CITY OF

Cortez SAFETY ACTION PLAN

APRIL 2025

CORTEZ

POLICE Cortez

CITY OF CORTEZ
RESOLUTION NO. 7, SERIES 2025

A RESOLUTION COMMITTING TO A VISION ZERO PLEDGE TO END TRAFFIC FATALITIES AND SERIOUS INJURIES ON CORTEZ'S STREETS AMONG ALL STREET USERS

WHEREAS, five people were killed and 21 were seriously injured on Cortez's streets from 2018 – 2022; and

WHEREAS, deaths and serious injuries on the City's streets are preventable and even one traffic fatality on City streets is one too many; and

WHEREAS, the City has conducted extensive public engagement and safety analysis to develop a Safety Action Plan that aims to prevent deaths and serious injuries on City streets; and

WHEREAS, the City intends to seek funding for safety improvements through the Federal Highway Administration's Safe Streets and Roads for All Program and other funding sources; and

WHEREAS, Vision Zero is a proven framework for eliminating traffic deaths and serious injuries through intergovernmental and community partnerships leveraging resources and funds to ensure safe and efficient multimodal transportation; and

WHEREAS, a comprehensive Vision Zero strategy unifies existing safety efforts and elevates improvements through engineering and street design, education and engagement efforts, enforcement and technology, evaluation and data analysis, and equity; and

WHEREAS, taking the Vision Zero pledge gives the City access to global best practices and resources.

NOW, THERFORE, BE IT RESOLVED BY THE CORTEZ CITY COUNCIL:

THAT, the City Council hereby adopts a Vision Zero goal of achieving zero traffic fatalities and serious injuries on Cortez's roadways by 2045; and

THAT, the City staff shall prepare and provide an annual report to City Council to relay progress on the Safety Action Plan implementation and track crash metrics; and

THAT, the City shall convene a Vision Zero Task Force comprised of relevant City staff, stakeholders from partner jurisdictions such as Montezuma County and CDOT, and community member representatives to facilitate implementation and monitoring of the Safety Action Plan.

MOVED, SECONDED, AND ADOPTED THIS 13th DAY OF MAY, 2025.

Dennis Spruell, Mayor Pro-tem

ATTEST:

Linda Smith, City Clerk

Acknowledgements

Project Team

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Montezuma-Cortez School District

Southwest Health System EMS

Consultants

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Funding

This plan was paid for in part by the Federal Highway Administration (FHWA) through a Safe Streets and Roads for All (SS4A) Action Plan grant award.

Thank you to the Cortez community members who contributed through the focus groups, open house, survey, and interactive map—your ideas were essential in shaping this plan.

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Executive Summary

The **Cortez Safety Action Plan** outlines a strategic approach to implementing safety projects and programs with the goal of eliminating fatal and serious injury crashes in Cortez. The plan is guided by **Vision Zero**, a global effort to achieve zero traffic deaths, and the **Safe System Approach**, the Federal Highway Administration's comprehensive transportation safety framework.

In alignment with Vision Zero and the Safe System Approach, the plan focuses on fatal crashes and crashes that resulted in serious injuries. These are known as **Killed or Serious Injury Crashes**, or KSI crashes. It also emphasizes the protection of **Vulnerable Road Users**—pedestrians, cyclists, and motorcyclists—who are at greater risk of severe injury in a crash.

By adopting this framework, Cortez will be positioned to apply for implementation funding through the **U.S. Department of Transportation's Safe Streets and Roads for All (SS4A) program**, helping turn safety initiatives into actionable improvements.

Community Engagement

Outreach for the Cortez Safety Action Plan focused on identifying safety concerns, generating ideas for solutions, and gauging support for various safety countermeasures and programs. Outreach efforts included:

- Back to School focus group
- Hispanic/Latino roundtable focused on Spanish speakers
- Public open house
- Survey in English and Spanish
- Website with interactive comment map
- Presentation to City Council
- Draft comment period

Cortez and Montezuma County residents were highly engaged in the plan: 44 residents attended in-person engagement events (focus groups/open house), 797 people responded to the survey, and residents left 409 comments on the interactive map.

Figure 1: Safe Streets Open House

THEMES

Some consistent themes emerged from outreach efforts surrounding safety issues and potential solutions.

Safety Issues

- Several safety issues were mentioned frequently, including speeding, running stop lights and stop signs, distracted driving, poor yielding to pedestrians, intoxicated driving, lack of road striping, and visibility issues.
- Bicycle and pedestrian issues included a lack of quality infrastructure, including inconsistent sidewalks and bike lanes. Pedestrian crossings, especially across Main St, were mentioned often.
- The most frequently mentioned locations with safety issues included:
    - Hwy 491 (Broadway) and 160 (Main St), especially in front of schools and popular pedestrian crossing locations.
    - Locally-owned roads that were mentioned frequently included Empire St and Mildred Rd.
    - Participants noted issues with speeding in front of elementary, middle, and high schools.

Figure 2: Open House Feedback Boards

Safe Streets Solutions

- Programming interventions received strong support, especially Safe Routes to School programming. Other programming ideas, including DUI reduction campaigns, stricter enforcement, and safety education campaigns were also broadly supported.
- Specific safety countermeasures that were strongly supported included better street lighting, sidewalks, and pedestrian crossings. New or modified traffic lights received support from over half of survey respondents, while bicycle facilities received slightly less than 50% support.
    - The need for improved street lighting was mentioned frequently in focus groups, the public meeting, survey, and interactive map comments.
- Traffic calming measures received less support than other types of countermeasures. The only traffic calming measure included on the survey that received more than 50% support was speed humps. Only about one third of respondents supported traffic circles, medians, and road diets.
- Two types of countermeasures appeared highly controversial: roundabouts and the medians on Main Street. Participants generally disliked the medians on Main Street. Roundabouts were mentioned frequently: participants either strongly supported or strongly opposed them.

Figure 3: Hispanic/Latino Roundtable

Promoting Engagement Efforts

The high level of public involvement in the safety planning process was driven by extensive outreach efforts. The Cortez Police Department (CPD) played a key role, leveraging social media, official websites, and community events to raise awareness and encourage participation.

CPD distributed information at Third Thursday events and the Farmers' Market, distributed mailers in utility bills, and visited local businesses to share surveys and flyers. Special efforts were made to engage seniors, the Hispanic/Latino community, and schools. Surveys were distributed at a Hospice of Montezuma meeting and emailed to over 600 residents, primarily seniors. The City also hosted its first-ever Spanish-language roundtable, and local schools helped promote the survey and Back to School focus group.

Safety Analysis

536 crashes occurred on Cortez's roadways from 2018 – 2022. Five people were killed in crashes and 21 were seriously injured. Pedestrians were disproportionately affected, accounting for three of the five fatal crashes and five of the 21 serious injury crashes. Table 1, which is also included in the Crash Analysis section of this plan, describes Cortez crashes by severity and mode of transportation.

Table 1: Cortez Crash Severity

	All Crashes	Pedestrian-Involved Crashes	Bicycle-Involved Crashes	Motorcycle-Involved Crashes
Fatal	5	3	0	2
Serious Injury	20	5	0	2
Other Injury	102	2	5	2
Property Damage Only	409	1	1	1
Total	536	11	6	7

A review of Cortez's crash history over the past five years reveals which factors may contribute to fatalities or serious injuries. Factors that **play a strong role** in KSI crashes include:

- **Mode**: Pedestrians and motorcyclists are highly at-risk if they are involved in a crash. Bicyclists are also at a higher risk of being injured in a crash.
- **Type of roadway:** State highways have much higher overall crash rates and KSI crash rates than City roads. The top two crash corridors are both state highways. 69% of KSI crashes occur on these corridors, which represent just 6.3% (4.6 miles) of the City's road miles.
- **Intersections and driveways:** Crashes occur more frequently at intersections or driveways than midblock locations.
- **Lighting:** KSI crashes are more likely than non-KSI crashes to occur in dark conditions or at dawn/dusk.
- **Alcohol or drugs:** Alcohol or drugs are involved in 12% of all crashes but 40% of fatal crashes and 25% of serious injury crashes.

Figure 4 maps the location of KSI crashes in Cortez, and Figure 5 maps total crashes and crashes by mode. Maps and further analysis can be found in the Crash Analysis section of the plan.

Figure 4: Cortez KSI Crashes, 2018 -2022

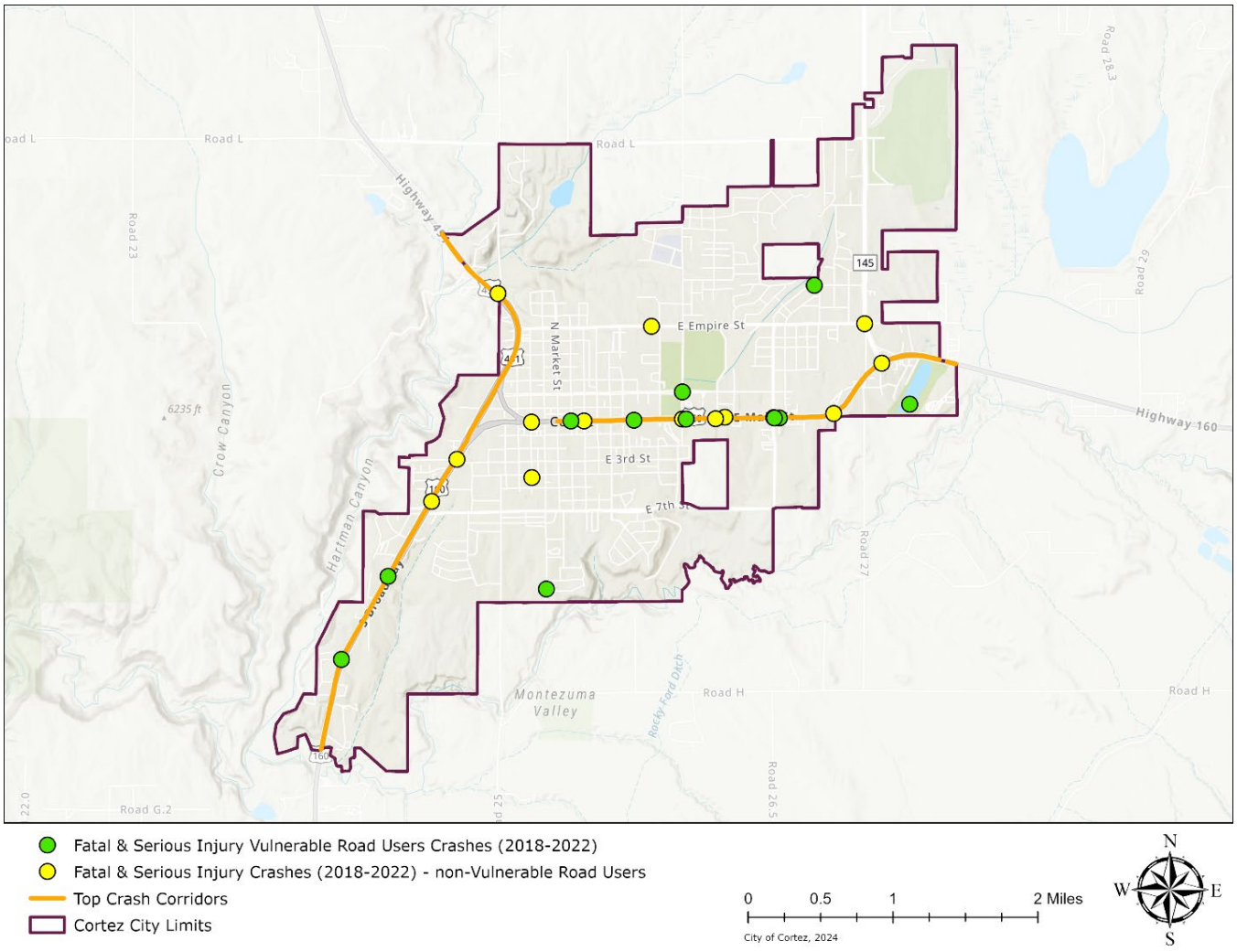
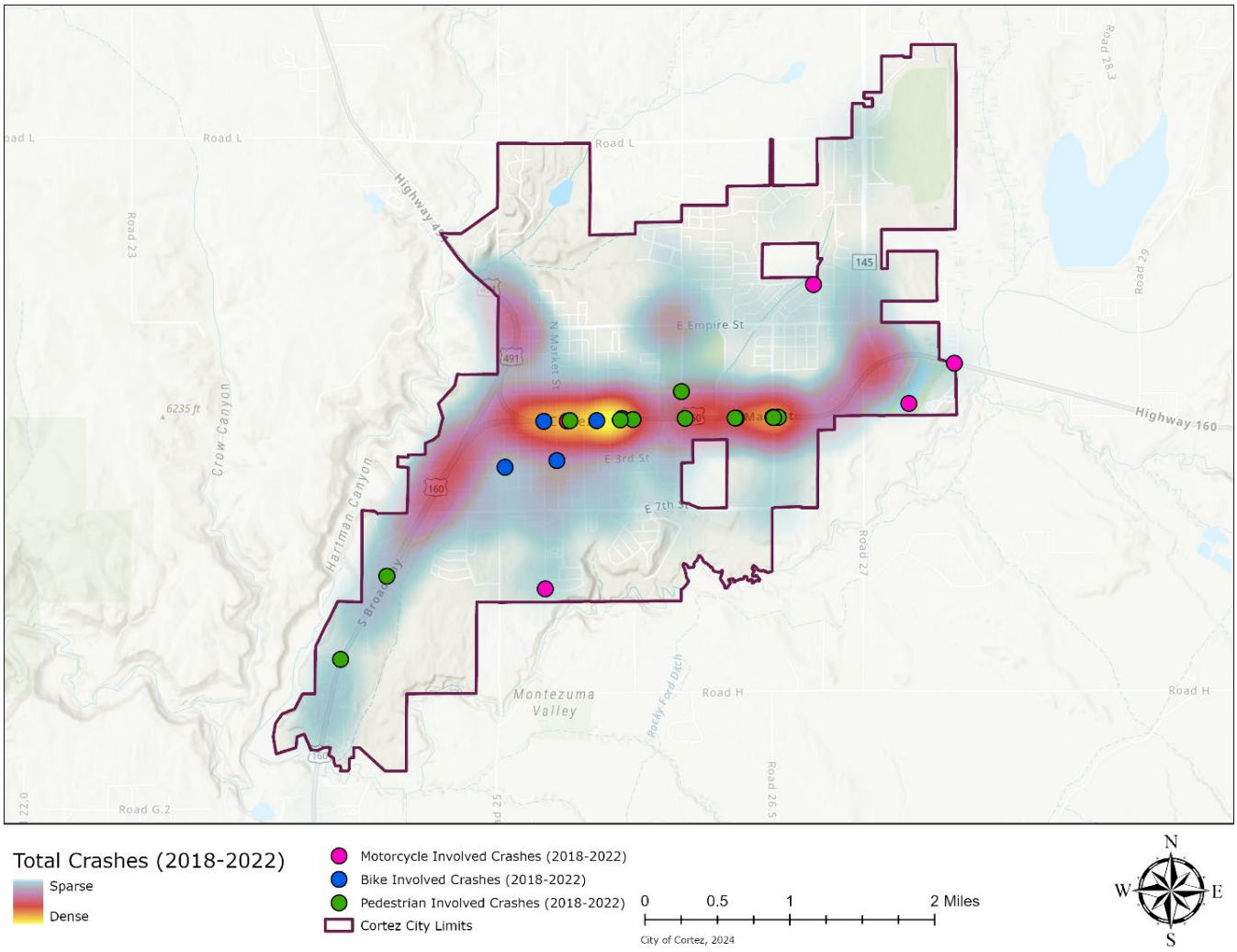


Figure 5: Cortez Total Crashes, 2018 - 2022



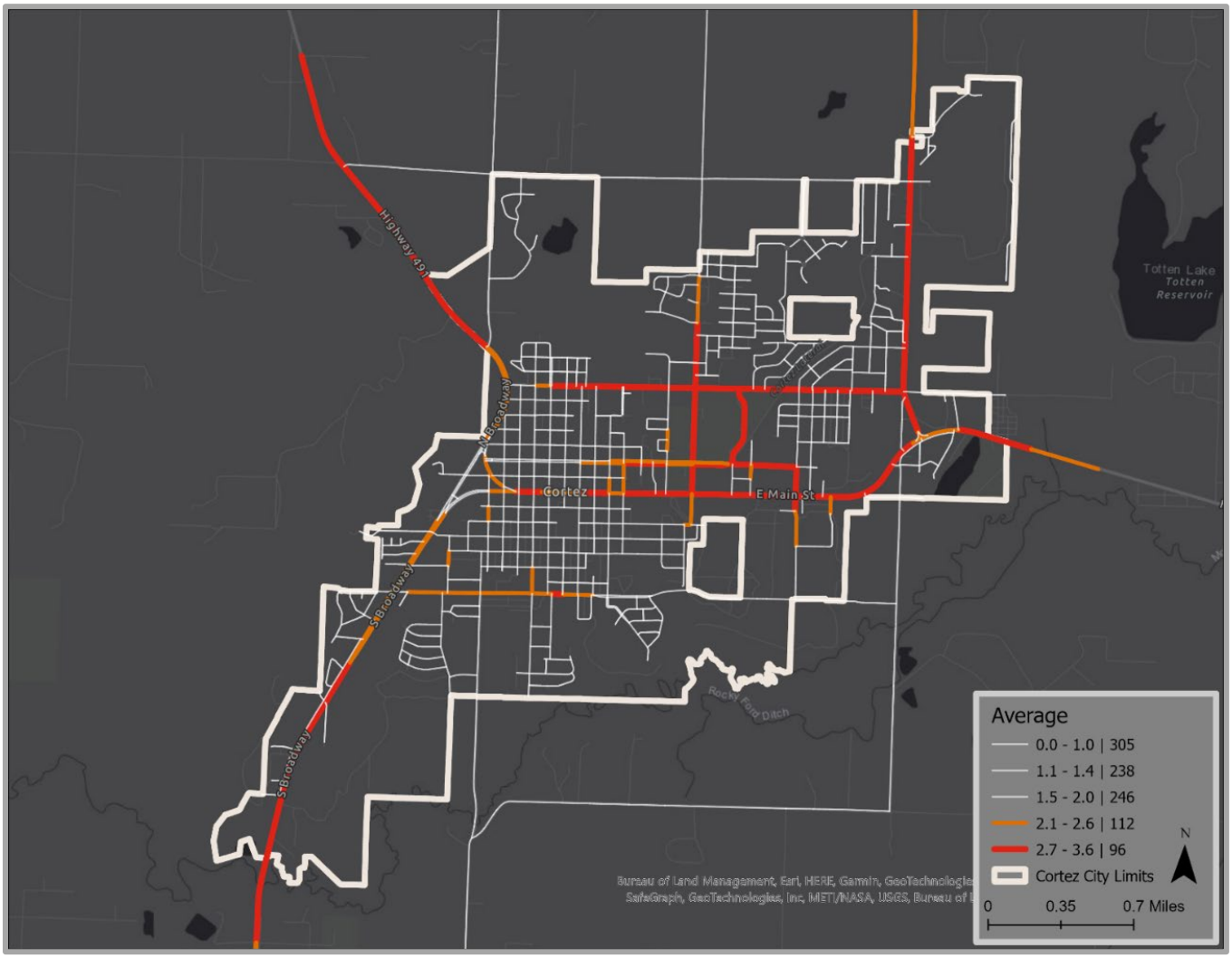
High Risk Network

Cortez's High Risk Network (HRN) identifies streets where safety issues could occur in the future. This proactive approach to safety planning attempts to identify issues before fatalities or severe injuries occur. The HRN, mapped in Figure 6, analyzes the following risk factors for crashes:

- Annual Average Daily Traffic (AADT) estimates
- Bicycle volume estimates
- Pedestrian volume estimates
- Average speed estimates
- Light truck volume estimates

Main St, Empire St, Roger Smith Ave, and Hwy 145 are Cortez's highest-risk streets. Other streets with risk factors include Hwy 491, Montezuma Ave, Mildred Rd, and 7th St. More information on the High Risk Network is included in the High Risk Network section of the olan and in Appendix D.

Figure 6: Cortez High Risk Network



Recommendations

This Safety Action Plan recommends three types of interventions to align with the Safe Systems Approach and achieve the goal of zero traffic fatalities and serious injuries in Cortez:

1. **Site-Specific:** Changes to the built environment at locations with identified safety risks. These interventions focus on building safer roads and promoting safer speeds.
2. **Systematic**: Changes that can be applied on a broader scale such as changes to City policy and practice into the future. These types of changes can create safer roads, safer speeds, and better post-crash care.
3. **Programmatic:** Events and programs that educate residents, create a culture of safety, and address dangerous behaviors. Programmatic efforts work to foster safe road users and responsible behaviors.

Site-Specific Recommendations
Access control: set clear guidelines and boundaries to manage the flow of vehicles and pedestrians.
Intersection geometry changes: Alter intersection geometry to slow vehicle speeds and reduce pedestrian exposure.
Bike facilities: Provide separate spaces for bicycling while slowing traffic speeds.
Sidewalks or ADA compliant walkways: Give pedestrians separated space for walking, allow access for wheelchairs and mobility devices.
Trails: Provide separate space for walking and biking, increase recreational opportunities.
Signalized pedestrian crossings: Improve safety for people crossing at locations with a traffic light.
Unsignalized pedestrian crossings: Improve safety for people crossing the street at locations without a traffic light.
Speed limit compliance and traffic calming: Slow vehicle speeds in areas with high pedestrian and bicycle activity.
Median islands and community gateways: Slow speeds as vehicles enter Cortez, improve aesthetics, and communicate community identity.
New traffic signals or roundabouts: Provide safer and more efficient traffic flow at busy intersections.

Systematic Recommendations
Develop and adopt a Complete Streets Policy or Resolution.
Develop and adopt a Bicycle/Pedestrian Master Plan.
Establish a Neighborhood Traffic Calming Program.
Update pedestrian facilities throughout the city to comply with ADA and PROWAG guidelines and develop a local ADA transition plan.
Consider the completion of a sidewalk inventory and gap analysis.
Develop a plan for striping maintenance and regular resurfacing projects.
Install speed feedback signs.
Develop a road safety audit (RSA) program and engage with relevant agencies to understand implementation.
Prioritize improvement projects in regional and local budgets.
Conduct a transit feasibility study to examine whether fixed-route transit could be operated in Cortez, potentially with connections to nearby communities.
Lower all residential speed limits to 20 mph.

Programmatic Recommendations
Host a Cycle Safety Summit
Implement targeted education campaigns for drivers, pedestrians, and bicyclists.
Coordinate with the school district to host a children's/youth/adult bicycling workshop.
Build upon Safe Routes to School (SRTS) efforts.
Pilot automated enforcement, such as red-light cameras and speed cameras.
Continue the MioVision program to install and enhance video monitoring systems.
Host targeted events and educational Vision Zero campaigns for the general public that promote safe behaviors and increase awareness of traffic laws.
Implement targeted education campaigns for driving under the influence.
Implement targeted education campaigns for teens and young adults.
Create changes in striping and raised medians to provide visual cues to drivers regarding desired travel speeds benefiting the surrounding development intensity.
Create gradual step-downs in posted speed limits.
Enforce Colorado's new ban on phone use while driving.
Enforce no parking in bike lanes, especially adjacent to schools.
Identify and/or create a safety action plan coordinator position
Create a multi-agency Vision Zero Task Force
Prioritize collaboration with Colorado Department of Transportation (CDOT)
Support a continued transparent and data driven safety crash analysis
Promote transparency by keeping the public informed on the status of the plan, project implementation, and safety trends.
Continue to build relationships with the Hispanic/Latino community and distribute Spanish-language outreach materials.

Implementation

The Plan Implementation section of this Safety Action Plan outlines the criteria used to prioritize location-specific recommendations and identifies priority projects. 52 potential projects were scored based on safety, equity, public priority, and feasibility. Table 2, which is also included in the Implementation Section of this Plan, describes the projects with the highest prioritization scores.

Table 2: Prioritized Project List

PROJECT	PROJECT TYPE	RELATIVE COST ($ – $$$)	TIMEFRAME	PRIORITIZATION SCORE (MAX 5)
Sligo St Corridor	Bike lanes/lane narrowing	$	Near-Term	**5.0**
Mildred Rd Corridor	Bike lanes/lane narrowing	$	Near-Term	**4.5**
Empire St Corridor	Bike lanes/lane narrowing	$	Near-Term	**4.2**
Main St/Mildred Rd Intersection	Signalized crossing improvements	$	Near-Term/ Medium-Term	**4.2**
Empire St/Mildred Rd Intersection Crossing Improvements	Unsignalized crossing improvements	$	Near-Term/ Medium-Term	**4.2**
7th St Corridor	Bike lanes/lane narrowing	$	Near-Term	**4.0**
Main St Midblock Crossing between Roger Smith Ave and Edith St	Unsignalized crossing improvements	$$	Medium-Term	**4.0**
Montezuma Ave Corridor	Bike lanes/lane narrowing	$	Near-Term	**3.8**
Main St/Elm St Intersection	Unsignalized crossing improvements	$$	Medium-Term	**3.7**
Main St/Market St Intersection	Signalized crossing improvements	$	Near-Term	**3.7**
Empire St/Park St Intersection	Unsignalized crossing improvements	$	Near-Term/ Medium-Term	**3.7**
Main St/Sligo Intersection	Signalized crossing improvements, intersection geometry	$$$	Near-Term/ Long-Term	**3.5**
Main St/State St Intersection	Signalized crossing improvements, intersection geometry	$$$	Near-Term/ Long-Term	**3.5**
Sligo St/Cactus St Intersection	Unsignalized crossing improvements	$$	Medium-Term/ Long Term	**3.5**
Sligo Midblock Crossing Between 1st St and Cactus St	Unsignalized crossing improvements	$$	Medium-Term/ Long Term	**3.5**
Cactus St Corridor	Traffic calming	$	Near-Term	**3.5**

Projects that add bike lanes scored highly because of their low costs and safety benefits. Pedestrian crossing improvement projects also scored highly, especially the crossings on Main St, which were a top public priority. Many of these crossing improvement projects can be implemented in the near-term by making signal modification and/or adding low-cost safety improvements like better signage and striping. Other treatments, such as rectangular rapid flashing beacons (RRFBs), pedestrian hybrid beacons (PHBs), pedestrian refuge islands, curb extensions, geometry changes, and pedestrian illumination could be added as medium- or long-term solutions.

Introduction

The City of Cortez is a town of about 9,000 residents in the Four Corners region of southwestern Colorado. Located at the junction of U.S. Highways 491 and 160, the city is a transportation hub and economic center for the region. Cortez is also the main access point for major archaeological sites, most notably Mesa Verde National Park.

Purpose of the Safety Action Plan

The Cortez Safety Action Plan creates a strategy to implement safety projects and programs with the goal of reducing the number of fatal and serious injury crashes in Cortez to zero. This approach is referred to as **Vision Zero** and is a strategy used around the globe.

The Safety Action Plan focuses on fatal crashes and crashes that resulted in serious injuries. These are known as **Killed or Serious Injury Crashes**, or KSI crashes. It also focuses on **Vulnerable Road Users** (people walking, biking, and riding motorcycles) because they are less protected from injury in a crash.

From 2018 – 2022, 536 crashes occurred on Cortez's roadways. Five people were killed in crashes and 21 were seriously injured. Pedestrians were disproportionately impacted by serious crashes: three of the five fatal crashes and five of the 21 serious injury crashes involved a pedestrian.

Defining Safety

Public safety refers to protecting the public from danger, and includes various policy areas such as crime and policing, emergency response, public health, disaster preparedness, and infrastructure. **The Cortez Safety Action Plan outlines steps to achieve a safe transportation system and prevent crashes that result in fatalities and serious injuries.** Other aspects of public safety, such as crime prevention, are not addressed in this plan.

Safe Streets and Roads for All

The plan will enable Cortez to apply for federal Safe Streets and Roads for All (SS4A) implementation funding. The U.S. Department of Transportation (USDOT) SS4A program was created by the Bipartisan Infrastructure Law to provide communities the resources to create a safe transportation system, with approximately $2 billion set aside for fiscal years 2025-2026.

In order to be eligible for implementation grants, communities must submit compliant Safety Action Plans. Table 3 describes the federally required components of the plan and cites the page number(s) where the relevant information can be found.

