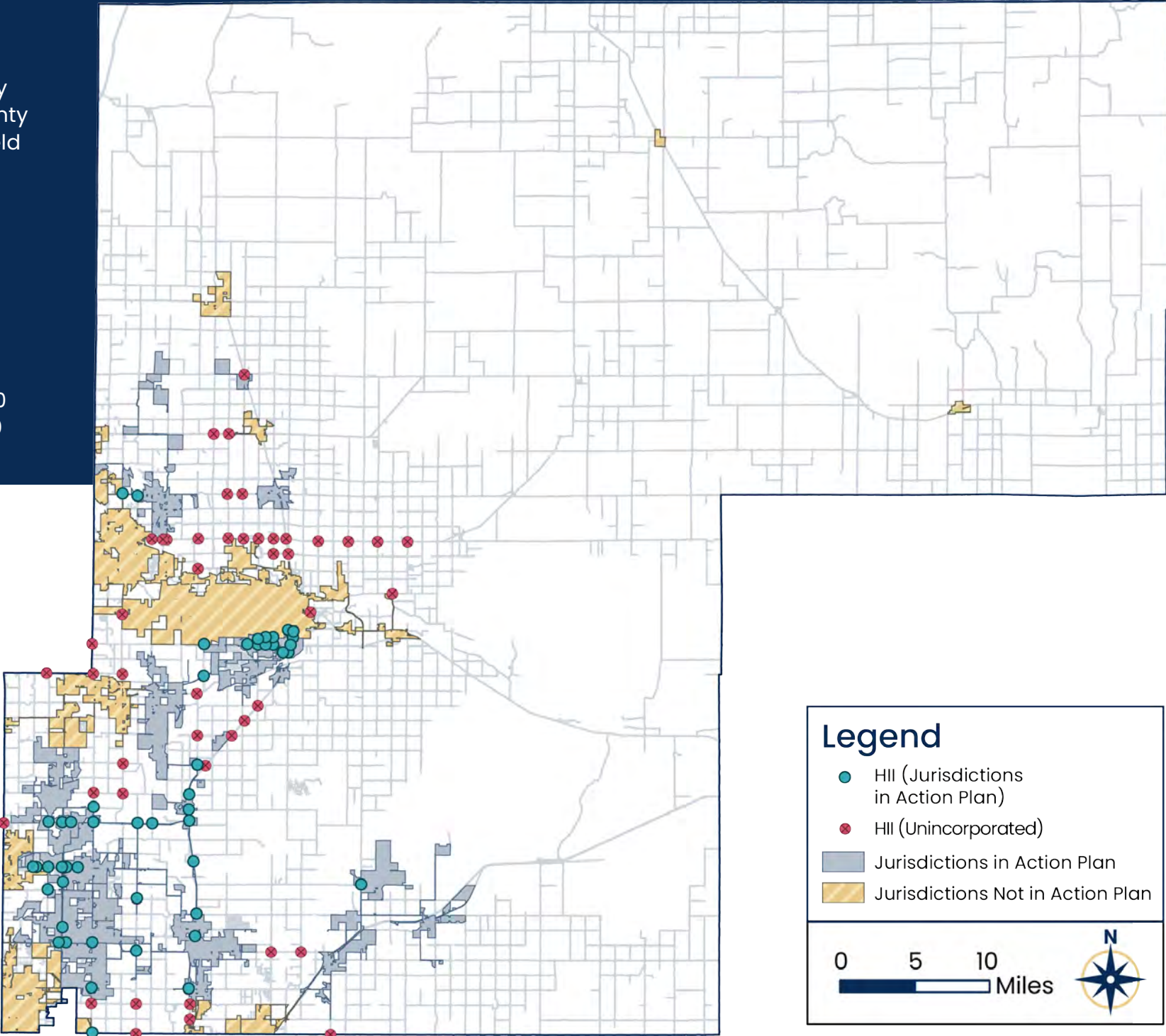
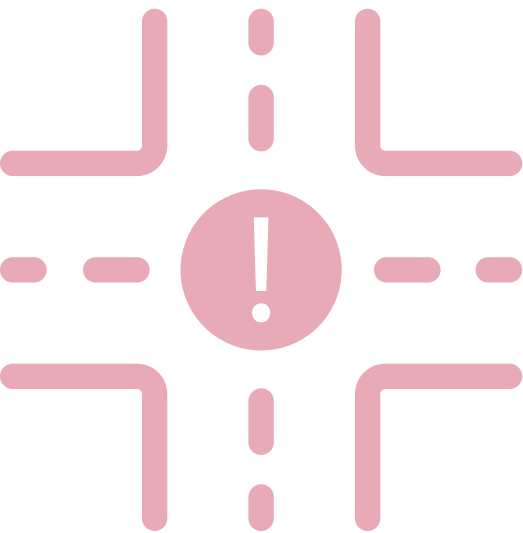
High Injury Intersections

High Injury Intersections (HII) are another key mapping tool. Like the HIN, the HII uses 10 years of injury crash data to identify the most dangerous intersections to most effectively allocate county resources and give context to transportation safety problems. Weld County has 13,780 intersections overall, all of which were included in the data analysis for the Weld County Safety Action Plan (SAP). For the purposes of the HII analysis, the plan focuses on 7,674 of the county's intersections in two specific categories:

- 5,052 in jurisdictions in action plan
- 2,622 in unincorporated Weld County

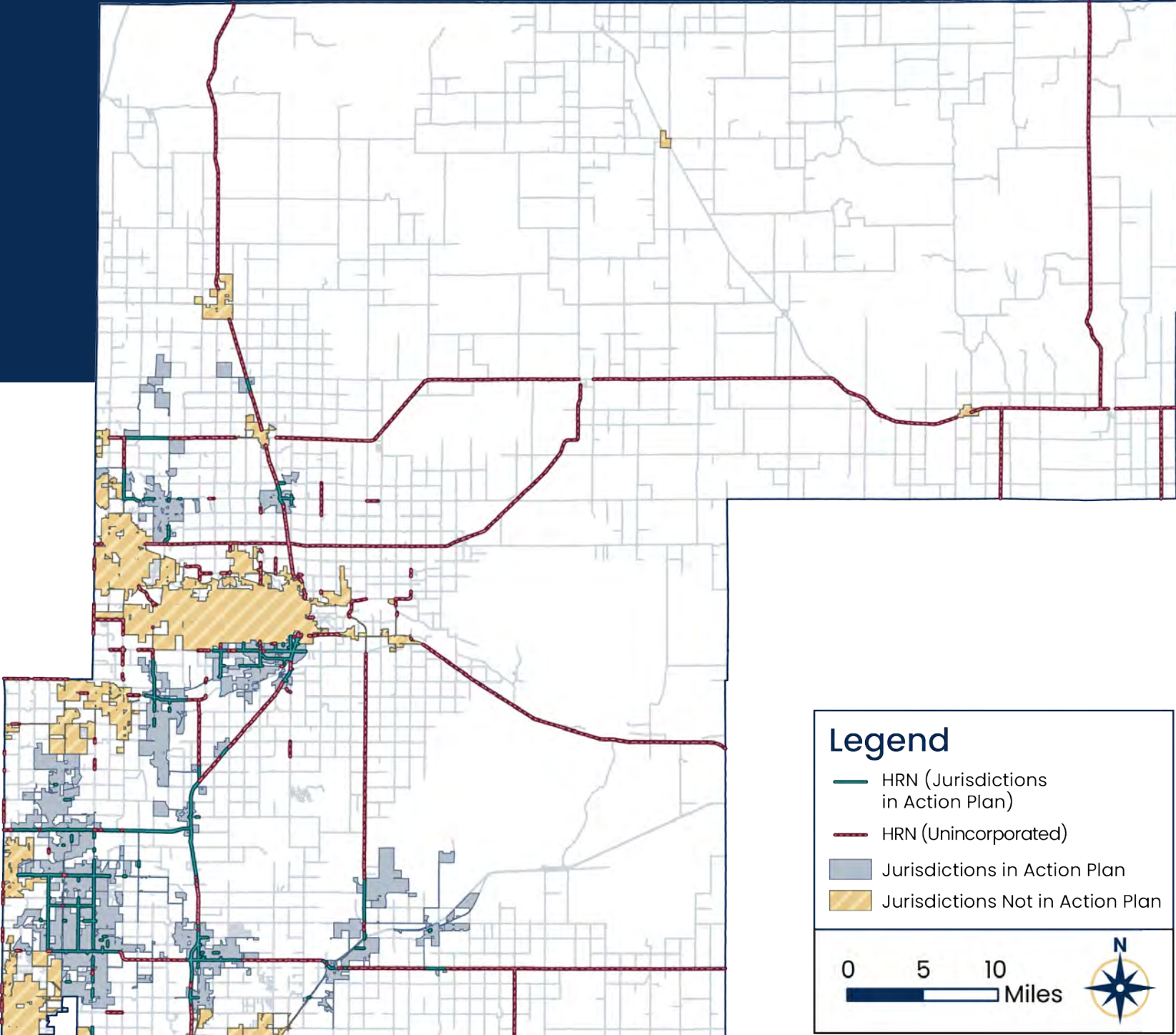
HII locations shown below have the highest concentration of intersection crashes in the county. For the purposes of the SAP, the top 100 intersections within the county (50 within jurisdictions in action plan and 50 in unincorporated Weld County) comprise the HII and account for 345 KSI crashes, or 59.1% of KSI crashes within these two categories. These 100 intersections represent 1.3% of the 7,674 intersections in the plan and just 0.7% of all 13,780 intersections in the entire county.

Category	# of KSI Crashes	% of KSI Crashes	# of Intersections	% of Intersections	Rep. Ratio
HII (Jurisdictions in Action Plan)	149	62.6%	50	1.0%	63.3
HII (Unincorporated Weld County)	196	56.6%	50	1.9%	29.7
HII (Combined)	345	59.1%	100	1.3%	45.3



High Risk Network

Both the HIN and HII are based on historical crash data, which is very useful in addressing existing problems where data is available. Since we know that KSI crashes account for a small share of total vehicle interactions, and near misses are rarely reported/recorded, some of the roadways most likely to experience a KSI crash may not be represented in the HIN and HII data. Therefore, the High Risk Network (HRN) can be used to identify streets where KSI crashes are likely to occur, based on existing attributes such as the number of lanes, traffic volumes, roadway functional classes, and speed limits.



Emphasis Areas

The Weld County Safety Action Plan Task Force selected **four emphasis areas based on findings in the data analysis**. Emphasis areas provide an opportunity to take a deeper look at potential issues that the action plan aims to identify and address.

These emphasis areas include:



BEHAVIORAL:
Impaired & Distracted Driving, Speeding



ENVIRONMENTAL:
Land Use Context, Road Hazards



INFRASTRUCTURE:
Lighting, Intersection & Roadway Design



MODES OF TRAVEL:
Vehicle Types, Vulnerable Road Users



EMPHASIS AREAS



BEHAVIORAL
Examining behavioral factors like impaired driving, distracted driving, and speeding are important to dissecting the root causes of many fatal and serious injury crashes. Understanding unsafe behaviors such as these directly influence roadway safety and help identify where enforcement, education, and policy efforts should be focused.



ENVIRONMENTAL
Environmental factors such as land use context and road hazards play a significant role in roadway safety by shaping how drivers interact with the built environment. Vehicles in rural areas face different safety challenges compared to those in urban settings. Contextualizing land use and exploring hazards better informs what makes a roadway less safe.



INFRASTRUCTURE
Infrastructure elements, such as lighting, intersection design, and roadway design, directly impact how safely and efficiently traffic moves. Analyzing design factors, such as intersection geometry and roadway type, are essential for identifying safety issues and implementing solutions that reduce conflicts and improve traffic flow.



MODES OF TRAVEL
Different travel modes, such as walking, biking, or driving various types of vehicles, present unique safety challenges and vulnerabilities. Vulnerable road users (VRUs), like pedestrians, bicyclists, and motorcyclists, are at higher risk in crashes due to lack of protection. Understanding how travel mode affects crash outcomes helps guide the development of safer, more inclusive transportation systems.



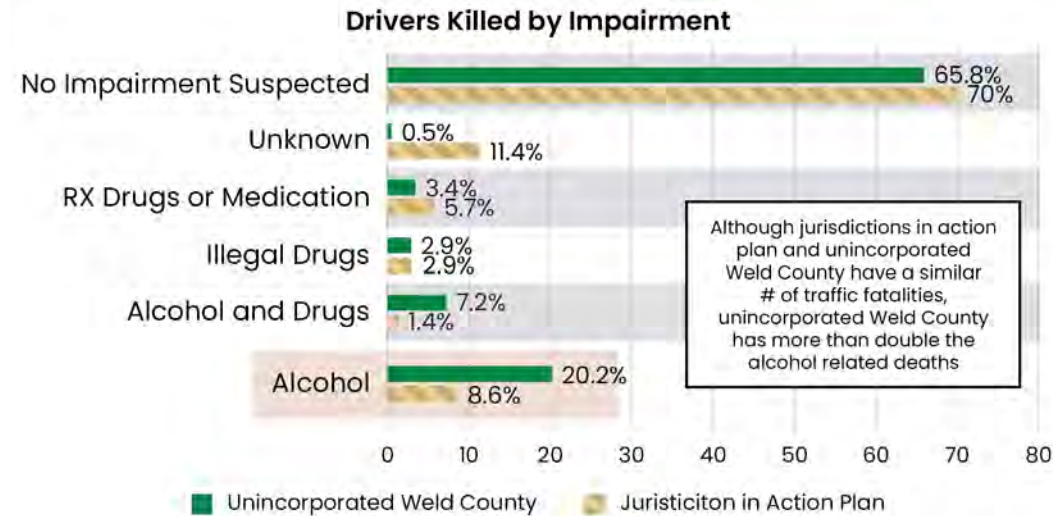


5.9%
of KSI crashes involve a driver who is either preoccupied or distracted by a passenger.



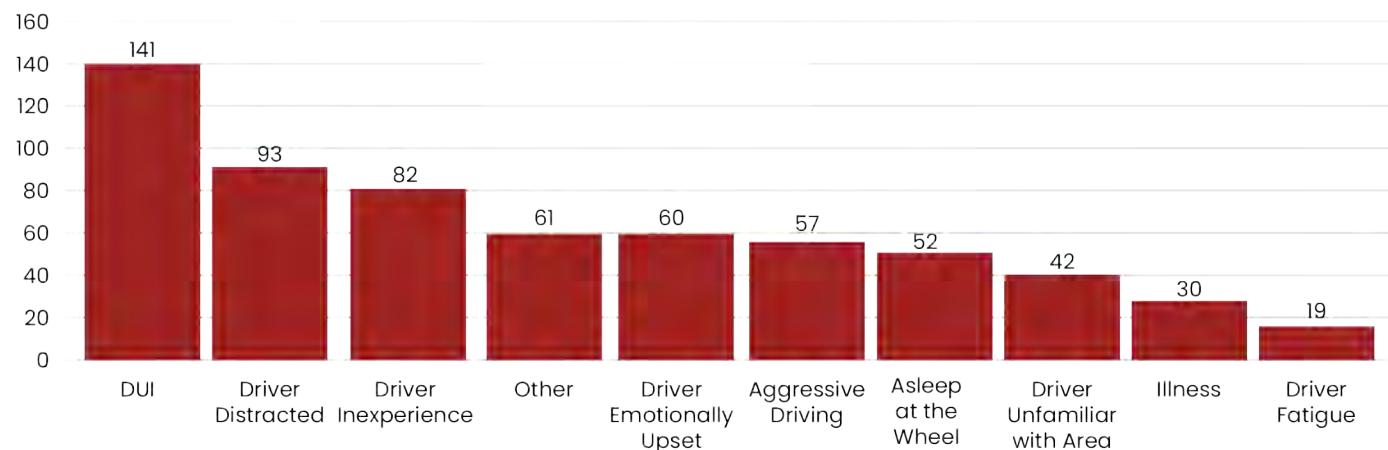
Impaired & Distracted Driving

People aren't perfect. Sometimes, they make mistakes and poor decisions — however, they should not have to pay with their lives or live their lives permanently altered because of a single moment or choice. Some behaviors may be considered reckless, or even negligent, and have an outsized impact on KSI crashes. Impairment, the use of alcohol or drugs while traveling, is one of those.



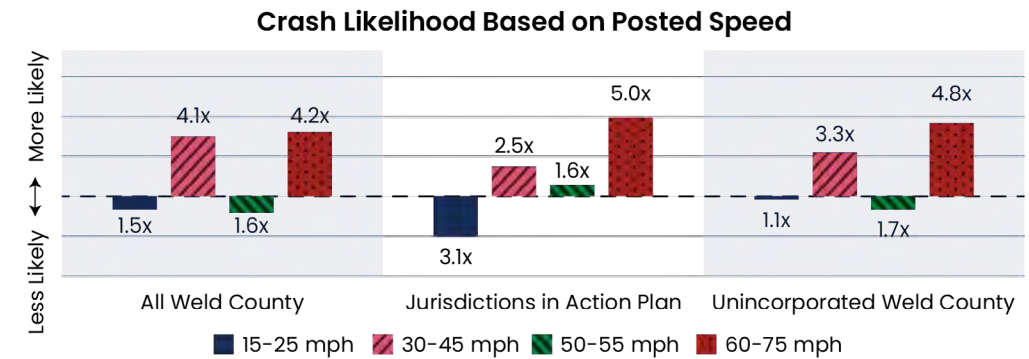
Even if someone is unimpaired, the current world is constantly trying to grab everyone's attention away from the road, making distractions another concern for roadway users. Nearly half of all KSI crashes have no apparent contributing factor.

KSI Crashes by Contributing Factor



Speeding

Speeding is often one of the first thoughts that come to mind when considering reckless driving.



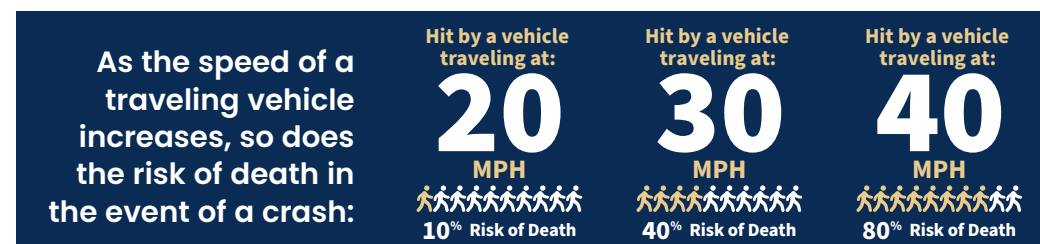
For roadways with a posted speed limit of 50-55 mph, we see the trend dip; this is due to most roadway facilities with higher speeds having increased safety infrastructure such as medians, separated pedestrian/bicycle paths, access management, and improved shoulders. As speeds increase, the infrastructure present may not be best suited to adequately handle forces due to these speeds as well as having a higher level of traffic volume.

8 in 10 fatal crashes within all Weld County occur on a road with a posted speed limit of 55 mph or higher.

