RTSAP

MRMPO
Mid-Region Metropolitan Planning Organization

REGIONAL TRANSPORTATION SAFETY ACTION PLAN 2024

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MAP IT CONSULTING
GIS AND URBAN PLANNING

groundworkstudio

Developed in collaboration with Map It Consulting and Groundwork Studio.

Chapter 1 VISION AND APPROACH

WHY A SAFETY PLAN FOR OUR REGION?

AN UNACCEPTABLE AMOUNT OF DEATHS

In the most recent *Dangerous by Design* (2022) report produced by Smart Growth America, Albuquerque ranks as the second most dangerous place for pedestrians in the nation and New Mexico ranks first. Albuquerque has consistently ranked as first in the past decade. The State of New Mexico also ranks high in comparison to other states. This unacceptable amount of deaths needs to be taken seriously.

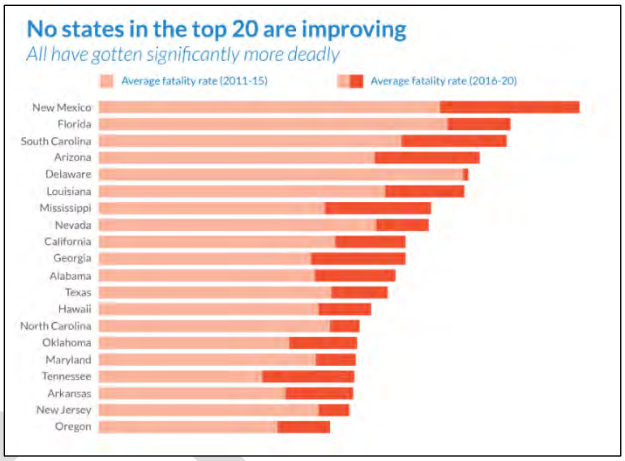


Image from *https://smartgrowthamerica.org/dangerous-by-design/*

This plan looks at crash data from 2017 to 2021 to tease out what is causing high numbers of fatalities and serious injuries in our region. The latest crash data for the region shows that fatal crashes have increased from 125 in 2017 to 184 in 2021 despite the number of overall crashes and vehicle miles travelled decreasing during that same period. Some shocking statistics by mode of travel from the crash data include:

- 95 percent of the total number of crashes involve motor vehicles. and fatalities for automobile occupants account for 49 percent of all the fatalities. Considering this is the most protected mode it is still high at almost half. Most of these deaths in the region that happen when driving are related to dangerous and inattentive driving and/or some type of alcohol or drug involvement.
- Crashes where pedestrians are involved only account for two percent of the total crashes, but 30 percent of fatalities. 91 percent of the pedestrian fatalities are in the large urban area.
- The small urban and rural areas that only contain 20 percent of the population, include 25 percent of the fatal crashes (these are mostly motor vehicle involved crashes) with a high percentage of deaths from Rollovers.
- Crashes involving motorcyclists only account for two percent of the overall crashes, but 18 percent of fatalities.

Crash Data Origins

The information contained in the crash data is originally compiled by the police officer at the scene of a crash. This plan uses the most recent crash data available from 2017 to 2021.

The crash data is provided by University of New Mexico Geospatial Population Studies department, which geocodes crash record data compiled by the New Mexico Department of Transportation's (NMDOT) Traffic Safety Bureau from police records across the State of New Mexico.

A crash must involve at least one motor vehicle, occur on a public roadway, and result in at least $500 of property damage or personal injury to be recorded.

This crash data, along with MRMPO's street network and traffic counts data, allow for the region's crash rates to be calculated.

RTSAP 2024 PURPOSE

> *We need a change in mentality. We've become accustomed to accepting the unacceptable.*
>
> *-Pete Buttigieg, US Secretary of Transportation*

The purpose of the RTSAP 2024 is first and foremost to provide tools to local agencies and the public to improve roadway safety in response to the extremely high number of deaths and serious injuries on our roadways. To do so, this plan has been developed from the perspective that everyone has a role in improving roadway safety in the region, and uses an approach that is multi-faceted and systemic when it comes to making changes to the transportation system. Based on the data analysis and public and agency outreach, safety strategies were developed that range from policy to education to engineering, and priority programs and projects were identified. The intent of these elments is to reduce deaths and serious injuries thereby improving safe mobility for all modes of travel.

Furthermore, because there are unique concerns for urban, rural, and Tribal areas, this plan addresses these different issues by offering customized crash analyses and recommendations. For example, this plan provides a searchable toolbox of vetted safety strategies, crash profiles for different geographic areas, and a prioritized list of projects and programs. The development of these elements was guided by public and agency input, five years of crash data analyses for the region, and an emphasis on equitable outreach and implementation.

For local agencies, this plan provides a federally certified safety plan that can be used to help local governments in the region receive federal funds for roadway safety projects through the Safe Streets and Roads for All (SS4A) grant, as well be prepared for other funding opportunities. There is added emphasis on providing support for smaller agencies that do not have as many resources.

THE ROLE OF MRMPO

The RTSAP 2024 was developed by the Mid-Region Metropolitan Planning Organization (MRMPO) with support from Map It Consulting and Groundwork Studio. MRMPO initiated the development of the plan with support from member jurisdictions, multidisciplinary stakeholders, and a grant from the Federal Highway Administration.

Metropolitan planning organizations (MPOs) function as a regional forum for transportation planning, programming, and analysis efforts. The MPO planning process is designed to enhance the safety, security, and mobility of all users and modes of the region's transportation system. MRMPO maintains a variety of plans, reports, initiatives, and studies that identify and promote safety-related goals and outcomes, and regularly use safety data to analyze crashes to identify emerging trends and prioritize investments with limited resources.

Metropolitan Transportation Board Meeting

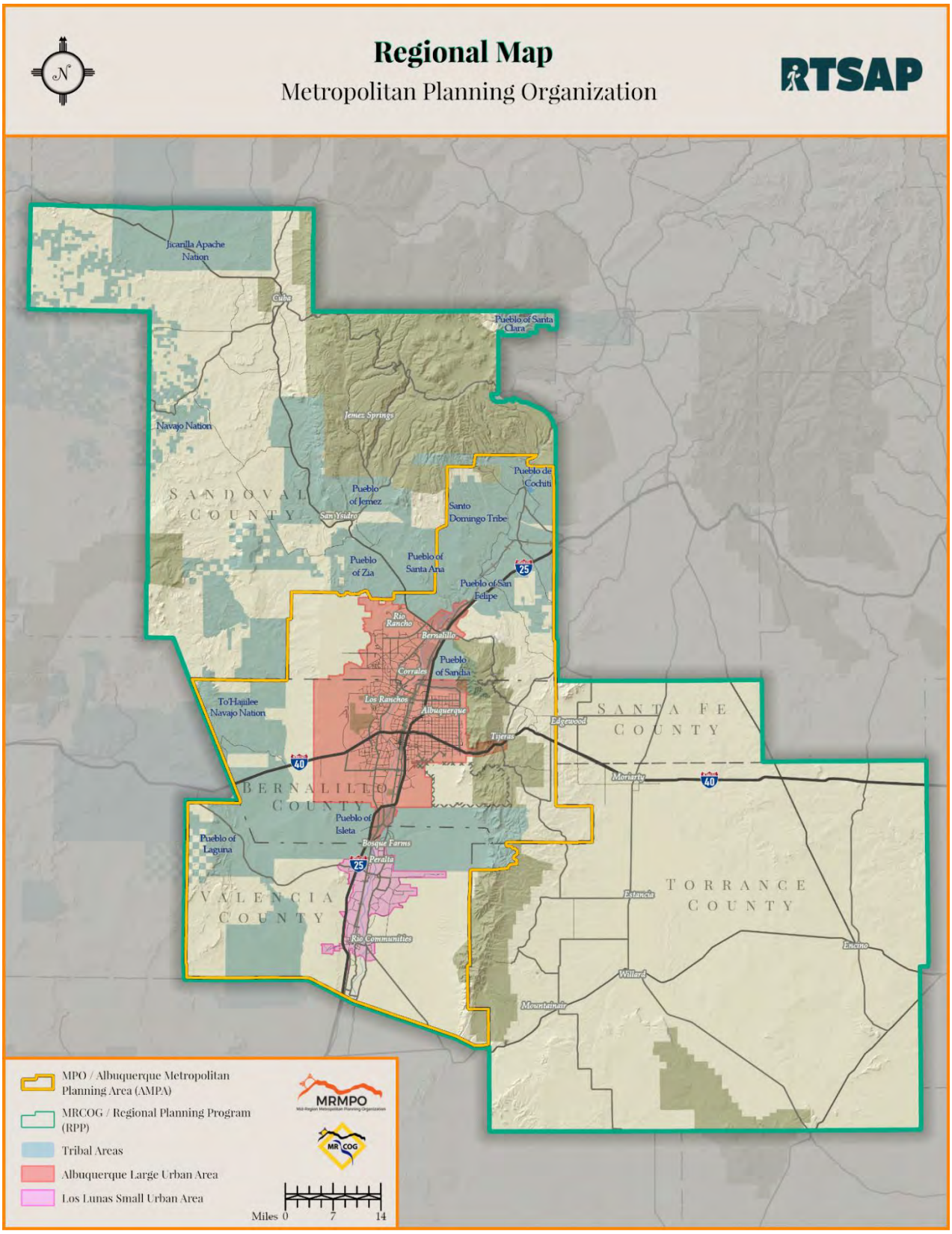
The RTSAP 2024 planning area previously focused on the Albuquerque Metropolitan Planning Area (AMPA) but has now expanded to include the entire MRCOG Region, which includes Bernalillo, Valencia, Sandoval, and Torrance counties, and the southern part of Santa Fe County.

This plan was guided by input from a Technical Team that was formed to guide the analyses, review strategies, and help determine projects and programs. The Mid Region Safety Steering Committee was also updated throughout the development of the plan.

Technical Team Members included:

Cordell Bock	Albuquerque Public Schools (APS)
Rachel Hertzman	Albuquerque Public Schools (APS)
Julie Luna	Bernalillo County
Zachary Nevitt	City of Rio Rancho
Lina Benavides	Valencia County
Debbie Bauman	City Albuquerque Department of Municipal Development (DMD)
Valerie Hermanson	City Albuquerque Department of Municipal Development (DMD)
Jeff Hertz	City of Albuquerque Council Services
Carrie Barkhurst	Albuquerque Transit (ABQ Ride)
Luis Melgoza	Federal Highway Administration (FHWA)
Avery Frank	Federal Highway Administration (FHWA)
Alex Ochoa	Village of Los Lunas
Senaida Anaya	Torrance County
Samantha O'dell	Torrance County
Martin Moore	Rio Communities
Grant Brodehl	Rio Metro Regional Transit District (RMRTD)
Tanya Lattin	Village of Corrales
Dale Kleinsmith	Isleta Pueblo
Nancy Perea	New Mexico Department of Transportation (NMDOT) District 3
Jason Coffey	New Mexico Department of Transportation (NMDOT) Planning
Sheri Bozic	Pueblo of Jemez
Dennis Fulfer	Mountainair
Nick Ferenchak	University New Mexico (UNM)
Eric Tang	Vanasse Hangen Brustlin (VHB)
Roseanne Gomez	Sandoval County
Jon Zaman	Sandoval County
Jeanette Linville	Village of Cuba
Mark Aasmundstad	Southwest Bike Initiative

Mid-Region Council of Governments Planning Area with large urban, small urban, Tribal, and rural areas.



THE VISION, GOAL, AND PERFORMANCE MEASURES

THE RTSAP 2024 VISION

From policy to education, campaigns coupled with enforcement, and planning to engineering - we all share the responsibility to make safety the highest priority on our roadways.

The Vision is simple…

Eliminate Physical Harm due to Traffic Violence and Improve Physical Health through Multimodal Mobility

The region will be proactive in moving towards zero fatalities and life-altering injuries, and in doing so provide safer mobility for all modes of travel.

RTSAP 2024 GOAL

The City of Albuquerque is the only agency in the region that as a part of their Vision Zero program has committed to a goal of zero traffic deaths to be achieved by 2040. This was done by Executive Order in 2019.

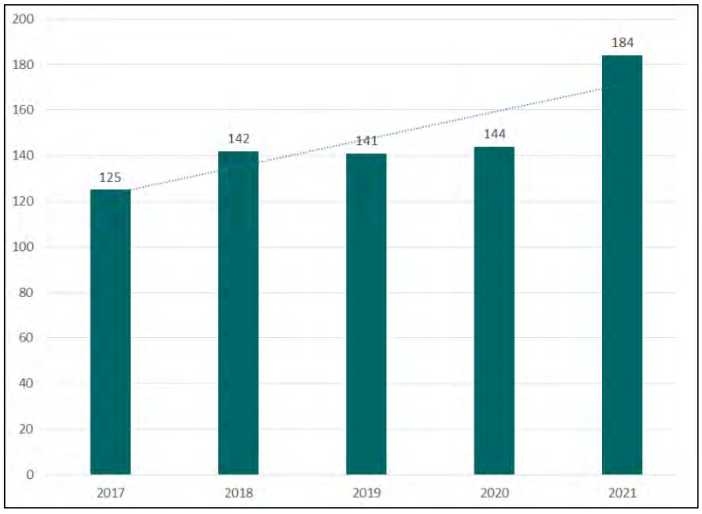
In agreement and support of Vision Zero, MRMPO is adopting that same goal as well.

MRMPO will be tracking implementation progress of the Project and Program List provided in this document and has committed to timely updates of the High Fatal and Injury Network, Proposed Road Diet Candidates, and an online crash dashboard serving as an annual report.

We must change this upward trend of roadway deaths in our region.

Public messaging from civic leadership about this new traffic safety vision must be omnipresent and overwhelming. Civic leadership must be seen as accessible and actively participating (leadership is riding the bus, biking to work, walking children to school, making public statements at Isotopes games prior to start of game, handing out freebies, etc.).

– Technical Team Member



The chart shows fatalities by the 5 years of data available for this plan.

RTSAP 2024 PERFORMANCE MEASURES

For the RTSAP 2024 to be successful it must include outcome-based metrics and be periodically evaluated for effectiveness. This allows for modifications to ensure continual improvement in performance over the next five years.

The Infrastructure Investment and Jobs Act (IIJA) requires the implementation of five specific safety performance measures to assess fatalities and serious injuries on all public roads. The New Mexico Department of Transportation (NMDOT) uses five-year averages to calculate historical crash trends and set new targets. The MRMPO supports these targets and the five performance measures, along with additional measures that are customized to this plan and the distinctive challenges that different areas in our region face.

Federal/State Performance Measures
Reduce Number of Fatalities
Reduce Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
Reduce Number of Serious Injuries
Reduce Rate of Serious Injuries per 100 million VMT
Reduce Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries

The Region is a diverse area, which results in different types of crashes contributing to fatalities and injuries. Because of this, there are different metrics provided for the metro area versus the small urban and rural areas.

Regional Performance Measures
Decrease fatal Rollover crashes in Small Urban and Rural Areas
Decrease fatal and injury Pedestrian Involved crashes in the Large Urban Area (particularly in the more Vulnerable Communities identified in this plan)
Decrease Alcohol/Drug Involved crashes
Decrease fatal and injury Motorcyclist Involved crashes
Decrease fatal and injury crashes for motorized and non-motorized travelers along high crash HFIN segments and at high crash HFIN intersections
Implement strategies, projects, and programs from the RTSAP 2024 Strategies Toolbox and Project and Program List

OUR COMMITMENT

MRMPO's policy board, the Metropolitan Transportation Board, has recently strengthened its commitment to safety by convening a special Safety Steering Committee and passing a resolution (add # in the final) affirming safety as a regional priority. Any fatalities on our streets are deemed unacceptable, and the Mid Region Council of Governments has pledged to take action.

This plan is the first step to guide transportation investments in a targeted manner to prioritize projects and strategies that best serve the goal of achieving zero traffic fatalities and life-altering injuries on our roadways. This includes moving forward in an equitable manner by lifting up the importance of roadway safety improvements in traditionally underserved communities.

As the Metropolitan Transportation Board (MTB) and members of local agencies and organizations we are committed to:

1. Using the High Fatal and Injury Network and the Potential Road Diet Candidates as planning tools to prioritize investments and meet the Vision.
2. Developing public information campaigns with community partners to promote the Vision, address dangerous behaviors like speeding and alcohol/drug use, and educate about new design features that support multimodal travel.
3. Actively participating in biking to work, safe routes to school, and other activities that promote the Vision.
4. Achieving equity in transportation by ensuring our more vulnerable communities are a priority and have improved access to safe and efficient travel options.
5. Serving our community by being transparent and reporting on safety performance metrics and progress.
6. Supporting safe street design that puts multimodal roadway safety first over capacity or speed/efficiency-.
7. Supporting a new paradigm in transportation that is proactive and systemic: the Safe Systems approach.
8. Creating a safer roadway culture by actively partnering with each other to collect and share information to implement strategies and projects that will most benefit roadway safety in the region.

THE SAFE SYSTEMS APPROACH

PLANNING FOR SAFE STREETS

Since the 2018 RTSAP was approved there has been considerable movement in implementing some of the ideas and values around roadway safety in the region. For example, the previous RTSAP encouraged agencies to adopt Vision Zero policies and to implement safer street design by using the High Fatal and Injury Network and the Potential Road Diet Candidates as tools to help target the highest priority locations. Complete Streets and Vision Zero policies have been adopted by local agencies since then.

Policy alone will not fix the problem, but often the first step to safer roadways is adopting policies such as Vision Zero or Complete Streets. As the process unfolds quality data is needed for analysis, decision making, and strategies like public information campaigns are needed to support design efforts such as new roundabouts or traffic signals. Other efforts such as NMDOT's ENDWI campaign coupled with enforcement at high-risk locations, events like CiQlovia to support active transportation, and multimodal driver education are also great tools to improve safety.

And yet, a new approach is needed that is proactive and systemic. Priorities must change to support roadway design for safe speeds and provide opportunities to travel safely by all modes. Ultimately, this is an approach that puts safety first when deciding on allocation of resources and funding.

THE SAFE SYSTEMS APPROACH

This plan goes beyond traditional roadway safety approaches by integrating best practices in design, supporting Vision Zero and Complete Streets, and using the federal Safe System Approach that recognizes the need to immediately take action to prevent more fatal and serious injuries. The Safe System Approach is a human-centric approach that proactively identifies and addresses risks. People will make mistakes, and crashes will occur, but they shouldn't end in life-altering tragedy.

> *A dangerous crosswalk heading north/south along the West side of Louisiana. There is poor visibility for pedestrians and motorists in a high traffic area with Total Wine and the adjacent shopping center. You are safer crossing in the middle of the road West of Louisiana than at the cross walk because there's better visibility all around, and cars have slowed down before taking the turn. It is very unfriendly to pedestrians.*
>
> -Public Comment

The Federal Highway Administration's Safe System Approach recognizes that although humans make mistakes and are vulnerable, fatalities and injuries can be prevented. This approach differs from the past in that it sets forth a goal of zero fatalities and serious injuries and the onus to reach this goal is not put on individual road users (or victim blaming) but is best achieved through shared responsibility and approaches that stop fatal and serious injury crashes from happening in the first place. Following the principles of the Safe System Approach are essential to realizing the RTSAP 2024 vision and goals.

Furthermore, funding is attached to this approach. The Bipartisan Infrastructure Law (BIL) established the Safe Streets and Roads for All (SS4A) discretionary program with $5 billion in appropriated funds over five years (2022-2026). The SS4A program funds regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries.

FUNDING ELIGBILITY

A variety of non-traditional projects and plans are eligible for funding. Projects include project-level planning, design and development, behavioral related and/or operation ativities. Examples include: the development of a roadway safety plan; improvements that support safe routes to transit and schools; upgrades to at-grade railroad crossings for pedestrians and bicyclists; better lighting for pedestrians; low-cost safety treatments like rumble strips; and even quick-build demonstration projects and educational campaigns.

More information about what is eligible is found here:
https://www.transportation.gov/grants/ss4a/implementation-grants#eligible-activities.

https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

ENGAGEMENT PROCESS

Feedback from public outreach and stakeholder engagement played important roles in updates to the RTSAP 2024. Outreach and engagement activities helped identify roadway safety concerns of the communities impacted by transportation plans and projects and tapped into local community members' expertise to identify opportunities for safety improvements.

The RTSAP community involvement process organized outreach and engagement activities into three categories according to the type and depth of involvement. The three categories are: Inform, Consult, and Collaborate. Each type of involvement was tailored to the target audience and the goals of engagement.

Community input helped to identify:

- Critical safety issues affecting communities throughout the region.
- Local knowledge and perspective on the factors contributing to safety concerns.
- Potential strategies, policies, or projects to improve roadway safety in the region.
- Barriers to ensuring safety in the planning, design, and development of transportation infrastructure.

	INFORM	**CONSULT**	**COLLABORATE**
	MRMPO → PUBLIC	MRMPO ← PUBLIC	MRMPO ⇄ PUBLIC
GOAL	Provide transparency in the planning process.	Get feedback on safety issues and potential solutions for the RTSAP.	Provide a seat at the table when developir plans
WHEN THE COMMUNITY IS INCORPORATED	Throughout the process stakeholders were informed about the RTSAP'S goals, timeline, and planning process.	Once the strategies for the RTSAP were identified.	At the beginning, and throughout with foll up regarding how their input is used
ENGAGEMENT TOOLS	• Newsletter • Brochures/Flyers • Social Media • Webpages • E-communications	• Surveys & Polls (in-person or online) • Key Person Interviews	• Focus Groups & Working Groups (i person or online) • "Pop-up Events" and participatory planning tools that incorporate feedback. • Walking Tours • Working sessions (in-person or online)
ROLE OF COMMUNITY	Audience	Advisor	Stakeholder
ROLE OF AGENCY	Decision-makers	Planners	Leaders
ROLE OF EQUITY	Minimal	Targeted	Integrated

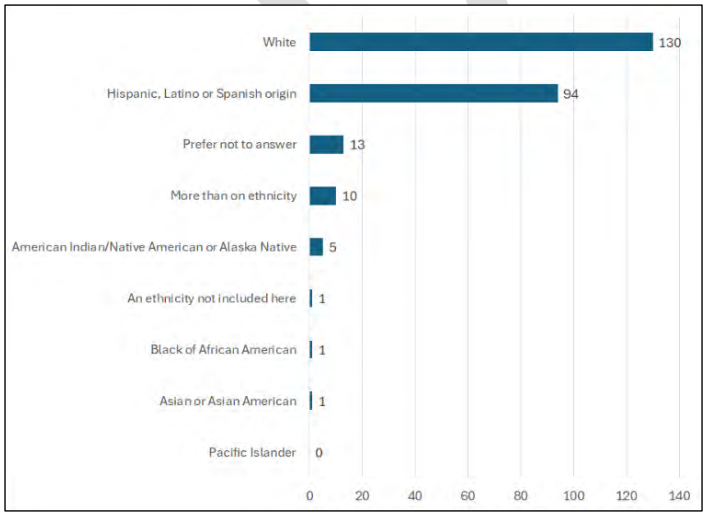
STAKEHOLDERS

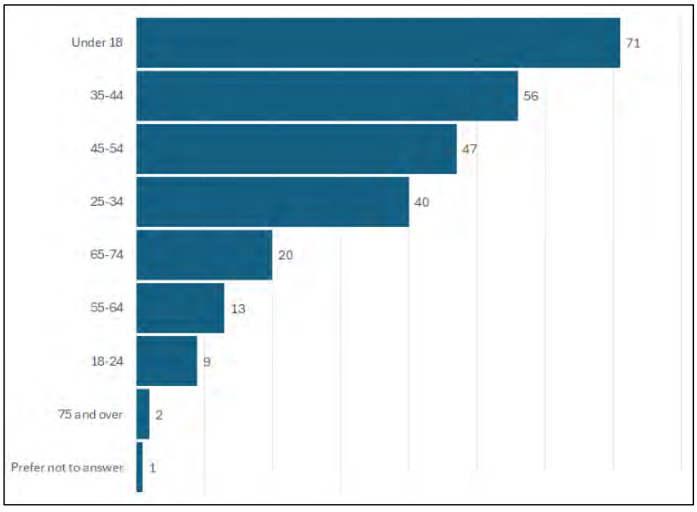
Stakeholder groups included local governments, Tribal governments, school and school district staff, public health officials, and advocacy groups representing vulnerable road users, particularly walkers, bikers, and people with disabilities. Contact lists were developed utilizing MRMPO contacts and leveraged additional contacts from concurrent statewide planning efforts for the *New Mexico Department of Transportation Vulnerable Road User Safety Assessment*. The following table provides a list of stakeholder groups that were included in the outreach and engagement activities.

Stakeholder Group	Description
Local government staff	Active transportation, Vision Zero, etc.
Tribal Government staff	Tribal Government staff, planning staff, NMDOT Tribal Liaison
Education/schools	Community Schools, Safe Routes to School groups, Vision Zero
Public Health officials	Health coalitions, public health/active living
Nonprofits & Advocacy Groups	Representing VRU's, particularly walkers, bikers, children, seniors, and people with disabilities
Law Enforcement	Police Chiefs, Deputy Chiefs, Community Safety
Emergency Response	Fire and Emergency responders
Engineers	Transportation engineers
Businesses/Community Economic Development Groups	Biking and running stores; MainStreet programs, Chambers of Commerce

SURVEY DEMOGRAPHICS

The RTSAP survey participants had the option of providing demographic information. One notable finding was the high number of under eighteen year old participants, which was largely due to direct outreach undertaken at Rio Grande High School. The next largest segments of age ranges for participants are the 25-34 and 45-44 age ranges, which represents a large chunk of the working age range. As for ethnicity, the results show a significant number of responses from those that identify as White, Hispanic, Latino, or Spanish origin, and Native American which accurately reflects regional populations.





ENSURING EQUITY

Traffic fatalities and serious injuries impact communities unevenly. Fatal and serious injury crashes disproportionately impact historically underserved communities including people who are Black, American Indian, and Hispanic or Latino. According to a report by the *Governors Highway Safety Association (GHSA)*, Black, Indigenous, and People of Color (BIPOC) are disproportionately represented in fatal traffic crashes. This is a significant health disparity for minority communities and this concern is reflected in our region as well.

In New Mexico, statistics show that the highest number of fatalities per capita are also American Indian/Alaska Native (AI/AN), the second highest is Hispanic, and the third is Black persons.

Throughout the RTSAP public outreach process, the project team worked with leaders who represent underserved community groups to determine the best channels for communication and approaches to engagement. Establishing these communication channels helped garner meaningful feedback from communities impacted the most.

As the map shows, survey feedback was gathered from a variety of zip codes, and zip codes in historically underserved areas had relatively good participation compared to other zip codes.

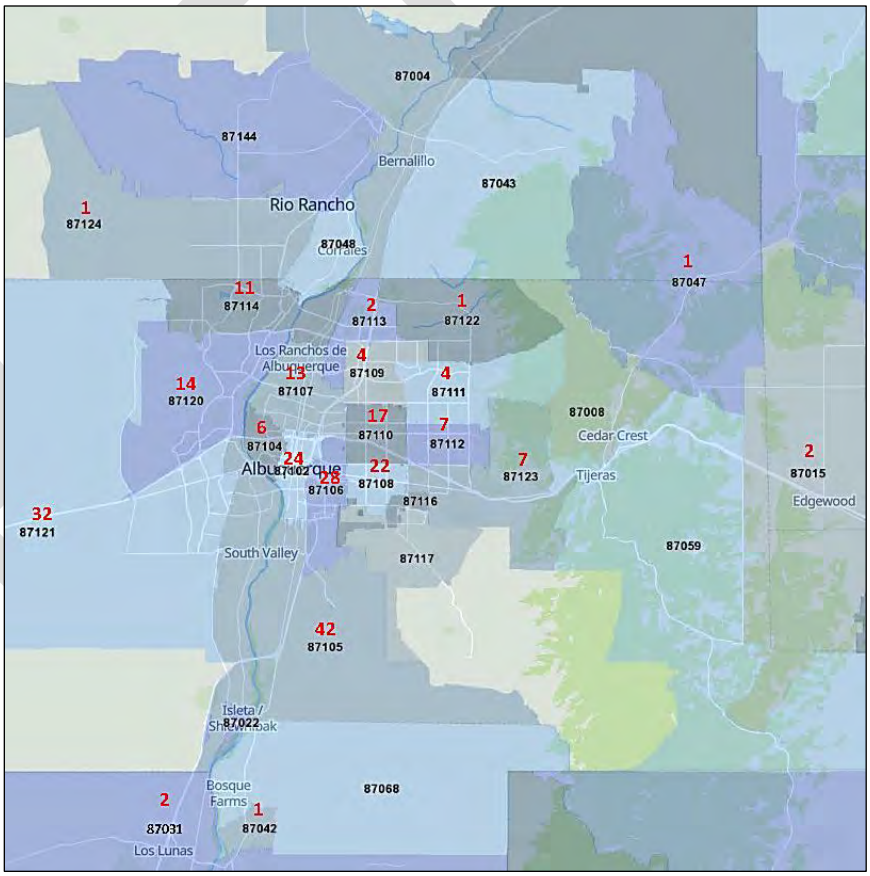


Image shows responses by zip code from the RTSAP 2024 Metro Quest survey.

OUTREACH ACTIVITIES AND TOOLS

Public involvement activities took place between October 2023 and February 2024. Approximately 696 people participated directly in outreach activities, and 374 people took the online survey. The online survey tool hosted through the MetroQuest platform was used to gather input from around the region. The survey was offered in English and Spanish and materials were produced in English and Spanish for distribution through emails, MPO newsletters, social media posts, and a digital flyer distributed to families at 38 Albuquerque Public Schools (schools adjacent to roadway segments highlighted on the HFIN were prioritized for flyer distribution).

The RTSAP survey was promoted heavily through the MRMPO newsletter. Recipients included in this distribution ranged from local agencies in the region to the Metropolitan Transportation Board (MTB) and MPO committees and subcommittees, as well as to the hundreds of members of the public who have signed up for the MRMPO Travel Times e-newsletter over the past few years. The survey and additional information about the RTSAP update were distributed in the following email campaigns:

- Fall 2023 Travel Times (842 sends)
- RTSAP Film Screening (990 sends)
- RTSAP survey boost (1,227 sends)
- Winter 2023 Travel Times (1,213 sends)

EVENTS AND FOCUS GROUPS

Events and Focus Groups were also part of the public outreach process. These events and meetings were modeled after the MetroQuest survey to provide a larger sample of responses for determining patterns and concerns from the public and agencies. A one-page flyer with a QR code to take the survey and tablets with the survey loaded were provided at most events.

Most of the focus groups were asked the sameopen-ended questions from the MetroQuest survey and additional customized questions related to the focus group members' area of expertise.

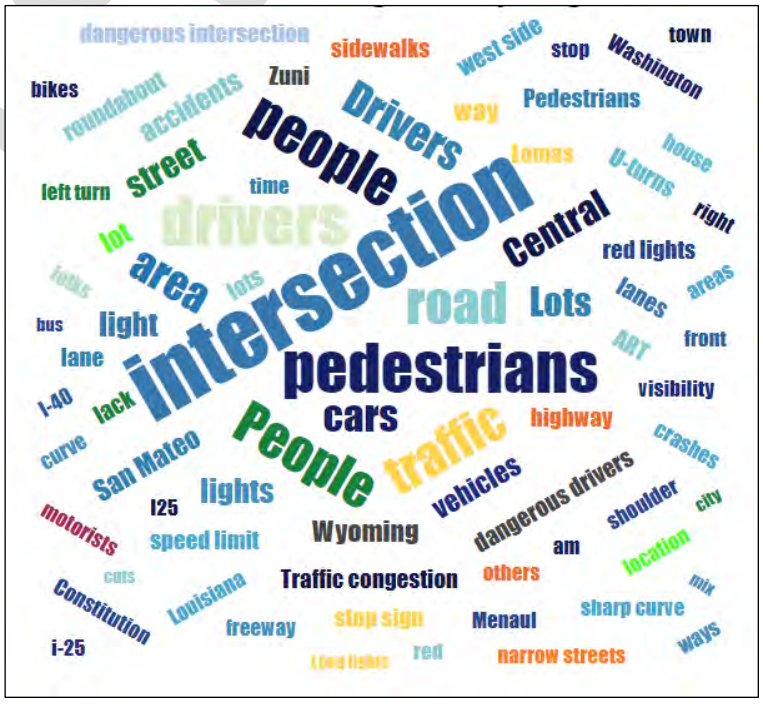


Image shows a world cloud from the concerns raised by automobile drivers in the region (Metro Quest survey).

The RTSAP was promoted by RTSAP team members at the following community events:

CiQlovía

The RTSAP team staffed a booth with interactive activities and surveys at this annual open street event in the International District of Albuquerque, a community disproportionately impacted by traffic fatalities and injuries. The event helps people to re-imagine streets as places for people to safely walk and bike. Participants were invited to comment on why they believed our region ranks so high in traffic fatalities and what we might do to address the issue. Participants at the event were invited to review informational posters with images of different proven safety countermeasures and vote on their preferred strategies.

Street Project Film Screening

The RTSAP team hosted a film screening for the Street Project Film, a documentary about the global citizen-led movement to make our streets safer. The screening was at the International District Library. Participants viewed the film and then discussed transportation safety issues in Albuquerque. This event was organized in collaboration with the Health Equity Council and Together 4 Brothers (T4B).Discussions focused on transportation safety challenges and priorities in Albuquerque's International District.

Sierra Club E-bike Fair

MRMPO staff tabled at an event hosted by the Sierra Club where attendees were encouraged to test e-bikes and learn about bicycle safety. Several organizations were on hand to provide the public an opportunity to learn about various efforts in the region to promote and increase transportation safety, particularly for vulnerable users.

Rio Grande High School

MRMPO staff were invited to present at a series of classes at Rio Grande High School in the South Valley. The students were asked to take the RTSAP survey as a short assignment before leaving class. This was a great opportunity to help engage with a younger demographic and hear about their

experiences using the transportation system. At the end of the day, MRMPO staff talked with over eighty students about transportation safety and collected valuable feedback from this age group that is not often heard from.