Table 3: Safety Action Plan Components

Safety Action Plan Component	Page Number
Leadership Commitment and Goal Setting	City Council Vision Zero Resolution
Planning Structure	76, City Council Vision Zero Resolution
Safety Analysis	40
Engagement and Collaboration	21
Equity Considerations	21; 80; Appendix B
Policy and Process Changes	73
Strategy and Project Selections	60
Progress and Transparency	76, City Council Vision Zero Resolution

This safety action plan includes the following sections:

- Engagement Summary
- Crash Data Analysis
- High Risk Network
- Recommendations
- Implementation

In addition, the plan includes the following appendices which provide more details and context for the plan:

- Appendix A: Outreach Materials and Public Input
- Appendix B: Demographic and Vulnerable Populations Analysis
- Appendix C: Existing Conditions and Crash Maps
- Appendix D: High Risk Network Methodology and Maps
- Appendix E: Project List and Scoring
- Appendix F: MioVision Intersection Safety Studies

Cortez Safety Planning Context

Existing City of Cortez plans, including the Cortez Comprehensive Plan and Parks and Recreation Master Plan, emphasize the importance of a safe transportation network. The Comprehensive Plan states that safety is the number one priority for all transportation improvements and identifies strategies to improve the multi-modal transportation network.

The following are City goals related to a safe transportation network.

Trails

- Expand the trail network both around and through Cortez.
- Extend bike and pedestrian routes into downtown and other areas of the community.
- Provide safe trail crossings:
    - Establish guidelines and standards for safe trail crossings at highways.
    - Consider building trail underpasses where trails cross major streets.
- Maintain bike and pedestrian routes year-round.

Sidewalks

- Make downtown sidewalk and intersection improvements to facilitate the needs of elderly, visually impaired, and disabled residents.
- Build new pedestrian crossings at high-volume intersections where there are high levels of pedestrian traffic.
- Improve Main Street, which is a barrier for pedestrian crossings in both downtown and along the highway where pedestrians may be crossing.
- Continue the sidewalk cost sharing program, which provides a 50% cost share for property owners to install new sidewalk or replace deteriorated sidewalks on their property.
- Continue requiring developers to construct sidewalks.
- Maintain pedestrian walkways year-round. A City ordinance requires property owners to remove snow from their sidewalks.

Transit

- Examine the feasibility of establishing a public transportation network both within Cortez and between neighboring communities. Currently, the only transit service in the region is a Dial-a-Ride program managed by Montezuma County.

Roads

- Ensure roads have safe speed limits, especially on routes to schools and near pedestrian crossings on highways.
- Consider a bypass to divert highway truck traffic off Main Street.
- Add bicycle infrastructure to roads such as striped bike lanes, share the road signage, and bicycle parking.

Schools

- Evaluate traffic calming in school areas.
- Establish a Safe Routes to School program.
    - Provide safe biking and walking infrastructure to schools.
    - Create programming such as walking/biking buses and police/parent escorts for children walking to school.

Programming

- Develop safety-focused programming on how road users can share the transportation system.

Engagement Summary

Outreach for the Cortez Safety Action Plan focused on identifying safety concerns, generating ideas for solutions, and gauging support for various safety countermeasures and programs. Outreach efforts included:

- "Back to school" focus group
- Hispanic/Latino roundtable focused on Spanish speakers
- Public open house
- Survey in English and Spanish
- Website with interactive comment map
- Presentation to City Council

Cortez and Montezuma County residents were highly engaged in the plan: 44 residents attended in-person engagement events (focus groups/open house), 797 people responded to the survey, and residents left 409 comments on the interactive map.

Themes

Some consistent themes emerged from outreach efforts surrounding safety issues and potential solutions.

Safety Issues

- Several systemic problems were mentioned frequently, including speeding, running stop lights and stop signs, distracted driving, poor yielding to pedestrians, intoxicated driving, lack of road striping, and visibility issues.
- Bicycle and pedestrian issues included a lack of quality infrastructure, including inconsistent sidewalks and bike lanes. Pedestrian crossings, especially across Main St, were mentioned often.
- The most frequently mentioned locations with safety issues included:
    - Hwy 491 (Broadway) and 160 (Main St), especially in front of schools and popular pedestrian crossing locations.
    - Locally-owned roads that were mentioned frequently included Empire St and Mildred Rd.
    - Participants noted issues with speeding in front of elementary, middle, and high schools.

Safe Streets Solutions

- Programming interventions received strong support, especially Safe Routes to School programming. Other programming ideas, including DUI reduction campaigns, stricter enforcement, and safety education campaigns were also broadly supported.
- Specific safety countermeasures that were strongly supported included better street lighting, sidewalks, and pedestrian crossings. New or modified traffic lights received support from over half of survey respondents, while bicycle facilities received slightly less than 50% support.
    - The need for improved street lighting was mentioned frequently in focus groups, the public meeting, survey, and interactive map comments.
- Traffic calming measures received less support than other types of countermeasures. The only traffic calming measure included on the survey that received more than 50% support was speed humps. Only about one third of respondents supported traffic circles, medians, and road diets.

- Two types of countermeasures appeared highly controversial: roundabouts and the medians on Main Street. Participants generally disliked the medians on Main Street. Roundabouts were mentioned frequently: participants either strongly supported or strongly opposed them.

PROMOTING ENGAGEMENT EFFORTS

The high level of involvement in the safety planning process was due in large part to extensive efforts to make the public aware of the plan and provide opportunities for input. The Cortez Police Department (CPD) were highly effective in their use of social media accounts, official websites, and community connections to promote the plan.

The Police Department attended several community events to distribute information on the project. CPD handed out postcards at three Third Thursday events, which are free community events featuring live music, vendors, dancing, and food. CPD also attended the Farmers' Market on September 14 to hand out bicycle helmets to local children. Mailers were sent out in residents' water bills with information in English and Spanish about the public open house. Police officers also visited local businesses to distribute the survey and hand out flyers.

The project team made concerted effort to engage seniors, the Hispanic/Latino community, and school communities. The project team attended a Hospice of Montezuma meeting to distribute electronic and paper surveys to seniors. Project information was also emailed to a community email list with over 600 residents, largely seniors.

To engage the Hispanic/Latino and Spanish-speaking communities, the survey and flyers were translated into Spanish and the project team hosted a Spanish-language roundtable, which was the first time the City of Cortez held an outreach event specifically geared toward the Latino population.

The City of Cortez also contacted local schools to distribute information about the survey and Back to School focus group. Several teenagers attended the Back to School focus group and Hispanic/Latino roundtable. Parents and school administrators were also involved throughout the project.

The Police Department continually posted on social media throughout the project process announcing the Safe Streets for All grant, focus groups, open house, survey, and project website. Social media posts engaged residents by asking for input on the website name and tagline. Participants chose "Cortez Safe Streets" as the website with the tagline "Be Aware, Show You Care." Social media posts were highly effective: the weekend after the survey was announced on Facebook, over 500 new participants responded to the survey.

The Cortez Police Department also disseminated information through the city-based website page and Crimewatch website (CortezPD.org).

Figure 7: Crime Watch Post

The project drew the attention of local news sites. The Journal, Cortez's local newspaper, published articles on the project on July 21, Oct 11, and Nov 10. Local radio station KSJD also published an article and segment on Nov 7. The project was featured in the Montezuma Local News Network video that plays on TVs in local businesses and the Recreation Center.

Outreach flyers and print materials can be referenced in Appendix A. The project team purposefully aimed outreach efforts at vulnerable populations in Cortez in order to solicit feedback from multiple perspectives. For an demographic and vulnerable populations analysis of Cortez's population, refer to Appendix B.

Figure 8: Survey Postcard

Back to School Focus Group

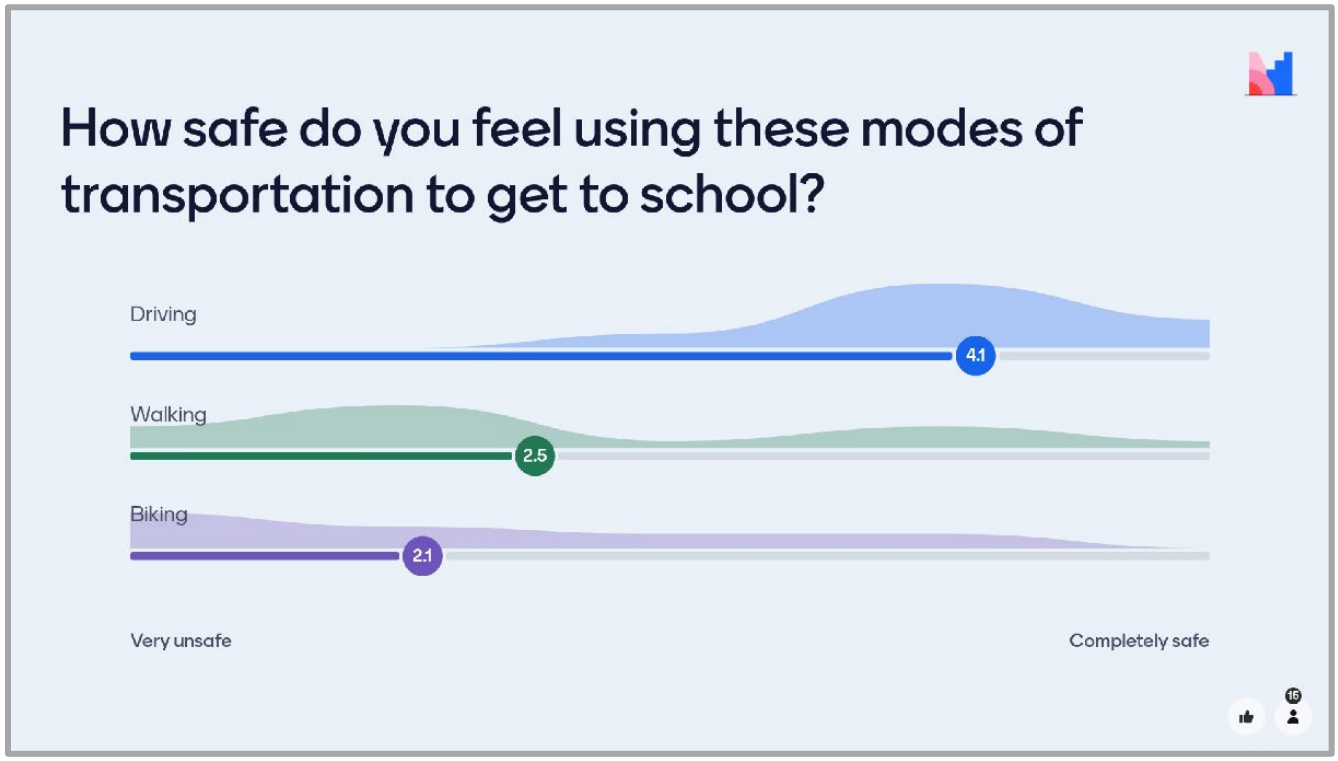
On Thursday, August 29, from 5-6 PM, the Cortez Police Department hosted a focus group geared toward the school community. Fifteen participants attended the session. Participants were recruited through school district resource group contacts, school principals who shared the invitation with parents, and invitations to the Fire Department and hospital. The group included police officers, a Safe Routes to School coordinator, high school students/new drivers, parents, teachers, and the Cortez Fire Chief.

The session kicked off with introductions, followed by a presentation on the project and Vision Zero. Facilitators used interactive polling to engage participants, collect feedback on various safety strategies, and identify concerns. Sandwiches were provided and attendees received $20 gift cards to local businesses as a thank-you for their participation.

Participants were asked about their safety concerns in Cortez and how they felt about various safety interventions. Participants expressed concerns about speeding, intoxication, bicyclist safety, lack of sidewalks, and intersection safety. There was strong support for pedestrian crossings, sidewalks, and street lighting. Safety interventions that received mixed support included bike lanes, speed humps, roundabouts, and repurposing driving lanes for sidewalks and bike lanes. Medians/access control received a low ranking, likely due to negative perceptions around the newly added medians on Main Street. Most programming and education measures received strong support, especially safe routes to school programming.

Further feedback gathered from the focus group can be referenced in Appendix A.

Figure 9: Focus Group Interactive Questions



HISPANIC/LATINO ROUNDTABLE

The study team conducted a roundtable event with Spanish language translation on Tuesday, Oct 29 at 5 PM at the Cortez Recreation Center. Participants could drop by to learn more about the plan, take the survey, and comment on the interactive map. Each participant received a $20 Cortez Retail Enhancement Association (CREA) gift card that could be redeemed at a variety of Cortez businesses. Sandwiches were also provided.

Eleven participants attended, and all took the survey. The conversation was primarily conducted in Spanish. Several teenagers/young adults attended the roundtable. Participants expressed support for better street lighting, sidewalks, bike facilities, speed humps, education campaigns, and safe routes to school programs. Roundabouts received the least support of the safety interventions discussed. Participants also commented that they would like to see free public transit and more police patrols, especially in the morning. Street lighting was discussed and received strong support.

Figure 10: Hispanic/Latino Roundtable

PUBLIC OPEN HOUSE

A public open house was held at City Hall on Wednesday, November 6 from 5 PM – 7 PM. 18 participants attended. Nine CREA gift cards were raffled off during the meeting and the high school catering class (Panther Chefs) provided cupcakes and cookies for the event.

The project team created boards where participants could place dots to vote on whether they supported various safety countermeasures. There was also a map board where participants could leave dots at locations where they had safety concerns. Participants discussed concerns around pedestrian and bicyclist safety and provided specific suggestions for ways to improve safety. Feedback boards can be found in Appendix A.

Feedback from the public open house showed strong support for bicycle facilities, including bicycle boulevards, bike lanes, and protected bike lanes. Speed feedback signs received unanimous support, as did traffic signal phasing. Speed humps, bulb-outs, street lighting, and road diets received a mix of support and opposition. Some participants disliked street lighting because they didn't want lighting to obscure views of the night sky.

Map board comments and dots were added to the interactive web map after the meeting and were analyzed with other interactive map comments in the section below.

Safe Streets Survey

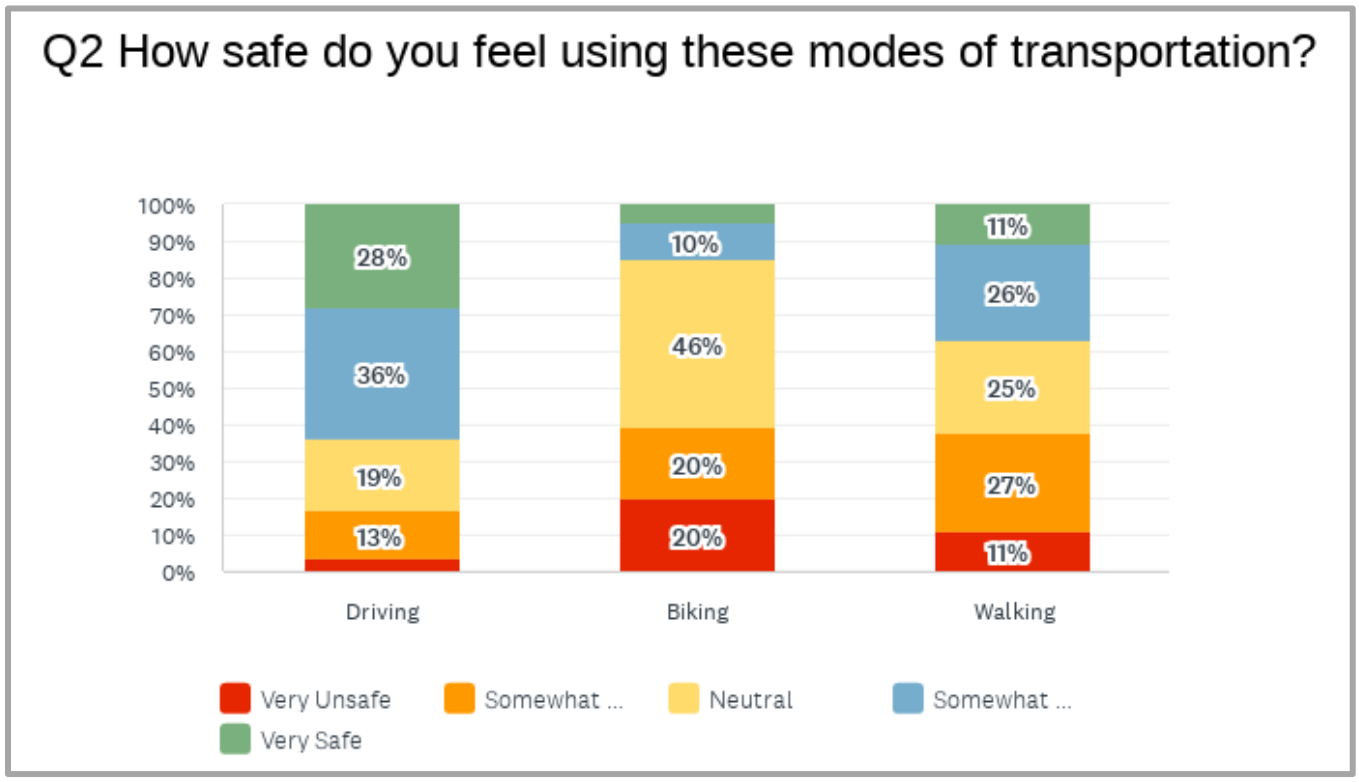
The Cortez Safe Streets survey was open for about two months from October – November. There were 797 responses to the survey. Of these, 9 were in Spanish. The complete survey questionnaire and responses for each question can be referenced in Appendix A.

Do Respondents Feel Safe Traveling in Cortez?

The survey results show that most Cortez residents (66%) feel safe driving, but less than 15% safe bicycling and only 37% feel safe walking. While many respondents feel neutral about walking or bicycling, **40% feel unsafe biking and 38% feel unsafe walking**.

Large numbers of respondents never bike, which accounts for the high number of people who reported feeling neutral about bicycle safety. Of respondents who bike at least a few times per month (212 respondents), 51% report feeling unsafe, 19% feel neutral, and 30% feel safe.

Figure 11: Survey responses - How safe do you feel using these modes of transportation?



WHAT ARE THE BIGGEST SAFETY TRAFFIC ISSUES AND LOCATIONS?

Figure 12 summarizes responses to the question: "What do you think is the biggest traffic safety issue in Cortez?".

Figure 12: Word Cloud of Biggest Traffic Safety Issues

26% of respondents identified speeding as the top issue and several other responses identified related issues, such as people being in a hurry, driving aggressively, or passing unsafely. Many respondents to this question **identified the medians on Main Street as the biggest safety issue**. Of the 594 responses, 107 named the "medians" as the biggest safety issue. About 40 respondents also identified drunk or intoxicated drivers or drunk or intoxicated pedestrians. Other issues include red light runners, people on their cell phones or otherwise distracted, bad driver behavior in general, jaywalkers, people not stopping for pedestrians in crosswalks, four-way stop violations, lack of sidewalks, unclear road markings, school zone violations, lack of traffic law enforcement, visibility issues, and bicyclists not obeying traffic rules.

Specific intersections and corridors identified as the biggest traffic safety issues included:

- North Broadway (Hwy 491)
    - Respondents noted issues with the Lebanon Rd and Empire St intersections, stating that they were confusing.
    - Respondents also stated that the speed is too fast on this corridor.
- South Broadway (Hwy 491)
    - Respondents identified safety issues along the corridor near the S Broadway/Main Street intersection (in front of the middle school).
    - Respondents noted issues with passenger car and truck traffic navigating the intersection of Hwy 160/Hwy 491.
- West Main Street (Hwy 160)
    - Several participants commented that the segment near Pinon Dr (in front of True Value Hardware and the Conoco gas station) is complex and confusing.
- East Main Street (Hwy 160)
    - Respondents noted issues with pedestrian crossings and traffic issues in this area, especially near the Denny's and McDonald's (10% of respondents identified area by McDonald's as dangerous in the open-ended question).[1]
- Mildred Rd
    - Several intersections along Mildred Rd were identified as dangerous, including the intersection with Empire St, Montezuma Ave, and Main St. Common issues were running through the intersections without stopping.
- Empire St
    - Several issues were identified with the Empire St corridor, including speeding through the intersection with Sligo St when children are crossing and cars speeding near the Southwest Open High School. Respondents also noted that truck traffic is heavy on Empire St.
- Some comments noted poor sightlines on the side streets that branch off Main St near downtown.

[1] One response provided a narrative about the various issues that make the area in front of McDonald's so dangerous: "The median at McDonalds/Big R is a safety hazard. Cars trying to turn into McDonald's get left hanging in the street, you have to pull into Big R if you want to go left coming out of McDonald's. I agree we need a crosswalk, but I wouldn't say what we have is any safer than just winging it and running. You can't see the flashing light till you are right on it and if you have a tall or wide vehicle in front of you may not see it at all. Pedestrians don't bother walking to the crosswalk and cross where it's closer to them. I hate the medians on Main but don't consider them as unsafe as this one."

In an open-ended question soliciting ideas for other ideas for safety measures in Cortez, **numerous respondents identified the Main Street medians as problematic and unsafe and recommended removing the medians**. Of the 262 responses to "If you have other ideas for safety measures you would support in Cortez, please describe them below," more than 10% mentioned the medians. Almost all were opposed to them. Representative comments include:

- "Medians on Main Street obstruct traffic, are unsightly, and hazardous."
- "Remove the medians. They hinder traffic flow and emergency response."
- "Take out the medians. They create more problems than they solve, especially with snow removal."
- "Remove the medians. They're more dangerous for pedestrians than helpful."
- "Get rid of the medians. Especially near McDonald's. They are a joke for turning with a large trailer."

In a subsequent question, participants said that Montezuma Ave was their favorite street in Cortez (see the word cloud in Figure 18). While Montezuma Ave also has medians, participants generally seemed to support the wider, landscaped medians on Montezuma Ave while opposing the high, concrete medians on Main Street.

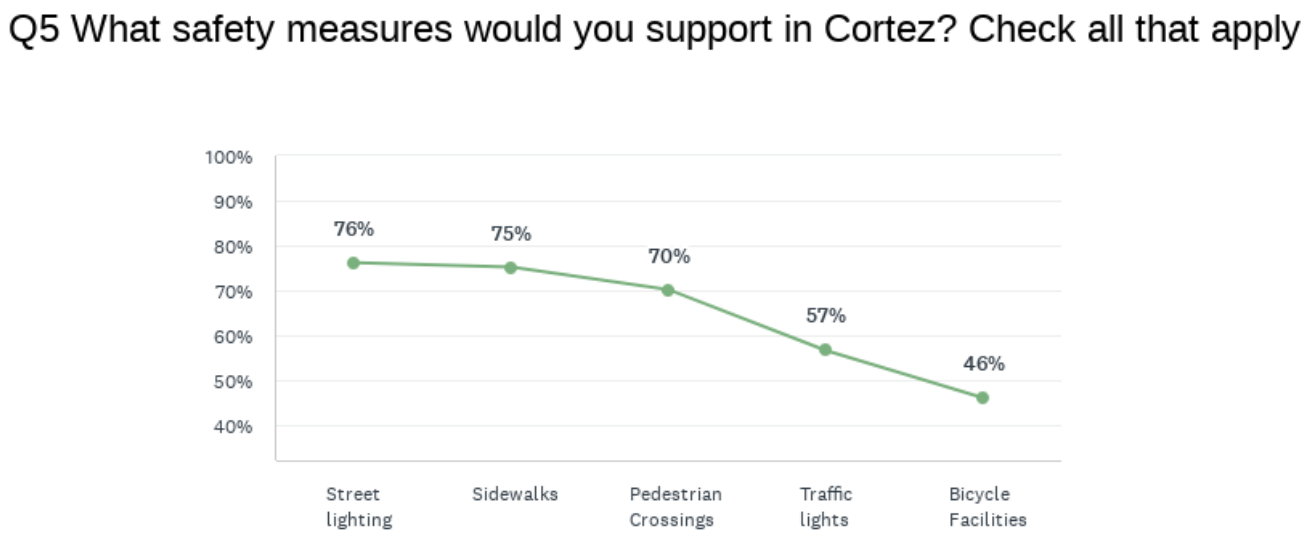
Figure 13: Medians on Montezuma Ave

Figure 14: Medians on Main Street

WHICH SAFETY MEASURES DO RESPONDENTS SUPPORT?

There is **substantial support for improved street lighting, sidewalks, pedestrian crossings, and traffic lights, while just under half of respondents would support bicycle facilities**. The following graph shows, in order of popularity, what percentage of respondents support each safety measure the survey proposed.

Figure 15: Survey responses – What safety measures would you support in Cortez?



The **need for lighting and visibility improvements came up repeatedly**. In addition to being the most popular safety measure when given specific choices, respondents called for more public lighting in both open-ended question responses about safety measures and safety issues.

Of the 276 who responded to a question about methods for slowing traffic, most (57%) support installing speed bumps or speed humps. About one-third of respondents supported each of the other proposed methods:

- Traffic circles/roundabouts (36%),
- Access control/medians to restrict (33%)
- Road diets (31%).

Figure 16: Survey responses – Which methods for slowing traffic speeds would you support in Cortez?

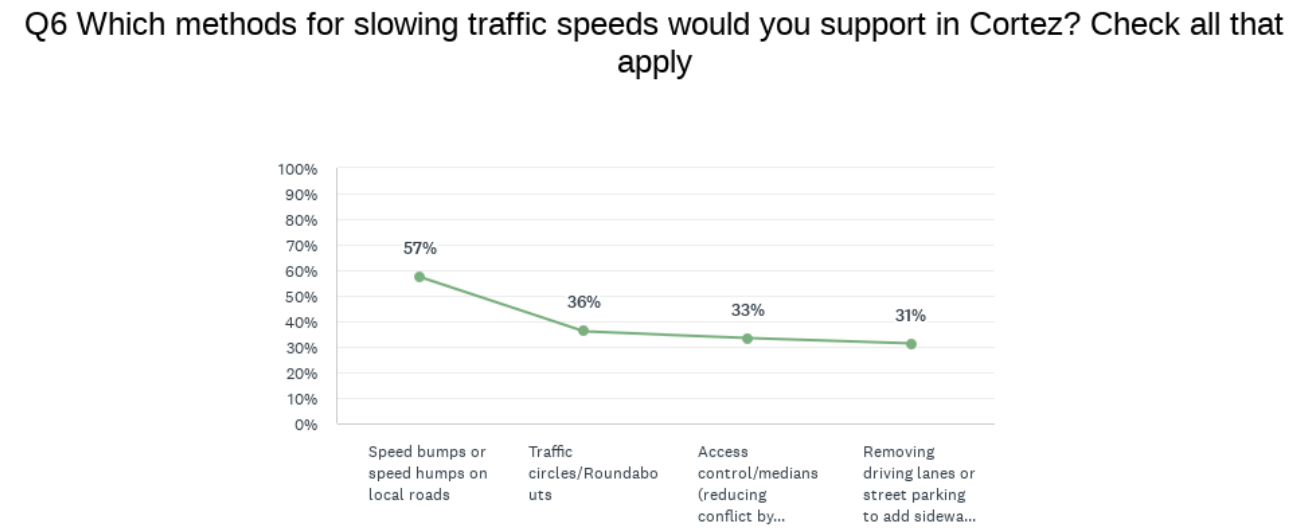
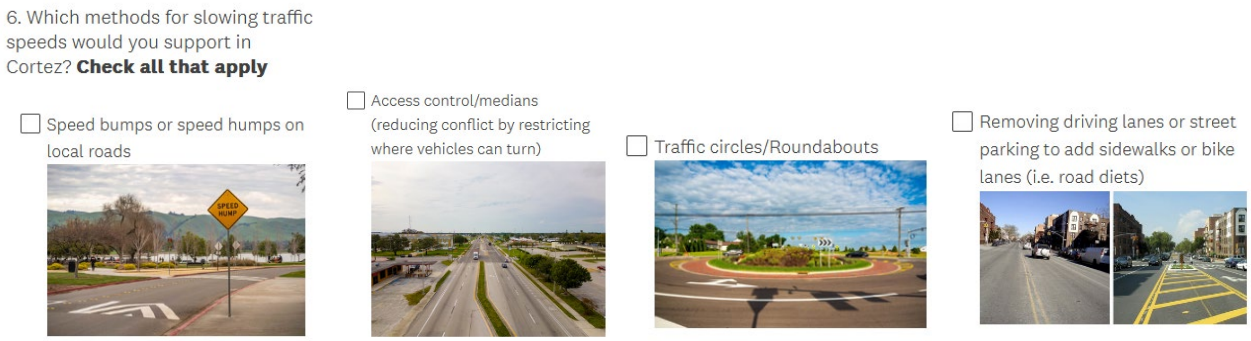


Figure 17: Traffic Calming Measures Survey Question



Roundabouts were mentioned frequently in open-ended comments, with participants expressing a mix of support and opposition to roundabouts.