The likelihood of fatality increases exponentially with vehicle speed; for every 10 mph increase, the likelihood of a fatality doubles. Speed is such an impactful factor within crashes for several reasons, including:

- The higher the speed, the more forceful the crash
- The higher the speed, the narrower the field of vision drivers have
- As speeds increase, the amount of time drivers have to react decreases
- As speeds increase, so do their braking distances (meaning, drivers may be unable to stop in time)

This likelihood of fatality increases more sharply for pedestrians.



Source :<https://www.ite.org/technical-resources/topics/speed-management-for-safety/speed-as-a-safety-problem/>



15%
of KSI crashes involve a vehicle going more than 5mph over the posted speed limit.





Land Use Context

Rural and urban areas within the county often differ in various safety challenges due to the differences in infrastructure, road users, and traffic volume. When examining surface area, more than 95% of Weld County is considered unincorporated (rural). Although jurisdictions account for less than 5% of the county's surface area, more than half of KSI crashes occur within a municipal area.

While these urban areas are more represented in terms of the number of KSI crashes, rural (unincorporated) crashes are:

2.8x more likely
to result in a fatality than urban crashes

1.7x more likely
to result in a serious injury than urban crashes.

Certain crash types are significantly more represented in rural areas (when compared to urban areas):



Overturning crashes are 3.8x times more likely



Embankment or Ditch crashes are 3.7x times more likely



Fence or Fence Part crashes are 3.2x times more likely



Light or Utility Pole crashes are 2.3x times more likely

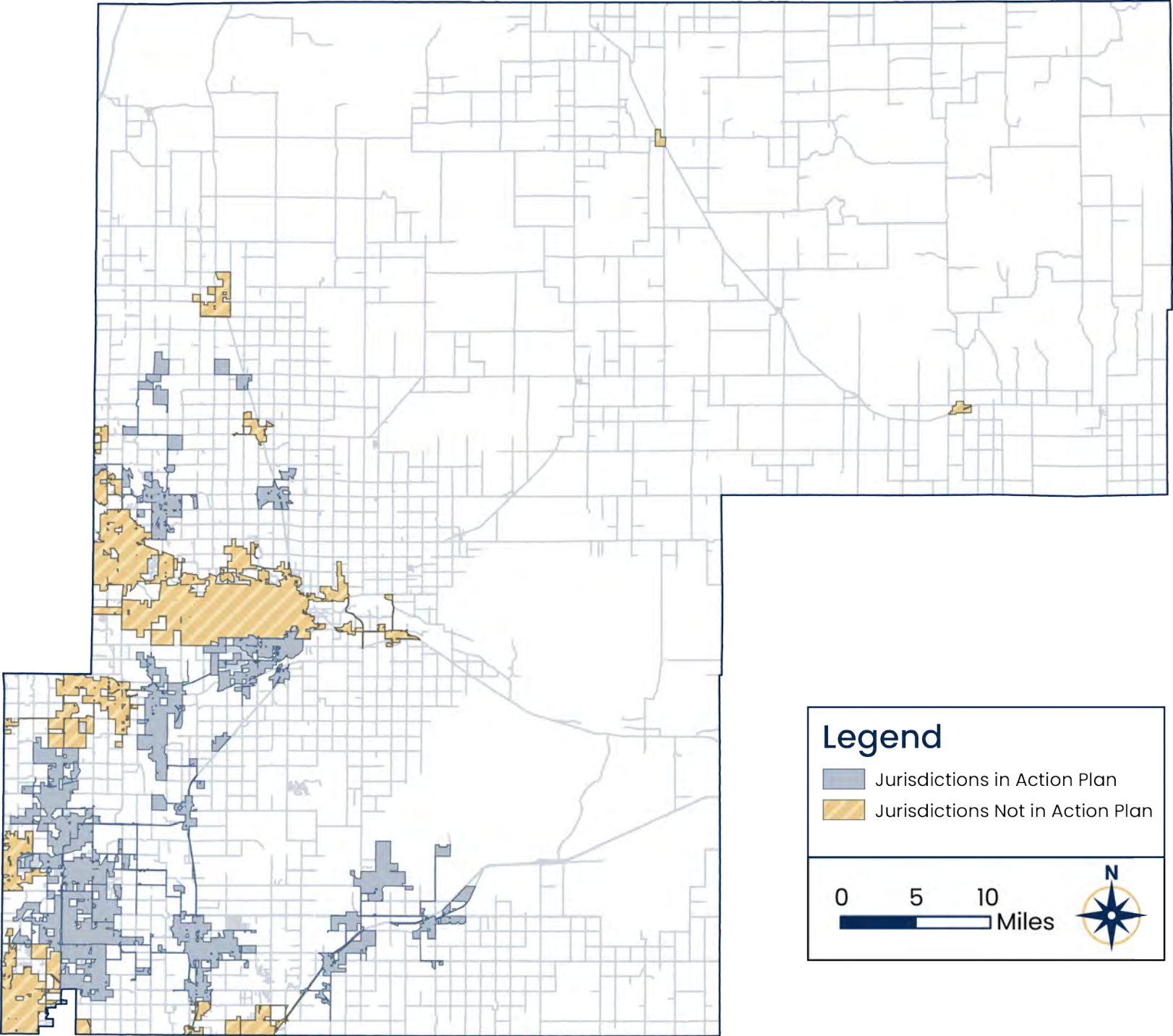


Sideswipe Opposite Direction crashes are 2.1x more likely



Head-on crashes are 1.7x more likely

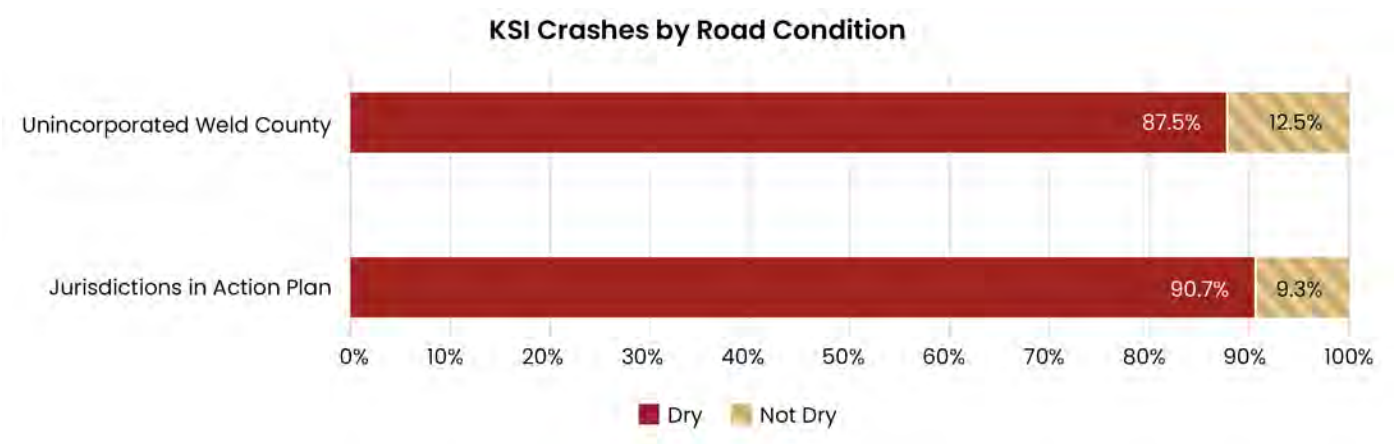
Rural areas will also have more roadway miles at higher post speeds. 81% of injury crashes in unincorporated Weld County occur on roads with a posted speed limit of 55 mph+ compared to roughly 50% for similar crashes in municipal jurisdictions within Weld County.





Road Hazards

Road hazards are something drivers can’t necessarily control, but these things still need to be accounted for when developing safer roadways. Factors like poor weather and roadside obstacles can pose an increased risk to drivers and vulnerable road users alike. Moisture on the road like water, ice, snow, or mud has a larger impact on injury crashes in unincorporated Weld County compared to municipal jurisdictions in the action plan.



9% of injury crashes involve a fixed object in Weld County.

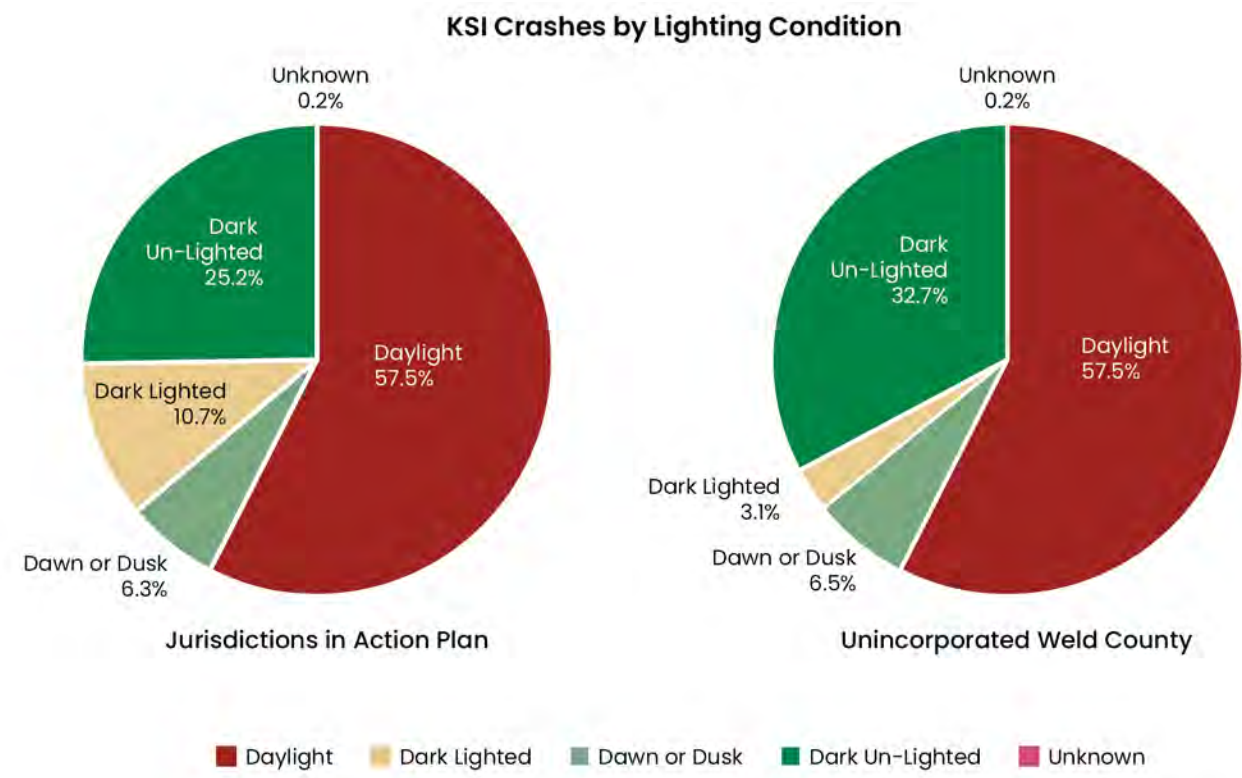
1 in 4 of fixed objects involve a fence or fence post.

Lighting

Nationally, the number of fatal crashes occurring in daylight versus darkness is approximately the same; however, the nighttime fatality rate is three times the daytime rate because only 25 percent of vehicle miles traveled (VMT) occur at night.¹

In Weld County, a little more than half of crashes in urban and rural environments happen in daylight; however, **rural (unincorporated) Weld County experiences 7.5% more crashes in unlit conditions at night than in jurisdictions in the action plan.**

1.7X
Crashes in Weld County on dark (lit or unlit) roads are 1.7X more likely to involve a fatal or serious injury.



¹ FHWA | Lighting



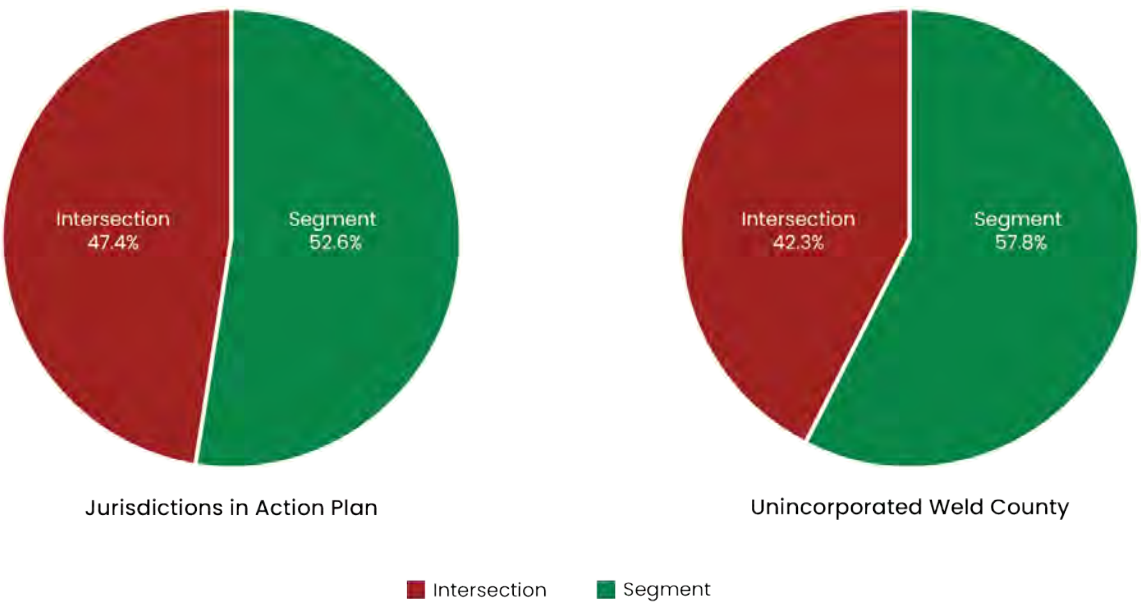
Half
of all intersection
crashes in
Weld County
occur at less
than 1% of total
intersections.

Intersection & Roadway Design

Intersections are a natural point of conflict for roadway safety. With the complexity of vehicle movements (e.g., crossing paths, merging, diverging), varying control types, and the potential presence of pedestrians, intersections have many things that can contribute to a hazardous crash environment.

Typically, urban intersections see more crashes due to higher traffic volume compared to their rural counterparts. For jurisdictions in the action plan and unincorporated Weld County, segments are the primary location of crashes. When considering KSI crashes in Weld County, segments contain the majority of KSI crashes in the action plan.

KSI Crashes by Crash Location



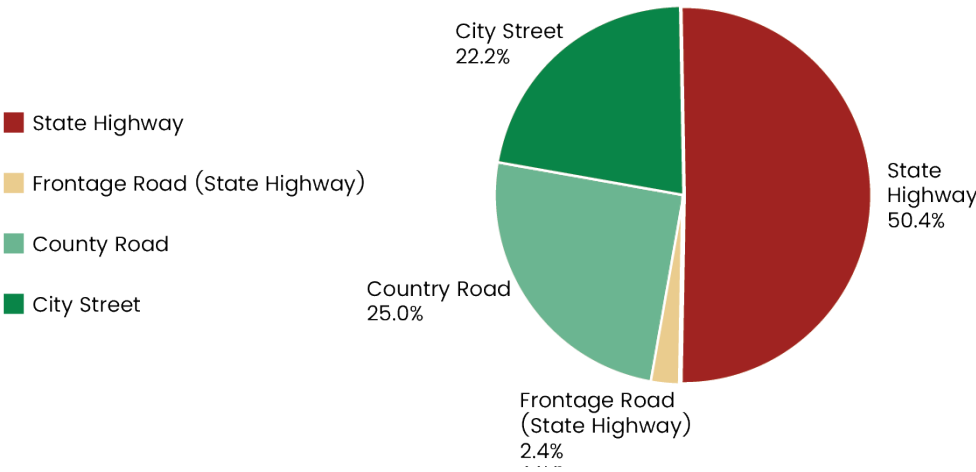
Roadway design plays a crucial role in traffic safety, influencing both the frequency and severity of crashes. Roadway classification, the number of lanes, and other elements such as access management play a vital role in not only lessening the severity of crashes but also limiting them altogether. In Weld County, half of all KSI crashes occur on a state highway.

Crashes on principal arterial – other freeway and expressways roadways are 6.5x more likely in all of Weld County and 7.9x more likely in unincorporated Weld County.

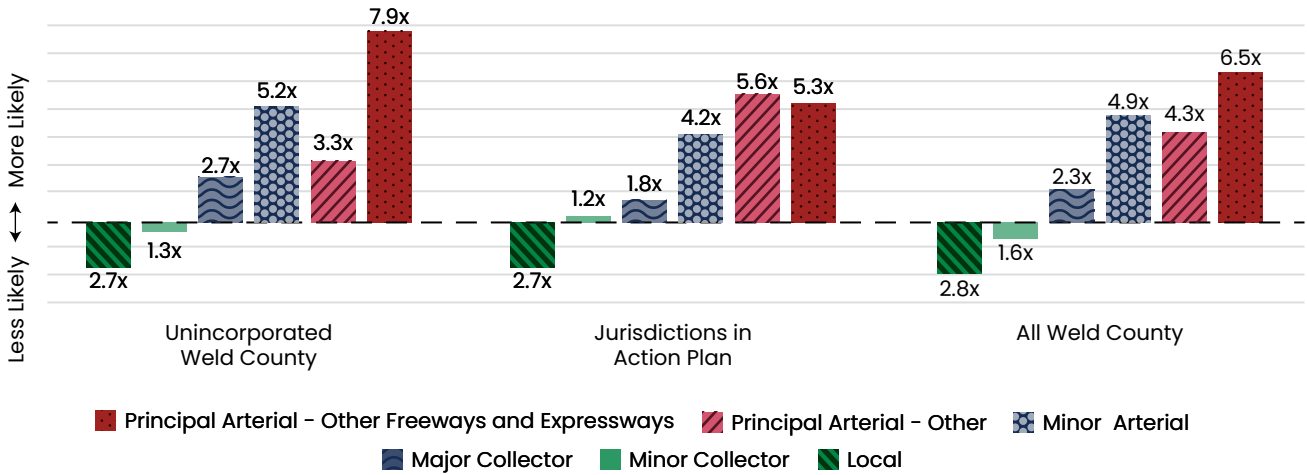
Although crashes are more likely on these functional class roads, these roadways have higher traffic volumes and are designed to better limit crash severity.

1 in 4
fatal crashes
occur on a local
road (CDOT
classification).