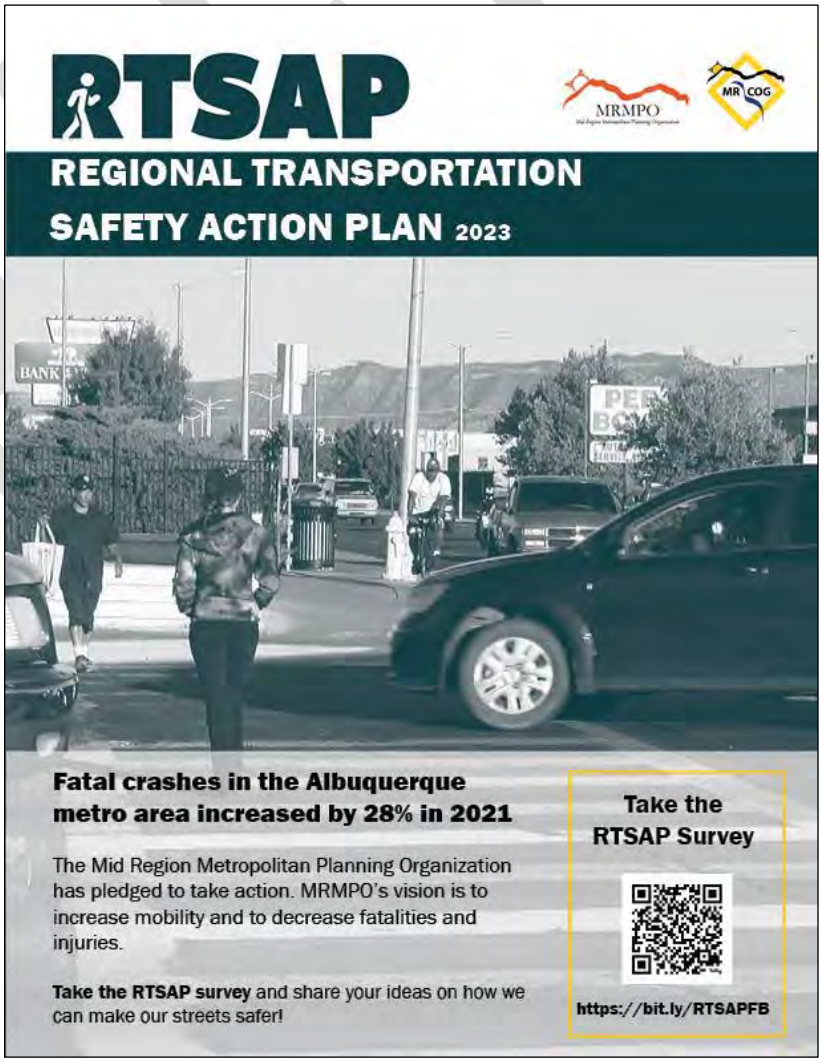
GIS Day at University of New Mexico

MRMPO staff attended the annual University of New Mexico (UNM) Geographic Information System (GIS) day where high school, university students, and members of the public were informed about the efforts of the RTSAP project and provided the opportunity to provide feedback. Staff had a variety of engagement materials, including pamphlets, brochures, a sign-up sheet for RTSAP updates, and tablets that could be used to take the interactive survey.

T4B Transit Equity Day

MRMPO staff tabled at the 4th Annual Albuquerque Transit Equity Day held at the Albuquerque Downtown Alvarado Transit Center. Together 4 Brothers, a local community organization, invited MRMPO to participate at the event to help with survey participation.

Image shows RTSAP Flyer with QR Code



OPEN-ENDED QUESTIONS

A section of the Metro Quest survey containing open-ended questions invited participants to share their thoughts on why the region ranks so high in traffic fatalities and what can be done to address the problem. The analysis of these responses provided a wealth of information. The open-ended questions were:

1) Why do you think our region ranks so high in fatalities and injuries?

2) How can we best address this problem?

Why the region ranks so high

Participants in the public involvement process pointed to a variety of different traffic safety concerns when responding to the question of why the region ranks so high in traffic fatalities and injuries. In write-in responses, participants most consistently blamed driver attitudes and behavior for the high rates of traffic fatalities and injuries. Participants noted a general auto-centric culture and disregard for pedestrians and cyclists that was reflected in driver behavior, planning priorities, and road infrastructure. Concerns over speeding, illegal racing, and distracted driving were common. Lack of enforcement, particularly for reckless driving and speeding, was also a common concern.

1. Dangerous or bad driving behavior was the most common response (98)
2. Street design (72)
3. Speeding (52)
4. Driving under the influence (42)
5. Lack of enforcement (42)
6. Distracted driving (37)

How to address this problem

Design and engineering strategies were the most commonly recommended followed by enforcement, policies/programs, and education/campaigns. Participants indicated that improved roadway design would be the most effective strategy for reducing traffic fatalities and injuries.

There was strong support for reducing speed through roadway design and increasing separation between cars and vulnerable road users. There was a slightly stronger focus on pedestrian improvements than bike facility improvements, but many spoke to the need for complete street improvements that provided safe facilities for all modes.

Many participants felt that increased traffic enforcement as well as education and campaigns would be the most direct ways to address dangerous driving and speeding. Many pointed to opportunities to increase enforcement of traffic laws, particularly red light running and speeding.

Also mentioned were expanded education programs and campaigns to promote personal responsibility while driving. Other education iniatitives mentioned educating roadway users on infrastructure improvements (i.e. roundabouts) and to make a shift beyond the auto-centric culture.

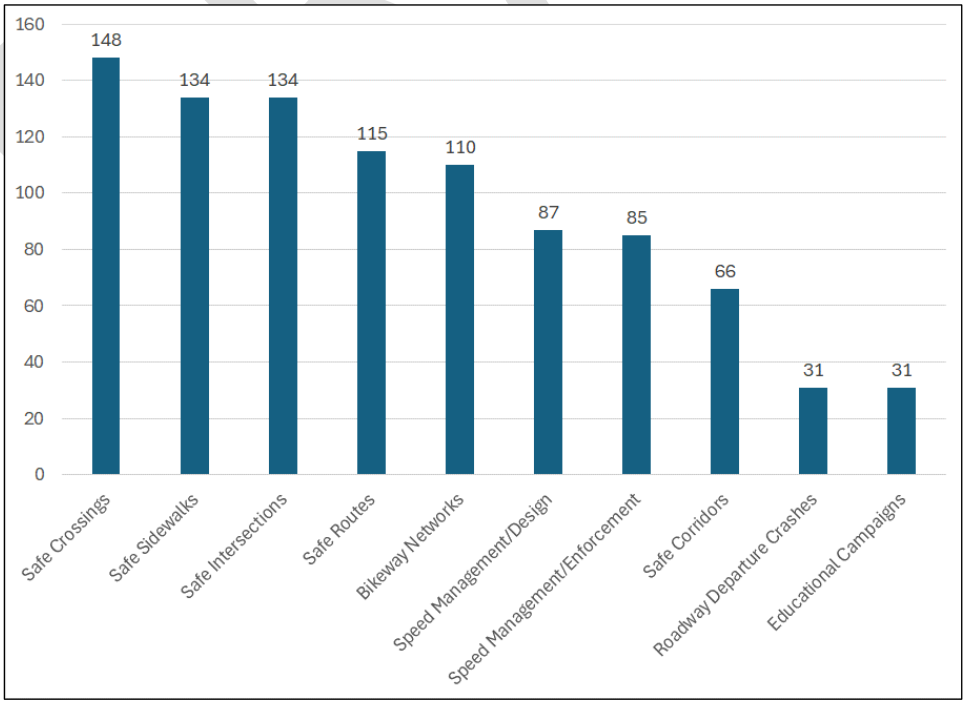
Participants shared a wide variety of approaches to addressing the problem of traffic safety in the region. Responses to this question could be grouped into several categories including Design, Planning, Policies, Education, Campaigns, and Enforcement. These responses are reflected in the strategies developed for this plan.

There were nearly 140 comments related to issues of road design and engineering, particularly that roads are designed for speed and efficiency rather than safety and that there is missing or insufficient infrastructure for vulnerable road users on roadways throughout the region.

PRIORITY RANKINGS

A section on priorities invited participants to rank their top priorities for improving transportation safety. This section included ranking what respondents felt were the most important items to improve upon based on a list provided. This graph represents the total number of times a priority was ranked within the top 3.

Safe Crossings ranked #1 as the highest public priority. This is not surprising as overall the concern for more vulnerable users was consistently indicated as being due to feeling unsafe crossing a street or just not crossing at all because of the lack of locations where it felt safe to cross. Comments on Safe Sidewalks were generally that they are too narrow and close to adjacent traffic. The ranking of other priorities is shown in the graph below.

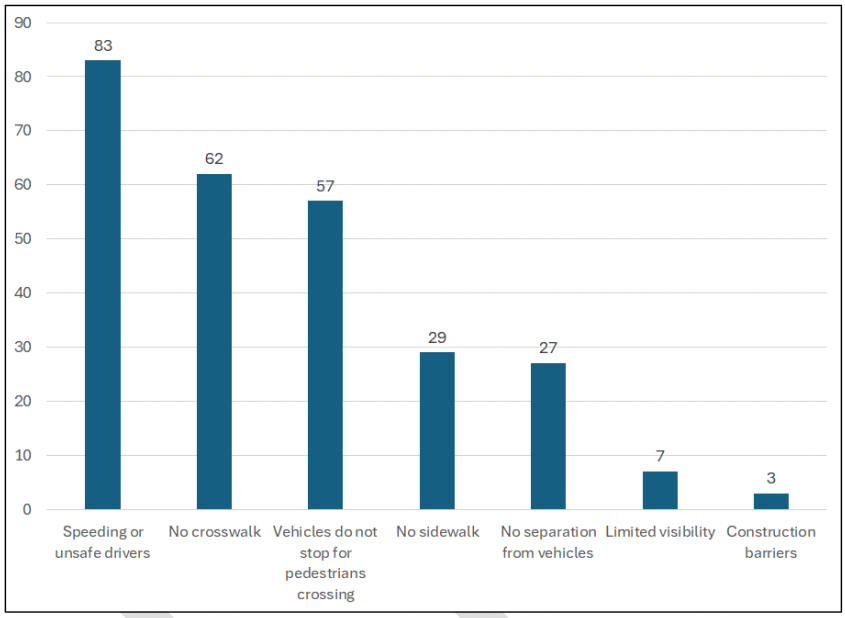


INTERACTIVE MAP

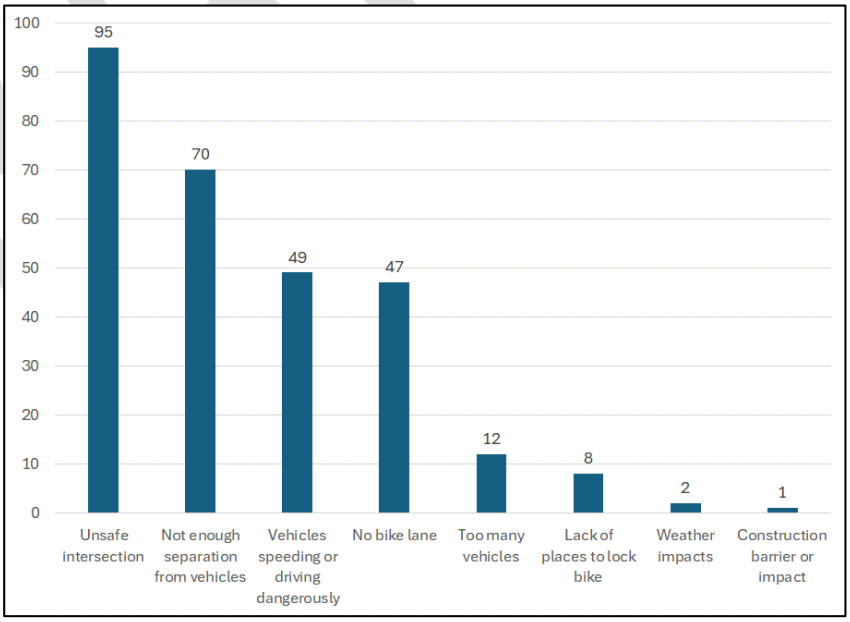
An interactive map tool allowed survey participants to zoom in on a map of the region and drag and drop icons to mark specific locations where they would like to see safety improvements.

These responses were analyzed for the most common responses for each mode. When looking at the entire region, the results by mode show that an overwhelming majority of the markers placed on the map were for walking, cycling, or rolling.

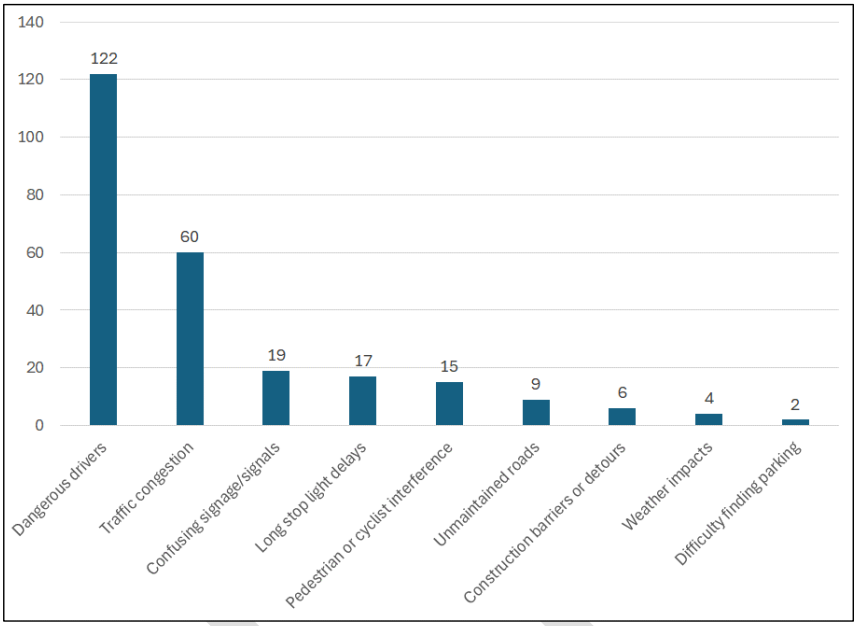
Challenges encountered while walking: Survey participants indicated that the top three challenges that they encountered while walking in locations around the region were speeding or unsafe drivers, no crosswalk, or vehicles not stopping for pedestrians crossing. This reinforces community input about concerns over driver behavior and road design. Also, the lack of safe places for pedestrians to cross is prevalent throughout the feedback received.



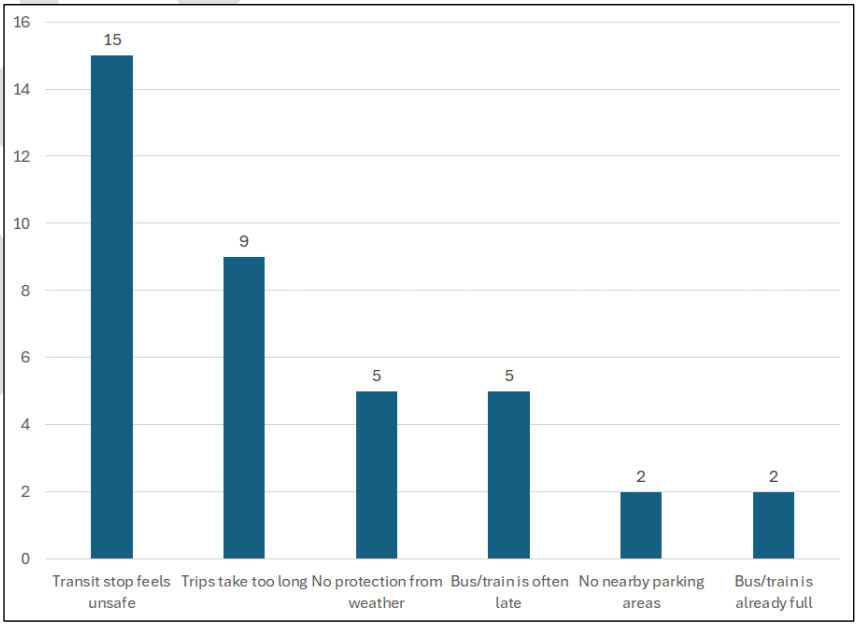
Challenges encountered while cycling or rolling: By far, the top challenge survey participants encountered while cycling or rolling was unsafe intersections. This was followed by not enough separation from vehicles, vehicles speeding or driving dangerously, and no bike lane. This reinforces community concerns more broadly about unsafe and challenging intersections and speaks to the desire to increase separation between vehicles and other modes of transportation. Often times a safe space for the bicyclist does not continue through the intersection.



Challenges encountered while driving: Dangerous drivers was selected more than twice as many times as the next most common challenge of traffic congestion. This reinforces consistent community feedback that driver behavior is a top concern and contributes to widespread feelings of lack of safety. This seems to be the case regardless of if you are a more vulnerable user or are more protected driving in a vehicle.



Challenges encountered with Transit: Transit stop feeling unsafe was the most common concern followed by trips taking too long. Community feedback from rural areas indicated that there was an interest in having more frequent service. For urban areas the transit stops themselves both in terms of protection from sunlight and heat, and general safety are the concerns.



FOCUS GROUPS

Focus groups were hosted to facilitate more in-depth discussions with key stakeholder groups. Focus group agendas included data and information tailored to the stakeholder community and then a conversation about various topics using Jam Board as a tool to track participant comments and make them visible to the whole group.

Participants shared about transportation projects and programs that are a high priority for the community they serve and gave feedback on additional ways MRMPO can engage with communities in transportation planning. The following focus groups were held.

Schools Focus Group

Priority projects and programs for schools included data-based project prioritization and increased funding for projects that support convenient and safe multi-modal connectivity to schools.

School districts would like to see greater collaboration with the MPO and other agencies to promote safe routes to schools. There is interest in sharing data and working together to get traction on project design, funding, and implementation. Additionally, school administrators expressed the importance of connecting with the Principal or Community School Coordinator if transportation projects come up in a school area.

Schools are a great place to host discussions about the barriers families experience to walking and biking. Additionally, school events and classrooms can provide opportunities to get diverse community input on surveys and educate about transportation safety projects.

Tribal Focus Group

Tribal focus group participants spoke about the unique challenges that Tribal communities face in terms of traffic safety. Many of the region's Pueblos and Tribal communities are in rural areas and have limited infrastructure to support walking, biking, and or using a wheelchair Improved road crossings, pedestrian facilities, and trail networks were listed as top priorities.

Many Tribes are short-staffed and don't have internal capacity to oversee large federal grant implementation. Additionally matching grant requirements can be a challenge to initiating projects. Focus group participants indicated that MRMPO could better collaborate with Tribal communities through technical assistance and capacity building to develop construction ready projects and support successful grant administration and project implementation. Additionally,

participants noted that many priority projects are within the NMDOT right of way and the MPO could help facilitate conversations and advocate for these projects.

Rural Focus Group

Rural focus group participants discussed challenges with lacking pedestrian infrastructure, roads in poor condition, and people driving at excessive speeds as main contributors to high rates of traffic fatalities and injuries.

There is a sense amongst rural communities that infrastructure investments aren't equitably distributed and that one of the best ways to impact driver behavior is through safer road design. Rural focus group participants would like to see a more transparent follow-up process after plans are developed and clear communication about how community concerns are being addressed.

Additionally, it was noted that there is a lot of staff change in Pueblos and it is important to make sure that MRMPO keeps contact lists up to date and reaches out regularly to connect with new staff and administration.

Public Health & Equity Focus Group

Participants in the Public Health and Equity Focus Group include members of the Bernalillo County Health Equity Council and are part of the Active Living Workgroup hosted by Presbyterian Health.

The group discussed road design as a barrier to the active living and health equity goals in their service areas with particular focus on the International District, South Valley, and 2nd and 4th Street corridors in Albuquerque. Due to road design, many people within these areas are less likely to walk or use their bikes unless necessary and are more likely to experience safety risks when doing so. Wide arterials, designed for speed, with limited opportunities to cross were discussed as a key challenge. Road diets, reduced speed limits, and mid-block crossings were top priorities.

INTEGRATING INPUT

The responses from the Metro Quest Survey, outreach events, and the Focus Groups are integrated throughout the plan. The responses provided input on safety strategies, geographic locations of concerns, and projects or programs that would benefit the region, and even helped guide crash analyses. As mentioned, the Technical Team provided guidance at key stages throughout the plan and provided support in developing strategies, projects and programs, and priorities.

SAFETY PLANS AND POLICIES

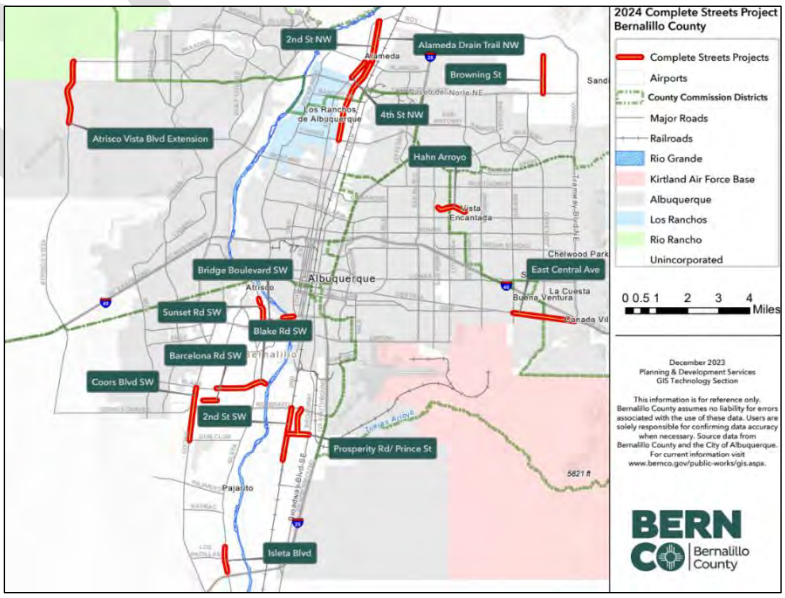
CITY OF ALBUQUERQUE AND VISION ZERO

The City of Albuquerque has adopted Vision Zero principles, hired a full-time staff member to lead Vision Zero, and set forth a prioritized plan to implement projects with a goal to eliminate traffic deaths and serious injuries by 2040. An Executive Order was passed to show the City's commitment to this goal. The City's approach is data-centric and uses the HFIN (High Fatal and Injury Network) developed by MRMPO but modified for their purposes to identify dangerous locations and set priorities. There is also an emphasis on equitable distribution of resources and infrastructure improvements.

The Albuquerque Vision Zero Year in Review 2023 document provides a good example of the types of action items needed among departments in local agencies to share responsibility and move the needle towards fewer deaths and serious injuries. For example, the City of Albuquerque's Complete Streets Annual Street Maintenance program has been a successful approach that allows for consideration of ways to include greater multimodal accommodation during routine maintenance efforts. Some continuing challenges identified by the City of Albuquerque are a lack of funding and making sure there is a public education piece that brings more attention to the principles of Vision Zero and why there is a need for new designs to create safer multimodal roadways. This public education action item is one that the region can undertake together, and it is included in the Projects and Programs List provided in this plan.

BERNALILLO COUNTY COMPLETE STREETS ORDINANCE

This ordinance establishes a framework for current and future development on identified corridors that integrates sidewalks, trails, bike facilities, transit amenities, and safe crossings into their design.



Bernalillo County has been forward thinking in developing a list of Complete Streets projects for funding that draws from their local plans and crash analyses.

PEDESTRIAN AND BICYCLE SAFETY ACTION PLAN

An update is currently underway. This plan update will incorporate the FHWA Safe System Approach and will guide future pedestrian and bicyclist capital infrastructure projects.

ALBUQUERQUE PUBLIC SCHOOLS AND VISION ZERO YOUTH INITIATIVE ACTION PLAN

This plan was developed in 2022 by Albuquerque Public Schools to, in part, bring attention to the vital need to coordinate between local municipalities and schools, and is a collaborative effort among APS and local governments.

The plan seeks to fill two major gaps:

1) incorporate roadway safety into the school curriculum and

2) formulate and maintain a collaborative and ongoing public campaign component for drivers to be aware of pedestrians, especially around schools.

There are several actions contained in this plan that could be emulated by other school districts.

As a part of this plan an APS Vision Zero Task Force was created to discuss the APS Vision Zero for Youth Initiative components. This task force provides input on the Traffic Safety Curriculum, reviews the APS Vision Zero Action Plan to evaluate implementation strategies, and develops ideas for the Traffic Safety Awareness Campaigns.

NMDOT AND VULNERABLE ROAD USER SAFETY ASSESSMENT

The recent Vulnerable Road User Safety Assessment plan adopted by the New Mexico Department of Transportation (NMDOT) in 2024 brings attention to the fact that New Mexico repeatedly ranks the highest in pedestrian fatalities per capita in the nation. The plan emphasizes that the safety of pedestrians and other vulnerable road uses must become a higher priority.

> *"More than 370,000 people died in transportation incidents over the last decade (2011-2020) in the United States. More than 350,000 of them died on our roads."*
>
> -U.S. DOT

This plan develops a HIN (High Injury Network) for the state and creates a typology for roadways and intersections that guides the type of safety countermeasure that will best help reduce crashes based on historical crash data analysis. The intention is for planners and engineers to use these in developing a "short list" of potential safety countermeasures.

NMDOT's long-range statewide transportation plan, the New Mexico 2045 Plan, includes Complete Streets strategies and recommends updates to guidance manuals to incorporate Complete Streets principles. The 2018 New Mexico Prioritized Statewide Bicycle Network Plan identifies safety countermeasures such as road diets, rumble strips, and lane narrowing. Most recently, the 2021 Pedestrian Safety Action Plan recommends more proven safety countermeasures such as Pedestrian Hybrid Beacons and Leading Pedestrian Intervals.

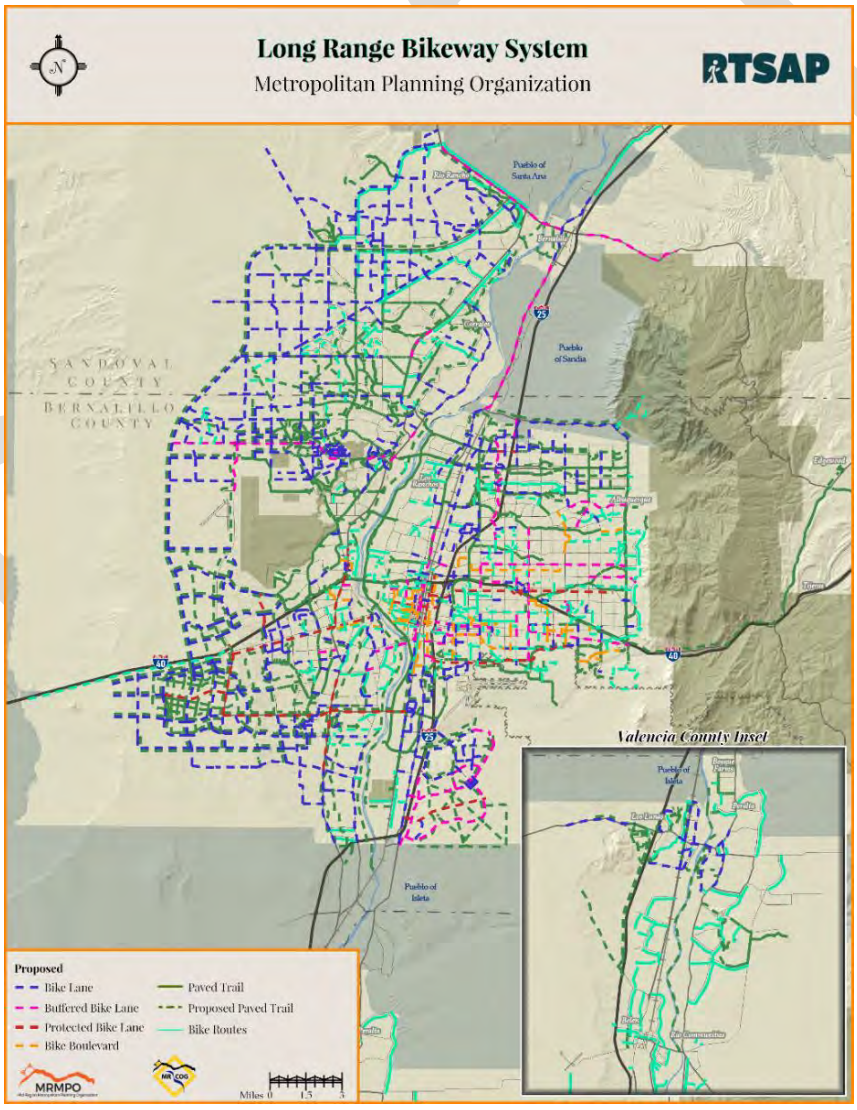
SAFETY RELATED PLANS IN THE REGION

The following page lists the safety-related plans in the region. There are a variety of plans for the region listed below that contain a safety component, support the development of safer facilities, or enhance the development of Complete Streets. In rural and Tribal areas there are some comprehensive plans that include a transportation component, but these are limited.

Most agencies have an ADA Transition Plan which is required to bring pedestrian facilities in compliance. The challenge with ADA Transition Plans is having a comprehensive inventory of needs and a prioritized method for upgrades based on safety.

Of the bicycle facilities and multi-use trails proposed from local agencies, most have been integrated into the Long Range Bicycle Network (LRBS) that MRMPO has developed. This map is updated regularly by MRMPO as new plans develop. This map is also available online in an interactive form:

https://mrmpo.maps.arcgis.com/apps/View/index.html?appid=3d66cd422eba4ccd98931d62b6d7e215



Plan Name	Description	Link	Adopted	Agency
Alameda Drain Trail and Master Plan	This plan provides a framework for improvements along the nine-mile corridor that runs from Interstate 40 to the northern end of 2nd Street.	https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2021/07/Alameda-Drain-And-Trail-MP-Book_reduced-8_17_16.pdf	2016	Bernalillo County
Bernalillo County Complete Streets Ordinance	This ordinance establishes a framework for development on identified corridors that integrates sidewalks, trails, bike facilities, transit amenities, and safe crossings into their design.	https://library.municode.com/nm/bernalillo_county/codes/code_of_ordinances?nodeId=BECOCO_CH66ROBR_ARTVICOSTOR	2015	Bernalillo County
Bridge Boulevard Corridor Redevelopment Plan	This plan integrates current and future land uses along the corridor with transportation improvement projects.	https://www.bernco.gov/public-works/blog/2021/04/16/bridge-boulevard-corridor-redevelopment-plan/	2013	Bernalillo County
Complete Streets Projects 2022	Development of a list of Complete Streets projects for funding.	https://www.bernco.gov/public-works/transportation-planning/complete-streets-planning/		Bernalillo County
East Central Avenue Safety Plan	Based on existing roadway conditions and the locations of crashes this study identifies design issues that create unsafe conditions along the corridor. This study identifies these safety issues and recommends improvements along East Central Ave corridor from Louisiana Blvd to Eubank Blvd.	https://www.cabq.gov/municipaldevelopment/our-department/engineering/greater-albuquerque-active-transportation-committee/documents/east-central-ave-safety-study-final-draft-10-2-2020.pdf		City of Albuquerque
El Camino Real NHT Development Concept Plan	This plan retraces 22 miles of the trail's historical alignment. The plan recommends several multimodal trail projects, trail amenities, and trail signage and interpretation connecting to and at public sites.	https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2022/07/El-Camino-Real-Trail-DCP_Exec-Summary-sm.pdf	2022	Bernalillo County

Isleta Drain Master Plan	This trail starts at Central Avenue and extends to I-25. The plan outlines a proposal for the drain to serve as a multi-use trail and addresses drainage, flood control, and access issues as well as identifying a trail alignment and locations for amenities.	https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2023/11/IDTP_FINAL_sm2.pdf		Bernalillo County
Near South Valley Multimodal Study	This plan evaluates and identifies deficiencies in the existing network of streets, transit facilities, sidewalks, bike lanes, bike routes, and multi-purpose trails. The plan details some transit improvements on Bridge Boulevard and includes recommendations on connections for existing bicycle facilities. A list of high priority projects is included.	https://www.bernco.gov/public-works/wp-content/uploads/sites/76/2021/07/South-Valley-Multimodal-Study-Dec-2017.pdf	2017	Bernalillo County
Pedestrian and Bicyclist Safety Action Plan	An update is currently underway. This plan update will incorporate the FHWA Safe System Approach and will guide future pedestrian and bicyclist capital infrastructure projects. The previous plan provides a list of priority projects.	https://www.bernco.gov/public-works/transportation-planning/transportation-plans/pedestrian-bicycle-safety-action-plan/	2012	Bernalillo County
Bernalillo County Parks, Recreation & Open Space Facilities Master Plan (PROS Plan)	This plan lays out priorities from 2015 to 2030. The Plan consists of policies and recommendations for improvements to facilities that will increase the quality of life of residents in all parts of the County including important multiuse trail connections.	https://www.bernco.gov/community-services/parks-recreation/master-plans-for-parks-open-space-and-trails-pros-plan/	2015	Bernalillo County
2021 Vision Zero Action Plan	This plan lays out steps that the City, working with agency and community partners, will take to reduce traffic fatalities to make the City of Albuquerque's streets safer.	https://www.cabq.gov/vision-zero/documents/abq-vzactionplan-2021-final.pdf	2021	City of Albuquerque

ABQ Ride Forward Network Plan	This plan is in the process of reviewing the performance of the existing bus network. The plan will consider how best to meet goals and evolving needs as well asmake the most efficient use of existing resources. A key question being answered are how to balance routes that are ridden by the greatest number of people (ridership) versus routes that cover the greatest geographic area (coverage).	https://www.cabq.gov/transit/routes-and-schedules/abq-ride-forward-network-plan	2024	City of Albuquerque (ABQ Ride)
Albuquerque & Bernalillo County (ABC) Comprehensive Plan	The ABC Comprehensive Plan is the City's Rank 1 policy document that guides planning throughout the city/county area. The plan identifies Centers & Corridors vision for community growth and priority areas to protect and enhance, such as the city's diverse and vibrant neighborhoods and unparalleled network of parks, open space, and trails.	https://compplan.abc-zone.com/	2017	City of Albuquerque
Albuquerque Vision Zero Year In Review	This plan assesses progress made toward Vision Zero, including projects and programs that have been successful. The plan prioritizes thematic goals, actions, and corridors where the City should first focus on traffic safety efforts to have the greatest impact in reducing and eliminating traffic deaths and serious injuries by 2040. It also serves as an updated Action Plan for the City to implement Vision Zero efforts.	https://www.cabq.gov/vision-zero/documents/albuquerque-vision-zero-year-in-review-2023-_final.pdf	2023	City of Albuquerque
City of Albuquerque Bikeway& Trail Facilities Plan Update	In process of being updated will contain a prioritized list of facilities.	https://www.abqbikeplan.com/	2024	City of Albuquerque