Other respondent ideas for safety measures include:

- **Traffic control measures** such as lowering speed limits, installing traffic lights at dangerous intersections and adjusting signal timing, and introducing red-light cameras.
- **Pedestrian safety measures** such as wider sidewalks, repairing sidewalks in disrepair, making sidewalks ADA compliant, and enhancing visibility at crosswalks.
- **Lighting and visibility improvements** such as installing more lighting in poorly lit areas, around schools and parks, and enhancing signage and road markings with reflective features.

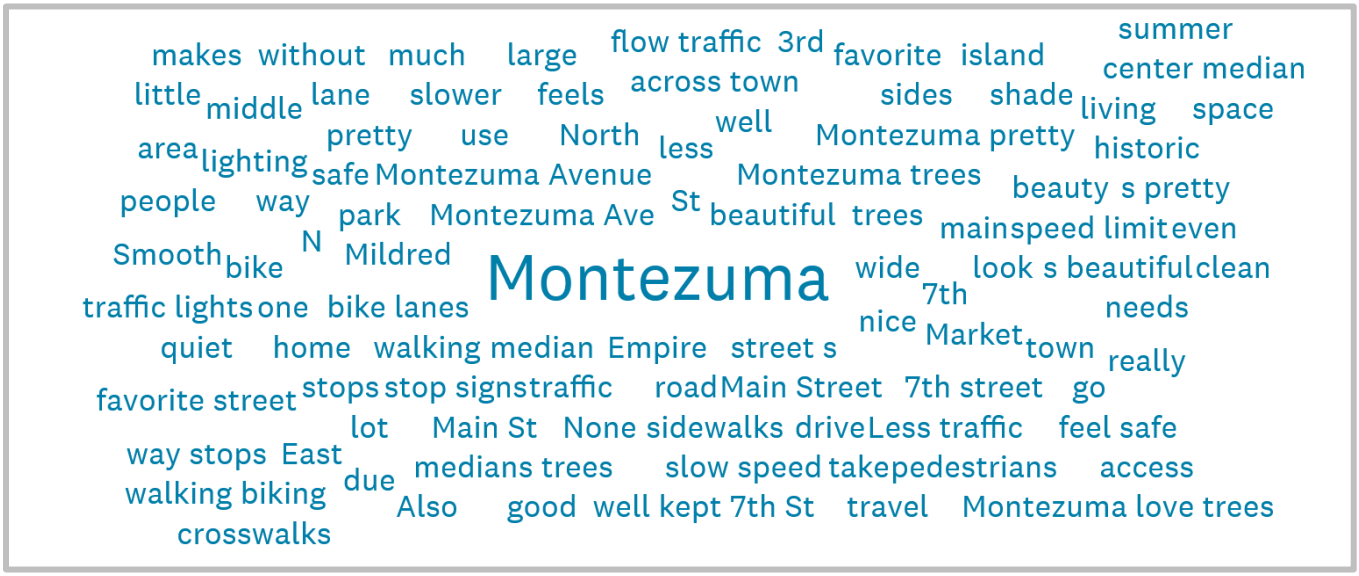
WHAT EDUCATION AND PROGRAMMING EFFORTS DO RESPONDENTS SUPPORT?

There was significant support for all proposed methods of programming and education. **Safe Routes to Schools programming received the most support** (66%), followed by DUI reduction campaigns (56%), stricter enforcement measures (56%), and safety education campaigns (50%).

WHAT TYPES OF STREETS ARE VALUED IN CORTEZ?

Respondents were asked what their favorite street is in Cortez and why. This question was intended to give the project team an idea of what kinds of streets and street features the community values most. The most mentioned street was Montezuma Ave because of its mature trees, beauty, crosswalks, good lighting, landscaped medians, wide sidewalks, bike lanes, slow speeds, and good traffic control.

Figure 18: Favorite Street Word Cloud



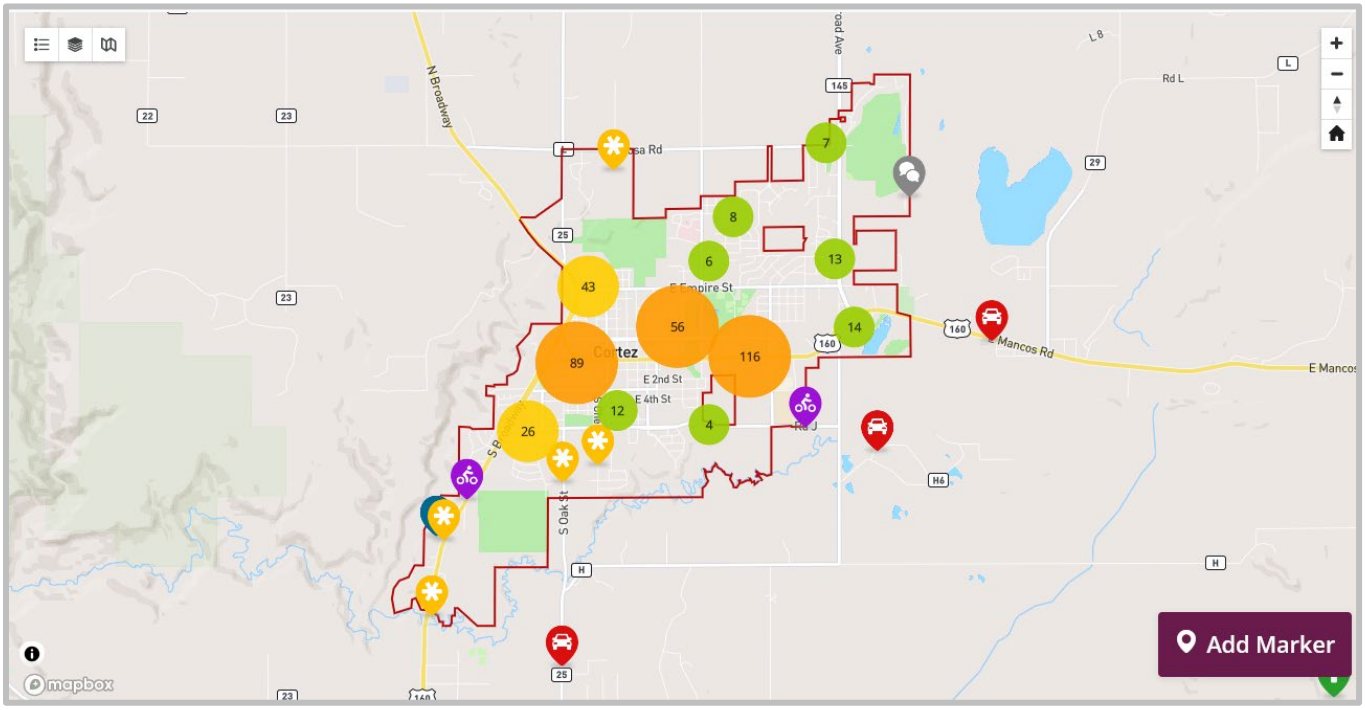
WHO TOOK THE SURVEY?

- 1% of respondents identified as having a disability that prevents them from driving a car, while 5% of respondents use a wheelchair, walker, or other mobility aid.
- 57% of respondents identified as a Cortez resident (445). 40% of respondents lived in Montezuma County but not within the City of Cortez (313). 14% described their connection to Cortez as a Cortez business owner, and 5% as Cortez Community organization. Some identified as "Other," including people who work in Cortez, used to live in Cortez, or shop or volunteer in Cortez. Survey respondents could check more than one option ("check all that apply").
- A wide range of age groups participated in the survey. While only 3 respondents were under the age of 18, young adults were well represented with 19% of survey respondents between the ages of 18-34. Senior citizens were also well represented with 23% of survey respondents over the age of 65.
- The majority of respondents identified as white (87%). 10% of respondents identified as Hispanic or Latino and 6% as Native American.

INTERACTIVE MAP AND PROJECT WEBSITE

The project website (www.cortezsafestreets.com) was launched in June 2024. The website included information about the project, ways to get involved, contact information, and information on national safety initiatives (Complete Streets, Vision Zero and Safe Streets for All). The website also included an interactive map where participants could leave pins and comments in locations where they had safety concerns. Participants left 408 comments on the interactive map.

Figure 19: Interactive Map Web Dashboard

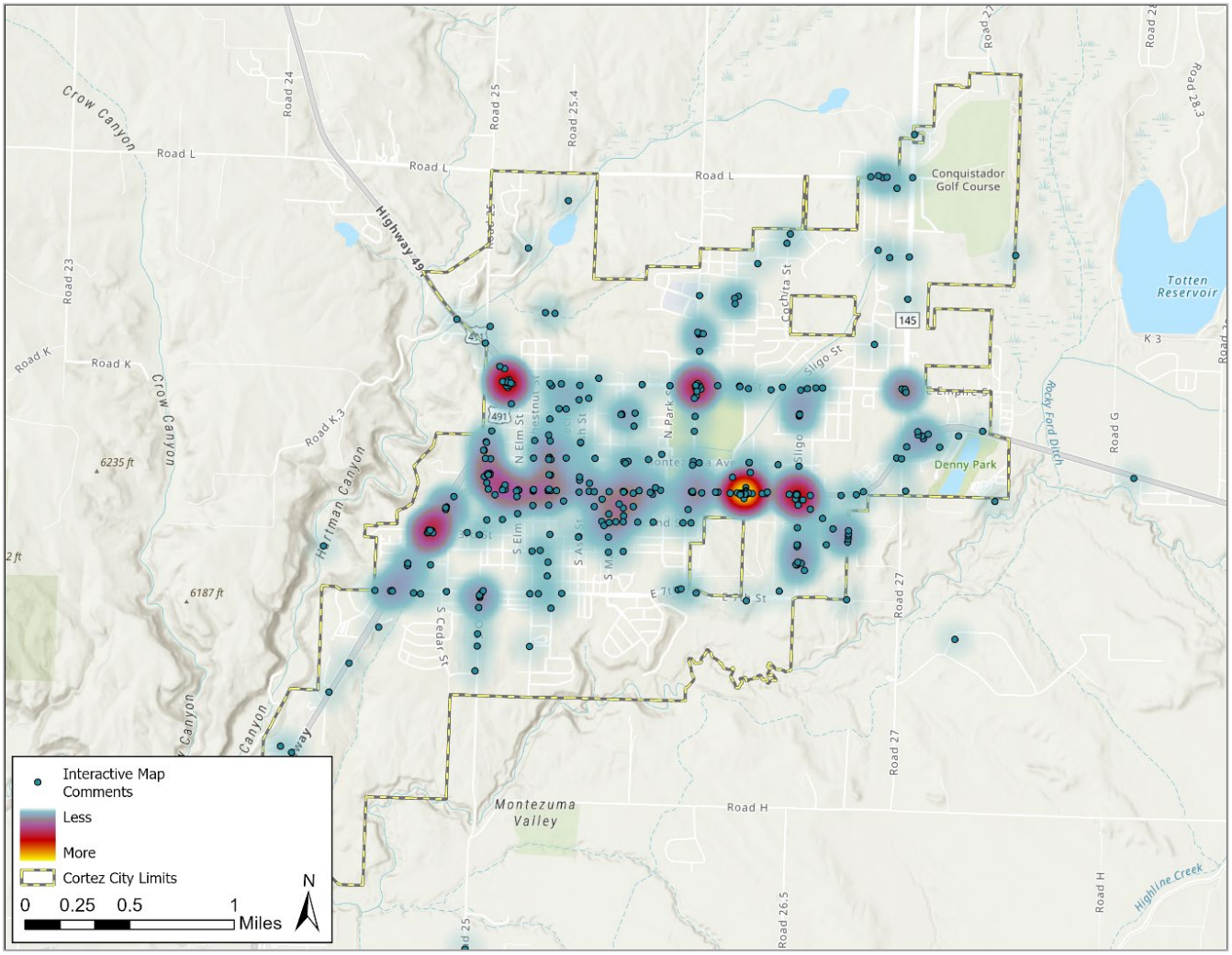


Overall, there were 408 interactive map comments received, spread among six categories: safety, traffic, intersection, pedestrian, bike, and other. Safety received the most comments at 122, followed by traffic at 94, intersections at 86, pedestrians at 76, with bikes and others both receiving 15. Clusters of interactive map comments are primarily located along E Main St (Highway 160) and at the intersections of Highway 491 with local roads.

Common themes across all comment categories were safety and speeding, with emphasis on the need for increased enforcement and structural changes to improve conditions for pedestrians, cyclists, and drivers. Obstructions such as bushes, signs, or medians frequently cause visibility issues. Infrastructure needs include the improvement of bike lanes, sidewalks, pedestrian crossings, and traffic management systems. Rule violations include things like running red lights, failing to yield, and making unsafe turns.

Repeated Words and Phrases: **Safety, speeding**, **visibility**, **traffic**, **pedestrian crossing**, **bike lane**, **roundabout**, **median**, **stop sign**, and **turn lane** appear frequently, highlighting the primary concerns across all comments.

Figure 20: All Interactive Map Comments

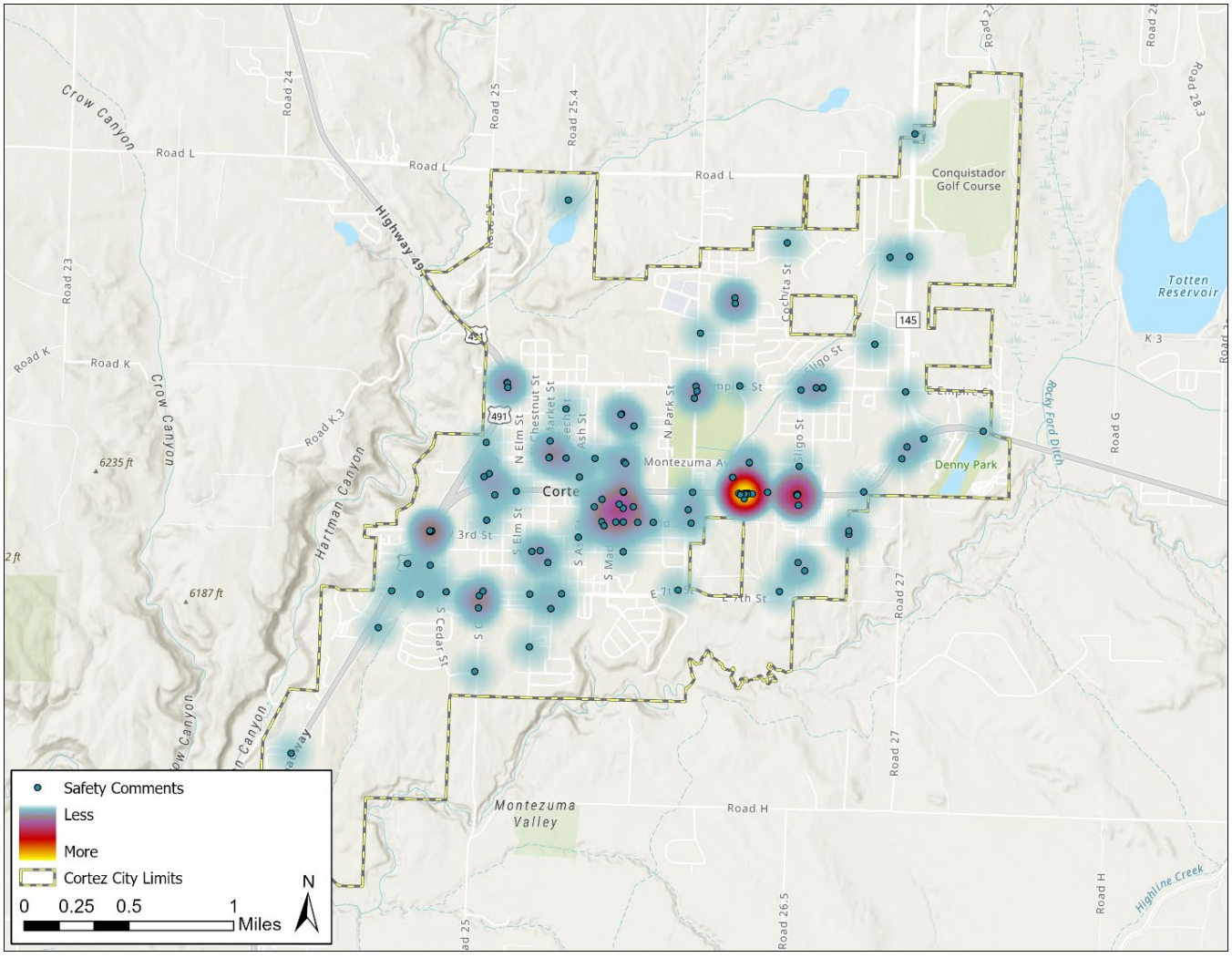


SAFETY COMMENTS (122)

Comments related to safety spanned various categories with common themes being:

- Excessive speeding in residential areas and near schools.
- Poorly designed crossings and medians, leading to crashes and near-misses.
- Visibility obstructions (e.g., bushes, parked cars) that obscure sight lines.
- Inadequate enforcement of traffic laws, particularly for red-light running and speeding.

Figure 21: Interactive Map Safety Comments

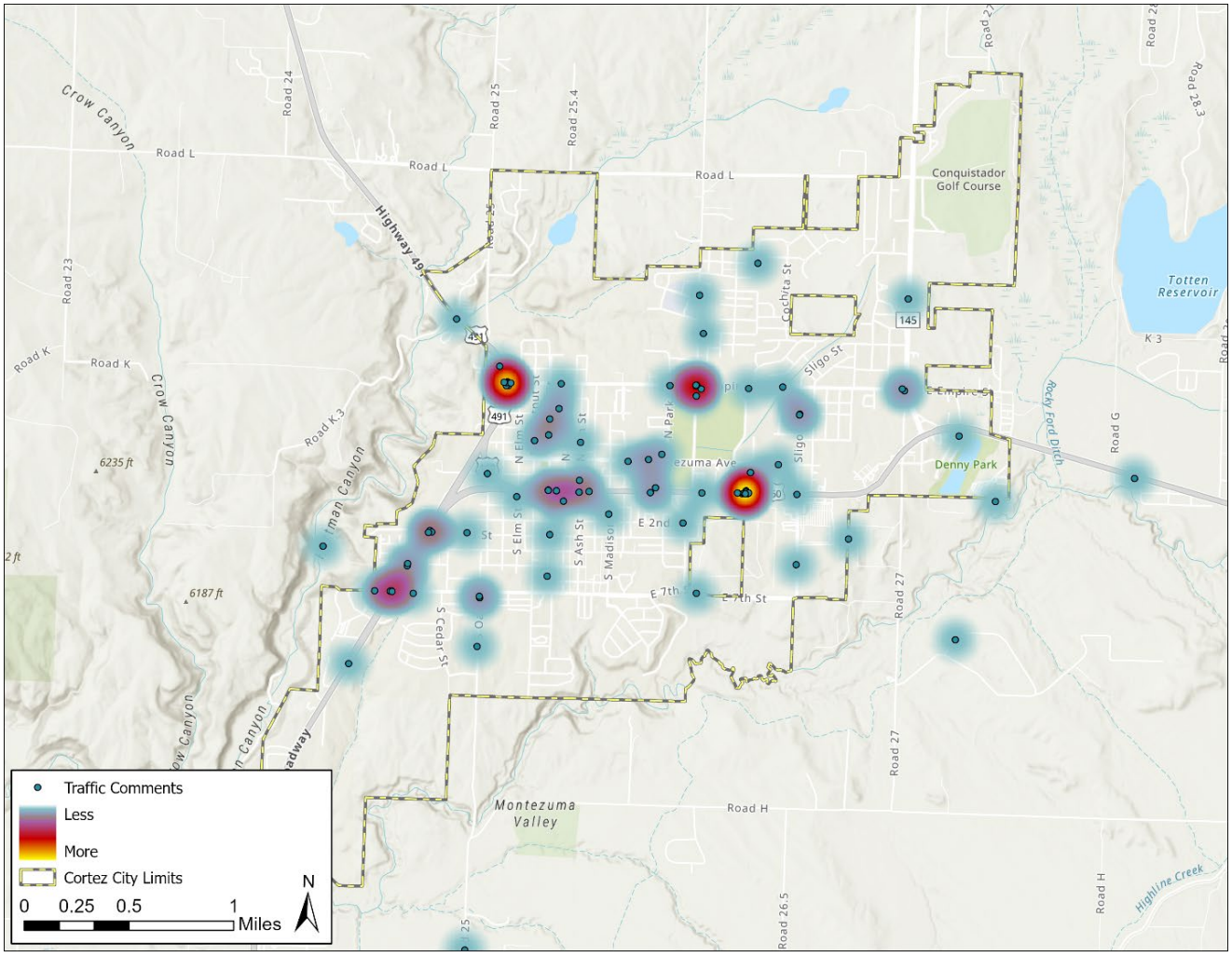


TRAFFIC COMMENTS (94)

Recurring themes with traffic comments speak to congestion and flow issues:

- High speeds and reckless driving in both commercial and residential areas.
- Frustrations with left turns, especially at high-traffic intersections.
- Concerns about medians hindering smooth traffic movement, access, and visibility.
- Suggestions for better signage and striping and more traffic lights.

Figure 22: Interactive Map Traffic Comments

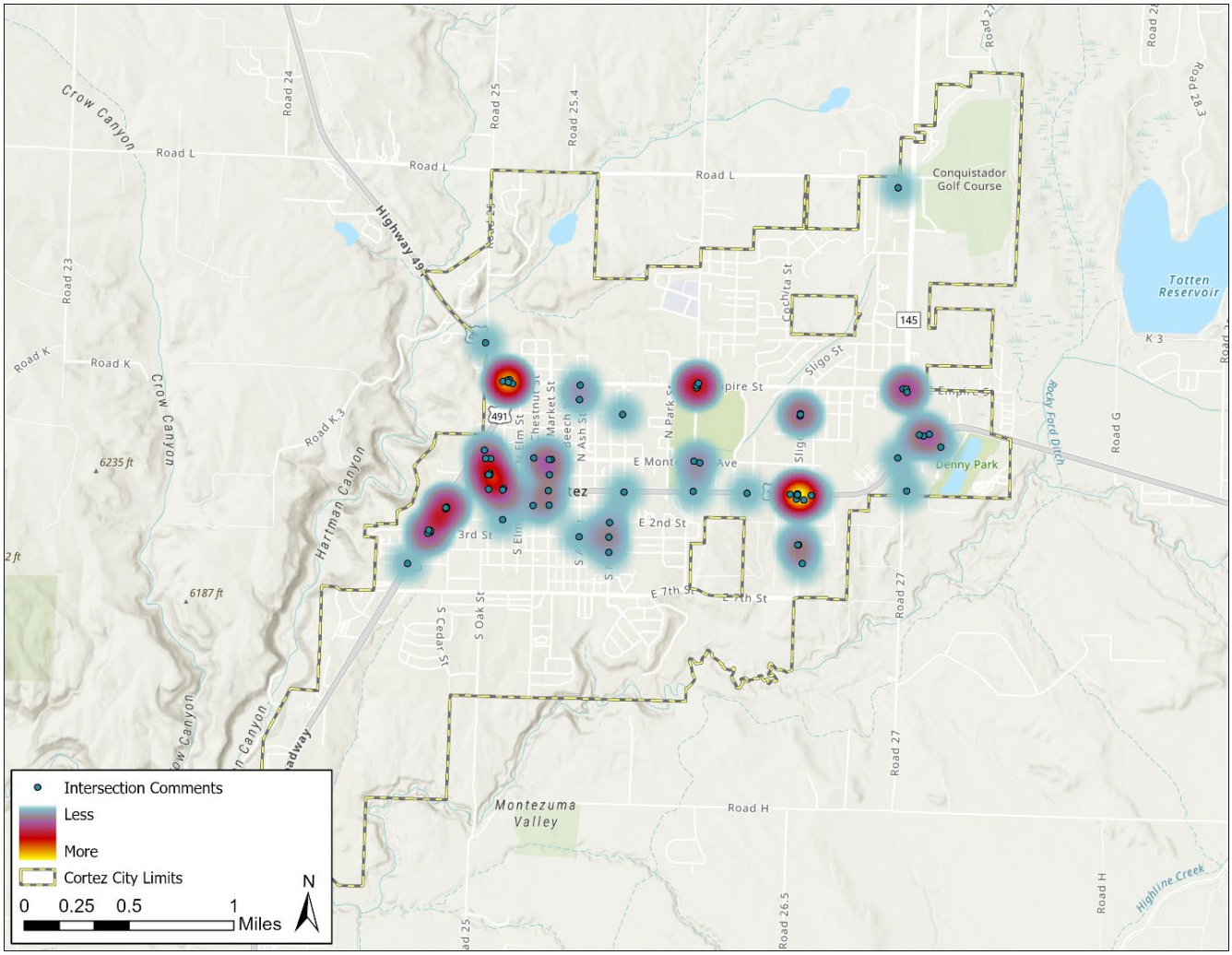


INTERSECTION COMMENTS (86)

Recurring themes with intersection comments speak primarily to the following concerns:

- Poor visibility due to obstructions (e.g., plants, electrical boxes).
- Frequent traffic rule violations, including running stop signs and red lights and making illegal U-turns.
- Congestion and confusing layouts, often suggesting the need for roundabouts or traffic lights.
- Difficulties making left turns due to congestion or median placement.
- Comments discussed adding roundabouts at stop-controlled intersections; some comments were in support of roundabouts and some were against.

Figure 23: Interactive Map Intersection Comments

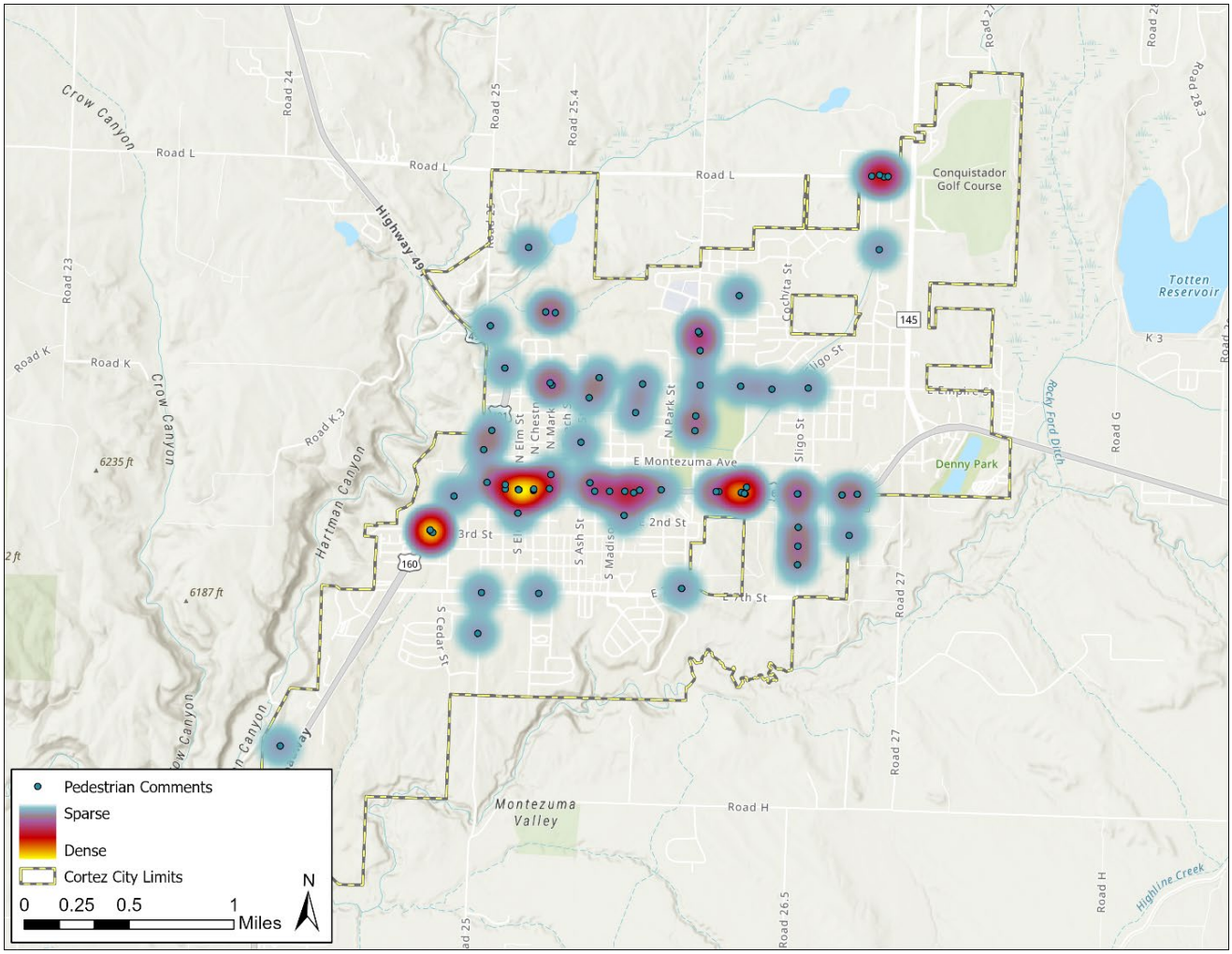


PEDESTRIAN COMMENTS (76)

Common pedestrian concerns were:

- A lack of crosswalks, sidewalks, and pedestrian-friendly infrastructure makes walking unsafe, especially near schools and busy intersections.
- Drivers often disregard pedestrian traffic, even in marked crosswalks.
- Requests for better pedestrian signage, elevated crossings, and extended signal times reflect the need to prioritize pedestrian safety.
- Requests for more designated walking paths to create better pedestrian connectivity.