KSI Crashes in All Weld County by Roadway Type

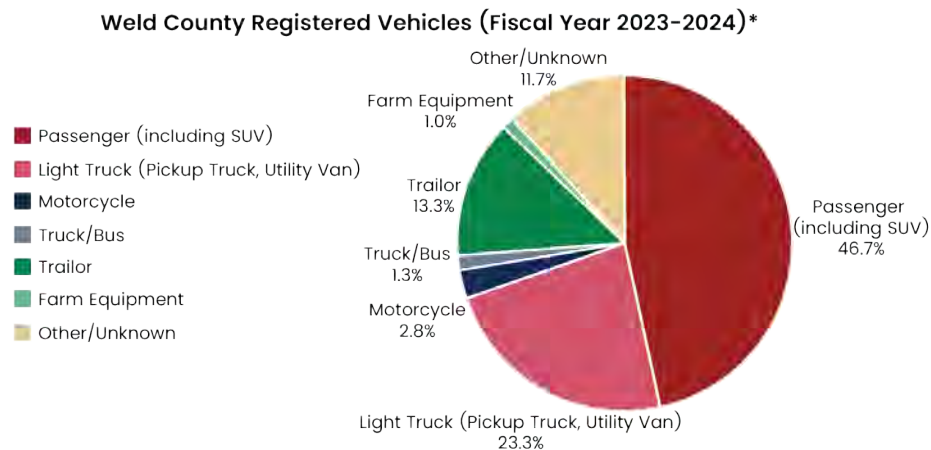


Crash Likelihood Based on CDOT Roadway Functional Classification



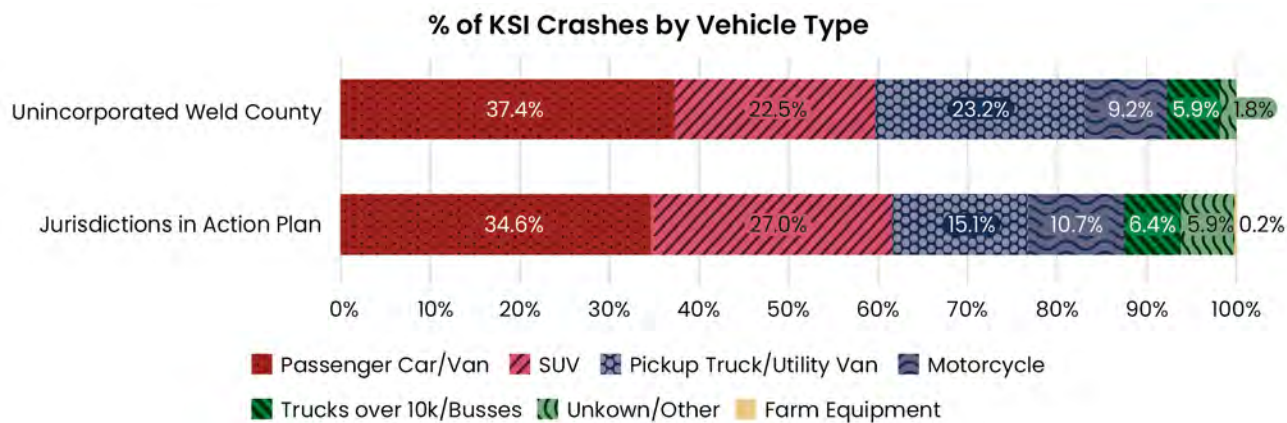
Vehicle Types

Different vehicle types impact safety in unique ways. Larger vehicles (like trucks) can lead to more severe crashes as the size and weight can increase damage caused by these vehicles in crashes whereas smaller vehicles (like motorcycles) are at a higher risk of fatalities and serious injuries due to more physical exposure by the driver.



*Source: Colorado Department of Revenue Fiscal Year 2023-2024 Annual Report

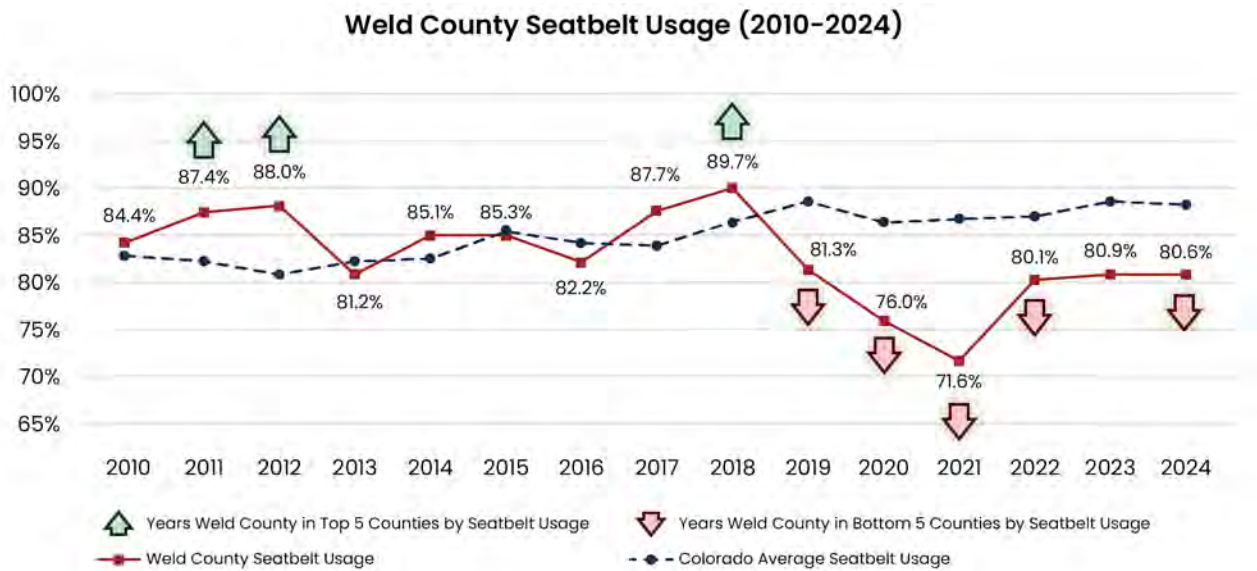
Vehicles type will vary based on geography as well. Rural areas will have more work vehicles like pickup trucks, cargo vans, and farm equipment whereas urban areas will see more passenger vehicles (including SUVs). **Looking at specifically heavy trucks, crashes involving a heavy truck make up a small percentage (0.3%) of all crashes within Weld County. Of the 42 crashes involving a heavy truck, 38% resulted in a fatal or serious injury.**



Safety equipment usage by vehicle types also varies.

Over the last 15 years, Weld County’s seatbelt usage has fluctuated. In 2010, Weld County had a usage rate of 84.4% (ranked 11 out of the 25 counties included in the survey), reaching a peak of 89.7% (ranked 5 out 31 counties) in 2018. During this period, Weld County was in the top five counties by seatbelt usage in the entire state for three years (nearly reaching CDOT’s 90% threshold for seatbelt usage rate in 2018).

However, beginning in 2019, Weld County’s seatbelt usage dipped, reaching a low of 71.6% in 2021 (ranked 29 out of 31 counties); between 2019 and 2024, Weld County was ranked in the bottom five counties by seatbelt usage for five out of six years.



Source: CDOT Statewide Seatbelt Survey (2010-2024)

The National Highway Traffic Safety Administration (NHTSA) estimates that wearing a seat belt reduces the risk of serious injury or death by up to 65%. **Looking at crashes in Weld County by seatbelt usage, a quarter of all serious injury crashes and a third of fatal crashes involved at least one driver with improper or no seatbelt usage.**



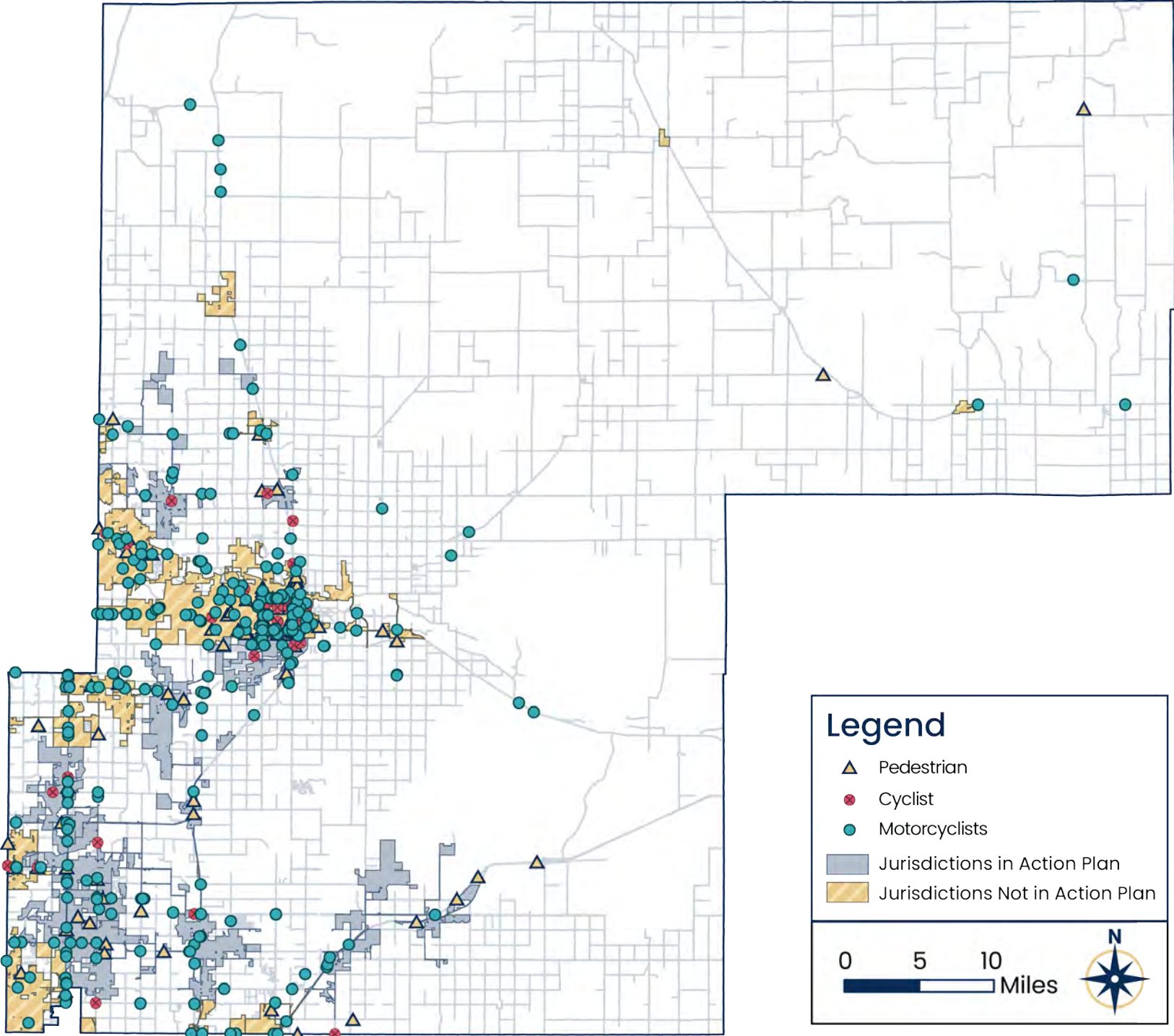
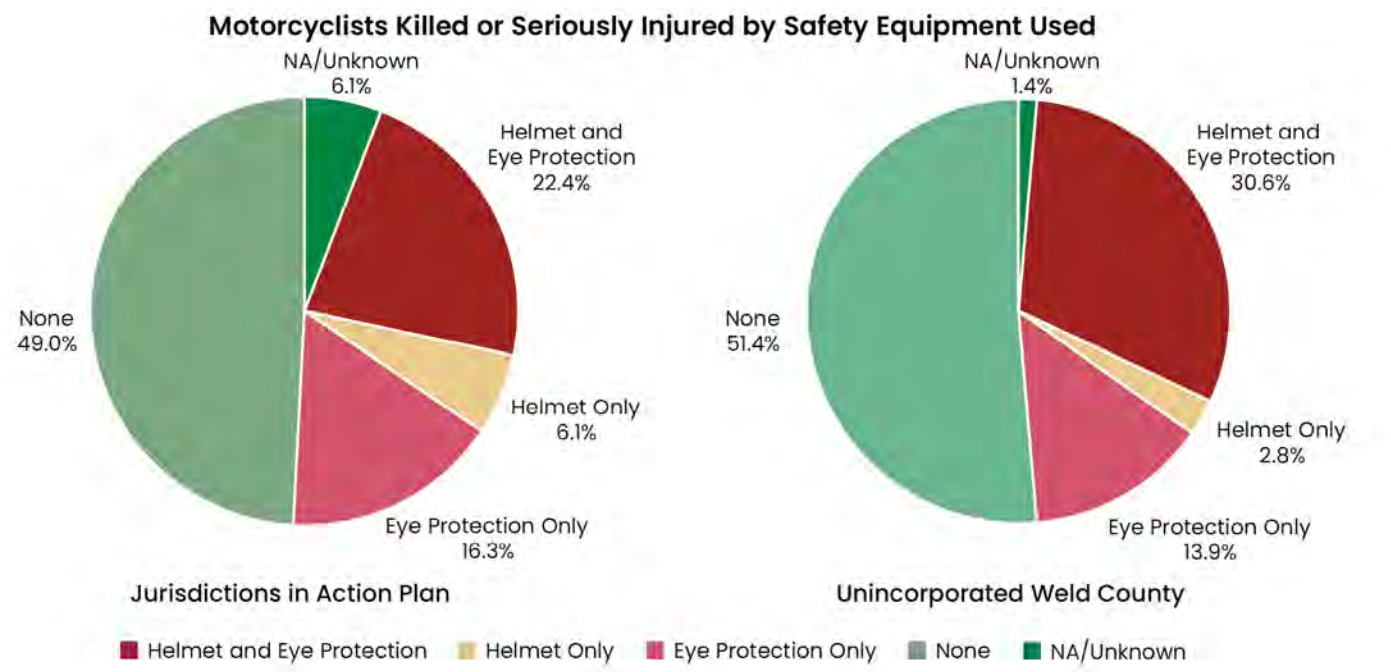
Vulnerable Road Users

Vulnerable road users, made up of pedestrians, bicyclists, and motorcyclists, account for over 21% of all KSI crashes. When we examine transportation mode share in Weld County, vehicle traffic makes up 97% of commute trips but less than 79% of KSI crashes. This means that the other modes of travel in Weld County are far over-represented:



For motorcyclists, one contributing factor to this overrepresentation could be low rates of helmet and safety gear usage by motorcyclists, as more than half motorcyclists injured in crashes were not wearing any form of safety gear. Approximately three-quarters of motorcyclists within jurisdictions in the action plan and two-thirds of motorcyclists in unincorporated Weld County were not wearing helmets. Currently, Colorado does not have a law requiring riders 18 and over to wear a helmet. Motorcycle helmet usage is estimated to reduce the risk of death for motorcyclists by 42% and the risk of head injury by 69%.²

Although Colorado legally requires all riders (driver or passenger) to use some form of eye protection, 61.2% of urban (jurisdictions in action plan) riders and 55.6% rural riders killed or injured in a crash were not wearing eye protection.



² <https://pubmed.ncbi.nlm.nih.gov/18254047/>





Toolbox of Safety Countermeasures

The Weld County Safety Action Plan has a toolbox of infrastructure countermeasures, from engineering and design solutions like signage or lane reconfiguration to education campaigns, that raise awareness about safe road behaviors.

Audience

This toolbox is simple, straightforward, and created for a wide range of users. Although the primary audience is transportation professionals and safety advocates in roles where they have an impact on what projects are implemented within their community (such as members of a Planning or Public Works department), this toolbox was designed to ensure that anyone could pick it up and understand what these countermeasures are, their benefits, and their applications.

Weld County has a variety of different contexts that affect which countermeasures are most appropriate for a given situation. This toolbox features 48 countermeasure tools broken into three sections, dividing countermeasures by the appropriate land use areas:



All Weld County Countermeasures (Rural-Urban)



Jurisdictions in Action Plan Countermeasures (Urban)



Unincorporated Countermeasures (Rural)

These countermeasures are also labeled with applicable emphasis areas (Behavioral, Environmental, Infrastructure, or Modes of Travel) to help make the transportation network safer and more accessible for all road users, regardless of the cause, location, or preferred travel method. The toolbox can be utilized in conversations around safety, especially in reaching a shared understanding about creating a safer roadway system for all.

With this toolbox, Weld County can tailor its approach to specific road user groups, locations, and conditions, ensuring a holistic and effective strategy towards creating safer roads for all users.



Attribute Descriptions

Each countermeasure includes the following:

Applicable Emphasis Area: Indicator of the primary type of crash the countermeasure is used to combat; however, this does not indicate an exhaustive list of crash types that could benefit from the countermeasure.

Name: The title of the countermeasure.

Description: 1-2 sentences describing the countermeasure.

Crash Reduction Factor: The potential reduction of crashes due to the implementation of a countermeasure for all crash severities and types, with exceptions for roadway lighting, cable median barrier, and all pedestrian and bicycle safety related countermeasures.

Cost: The relative cost for the countermeasure.

- \$ <\$10k
- \$\$ \$10k – \$100k
- \$\$\$ \$100k – \$1M
- \$\$\$\$ \$1M+

Traffic Consideration: Traffic considerations are factors (such as roadway geometry, traffic volume, and number of lanes) that help users decide if a countermeasure may be a good fit for a potential area or project; as behavioral countermeasures are not dependent on the existing geometry of the roadway network, general considerations (such as crash history) are the factors considered.





All Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Behavioral	Mass Media Campaigns	Mass media campaigns are intensive communication and outreach activities focusing on key topics regarding safety, health, and well-being (such as driving under the influence) that use radio, television, print, social, and other mass media platforms.	Varies	\$\$	See NHTSA Countermeasures That Work: Mass Media Campaigns
Environmental	Road Safety Audit (RSA)	A RSA is a safety performance review of a roadway segment or intersection by a multidisciplinary team as a part of a project development process; RSAs investigate existing infrastructure, mode use, and other factors.	NA	\$	Can be employed on any type of facility and during any stage of the project development process, including existing facilities that are open to traffic. RSAs conducted during the pre-construction phase can be particularly effective because there is an opportunity to address a number of safety issues.
Environmental	Speed Limit Reduction / Slow Zones	1. Speed limit reductions, based on context and activity level, reduce crashes by lowering speeds and increasing sign frequency. 2. Slow zones designate lower speeds (15 - 20 mph) in areas with vulnerable populations, like parks, school zones, and neighborhoods.	25%	\$\$\$	1. - 2. <5,000 ADT
Environmental	Lateral Shift	A lateral shift is a shift of an otherwise straight street to reduce motor vehicle speeds, typically through the use of a median island.	NA	\$\$	Speed limit ≤ 35 MPH Midblock locations only, preferably near a streetlight
Environmental	Gateway Signing / Landscaping	Gateway signing / landscaping is a way to give warning to motorists entering a denser region of the county from a more rural area. Landscaping can also be used to calm traffic by visually narrowing the roadway.	30%	\$\$	

Success Story: Lane Reconfigurations in Genesee County (Michigan)

A technical study in Genesee County was completed that evaluated more than 140 miles of four-lane roads to identify potential for reduction to three lanes. After analyzing traffic impact, crash history, and other operational features, a ranking of the best candidates for lane reconfigurations was created for easier project identification and prioritization. After implementing several lane reconfiguration projects, the Genesee County Metropolitan Planning Commission conducted a before-after analysis of 7 project locations over an 11-year period. Results showed an overall reduction of crashes:

- A 32% reduction in head-on crashes
- A 58% reduction in left-turn crashes
- A 35% reduction in rear-end crashes
- A 36% reduction in rear-end left-turn crashes
- A 33% reduction in side-swipe same side crashes
- A 39% reduction in side-swipe opposite side crashes
- A 32% reduction in all non-alcohol and non-deer crashes

The space created from the reduced lane can also be used in other ways to improve the roadway like added bike lanes, pedestrian pathways, or parking. Lane reconfiguration can improve safety, calm traffic, and provide better mobility/access for all road users.³

³ rdig.pdf





All Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Infrastructure	All-Way Stop Control Conversion	All-way stop control converts either two-way stops or unwarranted signals to four-way stops, reducing wait times and making intersections more predictable. This countermeasure can also serve as a temporary solution for other, more expensive traffic control solutions, such as roundabouts.	70%	\$	<12,000 ADT(each approach) <=2 thru-lanes (each approach)
Infrastructure	Lane Narrowing	Lane narrowing shrinks roadway width while keeping the same number of lanes, slowing traffic, shortening pedestrian crossings, and allowing for the reclaimed space to be used for on-street parking or for adding bike/pedestrian facilities.	25%	\$\$	Avoid on truck routes
Infrastructure	Lane Reconfiguration	Lane reconfigurations reduce the number of lanes, cutting conflict points, crossing distances, and vehicle speeds. In rural areas without sidewalks, increasing the paved shoulder width by removing a travel lane can accommodate non-motorized users.	35%	\$\$-\$\$\$	4-to-2 thru lanes: <18,000 ADT 6-to-4 thru lanes: <36,000 ADT
Infrastructure	Lighting	Street lighting improves visibility, especially at intersections, crosswalks, and other high-traffic areas, reducing crashes and enhancing pedestrian safety.	20%	\$\$	History of nighttime crashes
Infrastructure	Reduced Left-Turn Conflict Intersections	Reduced left-turn conflict intersections redesign left turns to reduce crashes and improve safety. Common types include RCUTs (which modifies the cross-street approach) and MUTs (which modifies the major approaches).	35%	\$\$\$\$	Prior condition: stop-controlled or signalized





All Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Infrastructure	Systemic Crossing Modifications	Systemic crossing modifications improve pedestrian safety and accessibility across busy streets with marked crosswalks, lighting, refuge islands, and clear signage.	30%	\$\$	See FHWA STEP Guide, Table 1
Infrastructure	Flashing Yellow Arrows (FYA)	FYA traffic signals feature a flashing yellow arrow in addition to the standard red, yellow, and green arrows. When illuminated, the FYA allows waiting motorists to make a left-hand turn after yielding to oncoming traffic. FYAs reduces driver confusion when turning.	25%	\$	See FHWA MUTCD, Chapter 4A.04
Infrastructure	Protected Left-turn Only Phasing	Protected left-turn only phasing provides a green arrow for left-turning vehicles while stopping oncoming traffic and parallel pedestrians. This phasing improves safety by limiting confusion and limiting traffic conflicts.	40%	\$-\$\$	See FHWA Pedestrian Safety Guide and Countermeasure Selection System, Left-Turn Phasing
Infrastructure	Retroreflective Backplates	Retroreflective backplates increase the visibility of traffic signals; they also alert drivers to intersections during power outages.	15%	\$	
Infrastructure	Modern Roundabout	1. Single-lane roundabouts reduce traffic speed, eliminate dangerous angle crashes, and shorten crossing distances for pedestrians. 2. Multi-lane roundabouts handle more traffic but have more conflicts than single-lane roundabouts. Turbo roundabouts add dividers to improve safety.	70%	\$\$- \$\$\$\$	<30,000 EADT <45,000 EADT





All Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Infrastructure	Intersection Conflict Warning System (ICWS)	An ICWS provides warnings to drivers through warning signs and beacons of potential conflicting vehicles approaching an unsignalized intersection. ICWSs can be installed on the major and/or minor approach.	30%	\$-\$\$	History of angle crashes See FHWA MUTCD for signage and beacon placement guidance
Infrastructure	Corridor Access Management	Corridor access management reduces driveway density (i.e., the number of entry and exit points along the roadway, including intersections) to reduce trip delay and congestion, facilitate walking and biking, and enhance safety for all modes of transportation.	25%	\$-\$\$\$\$	Reanalyze access management after substantial land use changes or development, as travel patterns change, and at time of roadway widening or reconstruction.
Infrastructure	Dedicated Turn Lanes (Intersection) / Offset Turn Lanes	Dedicated turn lanes separate and protect turning vehicles from travel lanes, providing deceleration before a turn and storage of vehicles waiting to turn. Offsetting turn lanes increases visibility these vehicles, especially at locations with higher speeds or where free-flow or permissive movements are possible.	50%	\$\$\$	History of rear-end crashes and/or queueing-related issues





Jurisdictions in Action Plan Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Behavioral	High-Visibility Saturation Patrols	A saturation patrol consists of law enforcement officers patrolling a specific area looking for impaired drivers; these patrols usually occur at times and locations where impaired-driving crashes commonly occur and should be publicized extensively and conducted regularly.	NA	\$\$	See NHTSA Countermeasures That Work: High-Visibility Saturation Patrols
Behavioral	Publicized Sobriety Checkpoints	Sobriety checkpoints are highly visible, regularly conducted stops of motorists at predetermined locations to investigate whether motorists are impaired. Stops are conducted per vehicle or at a regular interval (e.g., every third vehicle).	10%	\$\$	See NHTSA Countermeasures That Work: Publicized Sobriety Checkpoints
Behavioral	Automated Enforcement	Automated enforcement uses cameras to detect and document traffic violations like red light running and speeding, notifying vehicle owners by mail.	25%	\$\$	Data-informed location selection
Behavioral	Integrated Enforcement	Integrated enforcement is a type of high visibility enforcement focused primarily on behavioral activities, such as driving under the influence, speeding, and seat-belt usage, and is seen in both regular traffic enforcement / crash investigations and specialized checkpoints / saturation patrols.	Varies	\$\$	See NHTSA Countermeasures That Work: Integrated Enforcement
Infrastructure	Intersection Daylighting	Intersection daylighting improves the sight distance for road users as they enter and navigate an intersection by restricting curbside vehicle parking spaces or clearing of sight distances leading up to an intersection. Restrictions can be accomplished through the use of pavement markings and flexible guideposts.	30%	\$\$	Intersections with high pedestrian traffic History of crashes due to limited sight distance

Success Story: Carmel, Indiana, and the use of roundabouts

Carmel, Indiana, took their passion for roadway safety and channeled it into creating a town with more roundabouts than any other city in the U.S. This conversion of intersections into roundabouts lead to a 47% reduction in overall injury crashes. Their circular design reduces the likelihood of severe collisions by better managing speed and traffic flow, with roundabouts being well known for their safety and efficiency in managing traffic volumes.⁴

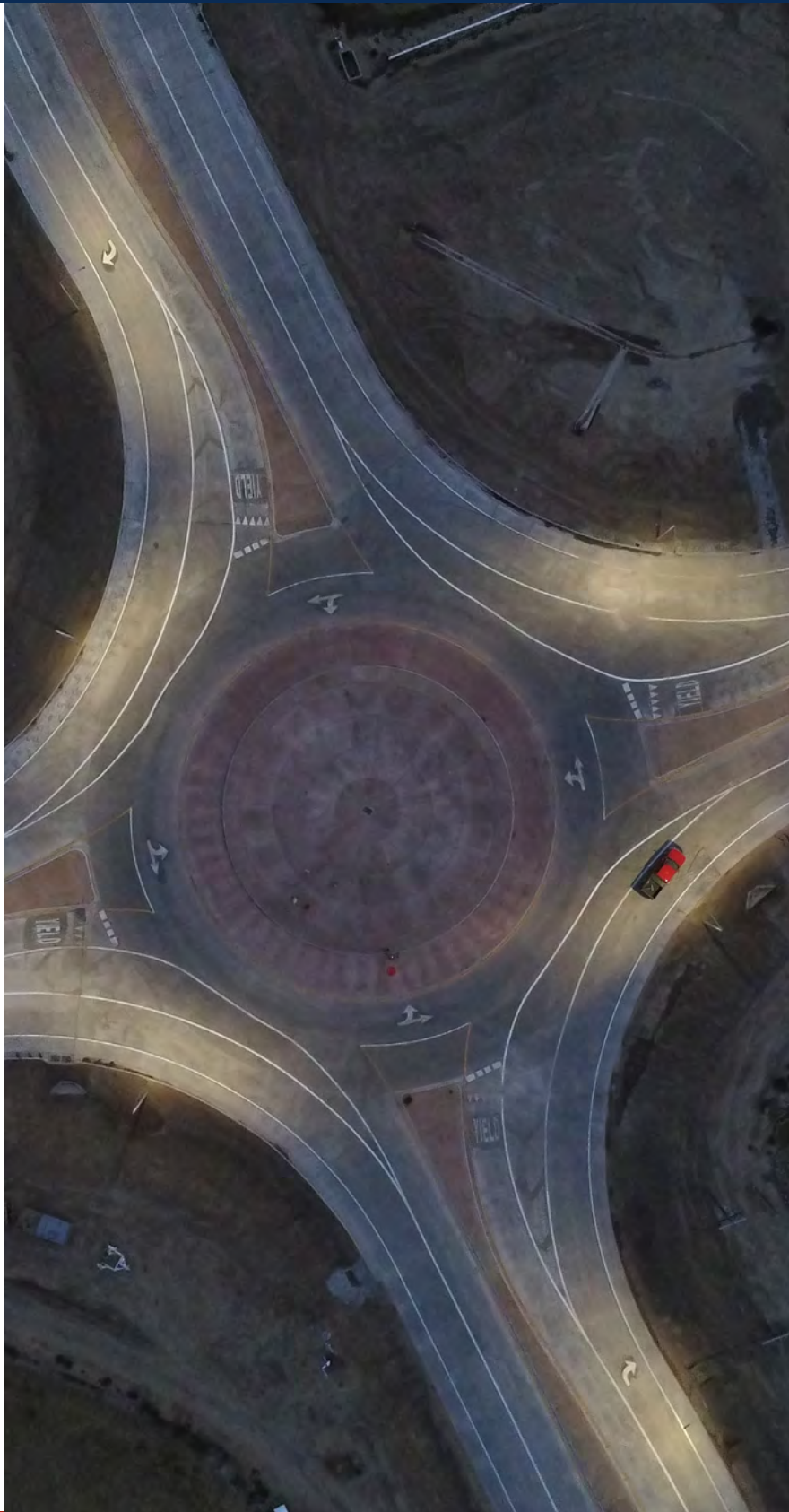
⁴ Yes, Carmel's roundabouts have a huge impact in reducing crashes | wthr.com





Jurisdictions in Action Plan Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Infrastructure	Leading Pedestrian Intervals (LPI)	LPIs give pedestrians 3-7 seconds of crossing time before vehicles are given a green light; LPIs increase pedestrian visibility, increase the yielding behavior of motorists, and can provide additional time to cross.	10%	\$-\$\$	See Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE)- Leading Pedestrian Interval
Infrastructure	Raised Medians	Medians separate traffic, reducing head-on collisions and providing safe havens for pedestrians. Raised medians can be used in conjunction with corridor access management strategies (e.g., reducing driveway access points).	25%	\$\$\$\$	History of head-on and angle collisions
Infrastructure	Mini-Roundabout	Mini-roundabouts are smaller, single-lane versions of traditional roundabouts with traversable centers for larger vehicles without requiring additional ROW.	35%	\$\$-\$\$\$	<20,000 EADT
Modes of Travel	Raised Crosswalk / Raised Intersection	Raised crossings improve pedestrian safety and accessibility by slowing traffic and providing a level crossing surface flush with the sidewalk while simultaneously encouraging motorists to yield. Raised crossings can be extended to cover an entire intersection.	30%	\$\$	(see FHWA STEP Guide, Table 1)
Modes of Travel	Rectangular Rapid Flashing Beacon (RRFB)	RRFBs use flashing lights to improve safety at unsignalized crosswalks, especially multilane crossings under 40 mph.	45%	\$\$	(see FHWA STEP Guide, Table 1)





Jurisdictions in Action Plan Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Modes of Travel	Pedestrian Hybrid Beacon (PHB)	PHBs use flashing lights to improve driver yielding to pedestrians at unsignalized crossings, especially on higher-speed roadways.	55%	\$\$\$	(see FHWA STEP Guide, Table 1)
Modes of Travel	High Visibility Crosswalk	High visibility crosswalks create a visible place for pedestrians and bicyclists to cross using a combination of high visibility crosswalk markings, parking restrictions, advance pavement markings/signs, curb extensions, and lighting.	40%	\$\$	Areas of high pedestrian traffic
Modes of Travel	Bicycle Lanes	Bicycle lanes make cycling safer and more comfortable by separating cyclists from traffic and pedestrian facilities using paint or physical barriers.	45%	\$\$	<6,000 ADT and <35 MPH
Modes of Travel	Curb Extensions	Curb extensions and bulb-outs shorten crossing distances, improve visibility, and reduce vehicle speeds by narrowing the roadway. Curbs can be extended at midblock crossings or at intersections.	30%	\$\$	Avoid at high truck-volume intersections





Unincorporated Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Environmental	Center Line Buffer Area	A center line buffer area provides extra space between the two solid center line markings, further separating opposing directions of traffic. The width of the buffer area can range between two to ten feet.	35-90%*	\$	No-passing zones with adequate ROW History of head-on crashes
Environmental	Enhanced Curve Delineation	Enhanced curve delineation uses a combination of signs and pavement markings to significantly reduce curve crashes, such as chevrons, in-lane curve warning pavement markings, retroreflective strips on signposts, delineators, and dynamic warning signs / chevrons.	30%	\$\$	Existing sideslope and distance to roadside features History of roadway departure, nighttime crashes, or crashes during inclement weather
Environmental	Roadside Design Improvements at Curves	Roadside design improvements, including the establishment of clear zones, flattening slopes, adding or widening shoulders, or installing roadside barriers, allow for a safe recovery for a motorist who has left the roadway or to stop safely.	20%	\$-\$\$	History of lane departure crashes
Environmental	Local Road Safety Plan (LRSP)	A LRSP is a plan that identifies, analyzes, and prioritizes roadway safety improvements on local county roads utilizing public and stakeholder engagement, RSA, data analyses, and more.	25%		
Environmental	Rumble Strips & Stripes	Rumble strips and stripes (strips that have pavement markings painted over them) alert drivers to lane departure, reducing head-on and run-off-the-road crashes. Rumble strips/stripes can be placed at the center line, edge line, or on the shoulder.	15%	\$\$	Can be in both passing and no passing zones wherever an agency has identified risk factors (such as lane width, shoulder width, median type, horizontal curvature, or crash history)

Countermeasures in Action Washington County (Kansas) Curves

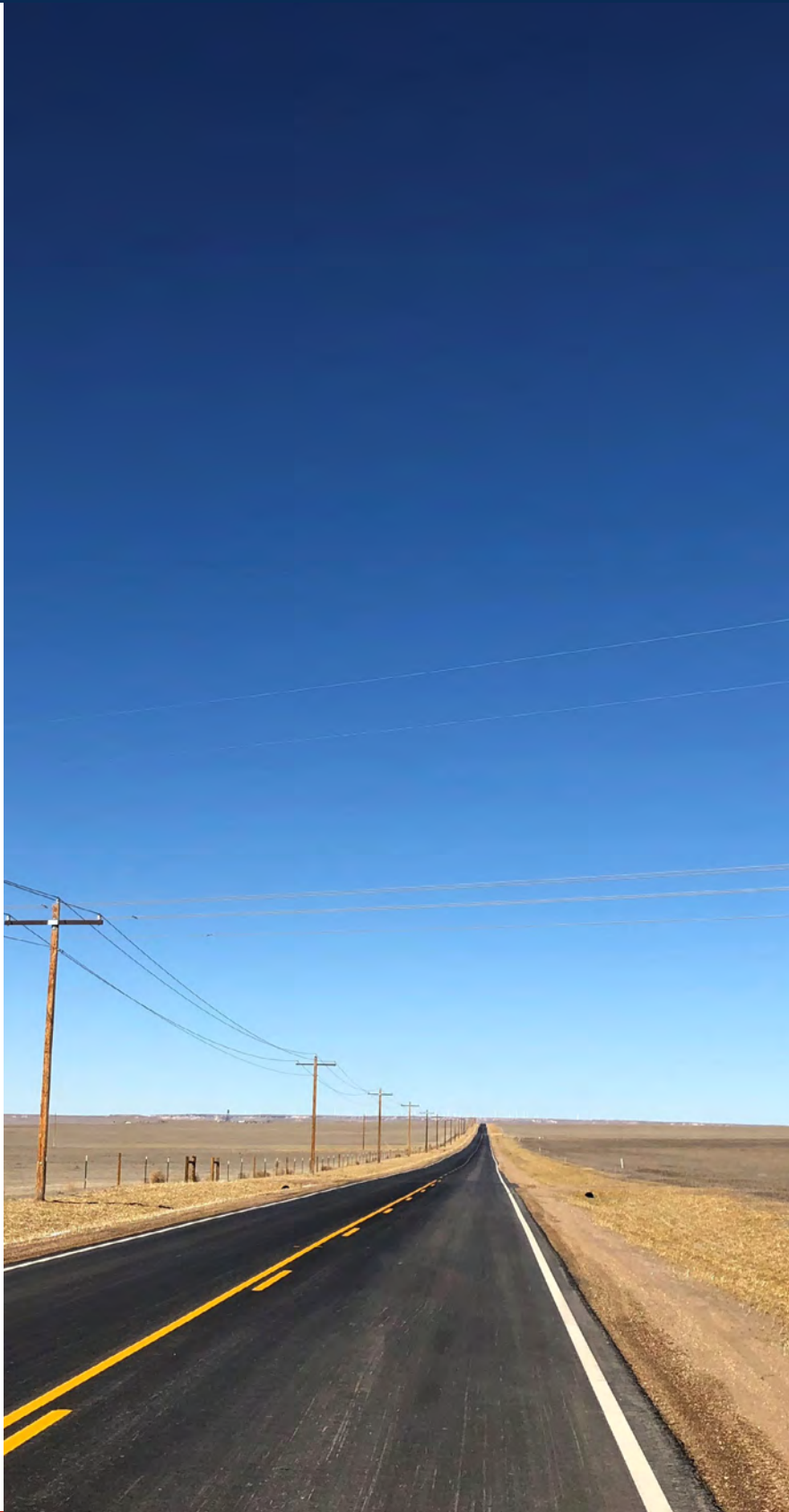
A study was performed in Washington County, Kansas, to address additional signing on curves to increase roadway curve visibility and safety. Through this study, improvements to existing and new signage were suggested as well as adjustments to advisory speeds to reduce crash volume and limit lane departures.