Executive Order	Mayor Keller made a commitment to Vision Zero and signed an Executive Order committing the City of Albuquerque to work toward the goal of zero traffic deaths by 2040.	https://www.cabq.gov/municipaldevelopment/documents/dmd-20190904-executiveorder-vz.pdf	2019	City of Albuquerque
Neighborhood Traffic Management Program	The goal of this program is to address speeding and cut-through traffic on local residential streets using a set of traffic-calming tools, such as lane narrowing, turn restrictions, and curb bulb-outs, as well as non-physical tools like radar speed signs and targeted enforcement.	https://www.cabq.gov/neighborhood-traffic-management-program	2023	City of Albuquerque
City of Belen The Hub City 2022 Comprehensive Plan Update	This plan presents strategies for future development with a primary emphasis is on land use activities as an indicator of health, character, and municipal functions in the community. Recent economic development and growth, including new housing and retail growth are included.	https://www.belen-nm.gov/wp-content/uploads/2023/01/Belen-Comp-Plan-Adopted-1-3-2022-web.pdf	2023	City of Belen
Jemez Springs Comprehensive Plan				Jemez Springs
2021 New Mexico SHSP	This plan coordinates traffic safety programs across the state, identifies priorities and strategies, and provides a common approach for all roadway users. The purpose is to guide transportation project investment decisions to achieve a reduction in traffic fatalities and Class A injuries on all public roadways.	https://newmexicodotshsp.com/wp-content/uploads/2023/08/NMDOT_2021-Strategic-Highway-Safety-Plan.pdf	2022	NMDOT

Pedestrian Safety Action Plan	This plan provides a framework to address pedestrian safety, including: improving data to better understand crashes, addressing aspects of roadway engineering and design, advancing roadway user education, and implementing policy solutions over the next 5 years.	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://nmpedplan.altaplanning.cloud/storage/app/media/Final%20Plan_August_2021.pdf	2021	NMDOT
Prioritized Statewide Bicycle Network Pln	This plan covers how to best provide both residents and visitors with a safe and connected bicycle network at the statewide level by 1) identifying locations where bikeway infrastructure would be most beneficial, and 2) providing design guidance that indicates the appropriate types of infrastructure by roadway context.	https://www.dot.nm.gov/planning-research-multimodal-and-safety/planning-division/multimodal-planning-and-programs-bureau/bicycle-pedestrian-and-equestrian-coordinator/#:~:text=The%20Prioritized%20Statewide%20Bicycle%20Network,network%2C%20as%20called%20for%20in	2018	NMDOT
Vulnerable Road User Safety Assessment and Strategic Highway Safety Plan	This plan was developed to improve the safety performance outcomes for vulnerable road users, and to meet the IIJA requirements.	https://newmexicodotshsp.com/wp-content/uploads/2023/11/NMDOT-VRU-Safety-AssessmentAppendices_20231106_Final-Submittal.pdf	2023	NMDOT

Rio Rancho Bicycle and Pedestrian Transportation Master Plan	This plan provides a blueprint for increasing bicycle and pedestrian safety, implementing bicycle and pedestrian improvements for "complete streets," outlining community specific benefits for bicycling and walking as alternative modes of transportation, and identifying trail and sidewalk connectivity issues and solutions.	https://www.rrnm.gov/DocumentCenter/View/8302	2011	Rio Rancho
Rio Rancho Comprehensive Plan	This plan is a compilation of policies on how the City should develop, including the types of development and how the various types of development will interact.	https://www.rrnm.gov/DocumentCenter/View/63789	2010	Rio Rancho
Bernalillo TOD Plan				Town of Bernalillo
Comprehensive Land Use Plan	The plan is a series of broad statements that reflect the community's goals and aspirations. The goals, objectives, and implementation strategies interpret the community values and provide the guidance for decision making regarding future land use and zoning, growth and development, and investments in capital improvements.	https://www.tobnm.gov/Departments/p&z/Adopted%20-%20Town%20of%20Bernalillo%20Comprehensive%20Plan%20-%202022.pdf	2022	Town of Bernalillo
Town of Edgewood Comprehensive Land Use Plan				Town of Edgewood
Village of Corrales Comprehensive Land Use Plan				Village of Corrales

Bicycle Master Plan Village of Los Lunas	The Village of Los Lunas currently utilizes three (3) main types of bicycle facilities: multi-purpose paths, bike lanes, and shared use roadways. This plan was developed to improve the connectivity between the existing bicycle facilities and to encourage designated bikeways where no such facilities currently exist.	https://www.loslunasnm.gov/DocumentCenter/View/9503	2015	Village of Los Lunas
Los Lunas Master Transportation Plan 2035	This plan provides guidance for the development and function of the Village's multimodal transportation system compatible with the local character and desires including appropriate land use assumptions to estimate travel and documentation of existing facilities and service needs.	https://www.loslunasnm.gov/DocumentCenter/View/6526	2013	Village of Los Lunas
Los Lunas Route 66 Scenic Byway Corridor Management Plan (CMP)	Historic Route 6 extends is identified as an All-American Road and a National Scenic Byway. This designation requires a CMP that provides for conservation and enhancement while also promoting tourism and economic development. This plan is focused on the Los Lunas section and identifies the character-defining qualities unique to the area and presents strategies for maintaining and enhancing these qualities.	https://www.loslunasnm.gov/DocumentCenter/View/8867	2015	Village of Los Lunas
Village of Los Lunas 2040 Comprehensive Plan	This plan illustrates how Los Lunas will grow and change in the next twenty years taking into account demographics trends, a staggering increase in future traffic projections, and meeting growing demands for limited natural resources.	https://www.loslunasnm.gov/DocumentCenter/View/11100/Village-of-Los-Lunas-2040-Comprehensive-Plan	2022	Village of Los Lunas

THE IMPORTANCE OF EQUITY

INEQUITABLE PHYSICAL HARM

The Albuquerque metropolitan area is the second most dangerous for pedestrians in the nation. Underlying data reveal vast inequities regarding who is dying. There are substantial disparities for BIPOC communities (Black, Indigenous, and people of color) and for people living in lower income areas.

For example, Albuquerque's International District, an area of concentrated poverty and persons of color, holds five percent of the population in the metro area but is the location of 23 percent of pedestrian fatalities.

There have been decades of disinvestment in such communities despite traffic crashes continuing to be a significant public health disparity. According to the 2012 report, *Place Matters for Health In Bernalillo County: Ensuring Opportunities for Good Health for All* there is as much as a 20 year life expectancy difference between the Northeast Heights and South Valley in Bernalillo County.

For this plan specific strategies and projects have been developed around equity. First and foremost is the assurance that resources are allocated to address pedestrian safety needs in underserved areas, with the International District being the community of the highest priority because of the number of fatalities and injuries occurring there. This means prioritizing planning, providing diverse representation in advisory committees and decision making, and the strategic implementation of proven safety countermeasures.

As a part of this plan:

1) An equity assessment was conducted for the region using MRMPO's Vulnerability Index (MVI) along with the latest available crash data.
2) Public outreach was prioritized to engage vulnerable communities.
3) Projects and programs were selected that integrate equity and highlight the needs of more vulnerable communities.

Federal Executive Orders

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994), directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, on low-income or minority populations resulting from their programs, policies, and activities.

Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (2021), affirms that the Federal Government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our Government.

MPO Responsibilities

As the agency responsible for coordinating the transportation planning process, the State DOT or MPO must ensure that all segments of the population have been included in the planning process regardless of race, national origin, income, age, sex, or disability. State DOTs, MPOs, and public transportation providers must comply with agency-specific Title VI requirements when developing and implementing a Title VI Program.

https://www.planning.dot.gov/planning/topic_transportationequity.aspx

ACCESS TO TRANSPORTATION

Access to transportation options is a determinant of quality of life. Roads in our region have traditionally been designed for vehicular travel and as a result are more dangerous for walking and cycling or accessing transit. Accessing destinations or a bus stop to take transit can be a dangerous proposition in the region where the roads do not take the needs of all roadway users into consideration. Communities that have suffered from underinvestment are undeniably more vulnerable to fatalities and injuries when navigating transportation options.

Vulnerable communities in this region have a higher proportion of households without access to a vehicle. Communities with less access to vehicles face serious transportation barriers in terms of how many jobs and services they can reach within a reasonable time. People without access to cars in this region must rely on other modes of travel like walking, biking, and public transportation. People reliant on these modes of travel are far more exposed to traffic violence as they must cross large busy streets where transit and commercial activity is located without the protection of being inside an automobile. Vulnerable communities must often contend with substandard infrastructure, like missing sidewalks or trails, poor lighting, or less frequent public transit service, to name a few.

Nationally and locally there has been an inequitable distribution of pedestrian and bicycle infrastructure along with a higher proportion of high-speed roads in more vulnerable communities. This has resulted in increased traffic violence in these places.

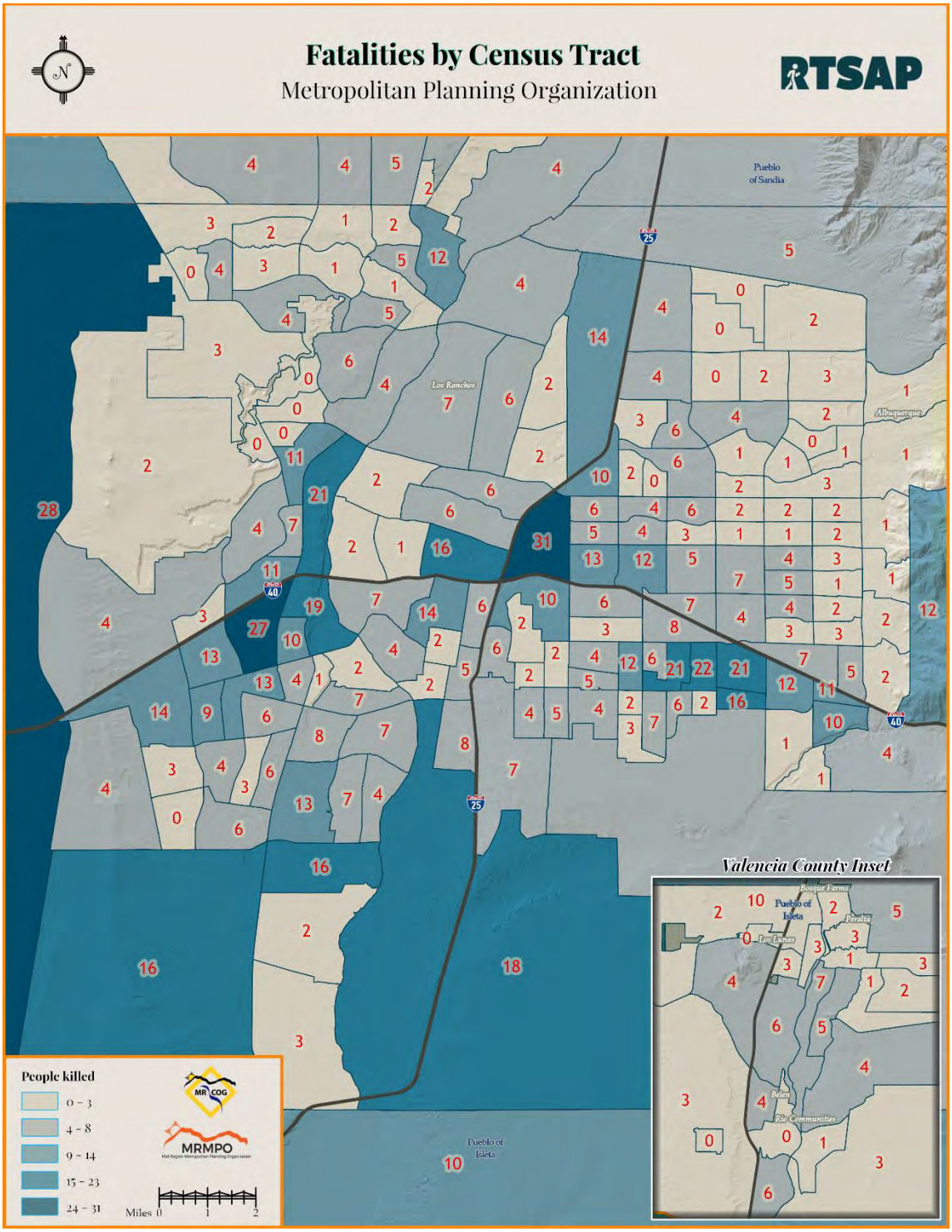
MRMPO VULNERABILITY INDEX (MVI)

To evaluate the locations of the more vulnerable communities in the region and conduct analyses to evaluate safety concerns, MRMPO has developed the MVI to support transportation equity. Transportation equity means the intentional development of transportation options that do not limit users by their race, sex, age, gender, socio-economic status, or other demographic factors.

Demographic indicators included in the MVI are as follows:

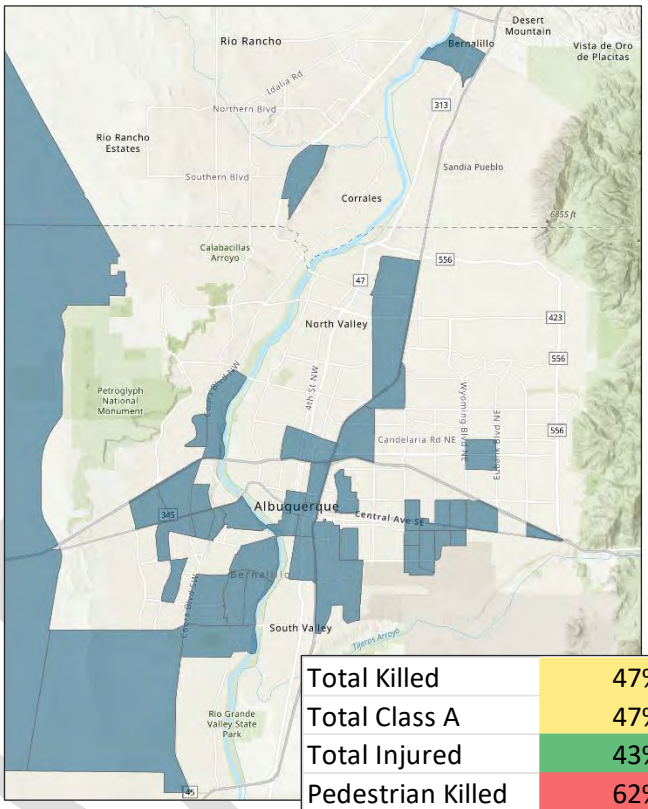
- Socioeconomic Status
  - Below 150% Poverty
  - Unemployed
  - Housing Cost Burden
  - No High School Diploma
  - No Health Insurance
- Household Characteristics
  - Aged 65 & Older
  - Aged 17 & Younger
  - Civilian with a Disability
  - Single-Parent Households
  - English Language Proficiency
- Racial & Ethnic Minority Status
  - Hispanic or Latino (of any race); Black and African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Two or More Races; Other Races
- Housing Type & Transportation
  - Multi-Unit Structures
  - Mobile Homes
  - Crowding
  - No Vehicle
  - Group Quarters

Based on the Social Vulnerability Index of the Centers for Disease Control and Prevention, the MRMPO Vulnerability Index (MVI) score provides an indicator of the relative ability of communities to survive and thrive when confronted by external stresses on human health. The MRMPO Vulnerability Index includes Census tract-level demographic information from the 2016-2020 American Community Survey (ACS), which is used to estimate the relative vulnerability of resident populations. Percent ranked variables are combined into one percentile value representing a comparative measure of resident population vulnerability relative to other tracts in the regional or metropolitan area. This map shows these census tracts with the number of total fatalities in each.



REGIONAL EQUITY AND CRASH ANALYSES

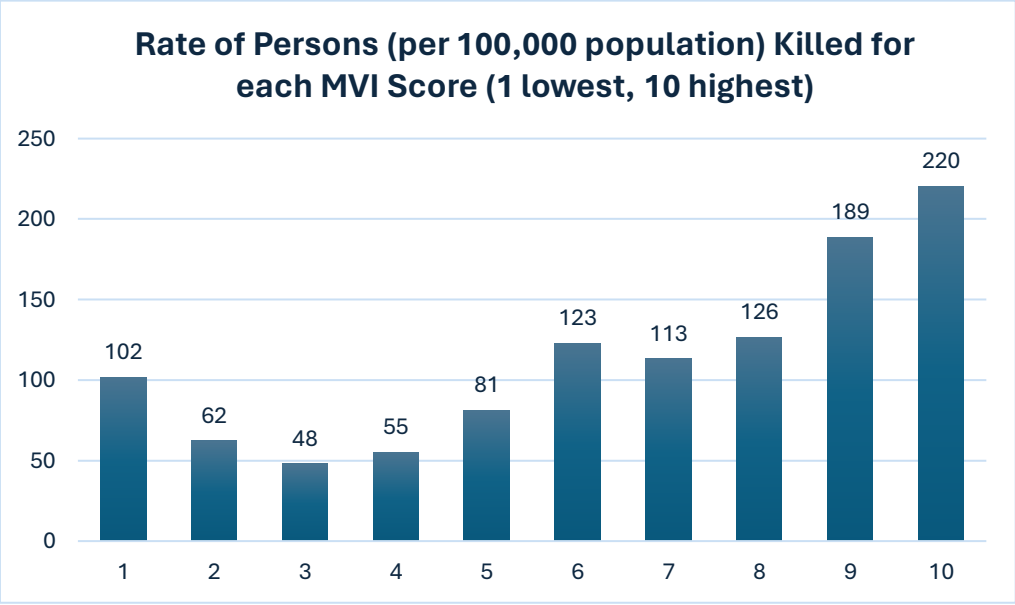
MRMPO conducted an analysis for the region using 2017 to 2021 crash data and MVI census tracts to evaluate the relationship of roadway fatalities and injuries in more vulnerable communities. MRMPO found that as the MVI rank increases, the number of fatal and injury crashes per 100,000 population also increases. An MVI score of 1 is the lowest and 10 is the highest in terms of representing the most vulnerable areas based on the demographic indicators described earlier in this chapter.



Total Killed	47%
Total Class A	47%
Total Injured	43%
Pedestrian Killed	62%
Pedestrian Injured	56%
Bicyclist Killed	46%
Bicyclist Injured	44%

In the MRCOG region, 20 percent of the population live in tracts with an MVI score of 8 or higher, and these areas include 62 percent of the pedestrian fatalities.

A few tracts are located outside the map shown, but most are represented here. The table shows a further breakdown of the fatalities and injuries for the tracts with an 8 or higher MVI score. This analysis shows the importance of focusing on what can be done in more vulnerable communities as the amount of people being killed and injured on the roadways is disproportionally higher than other areas in the region. In short, the MVI is a strong indicator of the need for roadway safety interventions.



HEALTHY HERE AND THE ACTIVE LIVING WORK GROUP

MRMPO worked with the Healthy Here Coalition and met with the Active Living Group to gain insight into the needs of some of the most vulnerable communities in the region. The Healthy Here Coalition has conducted many walking audits to identify safety issues in different communities in the metropolitan area. These audits were conducted in some of the more vulnerable communities in the region and provided Healthy Here with a good understanding of the safety conditions faced by these communities. The audits were intended to provide recommendations for improving public health and safety for people walking, biking, and taking transit.

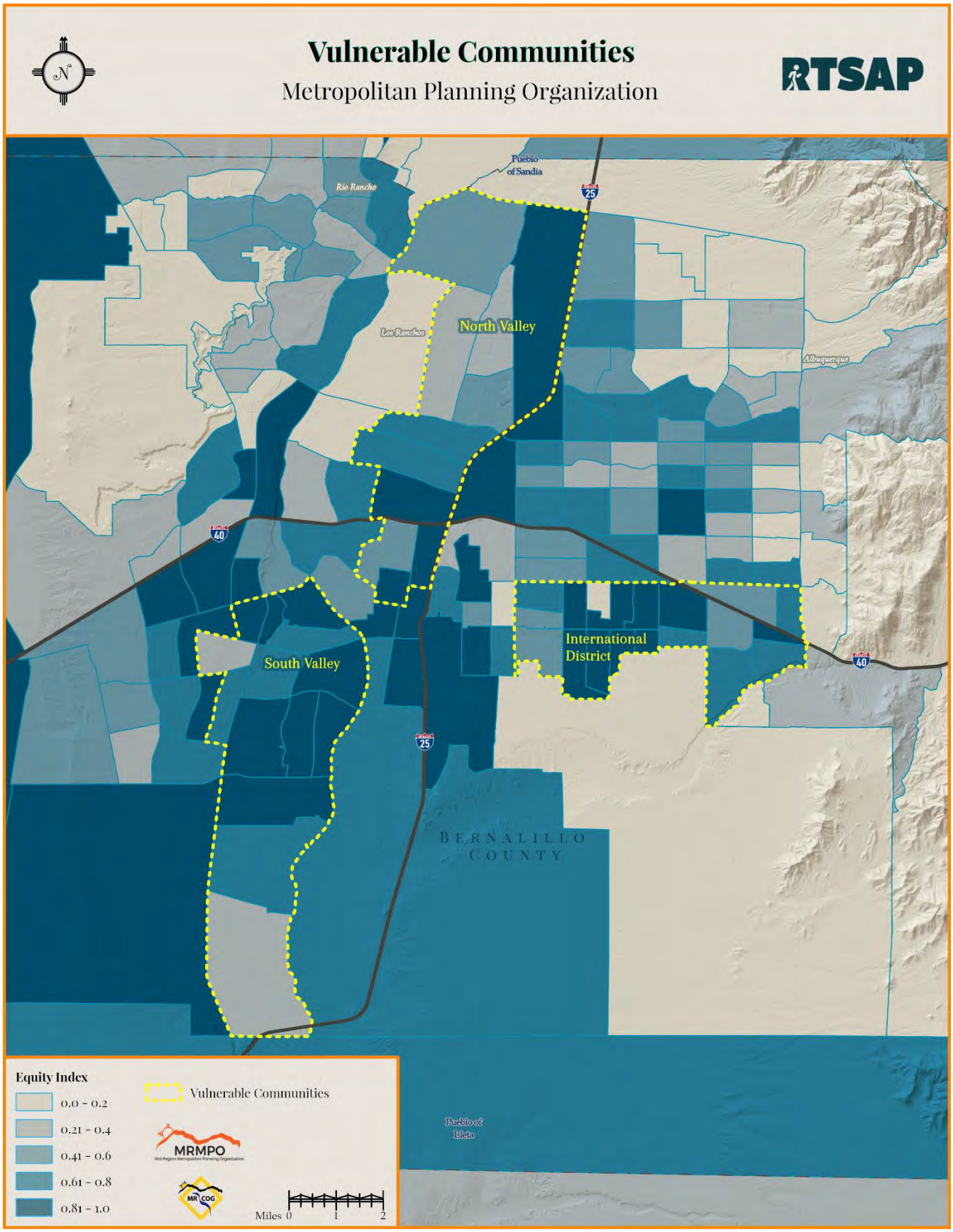
Each time MRMPO conducted a meeting with a focus group the question was asked "Why do you think there are so many roadway fatalities and injuries in our region?" Through meetings with the Active Living group and the results from their audits, MRMPO recorded and integrated their priorities and concerns. Many of the responses from this group were about unsafe and uncomfortable walking conditions and the difficulty in crossing the street because of safety concerns and the lack of crossings. There was prominent concern expressed regarding drivers speeding and the need to slow traffic down.

The Active Living group considers East Central a safety priority. The importance of addressing safety on Central is reflected in the public responses from the Metro Quest survey and from crash data for the region as well: East Central is one of the highest-ranking corridors on the High Fatal and Injury Network (HFIN).

The Healthy Here Coalition and the Active Living Groups is a community-based organization and partnership of residents and institutions engaged in the shared work of identifying and addressing the public health and racial disparities most impacting communities in Albuquerque. Healthy Here is committed to shared and transparent institutional analysis and strategic and community informed efforts to eliminate policies, practices, and procedures contributing to disparities. Healthy Here is a collective of organizations and other community partners funded through the CDC and administered by Presbyterian which serves as the umbrella organization.

Audits conducted by Healthy Here:

1. International District: Trumbull, La Mesa, and South San Pedro and San Mateo between Gibson and Zuni.
2. South Valley: 5-mile radius from First Choice.
3. North Valley: 5-mile radius from Los Griegos Community Center.
4. North Valley: 4 routes near Mountain Mahogany Charter school.
5. Westgate: Together 4 Brothers biking audits in neighborhoods.
6. Downtown: 5-mile radius from Encuentro on 4th St.

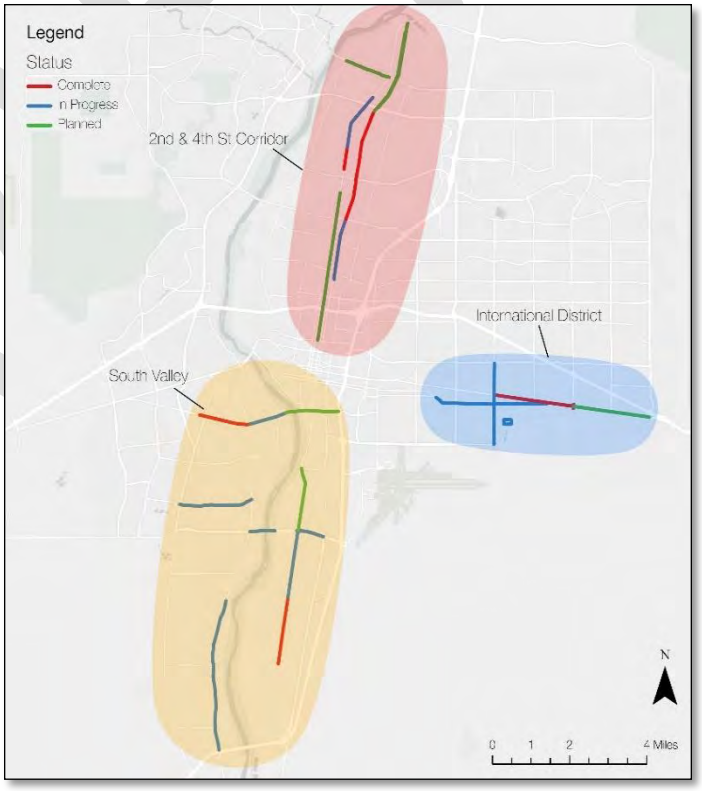

Vulnerable Communities
Metropolitan Planning Organization
RTSAP
Pueblo of Sandia
Rio Rancho
Los Ranchos
North Valley
Albuquerque
South Valley
International District
BERNALILLO COUNTY
Pueblo of Isleta
Equity Index
0.0 - 0.2
0.21 - 0.4
0.41 - 0.6
0.61 - 0.8
0.81 - 1.0
Vulnerable Communities
MRMPO
MR COG
Miles 0 1 2

Active Living Group Responses collected using JamBoard.

COMMUNITIES OF CONCERN

There are three main communities that Healthy Here focuses on in the metro area: the 2nd and 4th Street Corridors, the South Valley, and the International District.

As a part of this plan MRMPO developed an Area Profile for the International District that provides additional information on the most unsafe places based on crash data analysis and more detailed information about the locations of concern derived from public input received.



An important issue to highlight is the strained relationship between BIPOC communities and law enforcement. Traffic enforcement programs must have engagement with local advocates and community members in developing traffic enforcement programs to ensure they do not further exacerbate the already divisive situation.

In addition to conducting roadway safety assessments, Healthy Here has been tracking linear miles of pedestrian and bike improvements, sites connected by safe routes, and active transportation plans and policies.

HEALTHY HERE PRIORITIES

Based on their work in these communities and the audits they have conducted, Health Here's highest priorities are included in the following list. Their priorities align with the Strategy Toolbox in this plan and have been integrated into the Project and Program List that identifies items available for federal funding.

1. Continued road safety audit activities
2. Free bus passes
3. NACTO street design trainings
4. Complete Streets / Vision Zero workshops
5. Road Diet trainings
6. Continued operation of the CiQlovía event in the International District
7. Development of pop-up / demonstration projects with Together 4 Brothers (T4B)
8. Input into updates of bicycle and pedestrian plans, particularly in Bernalillo County
9. Street lighting that improves visibility for pedestrians
10. Shade structures including increased tree planting (particularly at bus stops)

Of special note are the following projects:

East Central has many conflict points along this portion of roadway with frequent driveways and turning movements that require better access management and infrastructure changes to make this roadway safer. However, East Central is also an ideal candidate for a quicker and less costly improvement of implementing a road diet because of the vehicle volumes and the amount of pedestrian and bicycling activity. As such, a simple restriping that narrows or reduces travel lanes and the addition of bike lanes, bus lanes, or on-street parking would be a great first step.

Lack of pedestrian scale lighting has historically been identified as a high concern in the International District and to address this concern MRMPO conducted analyses of pedestrian crash fatalities with respect to roadway light conditions finding that indeed a large portion occur in dark conditions. The Area Profile for the International District which contains more information on Central Avenue and the light conditions analyses are found in Chapter 2.

LET'S ENSURE EQUITY

Equity is an enormously important consideration for trying to understand or address traffic crashes in our region. Vulnerable communities are home to most of the region's pedestrian deaths. These communities have higher proportions of households without access to a car, yet the roadway infrastructure does not reflect the need for safer non-motorized infrastructure in these areas.

IMPROVING SAFETY

Roadway safety interventions must be targeted to address these areas first if we are to bring down the number of fatal crashes in our region. The next Chapter provides an extensive analysis of the crash data in the region. It examines the fatal and injury crashes for all modes of travel and provides insight into how we can reduce these types of crashes.

Chapter 2 REGIONAL CRASH ANALYSES

CRASH DATA OVERVIEW

From 2017 to 2021, 736 people were killed in traffic crashes in the region and 46,375 people were injured. Of those 46,375 injuries, 2,207 were serious or incapacitating injuries (called Class A). A particularly alarming statistic is that of the total number of fatal crashes in our region, 30 percent involve pedestrians and those numbers are not getting any better.

Year	Total Fatalities	Pedestrian Fatalities
2017	125	36
2018	142	44
2019	141	46
2020	144	35
2021	184	56
% Change '20 to '21	**28%**	**60%**

What is perplexing about trends over these 5 years of data is that the number of fatalities did not go down in 2020 despite a 23 percent reduction in the region's vehicle miles traveled (VMT).This reduction in VMT is due to the onset of the COVID 19 pandemic. In fact, the overall number of fatalities in the region increased slightly in 2020, and then increased the next year by another 28 percent. Pedestrian fatalities had a slight drop in 2020 before an unprecedented 60 percent surge in 2021.

Year	Fatal Crashes	AMPA VMT Annual (billions)	Fatality Rate per 100 Mil VMT
2015	72	7.49	0.96
2016	114	7.74	1.47
2017	110	7.83	1.41
2018	118	8.30	1.42
2019	127	8.62	1.47
2020	129	6.67	1.93
2021	171	7.86	2.18

THE IMPACT OF REDUCED TRAVEL

MRMPO tracks the fatal crash rate in the region from year to year. The fatal crash rate is calculated by dividing the number of fatalities in the AMPA by the sum of the vehicle miles travelled (VMT) in the same geography over the same period. The rate represents how many fatal crashes happened per 100 million vehicle miles traveled in the AMPA.

The rate stayed relatively flat from 2016 to 2019. Although 2020 saw a modest 2 percent increase in fatal crashes, when combined with the dramatic reduction in VMT, this translates to a 31 percent increase in the fatality rate per 100 million VMT. When this trend was first noticed, many transportation professionals hoped it was an anomaly caused by the pandemic and that the fatal crash rate would decrease as traffic levels returned to pre-pandemic levels. In 2021, the AMPA VMT increased by about 18 percent, but the number of fatalities increased by 32 percent, further exceeding the elevated 2020 levels.

Many jurisdictions across the nation have noted the same trend in fatal crashes during 2020 and 2021. It is still unclear what the cause of this phenomenon is but there are several theories. COVID may have created ideal conditions for risky driving behavior by taking a lot of traffic off the road. Some of the most dangerous corridors in the region have very low traffic volumes.

COMPARING CONGESTED CORRIDORS

MRMPO's Congestion Management Process (CMP) monitors traffic on the region's congested network (31 corridors identified by the CMP Committee as the key corridors for regional transportation in the region). The process of analyzing traffic data along these corridors includes a crash analysis and allows for ranking and comparing corridors.

East Central Avenue, for example, has a very high number of fatalities despite having very low volumes compared to other 6-lane arterials in the region. In contrast, our region's most congested corridor, Alameda Boulevard, has some of the lowest crash rates despite high volumes. Alameda, tends to have lower crashes than corridors that are far less congested like east Central Avenue.

These different outcomes suggest that traffic safety is much more complex than simply how much traffic uses a road. A comparison of Central Avenue east of Louisiana, and Alameda between Coors and I-25 provides an idea of what type of roadway characteristics can influence traffic safety.

Road	Miles	Location	Killed	Class A Injury	Injured	Pedestrian Killed	Pedestrian Injured	VMT 17-21 (millions)
Alameda Blvd.	4.1	Coors to I-25	7	10	355	0	5	204.3
Central Ave.	4.05	Louisiana to Tramway	36	73	965	17	110	164.5

Both sections in question are of similar length but have very different crash outcomes. Alameda Boulevard has more VMT despite being 4 lanes for most of the corridor. East Central, between Louisiana and Tramway is 6 lanes, yet hosted 24% less VMT between 2017 and 2021. The 4.05-mile length of east Central hosted 80% more fatalities and 86% more Class A injuries than the 4.1 mile stretch of Alameda. East Central is home to the highest concentration of pedestrian crashes in our region. There were 17 pedestrian fatalities on this stretch of Central between 2017 and 2021, and none on Alameda.

THE INFLUENCE OF ROADWAY CHARACTER

East Central and Alameda are two roads different in character in many ways. Alameda is designated as a Regional Principal Arterial (per MRMPO's Long Range Roadway System) meaning that Its purpose is to carry traffic over long distances. Central on the other hand is designated as a Community Principal Arterial, meaning that its purpose is to connect people with goods and services and is likely to be destination rich and host more pedestrian activity.

Alameda Boulevard

The land use that adjoins Central is rich in commercial activity (with a lot of direct access to Central via driveways) that generates many pedestrian and car trips. Alameda is a river crossing, and for much of its length, has very limited roadway access. There is some commercial activity on Alameda as you near I-25, but the roadway access is better managed than on east Central.

The difference between these corridors in crash outcomes sheds light on what types of roadways tend to be dangerous in the region – high speed, undercapacity, multi-lane, destination rich and often running through areas of persistent poverty. On the other hand, roadways that focus on moving high volumes of traffic efficiently while limiting access and conflict points, like interstates or river crossings, tend to have relatively lower crashes.

East Central

The fact that fatal crashes increased during the 2020 and 2021 despite a reduction in vehicle miles traveled is not so shocking when you consider the case of Central Avenue east of Louisiana, which has 6 lanes, yet most segments host 20,000 to 30,000 vehicles per day. This is low in comparison to our region's other 6 lane principal arterials like Montgomery or Coors Boulevard. Low traffic volumes on east Central may encourage people to speed and drive dangerously. Many transportation professionals believe the decrease in traffic nationwide during the early pandemic period led to more speeding and risk-taking behavior on roadways.