Figure 24: Interactive Map Pedestrian Comments

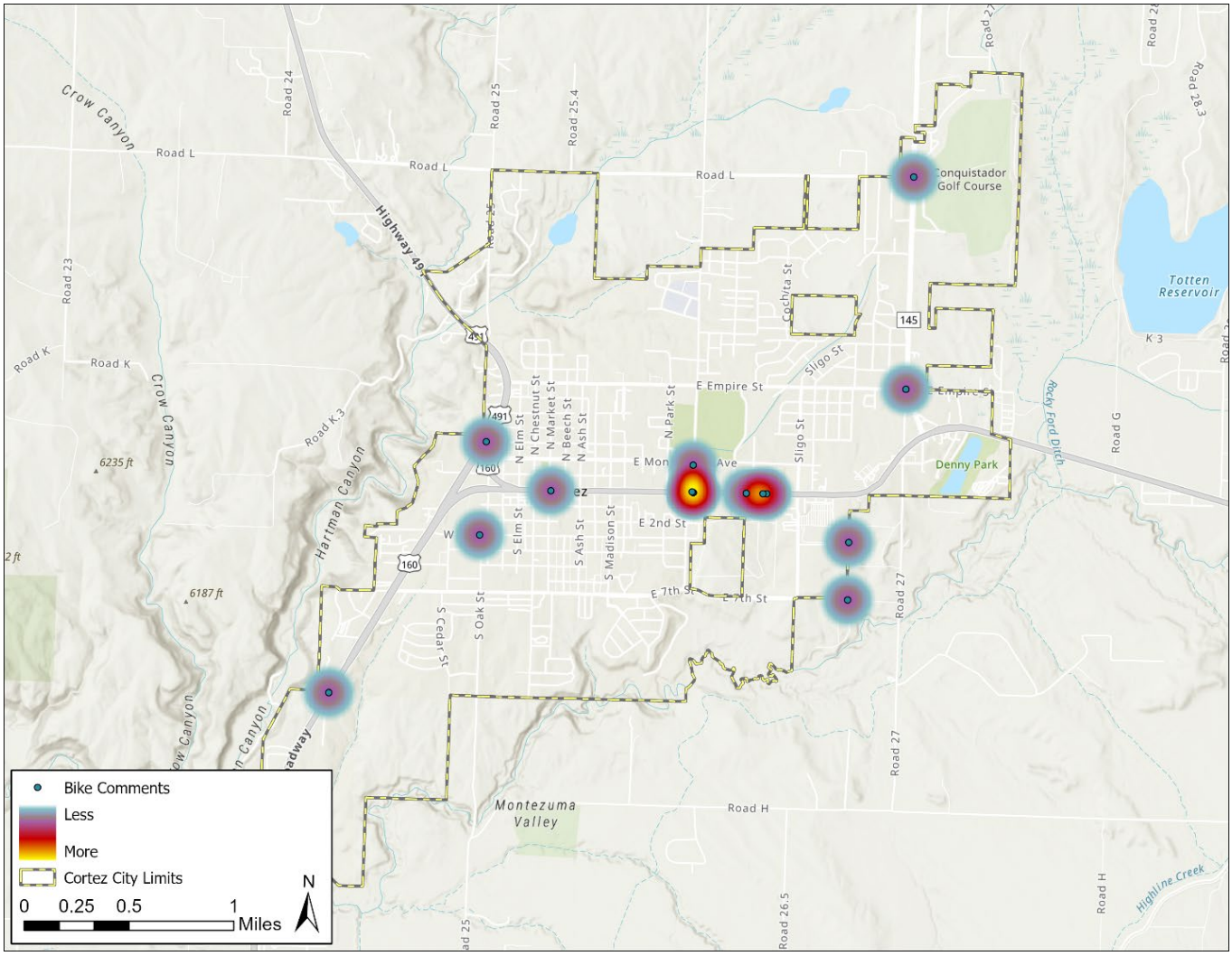


BIKE COMMENTS (15)

Recurring issues and topics include:

- Lack of bike lanes, particularly on busy streets. Comments noted a lack of good north/south routes.
- Unsafe behavior of cyclists and conflicts with cars and pedestrians, including bikes using sidewalks at high speeds.
- Crashes involving bicycles, such as those caused by limited visibility or failure to yield.
- The need for improved bike-specific pathways.
- Participants mentioned that there are no established routes for biking north/south across town. One participant suggested an underpass to safely cross Main St.

Figure 25: Interactive Map Bike Comments

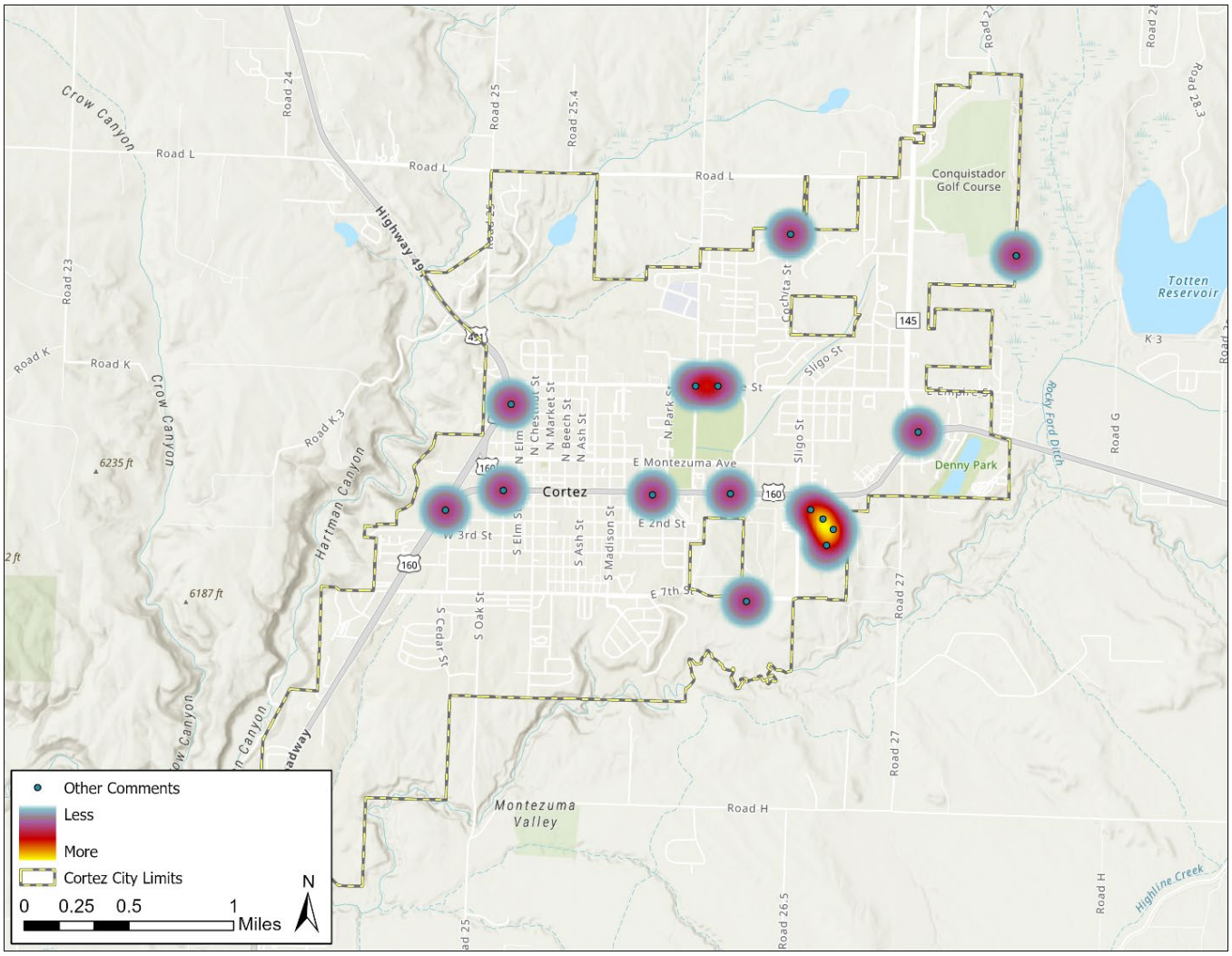


OTHER COMMENTS (15)

General comments included:

- Need for additional or better-maintained signage and road markings (striping on Empire Street, more speed limit signs on Main Street, and better signage at South Broadway/Main Street intersection).
- Requests for paving roads and improving pedestrian/bike infrastructure.
- Concerns about public safety due to loitering and potential criminal activity in some areas.

Figure 26: Interactive Map Other Comments



Presentation to City Council

The project team presented at the Cortez City Council workshop on Oct 22. The presentation focused on required components of the Safety Action Plan, crash statistics, and potential Vision Zero commitment statements. Presentation slides can be referenced in Appendix A.

Draft Plan Comment Period

The draft plan was open for public review during the month of March, 2025. 13 comments were submitted on the plan, which are included in Appendix A.

To let the public know about the release of the draft plan, the City published a news release on February 20. Direct emails were sent to over 300 residents who had participated in the first phase of outreach. The public were also informed of the draft plan via the City and Police Department Facebook pages as well as on the City and Police department websites.

There was also an article published in the Journal discussing the draft plan and opportunities to comment.

Crash Analysis

Understanding the factors that contribute to unsafe traveling conditions is the first step in achieving zero traffic fatalities in Cortez. This crash analysis examines all crashes within the City of Cortez over the past five years for which data are available (2018 – 2022). Particular attention is given to crashes that resulted in fatalities or serious injuries, also known as killed and serious injury crashes (KSI crashes).

Methodology

Crash data were obtained from the Colorado Department of Transportation, which maintains a crash database for the state from police reports. Colorado crash data use the KABCO severity rating, which was developed by the National Safety Council to rate the injury level of those involved in a crash. The KABCO scale is used nationwide and is included in the American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual (HSM). KSI crashes included crashes rated K (Fatal) and A (Suspected Serious Injury) on the KABCO scale. Other Injury Crashes include those listed as B (Suspected Minor Injury) and C (Possible Injury). Crashes rated O resulted in property damage only without any injuries.

Limitations

Crash data are collected via police reports and are subject to variation in reporting based on the responding officer. KABCO ratings are subjective and determined by a non-medically trained officer. Furthermore, officers may have varying opinions on driver actions or other factors that contributed to a crash. Crash data are also limited to crashes that were reported to police officers.

Crash location data is subject to data entry errors. Some crash coordinates did not match the cross streets listed in the crash database. The CSAP team examined KSI crashes for coordinate errors and adjusted coordinates to match the cross streets. However, for crashes that occurred at mid-block locations rather than intersections, crashes may not be mapped in the exact location where they occurred. The project team included all crashes within the City of Cortez and within one quarter mile of City limits in order to include crashes that may have imprecise location data.

Crash data are not normalized by traffic volumes or the number of trips taken. For example, most crashes occur during the day, but most trips are also taken during the day. The crash data have not been adjusted to show the relative risk of traveling at night vs during the day.

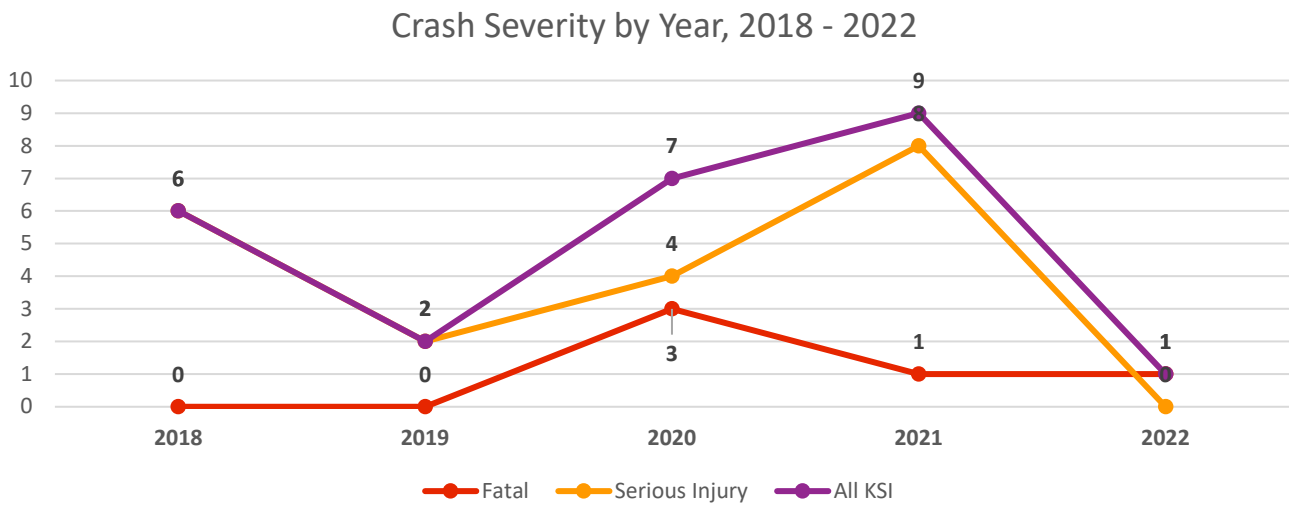
Finally, the study area and number of KSI crashes are relatively small. From an analysis perspective, **the small number of KSI crashes poses difficulties in confidently identifying crash hotspots and contributing factors,** and trends in small datasets may be caused by chance and not indicative of larger patterns.

This CSAP examined crash data in tandem with other analysis factors such as roadway conditions data, public input, and industry best practices in order to account for limitations in crash data.

WHAT ARE THE RISKS?

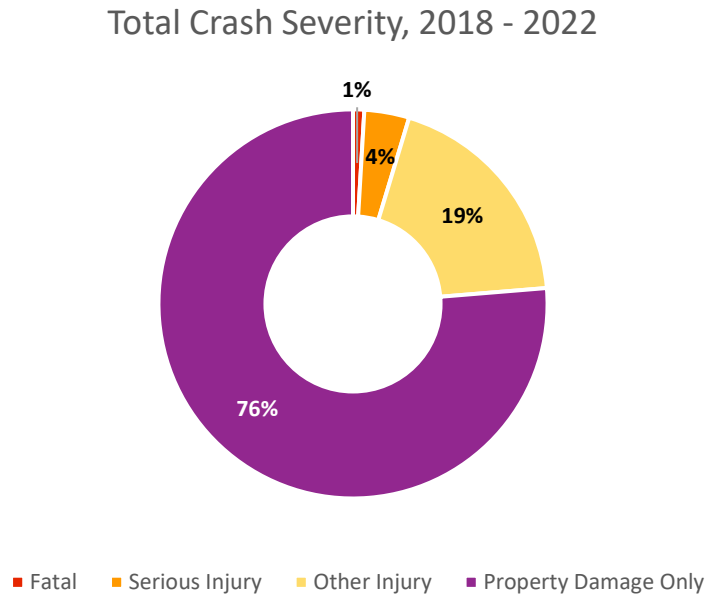
Figure 27 shows KSI crashes by year since 2018. Crashes spiked in 2020 and 2021, which is consistent with national trends. Decreased traffic volumes during the COVID-19 pandemic are thought to have contributed to increased speeding and KSI crashes. While 2022 saw only one KSI crash, there are not enough data points after the pandemic to determine if lower KSI crashes post-pandemic are a trend.

Figure 27: Crash Severity by Year, 2018 - 2022



From 2018 – 2022, Cortez experienced 536 total crashes. Of these, five crashes resulted in five fatalities and 20 crashes resulted in 21 people seriously injured. Figure 28 depicts the percentage of crashes that resulted in fatalities, serious injuries, other injuries, or property damage only from 2018 – 2022.

Figure 28: Total Crash Severity, 2018 – 2022



Who is at Risk?

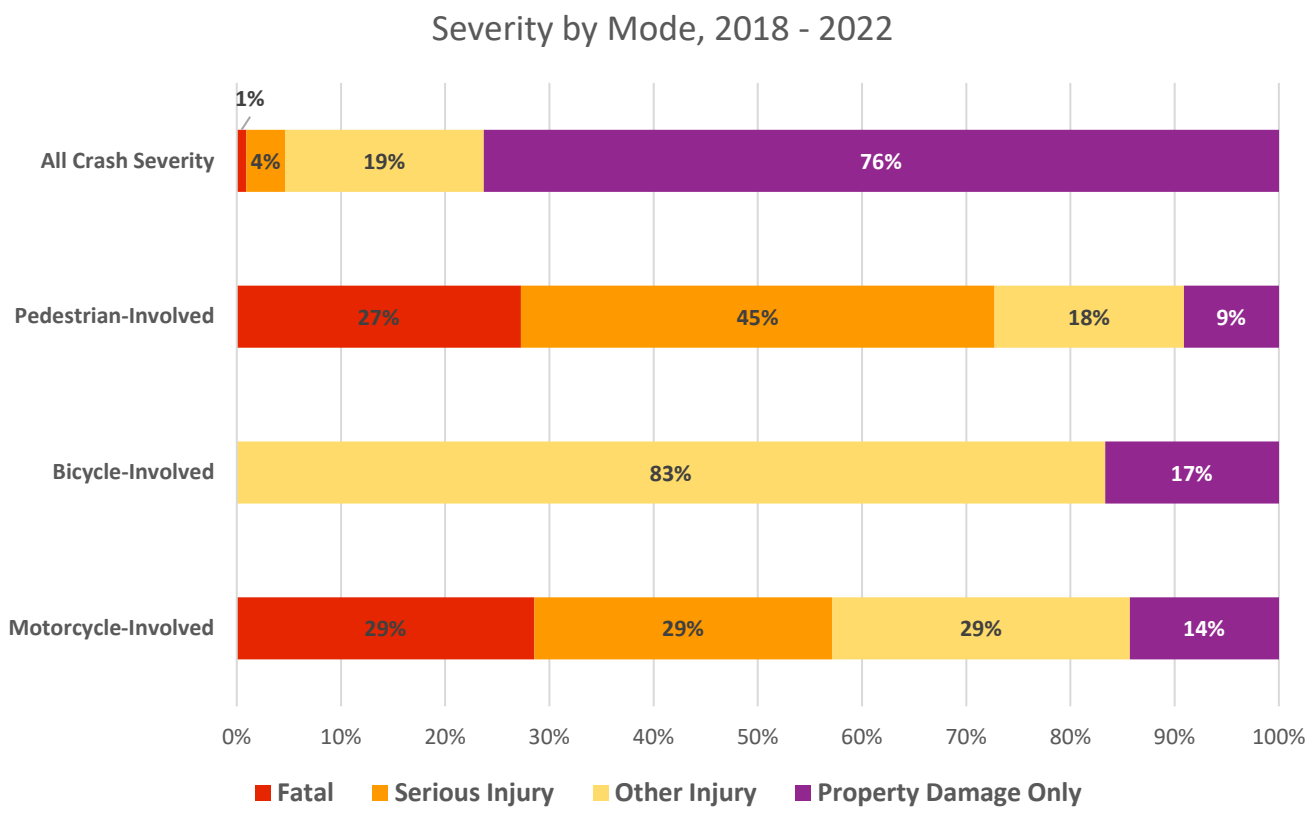
Pedestrians, bicyclists, and motorcyclists are less protected from injury in crashes and are at higher risk for death or serious injuries. These types of crashes are known as Vulnerable Road User (VRU) crashes. Table 4 shows how many crashes involve VRUs.

Figure 29 shows the severity of crashes for pedestrian, bicyclist, and motorcyclist-involved crashes.

Table 4: Crashes by Mode, 2018 – 2022

	All Crashes	Pedestrian-Involved Crashes	Bicycle-Involved Crashes	Motorcycle-Involved Crashes
Fatal	5	3	0	2
Serious Injury	20	5	0	2
Other Injury	102	2	5	2
Property Damage Only	409	1	1	1
Total	536	11	6	7

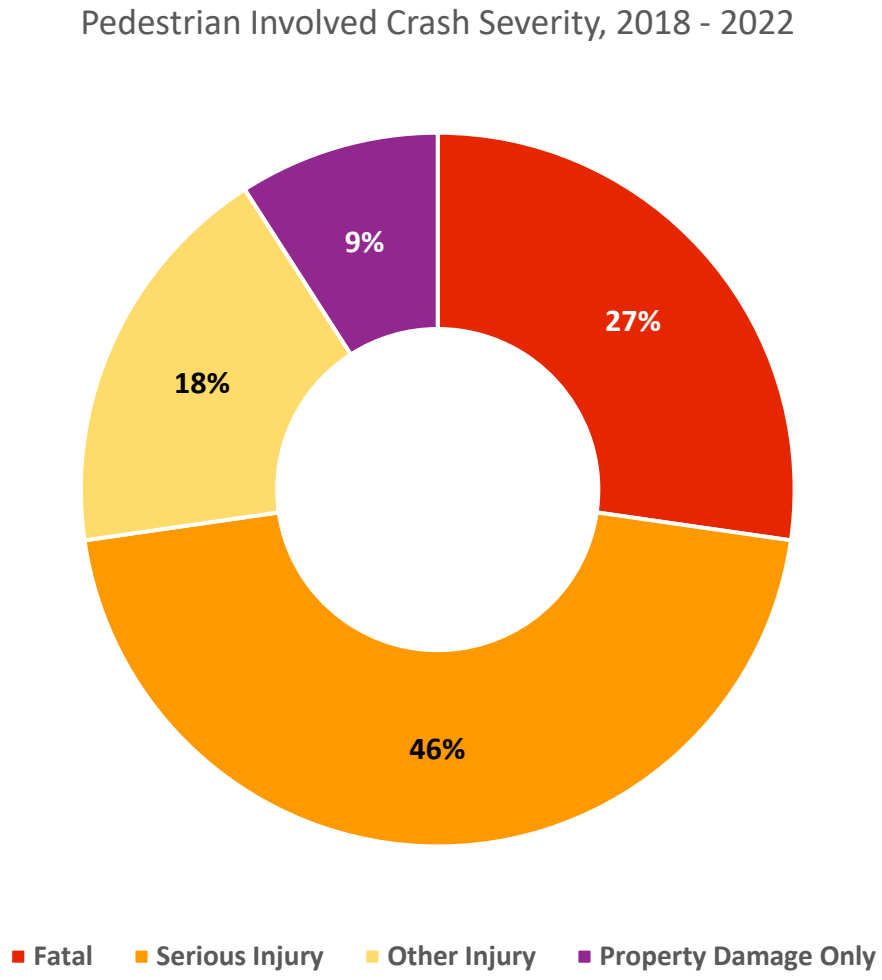
Figure 29: Crash Severity by Mode, 2018 – 2022



PEDESTRIANS

Pedestrians are at the highest risk; 3 of the 5 fatal crashes in Cortez resulted in a pedestrian fatality. While only 2% of crashes involve a pedestrian, 32% of KSI crashes involve a pedestrian. 5% of all crashes in Cortez result in a fatality or serious injury; however, for pedestrian-involved crashes, the risk jumps to 73% (see Figure 30).

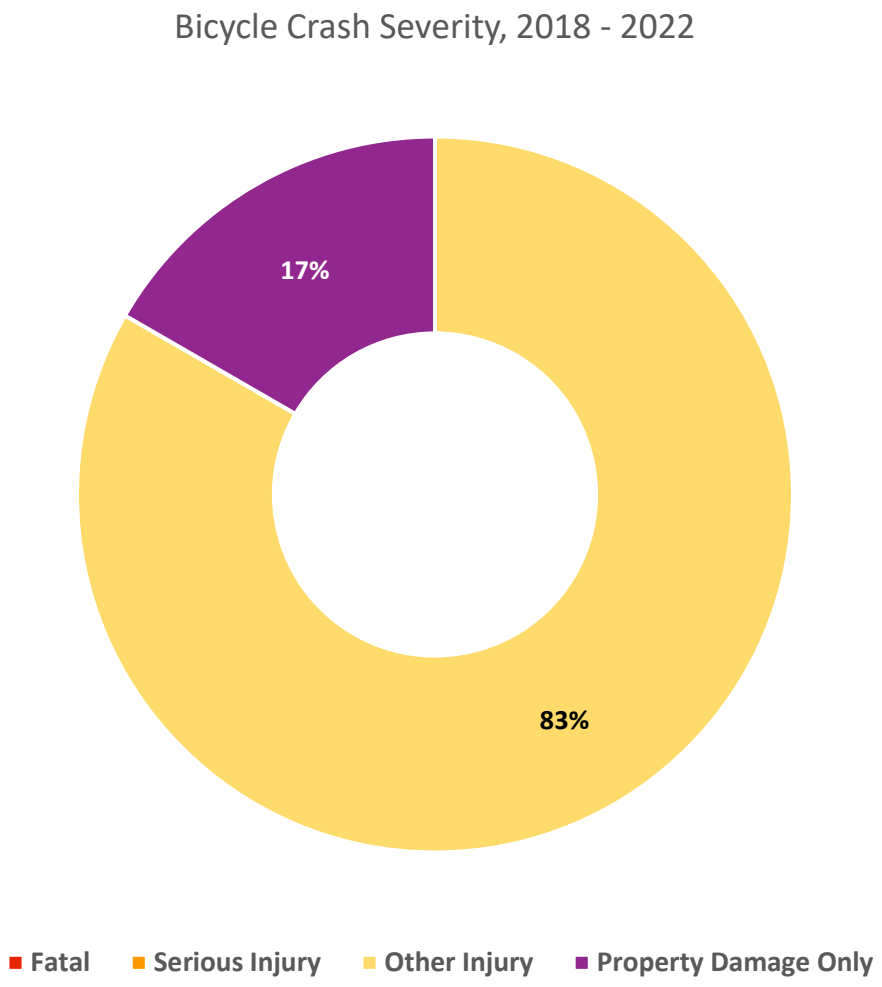
Figure 30: Crash Severity for Pedestrian-Involved Crashes, 2018 - 2022



BICYCLISTS

While no bicyclist-involved crashes resulted in fatalities or serious injuries, **only 17% of bicyclist-involved crashes *did not* result in an injury,** which is substantially higher than the overall rate of non-injury crashes (76%). However, bicyclist-involved crashes made up a small percentage of overall crashes in Cortez, and the small sample (six crashes) creates difficulties in drawing broader conclusions about bicycling safety in the city with crash data alone.