Unincorporated Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Environmental	Shoulder Installation / Widening	Installing or widening shoulders provides space for disabled vehicles, maintenance, and other safety activities. Safety edges can be installed on new or widened existing shoulders.	25%	\$\$\$	Most Effective When ADTs >1,000
Environmental	Wider Edge Lines	Wider edge lines improve visibility, reducing roadway departure crashes, especially on rural two-lane highways. Adding center and edge lines where they are missing further improves safety.	35%	\$\$	Applicable to all facility types (e.g., freeways, multilane divided or undivided highways, two lane highways) Commonly installed on rural two-lane highways, particularly those with a history of single-vehicle roadway departure crashes
Environmental	Clear Zone	Clear zones are areas along the roadside that have been cleared of natural materials and debris, compacted, and leveled; the width of a clear zone depends on a variety of factors, including traffic volumes, speeds, slopes, fixed objects, terrain, and other factors that affect risk.	20%	\$-\$\$\$\$	
Infrastructure	Systemic Stop-control Modifications	Systemic stop-control modifications improve intersection visibility with advanced warning signs, retroreflective panels, enlarged signs, rumble strips, and cross-traffic warning signs.	25%	\$\$	History of stop-sign running or nighttime crashes
Infrastructure	Striping Center Lines / Edge Lines	Roadway striping, in the form of center lines and edge lines, separates the opposing flows of traffic and indicates the edge of the paved roadway from the shoulder/the adjacent graded materials.	25%	\$	History of head-on crashes





Unincorporated Weld County Countermeasures

Emphasis Area	Name	Description	Crash Reduction Factor	Cost	Traffic Consideration
Infrastructure	Approach Rumble Strips	Approach rumble strips are transverse rumble strips installed into the pavement ahead of stop-controlled approaches; when crossed by tires, these create a physical vibration and an audible warning that alerts the motorist of the upcoming approach so that they can safely stop in time.	30%	\$	History of failure to yield and related crashes
Infrastructure	Dynamic Curve Warning System (DCWS)	DCWSs aim to decrease vehicle speeds at a curve by displaying dynamic feedback of vehicle speed to speeding drivers; messaging could be the driver's speed, "SLOW DOWN," or activation of warning devices. Sequential DCWSs are a series of solar-powered, LED-enhanced chevrons installed through a curve.	45%	\$\$-\$\$\$	Applicable at horizontal curve locations History of high-speed and/or roadway departure crashes
Infrastructure	Cable Median Barrier	Cable median barriers protect against fixed roadside hazards, reducing fatal and serious crashes.	25%	\$\$\$	History of median crossover or head-on collisions
Modes of Travel	Safety Edge	Safety edges provide a smooth transition between paved roadway and shoulders, preventing tire damage and vehicle loss of control while increasing pavement durability.	0.25	\$\$\$	Curb-less/guardrail-less roadways
Modes of Travel	High Friction Surface Treatment (HFST)	A HFST is a layer of specialized aggregate locked onto the roadway surface that improves the friction capability for vehicles and should be used at interchange ramps, horizontal curves, intersections, and locations with high-friction demand.	45%	\$\$	History of run-off road, inclement weather, and/or motorcycle crashes





Action Steps and Recommendations

This Safety Action Plan is a response to the lives lost or forever altered in Weld County due to preventable, traffic-related incidents; the SAP presents a comprehensive set of recommendations designed to guide communities towards safer roads for all users.

The following recommendations are based on discussions with the project team, the Safety Task Force, community priorities, and a review of the county's current policies, programs, and processes related to transportation safety.

This set of recommendations spans three crucial principles based on the Safe Systems Approach:

Safer Speeds



Safer Speeds will explore measures to curtail excessive speeds, a key contributor to the severity of traffic collisions.

Safer Roads



Safer Roads will underscore the need for well-designed infrastructure that accommodates diverse modes of travel.

Safer People

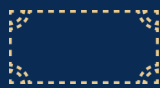


Safer People will tackle education and awareness, fostering a culture of shared responsibility among all road users.



Structure of Recommendations

Name: The title of the recommendation.
Recommendation: 1-2 sentences describing the action recommended.
Justification: 1-2 sentences providing further description and justification.
Cost: The relative cost associated with the recommendation.



(-) Not Applicable.



(\$) Implementable with current staff; minor training and limited costs for equipment or facilities may be necessary.



(\$\$) Requires some additional staff time, equipment, facilities, and/or publicity.

Timeline: Relative time frame associated with the descriptions; all timeframes were kept under 5 years to account for (1) the urgency of eliminating traffic fatalities and (2) the plan is anticipated to be updated every 3-5 years and timelines updated.

Timeline	Description
Short-term	Complete in 6 months – 2 years
Long-term	Complete in 2 – 5 years
Ongoing	Start within 1 year with no end date

Safe System: The applicable component of the Safe System Approach; these recommendations focus on **Safer Speeds**, **Safer Roads**, and **Safer People**, as these are the parts of the transportation network that Weld County can have the most impact on.

Emphasis Area: The emphasis area(s) that the recommendation is targeting for safety improvements.



Behavioral:
Impaired & Distracted Driving, Speeding



Environmental:
Land Use Context, Road Hazards



Infrastructure:
Lighting, Intersection & Roadway Design



Modes of Travel:
Vehicle Types, Vulnerable Road Users

Urban/Rural/Both: The land use context that the recommendation is suited for.





Safer Speeds

Dynamic Speed Display/Feedback Signs

Recommendation: Expand deployment of speed feedback signs (temporary/mobile or permanent) in locations determined through a data-driven process, targeting locations with high rates of speed-related crashes, a high rate of prevailing speeds, a high number of pedestrian and bicycle users, and based on public input.

Justification: Speed feedback signs dynamically show the driver's speed alongside the posted speed limits and have been shown to slow overall speeds where deployed. They also can help to educate drivers on the importance of safe speeds.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Speed Management Plan

Recommendation: Develop a Speed Management Plan for county roads. Key elements of the speed management plan should include (1) system-wide speed data collection and analysis, (2) review of statutory speed limits, (3) traffic calming strategies, and (4) public education and awareness.

Justification: A Speed Management Plan (SMP) systematically reviews posted statutory speed limits and actual prevailing driver speeds across an entire county. SMPs also include a review of policies used in setting speed limits and making recommendations to change speed limits in specific locations, identifying speed management areas, and designating areas for traffic calming implementation. FHWA provides guidance on creating plans and other resources.

Cost:



Timeline:

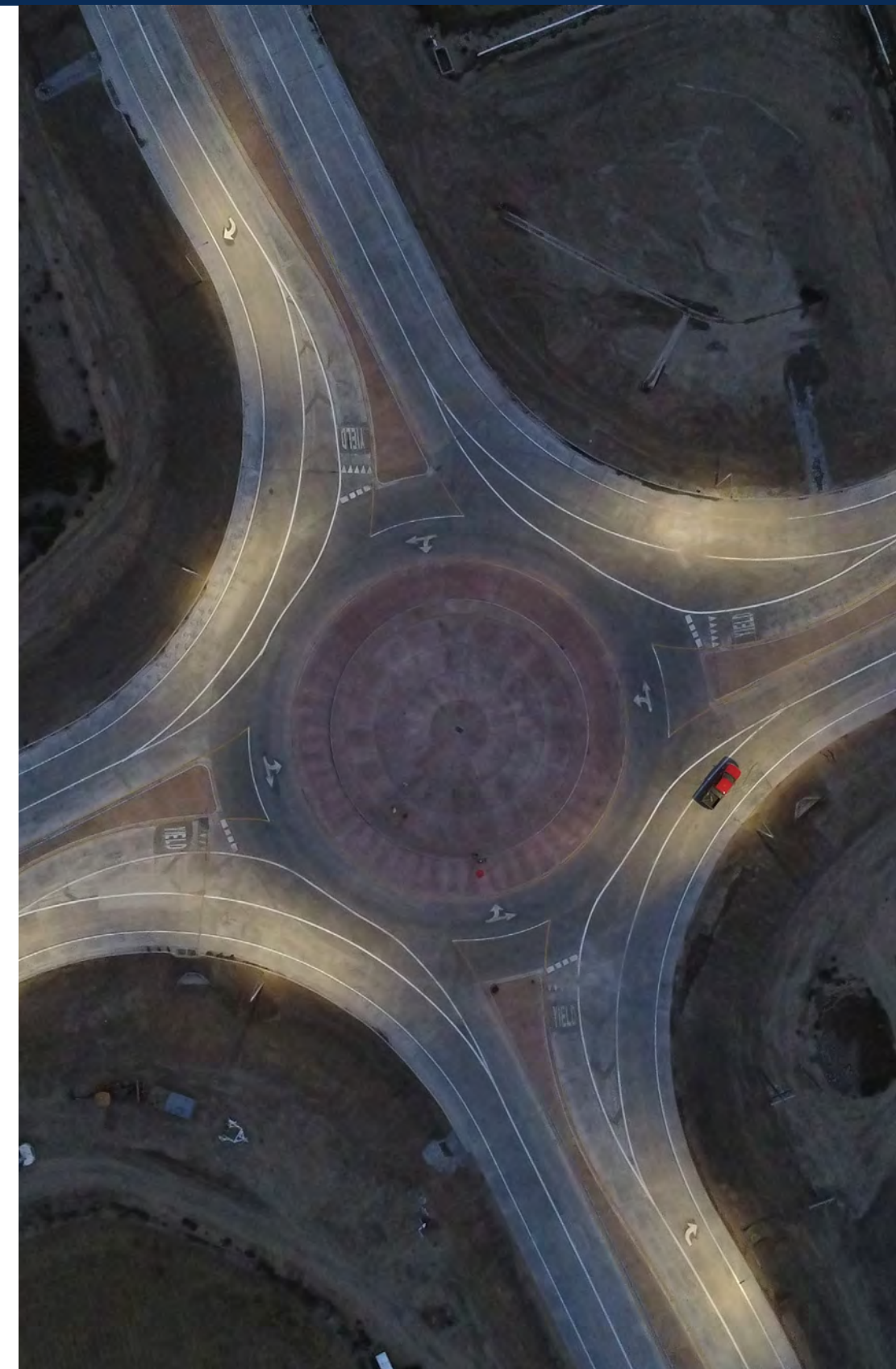
Long-Term

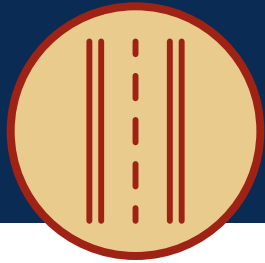
Emphasis Area:



Urban/Rural/Both:

Both





Safer Roads

CIP Project Identification and Prioritization

Recommendation: Develop and apply safety-focused criteria for transportation project identification and prioritization as part of each capital improvement plan update. The criteria should include fatal and serious injury crash reductions.

Justification: Capital Improvement Plans (CIP) outline their planned infrastructure improvements over the next period. The CIP process provides an opportunity to prioritize projects that align with a community's safety goals.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Safety Lighting Action Plan

Recommendation: Develop and implement a Safety Lighting Action Plan to enhance roadway illumination, aiming to reduce nighttime traffic fatalities and serious injuries.

Justification: Adequate lighting is a proven countermeasure for improving traffic safety. Enhanced illumination at intersections, pedestrian crossings, and high-risk areas increases visibility for all road users, thereby reducing the likelihood of crashes during low-light conditions. FHWA provides guidance and resources for creating plans and overall best practices.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Quick-Build Funding Program

Recommendation: Develop a funding program for quick-build or demonstration safety improvements. Include monitoring and data gathering to assess the effectiveness of these projects, allowing for improvements, replication, or making them more permanent.

Justification: Quick-build projects are easily adjustable safety improvements typically utilizing paint, posts, signage, and other widely available, low-cost materials. Examples of quick-build projects include installing paint-and-post curb extensions at pedestrian crossings and intersection access control (e.g. paint-and-post medians) at high conflict intersections.

Cost:



Timeline:

Short-Term

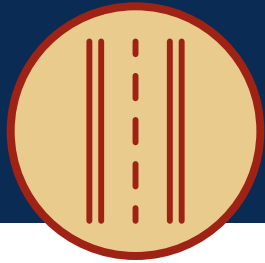
Emphasis Area:



Urban/Rural/Both:

Urban





Safer Roads

Intersection Control Evaluation Policy

Recommendation: Adopt an Intersection Control Evaluation (ICE) policy. ICE reports should be conducted for all intersections in capital improvement projects and for collector and arterial street intersections that are constructed or reconstructed as part of private development projects. Consider waiving the ICE requirement for improvements that choose roundabouts from the project’s outset.

Justification: Implementing an ICE process enables jurisdictions to make data-driven decisions, consider all viable intersection alternatives, and select cost-effective solutions, ultimately enhancing overall road safety. An ICE process evaluates safety, traffic operations, pedestrian and bicycle access, cost, right-of-way impact, and other factors to determine the appropriate intersection control type for a new or reconstructed intersection.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Street Design Standards Updates

Recommendation: Update the Weld County Engineering and Construction Criteria manual to incorporate Safe Systems and context-sensitive design principles, such as:

- reducing some of the minimum roadway widths, lane widths, and posted speeds within Subdivisions;
- reducing the minimum design speed requirement to 5 mph over the posted speed (instead of the current 10 mph);
- increasing the level of separation of pedestrian and bike facilities from vehicle traffic (such as incorporating an off-street shared use path or separated bike lanes instead of on-street bike lanes in the “Urban Arterial” standard cross-section);
- changing the design vehicle for urban streets within subdivisions to an SU-30, except where necessary to accommodate large trucks; and
- including a wider shoulder width as part of the design standards for rural local roads.

Justification: Weld County’s Engineering and Construction Criteria manual guides the design, review, and construction of all improvements in the public right-of-way. Safety-focused revisions to the design standards can help to further emphasize a safe systems approach to the design of newly constructed streets and improvements along existing streets.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Systemic Lane Departure Mitigation Strategy

Recommendation: With all rural county road resurfacing projects, consider incorporating systemic lane departure mitigation countermeasures such as rumble strips, wide edge lines, SafetyEdge, and curve delineation improvements. Develop specific criteria for selecting the appropriate countermeasures based on the existing roadway cross-section, traffic volumes and speeds, and crash history.

With all new construction and reconstruction, continue following the Transportation Plan TP.Policy 1.1. “Ensure County road facilities are constructed and maintained in accordance with the functional classification plan, as well as adopted County standards in the Weld County Engineering and Construction Guidelines” with emphasis on roadway shoulders.

Justification: Incorporating lane departure mitigation treatments into all capital construction and routine resurfacing projects is a cost-effective way to systematically incorporate these safety countermeasures on county roadways throughout the rural areas of the county. Crash types that are related to lane departures (such as overturning, sideswipes, head-on crashes, and embankment/ditch crashes) are significantly overrepresented in the county’s rural areas.

Cost:



Timeline:

Ongoing

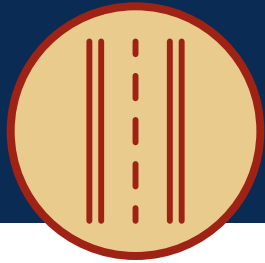
Emphasis Area:



Urban/Rural/Both:

Rural





Safer Roads

Road Safety Audits

Recommendation: Include a Road Safety Audit with every capital improvement project. Additionally, the county should choose at least one location on the High Injury Network or Highest Risk Network to perform a Road Safety Audit each year.

Justification: Road Safety Audits follow a formal process utilizing a multidisciplinary group that reviews street safety aspects and makes recommendations. Use of RSAs has shown up to 60% decrease in crashes where recommendations were implemented.

Cost:



Timeline:

Long-Term

Emphasis Area:



Urban/Rural/Both:

Both

Bicycle & Pedestrian Plan

Recommendation: Develop a strategic plan for developing a more bicycle and pedestrian friendly roadway and trail network in Weld County. The plan should inventory gaps in sidewalks, crossings, multi-use shoulders, and network gaps in trails and bike infrastructure—especially connecting schools, subdivisions/populated areas, employers, and parks. The plan should develop a prioritized list of potential projects to address these gaps as well as policy recommendations that could improve access to safe walking and bicycling.

Justification: Pedestrians and bicyclists are over-represented in fatal and serious injury crashes compared to other modes of travel in Weld County. A comprehensive plan for improving network connectivity for these active modes of travel can help to address key areas of safety concerns while increasing recreation opportunities and transportation options.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Utilize Appropriate Safety Technology

Recommendation: Include technology-based improvements in roadway and intersection designs. These improvements could include installing Intersection Conflict Warning Systems at intersections or speed reduction notice approaching intersections or curves.

Justification: The Weld County Crash data shows ~43.7% of fatal and serious injury crashes happen at 0.7% of all intersections in the county. Installation of ICWS at high-conflict locations can reduce crashes up to 19% (FHWA). The judicious use of ICWS can reduce the number crashes at these locations.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both





Safer People

Promote Motorcycle Rider Education

Recommendation: Promote and spread awareness of motorcycle rider training courses, such as those offered through the Colorado Motorcycle Operator Safety Training (MOST) program.

Justification: Motorcyclists are over-represented in fatal and serious injury crashes compared to other modes of travel in Weld County. Comprehensive training equips riders with critical skills and knowledge, promoting safer riding behaviors and better hazard perception.

Cost:



Timeline:

Long-Term

Emphasis Area:



Urban/Rural/Both:

Both

Vehicle Fleet Safety Training

Recommendation: Develop comprehensive safety policies for all county vehicle operators (excluding the Sheriff's office). These policies should include regular training on safe driving practices, routine vehicle maintenance checks, and monitoring systems to track driver behavior. The county may also consider distributing educational materials to companies to incorporate into their own fleet vehicle driver training.

Justification: Training programs for fleet vehicle drivers can lead to significant cost savings by decreasing accident-related expenses, enhancing operational efficiency, and promoting a safety culture within the fleet.

Cost:



Timeline:

Short-Term

Emphasis Area:



Urban/Rural/Both:

Both

Communications and Outreach Supporting Safe Travel Behaviors

Recommendation: To effectively promote traffic safety priorities and engage the public, develop a communication campaign focused on curtailing excessive speeding, impaired driving, distracted driving, and not wearing seatbelts. These campaigns may be most effective by using a "positive-community norms" strategy, using evidence-based messaging to emphasize that most drivers are typically not engaging in these risky behaviors, thus reducing the perceived social acceptability of these behaviors. The county should leverage outreach channels such as mailing lists, websites, public space signage, and coordinate with churches and schools (such as publishing safety campaign messaging in their newsletters) to ensure widespread dissemination of the messaging.

Justification: Research suggests that "positive community norms" (PMC) safety messaging campaigns (as opposed to traditional fear-evoking campaigns) may be more effective at creating lasting shifts in people's attitudes toward risky driving behaviors. For example, rural Montana counties where a PMC campaign targeting drinking and driving among young adults saw a 15% reduction in young adults drinking and driving, while similar counties saw an increase.

Cost:



Timeline:

Long-Term

Emphasis Area:



Urban/Rural/Both:

Both





Prioritized Projects

Potential safety improvement projects along the High Injury Network, High Injury Intersections, and High Risk Network were identified and prioritized using a data-driven process, drawing on the tools summarized in the Toolbox of Safety Countermeasures. A total of 98 intersections and 267 miles of roadway have been identified as Priority Safety Projects. These projects are intended to offer a broad set of options for the county and the other communities within the Safety Action Plan study area to consider when prioritizing street improvements or pursuing safety-related grant funding.

The following pages detail the process used to identify and prioritize these projects, including maps of proposed project locations. A full list of proposed projects with more details can be found in Appendix D. It is important to note that the scope and recommendations for each project are only conceptual recommendations, serving as a starting point for more detailed study during implementation.