STREET OR ROAD? WHEN YOU DON'T HAVE A CLEAR PURPOSE

The concept of 'Stroads' highlights how overlooking the intended function or nature of a road can lead to compromised safety for its users. A Stroad is a term coined by Strong Towns (https://www.strongtowns.org/) that indicates a mixture of a street and a road. In Strong Town's telling, a Stroad tries to combine a road's ability to move large volumes of traffic quickly over long distances with a street's function of connecting people to goods and services.

Central Avenue east of Louisiana is an example of a Stroad in our region. It is a 6-lane road with a speed limit of 35 mph that both tries to move vehicles fast and grant them access to adjoining land uses via driveways. Alameda, on the other hand, is a road. Its function is not to grant access to adjoining land use, but to move large volumes across the region quickly and efficiently with few conflicts. Downtown Albuquerque provides us with examples of a street. The streets of downtown bounded by 8th Street to the west, 1st Street to the east, Coal to the south, and Lomas to the north, are low speed and prioritize connecting people with jobs, goods, and services. In this part of the city, there was only 1 fatality between 2017 and 2021 despite having 6.8 centerline miles, more than the sections of Central and Alameda discussed earlier.

Road	Centerline Miles	Location	Killed	Class A Injury	Injured	Ped Killed	Ped Injured	VMT 17-21 (millions)
Alameda Blvd.	4.1	Coors to I-25	7	10	355	0	5	204.3
Central Ave.	4.05	Louisiana to Tramway	36	73	965	20	138	164.5
Downtown Albuquerque	6.8	1st to 8th, Coal to Lomas	1	27	479	1	49	164.9

The experience of crashes in our region reflects the concept of the Stroad. We must decide the purpose of our infrastructure. We can move vehicles across the region relatively safely on roadway facilities like Alameda or our interstates that limit access to adjoining land uses and reduce the number of conflicts. Or, we can connect people traveling by all modes to jobs, goods, and services safely on low-speed streets. We cannot both move cars quickly and connect to adjoining land uses that generate a lot of pedestrian activity like in the case of east Central.

Much of our region's roadway infrastructure was built at a time when high speed, high access roads like east Central, San Mateo, Montgomery, and Menaul were the norm. Addressing safety on these roadways will be difficult, but it is possible. An effort must be made to make our region's Stroads either more like a road or more like a street. The sections of Stroads in the region with the most pedestrian fatalities should be targeted first, and efforts to calm traffic and bring down speeds in those sections should be the priority. Understanding the character of these roadways provides us with insight into the importance of adjacent land use when improving safety but also what sorts of elements are needed to make the road safer. Decreased traffic volumes nor speed limit signs will fix the problem.

ROADWAY ACCESS: A PRELIMINARY PREDICTIVE CRASH ANALYSIS

Related to roadway character is the amount and type of access along a roadway. University of New Mexico (UNM) researchers at the Center for Pedestrian and Bicyclist Safety have undertaken research on the impact of roadway access on traffic crashes. MRMPO staff has partnered with them on this effort, but it has not been peer reviewed or published at this point. Nevertheless, they feel confident about their initial findings.

After analyzing arterial roadways in Albuquerque, they found that roadway segments that were determined to be high speed and high access in character displayed higher crash means when compared to segments where access was determined to be well managed or when compared to segments with high access and low speed.

The UNM researchers also looked at which road features and facilities correlate with higher amounts of bicyclist and pedestrian crashes. They found that the number of traffic lanes had a positive relationship with crashes for vulnerable users. More information will be available from this study over the next year.

EVALUATING INTERSECTIONS AND CORRIDORS

INTERSECTIONS VERSUS NON-INTERSECTION CRASHES

In the region, 54 percent of all non-interstate crashes occurred at major intersections between 2017 and 2021. However, 65 percent of fatal crashes occurred at least 100 feet *away* from major intersections. Furthermore, 68 percent of pedestrian fatalities occurred at least 100 feet away from major intersections. Major intersections, where two roads that have the functional classification of collector or above cross each other, are key conflict points between two heavy flows of traffic. This explains why most of the region's crashes occur at these major conflict points.

Crash Location	Fatalities	% of All Fatalities	Injuries	% of All Injuries	Pedestrian Fatalities	% of All Pedestrian Fatalities	Total	% of Total Crashes
Intersection	207	35%	22,341	56%	57	32%	49,553	54%
Non-Intersection	381	65%	17,891	44%	122	68%	41,837	46%
TOTAL	588	100%	40,232	100%	179	100%	91,390	100%

The National Highway Transportation Safety Association (NHTSA) conducted a nationwide study of pedestrian fatalities and found a similar trend. NHTSA reported that 75 percent of pedestrian fatalities in 2021 occurred at locations that "were not intersections". The study also found that 77 percent of the pedestrian fatalities occurred in dark conditions. Furthermore, not only is the number of pedestrian fatalities increasing each year, but they are making up a larger portion of the nation's overall fatalities at 17 percent.

MRMPO endeavored to provide several reasons why fatal crashes tend to happen away from major intersections while most overall crashes happen at major intersections. For instance, major road intersections mostly have traffic lights to control traffic conflicts. Traffic often proceeds through intersections slower as they often start from a full stop. Additionally, drivers are aware that major intersections are a conflict point and slow down as they navigate through the intersection. As drivers move away from intersections, they often pick up speed and are not as alert to potential conflicts with other road users as they are at intersections.

PEDESTRIAN COMFORT AT INTERSECTIONS

Another reason fatal crashes primarily occur at non-intersections has to do with pedestrians' perceptions of safe crossings. Based on outreach for this plan, pedestrians in the region tend to prefer to cross mid-block, especially when there is a raised median present. Local transportation professionals have also noted this trend and believe pedestrians can be overwhelmed by the heavy traffic and seemingly chaotic turning movements at major intersections. Pedestrians do not seem to trust that motorists will yield to them at major intersections particularly when turning and elect to cross mid-block where they feel safer and more in control of their fate. Unfortunately, this is where drivers least expect pedestrians and pedestrians may not be able to accurately gauge a driver's speed which can lead to a collision.

ARTERIAL MULTILANE ROADWAYS

Multi-lane arterials allow cars to jockey and change lanes, and their view of potential conflicts with pedestrians can be blocked by other cars, whether they are moving or stopped, making multi-lane arterials more dangerous. With speeding already being an issue, these roadways are even more dangerous when there are multiple lanes to weave in and out of traffic.

Non-Intersection Crashes (Interstates not included)	Ped Killed	% of Total	Miles	% of Total	Pedestrians killed per mile
6 lane arterial	44	36%	85.2	3%	0.52
4 Lane Arterial	48	39%	219.4	8%	0.22
2 Lane Arterial	9	7%	178.4	7%	0.05
TOTAL	122	100%	2,613.10	100%	0.05

One hundred and twenty-two (122) of 179 of our region's non-interstate pedestrian crashes happened at non-major intersection locations. Of these, 122, 92 happened on 4 or 6 lane principal arterials. Forty-four (44) pedestrian fatalities occurred on 6-lane arterials while 48 occurred on 4-lane principal arterials. To make a fair comparison the centerline miles were also calculated. There are 2.5 times as many centerline roadway miles on 4-lane arterials. Thus, in terms of pedestrian fatalities per mile, 6-lane arterials are more than twice as dangerous as 4-lane arterials and roughly 10 times as dangerous as 2-lane arterials. A drawback of this analysis is that MRMPO does not collect robust pedestrian count data, so we cannot gauge pedestrian exposure by facility type as we can with vehicles.

Six (6) lane arterials are exceedingly dangerous for pedestrians in our region. Many of our region's 6-lane roadways serve as important transit corridors and host significant commercial activity that attract pedestrians. Crossing these roads is difficult for pedestrians as they are exposed to traffic for a long time. With more lanes, there is also the risk of a multiple threat crash.

MULTIPLE THREAT CRASHES

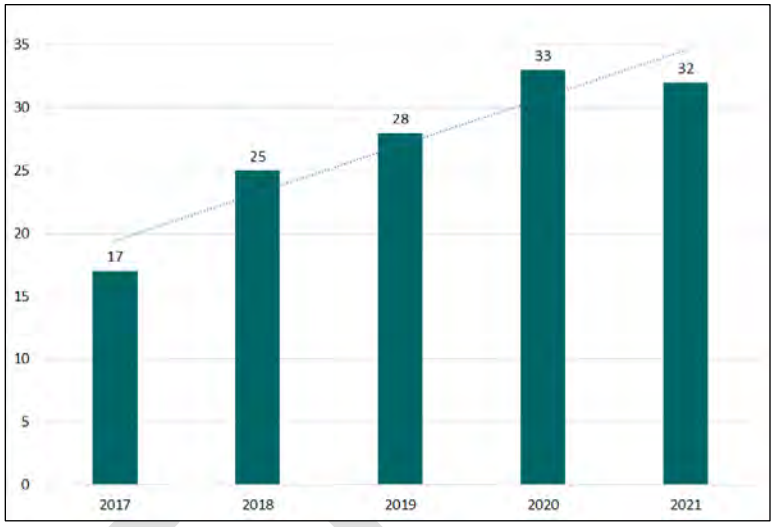
Brian Sroufe, P.E.

Multiple Threat Crashes occur on roadways with multiple lanes of traffic per direction. A multiple threat crash describes an instance where at least one vehicle yields to a pedestrian who begins to cross the street however a vehicle in the adjacent lane does not yield to the pedestrian and strikes them. The stopped car often blocks the pedestrian's vision of potential other cars approaching.

This situation occurred on Louisiana Boulevard with the tragic case of a 12-year-old Cleveland Middle School student. Eliza Justine Almunia was crossing just in front of her school when she was fatally struck by a car. One driver stopped to allow her to use the crosswalk when a driver in the adjacent lane failed to yield and struck her. Improvements have since been made to the mid-block crossing in question, including the installation of a pedestrian hybrid beacon.

RURAL ROADS AND SINGLE MOTOR VEHICLE CRASHES

There has been an increase in single motor vehicle fatal crashes in the region between 2017 and 2021. Single vehicle fatalities involve only one vehicle and do not involve other road users. Oftentimes these crashes involve a vehicle leaving the roadway and striking a fixed object or overturning. Single Vehicle fatalities nearly doubled between 2017 and 2020.



Single vehicle fatalities over 5 years.

Single vehicle crashes are more common in rural areas, such as Valencia and Torrance counties. Residents in rural areas drive longer distances to access goods and services than urban residents do. It's possible that rural residents suffer fatigue driving long distances, which increases the likelihood of a single vehicle crash.

These crashes may be due to an increase in speeding and reckless driving, distracted driving, or impaired driving. The top contributing factors (TCF) for single vehicle fatal and class A (incapacitating injury) crashes between 2017 and 2019 point to the type of risky behavior that often leads to these types of crashes. 32% of all fatal and class A single vehicle crashes were Alcohol Involved followed by excessive speed at 21% and Driver Inattention at 11%.

Top Contributing Factor for Single Vehicle Crashes	Killed + Class A	% of Total
Alcohol/Drug Involved	77	32%
Excessive Speed	52	21%
Driver Inattention	27	11%

SANDIA CREST ROAD

A good example of a road where single vehicle crashes occur more often is NM 536, the Crest Road, from Sandia Park to the Sandia Crest in Bernalillo County's east mountains. On the Crest Road, there were 115 total crashes reported from 2017 and 2021 between NM-14 and the Sandia Crest. Of those 115, 100 involved only 1 vehicle. There were 2 fatalities and 5 Class A injuries reported and all were single vehicle crashes. 38% of the single vehicle crashes along the Crest Road were attributed to Excessive Speed.

Crest Road is a curvy road that climbs the Sandia Mountains and is often driven by hobbyist drivers. Many drivers drive too fast and aggressively on the curvy road and lose control of their vehicles, often leaving the roadway and overturning or striking a fixed object. Single Vehicle Crashes are an indication of unsafe behavior like driving under the influence or excessive speed. The fact that these types of crashes are climbing in our region is troubling.

REGIONAL SITE VISITS

NM 6 IN LOS LUNAS

There were two site visits in Valencia County. One was with the Village of Los Lunas on NM 6 (Main Street). The second was with Valencia County on Meadowlake Road.

NM 6 is currently owned by NMDOT but it serves as the Village of Los Lunas' Main Street and hosts most of the commercial activity. NM 6 is the Village's only river crossing currently and is heavily trafficked. The road is unsafe for all modes and is particularly dangerous for pedestrians.

On the current HFIN, NM 6 has the highest concentration of pedestrian crashes outside of the City of Albuquerque. On the site visit, MRMPO and Village of Los Lunas staff members walked a particularly dangerous section of the corridor near Los Lentes Road and Carson Drive.

Sidewalks along NM 6 are narrow with no buffer from the heavy traffic. There are many access points via driveways to the businesses that line the road. The length between signalized crossings is significant, and the crossings themselves are intimidating with heavy turning movements on and off NM 6. There is a middle school on NM 6 and children were seen crossing the street at the stop light. The road needs to be made safer, especially since children frequently cross it.

Village of Los Lunas staff believe the construction of a new river crossing, Morris Road, presents an opportunity. With Morris Road, traffic will have an alternative to NM 6. For now, the Village staff want to investigate the feasibility of a road diet along NM 6. With traffic having a new option, the Village could redefine Main Street as the community center. This would allow Los Lunas to refocus its purpose on bringing people together rather than moving them through. The high number crashes of NM 6 could be mitigated by the calming effect of a road diet. The Village would also like to widen sidewalks along the corridor and install raised medians in areas with new business activity. Improving and adding signalized crossing points for pedestrians is also a high priority.

MEADOWLAKE ROAD

Meadowlake Road is a vital connection to the Meadow Lake community, and it is the only paved connection between Los Lunas and Meadow Lake. Unfortunately, the road has been experiencing more crashes since it was recently repaved according to Valencia County staff. The road has higher concentrations of crashes where the roadway curves. Currently, there are no streetlights at many of the curves. There also are no sidewalks along the entire route. Some minor activity centers would especially benefit from having sidewalks, like the stretch between Family Dollar and the Meadow Lake Community Center.

Meadowlake Road Safety Priorities are as follows:

1. School zone enhancements (overhead flashing lights) at Ann Parish elementary school
2. Street lights, especially at curves in the road, at the community center, and areas with known pedestrian activity.
3. Sidewalks, especially near areas with known pedestrian activity.
4. Roadway reconfiguration at intersection with High Mesa.

PUEBLO OF JEMEZ

MRMPO staff visited the Pueblo of Jemez to conduct a site visit on Mission Road. Mission Road is a constrained roadway that leads to the San Diego Riverside Charter School. The route walk was initiated at Mission Road's intersection with Eagle Wings. Many students use the road to walk between the charter school and the village, but because there is no sidewalk, pedestrians must walk in the roadway.

SIDEWALKS

The Pueblo would like to install sidewalks, or a sidewalk on one side of the road depending on the constraints that exist. The roadway passes above a culverted ditch that could make constructing a sidewalk above it more costly. A house on the north side of the road may restrict sidewalks to the south side only. However, Right-of-Way would likely need to be purchased from residents on the south side of the road to make building a sidewalk possible.

The project may be complicated, but in no means impossible, and should be researched further. If sidewalks prove to be impossible, more traffic calming elements could be added to this stretch of roadway to ensure that cars and pedestrians can share it safely.

UPTOWN ALBUQUERQUE RIDE

ABQ Ride, our region's largest transit provider is undertaking a major development project next to the Uptown Transit Center at Indiana Street NE and Uptown Boulevard NE. The Uptown Connect Project plans to redevelop the Uptown Transit Center and adjoining park-and-ride lot into a vibrant mixed-use development and transit plaza. The mixed-use redevelopment will bring over 400 new dwelling units to uptown, over 200 of them being affordable.

With 400 new dwelling units it is important to improve the walkability of the area. Uptown is one of the most destination rich neighborhoods in the region, with lots of jobs, goods, and services in a compact geographic area. ABQ Ride staff invited us to make a site visit to the area and assess the safety needs before the redevelopment.

CROSSING THE STREET

Uptown Albuquerque is very auto oriented and even local roads like Indiana are extremely wide to cross. Bulb outs are needed to make the crossing distance shorter for pedestrians at the locations surrounding the site. At the site's northeast corner, there is no marked crosswalk to cross Uptown Boulevard. Once the site is developed into housing, there will be increased desire to cross the street at this location. The team witnessed several people crossing at this location on our site visit. A median refuge would be helpful for crossing pedestrians as well.

ROAD DIET POTENTIAL

The team questioned whether both Indian School and Uptown Boulevard required 4 lanes and suggests the local agency explore whether a road diet would be appropriate on either street. One of the two streets could prioritize safe and comfortable conditions for walking and biking.

UPTOWN BOULEVARD AND LOUISIANA INTERSECTION

Where Uptown Boulevard meets Louisiana Boulevard there is no signalized intersection to allow for pedestrians to safely cross the major arterial. This will likely become a major desire line for pedestrians once the Uptown Connect project is complete and installing a formal crossing should be considered.

Louisiana is 8 lanes near the Uptown Connect project and is very intimidating to cross. Efforts to calm traffic on Louisiana Boulevard should be implemented through a road diet or perhaps automated speed enforcement. General streetscape enhancements all around the site are needed, like widening sidewalks, removing street furniture, and reducing crossing distances for pedestrians should be investigated.

AREA PROFILES

Unfortunately, staff were only able to visit a limited number of sites. Area Profiles provide a substitute for this and are additionally important because often the urban area drowns out the unique issues that some of the small urban, rural, and Tribal areas face. MRMPO conducted these assessments to highlight local issues that emerged from the crash data. This includes identifying intersections and corridors that might otherwise go unnoticed, as well as pinpointing types of crashes that result in more fatalities. The following Area Profiles are not finalized and there are more in process. The three that are provided here are for the more rural counties of Valencia, Torrance, and Sandoval. The intent is to provide additional Area Profile for Rio Rancho, the International District, and the Town of Edgewood but more may be added as we receive feedback from this draft. The City of Albuquerque and Bernalillo County have done or are in process of doing more in-depth crash evaluations as they have more capacity to do so than some of the other agencies.

Valencia County Area Profile

Fatal by Mode and Class (2017 to 2021)

The charts show fatalities by mode and compares the type (Class) of fatality and serious incapacitating injury (Class A) to the region. There were 48 fatal crashes and 50 fatalities in Valencia County. Auto only fatalities total 33, motorcycle fatalities total 12, and pedestrian fatalities total 5. There are not any bicycle fatalities.

Fatalities and serious incapacitating (Class A) injuries resulting from rollovers are more common in Valencia County than the Region. Only 8% in the Region compared to 19.7% in Valencia County. This may be because of long rural roadways that are easy to speed on. Lane departure measures and speed limits or traffic calming to reduce speeds is extremely important in this area.

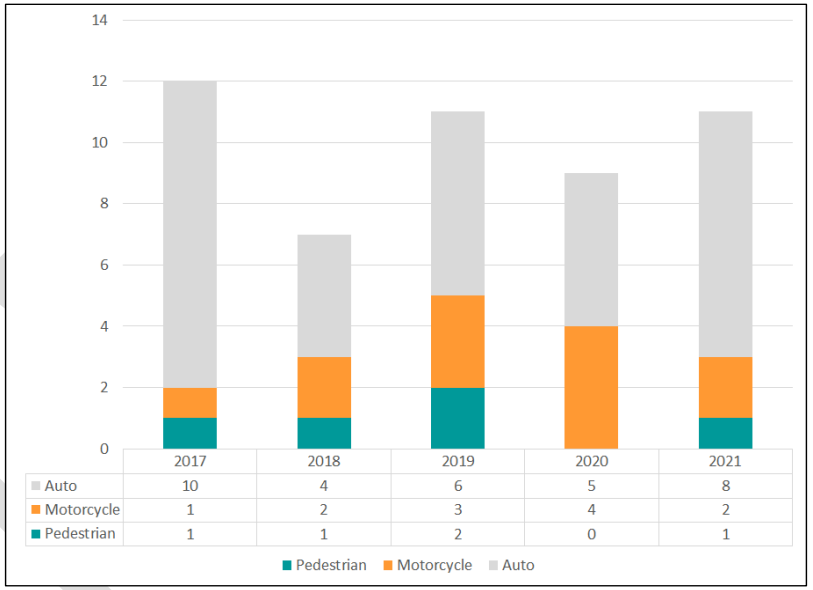
Pedestrian Fatalities 2022

Unexpectedly the number of pedestrian fatalities is increasing. In 2022, there were 6 pedestrian fatalities in Valencia County. This is more in one year than the total in the last 5 years. The following statistics are vital to consider:

1) All of them are in the Small Urban Area.
2) All of them took place in dark conditions.
3) All of them did not take place at intersections.
4) Two are alcohol or drug related.
5) Four are along state highways NM 47, NM 6, and NM 314.
6) Two are on major roadways (minor arterial and minor collector).

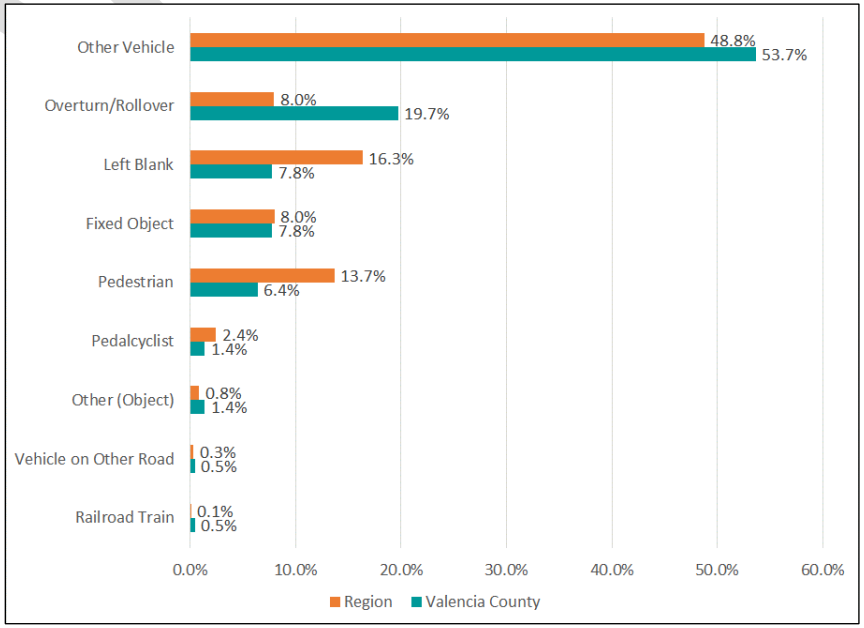
Rollovers by Time of Day

The rollover crashes that result in fatalities and Class A injuries mostly take place at 5am (12%) and in the evening from 7pm to 11pm (42%). They are generally not located along the HFIN network but are mid-roadway. Alcohol involvement is indicated in 5 of the 14 fatal and Class A rollover crashes which is like the impact that alcohol involvement has on the Region.



	2017	2018	2019	2020	2021
Auto	10	4	6	5	8
Motorcycle	1	2	3	4	2
Pedestrian	1	1	2	0	1

Fatalities by Mode



Fatalities and Class A Injuries by Class (Type) compared to the Region

Top Priority Corridors and Intersections

These corridors and intersections are selected from the HFIN segments and intersections that are above the mean for this area. The analysis evaluates total people killed and injured per mile for the roadway segments, and total fatal and injury crashes divided by the approach volume for the intersections.

Los Lunas Corridors

Corridor	Location	Killed	Injured	Speed	Lanes
N.M. 263	WEST OF MEADOW LAKE ROAD - EAST OF N.M. 47 (NORTH)	1	155	45	2
N.M. 6	EAST OF LOS LENTES STREET - WEST OF CARSON DRIVE	1	100	35	4
N.M. 47	N.E. OF N.M. 6 - S.W. OF VALENCIA ROAD	0	87	40	4
N.M. 6	N.E. OF N.M. 263 - S.W. OF N.M. 47	0	85	40	4
N.M. 6	EAST OF GRANT BLVD. - WEST OF LOS CERRITOS	0	81	40	4

Belen Corridors

Corridor	Location	Killed	Injured	Speed	Lanes
N.M. 47	N.W. OF N.M. 304 - SOUTH OF N.M. 309	0	38	40	4
N.M. 309/RIENKEN AVE.	RIO GRANDE BRIDGE - WEST OF N.M. 47	0	35	40	2
N.M. 309/RIENKEN AVE.	EAST OF MAIN ST. - WEST OF FOURTH ST.	0	34	35	4
MANZANO EXPRESSWAY	EAST OF N.M. 47 - WEST OF HILLANDALE AVENUE	0	31	40	2
MAIN ST. (FAP LOOP)	NORTH OF BECKER AVENUE - SOUTH OF REINKEN (N.M. 309)	0	25	45	4

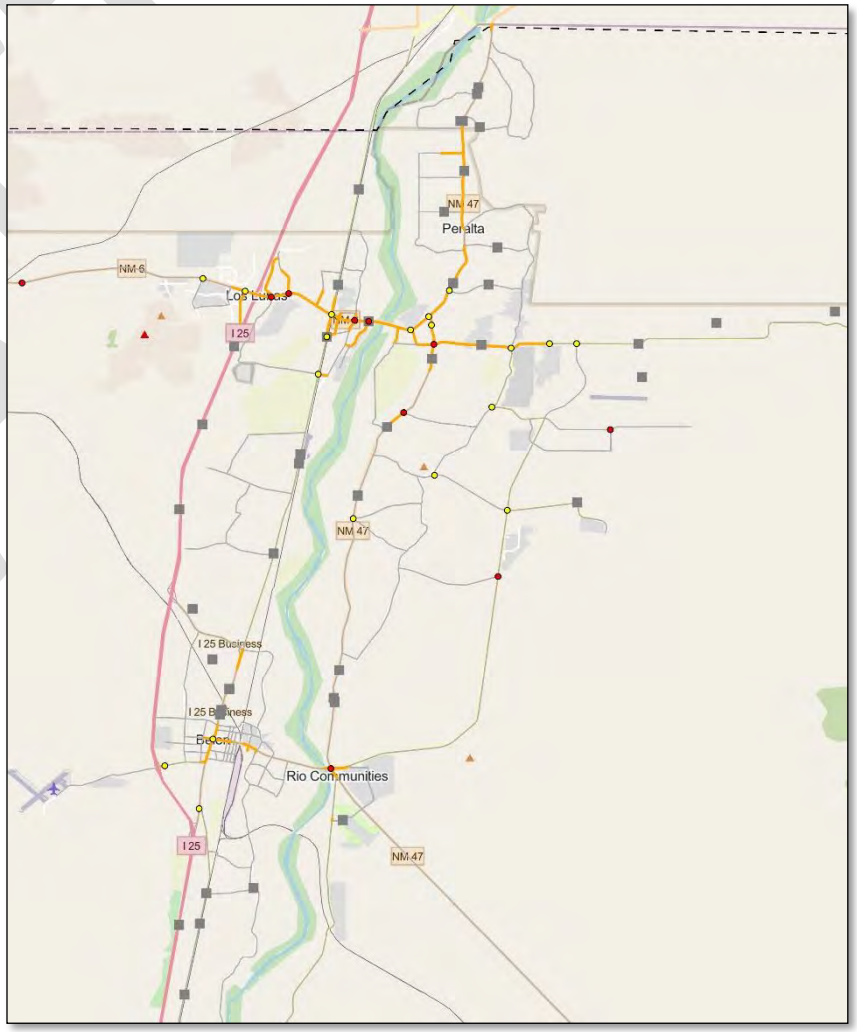
Intersections

Street A	Street B	Total Crashes	Kill/Inj Crashes	Killed	Injured	Total Rate	Severe Rate
RIO DEL ORO LOOP	MANZANO EXPRESSWAY	18	7	0	15	3.43	1.34
TR22	CHICAL RD.	1	1	0	1	1.04	1.04
LONESTAR	HUNING RANCH LOOP	2	2	0	3	1.00	1.00
BACA AVE	THIRD STREET	1	1	0	1	0.85	0.85
N.M. 6	LOS CERRITOS DR.	90	40	0	60	1.82	0.81
N.M. 263	N.M. 47	96	36	0	47	2.18	0.80
EL CERRO MISSION	VAN CAMP BLVD	11	5	0	8	1.65	0.75
N.M. 263	N.M. 47	47	14	0	22	2.53	0.74
N.M. 6	CARSON DR.	78	32	1	43	1.70	0.70
N.M. 6	CAMELOT/EMILIO LOPEZ	114	38	0	51	2.06	0.69
N.M. 6 (MAIN)	LOS LENTES RD.	78	35	0	48	1.53	0.69
N.M. 309	N.M. 47	68	23	0	32	1.98	0.67
LOS LENTES RD	MORRIS RD	4	3	0	4	0.87	0.65
N.M. 6	N.M. 47	83	29	0	43	1.83	0.64
COURTHOUSE RD.	N.M. 314	27	14	1	17	1.17	0.60

High Priority Map

The map shows the High Fatal and Injury Network (HFIN) corridors and intersections that are above mean for the County. **Intersections in yellow are 1x above mean and in red are 2x above mean*. Gray squares are fatal crashes.** The distribution of fatal crashes shows that they are mostly NOT along the HFIN.

*Roadway segment mean is 41.5. Intersection mean is .32 (Severe Rate).



Top Contributing Factors (TCF)

TCF data is not available for 2020 and 2021 but there is a good sample of three years of data. It is important to note that the Class A injuries (serious incapacitating injuries) are also included in the list of overall injuries.

Alcohol Involved, like the region, is ranked highest for number of people killed. The additional contributing factors for fatalities and serious injuries primarily center around dangerous driving like excessive speed and failure to yield right of way. For injury crashes following too closely and improper driving also play a role.

	VALENCIA				REGION			
Top Contributing Factor	Fatal+ClassA	% of total	Injured	% of total	Fatal+ClassA	% of total	Injured	% of total
Alcohol Drug Involved	38	26%	149	9%	441	23%	1954	7%
Failed to Yield Right of Way	24	16%	335	20%	271	14%	5828	19%
Driver Inattention	22	15%	293	17%	208	11%	6927	23%
Excessive Speed	20	14%	222	13%	215	11%	2626	9%
None Identified	10	7%	118	7%	85	4%	1190	4%
Drove Left Of Center	5	3%	44	3%	45	2%	253	1%
Following Too Closely	5	3%	182	11%	92	5%	3251	11%
Improper Driving	5	3%	147	9%	110	6%	1980	7%
Pedestrian Error	5	3%	6	0%	95	5%	304	1%
Disregard Traffic Signal	4	3%	36	2%	165	9%	3034	10%
Mechanical or Road Defect	3	2%	45	3%	30	2%	569	2%
Other	3	2%	52	3%	54	3%	594	2%
Avoid Contact	1	1%	43	3%	45	2%	807	3%
Passed Stop Sign	1	1%	28	2%	29	2%	553	2%
Bicyclist Error	0	0%	1	0%	5	0%	59	0%
Traffic Control Not Functioning	0	0%	1	0%	0	0%	16	0%

Public Input from Mapping Exercise

Public input from a map exercise consisted of 27 responses. Most comments are about vehicular congestion, walking, or transit and are located along NM 6 and NM 314. Most people are doing errands or going to a family or friend's place, with the next most common destination is school. Driving / motorcycling comments are about traffic congestion, long stop light delays (NM 6), and dangerous drivers. Pedestrians' and bicyclists' comments include crosswalks not being present, vehicles not stopping for pedestrians crossing, and bikes not having enough separation from vehicles. Transit comments are about wanting the train to run more often and not having a nearby parking area.

Based on high crash locations and local agency interest, MRMPO and representatives from this area completed some site visits to further investigate what could be contributing to the high number of incidents. The following information provides some potential recommendations.

Site Visit: Meadow Lake Drive

Meadowlake is about 8.5 miles in length. There is a community center along the road with a Head Start program, and there is a lot of pedestrian activity when the church along the road hosts events. Bus stops are also present. There is speeding along the road and no lighting or sidewalks. Drainage issues also exist. Challenges include State land on the south side of the road and milling coming out. Top improvements identified include:

1) School zone enhancements (with overhead flashing lights).
2) Streetlights especially at curves and the community center and areas with more pedestrian activity.
3) Sidewalks, especially near areas with more pedestrian activity or generators.
4) Reconfiguration of High Mesa intersection.

Site Visit: NM 6 in Los Lunas

NM 6 is a highly trafficked road. Morris Road is being reconstructed and will have a bike path and hopefully take some cars off the road. Morris Road will take about 3.5 years if they stay on schedule, and then Los Lunas would like to focus on NM 6.

A Road Diet is one idea for NM 6 because there is not much ROW to add on NM 6. The land use is diverse, and to improve safety the street needs wider sidewalks and traffic calming. There is a middle school with students crossing NM 6 and one new HAWK signal. Los Lunas hopes to put in more. Some challenges include that the ROW belongs to NMDOT. When NMDOT re-paved NM 6 a few years back, they took out the bike lane and made the travel lanes 12'.

Torrance County Area Profile

Fatal by Mode and Class (2017 to 2021)

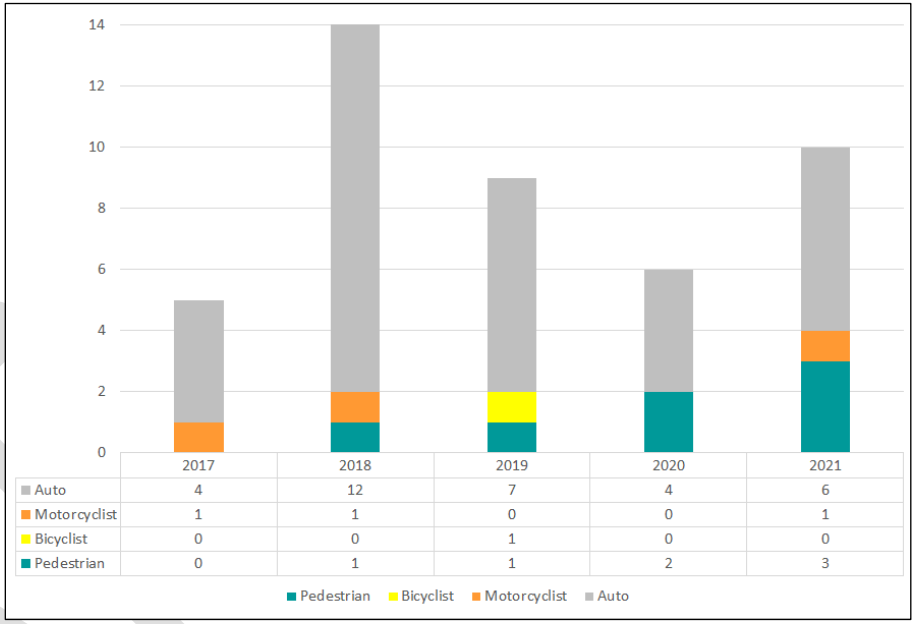
Torrance County is small in population with only 15,045 people as of the 2020 census. There were 44 fatalities in Torrance County (17 of those were on I-40 and 3 of the pedestrian fatalities were also on I-40). Auto only fatalities total 33, motorcycle fatalities total 3, and pedestrian fatalities total 7. There was 1 bicycle fatality. Of the 7 pedestrian fatalities, 3 were on I-40, and 6 were in dark conditions. West of Mountain Air is the location of the fatal bicyclist crash.