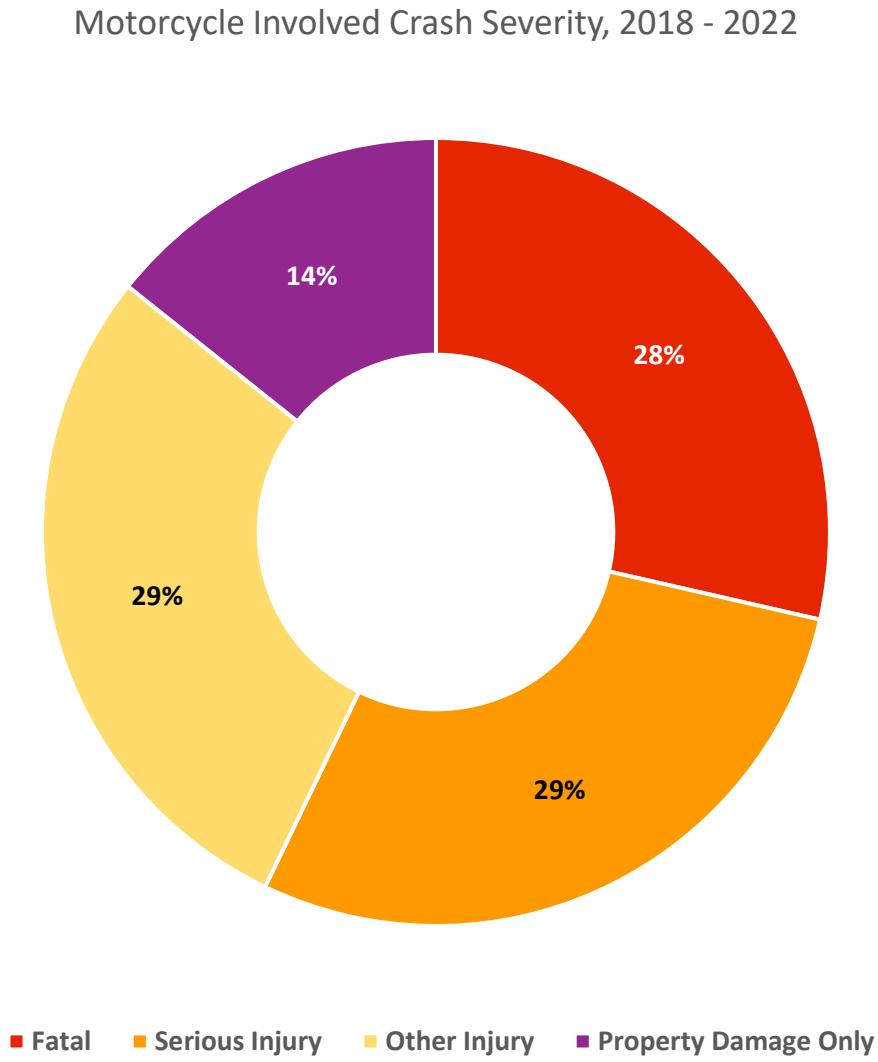
Figure 31: Crash Severity for Bicyclist-Involved Crashes, 2018 - 2022



MOTORCYCLISTS

Motorcyclists are also more at risk with 57% of crashes involving a motorcyclist resulting in a fatality or serious injury. Two of the five fatal crashes between 2018 – 2022 involved a motorcyclist. While motorcycle crashes were only a small portion of total crashes (seven crashes from 2018 – 2022), they accounted for 40% of fatal crashes in the same time period.

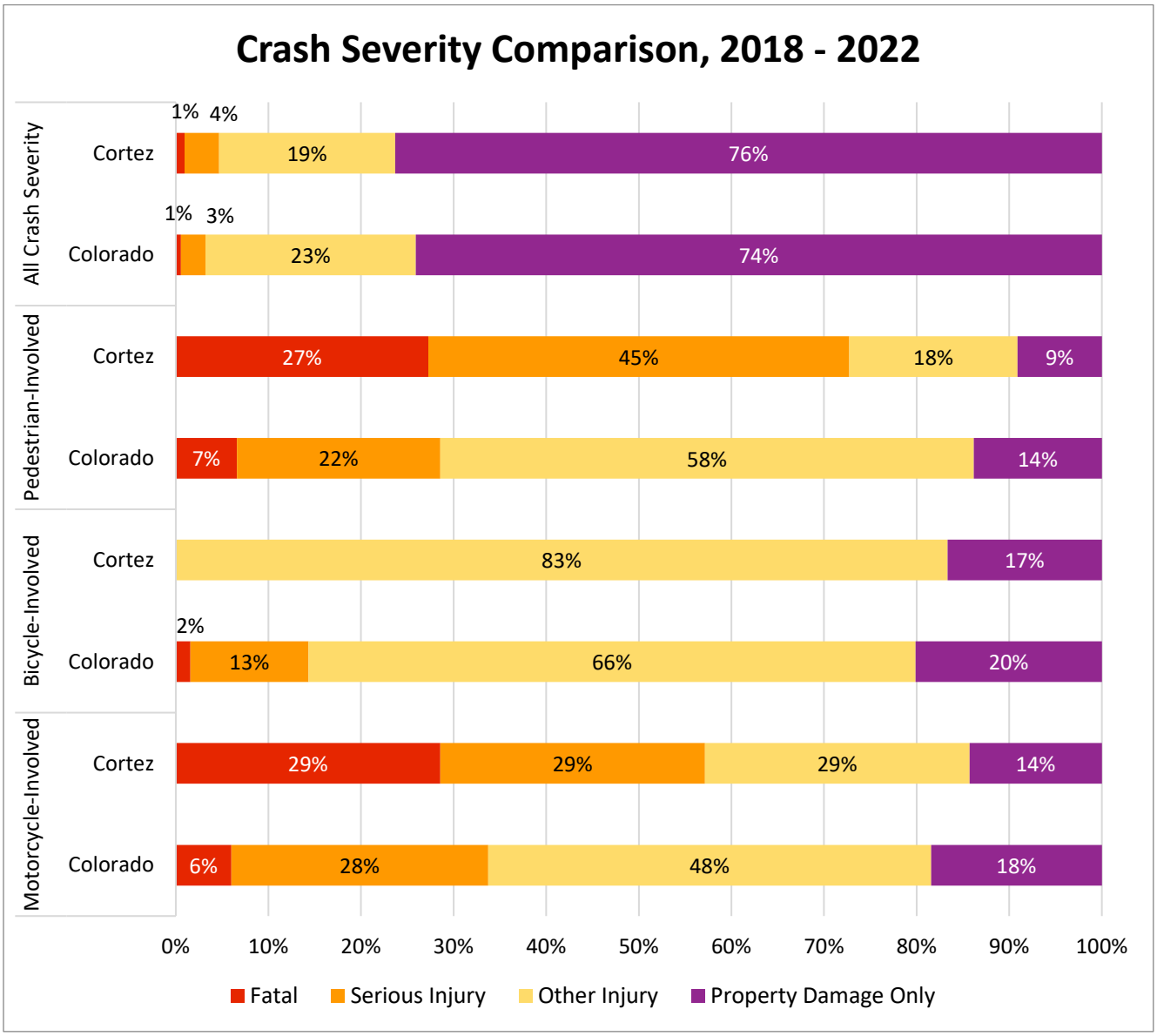
Figure 32: Crash Severity for Motorcyclist-Involved Crashes, 2018 – 2022



STATE COMPARISON

Severity data for Colorado crashes can be used to see how Cortez compares to the rest of the state (see Figure 33). Crash severity levels in Cortez for all crashes are similar to Colorado's (5% KSI crashes in Cortez; 4% in Colorado). However, pedestrian-involved crashes are more severe in Cortez. 29% of pedestrian-involved crashes in Colorado are KSI crashes, while 73% of pedestrian-involved crashes in Cortez are KSI crashes. Motorcycle-involved crashes also tend to be more severe: 57% of motorcycle-involved crashes in Cortez are KSI crashes vs 34% for Colorado. Bicycle-involved crashes in Cortez are more likely to result in injury, but those injuries tend to be less severe than in Colorado as a whole.

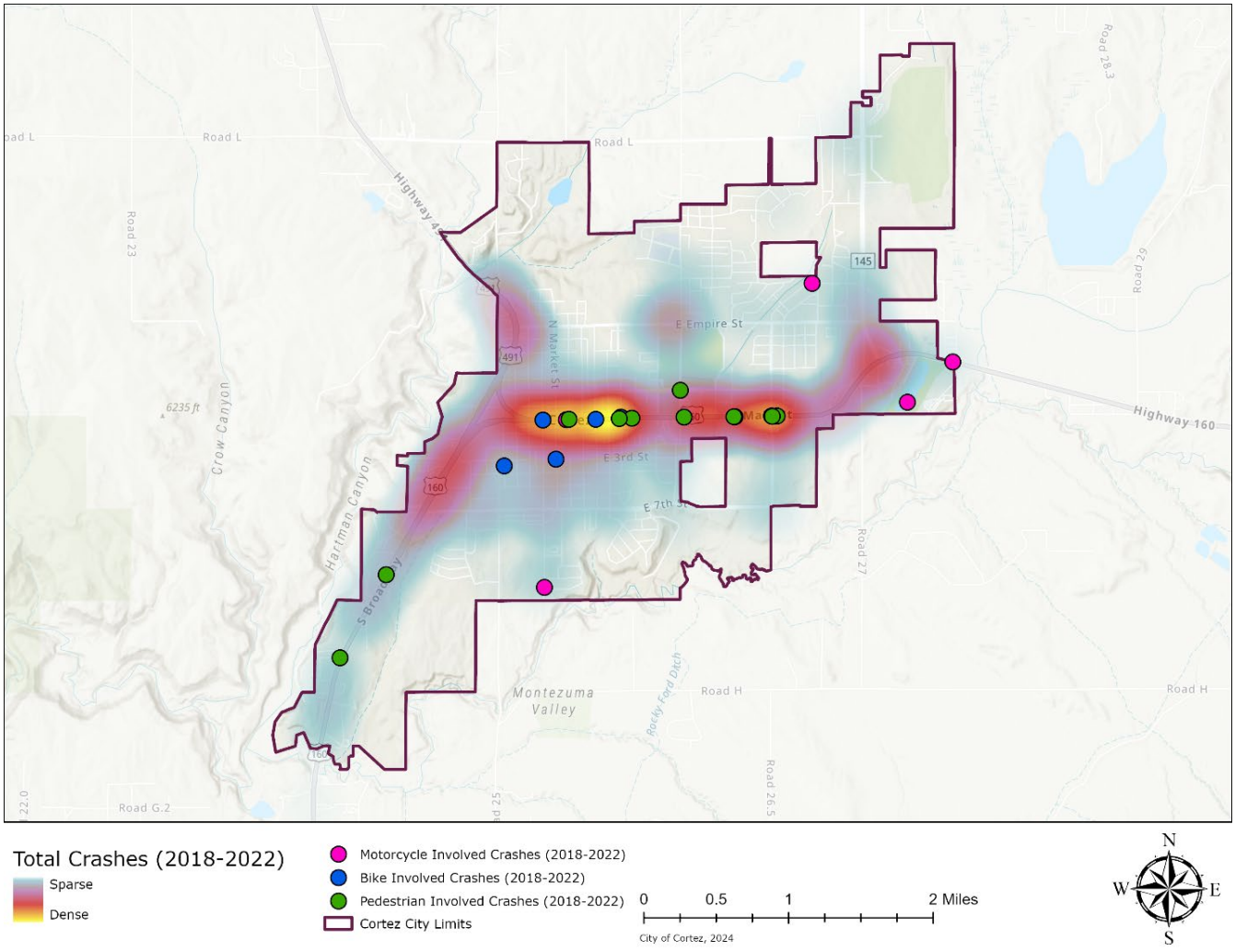
Figure 33: Colorado Crash Severity by Mode, 2018 - 2022



WHERE DO CRASHES OCCUR?

Most crashes occurred on State Highway 491 near the 491 and State Highway 160 interchange as well as along E Empire Street and Main Street through Downtown Cortez. VRU crashes, which include pedestrians, bicyclists, and motorcyclists, were mostly concentrated on Main Street in Downtown Cortez (State Highway 160). A high number of pedestrian-involved crashes occurred on E Main Street, potentially due to conflicts between pedestrians attempting to cross and vehicles traveling through on the highway. Main Street has high levels of pedestrian activity and many pedestrian destinations on both the north and south side of the highway. Figure 34 shows crash hotpots for all crashes and the location of VRU crashes.

Figure 34: Crash Hotspots, All Crashes 2018 - 2022



Most crashes, both KSI crashes and less severe crashes, occur on the state highways running through Cortez (State Highway 491 and State Highway 160). 80% of KSI crashes occurred on state highways and 64% of all crashes occurred on state highways (see Figure 35). State highways have the highest traffic volumes in Cortez.

Figure 35: Road Type, 2018 – 2022

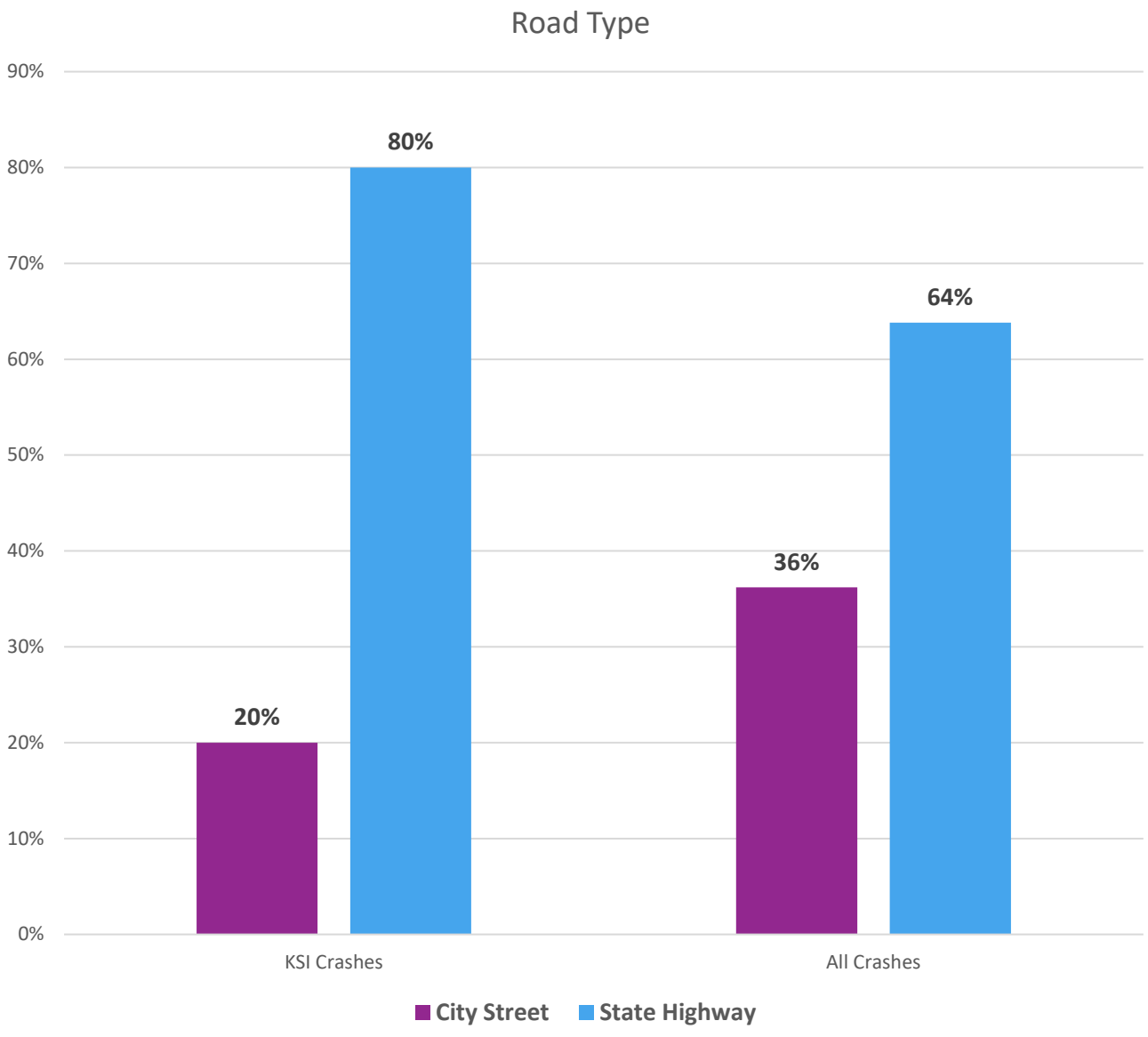


Figure 36 shows the top crash corridors and location of KSI crashes. There were only two corridors with multiple KSI crashes: E Main Street/Highway 160 and Highway 491 (also known as N Broadway and S Broadway), which are both state highways. **Of the total number of KSI crashes, 69% occurred on these two corridors.**

The total number of miles of all roads within the Cortez city limits equals to 73.3 miles. **The total road miles of the top two KSI crash corridors was 4.6 miles, equaling to about 6.3% of the total Cortez road miles.**

Figure 36: KSI Crashes and Top Crash Corridors, 2018 - 2022

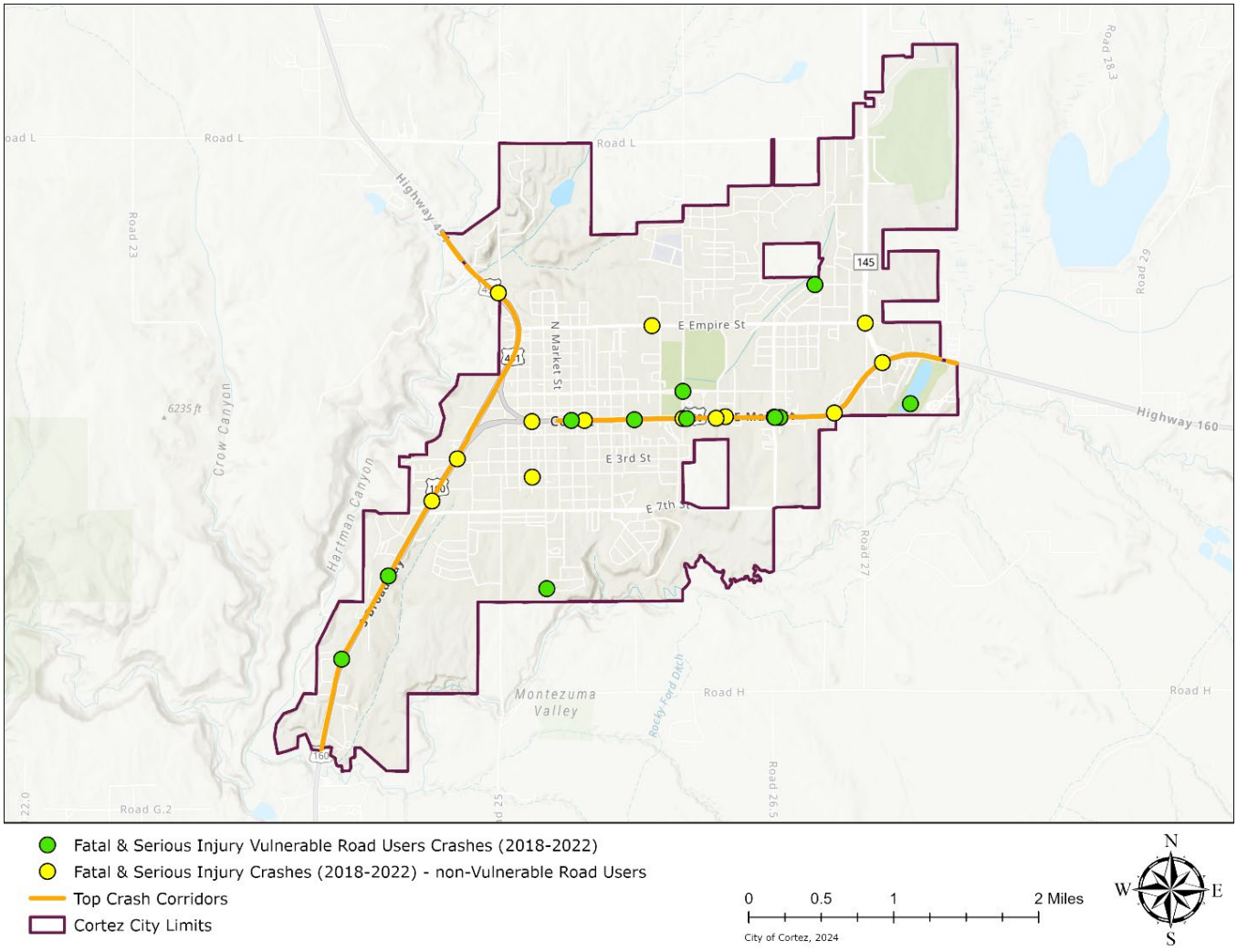
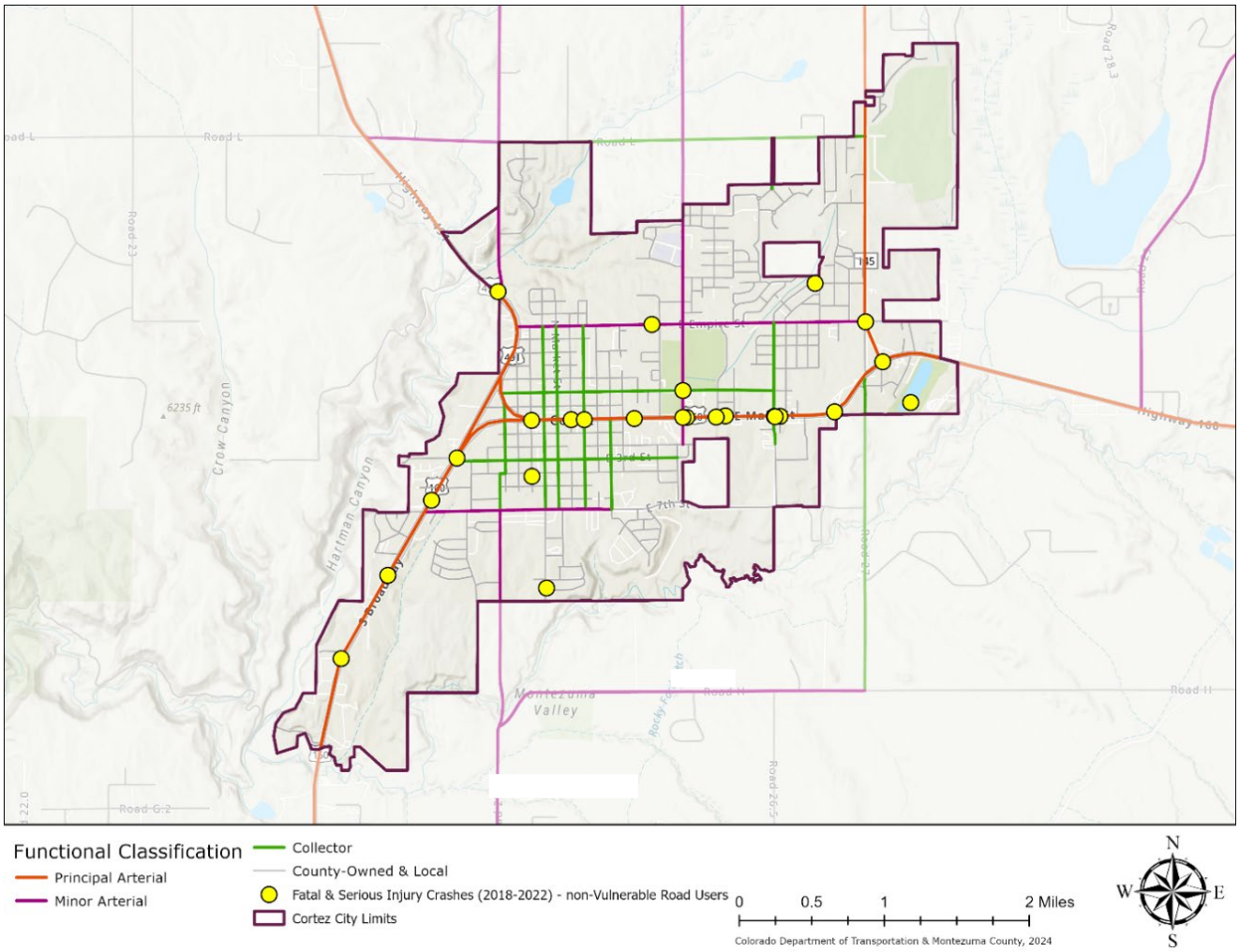


Figure 37 depicts KSI crashes and roadway functional classification**. Almost all KSI crashes are located on principal arterials.**

Figure 37: KSI Crash Map by Functional Classification



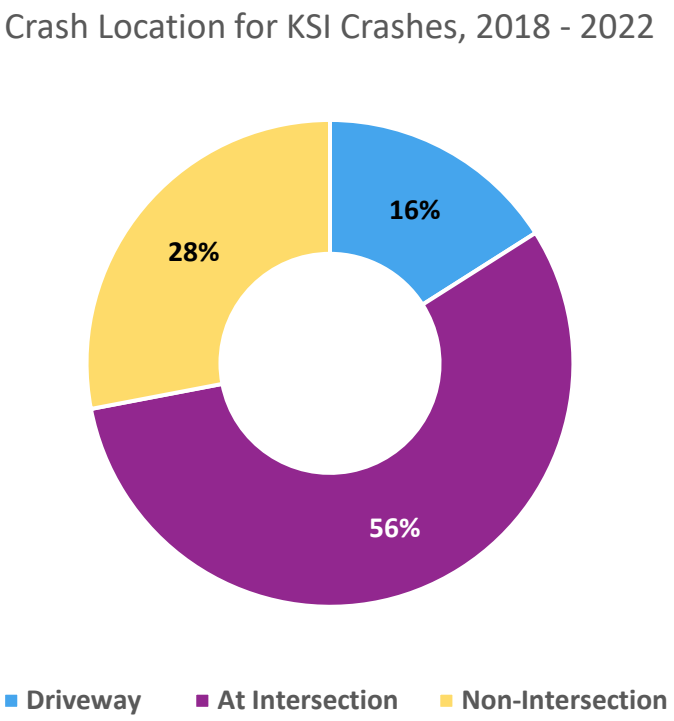
Speed limits vary significantly along the principal arterials. For example, Main Street has speeds ranging from 25 mph to 45 mph. Table 5 depicts the speed limits of road segments where KSI crashes occurred. **68% of crashes occurred on segments with speed limits between 25 – 35 mph, while 32% occurred on roads with speed limits of 35 mph or above.**

Table 5: KSI Crashes by Speed Limit on Principal Arterials

Speed Limit	Number of KSI Crashes	Percent
25 - 35 MPH	17	68%
35 MPH – 45 MPH	4	16%
> 45 MPH	4	16%

About half of KSI crashes occurred at intersections, 29% at mid-block locations, and 17% at driveways. On Highway 491, all KSI crashes occurred at unsignalized intersections and commercial driveways.

Figure 38: Crash Locations for KSI Crashes, 2018 – 2022



What Contributes to Crashes and Crash Severity?

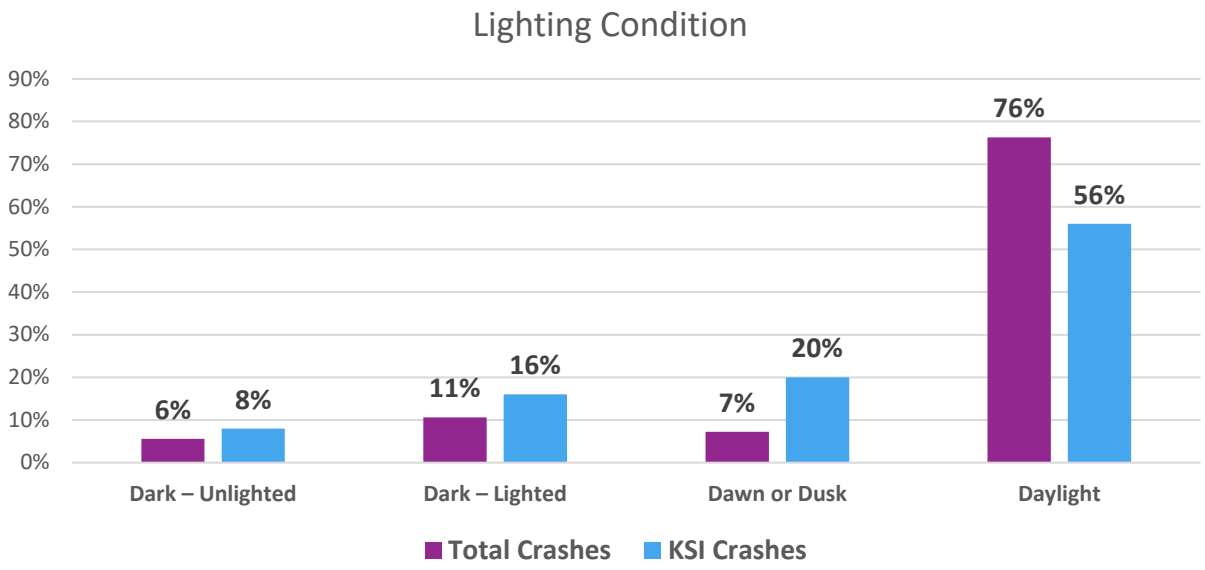
Table 6 depicts driver actions related to KSI crashes. Careless driving was a common issue, as was failure to yield. "Unknown" and "No Contributing Factor" were listed for 12 of the crashes. More thorough crash documentation at crash scenes could improve future crash analyses, as almost half of the serious crashes do not have data for driver actions.