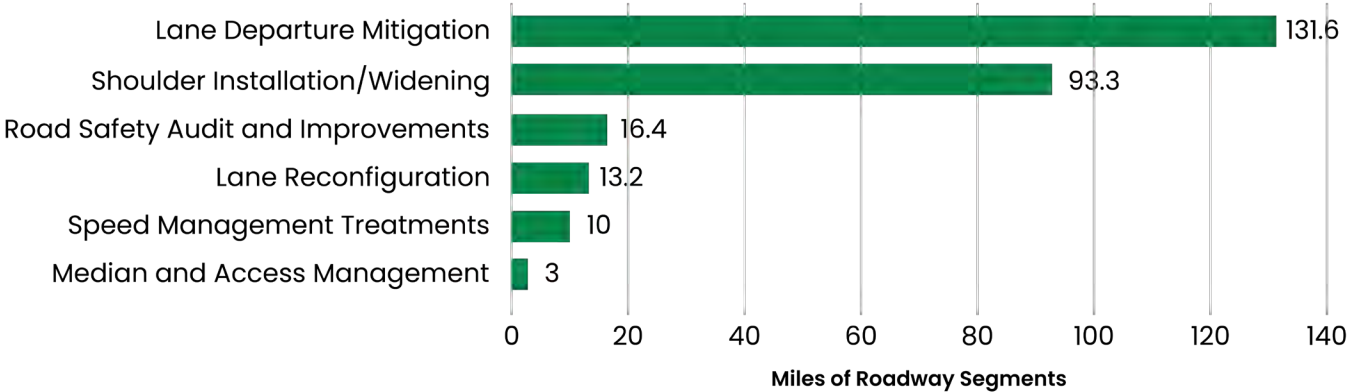
Project Identification

The project identification process involved a high-level review of the High Injury Network, High Injury Intersections, and High Risk Network to select potential safety countermeasures tailored to the specific safety needs and risk factors at each location.

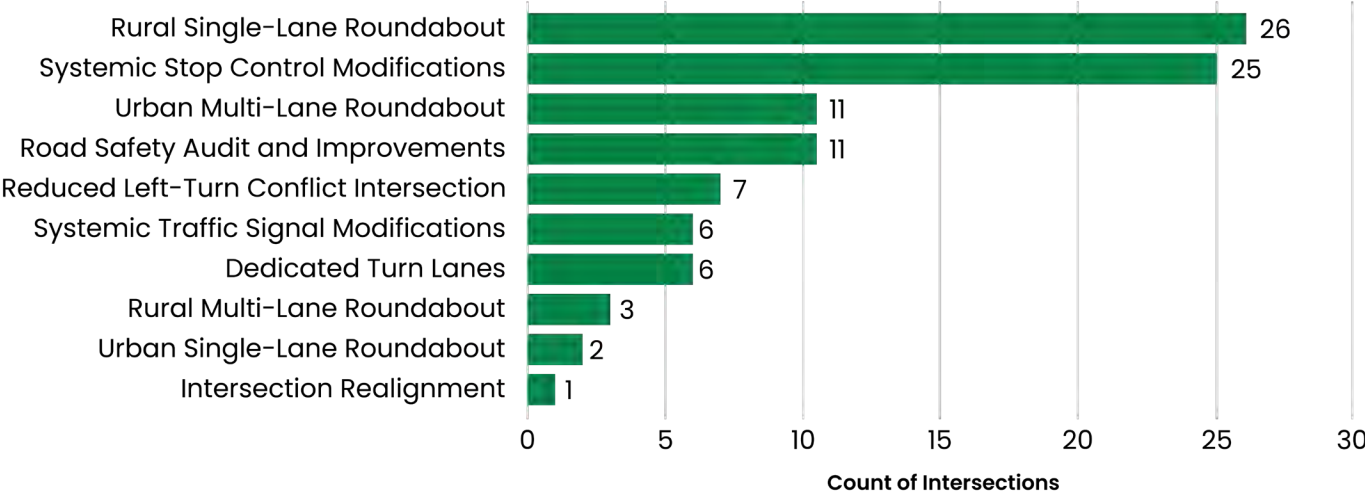
Each identified segment and intersection improvement location was categorized under one of the project types listed in the adjacent figures and tables. These project types are drawn from the Toolbox of Safety Countermeasures in Chapter 4 and reflect a planning-level grouping of more specific countermeasures in the toolbox.

Throughout this process, the 2014–2023 crash history was referenced to gain a general understanding of crash patterns at each potential project location and to determine which project types would likely be most effective at mitigating those crash patterns. The identified Priority Safety Projects include a broad distribution of different project types, as shown in the map and tables that follow.

Proposed Roadway Segment Projects by Type



Proposed Intersection Projects by Type

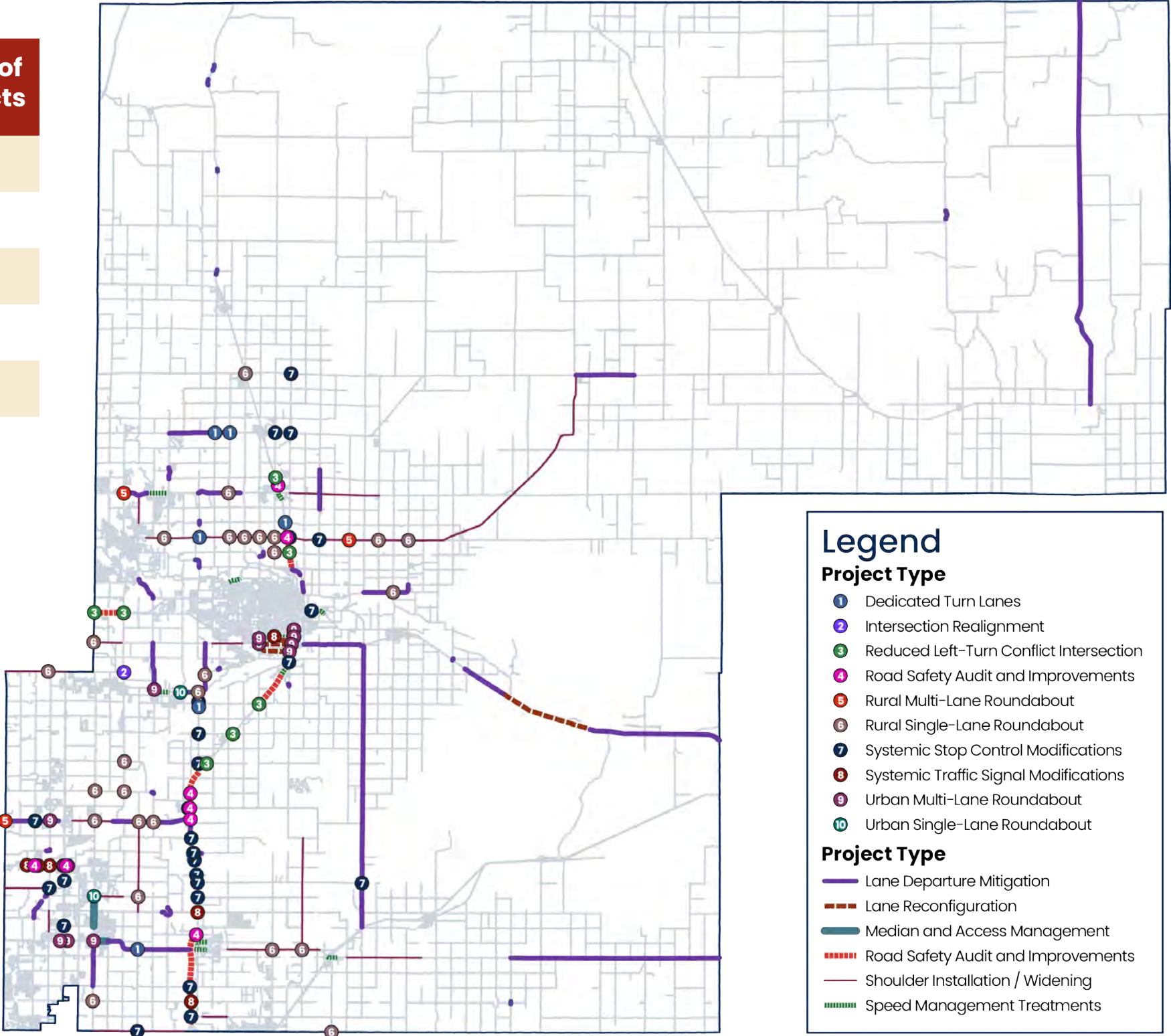


Segment Project Types

Project Type	Crash Reduction Factor	Estimated Cost (Per Mile)	No. of Projects	Miles of Projects
Lane Departure Mitigation	25%	\$150,000	56	131.6
Shoulder Installation / Widening	25%	\$2,000,000	31	93.3
Lane Reconfiguration	35%	\$700,000	11	13.2
Median and Access Management	25%	\$3,500,000	3	3.0
Speed Management Treatments	25%	\$500,000	16	10.0
Road Safety Audit and Improvements	20%	\$3,000,000	6	16.4

Intersection Project Types

Project Type	Crash Reduction Factor	Estimated Cost (Per Location)	No. of Projects
Rural Single-Lane Roundabout	70%	\$8,000,000	26
Rural Multi-Lane Roundabout	70%	\$12,000,000	3
Urban Single-Lane Roundabout	70%	\$4,000,000	2
Urban Multi-Lane Roundabout	70%	\$6,000,000	11
Reduced Left-Turn Conflict Intersection	35%	\$3,000,000	7
Systemic Traffic Signal Modifications	20%	\$2,500,000	6
Systemic Stop Control Modifications	15%	\$250,000	25
Intersection Realignment	10%	\$3,000,000	1
Dedicated Turn Lanes	70%	\$50,000	6
Road Safety Audit and Improvements	25%	\$1,500,000	11



Priority Safety Projects by Project Type



Project Prioritization

- Projects were prioritized based on a two-tier scoring system:
1. A **crash severity score** was calculated based on the 10-year total crash counts at each identified project location, scaled based on their severity as follows:
 - Fatal (K) or serious injury (A) crash = 15 points
 - Non-incapacitating injury (B) or possible injury crash (C) = 2 points
 - Non-injury or property damage only crash (O) = 1 point
 2. A **safety benefit-to-cost ratio (BCR)** was calculated for each project based on its planning level-cost estimate and on its 20-year projected crash reduction benefits, based on the latest USDOT guidance.

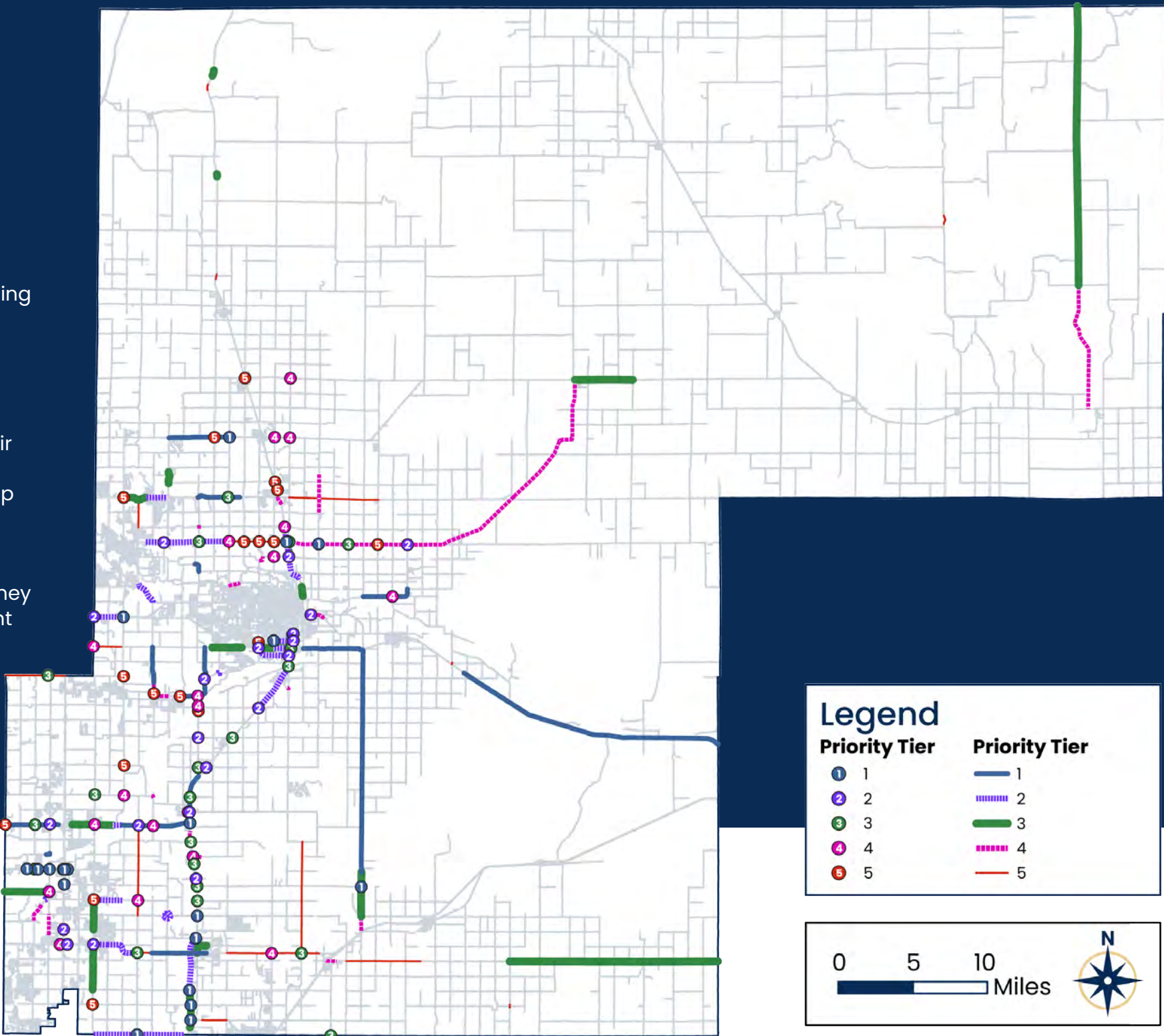
Next, the percentile ranking of each project’s crash severity score and BCR was added together to generate an overall **Project Priority Score** that ranges from 0 to 200 points. Projects were classified into five roughly equal-sized groups or “Priority Tiers” based on their Project Priority Score. This method results in a balance of lower cost or “low-hanging fruit” projects as well as higher cost projects that address high-crash locations rising into the top priority tier.

Tier 1 projects stand out with an average BCR exceeding 10.0, based solely on anticipated safety benefits. While most Tier 5 projects fall below a BCR of 1.0, this does not mean that they lack value from a safety perspective. Rather, these projects may require greater investment to achieve meaningful safety outcomes, and they may exceed a BCR of 1.0 if other types of benefits are considered, such as advancing economic development, infrastructure rehabilitation, or operational efficiency.

The overall BCR of all the identified projects is 2.2, meaning the total safety benefits in terms of potential reduction in fatal and injury crashes outweigh the total cost of all the proposed projects by a factor of 2.2 to 1.

Priority Projects by Tier

Priority Tier	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-to-Cost Ratio
1	40	51	127	13.1
2	41	28	103	2.2
3	40	22	63	2.2
4	39	14	51	1.1
5	37	16	57	0.9



Priority Projects in Weld County by BCR Tier



Priority Safety Projects by Jurisdiction

The Weld County Safety Action Plan covers project prioritization across the entire county. Implementation of the recommended projects will be a shared responsibility among government agencies within Weld County. This section details priority projects according to three agency categories: Weld County, the Colorado Department of Transportation (CDOT), and other jurisdictions comprising cities and townships within the Weld County Safety Action Plan’s study area. It is important to note that the project recommendations shown are conceptual planning-level recommendations only and should undergo further vetting and analysis by the jurisdiction responsible to move toward implementation.

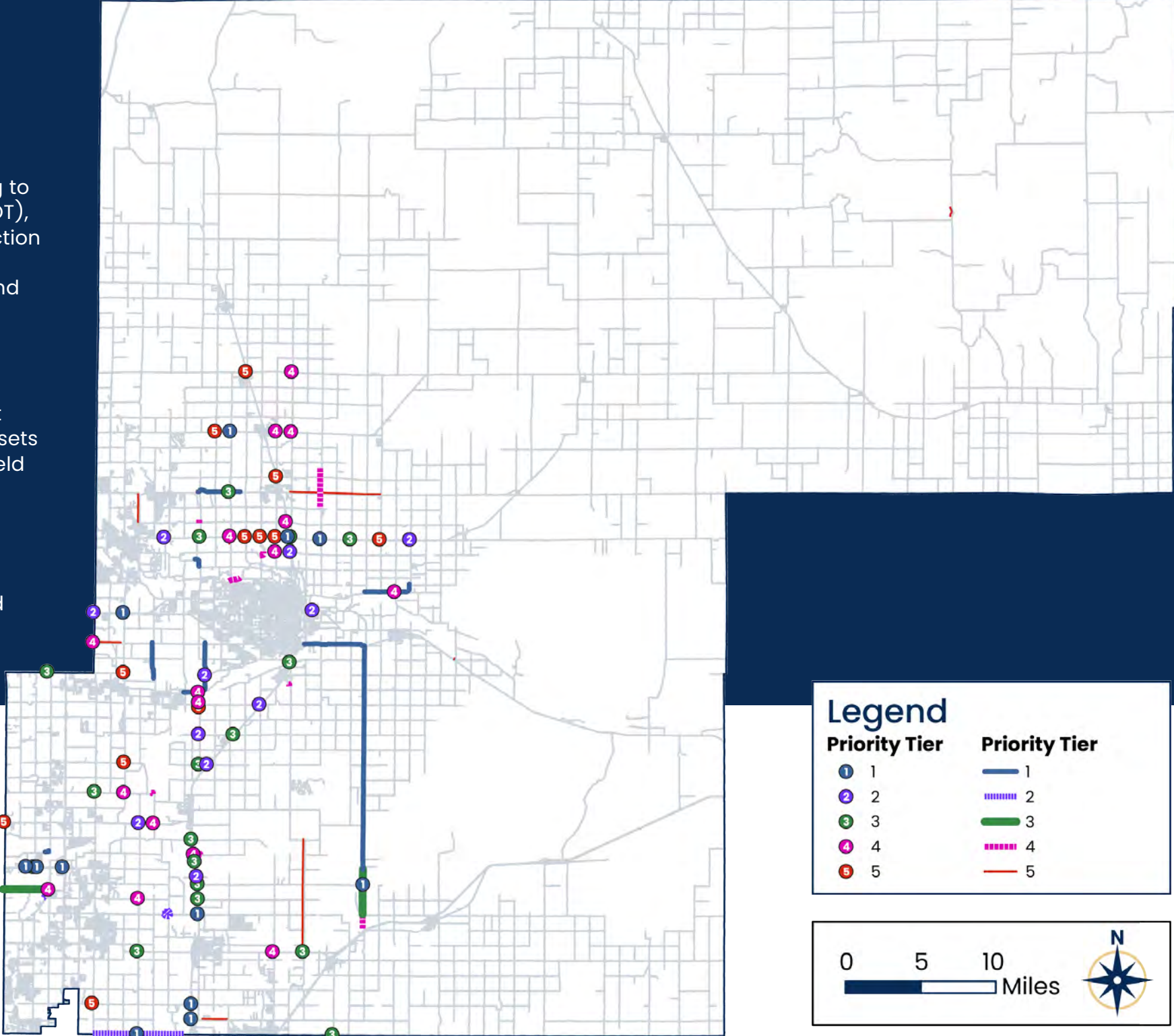
Multijurisdictional projects are duplicated across the following maps and tables. For instance, the recommended project at the intersection of Weld County Road 18 and US Highway 85 involves a county-maintained road and a CDOT-maintained highway, and it overlaps with the boundary of the City of Fort Lupton. Therefore, it is included in all three sets of maps and tables. By contrast, the intersection project at Weld County Road 34 and Weld County Road 13 pertains only to Weld County.