Fatalities and serious incapacitating (Class A) injuries resulting from Rollover crashes are more common in Torrance County with 29.2% compared to 8% in the region. Unfortunately, quite a few attributes were left blank. Most of the rollovers take place during the day with higher numbers during afternoon rush hour traffic. Alcohol involvement plays a role but is not higher than the regional impact.

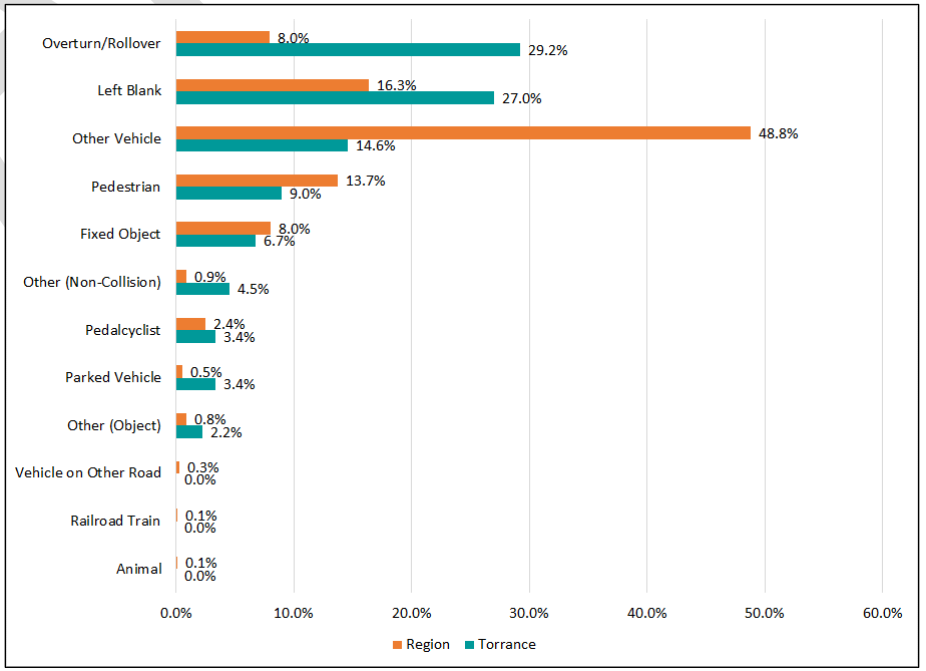
Local Concerns

There were no map-markers from the survey provided by MRMPO but there were a few comments about this area. One concern was that crashes on the I-40 and NM 285 are within the jurisdiction of Torranc County EMS/Fire services which is a large strain on their resources. The size of the county makes response times long. Fire departments are volunteer and have a very small EMS staff. There is also little to no law enforcement on I-40 near Moriarty. One recommendation was to build a station in Clines Corners or develop an MOA with Guadalupe County for response support.

The following charts show fatalities by mode and compares the type (Class) of fatality and serious incapacitating injury (Class A) to the region.



	2017	2018	2019	2020	2021
Auto	4	12	7	4	6
Motorcyclist	1	1	0	0	1
Bicyclist	0	0	1	0	0
Pedestrian	0	1	1	2	3



Top Priority Intersections

Even thought there are only 18 intersections with crash rates in the county, the top 10 are shown here do give an idea of the severe rate and the total number killed and injured at these intersections.

Street A	Street B	Killed + Injured	Severe Crashes	Severe Rate
MARTINEZ RD	LEXCO RD	9	7	1.72
PASEO PONIENTE	MARTINEZ RD	4	2	0.64
ROUTE 66	LEXCO	10	5	0.58
NM 55	RILEY RD	1	1	0.52
US 54	NM 3	1	1	0.35
ROUTE 66	HOWARD CAVASO BLVD	13	9	0.34
MARTINEZ RD	WINDMILL RD	1	1	0.26
HERITAGE LN	HIGHWAY 41	3	2	0.24
US 60	NM 55	1	1	0.20
NM 3	US 60	3	1	0.17

Top Priority Corridros

Route	Location	ADT	Posted Speed	Lanes	Killed + Injured
EDGEWOOD 7	NORTH OF MARTINEZ RD. - SOUTH OF N.M. 333	3433	30	2	18
L34 (ROUTE 66)	EAST OF N.M. 333 - WEST OF N.M. 41	8557	40	2	27
L34 (ROUTE 66)	EAST OF N.M. 41 - WEST OF PASEO PONIETE	4128	40	4	14
N.M. 333	SANTA FE /TORRANCE C.L. - WEST OF LEXCO	4169	55	2	15
N.M. 333	SOUTHEAST OF N.M. 344 - SANTA FE/TORRANCE C.L.	8083	55	2	35
N.M. 41	NORTH OF L34 (ROUTE 66 HISTORIC - SOUTH OF I-40 SOUTH RAMPS	7863	40	2	15
N.M. 41	NORTH OF N.M. 55 - SOUTH OF ALAN AYERS	2451	35	2	6
N.M. 41	NORTH OF MCNABB - SOUTH OF L34 (ROUTE 66)	8190	55	2	14
U.S. 285	NORTH OF U.S. 60 AT ENCINO - SOUTH OF I-40 SOUTH RAMPS (PC)	3094	45	4	31
U.S. 60	1.0 MILES EAST OF N.M. 41 - WEST OF N.M. 42 AT WILLARD	887	35	2	5

The large amount of rollovers on some of these corridors may benefit from more lane departure treatments or other countermeasures that would reduce speeding and innattentive driving. Lane departure measures or design to reduce speeds is extremely important along these corridors.

Main Streets

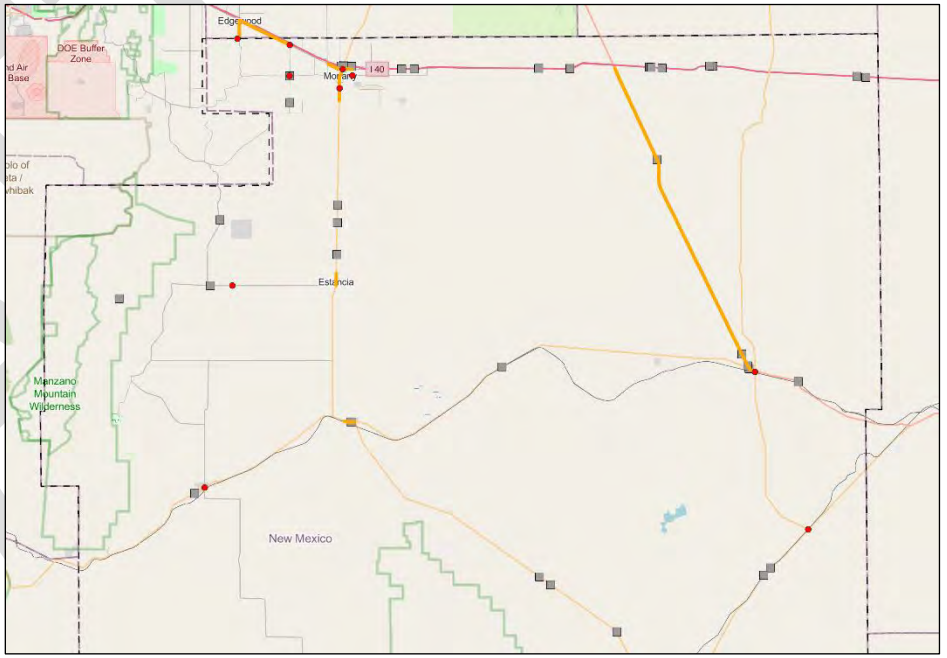
It is recommended that the small towns in Torrance County consider developing plans for improving their Main Streets and ask for funds from New Mexico Main Street.

https://www.nmmainstreet.org/

High Priority Map

The map shows the High Priority corridors and intersections. **Intersections are red and Corridors are orange. Gray squares are fatal crashes.** The distribution of fatal crashes shows that these crashes are in between local towns along long rural roadways.

Moriarty is an exception where there is a higher number of fatal and serious injury crashes at intersections and along their Main Street.



Top Contributing Factor (TCF)

The TCF data is limited to three years but still provides some insight into why some of these crashes are occurring. Surprisingly Alcohol/Drug involved crashes (16%) is not the highest TCF rather Inattentive Driving is. Additional high ranked factors are Excessive Speed (14%) and Avoid Contact (10%). It is not clear if this is with other vehicles or animals.

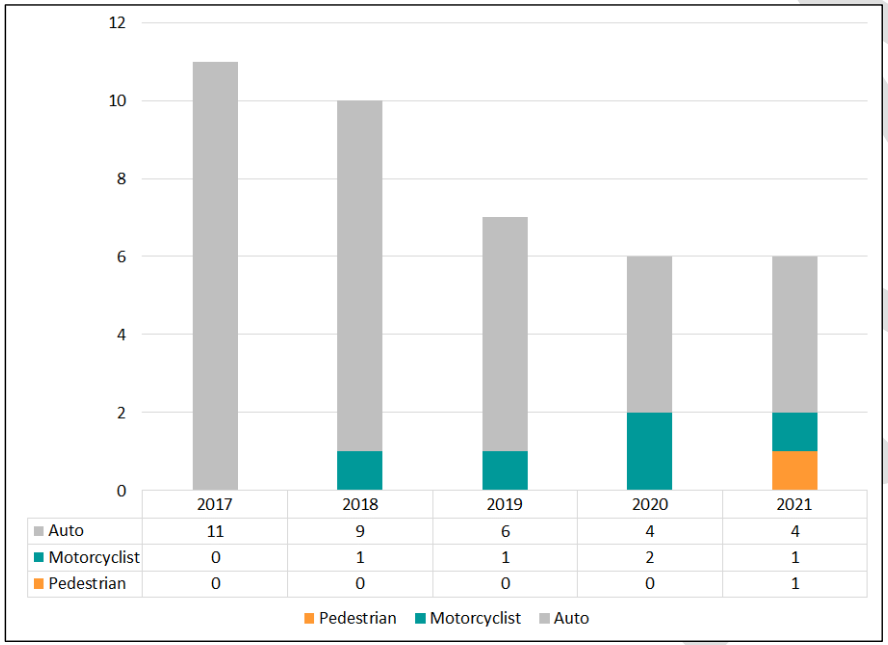
TCFComb	Region Fatal + Class A	% of Total	Torrance Fatal + Class A	% of total
Driver Inattention	208	11%	11	22%
Alcohol Drug Involved	441	23%	8	16%
Excessive Speed	215	11%	7	14%
Avoid Contact	45	2%	5	10%
None Identified	85	4%	5	10%
Improper Driving	110	6%	3	6%
Mechanical or Road Defect	30	2%	3	6%
Other	54	3%	3	6%
Pedestrian Error	95	5%	3	6%
Failed to Yield Right of Way	271	14%	2	4%
Bicyclist Error	5	0%	0	0%
Disregard Traffic Signal	165	9%	0	0%
Drove Left Of Center	45	2%	0	0%
Following Too Closely	92	5%	0	0%
Passed Stop Sign	29	2%	0	0%
TOTAL	1890	100%	50	100%

Sandoval County Area Profile

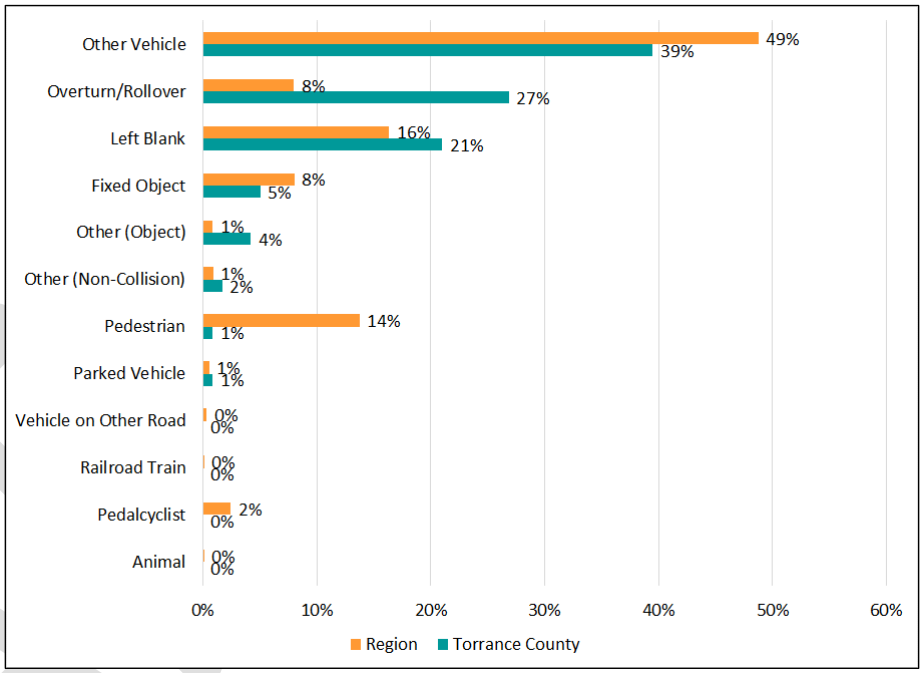
Fatal by Mode and Class (2017 to 2021)

These statistics are for Sandoval County outside of Rio Rancho. There were 40 fatalities in Sandoval County. Auto-only fatalities total 34, motorcycle fatalities total 5, and pedestrian fatalities total 1. There were not any bicycle fatalities identified.

Fatalities and serious incapacitating (Class A) injuries resulting from Rollover crashes are more common in Sandoval County similar to the other rural areas in the region with 27% compared to 8% in the region. Eleven (11) of the Rollover crashes were off the major roadway network. This is a unique finding for the region for locations of rollovers. Most of the rollovers take place at 6am and 2pm during the day. Unfortunately, quite a few attributes were left blank. Eventhough there are less Other Vehicle crashes than the region, there are more Other Vehicle crashes in Sandoval than Torrance or Valencia.



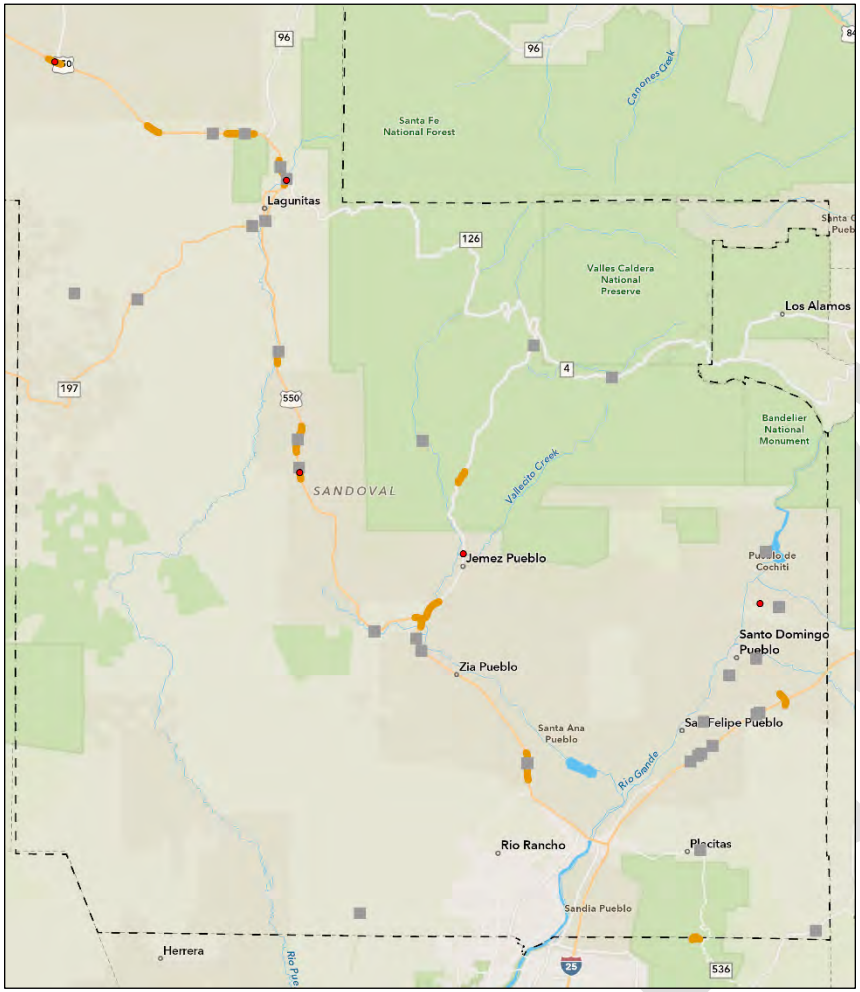
Fatalities by Mode



Fatal and Class A by Class comparing the Region and Torrance

High Priority Map

Intersections are red and Corridors are orange. Gray squares are fatal crashes. The distribution of fatal crashes shows that these crashes are in between local towns along long rural roadways.



Top Intersections and Corridors

Most of the segments are along US 550 for the top corridors. These sections are all 1 mile in length. These segments were used because of the extensive length of many of the roadways in Sandoval County. Each segment is mapped but beginning and end points need to be identified still. The 5 intersections identified as high priority.

INTERSECTIONS

Street A	Street B	Killed + Injured	Approach Volume	Severe Rate
HIGHWAY 4	HIGHWAY 290	3	3447	0.61
NM 22	CALLE ESCUELA VIEJA RD	1	1898	0.30
US 550	NM 126	3	7922	0.20
US 550	NM 279	1	10893	0.25
US 550	NM 537	1	6436	0.09

CORRIDORS

Route	Killed	Class A	Killed + Injured
N.M. 22	0	0	8
N.M. 4	0	1	6
N.M. 4	0	0	6
N.M. 4	0	1	6
N.M. 536	2	2	16
U.S. 550	5	5	19
U.S. 550	2	0	15
U.S. 550	0	0	11
U.S. 550	1	4	9
U.S. 550	1	5	8
U.S. 550	0	0	8
U.S. 550	0	1	7
U.S. 550	1	3	7
U.S. 550	0	1	7
U.S. 550	0	1	7
U.S. 550	0	0	6
U.S. 550	1	2	6
U.S. 550	0	0	6

Top Contributing Factor (TFC)

Top Contributing Factor for Other Vehicle are Alcohol Involved (29%), Excessive Speed (19%), and Drove Left of Center (19%). Drove Left of Center is not as common in the region but it is not clear why they were indicated as such. Not all years have TCF identified so the sample is smaller. Below are the top contributing factors for all of the fatal and Class A crashes compared to the region. The data does seem to indicate that excessive speed along with alcohol involvement is a high concern in this area resulting in both rollovers and hitting other vehicle mid-way along long stretches of roadway.

	Sandoval		REGION	
TCFComb	Fatal + Class A	% of Total	Fatal + Class A	% of Total
Alcohol Drug Involved	25	35%	441	23%
Excessive Speed	17	24%	215	11%
Drove Left Of Center	8	11%	45	2%
Other	7	10%	54	3%
Driver Inattention	4	6%	208	11%
Improper Driving	4	6%	110	6%
Avoid Contact	2	3%	45	2%
Following Too Closely	2	3%	92	5%
None Identified	2	3%	85	4%
Mechanical or Road Defect	1	1%	30	2%
Bicyclist Error	0	0%	5	0%
Disregard Traffic Signal	0	0%	165	9%
Failed to Yield Right of Way	0	0%	271	14%
Passed Stop Sign	0	0%	29	2%
Pedestrian Error	0	0%	95	5%
Traffic Control Not Functioning	0	0%	0	0%
TOTAL	72	100%	1890	100%

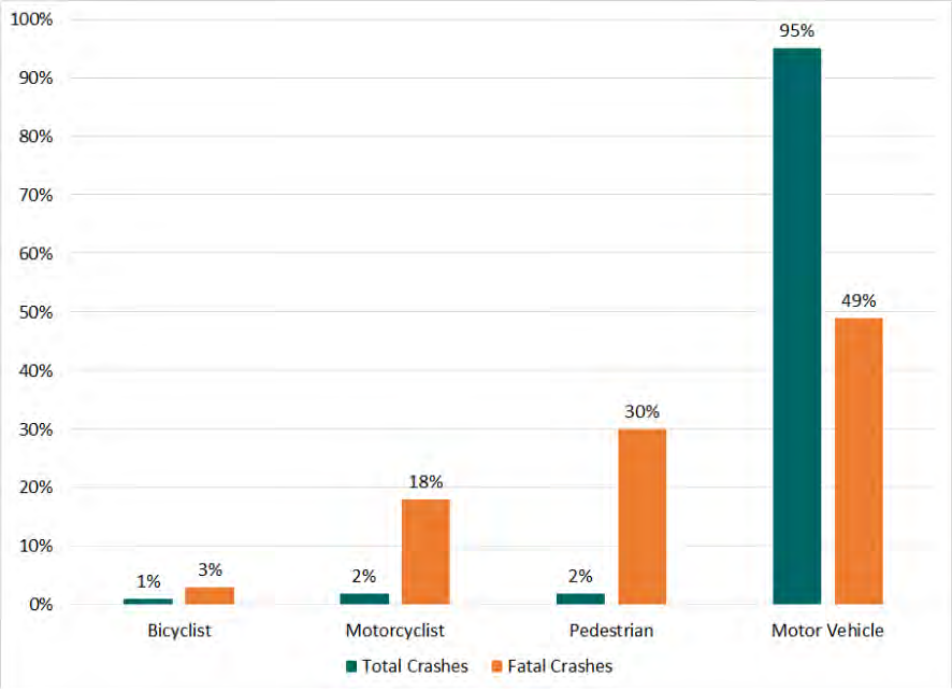
Santo Domingo Pueblo, San Felipe, and Cochiti Pueblo

If we look at Sandoval County as a whole, there are 1676 crashes total and 40 fatalities. 2.4% of the crashes resulted in a fatality. Of the County's 40 fatalities, 6 occurred in San Felipe, Santo Domingo, and Cochiti Pueblo meaning 15% resulted in a fatality in this area. The map below shows these crashes highlighted in blue.

VULNERABLE ROAD USERS (VRU)

Pedestrians and Bicyclists are the most vulnerable road users. In the event of a crash, they are unprotected and more likely to suffer a severe injury or death than a vehicle occupant. Pedestrians, bicyclists, and motorcyclists all suffer disproportionately when it comes to crashes that result in fatalities.

Only 5 percent of the MRCOG region's overall crashes involve a pedestrian, bicyclist, or motorcyclist, yet these road users make up 51 percent of all fatalities. 95 percent of crashes involve automobiles only, but automobile occupants make up 49 percent of all fatalities.



Total versus Fatal Crashes by Mode

HUMANS ARE VULNERABLE

This disparity in outcome between automobile occupants and vulnerable road users demonstrates that in the event of a crash, the automobile occupants are much more likely to survive than a pedestrian, motorcyclist, or bicyclist. This inequity in outcome illustrates why it is so important to target vulnerable road user (VRU) crashes. There are relatively fewer VRU crashes than car crashes, but they result in more fatalities. Successfully lowering VRU crashes would make a huge difference in the overall number of fatalities in our region and would result in fewer motor vehicle crashes as well.

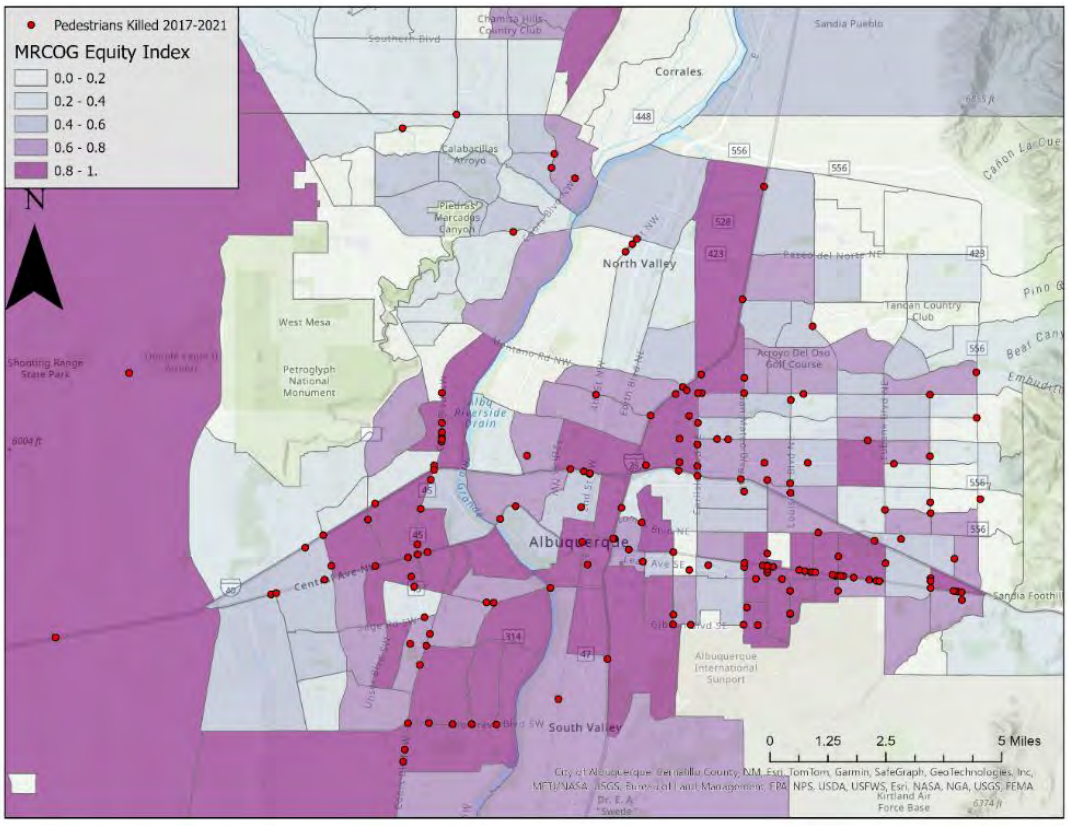
PEDESTRIAN FATALITIES AND EQUITY

Pedestrian fatalities have been up in the MRCOG region since 2017, with a severe spike in 2021. Pedestrian fatalities are concentrated in the region along East Central. 11 percent of the region's pedestrian fatalities occurred on Central Avenue between San Mateo and Eubank.

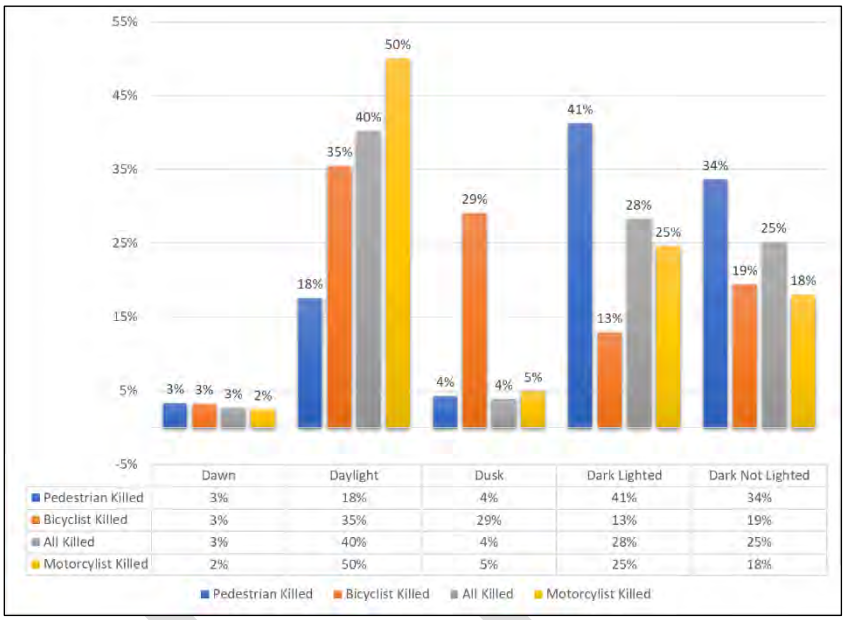
Pedestrian fatalities often cluster in areas of persistent poverty. The MRMPO Vulnerability Index (MVI) identifies census tracts with higher levels of vulnerability using socioeconomic measures like households in poverty and households without access to a vehicle. The Importance of Equity section in Chapter 1 provides a more detailed description of the MVI.

73 percent of MRCOG's pedestrian Fatalities occur in, or directly abut the poorest 30 percent of census tracts. This concentration may be because residents do not have access to automobiles and rely on walking, biking, and transit to access jobs and services. Where a major arterial passes through an area of high economic vulnerability there tends to be many pedestrian fatalities.

The City of Albuquerque prioritizes roadway interventions not only based on historical crash data, but on whether the roadway is in an area of persistent poverty. It is essential that, in all areas of the region, roadways with high crash rates that pass through vulnerable communities are prioritized for infrastructure improvements first.

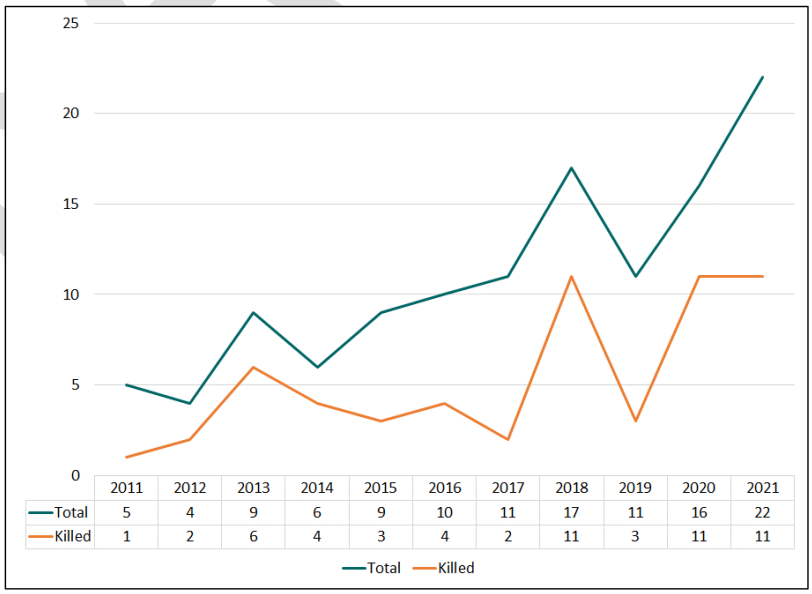


LIGHT CONDITIONS



One way to further evaluate crashes is by looking at the light conditions when the crash occurred. Even with some kind of street lighting, 75% of pedestrian crashes that result in fatalities occur during the dark time of the day. For vehicular, bike, and motorcycle fatalities this trend is not as severe. Dusk is a time when there are considerably higher bicyclist deaths compared to other modes. This may be due to poor visibility. The lighting infrastructure that is available along the street tend to be geared towards vehicular traffic and do not provide good lighting for other modes of travel particularly adjacent to sidewalks or for pedestrians crossing the street. Addressing this issue can make a huge impact on reducing fatalities in our region.

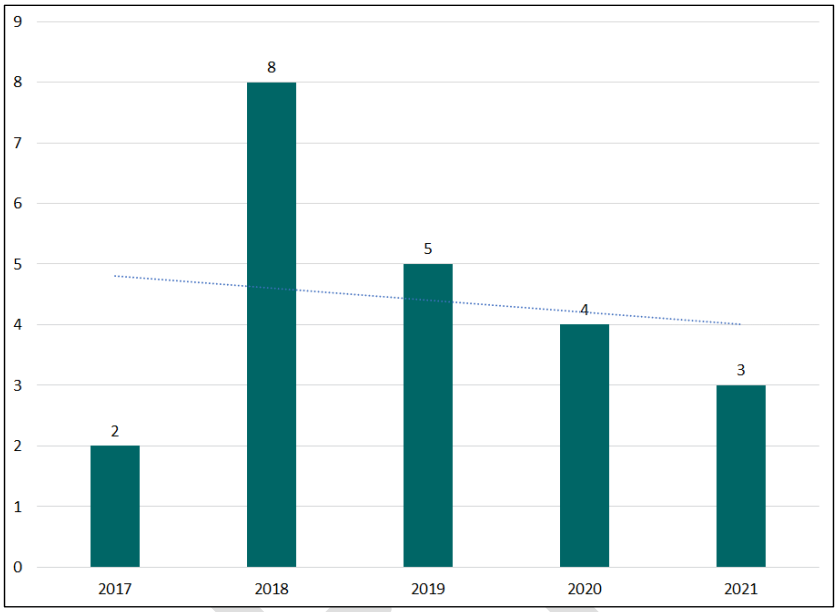
PEDESTRIAN FATALITIES ON THE INTERSTATE



Pedestrians are being struck on our region's interstate network. Puzzlingly, the number of pedestrian crashes on our interstate network has been going up over the last 10 years. This is a difficult problem to address as pedestrian access is strictly prohibited on the interstate. Conversations held with local law enforcement point towards this issue being linked with higher rates of homelessness. Interstate ramps provide a refuge from the weather for the homeless. If we are to reduce the number of pedestrian crashes on the interstate our region needs to address the growing social problem of homelessness and try to provide an alternative to camping along the interstate system. Furthermore, these fatalities point to the fact that addressing safety is not done in a silo. Traffic violence is a public health issue and requires improvements to services available to those that are impoverished or experiencing homelessness.