Table 6: Driver Actions for KSI Crashes, 2018 – 2022

Driver Action	KSI Crashes
Unknown	8
Careless Driving	4
Failed to Yield ROW	4
No Apparent Contributing Factor	4
Driver Inexperience	2
Driver Unfamiliar with Area	1
Failed to Stop at Signal	1
Over-Correcting/ Over-Steering	1
Total	25

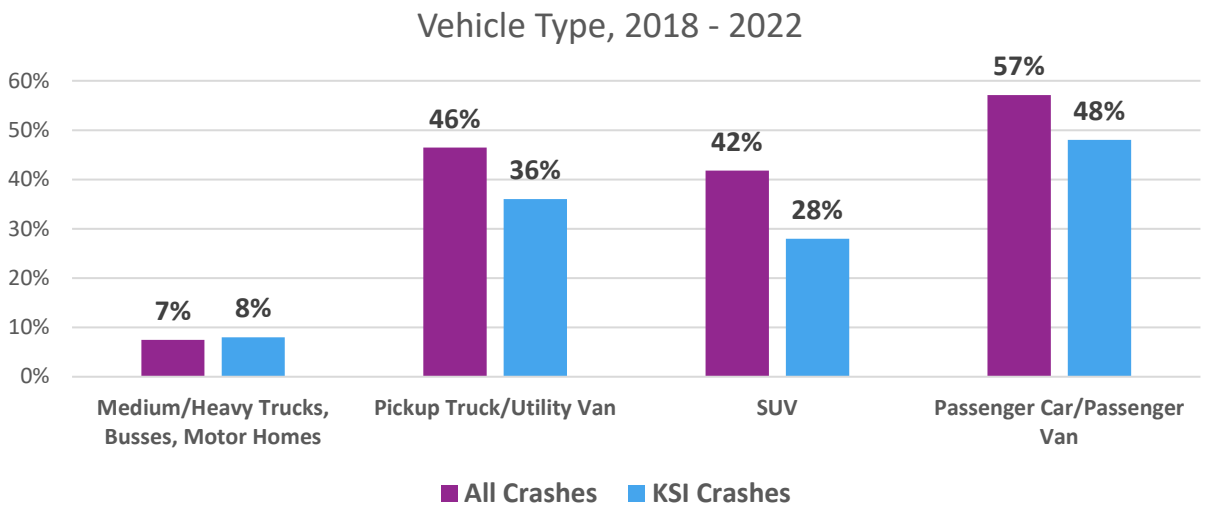
Fatal and severe injury crashes occur at higher rates in dark conditions and at dawn or dusk. 20% of KSI crashes occurred at dawn or dusk, over twice as high as the overall crash rate in these conditions. A larger percentage of KSI crashes also occurred in dark conditions both with lighting and without lighting. While 28% of total crashes occurred under dark, unlit conditions or at dawn/dusk, 37.5% of pedestrian-involved crashes occurred under these conditions.

Figure 39: Lighting Condition, 2018 – 2022



Vehicle type does not appear to play a strong role in crash severity. No VRU crashes involved large vehicles (medium/heavy trucks, buses, or motor homes). Mode appears to play a much stronger role in crash severity than the type of vehicle involved in a crash.

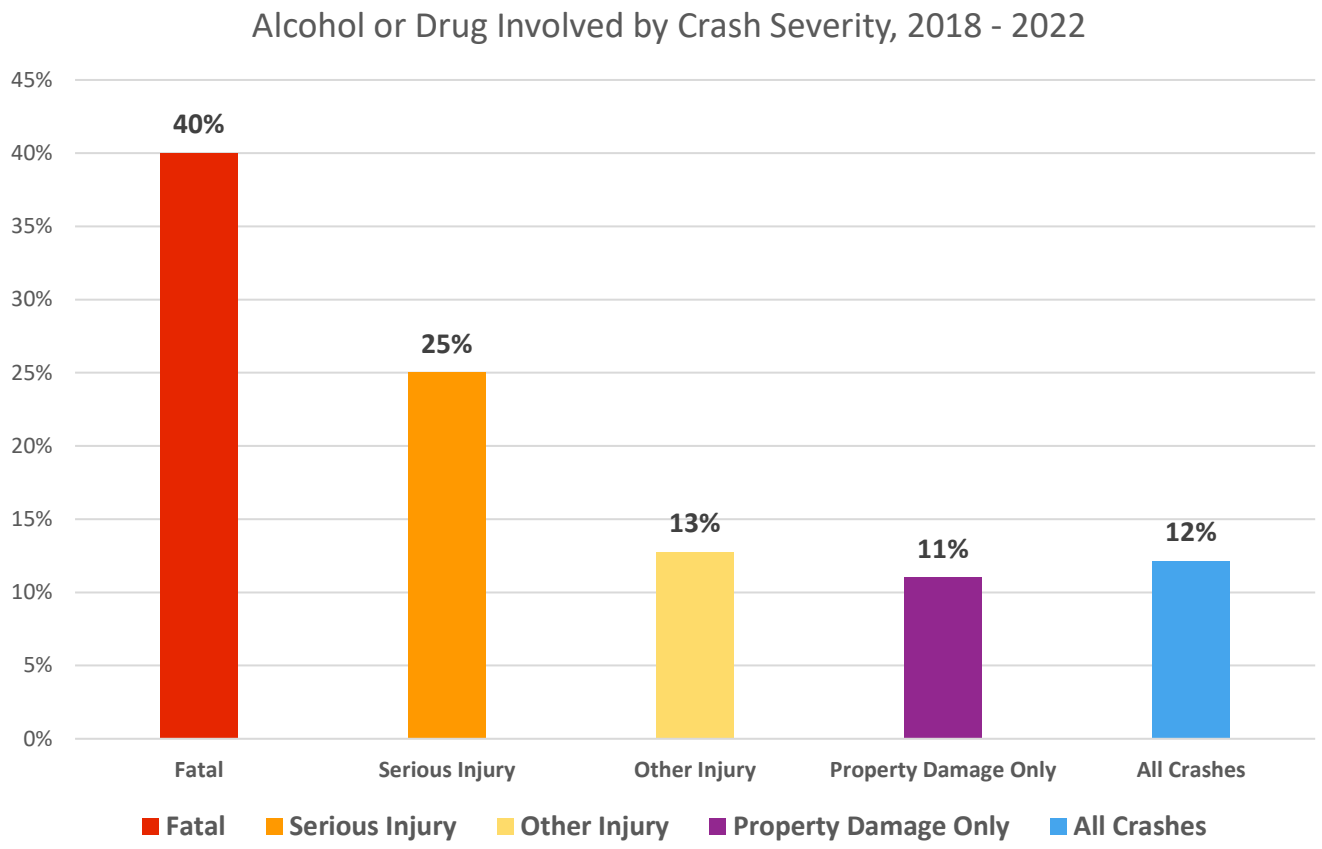
Figure 40: Vehicle Type, 2018 – 2022



**Vehicle type totals exceed 100% as most crashes involve multiple vehicles*

Alcohol or drug involvement may worsen crash severity. While alcohol/drugs are involved in 12% of all crashes, they are present in 40% of fatal crashes and 25% of serious injury crashes.

Figure 41: Alcohol or Drug Involved Crashes by Severity, 2018 - 2022



Wild animals do not appear to be a significant contributor to crashes in the City of Cortez. None of the KSI crashes involved wild animals.

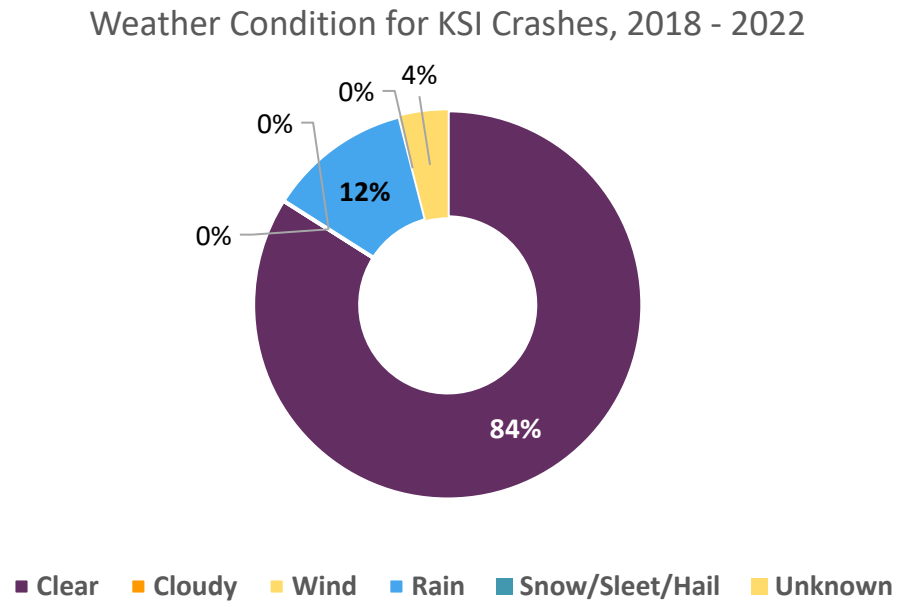
Table 7: Wild Animal Involvement, 2018 - 2022

	KSI Crashes		All Crashes	
	Count	Percent	Count	Percent
Deer	0	0%	18	3%
None/Unknown	25	100%	518	97%

WEATHER AND ROAD CONDITIONS

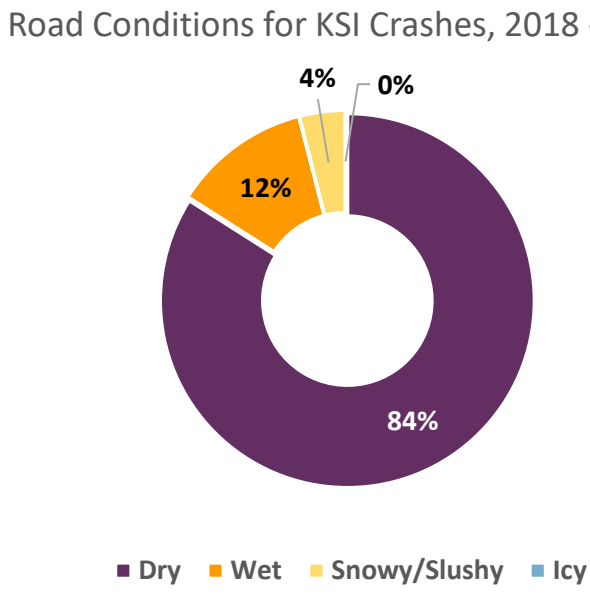
Weather conditions during KSI crashes were mostly clear, with about 12% of KSI crashes occurring during adverse weather conditions.

Figure 42: Weather Conditions for KSI Crashes, 2018 - 2022



Similarly, road conditions during KSI crashes were generally dry, with about 16% of KSI crashes occurring on wet, snowy, or slushy roadways. **Overall, it appears that poor driving conditions are not a major factor in most KSI crashes, although they may play a role in some crashes.**

Figure 43: Road Conditions for KSI Crashes, 2018 - 2022



When do Crashes Occur?

Crash rates in Cortez vary by month for KSI crashes and crashes as a whole. Both KSI and total crashes spike in September. KSI crashes dipped in July, August, and November, but were otherwise fairly consistent across months.

As summer is the highest-trafficked season in Cortez and nearby Mesa Verde National Park**, it appears that higher numbers of visitors did not contribute to increased crashes** in the past five years.

Figure 44: KSI Crashes by Month, 2018 - 2022

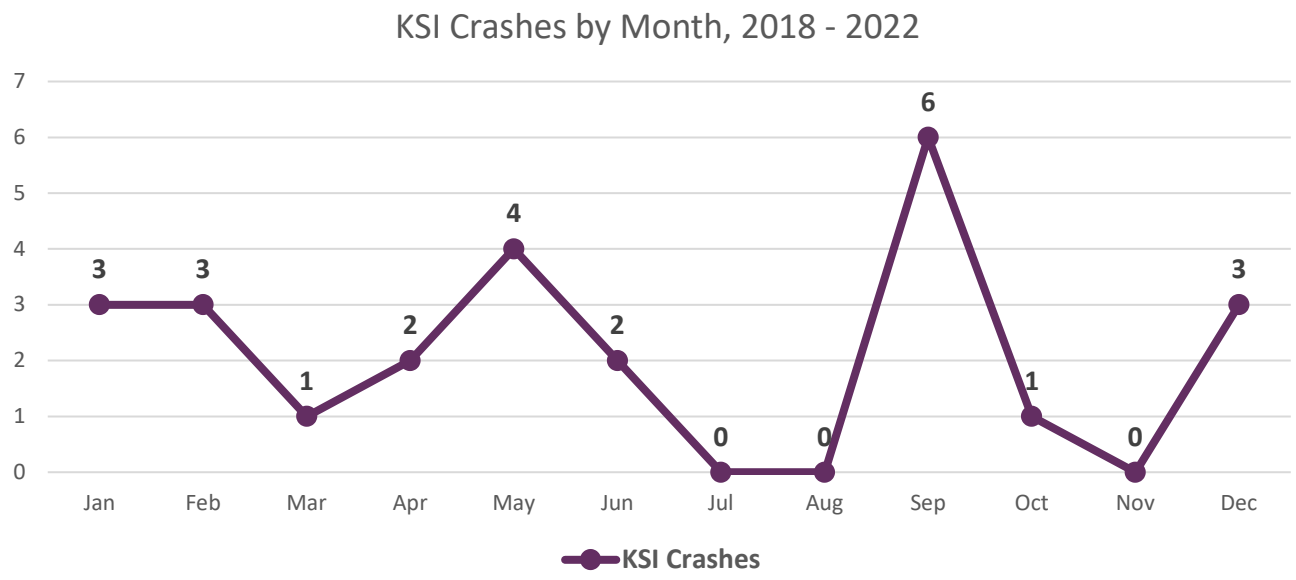
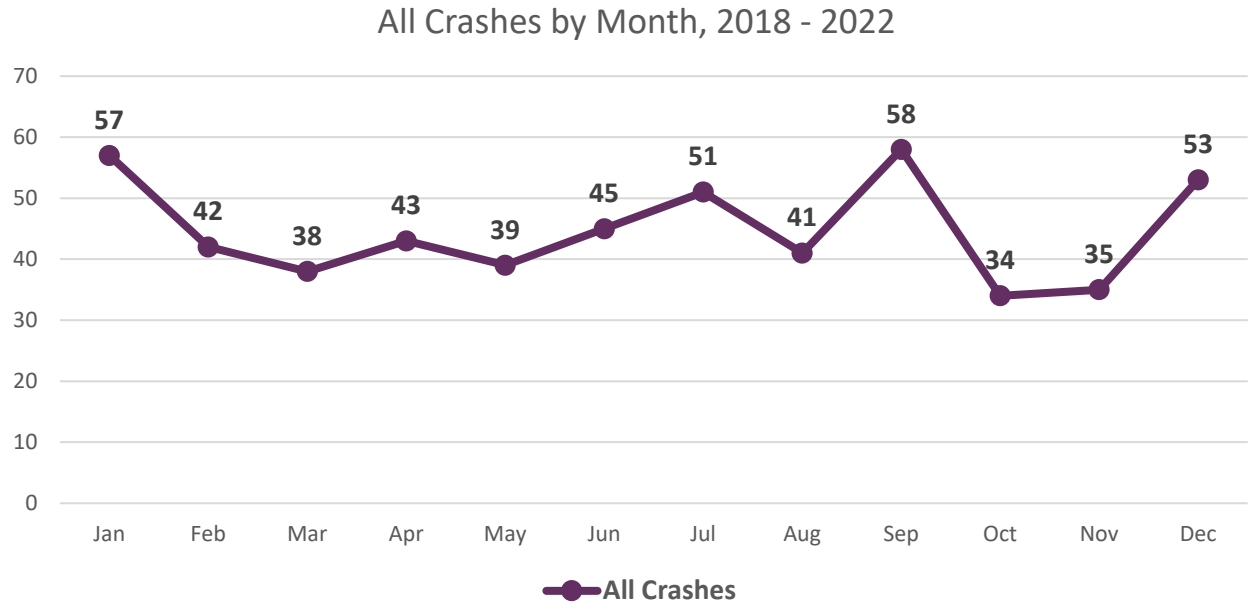


Figure 45: All Crashes by Month, 2018 - 2022



CONCLUSION

A review of Cortez's crash history over the past five years reveals which factors may or may not contribute to fatalities or serious injuries.

- Factors that **play a strong role** in worst crash outcomes include:
  - **Mode**: Pedestrians and motorcyclists are highly at-risk if they are involved in a crash. Bicyclists are also at a higher risk of being injured in a crash.
  - **Type of roadway:** State highways have much higher overall crash rates and KSI crash rates than City roads. The top two crash corridors are both state highways. 69% of KSI crashes occur on these corridors, which represent just 6.3% (4.6 miles) of the City's road miles.
  - **Intersections and driveways:** Crashes occur more frequently at intersections or driveways than midblock locations.
  - **Lighting:** KSI crashes are more likely than non-KSI crashes to occur in dark conditions or at dawn/dusk.
  - **Alcohol or drugs:** Alcohol or drugs are involved in 12% of all crashes but 40% of fatal crashes and 25% of serious injury crashes.
- Factors that **may play a role** in worst crash outcomes include:
  - **Weather conditions:** Most KSI crashes occurred during clear and dry conditions, although weather may contribute to about 16% percent of KSI crashes.
- Factors that **do not appear to have a role** in worst crash outcomes include:
  - **Vehicle type:** Large vehicles did not appear to play a strong role in contributing to crash severity.
  - **Wild animals:** No KSI crashes were caused by striking a wild animal.
  - **Increase in tourism over the summer months:** Crashes did not spike in the summer months when the number of out-of-town visitors is highest.

For larger scale maps of crash locations and roadway conditions, refer to Appendix C.

HIGH RISK NETWORK

Cortez's High Risk Network (HRN) identifies streets where safety issues could occur in the future. This proactive approach to safety planning attempts to identify issues before fatalities or severe injuries occur. The HRN, mapped in Figure 6, analyzes the following risk factors for crashes:

- Annual Daily Traffic (AADT) estimates
- Bicycle volume estimates
- Pedestrian volume estimates
- Average speed estimates
- Light truck volume estimates

As the HRN does not take into account a street's design, inclusion on the HRN does not always indicate that a street should be re-designed. Rather, the HRN is meant to be a tool to identify areas where crashes are more likely to occur based on speeds, traffic volumes, and VRU activity.

METHODOLOGY

The HRN was created using City of Cortez Street Light data. Five Street Light datasets for 997 street segments were combined to identify areas that may pose a higher risk for injury crashes. Each criterion's corresponding attribute was assigned a value between 1 – 5 based on the natural breakdown of values within the City of Cortez street network. For further information on methodology, as well as large maps of each HRN component dataset, refer to Appendix D.

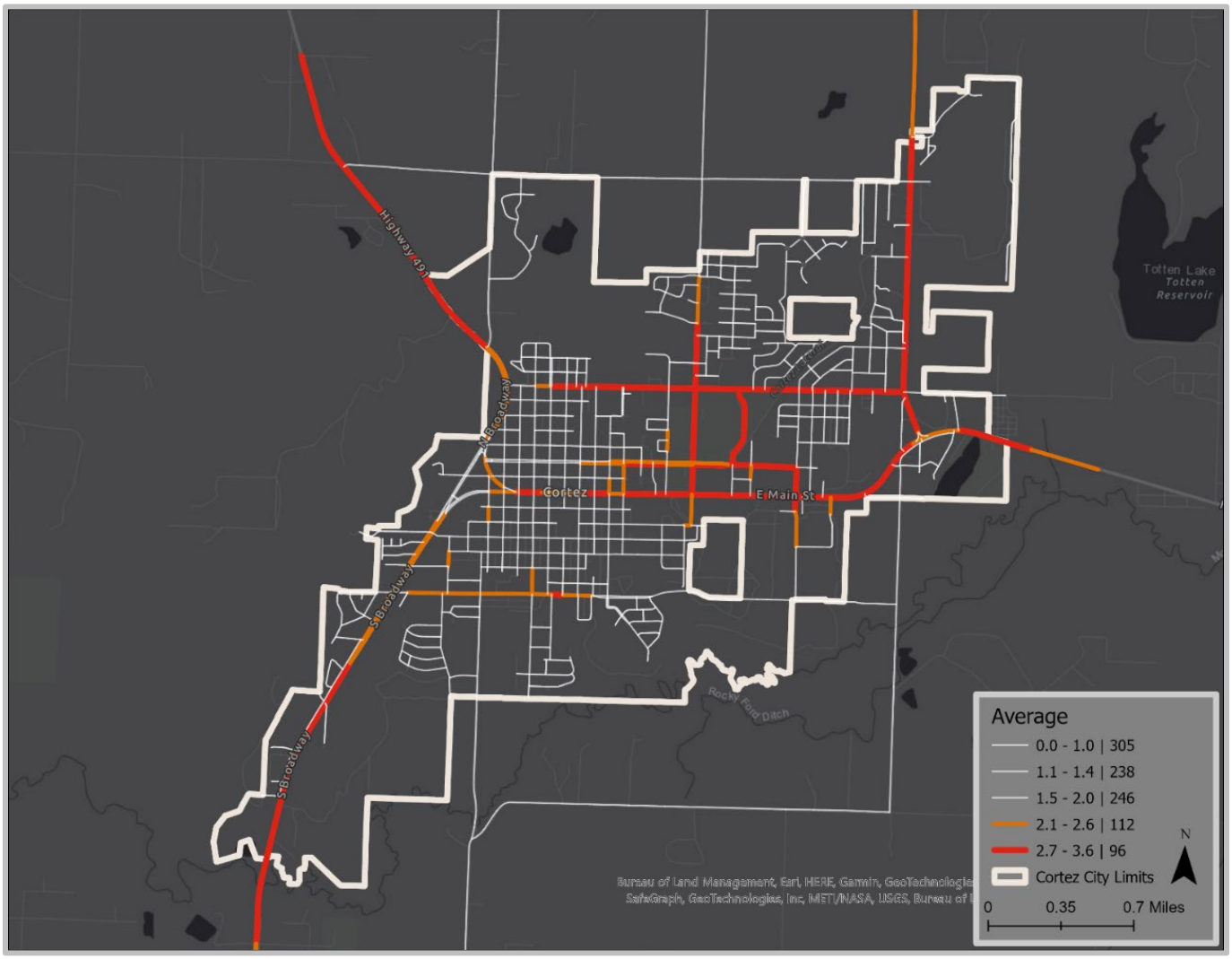
RESULTS

The five criteria were averaged to create the Cortez High Risk Network (see Figure 46). Red lines on the map represent the highest-risk streets, while orange represents the second highest-risk category of streets. The highest-risk streets are summarized in Table 8.

Table 8: Highest Risk Streets

STREET NAME	LIMITS	HRN TIER
Main Street (Hwy 160)	Maple Street to east city limits	1
Empire St	Chestnut St to Hwy 145	1
Roger Smith Ave	Montezuma Ave to Empire St	1
Hwy 145	Main St to north city limits	1
South Broadway (Hwy 491)	South city limits to Hwy 160 intersection	1 -2
North Broadway (Hwy 491)	Hwy 160 intersection to north city limits	1 - 2
Montezuma Ave	Ash St to Sligo St	1 – 2
Mildred Rd	2nd St to Cottonwood St	1 - 2
Sligo St	Cactus St to Montezuma Ave	1 - 2
7th St	S Broadway to S Washington St	2

Figure 46: Cortez High Risk Network



Average Annual Daily Traffic

Figure 47 shows Cortez AADT. Main Street sees the highest traffic volumes, with Hwy 145 and Hwy 491 also seeing relatively high traffic volumes.

Figure 47: Average Annual Daily Traffic

Average Daily Truck Traffic

Figure 48 shows average daily truck traffic. Similarly to AADT, truck traffic is concentrated on state highways.

Figure 48: Average Daily Truck Traffic

AVERAGE SPEED

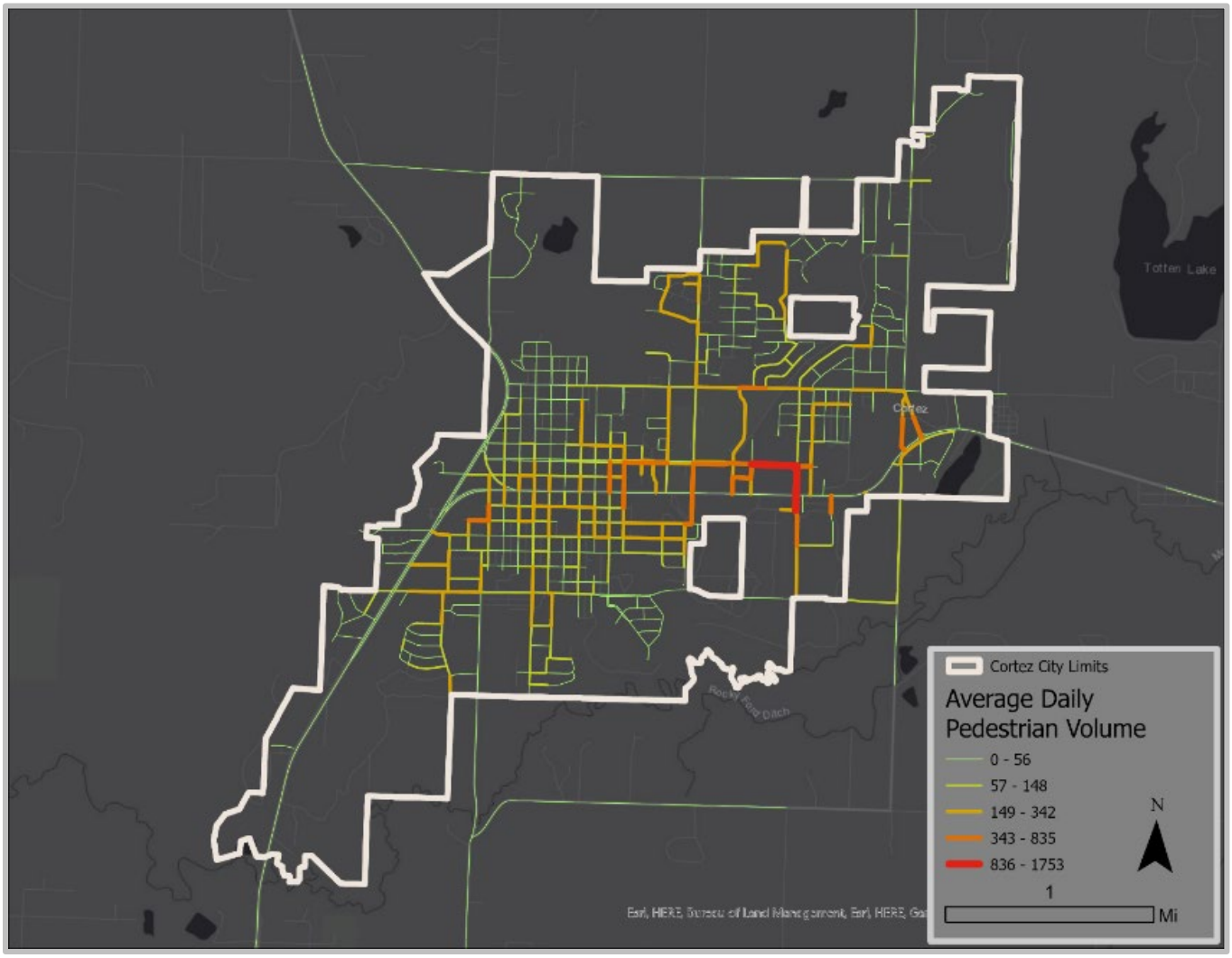
Average speeds are highest on Hwy 491 and Hwy 145. Main St sees low speeds through town, with speeds increasing on the eastern side of Cortez.

Figure 49: Average Speed

Pedestrian Activity

The highest pedestrian activity on Montezuma Ave and Sligo St. Moderate levels of pedestrian activity exist on Mildred Rd, Madison St, and Harrison St near downtown Cortez. Other moderate pedestrian activity occurs around Dolores Rd, potentially representing activity near Southwest Open High School.

Figure 50: Pedestrian Activity



Average Daily Bicycle Traffic

There are high levels of bicycle traffic on sections of Empire St, Roger Smith Ave, Mildred Rd, and Montezuma Ave. Moderate bicycle traffic occurs on all sections of Montezuma Ave and Empire St.