Weld County Priority Safety Projects

The map here shows only the 99 Priority Safety Projects located on roadways which Weld County is responsible for maintaining.

Priority Safety Projects by Tier – Weld County Roadways Only

Priority Tier	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-to-Cost Ratio
1	21	23	61	17.2
2	14	10	36	2.0
3	20	12	36	1.9
4	24	7	31	1.1
5	20	10	37	0.9

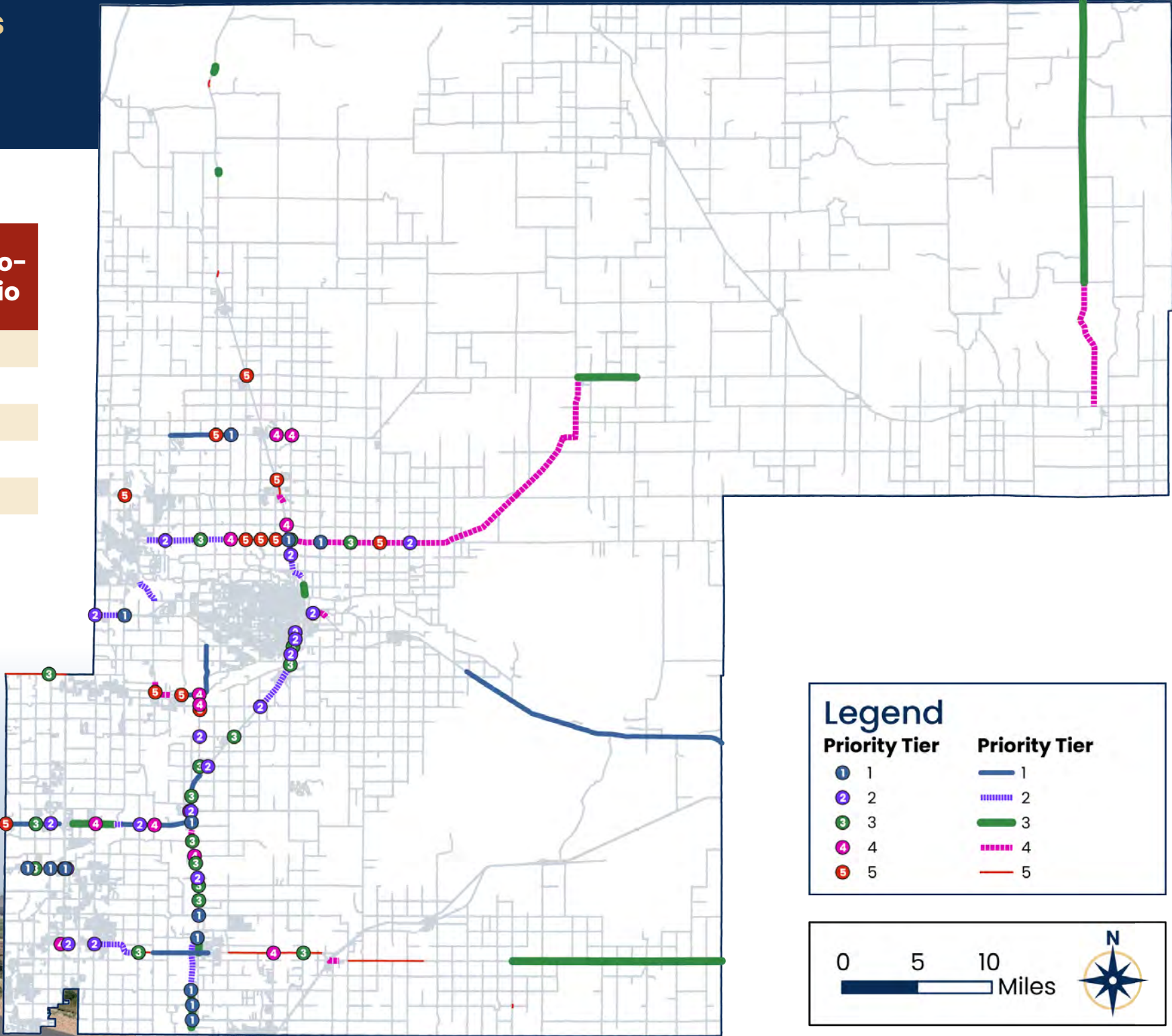


Priority Safety Projects on State-Maintained Highways

The map here shows the 124 Priority Safety Projects that are located on roadways which CDOT is responsible for maintaining.

Priority Safety Projects by Tier - State-Maintained Highways Only

Priority Tier	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-to-Cost Ratio
1	25	34	79	10.5
2	29	24	78	2.3
3	26	15	38	2.4
4	22	10	29	1.0
5	22	8	30	0.8

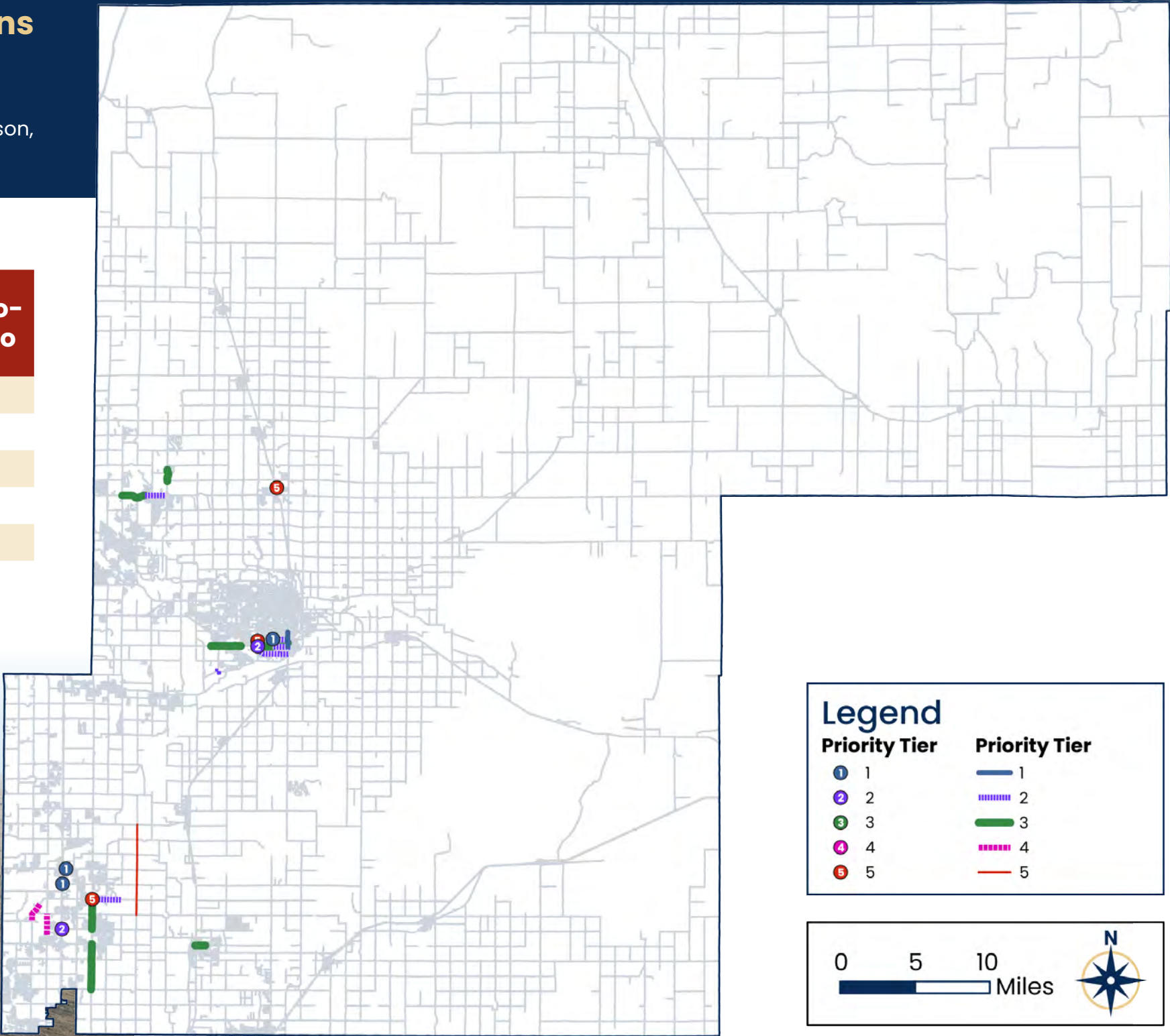


Priority Safety Projects in Other Action Plan Jurisdictions

The map here shows the 26 Priority Safety Projects that are within or overlap with the boundaries of other jurisdictions covered in the action plan. This includes project recommendations in Dacono, Eaton, Evans, Firestone, Fort Lupton, Frederick, Gilcrest, Hudson, Keenesburg, Kersey, Mead, Milliken, Pierce, Platteville, and Severance.

Priority Safety Projects by Tier – Other Action Plan Jurisdictions Only

Priority Tier	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-to-Cost Ratio
1	4	2	9	11.2
2	8	3	12	2.9
3	8	3	10	2.8
4	2	1	0	3.0
5	4	2	5	0.8





Implementation and Measuring Progress

Next Steps

This Safety Action Plan is only the beginning of Weld County's efforts in creating safer roads for all. Funding opportunities to support efforts identified in the plan, measures of progress to benchmark and adjust safety efforts, and a data dashboard to communicate key findings and update residents on progress are outlined as next steps moving forward.

Funding Opportunities

There are several safety-oriented grant programs managed by the NFRMPO, DRCOG, CDOT, and FHWA that can be utilized to execute the strategies and recommendations in the SAP.

- **Safe Streets for All (SS4A):** A Federal DOT multi-layered program that provides grants for Safety Action Plan development (funded this action plan), demonstration projects, and implementation grants to design and construct projects from Safety Action Plans.
- **Federal Highway Safety Improvement Program (HSIP):** Projects selected by CDOT that align with the Colorado Strategic Highway Safety Plan.
- **Colorado Safe Routes to School (SRTS):** Projects selected by a statewide selection advisory committee.

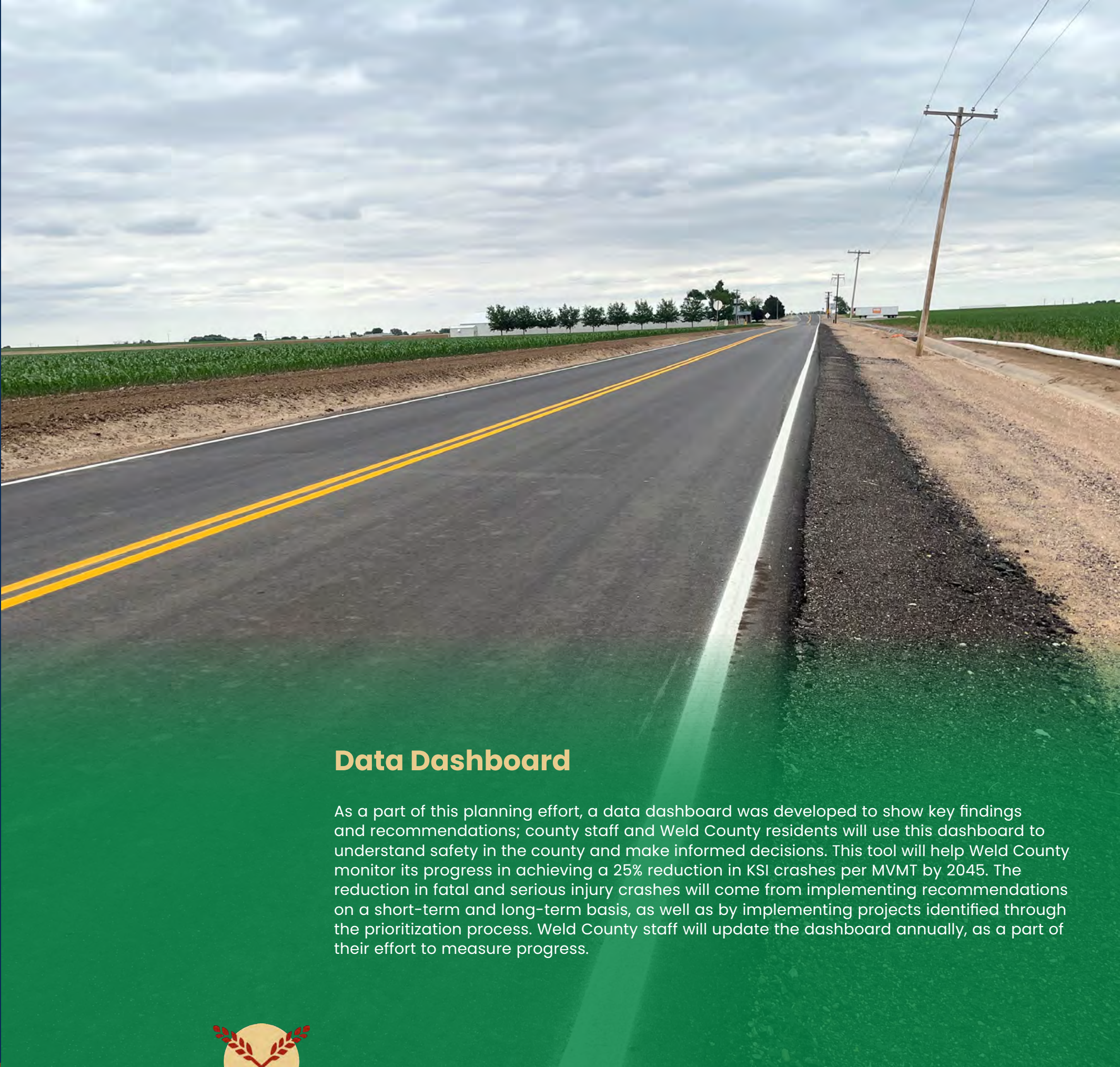
In addition to pursuing grants focused on safety, there are other transportation funding opportunities available to support capital improvement initiatives, incorporating safety elements from the SAP where possible.

- **Congestion Mitigation and Air Quality (CMAQ) Improvement Program.**
- **Colorado Department of Local Affairs (DOLA) Grants.**
- **Infrastructure for Rebuilding America (INFRA):** A sub-category in the Multimodal Project Discretionary Grant Opportunity (MPDG) program.
- **USDOT Better Utilizing Investments to leverage Development (BUILD).**
- **Surface Transportation Block Grant (STBG):** A competitive program with flexible funding. This program is allocated through both DRCOG and NFRMPO (project selection is assisted by the Technical Advisory Committee).

These grant programs could support the Bike/Pedestrian components of the SAP.

- **CDOT/NFRMPO Transportation Alternatives Program (TAP)**
- **Great Outdoors Colorado (GOCO)**

Weld County can coordinate through the NFR, UFR, and CDOT Region 4 to find additional opportunities to partner on safety improvements.



Data Dashboard

As a part of this planning effort, a data dashboard was developed to show key findings and recommendations; county staff and Weld County residents will use this dashboard to understand safety in the county and make informed decisions. This tool will help Weld County monitor its progress in achieving a 25% reduction in KSI crashes per MVMT by 2045. The reduction in fatal and serious injury crashes will come from implementing recommendations on a short-term and long-term basis, as well as by implementing projects identified through the prioritization process. Weld County staff will update the dashboard annually, as a part of their effort to measure progress.



Ongoing Measures of Progress

The following performance measures, including target actions (countermeasures, recommendations, and prioritized) and outcomes (desired results) are recommended from each of the four emphasis areas. These performance measures were identified and informed through the data analysis and public engagement and outreach feedback.

The Target Actions are intended to guide actions in the near/intermediate term (next five years) with the aim of propelling Weld County toward the Target Outcomes in the longer term, by 2045. Each of the Target Actions for each focus area aim for a 25% reduction in their related KSI crashes per MVMT by 2045, using a five-year rolling average of total KSI crashes.*

An annual report on Weld County's progress in reducing roadway fatalities and serious injuries will be published on the Weld County site. At least every five years, this Safety Action Plan should be revised and updated, including regularly reviewing progress toward these performance measures and updating them as needed.