BICYCLIST CRASHES

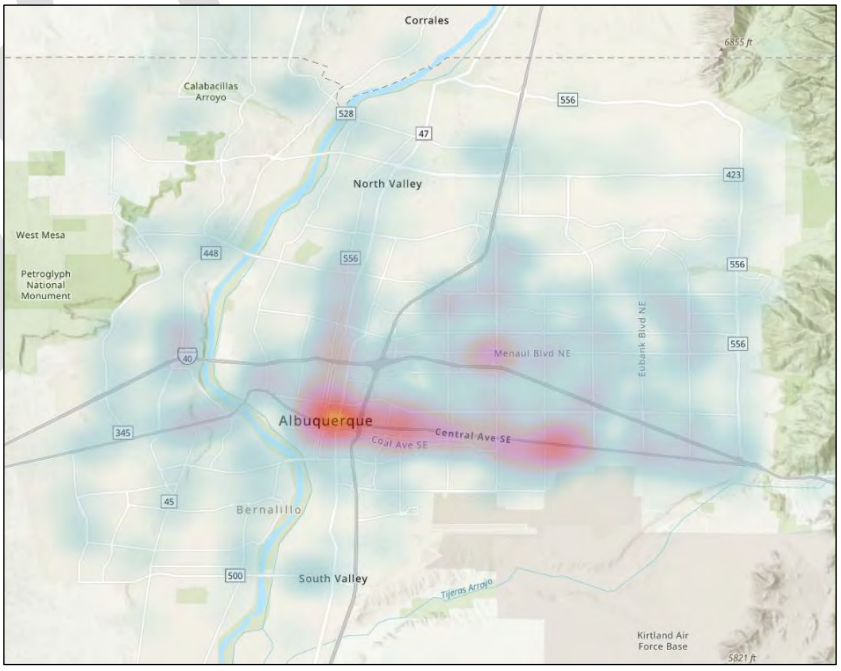
Bicyclist fatalities are trending downwards from 2017 to 2021. This is good news for our region, however not well understood. It is possible the creation of more off-street bike infrastructure and bike boulevard options have enabled our region's bicyclists to move around safer. Alternatively, bicyclists are choosing to use different routes and avoid any roadway that feels unsafe. This means that bicycling may be safer when there are alternative facilities, but it is not an efficient or direct way to access destinations for practical matters.



Bicycle Fatalities by Year

Bike crashes are somewhat seasonal with fatal and Class A injuries being less common in the winter months. This is likely due to lower exposure as many bicyclists travel less, or not at all, in the winter months. Bicyclists, like pedestrians, tend to get hit in more vulnerable communities. 45% of bicyclist fatalities and injuries occurred in the poorest 20% of census tracts.

The heat map shows density of overall bicyclist crashes. Like pedestrians, many bicyclists are struck along the Central Avenue corridor, especially downtown and along east Central. Bicycle crashes stretch to the north along 4th Street and there is a hot spot at Menaul and San Mateo Boulevards. There is a perception that most cyclists in our region are strictly biking for leisure, but the map of collision suggests that many people are cycling to access goods and services. The hot spots reflect areas of high activity density. This suggests that bicycle infrastructure is important on corridors that are destination rich and not only on off-street facilities.



Bicycle Crash Density Map

MOTORCYCLE CRASHES

Like bicycle crashes, motorcycle crashes are seasonal, with far fewer happening in the winter months. A large portion of motorcycle fatalities and Class A injuries are single vehicle crashes. In the entire region, 26% of all motorcycle fatalities and Class A injuries are single vehicle crashes.

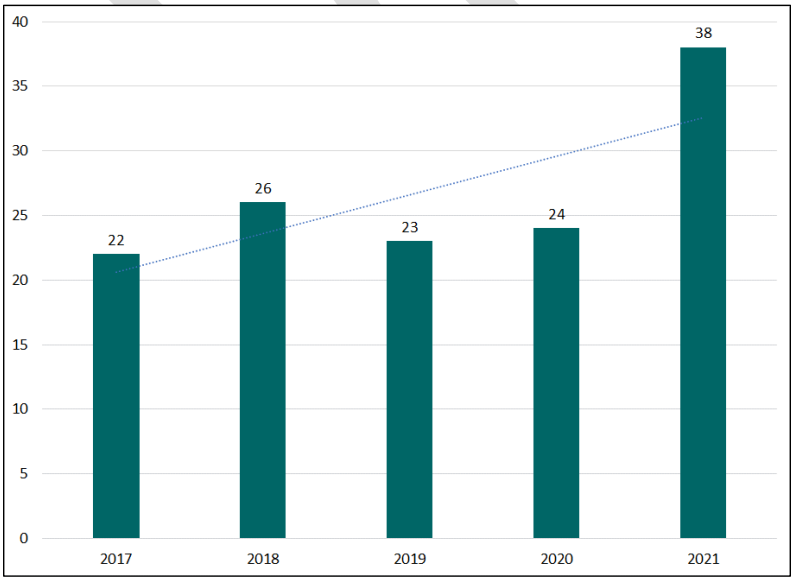
RURAL AREAS

Motorcycle fatalities that happen in rural parts of our region are far more likely to be single vehicle crashes. Of the motorcycle crashes that occurred in rural areas and resulted in a fatality or Class A injury, 60% of them only involved one vehicle. Single vehicle crashes are often an indication of speeding or other types of aggressive driving as drivers can lose control of their vehicle and leave the roadway when driving too fast.

All Motorcycle Fatalities and Class A Injuries		
Top Contributing Factor	Killed + Class A	% of Total
Excessive Speed	64	21%
Alcohol/Drug Involved	59	20%
Failed to Yield Right of Way	52	17%
Driver Inattention	27	9%
Disregarded Traffic Signal	19	6%
Following Too Closely	14	5%
Other Improper Driving	13	4%

Single Motorcycle Fatalities and Class A Injuries		
Top Contributing Factor	Killed + Class A	% of Total
Excessive Speed	33	38%
Alcohol/Drug Involved	16	18%
Other Improper Driving	9	10%
Driver Inattention	7	8%

Between 2017 and 2019 the data fatal and Class A injuries show that (the top contributing factor field was phased in 2020) Excessive Speed is the most frequent contributing factor in the region. For rural areas in the region, this trend is even more pronounced, with nearly 40% of fatal and Class A injury crashes being caused by excessive speed. It seems clear that speed is the greatest factor impacting the occurrence of motorcyclist crashes and especially single vehicle motorcycle crashes.

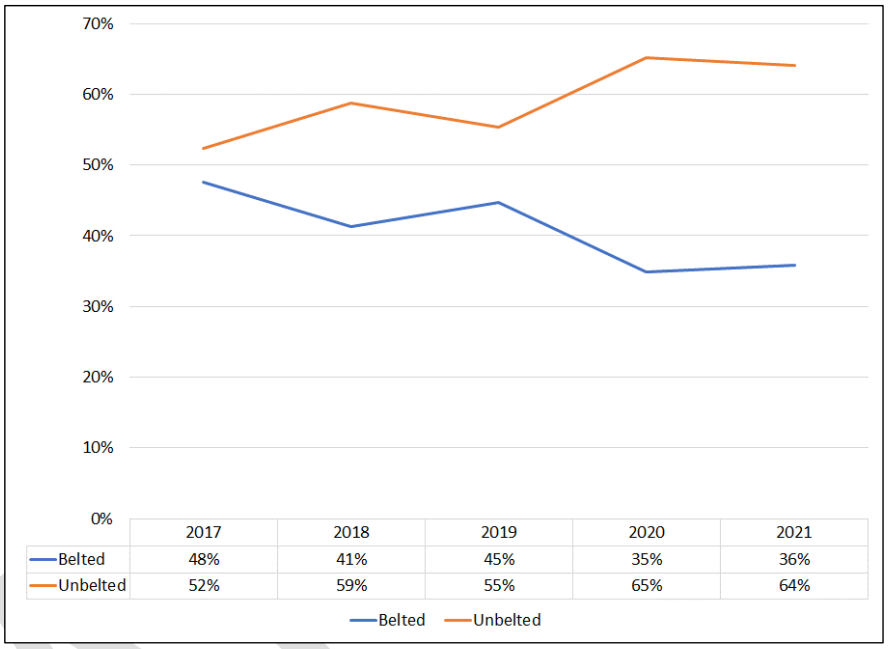


Motorcycle Fatalities for 5 Years

ROADWAY SAFETY CULTURE AND BEHAVIOR

UNBELTED OCCUPANTS

In New Mexico and throughout the country, there has been an increase of vehicle occupants dying who were unrestrained by a seatbelt. The most significant jump in New Mexico came in 2020 when 65% of all vehicle occupants who died in crashes were not wearing seatbelts.



	2017	2018	2019	2020	2021
Belted	48%	41%	45%	35%	36%
Unbelted	52%	59%	55%	65%	64%

Belted vs unbelted fatal crashes were close to 50-50 in 2017. Since then, there has been a discrepancy. In 2020 and 2021, the chart depicts this divergence, with the share of fatalities where an occupant was wearing a seat belt going down and the share of unbelted fatalities going up to 65%.

SURGE IN SPEEDING AND AGGRESSIVE DRIVING

Recent studies point to increased risk-taking on the nation's roadways. Fatal crashes surged not only in our region, but around the country during the pandemic. Many researchers and journalists point to speeding and aggressive driving as key factors in fueling the epidemic.

The NYT investigators go on to posit, **"The problem today, in the United States, may be that we're all baseline angry and anxious – and we're all in a car, all the time".**

Two Connecticut researchers published a study on speeding during the pandemic in *Science Direct*, a peer reviewed journal. The researchers attribute the rise in speed to the following theories:

1. During the early stages of the Covid 19 pandemic the reduced traffic resulted in impairments in drivers' ability to accurately perceive their own speed, and thus control it. Drivers often use other drivers to gauge their own speed, and with fewer cars this was not possible.
2. Drivers seek "homeostasis of perceived risk." With fewer cars on the road, drivers perceive speeding to be less risky and are more likely to speed.
3. Low traffic volume is associated with increased boredom, and drivers may drive faster and more aggressively to counteract their own boredom.

Many authors investigated this trend by late 2021. The LA Times interviewed a Temple University professor of Psychology, Frank Farley, who remarked at the time that Covid 19 marked "a sea change in psychology". Farley views reckless driving as an attempt at "arousal breakout," or a form of rebellion against the restrictions of the early pandemic.

"You've been cooped up, locked down, and have restrictions you chafe at, so if you can have an arousal breakout, you want to take it".

A researcher at the Johns Hopkins Bloomberg School of Public Health commented on this behavior in an LA Times article:

"We might decide: what does a seat belt or another beer matter, anyway, when we're in the middle of a pandemic?"

The article links the dangerous behavior on the road to "widespread feelings of isolation, loneliness and depression." The LA Times article commenting on the increase in unbelted fatalities, draws a parallel to other pandemic era trend, like a rise in drug overdoses and homicides around the country.

The New York Times also publishes several articles on the rise in fatal crashes throughout the United States. Staff interviewed many experts from different fields, including psychology, to better understand the phenomenon. The NYT investigators highlighted a study undertaken by the American University of Beirut titled "Measuring Aggressive Driving Behavior Using a Driving Simulator." The study found that participants who reported low or moderate amounts of stress in their lives were less likely to drive aggressively in the simulator when presented with a stressful situation. Participants who did report more stress and anxiety in their personal lives were more prone to engage in risky behavior.

SINGLE VEHICLE FATALITIES

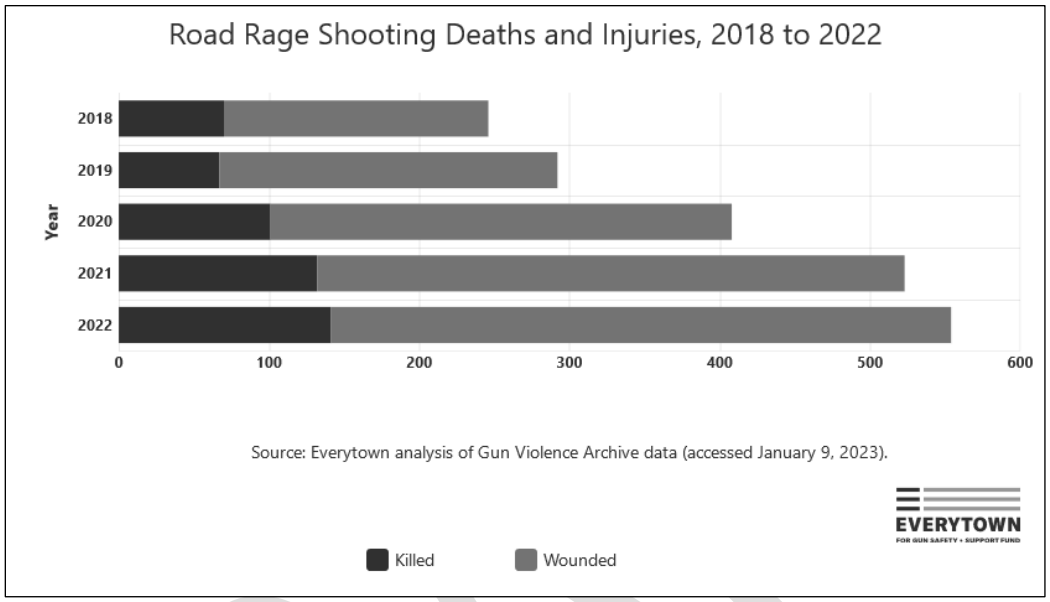
Single vehicle crashes are an indication of dangerous driving. As discussed earlier in the chapter, the top contributing factors for the region's single vehicle fatal and class A crashes are alcohol/drug involved, excessive speed, and driver inattention. The fact that single vehicle fatalities nearly doubled between 2017 and 2020 is an indication that these types of behaviors are becoming more commonplace on our region's roads.

Top Contributing Factor for Single Vehicle Crashes	Killed + Class A	% of Total
Alcohol/Drug Involved	77	32%
Excessive Speed	52	21%
Driver Inattention	27	11%

Transportation Professionals need to take responsibility for inadequacies in our infrastructure and endeavor to build a system that is safe for all users. Our roads must take into account the fact that humans are error prone. We should stop blaming victims when someone makes a mistake on a very unforgiving roadway system and loses their life. On the other hand, we need to work with the broader community to address the rise in unsafe behaviors. UNM's "Look For Me," campaign is a good example of trying to shift people's mindset. Efforts should be made to let the public know that dangerous driving behavior is leading to a rise in fatalities in the region and that people must treat driving as a serious endeavor that requires an attentive and calm operator.

ROAD RAGE

Fatal road rage shootings have doubled since 2018. Injuries have more than doubled in that same period. This data is for the entire nation, but an Everytown analysis includes a breakdown of the rate of people shot in road rage incidents per million residents in 2022. New Mexico had the highest rate in the nation, with 6.16 people shot in road rage incidents per million residents.



This frightening trend of more road rage shootings adds to the case that aggressive behavior on the road is rising. While addressing this type of behavior is well beyond the scope of this document, it is important to note as it parallels other behaviors we've noted here. Aggressive and careless behaviors, like speeding, reckless driving and not wearing a seat belt endanger car occupants and other road users.

CHAPTER 3 REGIONAL SAFETY STRATEGIES

DEVELOPING A SAFETY STRATEGY TOOLBOX

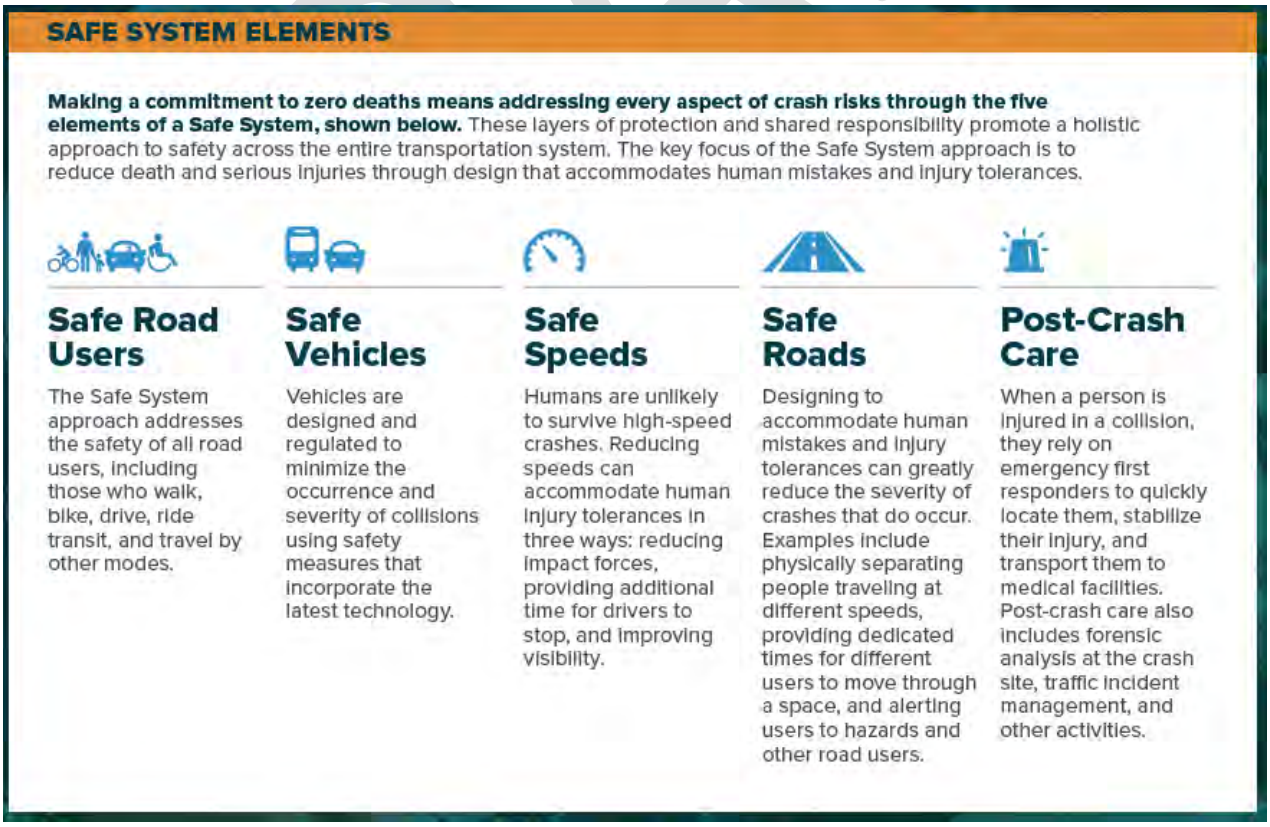
AGENCY AND PUBLIC INPUT

The public and agency engagement process was structured to receive feedback about strategies and projects that would be most beneficial for improving roadway safety. Specifically, two open-ended questions asking why and how the region can best address the unacceptable number of high fatalities and serious injuries provided excellent ideas from the public and local agencies. As mentioned in Chapter 1, The Technical Team and the Focus Groups were an integral part of developing and reviewing strategies. Local plans and programs in the region were also reviewed and national best practices compiled.

CONSISTENCY WITH THE SAFE SYSTEMS APPROACH

Furthermore, the strategies support the U.S. Department of Transportations' Safe System Approach, which recognizes that although humans make mistakes and are vulnerable, fatalities and injuries can be prevented. This approach emphasizes a shared responsibility among stakeholders to achieve the goal of zero fatalities. In addition to approaching transportation safety using these broad principles, five elements are included in the Safe Systems Approach.

The five elements are as follows:



RTSAP 2024 STRATEGIES AND SAFE SYSTEMS OBJECTIVES

The strategies in this plan directly address these five elements. For example, the strategies provided include the use of: (Renumbering and names to match the graphic)

1) Providing campaigns that address driving behavior (Safe Users)
2) Smart vehicle technology (Safe Vehicles)
3) Evaluating speed limit policies and speed management practices (Safe Speeds)
4) FHWA Countermeasures (Safe Roads)
5) Improving Emergency Medical Services response time (Post Crash Care)

Make it a Movement.

Create an educational campaign in schools that begins to address transportation safety and driving culture.

Re-design roads to reduce speeds.

Increase separation and protection for pedestrians.

Improve sidewalks, bike lanes, and buffers along key corridors.

Use speed enforcement cameras, not as a revenue generating scheme, but to ticket people who are driving at excessive speeds.

Re-work signals on 6 lane roads so people can only take a left turn on green arrow.

-Public Comment

THE STRATEGY TOOLBOX

The Strategy Toolbox is a customized inventory of safety strategies for the region and is intended to be comprehensive and easy to use. The strategies in the toolbox are not prioritized, rather they provide an array of options for an entity to choose based on their unique project or program needs.

From a regional transportation planning perspective, the strategies toolbox provides general guidance and resources on selecting and using well known safety strategies. Knowing what sort of safety issue an agency would like to address is built into the list by providing multiple categories to search by.

LOCAL GOVERNMENT SAFETY PROGRAM

The Albuquerque 2021 Vision Zero Action Plan and the 2023 Albuquerque Vision Zero Year In Review documents provide a good example of how a local governmental agency can adopt a roadway safety policy, and based on that, further develop a local roadway safety program to tackle the goal of reducing traffic violence.

MRMPO ONLINE INTERACTIVE MAPS

Several online maps developed by MRMPO are designed to assist agencies with local planning efforts.

1) Long Range System Maps: https://www.mrcog-nm.gov/544/Long-Range-System-Maps

These maps show transportation systems like roadway types or bicycle facilities that exist currently and that are planned for the future. Familiarity with these networks is essential for knowing where the priorities are for filling gaps in the transportation system or selecting roadways that have a more multimodal function when applying safety strategies. They include the following:

Long Range Roadway System (LRRS): The LRRS shows the regional role for existing and future roadways which includes a distinction between arterials based on character and purpose such as whether a roadway is limited access with minimal land use diversity or whether it runs through an area with denser highly accessed destinations.

Long Range Bikeway System (LRBS): The LRBS shows both existing and future bikeways and paved trails. Recommended types of facilities are presented such as a separated bike lane or bike boulevard.

Long Range Transit Network (LRTN): The Long Range Transit Network is an aspirational transit network developed with input from our regional transit agencies – ABQ Ride and Rio Metro Regional Transit District. The LRTN supports the connection of regional activity centers and better frequency along mixed-use corridors.

Pedestrian Composite Network (PCI): The PCI shows roadway segments by level of potential non-motorized activity. The PCI was developed by evaluating what is adjacent to the roadway such as proximity to various land uses or transit stops.

2) Intelligent Transportation Systems (ITS): https://arcg.is/1S6wyml

This type of infrastructure is essential for advanced and smart signal systems that are a part of the safety strategies list. This story map provides information on both the existing ITS infrastructure and the priorities for implementing new infrastructure. A regionally developed list of corridors is identified along with recommendations for specific type of ITS applications.

3) A Profile in Congestion: https://mrmpo.maps.arcgis.com/apps/MapSeries/index.html?appid=ed2774624f744787ad080725d712628e

This interactive map gives detailed information on the most congested corridors in the region that includes both speed and rankings for number of crashes.

4) Transportation Accessibility Analyses: https://www.mrcog-nm.gov/578/Planning-for-Equity

This map series is a tool for evaluating the equitable development of regional public transportation systems. The maps include access to transit service, parks and open space, grocery stores, and healthcare facilities.

RTSAP 2024 STRATEGIES

The strategies provided within this document include an easy-to-use list for exploring what types of strategies are available to improve roadway safety and to address the underlying factors that result in fatalities and injuries. Included with each strategy is a short description, links to online resources, and some customized guidance.

The list is provided here but is also available in a stand-alone spreadsheet that can be quickly filtered by multiple types of strategy. The types of strategies included are broken down into broad and more detailed categories. In this document they are sorted by broad categories. The intention of this strategy list is to provide an inventory primarily for local agencies but also for the public and advocacy groups.

Broad Categories:

1) Data Collection and Analysis
2) Policies and Programs
3) Design and Engineering
4) Education and Campaigns
5) Traffic Technologies

Secondary Categories:

a) Education
b) Enforcement
c) Intersections
d) Pedestrians
e) Bicyclists
f) Active Transportation
g) Planning / Engineering
h) Railroad
i) Roadways
j) Roadways / Lane Departures
k) Schools
l) Speed
m) Legislation
n) Transit

HIGHLIGHTING EQUITY STRATEGIES

Some specific equity strategies were also developed and noted as an Equity Concern in the strategies list. They are integrated with the strategies list by being explicit about when and where it is important to ensure things are being equitably implemented. In addition to being noted in the strategies list, some key principles below are important when ensuring equity with project and program development.

Enforcement	Ensure traffic enforcement programs are implemented with extensive engagement with local underserved communities or develop a program where police are not involved with traffic enforcement.
Investment	Prioritize planning and investment in underserved communities when creating and implementing transportation plans, programs, and projects.
Representation	Ensure diverse representation during the decision-making process on advisory committees and in leadership positions.
Engagement	Tailor the design of traffic education and campaigns with extensive input from underserved communities.
Public Health	Support public health approaches that would improve traffic crash prevention.

THE SAFETY STRATEGY TOOLBOX

Also available in a stand-along spreadsheet.

BROAD CATEGORIES

Data Collection and Analysis

Many different departments within and among agencies must work together to compile the data needed to conduct strong analyses for improving roadway safety and then also to evaluate the outcomes after applying a safety strategy such as the narrowing lanes or introducing signals for pedestrian crossings.

Identifying and analyzing safety issues relies upon the collection of robust data ranging from crash data to speed data to infrastructure condition. For example, creating a High Fatal and Injury Network or Potential Road Diet Candidates map relies on accurate crash records and traffic volumes. In addition, countermeasures that address specific types of crashes require that the police officer is marking the correct information so that data analysts can use that information to identify where and what safety improvements should be implemented.

Policies and Programs

Policy often comes first when improving safety because too often in safety practice is not the first priority when it pertains to roadways. Once policy has been adopted it will help to drive priorities and funding decisions. For example, Complete Streets and Vision Zero policies in the region have resulted in changes to design practice, created safety programs like post-crash evaluations, and developed specific projects for integration into local and regional funding sources.

Bringing to light the values that are necessary to improve roadway safety through policy, and then backing that up with how funds and projects are prioritized is key to creating communities that are safe for everyone. In addition, policies support many tools that impact safety that we might not have otherwise considered such as access management plans, non-motorized traffic counts, and Safe Routes programs.

Design and Engineering

Far too often, roadway design is focused on increasing capacity and relying on the speed limit signs to keep traffic at a safe speed. If our goal is to prioritize safety, speed management strategies such as calming traffic by narrowing roadways, reducing lanes, or installing raised crosswalks should be prioritized where appropriate. There are other ways to improve traffic flow without putting people's lives in danger, and sometimes a little delay can save a person's life. For this plan, these strategies are not as appropriate for Interstates, but rather are focused on the rural highways and major roads that people use daily to get around the region.

Education and Campaigns

Focused campaigns on alcohol involvement, texting while driving, or just being aware of all the different types of roadway users are important for changing our safety culture. Unfortunately, sometimes safety issues are addressed in a way that the victim is blamed. This approach needs to

change because everyone needs to take some responsibility and there is clearly an inequitable impact on who is dying on our streets.

NMDOT / UNM Look For Me Campaign

The NMDOT Look For Me campaign is an example of a more equitable way of bringing awareness to a safety issue. In this campaign, all roadway users are responsible for looking out for each other and there is not one mode that is being blamed for high fatalities. Also, on a positive note, despite some recent setbacks New Mexico has seen substantial increases over time in increased seatbelt use. Like this behavior change, people can learn the rules of the road for all modes of travel and how to navigate different types of facilities on streets such as roundabouts, bicycle boulevards, pedestrian crossing signals, and shared roads. These strategies are geared toward educating and providing a more comprehensive understanding of all modes of travel and each roadway user's legal rights.

Traffic Technologies

Management and operations strategies for improved traffic flow and safety rely heavily on advanced technologies that collect roadway data and support the processing and dissemination of information to traffic managers and travelers. Common traffic technologies include roadway sensors and cameras for speed and volume use, and weather-related equipment, both of which can provide information to be displayed on dynamic message signs and input for real-time travel apps on mobile devices.

Of particular importance is the in-ground infrastructure needed for some of these technologies to function. The regional Intelligent Transportation Systems (ITS) committee has developed a prioritized list of corridors in need of certain types of ITS infrastructure in the region. More advanced traffic technologies include the use of real-time traffic signal control capability to remotely adjust signal timing along a corridor. These types of activities are typically conducted by roadway managers at centralized locations such as a Traffic Management Center (TMC). TMC staff are also keyed into law enforcement dispatch to provide critical support at crash locations and the reduction of secondary crashes (crashes that result from the initial crash).

Strategies	Description	Broad Category	Secondary Category	Website Resources	Guidance Notes (includes priorities, equity concerns, and existing local initiatives).
Animal Collisions	Compile crash data on animal collision locations for wildlife crossing placements and evaluate potential crossings.	**Data Collection and Analysis**	Planning / Engineering	https://largelandscapes.org/news/west-wide-study/	Example wildlife crossing project being implemented by NMDOT in our region on NM 550 is in process: https://www.dot.nm.gov/projects/active-projects/us550wildlifeproject/
Crash Data Acquisition	Continue to enhance crash data acquisition timeliness and geographic accuracy.	**Data Collection and Analysis**	Planning / Engineering	https://nmtrafficrecords.com/	The TraCS project provides law enforcement statewide with access to an electronic collection and location tool for submission of the State's uniform crash report, uniform traffic citation, commercial vehicle inspection form.
Crash Diagram Software	Develop a program/process that diagrams crash data at intersections to provide system wide and specific applications for safety improvements at intersections.	**Data Collection and Analysis**	Planning / Engineering	https://highways.dot.gov/safety/local-rural/improving-safety-rural-local-and-tribal-roads-safety-toolkit/step-4-diagnose	
Crash Modification Factors (CMF)	Utilize CMFs when developing both system wide programs and specific designs for roadway safety improvements.	**Data Collection and Analysis**	Planning / Engineering	https://www.cmfclearinghouse.org/userguide_CMF.php	Consider post implementation evaluations to add to research on CMF research.
Crosswalk Inventory	Develop a geocoded inventory of both marked and unmarked roadway crosswalks.	**Data Collection and Analysis**	Planning / Engineering	https://www.pedbikeinfo.org/resources/resources_details.cfm?id=3960	Use HFIN and Vulnerable Communities as a starting point.
FARS Data and Minorities	Investigate state level FARS data analysis to help account for concentrations of certain minority groups in specific states. For example, approximately 52% of the total U.S. American Indian/Alaska Native	**Data Collection and Analysis**	Planning / Engineering	https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars	https://www.cdc.gov/injury/features/tribal-road-safety/index.html

	population resides in just six states – one of them being New Mexico.				
NEMSIS Data and Injuries	Examine the National Emergency Medical Services Information System (NEMSIS) database that collects State and Territorial EMS injury and fatality data from 911 calls. NEMSIS analysis could provide a broader examination of crash involvement by race and includes additional injury data.	**Data Collection and Analysis**	Planning / Engineering	https://nemsis.org/	Many of the rural areas are in need of quicker EMS service and could benefit from preventive crash measures to reduce the need.
Non-Motorized Count Program	Develop a multimodal traffic count program to evaluate demand (including latent demand) for all modes of travel.	**Data Collection and Analysis**	Pedestrians / Bicyclists	https://www.pedbikeinfo.org/topics/countingestimating.cfm	MRMPO is currently developing bicycle and pedestrian counts program that could be emulated.
Online Maps / Dashboards	Develop and maintain online maps or dashboards using most recent geocoded crash data, or other safety related infrastructure needs such as ITS applications.	**Data Collection and Analysis**	Planning / Engineering	https://mrmpo.maps.arcgis.com/apps/MapSeries/index.html?appid=ec395f5587744d778832207af7d86f93	
Post Crash Evaluation	Develop a streamlined and consistent template for evaluating and following up on fatal and incapacitating crash incidents.	**Data Collection and Analysis**	Planning / Engineering	https://rosap.ntl.bts.gov/view/dot/73538	Current committee exists that evaluates post fatal crashes including City of Albuquerque, Albuquerque Police Department, and MRMPO.
Public Health Data	Determine the extent to which BIPOC are disproportionately represented in fatal traffic crashes, and whether certain subsets of BIPOC (e.g., specific races, genders, age groups) have especially high rates of involvement relative to their population.	**Data Collection and Analysis**	Planning / Engineering	https://www.transportation.gov/transportation-health-tool	https://www.cdc.gov/transportationsafety/index.html

Roadway Elements Inventory	MIRE, the Model Inventory of Roadway Elements, is a federally recommended listing of roadway inventory and traffic elements intended as a guideline to help transportation agencies improve their roadway and traffic data inventories to improve safety.	**Data Collection and Analysis**	Planning / Engineering	https://highways.dot.gov/safety/data-analysis-tools/mire-fde/model-inventory-roadway-elements-mire	Consider the supplemental data that includes items such as roadside fixed objects, signs, land use elements related to safety, railroad grade-crossing descriptors, pavement data, and ADA compliant improvements.
Setting Speed Limits	Reevaluate the process of setting speed limits. Provide default speed limits, designate slow/speed zones, and look at conflict density and land use context. MUTCD no longer requires 85th percentile. https://highways.dot.gov/safety/proven-safety-countermeasures/appropriate-speed-limits-all-road-users	**Data Collection and Analysis**	Speed / Dangerous Driving	https://nacto.org/wp-content/uploads/2020/07/NACTO_CityLimits_Spreads.pdf	The National Transportation Safety Board (NTSB) has recommended an overhaul of how speed is managed on U.S. streets, including the way that speed limits are set: https://nacto.org/2017/08/15/federal-study-concludes-us-must-curb-speed/
Sight Distance Reviews	Investigate sight distance issues at intersections and curves with high crashes.	**Data Collection and Analysis**	Planning / Engineering	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/visibility-sight-distance/	Use HFIN and Vulnerable Communities as a starting point.
Uniform Crash Report	Ensure consistency with NHTSA guidance and usability for law enforcement officers to accurately capture crash data, particularly for pedestrians and contributing factors.	**Data Collection and Analysis**	Planning / Engineering	https://www.nhtsa.gov/traffic-records/model-minimum-uniform-crash-criteria	Top Contributing Factor was replaced with First Harmful Event in New Mexico in 2020. Pedestrian Error is often used incorrectly because of misunderstandings of the law. Many fields are also left blank.