Figure 51: Bicycle Traffic

RECOMMENDATIONS

The Safe Systems Approach is the Federal Highway Administration's comprehensive framework for creating a safe transportation system with multiple safeguards. The approach focuses on safe vehicles, safe speeds, safe roads, post-crash care, and safe road users. This Safety Action Plan recommends three types of interventions to align with the Safe Systems Approach and achieve the goal of zero traffic fatalities and serious injuries in Cortez:

1. **Site-Specific:** Changes to the built environment at locations with identified safety risks. These interventions focus on building safer roads and promoting safer speeds.
2. **Systematic**: Changes that can be applied on a broader scale such as changes to City policy and practice into the future. These types of changes can create safer roads, safer speeds, and better post-crash care.
3. **Programmatic:** Events and programs that educate residents, create a culture of safety, and address dangerous behaviors. Programmatic efforts work to foster safe road users and responsible behaviors.

Figure 52: The Safe Systems Approach

SITE-SPECIFIC RECOMMENDATIONS

Site-specific recommendations were developed for the City of Cortez by identifying areas with safety issues and opportunities for street design improvements. Table X describes site-specific project types and recommended locations and the following section details recommended design countermeasures. A full list of site-specific project locations and countermeasures can be referenced in Appendix E. Magnitude of cost and timeframe estimates for each countermeasure type can be found in in the Implementation section.

PROJECT TYPE	PURPOSE	RECOMMENDED LOCATIONS
Access control	Sets clear guidelines and boundaries to manage the flow of vehicles and pedestrians	• Main St corridor
Intersection geometry changes	Alter intersection geometry to slow vehicle speeds and reduce pedestrian exposure	• Main St/Sligo • Main St/Hawkins • Main St/Dolores Rd • Main St/State St • Lebanon/Broadway
Bike Facilities	Provide separate spaces for bicycling, slow traffic speeds	• Empire St • Main St • Market St • Mildred Rd • Montezuma Ave • 7th St • Sligo St
Back-in angled parking	Improve safety for bicyclists, improve visibility for parked vehicles	• Market St • Montezuma Ave • Chestnut St • North St • Washington St • 1st St • Park St
Sidewalks/ADA compliant walkways	Give pedestrians separated space for walking, allow access for wheelchairs and mobility devices	• Broadway • Lakeside Dr • 7th St
Trails	Provide separate space for walking and biking, increase recreational opportunities	• Cortez Lateral • Hwy 145
Signalized Pedestrian Crossings	Improve safety for people crossing at locations with a traffic light	• Main St/Maple • Main St/Chestnut • Main St/Market • Main St/Ash • Main St/Harrison • Main St/Mildred • Main St/Sligo • Main St/Hawkins • Main St/State

Project Type	Purpose	Recommended Locations
Unsignalized Pedestrian Crossings	Improve safety for people crossing the street at locations without a traffic light	• Main St/Linden • Main St/Elm • Main St/Beech • Main St/Washington • Main St/Madison • Main St/Park • Main St midblock crossing between Roger Smith and Edith • Empire St/Roger Smith • Broadway/3rd St • Empire St/Mildred • Empire St/Park • 7th St midblock crossing near Valley Rd • 7th St midblock crossing near Mesa Elementary • Sligo/Cactus St • Sligo midblock crossing between Cactus and 1st • Dolores midblock crossing between State and Main
Speed Limit Compliance and Traffic calming	Slow vehicle speeds in areas with high pedestrian and bicycle activity	• Cactus St • Dolores Rd near Southwest Open High School • Streets surrounding Montezuma-Cortez Middle School
Median islands and community gateways	Slow speeds as vehicles enter Cortez, improve aesthetics, and communicate community identity	• Main St at eastern city boundary • Hwy 145 and northern city boundary • Broadway/McElmo • Broadway/Lebanon
New traffic signals or roundabouts	Provide safer and more efficient traffic flow at busy intersections	• Broadway/3rd • Hwy 145/Empire • Empire/Mildred

Access Control

Access control is fundamental for traffic safety because it sets clear guidelines and boundaries to manage the flow of vehicles and pedestrians. Access control enhances safety and streamlines traffic flow for all road users by minimizing conflict points between vehicles and pedestrians.

Developing an access control plan for Main Street—consolidating access points, improving alignments, and implementing infrastructure enhancements—could significantly improve safety along the corridor. Removing access to Main Street from Piñon Drive at Linden Street would eliminate left-turn conflicts at Linden Street and

Main Street. Traffic could be routed through the signal at Maple Street instead, which can be configured with flashing yellow arrows to allow for different left turn operations depending on the time of day. Additionally, implementing a median at the east approach of the intersection at Harrison and Main Streets can reduce the number of crashes related to driveway access at this location.

IMPROVE INTERSECTION GEOMETRY AND ALIGNMENT

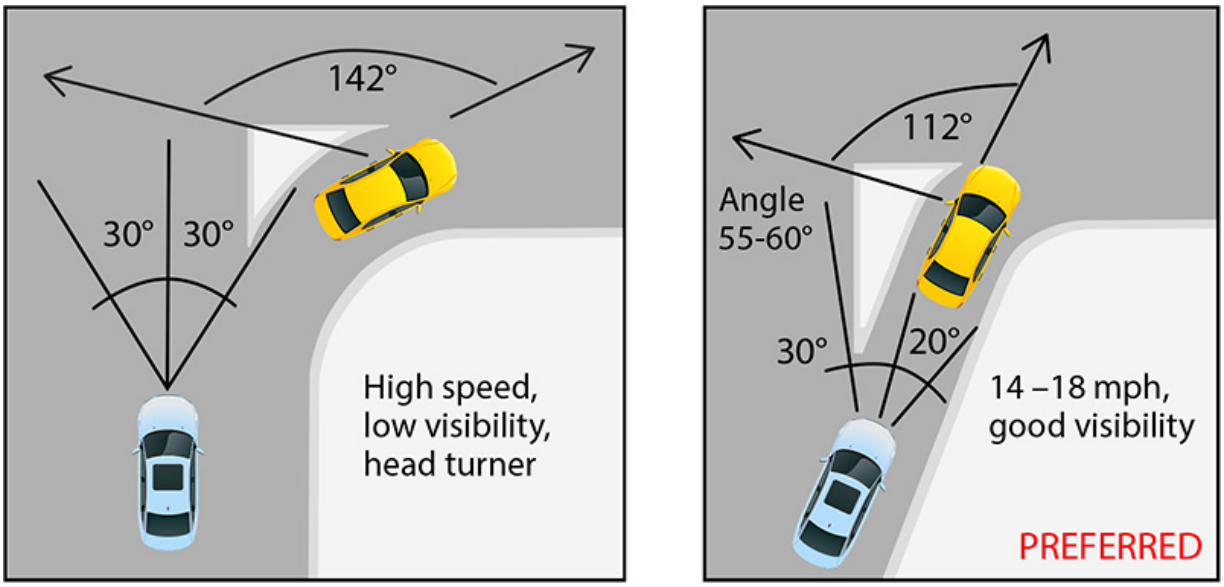
A channelized right turn, also known as a slip lane, is a dedicated right turn lane that allows vehicles to make a right turn without coming to a complete stop. Channelized right turns can be unsafe as they limit sight distance, prioritize vehicle speed over pedestrian safety, and encourage faster turns and erratic acceleration. Drivers are less likely to yield to people crossing in these locations, even when pedestrians are given a crosswalk and walk signal.

Some notable channelized right-turn lanes in Cortez are Lebanon Road at Broadway Street, Southbound Hawkins at Main Street, eastbound Main Street at Sligo Street, southbound Dolores Road at Main Street, and the north leg of State Street at Main Street. These channelized right turns can be eliminated and redesigned with tighter curb radii to slow down turning speeds. Additional safety countermeasures that can be applied at these intersections include high-visibility pavement markings, illumination, and advanced warning signs.

The wide intersection and large curb radii at Dolores Road and Main Street encourage high vehicle speeds and create an unnecessarily long and unsafe intersection for pedestrians to cross. This intersection would benefit from tightening the curb radii and reducing the width to encourage slower turning speeds, improve intersection sight distance, and shorten pedestrian crossing distances.

If eliminating channelized right turns is not appropriate due to traffic volumes, tighter curb radii in the channelized right turn can reduce turning speeds, decrease pedestrian crossing distances, and improve the motorists' line of sight. Figure 53 is an example of a preferred design if a channelized right-turn cannot be removed.

Figure 53: Preferred Right-turn Channelization Design

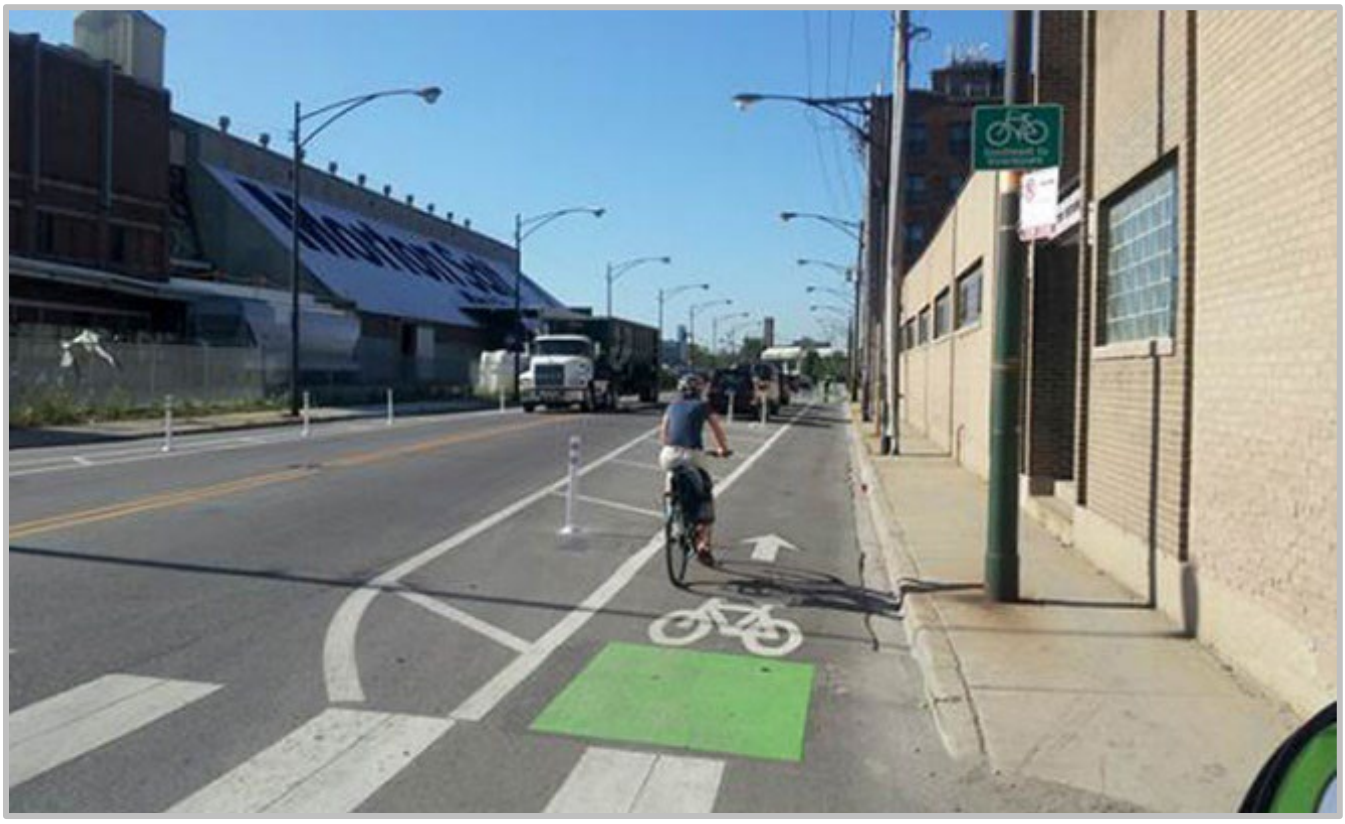


Source: FHWA

BICYCLE FACILITIES

Due to the speed and mass differences between motor vehicles and bicycles, crashes involving bicyclists are more likely to result in severe injuries and fatalities and often occur at non-intersection locations. A recent study of bicycle and road safety finds that implementing safe bicycle infrastructure, such as protected bicycle lanes, can lead to fewer fatal crashes and enhanced safety for all roadway users.[2] Per CDOT Roadway Design Guide, the minimum bicycle lane width is five feet, excluding the gutter pan. On many streets in Cortez, travel lanes can be narrowed to ten feet, creating space for one-foot to three-foot bicycle lane buffers to increase separation between motor vehicles and bicycles. Additionally, vertical features separating bicycle and motor vehicle facilities can deter motorists from using the bicycle lane as a parking facility or ad hoc passing lane and may also slow vehicle speeds.[3] Bicycle lanes with vertical separation are one of the FHWA's Proven Safety Countermeasures. They can provide up to a 53% reduction in bicycle and motor vehicle crashes. Figure 54 shows an example of separated bicycle lanes with vertical separators.

Figure 54: Bicycle lane separated with plastic bollards



Source:https://ops.fhwa.dot.gov/publications/fhwahop16080/index.htm

[2] Marshall, Wesley E., and Nicholas N. Ferenchak. "Why cities with high bicycling rates are safer for all road users." *Journal of Transport & Health* 13 (2019): 100539.

[3] Hannah Younes, Clinton Andrews, Robert B. Noland, Jiahao Xia, Song Wen, Wenwen Zhang, Dimitri Metaxas, Leigh Ann Von Hagen, Jie Gong, "The Traffic Calming Effect of Delineated Bicycle Lanes"

Wide lane striping (six to eight inches as opposed to four inches) can complement bicycle lanes by making the travel lane boundaries more visible. Wider lane striping can provide a safety benefit to all facility types in both urban and rural areas. It may also provide better guidance for autonomous vehicles and may increase the narrow appearance of a travel lane, slowing vehicle speeds. Wide striping is recommended between bicycle lanes (and bicycle lane buffers) and motor vehicle lanes.

Additionally, restriping standard angled parking to back-in angled parking can create a safer bicycling experience as it helps drivers see bicyclists before pulling out into the lane.

Sidewalks

In some areas, the city's sidewalks are discontinuous, inadequate, or absent. A lack of usable sidewalks may result in pedestrians using the road or hazardous surfaces or crossing at unsafe locations. Sidewalks are one of the FHWA's Proven Safety Countermeasures, providing a 65-89% reduction in crashes involving pedestrians walking along the roadways. Notable areas with inadequate or no sidewalks are Broadway Street and Seventh Street.

Trails

Multi-use trails can provide facilities for both bicyclists and pedestrians, as well as other micromobility devices like scooters and skateboards. Along Broadway Street, there is an opportunity to provide a multiuse path or expand the shoulder with vertical separation and illumination. The asphalt multiuse path will help maintain the area's rural nature by avoiding traditional curb and gutter, but is still considered ADA-compliant.

There may also be an opportunity to provide a multi-use path along Highway 145, as there is space adjacent to the roadway and opportunities to narrow lanes on the highway. The lack of driveway and side street conflicts makes Highway 145 a feasible location for a path. The trail should be set back from the roadway with a buffer to create a more comfortable environment for trail users and provide separation from the roadway.

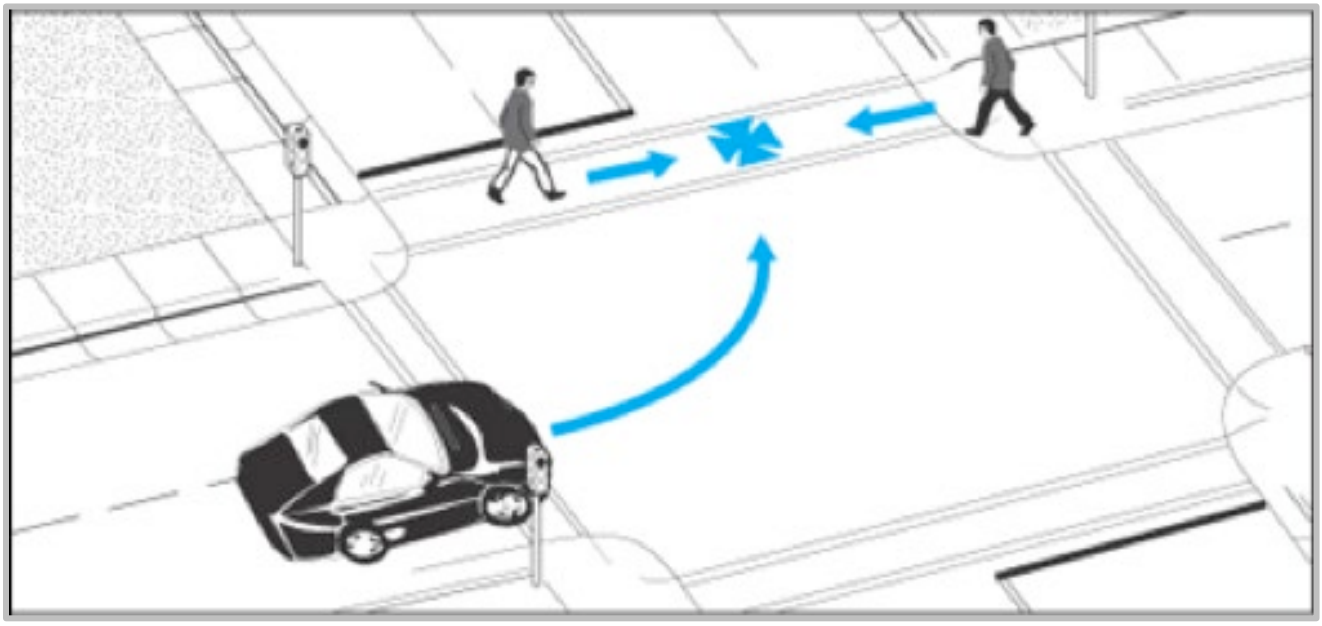
Another potential trail corridor could be aligned with the Cortez Lateral which runs from Parque de Vida to Alamosa Street. The trail would be separate from a roadway, improving comfort and safety over traveling adjacent to a roadway. The trail would require a crossing at Empire Street, which could include enhanced treatments such as high visibility crosswalks, advance warning signs, pedestrian refuge islands, and/or a Rectangular Rapid Flashing Beacon (RRFB). The trail could also include access points to the neighborhoods north of Empire Street.

Signalized Pedestrian Crossings

Main Street has frequent, well-developed pedestrian crossing locations at traffic signals; this is not the case for many other crossings in the city. However, the signalized Main Street crossings may benefit from additional treatments to enhance pedestrian safety with Leading Pedestrian Intervals (LPI) and Turn Lane Pedestrian Indicators (TLPI). These treatments may improve pedestrian safety at all signalized intersections from Maple Street to State Street, as well the intersection of Broadway Street and Seventh Street.

LPI allows pedestrians to enter the crosswalk three to seven seconds before the traffic signal turns green for vehicles. Doing so enhances pedestrian visibility, increases the likelihood of motorists yielding to pedestrians, and minimizes pedestrian and vehicle conflicts. Additionally, LPIs increase safety for pedestrians who walk at a slower pace. LPIs are one of FHWA's Proven Safety Countermeasures and can provide a 13% reduction in pedestrian-vehicle crashes at intersections. When implementing LPIs, upgrading the pedestrian call buttons to Accessible Pedestrian Signals (APS) is required to ensure that visually impaired individuals can cross streets safely.

Figure 55: Leading Pedestrian Interval



Source: pedbikesafe.org

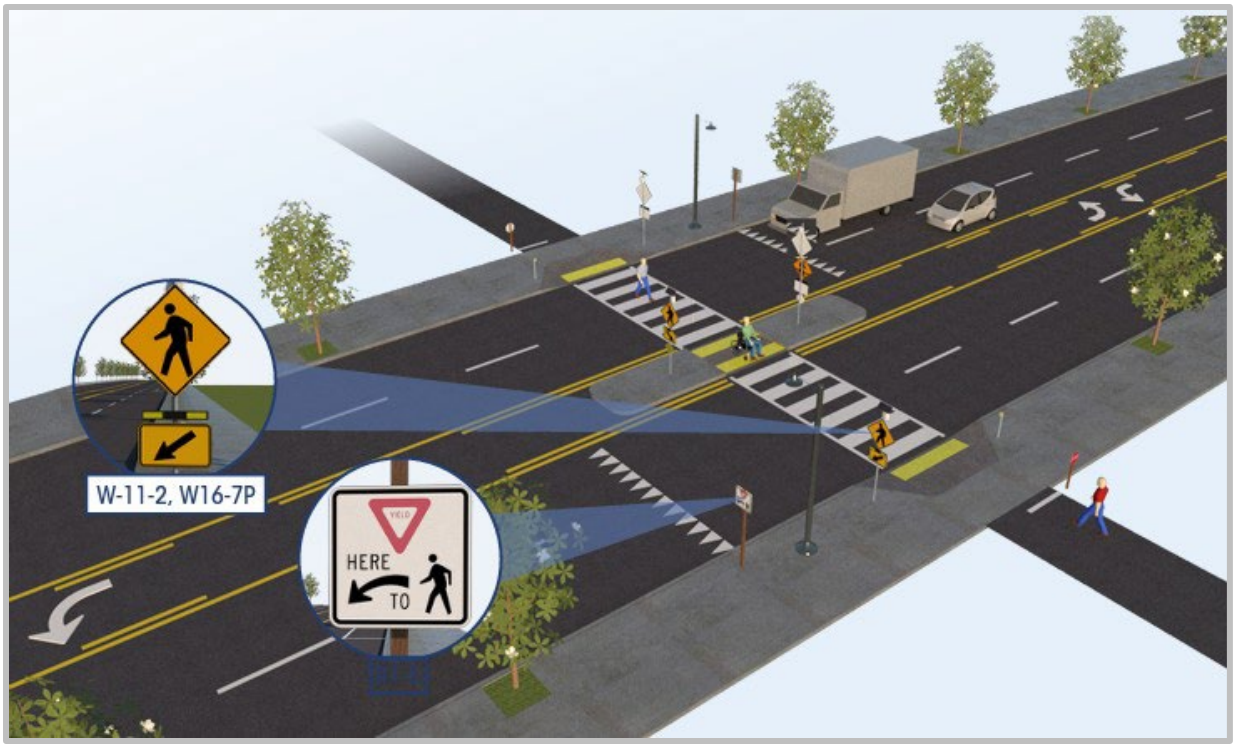
Turn Lane Pedestrian Indicators (TLPI) activate LED-illuminated R10-15 signs when pedestrians press the pedestrian call button to enhance driver awareness where drivers are focused on vehicular traffic and overlooking pedestrians in crosswalks.

Figure 56: R10-15 Sign

UNSIGNALIZED CROSSING LOCATIONS

Pedestrian safety could be improved at several existing crossings by applying enhancements like high visibility crosswalk markings, advanced warning signs, Advanced Yield Here to Pedestrians signs (R1-5), pedestrian refuge islands, Rectangular Rapid Flashing Beacons (RRFB), and Pedestrian Hybrid Beacons (PHB). These types of countermeasures can be applied on Main Street as well as at crossing locations throughout Cortez. Figure 57 depicts these safety countermeasures.

Figure 57: Marked Crossing with visibility enhancements



Source: FHWA

Advanced Warning Signs, Advanced Yield Markings, and R1-5 Signs

Fluorescent yellow-green Advanced Warning Signs should be used to alert motorists to upcoming pedestrian crossings that do not have traffic signals. Advanced Yield Markings and "Yield Here to Pedestrians" signs can help make these crossings more visible and remind drivers where to stop to keep pedestrians safe. Figure 58 through Figure 61 show advanced warning signs in fluorescent yellow-green, “Yield Here to Pedestrians” signs, and advanced yield markings. Appropriate, visible signage can reduce pedestrian crashes by up to 25%.[4]

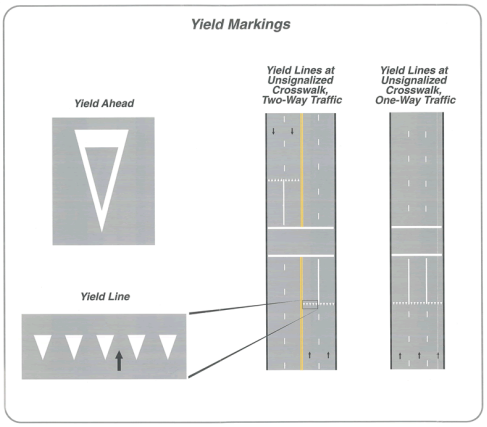
Figure 58: W11-2 sign with W16-7L left diagonal arrow

Figure 59: R1-5 Yield Here to Pedestrians Sign

[4] Elvik, R. and Vaa, T., “Handbook of Road Safety Measures.”

Figure 60: School Advanced Warning Assembly - S1-1 w/ W16-9P

Figure 61: Advanced Yield Markings



Source: Manual of Uniform Traffic Control Devices (MUTCD)

Pedestrian Gateways

Other crossing enhancements at locations without traffic signals include gateways created with in-street pedestrian signs and flexible delineator posts. The In-Street Pedestrian Crossing Signs are installed on the center and edge lines of the driving lanes, and the flexible delineator posts on the dashed white line. Research shows that using these methods together leads to more drivers stopping for pedestrians and driving at lower speeds.[5,6] Figure 62 shows an in-street pedestrian sign, and Figure 63 shows an example of a pedestrian gateway installed at an uncontrolled crossing.

Figure 62: R1-6 In-street pedestrian sign

Figure 63: Example of R1-6 Pedestrian Gateway

Pedestrian Crossing Illumination and Placement

Inadequately illuminated pedestrian crossing locations are unsafe for pedestrians in dark conditions. Inadequate illumination may cast shadows on pedestrians, decreasing their chances of being seen while crossing the street.

[5] Van Houten, Ron, Hochmuth, J, "Evaluation of R1-6 gateway treatment alternatives for pedestrian crossings : final report"
[6] Hochmuth, J., Newton, E., & Van Houten, R., "Examining the Effects of Gateway Width on Motorist Yielding to Pedestrians"

To ensure that pedestrians are visible from the perspective of oncoming drivers, lighting should be placed on all approaches to a crossing, on the right side of the road, and in front of the crossing. Properly illuminated intersections can reduce nighttime pedestrian injury crashes at intersections by 42%.

Rectangular Rapid Flashing Beacons (RRFB)

RRFBs increase pedestrian and cyclist visibility and driver awareness at crosswalks without a traffic signal. When a pedestrian or bicyclist pushes the crossing button on an RRFB, two LED lights begin flashing with an alternating high frequency. RRFBs can reduce pedestrian crashes by up to 47%[7] and can result in up to 98% of drivers stopping for pedestrians.[8] RRFBs should be installed with APS so they are accessible to all users. Figure 64 shows an example of a pedestrian refuge island enhanced with an RRFB.

Figure 64: Pedestrian crossing with RRFB and Refuge Island

[7] NCHRP Research Report 841 Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments, (2017).

[8] Fitzpatrick et al. "Will You Stop for Me? Roadway Design and Traffic Control Device Influences on Drivers Yielding to Pedestrians in a Crosswalk with a Rectangular Rapid-Flashing Beacon." Report No. TTI-CTS-0010. Texas A&M Transportation Institute, (2016).

Pedestrian Hybrid Beacons (PHB)

Pedestrian hybrid beacons (PHB) help pedestrians safely cross the street by stopping vehicles with a red light when activated. They offer a 55% reduction in pedestrian crashes, a 29% reduction in total crashes, and a 15% reduction in crashes resulting in an injury or fatality.[9] PHBs are best suited for roads with more than one lane per direction, speeds over 35 mph, high pedestrian demand, and traffic volumes over 9,000 vehicles per day. PHBs should be installed with APS so they are accessible to all users. Figure 65 shows an example of a crossing with a PHB.

Figure 65: Pedestrian Hybrid Beacon (PHB)

Pedestrian Refuge Islands

Pedestrian refuge islands offer a safe location in the middle of the roadway for pedestrians to wait. This feature allows pedestrians to cross a road in a two-step process, in which they only need to cross one direction of travel at a time. Pedestrians can begin crossing when the lane in front of them has a gap without waiting for a simultaneous gap in all lanes. Pedestrian refuge islands can reduce pedestrian crashes by up to 32%.[10] Figure 66 shows an example of a pedestrian refuge island.

[9] M. Albee and P. Bobitz, "Making Our Roads Safer: One Countermeasure at a Time"
[10] Zegeer et al. Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments, FHWA, (2017).

Figure 66: Pedestrian Refuge Island Example

Curb Extensions

Curb extensions are extensions to the sidewalk that narrow the road at intersections or mid-block crossings. By narrowing the roadway, they shorten the crossing distance for pedestrians, improve crossing visibility, and slow traffic speeds.