** Using a five-year rolling average is recommended to control for outliers. To calculate the five-year rolling average for 2045, you would calculate the average number of KSI crashes per year from 2041-2045.*

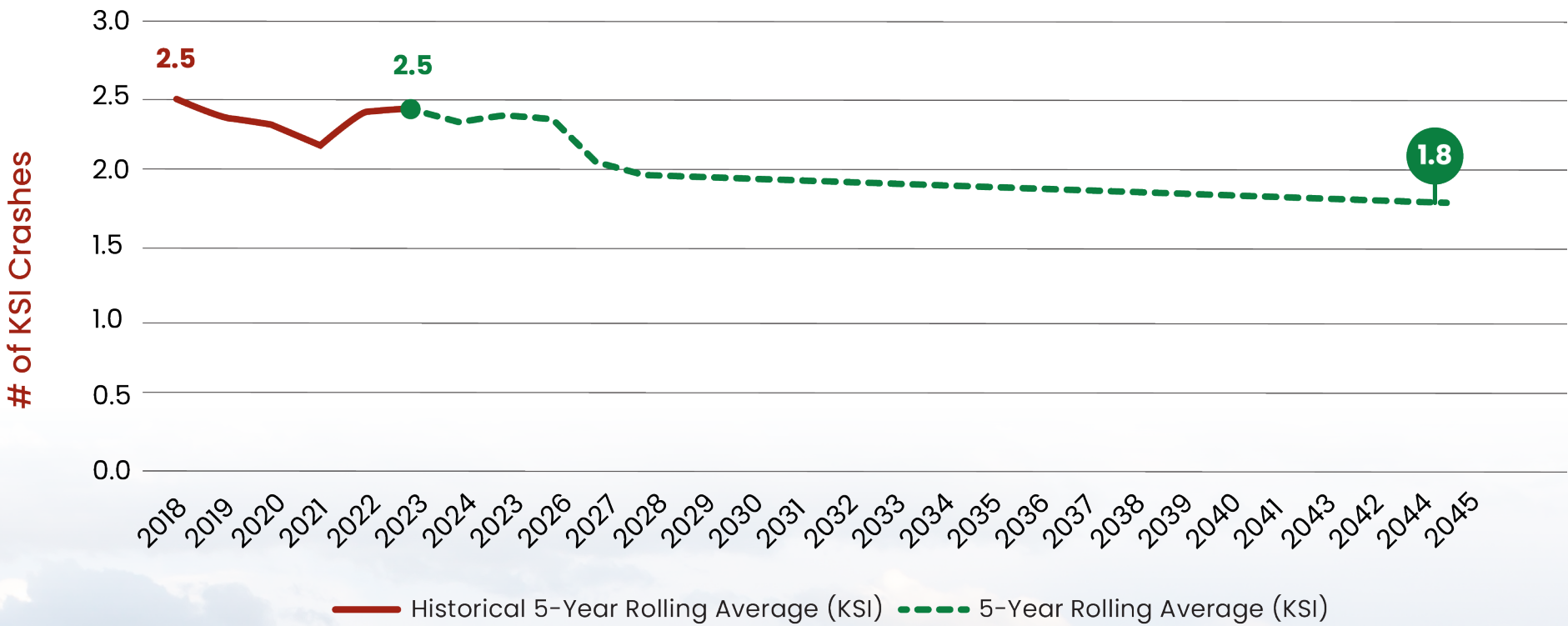


Impaired and Distracted Driving
(Behavioral)

Target Actions:

- 1. Implement communications and outreach aimed at reducing impaired driving and distracted driving

KSI Crashes Involving Impaired or Distracted Drivers (5-Year Rolling Average)



Target Outcome:

Reduce KSI Crashes involving impaired and distracted driving by



25%
per MVMT
by 2045



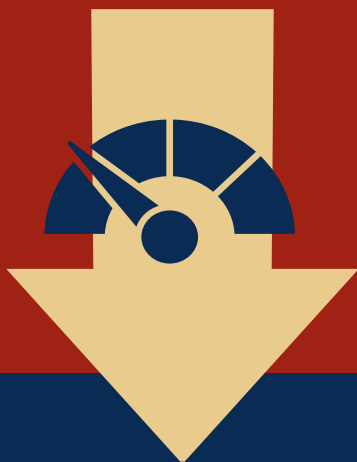
Speed (Behavioral)

Target Actions:

- 1. Complete speed studies or a Speed Management Plan along all of the High Injury Network and High Risk Network, aiming to identify where speed limits could be lowered based on updated federal guidance and opportunities to implement appropriate safety measures and utilize safety technology
- 2. Install dynamic speed display / feedback signs (permanent or temporary)
- 3. Implement communications and outreach aimed at reducing impaired driving and distracted driving.
- 4. Implement quick-build or permanent traffic calming countermeasures

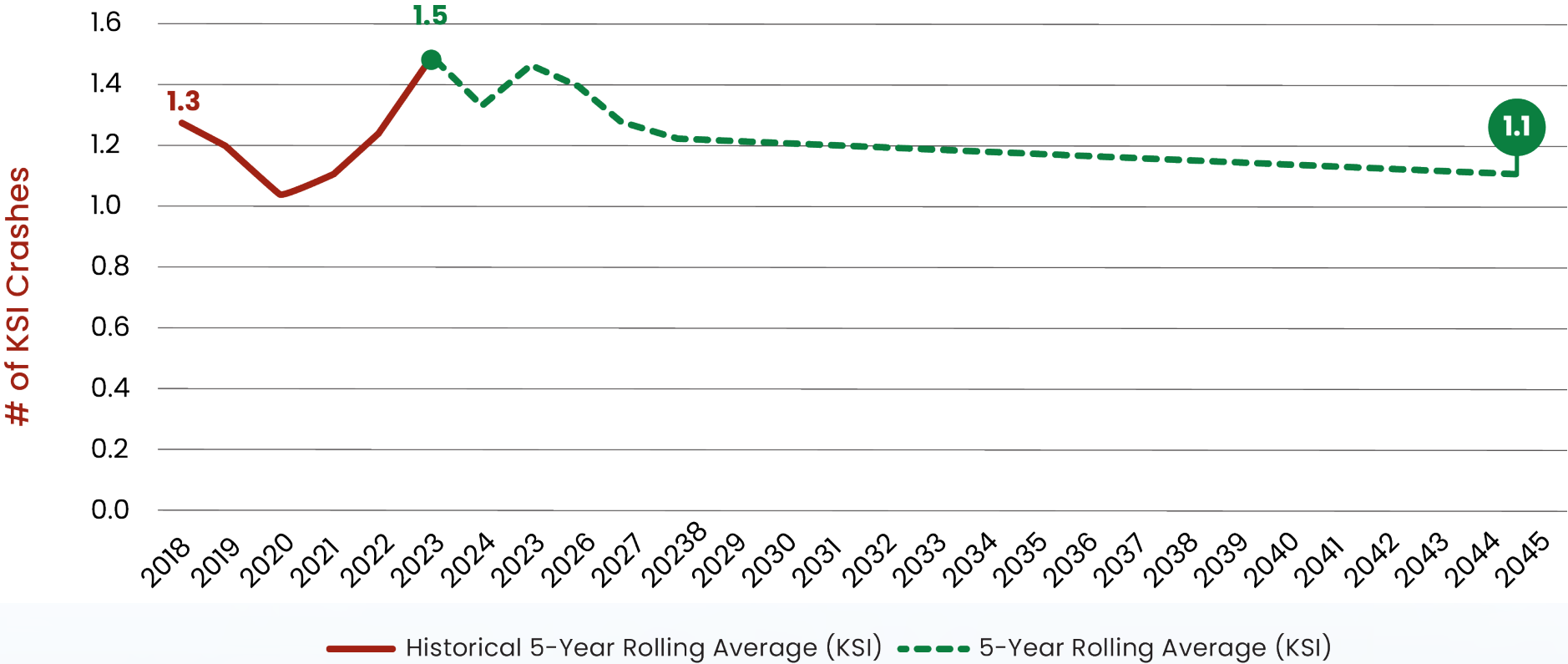
Target Outcome:

Reduce KSI Crashes involving speeding by



25%
per MVMT
by 2045

KSI Crashes Involving Speeding in Weld County (5-Year Rolling Average)



Select Crash Types (Environmental)

Looking at the top ten crash types between jurisdictions in the action plan versus unincorporated Weld County, several crash types are overrepresented in unincorporated Weld County (including overturning, embankment or ditch, fence or fence part, light or utility pole, sideswipe opposite direction, and head-on).

Target Actions:

- 1. Update road design standards to align with the Safe System principles, such as reducing roadway/lane width, increasing separation of pedestrian and bike facilities from vehicle traffic, and including wider shoulder widths as a part of the design standards for rural local roads.
- 2. Implement a systemic lane departure mitigation strategy to reduce risks of lane departure crashes by installing features like rumble strips, wide edge lines, and improved delineation with all roadway projects.
- 3. Utilize appropriate safety technology and countermeasures targeting overrepresented crash types (e.g., dynamic curve warning systems, center line buffer areas, etc.).
- 4. Assess roadway safety lighting, enhancing roadway illumination in areas with persistent nighttime traffic fatalities and serious injuries.

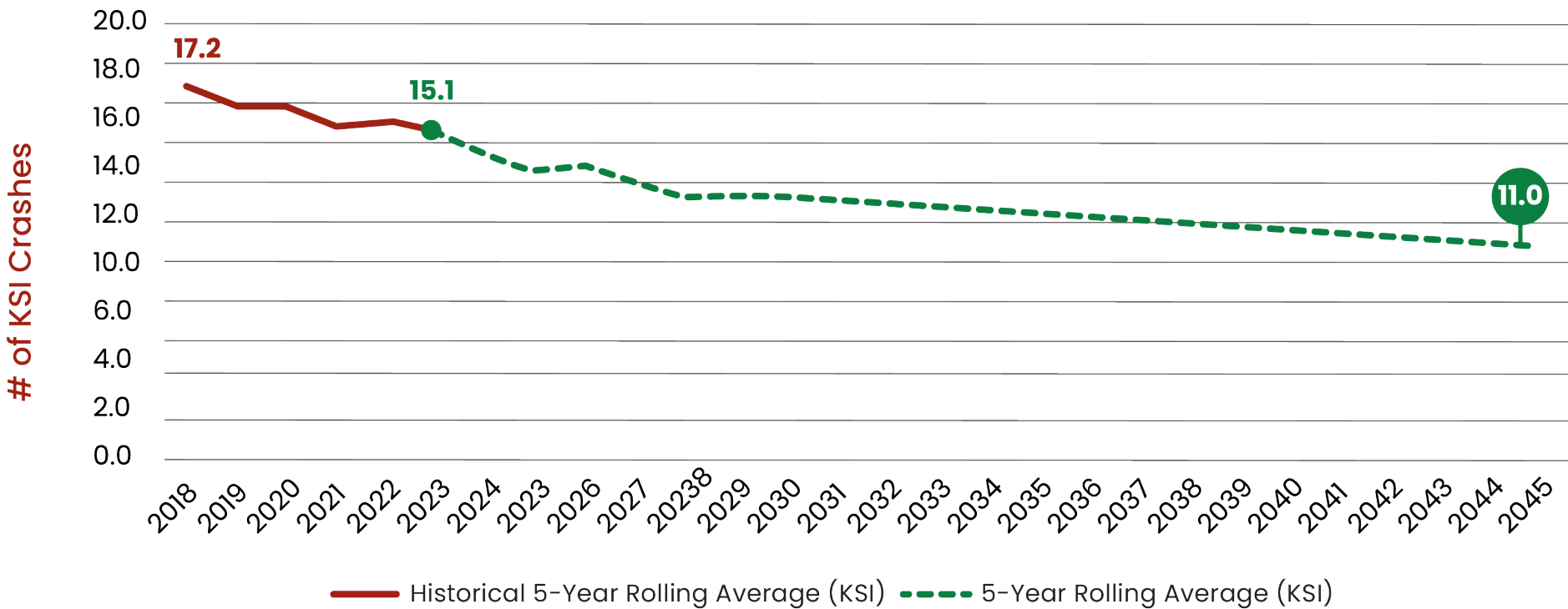
Target Outcome:

Reduce KSI Crashes involving overrepresented crash types by



25%
per MVMT
by 2045

KSI Crashes by Overrepresented Crash Types in Unincorporated Weld County (5-Year Rolling Average)



County Road Crashes at Segments (Infrastructure)

Target Actions:

- 1. Update road design standards to align with the Safe System principles, such as reducing roadway/lane width, increasing separation of pedestrian and bike facilities from vehicle traffic, and including wider shoulder widths as a part of the design standards for rural local roads
- 2. Implement a systemic lane departure mitigation strategy to reduce risks of lane departure crashes by installing features like rumble strips, wide edge lines, and improved delineation with all roadway projects.
- 3. Utilize appropriate safety technology and countermeasures targeting segment crashes (e.g., Local Road Safety Plan, cable median barriers, etc.)

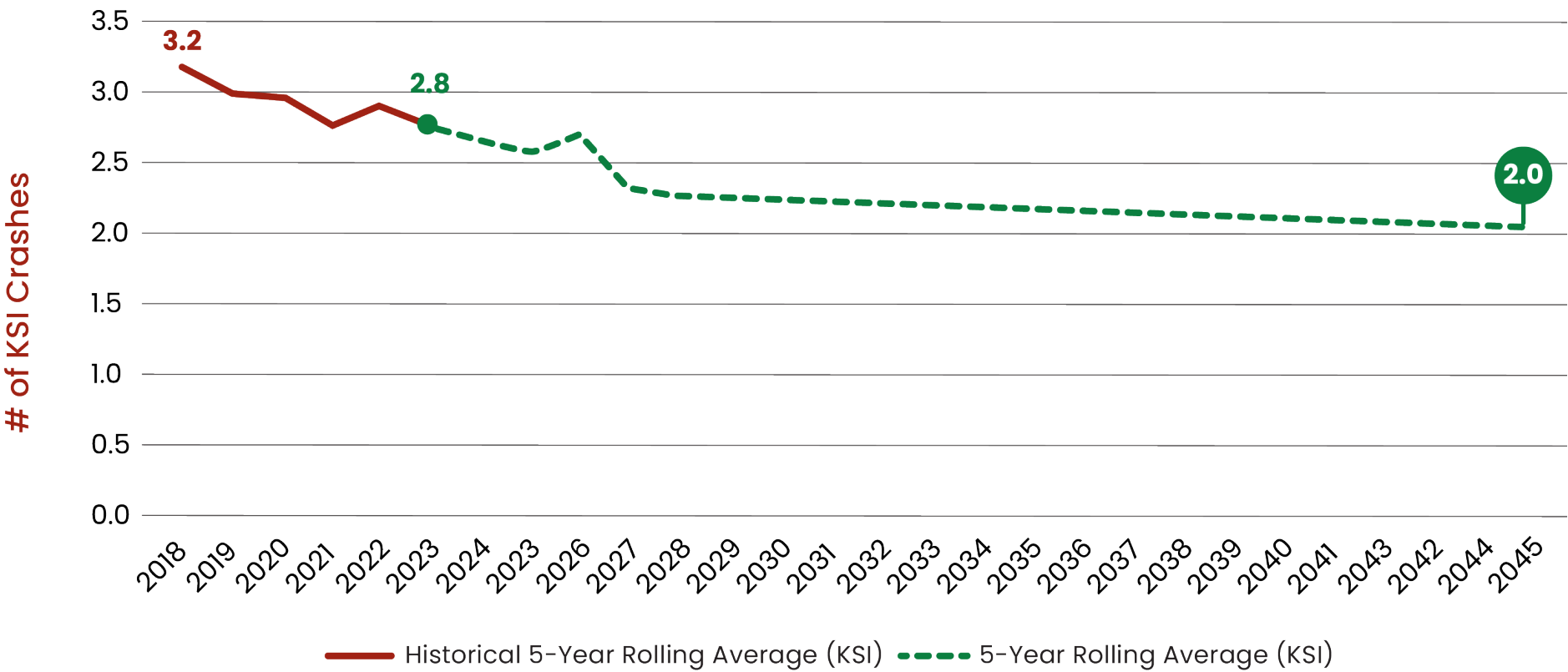
Target Outcome:

Reduce KSI Crashes on county roads segments (i.e., non-intersection) by



25%
per MVMT
by 2045

KSI Crashes on County Road Segments (5-Year Rolling Average)



Seatbelts (Modes of Travel)

Target Actions:

- 1. Implement communications and outreach aimed at increasing countywide seatbelt usage
- 2. Include a component about the importance of wearing seatbelts in vehicle fleet safety training, distributing educational materials to companies to incorporate into their own fleet vehicle driver training.

Target Outcome:

Reduce KSI Crashes involving improper or no seatbelt usage by



25%
per MVMT
by 2045*

KSI Crashes Involving Improper / No Seatbelt Usage (5-Year Rolling Average)



*For this target outcome, a different CDOT dataset was used to determine seatbelt usage in relation to KSI crashes, as the initial dataset (i.e., the dataset used throughout the Safety Action Plan) had omitted seatbelt usage.



VRUs (Modes of Travel)

Target Actions:

- 1. Create a Bicycle and Pedestrian Plan
- 2. Conduct Road Safety Audits along the High Injury Network and High Risk Network
- 3. Promote motorcycle rider education
- 4. Implement a quick-build funding program to support traffic calming countermeasures

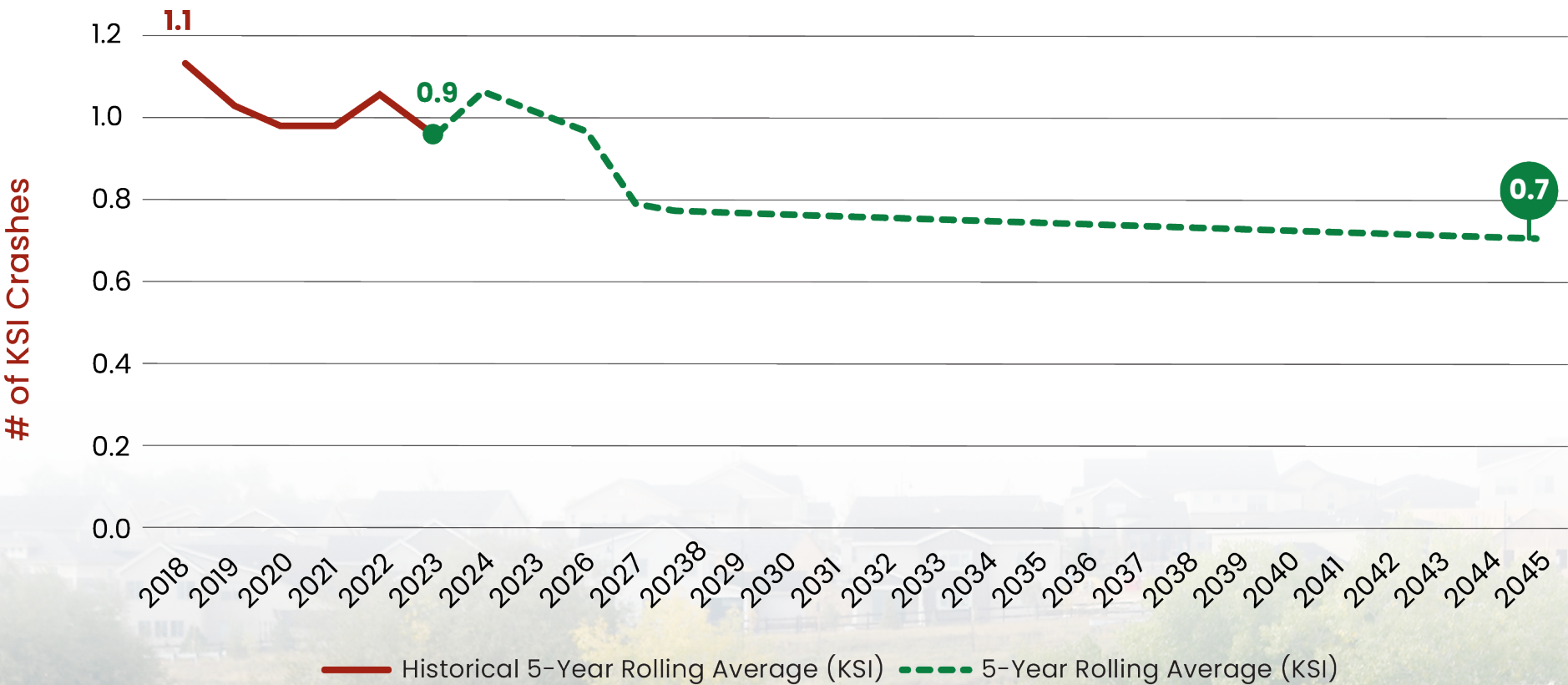
Target Outcome:

Reduce KSI Crashes involving vulnerable road users by



25%
per MVMT
by 2045

KSI Crashes Involving VRUs (5-Year Rolling Average)





Conclusion

Over the last year, Weld County has dug deep into ten years of crash data, investigating contributing factors in fatal and serious injury traffic crashes using public input and a data-driven analysis. Public outreach and feedback collection efforts helped identify emphasis areas, which are specific, targeted issues for the action plan to address.

These efforts, combined with a plans and policies review at the local, state, and federal level, highlighted what Weld County is already doing and what strategies and policies the county can implement to further efforts in improving safety. Identified strategies and policy improvements were distilled into the toolbox of safety countermeasures and recommendations. Taking it a step further, countermeasures and recommendations (accounting for work already planned or underway through Weld County’s Capital Improvement Program) were utilized to identify prioritized projects, targeting areas along the High Injury Network, High Injury Intersections, and High Risk Network. Weld County is and will continue to monitor crash data as the data is received to determine if necessary changes need to be made in the delivery of projects.

All of these components together form the Weld County Safety Action Plan, a comprehensive guiding document to help inform decision-makers and provide methods and metrics on how to implement the plan and measure progress in reducing fatal and serious injury crashes on Weld County’s roadways.