Strategies	Description	Broad Category	Secondary Category	Website Resources	Guidance Notes (includes priorities, equity concerns, and existing local initiatives).
Anti-Speed Campaigns	Develop educational campaigns coupled with enforcement that emphasize the importance of not speeding.	**Education and Campaigns**	Campaigns	https://www.cabq.gov/council/find-your-councilor/district-3/news/city-launches-2018speeding-has-a-name2019-campaign-to-slow-speeding-drivers	Make sure choosing locations for enforcement are done in an equitable manner and include members of the BIPOC community.
Bicycle and Pedestrian Safety and Education Center	Consider the development of a safety educational center along with educational materials and services.	**Education and Campaigns**	Pedestrians / Bicyclists	https://www.cabq.gov/parksandrecreation/recreation/bike/esperanza-bicycle-safety-education-center	See Albuquerque's Esparanza Bicycle Education Center programs.
Defensive Driving Courses	Expand availability of defensive driving courses in schools and places of employment and ensure that they are addressing multimodal travel.	**Education and Campaigns**	Schools	https://www.nsc.org/safety-training/defensive-driving/nsc-defensive-driving-courses	See Albuquerque Vision Zero Youth Initiative.
Distracted Driving Campaigns	Implement behavioral campaigns aimed at reducing distracted driving and texting while driving.	**Education and Campaigns**	Campaigns	https://hsc.unm.edu/medicine/departments/emergency-medicine/programs/cipre/cipre-programs/look-for-me/	https://www.dntxtjustdrive.com/
Driver Education	Improve driver education to include information on new multimodal facilities, design elements, and right-of-way laws.	**Education and Campaigns**	Education	https://rosap.ntl.bts.gov/view/dot/34736	Recent updates from NMDOT Traffic Safety Division who manages this curriculum. The State Taxation and Revenue Department (MVD is in this department) manages the test.
Driving under the Influence Campaigns	Educational campaigns coupled with enforcement that decrease driving while impaired.	**Education and Campaigns**	Campaigns	https://www.endwi.com/	NMDOT couples their driving under the influence campaign with the 100 Days and Nights of Summer enforcement program.
High Visibility DUI Saturation Patrols	Combine all enforcement with educational campaigns.	**Education and Campaigns**	Enforcement	https://www.dot.nm.gov/planning-research-multimodal-and-safety/modal/traffic-	Make sure choosing locations for enforcement are done in an equitable manner and include

				safety/impaired-driving-dwi-programs/	members of the BIPOC community.
Motorcycle Helmet Campaigns	Develop campaigns to encourage motorcyclist to use helmets, and for other drivers to watch out for motorcyclists.	**Education and Campaigns**	Campaigns	https://www.mvd.newmexico.gov/helmet-law/	Currently in New Mexico persons under 18 must wear a helmet.
Move Over It's the Law Campaign	An educational campaign that emphasizes moving over to protect law enforcement officers and other first responders stopped on the roadway.	**Education and Campaigns**	Campaigns	https://ops.fhwa.dot.gov/publications/fhwahop09005/move_over.htm	
Press Release with New Infrastructure	Coordinate press releases and educational campaigns with implementation of new multimodal infrastructure such as roundabouts or crossing signals.	**Education and Campaigns**	Planning / Engineering	https://www.rrnm.gov/1411/Roundabouts	
Public Information Meetings on Safety Designs	Provide outreach on safe roadway design to community organizations and schools.	**Education and Campaigns**	Education	https://journalofroadsafety.org/article/89365-how-to-successfully-engage-a-community-in-road-safety	Consider prioritizng meetings with public schools and at community meetings.
Roadway Safety Education at Schools	Development of education materials and courses at schools around safe driving and multimodal traffic laws.	**Education and Campaigns**	Education	https://www.aps.edu/capital-master-plan/documents/website-updates/vision-zero/action-plan	Albuquerque Public Schools Youth Initiative is already working on developing curriculum related to roadway safety in their schools.
Safety Culture	Actively share information and experiences with local community members to fellow government organizations to ensure there is a shared responsibility and vision.	**Education and Campaigns**	Education	https://www.towardzerodeaths.org/traffic-safety-culture/	https://highways.dot.gov/safety/zero-deaths/safety-culture
Workshops and Trainings	Provide workshops and training on policies and design guidelines that support a safer transportation system such as the FHWA Safe Systems Approach, Vision Zero, and Complete Streets.	**Education and Campaigns**	Education	https://nacto.org/event-type/training/	https://highways.dot.gov/safety/other/road-diets/road-diet-free-workshop

Strategies	Description	Broad Category	Secondary Category	Website Resources	Guidance Notes (includes priorities, equity concerns, and existing local initiatives).
Access Management Plans	Inventory existing access management and develop a plan to make improvements that will reduce the number of conflicts between modes.	**Policies and Programs**	Planning / Engineering	https://ops.fhwa.dot.gov/access_mgmt/progplan.htm#toc4	Requires are comprehensive inventory of roadway elements.
ADA Transition Plans	Support the development and implementation of ADA transition plans. Supplement with a prioritization process.	**Policies and Programs**	Planning / Engineering	https://highways.dot.gov/civil-rights/programs/ada/ada-transition-plan-and-inventory-map#:~:text=Accessible%20Transportation%20for%20All%20Americans&text=ADA%20Transition%20Plans%20are%20required,facilities%20for%20people%20with%20disabilities.	Most jurisdictions have some sort of ADA transition plan in process. Consider reevaluating how these infrastructure improvements are prioritized by using both the HFIN and the MVI.
Barrier Removal Program	Develop a program to remove barriers from sidewalk access such as utility poles and enforcing no parking in bicycle lanes.	**Policies and Programs**	Planning / Engineering	https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/chap4.cfm	Requires are comprehensive inventory of roadway elements or a prioritization process based on the HFIN and the MVI.
Community Based Traffic Policing	An approach to traffic enforcement that supports education, collaboration, and shared priorities and responsibility between police and community members.	**Policies and Programs**	Enforcement	https://www.americanprogress.org/article/safe-streets-for-all-an-opportunity-to-rethink-traffic-enforcement/	Equity concern.
Complete Streets Policy	Work on developing a complete streets policy for your jurisdiction that can be adopted by elected officials.	**Policies and Programs**	Planning / Engineering	https://smartgrowthamerica.org/program/national-complete-streets-coalition/policy-atlas/	Complete Streets or Vision Zero are excellent places to start for moving towards prioritizing roadway safety.

Courtesy Patrols	Implement a program that provides quick support to crashes occurring on major roadways.	**Policies and Programs**	Roadways	https://www.dot.nm.gov/travel-information/courtesy-patrol/	NMDOT already has this type of program for the Interstates.
Crosswalks Policy	Develop a policy regarding unmarked or marked, spacing, and use of mid-block crossings that improves safety benefits for pedestrians.	**Policies and Programs**	Pedestrians / Bicyclists	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/	See City of Rio Rancho mid-block crossing policy.
Emergency Medical Services Quick Response	A quick EMS response time can be the difference between life and death as there is a critical window of time in which people need treatment for serious injuries to stay alive.	**Policies and Programs**	Planning / Engineering	https://www.ems.gov/resources/newsletters/spring-2023/3-ways-highway-safety-and-ems-can-work-together/	In rural areas the need to transport a person to the hospital within the "golden hour" time frame is essential.
Enforcement Staff (Non Police)	Build non-police first responder teams that focus on traffic and road safety not criminal law enforcement.	**Policies and Programs**	Enforcement	https://visionzeronetwork.org/re-thinking-the-role-of-enforcement-in-traffic-safety-work-city-to-city/	Equity Concern. Remove the authority of police to stop cars for minor traffic violations.
Fatal Crash Evaluations	Deploy a response team to investigate locations of fatal and Class A crashes for safety improvements.	**Policies and Programs**	Planning / Engineering	https://visionzero.dc.gov/pages/crash-analysis	Develop a short memo to document the short and long term recommendations for the site.
Ignition Interlock Programs	Provide continued support of Ignition Interlock programs. NM law mandates an ignition interlock on every vehicle driven by anyone in the State convicted of a DWI, including first-time DWI offenders. The NMDOT/TSD is responsible for the licensing and certification of ignition interlock providers.	**Policies and Programs**	State Legislation	https://www.dot.nm.gov/planning-research-multimodal-and-safety/modal/traffic-safety/ignition-interlock-program/	
Improve School Safety Zones	Improve school zone crosswalks and pick and drop off processes. Also ensure well-trained adult crossing guards.	**Policies and Programs**	Planning / Engineering	https://www.saferoutesinfo.org/	Includes a "Safety-based prioritization of schools for Safe Routes to School infrastructure projects: A process for transportation professionals."

Legalize Idaho Stop	Pause at Stop Sign for bicyclists.	**Policies and Programs**	State Legislation	https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-03/Bicyclist-Yield-As-Stop-Fact-Sheet-032422-v3-tag.pdf	
Local Road Safety Plans	Developing a plan that analyzes and prioritizes safety improvements on local roads. Particularly of importance in neighborhoods and rural areas.	**Policies and Programs**	Planning / Engineering	https://highways.dot.gov/safety/proven-safety-countermeasures/local-road-safety-plans	
Long Range Bicycle System	Prioritize gaps in the long range bicycle system that will improve connections to important community destinations.	**Policies and Programs**	Planning / Engineering	https://www.arcgis.com/apps/View/index.html?appid=59043be2fefe4d8599ce7c26ca53f303&extent=-106.9364,34.9553,-106.4893,35.1422	MRMPO has developed a Long Range Bicycle System (LRBS) for the region and some of the larger jurisdictions have their own plans.
LPI Use by Bicyclists	Allows people biking to also use the LPI.	**Policies and Programs**	State Legislation	https://bklyner.com/lpi-bill-passes-allowing-bicyclists-to-follow-pedestrian-signals/	Would likely require local or State legislation.
Motorcycle Helmet Laws	Support State policies that require motorcyclists to wear helmets.	**Policies and Programs**	State Legislation	https://www.cdc.gov/transportationsafety/calculator/factsheet/mchelmet.html	Currently there is a requirement for motorcyclists that are under 18 to wear helmets.
Multiple Threat Crashes	Develop a process to specifically target the reduction of Multiple Threat crashes.	**Policies and Programs**	Planning / Engineering	https://www.pedbikeinfo.org/webinars/webinar_details.cfm?id=12	
Public Health Organizations	Support projects and programs that are high priority for both local agencies and Public Health organizations.	**Policies and Programs**	Planning / Engineering	https://www.healthequitycouncil.net/healthy-here/	Coordinate with Healthy Here and other public health or active transportation organizations.
Public School Collaboration	Preemptive collaboration with Schools and Local Agencies prior to changes in roadway design that focus on safe pedestrian crossing and bicycle access to the School.	**Policies and Programs**	Schools	https://www.safekids.org/research-report/school-zone-research-report	Develop consistent communication between local agencies and schools to coordinate future needs when investing in street infrastructure adjacent to school locations.

Reevaluate Minor Traffic Stops	Develop a plan to eliminate traffic stops that do not support public safety by considering alternative approaches that include educational components or vouchers.	**Policies and Programs**	Enforcement	https://lightsonus.org/about/	Equity Concern. For example, implement voucher programs for minor traffic violations as an alternative to enforcement. See link.
Repeat DWI Offenders	Strengthen State laws on repeat DWI offenders in the State of New Mexico.	**Policies and Programs**	State Legislation	https://seconddistrict.nmcourts.gov/services-programs/jsdp/jsdp-programs/felony-repeat-offender-dwi-court/	Requires Stata law changes. Currently there is a specialty court that handles repeat offenders.
Road Safety Audits	Conduct RSAs in key locations based on public feedback and crash data analysis. Consider prioritizing these in vulnerable communities.	**Policies and Programs**	Planning / Engineering	https://highways.dot.gov/safety/proven-safety-countermeasures/road-safety-audit	
Safe Routes to Schools Programs	Develop and enhance programs at schools focused on improving routes to schools for walkers an bikers that are protected and continuous. In Albuquerque focus on highlights from the Vision Zero Youth Initiative.	**Policies and Programs**	Schools	https://www.aps.edu/capital-master-plan/documents/website-updates/vision-zero/action-plan	Santa Fe Action Plan: https://sfct.org/safe-routes-to-school/action-plan/
Safe Routes to Transit	Develop a plan to prioritize infrastructure that provides safe walking and bicycling routes to transit stations.	**Policies and Programs**	Transit	https://highways.dot.gov/safety/pedestrian-bicyclist/safety-tools/chapter-6-safe-routes-transit-bicycle-and-transit	
School Pick up/Drop off Plan	Evaluate and enhance school pick up/drop off plans.	**Policies and Programs**	Schools	http://guide.saferoutesinfo.org/dropoff_pickup/index.cfm	Coordinate with local jurisdictions for roadway improvements.
Senior Organizations	Work with organizations that support mobility for seniors and persons with disabilities.	**Policies and Programs**	Pedestrians / Bicyclists	https://www.aarp.org/livable-communities/network-age-friendly-communities/	Funding is available from many national organizations that support the development of walkable communities.
Shared Micromobility Programs	Develop programs that provide lightweight vehicles like bicycles or scooters.	**Policies and Programs**	Planning / Engineering	https://nacto.org/publication/shared-micromobility-in-2022/	https://drcog.org/planning-great-region/transportation-planning/advanced-mobility/shared-micromobility

Technical Assistance with Grant Writing and applying for Federal Funds	MRMPO can provide small urban, tribal, and rural areas with assistance.	**Policies and Programs**	Planning / Engineering	https://www.fhwa.dot.gov/bipartisan-infrastructure-law/technical_support.cfm	MRMPO can provide assistance.
TIA Process and Safety	When new development occurs and the TIA process is initiated add a safety assessment.	**Policies and Programs**	Planning / Engineering	https://rosap.ntl.bts.gov/view/dot/55623	
Traffic Stop Transparency	Expand transparency of decision making around traffic stops and searches.	**Policies and Programs**	Enforcement	https://www.vera.org/downloads/publications/alternatives-to-policing-traffic-enforcement-fact-sheet.pdf	Equity Concern. For example, require written consent from drivers before all traffic searches and report legal basis and actions taken. Maintain and report data to identify disparities.
Transit Fare Program	Reduce or eliminate transit fares.	**Policies and Programs**	Transit	https://www.cabq.gov/transit/news/zero-fares-is-here-to-stay#:~:text=On%20Wednesday%2C%20November%208%2C%2023%2C%20City%20Council%20approved,the%20Sun%20Van%20Paratransit%20service%20in%20April%202023.	Equity Concern.
Tribal Governments	Work with Tribal governments to support their transportation plans and safety projects.	**Policies and Programs**	Planning / Engineering	https://highways.dot.gov/federal-lands/ott/study	Equity Concern. See also: https://nap.nationalacademies.org/catalog/27197/highway-safety-behavioral-strategies-for-rural-and-tribal-areas-a-guide
Vision Zero Policy and Workshops	Adopt Vision Zero Policies and Plans along with training.	**Policies and Programs**	Planning / Engineering	https://highways.dot.gov/safety/zero-deaths/vision-zero-cop/vision-zero-community-practice	https://visionzeronetwork.org/resources/

Strategies	Description	Broad Category	Secondary Category	Website Resources	Guidance Notes (includes priorities, equity concerns, and existing local initiatives).
Advanced Driver Assistance Systems (ADAS)	ADAS are vehicle-based safety technologies that work by alerting or assisting drivers to prevent or mitigate crashes.	**Traffic Technologies**	Speed / Dangerous Driving	https://www.itskrs.its.dot.gov/briefings/executive-briefing/vision-zero-and-its	Safer Vehicles.
Advanced Signal Timing / Smart Signals	Allocates right-of-way to intersection traffic based on mode and fluctuations in demand over the course of each day, week, and year.	**Traffic Technologies**	Intersections	https://mrcog-nm.gov/259/Intelligent-Transportation-Systems	In the Albuquerque metropolitan area consider the ITS Priority Corridors and consult the ITS Strategies Matrix (https://www.mrcog-nm.gov/DocumentCenter/View/6133/ITSStrategiesMatrix_V83c_Final).
Advanced Vehicle Detection	Uses technology to acquire vehicle counts, speed of each individual vehicle, traffic analysis, and vehicle categorization.	**Traffic Technologies**	Intersections	https://www.standards.its.dot.gov/ApplicationArea/10	In the Albuquerque metropolitan area consider the ITS Priority Corridors and consult the ITS Strategies Matrix (https://www.mrcog-nm.gov/DocumentCenter/View/6133/ITSStrategiesMatrix_V83c_Final).
Bicycle Signal Pilot Project	Install a bicycle light at intersections to test the viability.	**Traffic Technologies**	Planning / Engineering	https://nacto.org/publication/urban-bikeway-design-guide/bicycle-signals/	Existing infrastructure needs to be present for installation.
Bus Queue Jump Signals / Signal Priority	Allows buses to easily enter traffic flow in a priority position using Advanced Vehicle Detection.	**Traffic Technologies**	Transit	https://nacto.org/publication/transit-street-design-guide/intersections/signals-operations/	In the Albuquerque metropolitan area consider the ITS Priority Corridors and consult the ITS Strategies Matrix (https://www.mrcog-nm.gov/DocumentCenter/View/6133/ITSStrategiesMatrix_V83c_Final).

Dynamic Message Signs	Electronic signs on the roadway that provide drivers with real time traffic alerts.	**Traffic Technologies**	Roadways	https://www.standards.its.dot.gov/ApplicationArea/8	The Transportation Management Center is key to a successful system: https://www.mrcog-nm.gov/260/Regional-Transportation-Management-Cente
Emergency / Incident Management Plans	Develop and implementation of a plan that coordinates a multi-disciplinary response to traffic incidents and other emergency situations.	**Traffic Technologies**	Planning / Engineering	https://ops.fhwa.dot.gov/tim/	Current update is in progress for the Albuquerque Traffic Incident Management Plan. The final draft is in circulation to the stakeholder agencies. The Transportation Management Center is key to a successful system: https://www.mrcog-nm.gov/260/Regional-Transportation-Management-Cente
Emergency Signal Preemption Systems (ESPS)	ESPS are designed to disrupt the regular timing of traffic signals and grant a green light to emergency vehicles approaching intersections.	**Traffic Technologies**	Intersections	https://www.itskrs.its.dot.gov/briefings/executive-briefing/vision-zero-and-its	This enables emergency vehicles to navigate through intersections quickly and safely to reach their destinations without delay.
Green Wave Systems/Coordinated Signals	Coordinated signal timing synchronizes traffic movements and manages the progression of drivers. Signals can be timed to a target speed limit to encourage drivers to drive at safer speeds. Coordinated signal timing can limit drivers to safe speeds.	**Traffic Technologies**	Speed / Dangerous Driving	https://www.researchgate.net/publication/276497476_Green-Wave_Traffic_Theory_Optimization_and_Analysis	
Intelligent Lane Control Signs (ILCS)	Overhead signals that indicate whether a lane is open or closed due to various reasons such as traffic collision, breakdown, or reversed lanes.	**Traffic Technologies**	Roadways	https://ops.fhwa.dot.gov/publications/fhwahop12046/rwm17_minnesota1.htm	

Mobile Automated Speed Cameras	A portable system that uses a camera and a speed measurement device to detect and capture images of vehicles travelling in excess of the speed limit. It may also include other offenses such as running through a red light or unauthorized use of a bus lane.	**Traffic Technologies**	Speed / Dangerous Driving	https://highways.dot.gov/safety/proven-safety-countermeasures/speed-safety-cameras	Automated traffic enforcement supports the objective of consistent and unbiased enforcement of speeding, red light running and other traffic violations without regard to driver race or socioeconomic status. However, choosing locations for camera enforcement should include members of the BIPOC community.
Rest on Red	Traffic signals that remain in the red phase in all directions until a driver is detected. Speed detection can be added, and if a driver is traveling above the speed limit the red phase can be held to stop the driver. Manage excessive driver speeds.	**Traffic Technologies**	Speed / Dangerous Driving	https://trid.trb.org/View/61088	Currently being tested on Lead/Coal in Albuquerque:chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.cabq.gov/council/documents/lead-coal-rest-in-red-7-28-2021-final-1.pdf
Signal Clearances	Evaluate the time between one direction of travel getting the red phase signal and the opposing direction getting the green phase signal. A longer clearance can be achieved by having an all-red phase to increase time for intersections to be cleared before opposing traffic.	**Traffic Technologies**	Intersections	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=45	
Signal Phasing Modifications	Can reduce conflicting movements between turns, vehicles going straight, and/or pedestrian and bicyclist movements.	**Traffic Technologies**	Intersections	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/traffic-signals/coordinated-signal-timing/	

Smart Work Zones	Dynamic management of work zone traffic, such as queue warning, speed management and lane merging.	**Traffic Technologies**	Speed / Dangerous Driving	https://ops.fhwa.dot.gov/wz/its/index.htm	
Speed Feedback Indicator Signs	Manage driver speeds by comparing the driver's current speed with the speed limit.	**Traffic Technologies**	Speed / Dangerous Driving	https://www.nhtsa.gov/book/countermeasures-that-work/speeding-and-speed-management/countermeasures/other-strategies-behavior-change/dynamic-speed#:~:text=Unstaffed%20speed%20display%20devices%2C%20also,some%20drivers%20to%20slow%20down.	
Stationary Automated Speed Cameras	Permanent infrastructure that uses cameras and a speed measurement device to detect and capture images of vehicles travelling in excess of the speed limit. It may also include other offenses such as running through a red light or unauthorized use of a bus lane. Consider prioritizing on HFIN network.	**Traffic Technologies**	Speed / Dangerous Driving	https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed%20Safety%20Cameras_508.pdf	Automated traffic enforcement supports the objective of consistent and unbiased enforcement of speeding, red light running and other traffic violations without regard to driver race or socioeconomic status. However, choosing locations for camera enforcement should include members of the BIPOC community.
Traveler Information	Messaging signs that update drivers on current roadway conditions such as delays, incidents, weather, emergency alerts, and alternate routes.	**Traffic Technologies**	Roadways	https://ops.fhwa.dot.gov/travelinfo/about/aboutus.htm	An example of capturing this information and providing a map display for reference in addition to dynamic message signs: https://nmroads.com/mapIndex.html?

Variable Speed Limits (VSLs)	VSLs use current roadway conditions like traffic speed, volumes, weather, and road surface conditions to determine appropriate speeds and display them to drivers.	**Traffic Technologies**	Speed / Dangerous Driving	https://highways.dot.gov/safety/proven-safety-countermeasures/variable-speed-limits	Existing infrastructure needs to be present for installation.
Vehicular Technology	Continue to support vehicular technologies directly related to safety such as limiting speed and detecting other vehicles and people walking, biking, or rolling.	**Traffic Technologies**	Speed / Dangerous Driving	https://www.ntsb.gov/news/press-releases/Pages/NR20231114.aspx#:~:text=Passive%20ISA%20systems%20warn%20a,responsible%20for%20slowing%20the%20car.	California recently introduced a bill that would require 2027 or newer vehicles built and sold within CA to have a speed limiter that could prevent them from going more than 10 mph over the speed limit.
Yellow Change Intervals	Adequate timing on yellow signal following a green signal.	**Traffic Technologies**	Intersections	https://highways.dot.gov/safety/proven-safety-countermeasures/yellow-change-intervals	

PROVEN SAFETY COUNTERMEASURES

Federal Highway Administration (FHWA) Proven Safety Countermeasures are identified and included in the stand-alone strategy list but emphasized here because of their well-vetted impact on reducing crashes.

Countermeasures are often used along specific roadway segments or intersections based on the types of crashes taking place. They are primarily physical roadway infrastructure improvements but also include signal operation and planning elements such as Road Safety Audits and Local Safety Plans. The countermeasures provided here include clear and brief information on their appropriate uses and their impact in easy-to-understand language.

> True investment in changing infrastructure to slow vehicles down and elevate the experience of pedestrian, bike, and transit travel.
>
> An actual dedication to this would involve removing driving lanes to create separated sidewalks and bike lanes that are actually worth using.
>
> For example, imagine if Lomas was reduced to two lanes in each direction through UNM / North Nob Hill and had separated bike lanes and buffered sidewalks. It would be one of the most popular East / West travel routes in the city.
>
> -Public Comment

The valuable aspect of countermeasures is that studies have been conducted that estimate the probability of an implementation to reduce crashes by a percentage measure and therefore can predict safety outcomes. Installing multiple treatments at the same location can have complementary safety benefits.

Below are essential websites for countermeasures that every planner and engineer should have in their toolbox:

1. https://highways.dot.gov/safety/proven-safety-countermeasures
2. http://www.pedbikesafe.org/bikesafe/
3. http://www.pedbikesafe.org/pedsafe/

The FHWA continues to expand these countermeasures and look for new studies to support the benefits of specific measures. As with any engineering application the land use context and other geometric and operations conditions need to be taken into consideration. **Through outreach efforts it was remarkably clear that the systemic application of countermeasures is important to both the public and local agencies.**

There are many ways to implement countermeasures in a systemic way:

- As a part of every transportation infrastructure project.
- As a new program that evaluates where and when to start implementing them.
- As a priority at existing school crossings and/or high crash locations.
- As a demonstration project.
- As new plans from developers are received.
- As a part of regular maintenance programs.

RTSAP Strategies	FHWA Icon	Description	CMF Information	Guidance
Appropriate Speed Limits for all Roadway Users		Review current speed limits by looking at a range of factors such as pedestrian and bicyclist activity, land use context, and intersection and driveway density and establish non-statutory speed limits and designate reduced speed zones.	Traffic fatalities in Seattle decreased 26% after the city implemented city-wide speed management strategies and countermeasures, including setting speed limits on all non-arterial streets at 20 mph and 200 miles of arterial streets at 25 mph.	Systemwide process for reevaluating how speed limits are being set.
Backplates with Retroreflective Borders		Use backplates for Signal Heads that have retroreflective borders making them more visible and conspicuous. Also supports better orientation for older and color vision deficient drivers.	15% reduction in total crashes.	Low cost application.
Bicycle Lanes / Buffered Bicycle Lanes		Provide dedicated, on-road space for bicycling. Buffered lanes provide dedicated on-road space for bicycling with additional marked space between vehicles and bicyclists.	Bicycle Lane additions can reduce crashes up to 49% for total crashes on urban 4-lane undivided collectors and local roads and 30% for total crashes on urban 2-lane undivided collectors and local roads.	See MRMPO Long Range Bicycle System recommendations.
Bicycle Lanes: Protected or Separated		On road space for bicyclists that include a separated bicycle lane deliniated with flexible posts or other barriers.	Converting traditional or flush buffered bicycle lanes to a separated bicycle lane with flexible delineator posts can reduce crashes up to 53%.	See MRMPO Long Range Bicycle System recommendations.
Centerline Hardening and Turn Wedges		The use of bollards and rubber curbs that prevent drivers from cutting across intersections at a diagonal, which reduces turning speeds and reduces conflicts with other modes.	46% for all crashes at raised medians (Bahar et al. 2007).	Can be constructed rapidly and inexpensively using markings and flexible delineators. The turning radius of trucks and buses should be considered when installing turn wedges.
Corridor Access Management		Design, application, and control of entry and exit points along a roadway, including other intersections and driveways. Ensure enhanced safety for all modes that facilitates walking and biking.	Reducing driveway density 5-23% reduction in total crashes along 2-lane rural roads. 25-31% reduction in fatal and injury crashes along urban/suburban arterials.	Reduce driveway density. Manage spacing of intersection and access points. Limit allowable movements at driveways. Place driveways on an intersection approach corner rather than a receiving corner. Utilize designs such as roundabouts or reduced left-turn conflicts. Use lower speed one-way or two-way off-arterial circulation roads.
Crosswalk Visibility Enhancements		Increase visibiltiy at crosswalks with lighting, signing, and pavement markings such as bar pairs, continental or ladder crosswalk patterns.	High-visibility crosswalks can reduce pedestrian injury crashes up to 40% Intersection lighting can reduce pedestrian crashes up to 42%. Advance yield or stop markings and signs can reduce pedestrian crashes up to 25%.	Prioritize locations based on crash data analyses (like the HFIN) and the location of vulnerable communities.

Curb Extension/Bulb-out		Extensions of the sidewalk or curb line into the parking lane to narrow roadway width.	A CMF has not yet been determined; initial research indicates this treatment may be effective at increasing driver yielding and improving pedestrian safety (Johnson et al. 2005; Thomas et al., 2016).	High activity areas.
Daylighting		Removes / prevents parking right at the intersection (typically 20' of the intersection). Improves visibility of people crossing the street and also for drivers to safely see if there's oncoming traffic when making a turn.	30% for vehicle-pedestrian crashes (Gan et al. 2005).	High activity areas.
Dedicated Left- and Right-Turn Lanes at Intersections		Turn lanes that provide physical separation between slower turning traffic with adjacent through traffic.	Left-Turn Lane 28-48% reduction in total crashes. Positive Offset Left-Turn Lanes 36% reduction in fatal and injury crashes. Right-Turn Lanes 14-26% reduction in total crashes.	
Enhanced Delineation for Horizontal Curves		A variety of strategies that can warn drivers of a change in roadway direction that can be implemented in advance of or within curves, such as chevrons or retroflective signs.	Chevron Signs 25% reduction in night-time crashes, 16% reduction in non-intersection fatal and injury crashes. Oversized Chevron Signs 15% reduction in fatal and injury crashes. Sequential Dynamic Chevrons 60% reduction in fatal and injury crashes. In-Lane Curve Warning Pavement Markings 35-38% reduction in all	Priority strategy in areas with multiple roadway departures. Many of these are in rural areas.
Hawk Signals / Pedestrian Hybrid Beacons		A traffic control device designed to help pedestrians (and bicyclists) safely cross higher-speed roadways at midblock crossings and uncontrolled intersections.	55% reduction in pedestrian crashes. 29% reduction in total crashes. 15% reduction in serious injury and fatal crashes.	Filling gaps in trail networks and providing access to important community destinations.
Leading Pedestrian Intervals (LPIs)		Provide pedestrians with a head start when entering an intersection.	13% reduction in pedestrian-vehicle crashes at intersections. Reduces conflicts between pedestrians and bicyclists from vehicular turning movements.	Costs for implementing LPIs are very low when only signal timing alteration is required, but can be costly when the hardware is not already available.
Left-Turn Conflict Reduction		Improved geometric design at intersections that reduce the number of severe crashes associated with left-turn movements. Highly effective designs include U-turns to complete certain left-turn movements such as the Restricted Crossing U-turn (RCUT) or the Median U-turn (MUT).	Two-Way Stop-Controlled to RCUT 54% reduction in fatal and injury crashes. Signalized Intersection to Signalized RCUT 22% reduction in fatal and injury crashes. Unsignalized Intersection to Unsignalized RCUT 63% reduction in fatal and injury crashes. MUT 30% reduction in intersection-related injury crash rate.	The RCUT is suitable for and adaptable to a wide variety of circumstances, ranging from isolated rural, high-speed locations to urban and suburban high-volume, multimodal corridors. It is a competitive and less costly alternative to constructing an interchange.
Lighting		Increase visibility for all road users, especially at crossings and intersections. Ensure adequate illuminance levels and continous lighting along roadway segments.	Lighting can reduce crashes up to 42% for nighttime injury pedestrian crashes at intersections. 33-38% for nighttime crashes at rural and urban intersections. 28% for nighttime injury crashes on rural and urban highways.	High concern for vulnerable communities along mixed use corridors.

Local Road Safety Plans		Developing a plan that analyzes and prioritizes safety improvements on local roads. Particularly of importance in neighborhoods and rural areas.	25% reduction in county road fatalities in Minnesota. 17% reduction in fatal and serious injury crashes on county-owned roads in Washington State. 35% reduction in severe curve crashes in Thurston County, WA.	
Longitudinal Rumble Strips and Stripes		Milled or raised elements on the pavement intended to alert drivers that their vehicle has left the travel lane. Rumble stripes are markings placed over the rumble strips.	Center Line Rumble Strips 44-64% reduction in head-on fatal and injury crashes on two-lane rural roads. Shoulder Rumble Strips 13-51% reduction in single vehicle, run-off-road fatal and injury crashes on two-lane rural roads.	Rumble strips are relatively low-cost, and economic analyses have indicated benefit/cost ratios that exceed 100.
Median Barriers		Longitudinal barriers that separate opposing traffic on a divided highway to reduce cross median crashes. Includes metal-beam guard rails, concrete and cable barriers.	8% of all fatalities on divided highways are due to head-on crashes. Median Barriers Installed on Rural Four-Lane Freeways 97% reduction in cross-median crashes.	Potential risk factors include: Traffic volumes. Vehicle classifications. Median crossover history. Crash incidents. Vertical and horizontal alignment. Median terrain configurations.
Medians and Pedestrian Crossing Islands		Pedestrian safety islands or refuges decrease pedestrian exposure in the intersection or when crossing the road.	Median with Marked Crosswalk 46% reduction in pedestrian crashes. Pedestrian Refuge Island 56% reduction in pedestrian crashes.	Highly recommended where pedestrians must cross multiple lanes of traffic in one direction.
Paved Shoulders		Paved area of a roadway between the travel lane and the edge of pavement. Provided for accommodation of stopped vehicles for emergency use, and for pedestrians or wheelchair use typically on rural roadways.	Paved Shoulders 71% reduction in crashes involving pedestrians walking along roadways.	High priority for rural areas.
Pavement Friction Management		Monitoring and maintianing pavement friction at locations where vehicles are frequently turning, slowing and stopping. Pavement friction produces vibration and sound to prevent roadway departure, intersection and pedestrian involved crashes.	High Friction Surface Treatment can reduce crashes up to 63% for injury crashes at ramps, 48% for injury crashes at horizontal curves, and 20% for total crashes at intersections.	Horizontal curves. Interchange ramps. Intersection approaches. Higher-speed signalized and stop-controlled intersections. Steep downward grades. Locations with a history of rear-end, failure to yield, wet-weather, or red-light-running crashes. Crosswalk approaches.
Pedestrian Hybrid Beacons (PHBs)		Provide a protected phase for crossing pedestrians and bicyclists at midblock crossings and uncontrolled intersections.	55% reduction in pedestrian crashes. 29% reduction in total crashes. 15% reduction in serious injury and fatal crashes.	PHBs are used where it is difficult for pedestrians to cross a roadway, such as when gaps in traffic are not sufficient or speed limits exceed 35 miles per hour. They are very effective at locations where three or more lanes will be crossed or traffic volumes are above 9,000 annual average daily traffic.

Raised Crosswalks		Crosswalks that are elevated above roadway pavement in the form of an elongated speed hump with a flat section in the middle and at-grade with adjacent sidewalks.	45% for pedestrian crashes (Elvik et al. 2004). 51% for bicycle- vehicle crashes on entrances or exits to streets and driveways (Schepers et al. 2011).	Raised crosswalks are typically installed on 2-lane or 3-lane roads with speed limits of 30 mph or less and annual average daily traffic (AADT) below about 9,000.
Rectangular Rapid Flashing Beacons (RRFBs)		RRFBs flash with an alternating high frequency when activated to enhance awareness of pedestrians at the crossing to drivers. Increases driver yielding to pedestrians and bicyclists (or equines) at uncontrolled crossings.	RRFBs can reduce crashes up to 47% for pedestrian crashes. RRFBs can increase motorist yielding rates up to 98% (varies by speed limit, number of lanes, crossing distance, and time of day).	The RRFB is applicable to many types of pedestrian crossings but is particularly effective at multilane crossings with speed limits less than 40 miles per hour.
Road Safety Audits		Conduct RSAs in key locations based on public feedback and crash data analysis. Consider prioritizing these in vulnerable communities.	10-60% reduction in total crashes.	
Roadway Reconfigurations / Road Diets and Lane Diets		Reduce the speed of traffic, crossing distances, and/or provide additional space for other uses of the roadway such as bicycle lanes or parking, and narrowing travel lanes.	4-Lane to 3-Lane, Road Diet Conversions result in 19-47% reduction in total crashes.	Low cost application that can be done along with pavement maintenance. See MRMPO's Potential Road Diet Candidates map.
Roundabouts		An intersection with a circular configuration that reduces vehicle speed and minimizes conflict points.	Signalized Intersection to a Roundabout 78% reduction in fatal and injury crashes.	
SafetyEdgeSM		This technology shapes the edge of the pavement at approximately 30 degrees from the pavement cross slope. Particularly useful for rural road crashes involving edge drop-offs because they are 2-4 times more likely to include a fatality than other crashes on similar roads.	11% reduction in fatal and injury crashes. 21% reduction in run-off road crashes. 19% reduction in head-on crashes. Benefit-Cost Ratio Range 700:1 to 1,500:1.	Systemwide on all new asphalt paving and resurfacing projects where curbs and/or guardrail are not present, while also encouraging standard application for concrete pavements.
Sidewalks / Walkways		Defined pathway adjacent to the roadway for pedestrian travel or use of a wheelchair. Consider wide separation from vehicular traffic and providing facilities that are beyond ADA requirements.	65-89% reduction in crashes involving pedestrians walking along roadways.	Implement with ADA plan in systemic matter prioritized by safety needs and vulnerable communities.