SPEED LIMIT COMPLIANCE AND TRAFFIC CALMING

Managing speed is critical to reducing crash severity. Kinetic energy increases exponentially as speed increases, creating much more dangerous conditions at higher travel speeds. The following countermeasures have been shown to reduce vehicle speeds.

Lane Narrowing

Lane width and motor vehicle speed are related. Narrower lanes tend to reduce vehicle speeds at a rate of three mph for every foot reduction in driving lane width.[11] Narrowing travel lanes to 10 - 11 feet may increase speed limit compliance on many corridors throughout Cortez. Eleven-foot lanes can be used in locations used by large vehicles such as trucks or school buses. These widths can be accomplished by adjusting bicycle lane and buffer dimensions, widening parking lanes, or adding buffers to medians.

Main Street Road Diet

Safety on Main Street may benefit from a road diet. A road diet typically reduces the number of lanes on a roadway, often resulting in lower vehicle speeds due to narrower travel lanes and increased visual friction. Road diets can reduce **85th percentile speeds** between two to seven mph, improving safety without significantly

[11] Fitzpatrick et al., "Design Factors That Affect Driver Speed on Suburban Arterials."

increasing congestion.[12] Road diets are a FHWA Proven Safety Countermeasure and may reduce crashes by 19% to 47%.[13]

Daylighting

Daylighting refers to removing visual obstructions such as parked cars, signs, or overgrown vegetation near intersections, crosswalks, and driveways to improve visibility. Daylighting treatments on local streets that intersect with collectors or arterials can act as a gateway treatment and communicate a transition between road environments, highlighting the slower speed limit of the local street, encouraging slower turning speeds with tighter curb radii, and discouraging cut-through traffic. Daylighting is accomplished using paint and post or curb extensions. Daylighting may aid with speed limit compliance and create a safer road environment on Second and Maple Streets near Montezuma-Cortez Middle School.

Speed Cushions

Speed cushions help slow down car traffic while still allowing emergency vehicles and buses to pass through smoothly. They work like speed humps, but have gaps so that larger vehicles and bicycles can pass through without going over the bumps. Figure 67 shows rubber speed cushions; speed cushions can also be constructed of asphalt.

FHWA studies suggest speed cushions can reduce the 85th percentile speed by up to nine mph. Speed cushions are recommended on Cactus Street between Main and Sligo Streets to aid with speed compliance near Montezuma-Cortez High School and on Second/Pine Streets near Montezuma-Cortez Middle School.

Figure 67: Rubber Speed Cushions

[12] NACTO, "An Evaluation of "Road Diet" Projects on Five Lane and Larger Roadways"

[13] FHWA, "Evaluation of Lane Reduction "Road Diet" Measures on Crashes"

Median Islands and Community Gateways

This countermeasure aims to calm traffic by creating a shift in the roadway. These splitter islands are also potential sites for installing a community gateway feature to enhance the aesthetics of the roadway and communicate the Cortez's values and identity. The gateway feature adds a vertical element to the road, which can also slow vehicle speeds. More importantly, gateway features reinforce that the roadway environment changes with a corresponding slower speed limit. Figure 68 shows an example of a median island on a road with bicycle lanes, and Figure 69 shows a concept of a splitter island with a gateway feature.

Suggested locations for implementation include areas where highway traffic enter the city: the eastern city boundary and US 160, the northern city Boundary and Highway 145 (north of the fire station), Broadway Street and McElmo Street, and Broadway Street and Lebanon Street. The last two locations on Broadway Street are typical five-lane sections. A roundabout with a community gateway feature may be more appropriate than a median island.

Figure 68: Median Island on a two-lane road with bicycle lanes

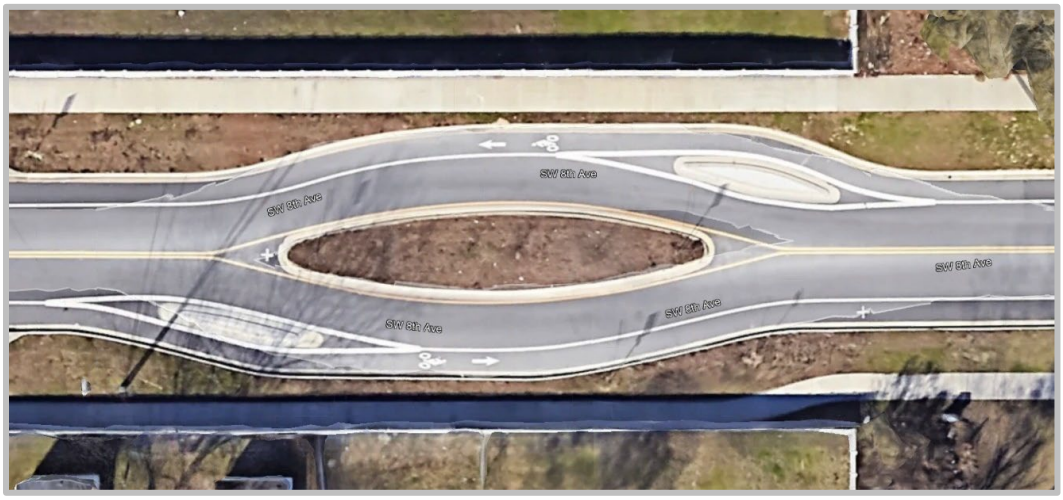


Figure 69: Concept of a Median Island with Gateway feature

Intersection Traffic Control

A traffic signal may be warranted at an intersection based on traffic volumes, crash frequency, or to improve efficiency. A roundabout is a traffic control alternative to a traffic signal that enhances safety while improving efficiency and reducing delays. They improve traffic flow and reduce the likelihood of severe crashes by eliminating conflict points, reducing traffic speeds, and reducing crash angles.

Busy intersections throughout the city may benefit from traffic control via a roundabout or a traffic signal, such as Empire Street at Highway 145, Broadway Street at Third Street/Canyon Drive, and Empire Street at Mildred Road. These intersections should be evaluated with a signal warrant and safety study to aid decision-making regarding the type of traffic control and the context of the road, given the current and anticipated conditions. Unsignalized crossing improvements are recommended at the intersections of Broadway Street and Third Street/Canyon Drive and Empire Street at Milred Road if a traffic signal or roundabout are not pursued.

Systematic Recommendations

Systematic recommendations focus on **building and retrofitting for safe streets and roads into the future.** The City of Cortez can make the following changes to its policies and practices to ensure that future projects are focused on safety.

1) **Develop and adopt a Complete Streets Policy or Resolution.**
    a) This would reinforce and formalize the City's commitment to the design, retrofit, and construction of streets to accommodate safe travel by all users and can better position the City for the pursuit of certain grants (e.g. CDOT Revitalizing Main Street, etc.)
2) **Develop and adopt a Bicycle/Pedestrian Master Plan.**
    a) This would provide the City with a list of prioritized, phased recommendations based on needs, connectivity, community concerns, and crash hot spots leveraging the analysis included in this safety action plan.
3) **Establish a Neighborhood Traffic Calming Program.**
    a) Establish a program where residents can submit requests for installation of traffic calming measures on their streets. Generally, these requests are for local streets with low speed limits. The process can include an application submittal with a certain number of neighbor signatures, a screening conducted by the city followed by a speed study, and project design and implementation.
4) **Update pedestrian facilities throughout the city to comply with ADA and PROWAG guidelines and develop a local ADA transition plan.**
    a) Providing ADA-compliant pedestrian facilities is also included in the State Highway Safety Plan (SHSP) as a strategy to improve pedestrian safety.
5) **Consider the completion of a sidewalk inventory and gap analysis.**
    a) A sidewalk inventory and gap analysis would support better planning for sidewalk maintenance/asset management, identify opportunities for sidewalk network improvements, and identify critical missing links (gaps) in the network that may be contributing to pedestrian involved crashes in the community.
6) **Develop a plan for striping maintenance and regular resurfacing projects.**
    a) Developing and adhering to a maintenance plan will ensure that pavement markings and signs are visible and retroreflective and that pavement stays in good condition. Some streets in Cortez are lacking striping, and striping in some other locations is faded. The following locations were identified as areas

with striping needs, but the City should also develop a comprehensive plan for regular restriping and/or paving maintenance.

i) Seventh Street and Cedar Street crosswalk
ii) Seventh Street crosswalk in front of Mesa Elementary School
iii) Crosswalk markings on the south leg of Broadway Street and Seventh Street
iv) Crosswalk markings on the north leg of Broadway Street and Third Street/Canyon Drive

7) Install speed feedback signs.

a) This countermeasure aims to increase awareness of the posted speed limit and compliance by installing Dynamic Speed Feedback Signs (DSFS). The City can establish speed feedback signs strategically in corridors with higher than desired motor vehicle speeds.
b) The City can install fixed or temporary equipment, conduct pilot, study pilot results, and consider moving forward with permanent installation or expansion based on results of the pilot.

Figure 70: Dynamic Speed Feedback Sign

Image Source: trafficalm.com

8) Develop a road safety audit (RSA) program and engage with relevant agencies to understand implementation.

a) Road Safety Audits can be conducted prior to implementing a site-specific project or to identify problematic areas. The City should partner with community groups to conduct audits.

9) Prioritize improvement projects in regional and local budgets.

a) Prioritize roadway segment and intersection upgrades into regional and local budgets, Capital Improvements Program (CIP), Transportation Improvement Program (TIP), and Regional Transportation Plan (RTP) for funding.

10) Conduct a transit feasibility study to examine whether fixed-route transit could be operated in Cortez, potentially with connections to nearby communities.

a) Identify priority routes and stop locations, focusing on safe transit stop placement near crosswalks and pedestrian facilities.
b) Conduct outreach to determine preferred bus frequency and time tables.
c) Identify funding sources both for capital purchases (buses and transit stops) as well as ongoing operational needs (drivers, maintenance, staffing).

11) Lower all residential speed limits to 20 mph.

a) Studies show that lowering the speed limit to 20 mph can reduce crashes and injuries.[14] Many cities in the U.S. have lowered residential speed limits as part of their Vision Zero programs, including Eugene, OR; Golden, CO; Denver, CO; and Madison, WI.

[14] van Erpecum, Carel-Peter L., Anna Bornioli, Claire Cleland, Sarah Jones, Adrian Davis, Nicolette R. den Braver, and Paul Pilkington. "20 mph speed limits: A meta-narrative evidence synthesis of the public health evidence." In *Advances in Transport Policy and Planning*. Elsevier BV, 2024.

Programmatic Recommendations

Programmatic recommendations educate residents on the importance of safety, address behavioral causes of safety issues, and support community efforts to improve safety. When paired with site-specific and systematic changes, safety programming promotes responsible road user behavior.

Protect and Educate Vulnerable Road Users

Recommendations included within this section aim to protect and educate people walking, biking, rolling, and motorists in the community.

1) **Host a Cycle Safety Summit.**
   a) Work with community partners to organize and promote a cycle safety event for new and experienced bicyclists and motorcyclists.
2) **Implement targeted education campaigns for drivers, pedestrians, and bicyclists.**
   a) Study various safety messaging and approaches that work in the City. Develop and implement education campaigns throughout the police department, city hall, and/or the school district.
   b) For drivers to learn about vulnerable road user awareness
   c) For pedestrians/bicyclists to learn about basic riding skills, safety practices, and road rules.
   d) Collect input on campaigns, refine approach, and ensure efforts are ongoing.
3) **Coordinate with the school district to host a children's/youth/adult bicycling workshop** to educate the cyclists in the community on how to safely navigate the local roadway network.
4) **Prioritize vulnerable road user improvements on the High-Risk Network** segments and at identified intersections and hot spot locations outlined in this plan.
   a) Prioritize sidewalk infill, inspection, and maintenance – continue to implement sidewalk upgrades into capital improvement projects and prioritize completing sidewalk gap projects.
   b) Upgrade or install mid-block crossings – consider identified intersections and hot spot locations in coordination with the HRN.
   c) Identify locations of right-turn slip-lane design that are on the HRN and evaluate for pedestrian improvements.
5) **Build upon Safe Routes to School (SRTS) efforts.**
   a) Consider updating and elevating SRTS walking and bicycling audits and develop improvement plans for infrastructure and non-infrastructure projects – consider connections to the HRN and prioritize infrastructure improvements that coincide with SRTS identified needs.

Address Dangerous Behaviors

Recommendations included within this section focus on influencing the behavior and attitudes of people travelling throughout Mesa County. These actions address driving under the influence and speeding.

1) **Pilot automated enforcement, such as red-light cameras and speed cameras.**
   a) Consider coordinating the location of automated enforcement with the location of public comments regarding speeding on the interactive map utilized for this plan, or high-crash locations where speed was a factor.
   b) Begin legal and administrative modifications to support pilot testing, install equipment, conduct pilot, and study the results. Consider moving forward with permanent installation of adjustments to the pilot program based on outcomes of testing.
2) **Continue the MioVision program to install and enhance video monitoring systems.**

a) Install and enhance MioVision program at 1-2 locations on CDOT roadways within the community to monitor near-miss conflicts and use safety data to inform engineering solutions. Recently completed MioVision safety studies can be found in Appendix F.

3) **Host targeted events and educational Vision Zero campaigns for the general public that promote safe behaviors and increase awareness of traffic laws.**
   a) Consider implementing or continuing saturation patrols.
   b) Implement targeted education campaigns to drivers for dangerous behaviors (speeding, tailgating, distracted driving, seatbelt use, etc.)
4) **Implement targeted education campaigns for driving under the influence.**
5) **Implement targeted education campaigns for teens and young adults.**
6) **Create changes in striping and raised medians to provide visual cues to drivers regarding desired travel speeds benefiting the surrounding development intensity.**
7) **Create gradual step-downs in posted speed limits.**
8) **Enforce Colorado's new ban on phone use while driving.**
9) **Enforce no parking in bike lanes, especially adjacent to schools.**

CREATE A CULTURE OF SAFETY

Recommendations within this section focus on creating a community-wide commitment to the Cortez Safety Action Plan.

1) **Identify and/or create a safety action plan coordinator position**
   a) Determine position need, role, and responsibilities. Create, identify, or seek funding for a full-or part-time position.
2) **Create a multi-agency Vision Zero Task Force**
   a) Elevate partnerships within the community, identify additional stakeholders, develop a charter, continually review crash data and re-prioritize efforts, and monitor and evaluate task force progress. The task force can be made up of representatives from the City, police department, county, schools, and EMS, as well as interested residents.
3) **Prioritize collaboration with CDOT**
   a) Create and/or elevate a working partnership with CDOT, Montezuma County, and local agencies, and meet regularly for programmatic, systemic, location specific safety improvements based on the HRN, and included crash analysis.
4) **Support a continued transparent and data driven safety crash analysis**
   a) Continue monitoring and utilizing the crash analysis included in this safety action plan, update data annually, and ensure the data is accessible to safety partners.
   b) Create public-facing annual reports about the Cortez Safety Action Plan - Define performance indicators based on the analysis included in this plan, continue to collect and analyze data, develop a clear narrative for the public, and develop and distribute the report.
   c) Improve accuracy of crash data by ensuring that crash factors and correct locations are included in police reports and crash databases. Provide training to patrol officers on crash reporting best practices.
   d) Promote collaboration between the Cortez Police Department and Public Works Department to enforce appropriate travel behavior at unsafe locations or locations with new traffic patterns or design treatments.

5) **Promote transparency by keeping the public informed on the status of the plan, project implementation, and safety trends.**
   a) Utilize the Cortez Police Department's outreach tools to disseminate information on plan progress and new projects.
6) **Continue to build relationships with the Hispanic/Latino community and distribute Spanish-language outreach materials.**

Plan Implementation

The Plan Implementation section of this Safety Action Plan outlines the criteria used to prioritize location-specific recommendations and identifies priority projects. Fifty-two potential projects were scored based on safety, equity, public priority, and feasibility. By utilizing a structured scoring system, the plan ensures that each action is evaluated based on its potential impact, feasibility, and alignment with overall safety goals. Table 9 depicts the metrics assigned to project evaluation criteria. Each criterion received a score between zero and one, and each category was weighted equally by dividing the total score for the category by the number of criteria in the category.

Table 9: Project Scoring Criteria

Category	Criteria	Metric
Safety	Killed/Serious Injury Crashes	Has there been a KSI crash in the project location in the past five years?
	High Risk Network	Is the location on the High Risk Network? (Tier 1 or Tier 2)
Equity	Vulnerable Road Users	Will the project improve safety for vulnerable road users (bicyclists and pedestrians)?
	Disadvantaged Census Tracts	Is the project location within a disadvantaged census tract?
	Vulnerable populations	Will the project provide specific benefits for vulnerable populations such as seniors or children?
Public Priority	Public Comments	Did the location receive high, medium, or low numbers of public comments?
Feasibility	Cost	Will the project costs be high, medium, or low?
	Technical Feasibility	Is the project's technical feasibility high, medium, or low?

Table 10 describes the projects with the highest prioritization scores. Projects that add bike lanes scored highly because of their low costs and safety benefits. These projects can be considered in the near-term, or striping can be adjusted during scheduled striping maintenance.

Pedestrian crossing improvement projects also scored highly, especially the crossings on Main St which were a top public priority. Many of these crossing improvement projects can be implemented in the near-term by making signal modification and/or adding low-cost safety improvements like better signage and striping. Other treatments, such as pedestrian refuge islands, curb extensions, geometry changes, and pedestrian illumination could be added as medium- or long-term solutions.

The midblock crossing on Main St between Roger Smith Ave and Edith St (in front of the McDonald's) was a notable project because of the high number of public comments and crashes at the location. The existing crosswalk may not provide adequate protection for pedestrians, and it is recommended to install a Pedestrian Hybrid Beacon at this location in place of the existing Rectangular Rapid Flashing Beacon. While this project is not low-cost and may be more difficult to implement due to required coordination with CDOT, it should be considered a high priority due to its crash history and public feedback.

Note that a project to improve pedestrian crossing treatments at the Main Street and Mildred Road intersection scored highly. A signal warranting study could also be conducted to determine if a traffic signal or roundabout is

needed at the intersection. Applying crossing treatments would be a near-term solution; a new traffic signal or roundabout is likely to be higher cost and could be implemented in a later phase.

Table 10: Prioritized Project List

Project	Project Type	Relative Cost ($ – $$$)	Timeframe	Prioritization Score (Max 5)
Sligo St Corridor	Bike lanes/lane narrowing	$	Near-Term	5.0
Mildred Rd Corridor	Bike lanes/lane narrowing	$	Near-Term	4.5
Empire St Corridor	Bike lanes/lane narrowing	$	Near-Term	4.2
Main St/Mildred Rd Intersection	Signalized crossing improvements	$	Near-Term/ Medium-Term	4.2
Empire St/Mildred Rd Intersection Crossing Improvements	Unsignalized crossing improvements	$	Near-Term/ Medium-Term	4.2
7th St Corridor	Bike lanes/lane narrowing	$	Near-Term	4.0
Main St Midblock Crossing between Roger Smith Ave and Edith St	Unsignalized crossing improvements	$$	Medium-Term	4.0
Montezuma Ave Corridor	Bike lanes/lane narrowing	$	Near-Term	3.8
Main St/Elm St Intersection	Unsignalized crossing improvements	$$	Medium-Term	3.7
Main St/Market St Intersection	Signalized crossing improvements	$	Near-Term	3.7
Empire St/Park St Intersection	Unsignalized crossing improvements	$	Near-Term/ Medium-Term	3.7
Main St/Sligo Intersection	Signalized crossing improvements, intersection geometry	$$$	Near-Term/ Long-Term	3.5
Main St/State St Intersection	Signalized crossing improvements, intersection geometry	$$$	Near-Term/ Long-Term	3.5
Sligo St/Cactus St Intersection	Unsignalized crossing improvements	$$	Medium-Term/ Long Term	3.5
Sligo Midblock Crossing Between 1st St and Cactus St	Unsignalized crossing improvements	$$	Medium-Term/ Long Term	3.5
Cactus St Corridor	Traffic calming	$	Near-Term	3.5

Table 11 details the cost and estimated timelines for various countermeasures. Some projects could be implemented in phases with lower-cost, near-term countermeasures (such as striping and cross visibility treatments) applied before more major construction projects (such as changing intersection geometry). Note that countermeasure cost estimates are general and do not reflect the cost of treatments at particular locations.

The full list of site-specific projects and prioritization scoring can be found in Appendix E. In addition to the projects listed above, systemic and programmatic recommendations from the Recommendations section can be selected for implementation and funding.

Table 11: Countermeasure Costs and Timelines

Countermeasure	Cost	Timeline
Access Control		
Remove access to Main at Piñon	High	Long-Term
Medians	High	Long-Term
ADA Compliance		
ADA Curb Ramps	Intermediate	Medium-Term
Accessible Pedestrian Signals (APS)	Intermediate	Near-Term
ADA Transition Plan	Intermediate	Medium-Term
Bicycle Facilities		
Bicycle Lanes and Bicycle Lane Buffers	Low	Near-Term
Bicycle Lane Pavement Markings	Low	Near-Term
No Parking Bicycle Lane Signs	Low	Near-Term
Intersection Geometry		
Eliminate Channelized Rights	High	Long-Term
Intersection Alignment	High	Long-Term
Pavement Markings/Striping/Signing		
Maintenance	Low	Near-Term
Replace Angled parking with Back in Angled Parking	Low	Near-Term
Revaluate Lane Geometry	Low	Near-Term
Stripe Edge lines, 11' foot lanes	Low	Near-Term
Stripe Parking, 11' foot lanes	Low	Near-Term
Pedestrian Crossings		
Advanced Warning Signs and Yield Markings	Low	Near-Term
High Visibility Pavement Markings	Low	Near-Term
Illumination	Intermediate	Medium-Term
Pedestrian Hybrid Beacon (PHB)	Intermediate	Medium-Term
R1-5 Signs	Low	Near-Term
R1-6 Signs	Low	Near-Term
Refuge Island	Intermediate	Long-Term
Curb Extensions	Intermediate	Long-Term
Rectangular Rapid Flashing Beacon (RRFB)	Intermediate	Medium-Term
Flexible Delineator Posts	Low	Near-Term
Leading Pedestrian Intervals and Turn Lane Pedestrian Indicator	Low	Near-Term
Pedestrian Facilities		
ADA Walkways	High	Long-Term
Speed Limit Compliance		
Lane Narrowing	Low	Near-Term
Main Street Road Diet	Intermediate	Long-Term
Community Gateways	Intermediate	Long-Term
Median Islands	Intermediate	Long-Term
Daylighting	Low	Near-Term
Speed Cushions	Low	Near-Term
Speed Feedback Signs	Intermediate	Medium-Term
Traffic Control		
Traffic Signal/Roundabout	High	Long-Term

Glossary of Terms

Accessible Pedestrian Signals (APS): Communicates information about pedestrian signal timing (such as when to start crossing) using audible tones, verbal messages, and/or vibrotactile feedback, allowing people who are blind or have low vision to safely navigate signalized intersections.

Americans with Disabilities Act (ADA): Creates a legal requirement to provide accessibility for people with disabilities in public facilities and infrastructure.

Buffered Bicycle Lane: A bicycle lane separated from traffic with a painted buffer zone.

Channelized Right Turn/Slip Lane: A dedicated lane and island to guide right-turning vehicles though intersections more efficiently. However, channelized right turns can decrease safety for people walking as it encourages higher speeds and decreases the likelihood that a driver will yield to a pedestrian.

Community Gateways: A physical entrance into a community that serves as a transition from a highway to a slower-speed area with higher levels of activity.

Complete Streets: Streets designed to enable safe, convenient access for all users—regardless of age, ability, or mode of transportation, including pedestrians, bicyclists, motorists, and transit riders.

Crosswalk Marking and Signage: A crosswalk with signage and road striping provides a safe crossing on low-volume, low-speed streets. Additional treatments, such as raised crosswalks, curb extensions, pedestrian crossing islands, and parking restrictions in advance of the crosswalk can be added to the crosswalk to further improve safety and increase the likelihood that drivers will yield to people crossing.

Curb Extensions or Bulb-Outs: Extend the sidewalk into the roadway at a crosswalk or intersection. This reduces crossing distance and places pedestrians in a more visible location when they are waiting to cross the street.

Daylighting: Removing visual obstructions such as parked cars, signs, or overgrown vegetation near intersections, crosswalks, and driveways to improve visibility.

Dynamic Speed Feedback Signs (DSFS): Show drivers how fast they are going using radar and a digital display and remind drivers to slow down.

High Risk Network: A proactive approach to safety planning that identifies streets where fatalities and injuries are more likely to occur based on roadway risk factors.

Intersection Geometry Changes: Can include reducing corner radii and removing channelized right turn lanes, which slows turning vehicles and positions drivers to better see crossing pedestrians. These changes can also reduce crossing distances.

KABCO Severity Scale: Rating system used nation-side to determine the injury level of those involved in a crash. Severity outcomes include K (Fatal), A (Suspected Serious Injury), B (Minor Injury), C (Possible Injury), and O (Property-Damage Only).

Killed or Serious Injury (KSI) Crashes: Crashes that resulted in death or serious injury.

Lane Narrowing: Narrowing vehicle travel lanes to 10 – 11 feet wide, which has been shown to slow traffic speeds without impacting traffic.

Leading Pedestrian Intervals (LPI): Give pedestrians the WALK signal 3-7 seconds before vehicles are allowed through the intersection. Giving people crossing a head start makes them more visible to turning cars and establishes priority for pedestrians.

Medians/Access Control: barriers or raised sections in the middle of a road that separate traffic going in opposite directions. They prevent head-on collisions and control where drivers can turn, reducing conflict points and crash risks.

Pedestrian Crossing Islands: Medians where pedestrians can wait in the middle of the roadway before completing their crossing. They allow pedestrians to cross in two stages, one direction of traffic at a time.

Pedestrian Hybrid Beacons (PHB) or HAWK Signals: Pedestrian-actuated stop lights that remain dark when not in use but bring vehicles to a stop when there are people crossing. PHBs can be used on high-speed and high-traffic roadways that would be unsafe to cross without a signal.

Protected Bike Lane: A bike lane separated from car traffic by barriers like curbs, posts, or parked cars. It provides extra safety for cyclists by creating a physical divide between them and moving vehicles.

Public Right of Way Accessibility Guidelines (PROWAG): Provides design guidelines to comply with the Americans with Disabilities Act. PROWAG establishes minimum accessibility requirements for pedestrian facilities in public rights-of-way, such as sidewalks, crosswalks, curb ramps, pedestrian signals, and on-street parking.

Raised Crosswalks: Crosswalks placed on top of a speed table that allow pedestrians to cross the street at the same level as the sidewalk. Raised crosswalks slow vehicle speeds, improve accessibility, increase the visibility of people crossing, and establish priority for pedestrians.

Rectangular Rapid Flashing Beacons: High-intensity flashing lights that turn on when a pedestrian pushes the crossing button. Lights alert drivers to pedestrians at crosswalks and encourage drivers to yield.

Road Diet: Removes driving lanes or street parking to add sidewalks or bike lanes. Improves safety by slowing down traffic and making more room for pedestrians and cyclists. In some cases, a road can be reconfigured by narrowing driving lanes without removing them.

Road Safety Audit (RSA): A systematic process for evaluating the safety performance of a road or intersection conducted by an independent, interdisciplinary team.

Roundabout: A circular intersection where drivers travel around a central island, yielding to traffic already in the circle. Roundabouts slow traffic speeds and reduce crash severity.

Safe Routes to School (SRTS): An initiative that promotes walking and biking to school by making routes safer, more accessible, and more appealing for children through infrastructure improvements, education, and community engagement.

Safe Systems Approach: The Federal Highway Administration's comprehensive framework for creating a safe transportation system with multiple safeguards. The approach focuses on safe vehicles, safe speeds, safe roads, post-crash care, and safe road users.

Speed Cushions: Similar to a speed table, but with gaps so that larger vehicles (emergency vehicles and buses) and bicycles can pass through without going over the bumps.

Speed humps: Raised areas on the road designed to slow down vehicles and reduce speeding.

Traffic Calming: Physical design measures that are intended to slow down drivers and discourage speeding.

Turn Lane Pedestrian Indicators (TLPI): LED- illuminated signs that increase awareness of pedestrians for drivers making left turns.

Vision Zero: a strategy to implement safety projects and programs with the goal of reducing the number of fatal and serious injury crashes to zero.

Vulnerable Road Users: Pedestrians, bicyclists, and motorcyclists who are less protected from injury in crashes and are at higher risk for death or serious injuries.