Speed Cameras		A camera which may be mounted beside or over a road or installed in an enforcement vehicle or mobile device to detect speeding, vehicles going through a red traffic light, and other offenses.	Fixed units can reduce crashes on urban principal arterials up to 54% and 47% for injury crashes. P2P units (multiple angles) can reduce crashes on urban expressways, freeways, and principal arterials up to 37% for fatal and injury crashes. Mobile units can reduce crashes on urban principal arterials up to 20% for fatal and injury crashes.	In New York City, fixed units reduced speeding in school zones up to 63% during school hours.Focus on major roads with high intersection crash rates. See HFIN.
Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections		A package of multiple low-cost countermeasures, including enhanced signing and pavement markings at a large number of stop-controlled intersections.	10% reduction of fatal and injury crashes at all locations. 15% reduction of nighttime crashes at all locations. 27% reduction of fatal and injury crashes at rural intersections. 19% reduction of fatal and injury crashes at 2-lane by 2-lane intersections. Average Cost-Benefit Ratio 12:1.	
Variable Speed Limits (VSLs)		VSLs use current roadway conditions like traffic speed, volumes, weather, and road surface conditions to determine appropriate speeds and display them to drivers.	VSLs can reduce crashes on freeways up to 34% for total crashes, 65% for rear-end crashes, 51% for fatal and injury crashes.	Because humans are unlikely to survive high-speed crashes, VSLs reduce speeds so that human injury tolerances are accommodated in three ways: improving visibility, providing additional time for drivers to stop, and reducing impact forces.
Wider Edge Lines		Marking a wider roadway edge line to increase visibility to drivers. Potential risk factors for two-lane rural roads include Pavement and shoulder widths, Presence of curves, Traffic volumes, and History of nighttime crashes.	Wider edge lines can reduce crashes up to 37% for non-intersection, fatal and injury crashes on rural, two-lane roads. Benefit-Cost Ratio is 25:1 for fatal and serious injury crashes on two-lane rural roads. 22% for fatal and injury crashes on rural freeways.	
Yellow Change Intervals		Adequate timing on yellow signal following a green signal. Appropriately timed yellow change intervals can reduce red-light running and improve overall intersection safety.	36-50% reduction in red-light running. 8-14% reduction in total crashes. 12% reduction in injury crashes.	

For more detailed information see https://highways.dot.gov/safety/proven-safety-countermeasures.

These safety countermeasures were adapted directly from the FHWA Proven Safety Countermeasures with support from Arlington, VA Multimodal Safety Engineering Toolbox. The icons are also from FHWA.

ADDRESSING SPEEDING

THE 85TH PERCENTILE

In the past, speed limits along roadways were established based on the 85th percentile, which estimates that 85 percent of vehicles will not exceed the speed limit. However, this approachcan perpetuate unsafe speeds without addressing safety. The 85th percentile rule also prioritizes motor vehicles and does not consider the needs of other roadway users such as pedestrians or bicyclists. This approach to setting speed limits was originally intended for highways but ended up being used for all major roadways. When roadways enter cities and small towns the character is completely different and should not be treated the same. In 2017, the National Transportation Safety Board (NTSB) "concluded that excessive speed is one of the most significant causes of both crashes and fatalities on U.S. roadways." This is similar to the impact that alcohol-related crashes have on our roadways but is something that needs to be addressed in a very different way. NTSB recommendations include:

- Modernizing how speed limits are set by using the Safe System Approach, which accounts for all road users – not just people in cars.
- Amending state laws to allow cities to use automated speed enforcement, a proven strategy to increase driver compliance with posted speed limits.
- Setting performance measures at the federal, state, and local level to track where speeding occurs, what measures are most effective at curbing it, and where progress is being made.
- Increasing attention at all levels on speed as a major national safety priority.

MUTCD POLICY CHANGE

> U.S. streets have long been designed to promote speed at all costs, with deadly consequences.
>
> - **Linda Bailey, Executive Director of NACTO**.

The 85th percentile approach is widely regarded by the transportation planning and engineering community as outdated. In fact, the Manual on Uniform Traffic Control Devices or MUTCD (which governs the implementation of speed related control devices) in their latest update, issued in December of 2023, deemphasized this practice by broadening what factors to look at when determining posted speed. Thus, the MUTCD emphasizes the importance (especially in urban areas and main streets) of considering crash history, the roadway context and geometry, and multimodal travel safety instead.

PROVEN SAFETY COUNTERMEASURE FOR SPEEDS

One of the FHWA's proven safety countermeasures is called *Appropriate Speed Limits for All Road Users*. This countermeasure is extremely clear on the fact that "speed control is one of the most important methods for reducing fatalities and serious injuries." All non-limited access multimodal corridors need a new approach to reducing speeds which includes both reevaluating current posted

speed limits and using design to slow down drivers. Often what seems like a reasonable speed to a driver can result in a higher probability of death for other road users and other drivers (or themselves).

SETTING SPEED LIMITS AND ZONES

When setting speed limits, agencies with the authority to do so need to consider more factors such as adjacent road characteristics, adjacent land use intensity and type, observed speeds, intersection and driveway spacing, pedestrian and bicycle facilities and use, complete streets concepts, and intersection sight distance requirements. Consideration should also be given to differentiating policy based on Rural, Small Urban, or Large Urban conditions. Designating speed zones in specific areas is also an option.

Additional FHWA Resources

FHWA Speed Management website.

Self-Enforcing Roadways: A Guidance Report.

Jurisdiction Speed Management Action Plan Development Package.

Traffic Calming ePrimer.

Safe Systems Approach for Speed Management

Many Vision Zero cities have lowered city speed limits. Often, they have had to secure State legislative authority to do so. In 2014, New York City lowered the default speed limit from 30 mph to 25 mph, unless otherwise posted. In early 2018, Portland, OR announced a speed reduction from 25 mph to 20 mph on residential streets, which comprise about 70 percent of the city's streets. There is also an organization called 20's Plenty for Us, which works toward assisting communities with setting mandatory 20 mph limit on most roads to create safer and more livable streets.

It is not just about speed limits though – the design of roadways also needs to change. Often, even when the posted speed is lower, the roadway design doesn't give the driver any indication that they need to slow down. This is the difference between design speed and posted speed. Some considerations to address speed include:

1) Reevaluate the process of setting speed limits.
2) Provide default speed limits in city and town centers.
3) Designate slow/speed zones.
4) Evaluate conflict density and land use context.
5) Use automated enforcement.

DESIGNING ROADWAYS

DESIGN MANUALS

To develop streets that are safe for everyone, local agency design manuals need to be updated and paired with information campaigns on how to use new and safer roadway and intersection designs. Other strategies such as enforcement can supplement these efforts but need to be implemented with caution in underserved communities and in a way that creates a shared responsibility and respect.

> There were ~140 comments related to issues of road design and engineering, particularly that roads are designed for speed and efficiency rather than safety and that there is missing or insufficient infrastructure for vulnerable road users on roadways throughout the region.
>
> - RTSAP Engagement Process

When it pertains to roadway safety, education in and of itself does not push the needle as much as slowing down traffic does. The reality is that putting the burden on vulnerable roadway users is not acceptable and changing driver behavior is not enough - there must be design changes in roadway infrastructure and advances in vehicle technology to make significant difference in reducing deaths and serious injuries.

BROAD DESIGN PRINCIPLES

Many jurisdictions across the United States have adopted some form of broad design principles. These principles can help guide decision making processes for new roads, resurfacing and restriping projects. By just approaching every project with these principles, a significant impact can be made on improving roadway safety. For example, Chicago's Design Principles encourage safe speeds and minimize risk to all users by focusing on the follow items:

1. Narrow Vehicle Lanes
2. Crossings that Provide Easy Access to Transit
3. Compact Intersections
4. Short Pedestrian Crossings
5. Separated Areas for Vulnerable Roadway Users

Compacting an intersection in California.

The sign on pavement is also informative explaining how these barriers save lives.

Name	Description	Link
Designing for All Ages and Abilities	This document considers how to best apply different types of bicycle facilities by looking at contextual factors like vehicular speeds and volumes and observed sources of bicycling stress. The document helps determine when, where, and how to best combine traffic calming tools, like speed reduction and volume management, with roadway design changes.	https://nacto.org/wp-content/uploads/2017/12/NACTO_Designing-for-All-Ages-Abilities.pdf
Don't Give Up at the Intersection	Focuses on improving comfort and safety by reducing vehicle conflict with bicyclists and pedestrians at intersections. Strategies to improve signalization are also included.	https://nacto.org/publication/dont-give-up-at-the-intersection/
Rural Roadway Departure Countermeasure Pocket Guide	Contains countermeasures related to minimizing severity and keeping vehicles on the roadway. This quick reference document is meant to be distributed to workers managing roadway safety. Costs are also provided.	https://safety.fhwa.dot.gov/FoRRRwD/RwDPocketGuide.pdf
Small Town and Rural Design Guide	Addresses unique issues in small towns and rural areas using existing national design guidance but also encourages innovation. Two emphasized treatments are Yield Roadways and Advisory Shoulders. An additional purpose is to advance more experimentation and research for multimodal design and flexibility in small towns and rural areas.	https://ruraldesignguide.com/
Speed Management Practices	Because of the lack of resources to address speeding and pushback with changing speed limits, this document was developed to provide practitioners with some noteworthy practices from case studies that addressed speed management at local agencies. Includes automated enforcement, setting new speed limits, self-enforcing roadways, and more.	https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa20047/index.cfm
Transit Street Design Guide (NACTO)	On all types of streets design can directly improve transit travel time, reliability, and capacity. Large projects like dedicated transitways and smaller improvements like bus bulbs and signal timing can increase frequency and safety.	https://nacto.org/publication/transit-street-design-guide/transit-streets/

CORRIDOR AND INTERSECTION SAFETY

INTERSECTIONS

Redesigning an unsafe intersection using more innovative intersection geometry improves safety for all modes of traffic. Bicyclists are particularly vulnerable at intersections that do not have a continuous protected space. According to NHTSA, 26 percent of bicyclist fatalities occurred at intersections in 2020. The only reason pedestrian fatalities are not as high at intersections is because many people choose not to cross there, and a bicyclist does not have that same option.

There are many innovative intersection designs to choose from. Some excellent guidance is included in the NACTO *Don't Give Up at the Intersection* publication, which focuses on improving comfort and safety by reducing intersection conflicts between vehicles and bicyclists, pedestrians, and wheelchair users. Strategies to improve signalization are also included. One example provided is the protected intersection treatment that minimizes turning movements, includes a bike lane transition at the intersection to a more protected space, and mid-block crossing islands for pedestrians and other non-motorized travel. There are different variations of this design. Some more traditional and basic items that can be done to improve intersections include the following treatments:

1. Automate the pedestrian phase of signals and allow enough time for slower users.
2. Provide pedestrian median refuges and plan for one-stage crossings.
3. Reduce turning radii to reduce speed of turn maneuvers.
4. Provide a No Turn on Red phase to the signal plan with a dynamic sign.
5. Provide a leading pedestrian interval (LPI).
6. Add backplates with retroreflective borders to all signal heads.
7. Use PROWAG to provide additional space in key locations for sidewalk space.

Protected Intersection: 30th Street and Colorado Avenue in Boulder, Colorado

LONG RANGE TRANSPORTATION SYSTEM GUIDE (LRTS)

The Long Range Transportation System (LRTS) Guide developed by MRMPO provides recommendations on better integrating planned land use into the roadway design process by making sure that existing and future planned land use is evaluated when building new roadways or retrofitting existing roadways. Costly changes to the street in the future can be minimized by evaluating how the road will function in the future. Local governments in the region are strongly encouraged to use the LRTS Guide in the design or redesign of their roadways, particularly if they do not have local complete streets design guidance available. The latest update to this document includes recommendations on green infrastructure.

BICYCLE BOULEVARDS AND PARALLEL ROADWAYS

Sometimes the best way to provide safer multimodal travel is to consider safety improvements such as bicycle boulevards on parallel roadways. Ample right-of-Way to include separated facilities or wider sidewalks is not always available on main thoroughfares. As much as possible it is important to implement these types of improvements but providing facilities elsewhere is also an option.

Bicycle boulevards can be implemented to improve safety for vulnerable users as well as drivers. They provide safe and comfortable connections by slowing motor vehicle speed and are usually along local roads with lower traffic volumes that still maintain access to important destinations. Sometimes local roadways are still quite wide and finding ways to narrow the street or the width of lanes for travel is already needed. Traffic calming elements is key to making these parallel roadways safer. Wayfinding signage is also essential.

When developing these alternate routes the intersections that provide access to important destinations cannot be forgotten. Ultimately, there will be intersections with major roadways and pedestrians or bicyclists will want to reach a destination on a major road because the reality is that most destinations are located on arterial roadways. Therefore, providing improvements to intersections and ensuring access to major roadways at certain intervals should be part of the development of these routes.

CHOOSING LOCATIONS FOR SAFETY IMPROVEMENTS

The High Fatality and Injury Network (HFIN) corridors and intersections and Potential Road Diet Candidates are a good place to start for guiding local agencies towards important safety locations. Further engineering evaluation is needed to determine the best types of safety improvements. Nevertheless, implementing a more radical design that puts safety first before capacity is simply the direction the region needs to move to make an impact on reducing roadway fatalities and injuries.

Land use context is important in deciding how to design for safety. An intersection, for example, that is located immediately adjacent to a school, has heavy foot-traffic, and transit stops on all approaches is an ideal location for implementing a new innovative intersection design. Following this list of some highly recommended design guidance for safety improvements is further information on selecting and improving high crash corridors and intersections.

ROADWAY RECONFIGURATIONS

ROAD DIETS

Road Diets have proven to be an effective strategy for improving safety along a corridor. A Road Diet is essentially a reallocation of roadway space that aims to reduce speeding and improve infrastructure for other road users and that complements the adjacent land use. The purpose of a Road Diet is to reconfigure streets to better serve the people who use them, whether they're commuters driving, shoppers walking, or people bicycling.

The most common type of road diet takes an undivided four lane roadway and reconfigures it into a three-lane roadway with one travel lane in each direction and a two-way left turn lane in the center. This reconfiguration decreases conflict points and provides space for bicycle lanes or parking spaces in each direction of travel. The bike or parking lane also provides pedestrians with a traffic buffer increasing their comfort and safety on the roadside.

ROAD DIET INFORMATIONAL GUIDE

In 2014, the FHWA released its *Road Diet Informational Guide*, followed by the New Mexico Department of Transportation's *Road Diet Guide* in 2016. According to the USDOT, road diets are a proven safety countermeasure. In small urban areas with populations around 17,000 and roadways with traffic volumes up to 12,000 (daily volume), post-road-diet crashes dropped about 47 percent. In larger metropolitan areas with populations around 269,000 and roadways with traffic up to 24,000 (daily volume), the crash reduction was roughly 19 percent. The combined estimate from all the best studies predicts that accidents will decline an average of 29 percent after a four-to-three-lane road diet.

Central Avenue west of Downtown was given a road diet between 8th Street and San Pasquale in 2011. In the two years after the Central Avenue change, there was a two percent increase in overall crashes along the road diet corridor, but a **31 percent decrease in injury crashes**. For some context, in the AMPA as a whole, property damage only (PDO) increased 27 percent from 2012 to 2015, and the number of **injury crashes increased by 51 percent**. Most importantly, after the road diet, there were fewer crashes attributed to the most dangerous contributing factors, such as running red lights, speeding, and improper overtaking. Preliminary traffic and safety data seem to indicate that these types of projects work just as well in the AMPA as they do elsewhere. Historical traffic data on the four segments subject to the reconfiguration show that average weekday traffic (AWDT) dipped slightly after the road diet (during a period coinciding with the Great Recession) and have since recovered to previous traffic levels. 2016 traffic counts even show some of the highest traffic volumes ever recorded on these sections of roadway.

ROAD DIET BENEFITS

Other benefits of road diets include an increase in bicycle and pedestrian traffic. The addition of bike lanes and crossing islands can increase safety for bicyclists and pedestrians. Also, post-road-diet vehicle speeds decline. This is especially true for speeders going more than five miles per hour over the limit. Traffic volumes, meanwhile, typically stay even in post-road diet situations: some drivers are diverted to other parts of the street network, while the rest quickly soak up any vacated space.

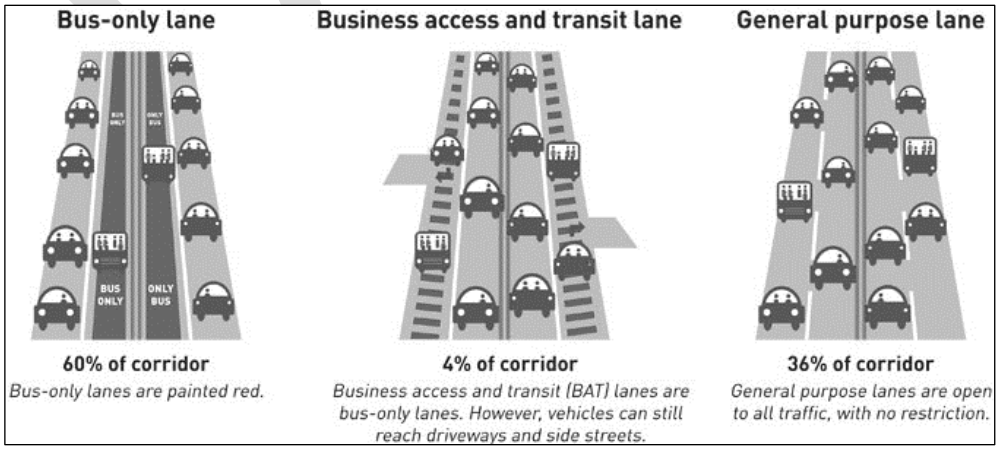
The types of changes involved in road diets don't cost very much when compared to other transportation infrastructure investments. When timed with regular road maintenance and re-paving, little more than paint is needed to re-stripe lanes. They're about as cheap and cost-effective as infrastructure improvements get. Although not as cost-effective, road diets can also include reconstructing the road by moving curb lines and building or removing medians. On roads used by fewer than 20,000 vehicles per day, road diets have a minimal or even positive impact on vehicle capacity. Left-turning vehicles, delivery trucks, police enforcement, and stranded vehicles can move into a center lane or bike lane, which eliminates double-parking and reduces crash risks.

LANE DIETS

Improvements can sometimes also be made without removing travel lanes. In some cases, traffic lanes are wider than needed, which can induce speeding. In most urban areas, travel lanes may be as narrow as 10 feet. By narrowing travel lanes more space can be provided for pedestrian buffers and wider bike lanes.

BUSINESS ACCESS TRANSIT (BAT) LANE

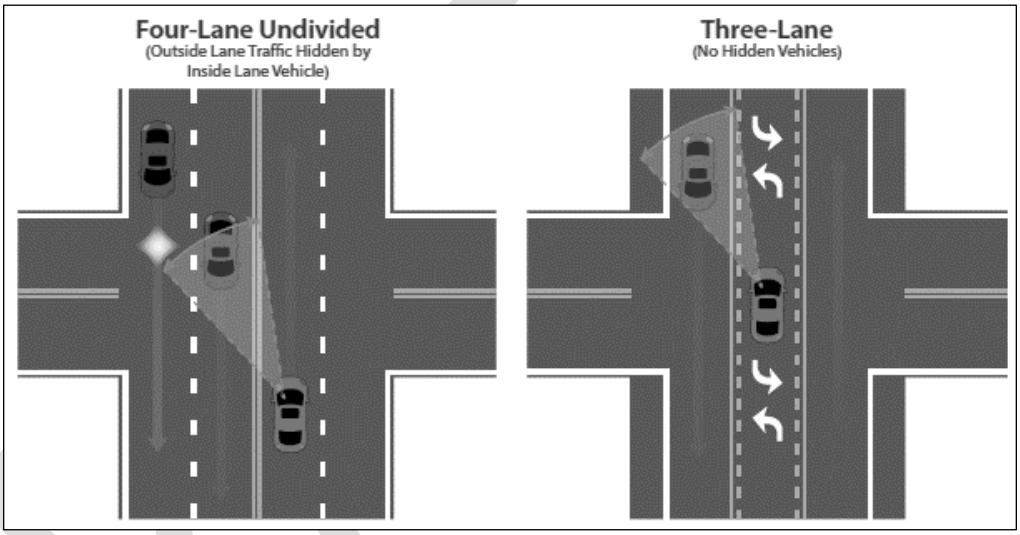
BAT lanes are another option. This outside lane use is used along corridors with frequent transit service and provides increased transit reliability as well as improved access to businesses along the road because of less conflict during right-turn movements for drivers and bicyclists. Like Road Diets, BAT lanes also create a buffer between fast-moving traffic and pedestrians.



https://www.theurbanist.org/2016/08/15/how-to-earn-bus-rapid-transit-status/

SELECTING ROAD DIET CANDIDATES

MRMPO has identified roadways in the region that are good candidates for changing the roadway reconfiguration. The Road Diet Candidates map included here uses the latest available traffic volumes. The determination of candidates is a data driven process that considers traffic volume and crashes on all major roads in the region. Average daily traffic (ADT) is the first step in determining locations for possible road diets. The Federal Highway Administration (FHWA) suggests that roadways with 20,000 vehicles per day or less are good candidates for road diets from four (4) lanes to three (3) lanes, but different agencies across the country have different thresholds that they find acceptable. MRMPO follows the FHWA suggestion of 20,000 Average Weekday Traffic (AWDT) as the upper limit for four to three lane changes but shows opportunities for consideration with roadways from 20,000 to 25,000 for 4 lane roadways as well. Many agencies throughout the U.S. have applied Road Diets to roadways up to 25,000 vehicle per day, and in some cases, like New York City, up to 30,000 daily traffic trips.



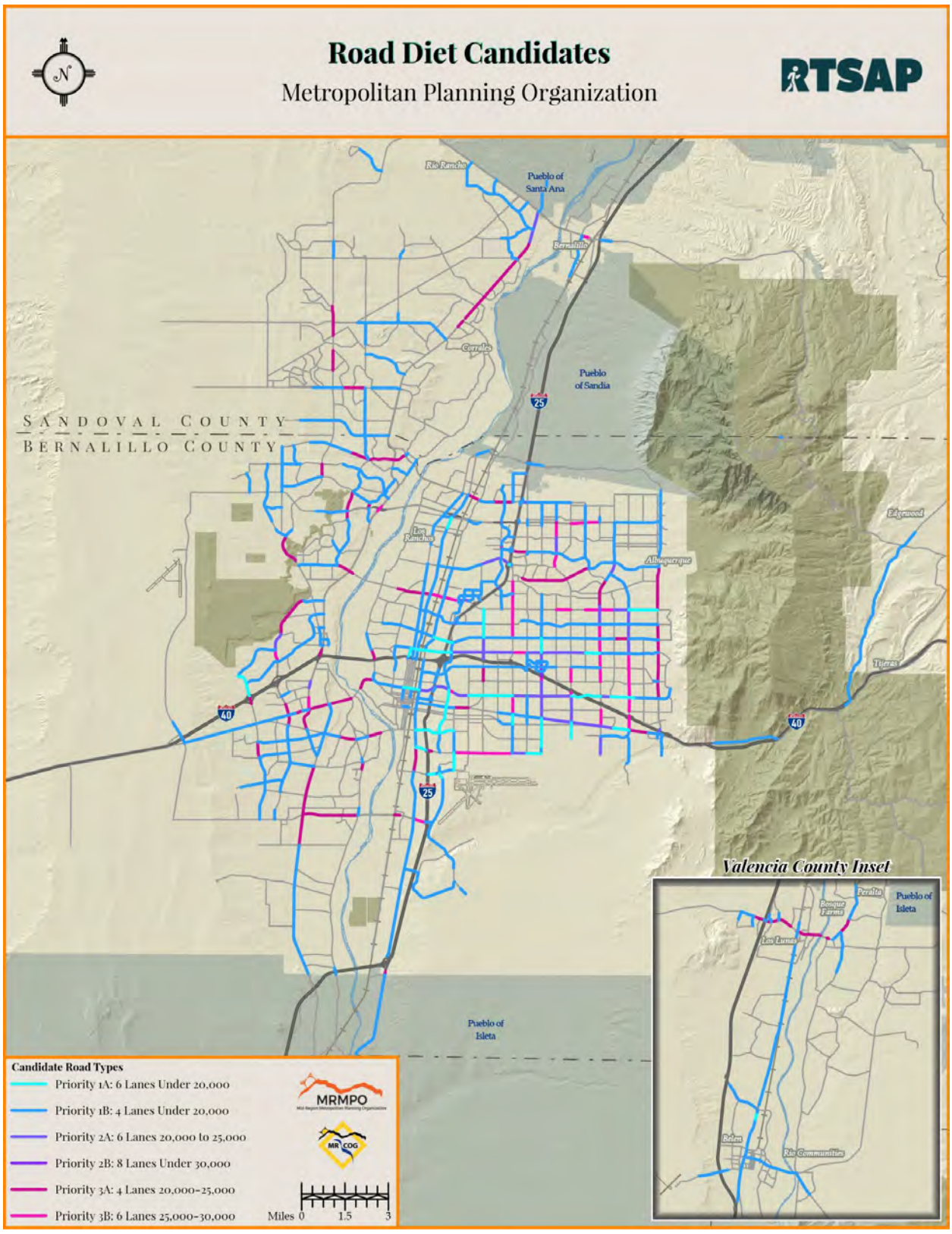
https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/ch2.cfm

U.S. DOT Road Diet Information Guide

5-LANE AND LARGER ROADWAYS

The FHWA does not have guidance on thresholds for converting six lane or larger roadways to five lanes (two lanes in each direction and a center turn lane). However, MRMPO analyses found that while many four lane roads in the region support over 35,000 vehicles a day, others are underused. Furthermore, the average amount of traffic that existing 5 lane roadways holds in the region is 35,188 Average Daily Traffic. Therefore, some considerations are provided in the analysis for road diets on six lane and above roadways.

Before a road diet is undertaken, there should be further analysis of the corridor's suitability for roadway reconfigurations. Other considerations are the land use context, whether there is on-street parking or heavy transit use along the roadway, or if the project might fill a gap in the bike network. MRMPO recommends overlaying the HFIN corridors and intersections with the Potential Road Diet Candidates map to develop priorities. Nevertheless, when a road does not experience above-average crashes, implementing a road diet may still be a good decision because of its many benefits, including the potential to add facilities for bicyclists and buffers for pedestrians.


Road Diet Candidates
Metropolitan Planning Organization
RTSAP
Rio Rancho
Pueblo of Santa Ana
Bernalillo
Corrales
Pueblo of Sandia
SANDOVAL COUNTY
BERNALILLO COUNTY
Los Ranchos
Albuquerque
Edgewood
Tijeras
Pueblo of Isleta
Valencia County Inset
Peralta
Bosque Farms
Los Lunas
Belen
Rio Communities
Candidate Road Types
Priority 1A: 6 Lanes Under 20,000
Priority 1B: 4 Lanes Under 20,000
Priority 2A: 6 Lanes 20,000 to 25,000
Priority 2B: 8 Lanes Under 30,000
Priority 3A: 4 Lanes 20,000-25,000
Priority 3B: 6 Lanes 25,000-30,000
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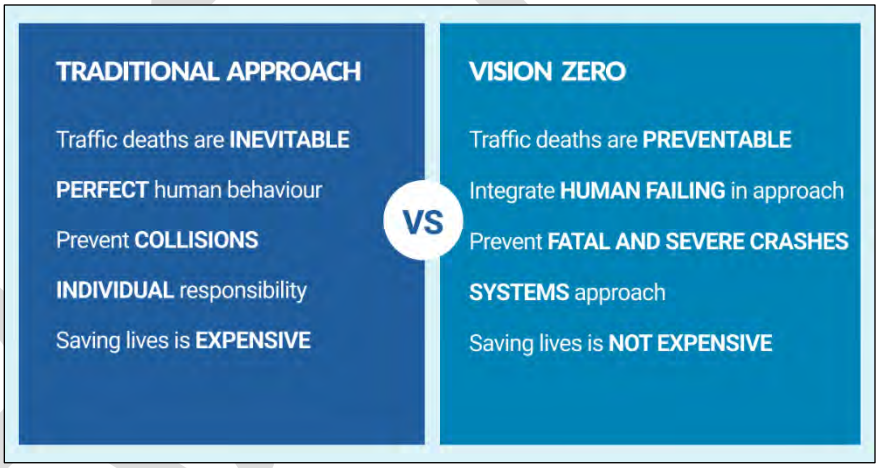
REGIONAL HIGH FATAL AND INJURY NETWORK (HFIN)

HFIN NETWORK

The High Fatal and Injury Network (HFIN) is a map of the most dangerous corridors and intersections in the region. Specifically, the HFIN illustrates the locations where an above average amount of people have been killed and severely injured. MRMPO developed this network as a planning tool in 2018 and updates the HFIN as new crash data becomes available.

This type of evaluation helps target scarce funding and make more informed selections about where safety funds are spent. It is not a map intended for pointing out all the locations that need improvement, but rather a starting point for decision making around where to further investigate and determine the best safety strategies to employ. Having some insight on the location and mode of crash can be insightful for education, design, and enforcement strategies. A deeper dive into characteristics of the roadway and the crash data reports is usually necessary for selecting the most beneficial safety strategies.

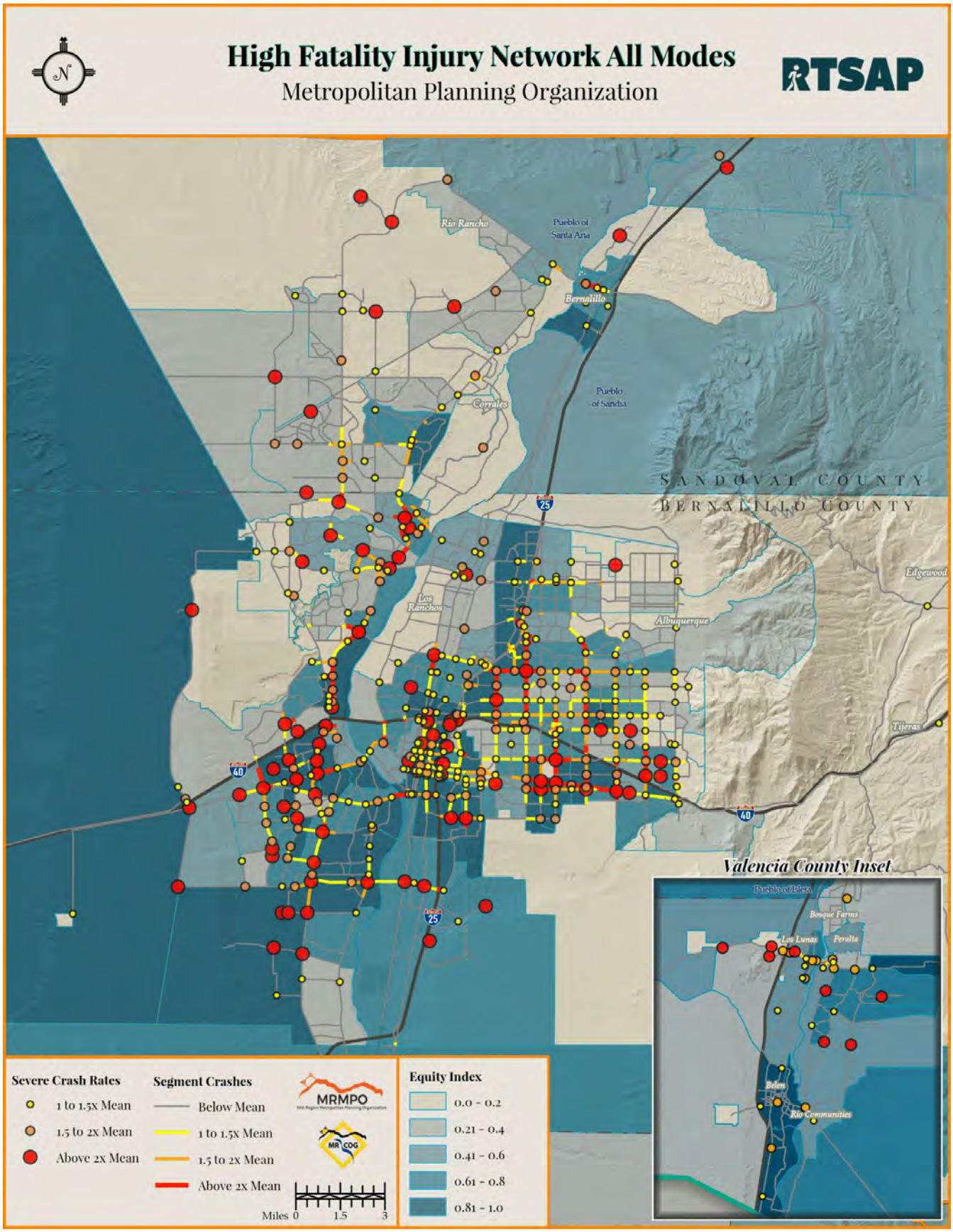
WHY USE THE HFIN?



Following in the footsteps of Vision Zero efforts, this type of crash analysis and map visualization has become a common way to present crash data to prioritize locations that contain the most fatal and injury crashes. This type of prioritized network also helps identify reoccurring patterns to where and why crashes are happening. For example, in Chapter 2 crash analyses showed how the character of a roadway impacts the number and type of crashes along a corridor. The HFIN also provides a clear visual tool to present to decisionmakers and boost awareness of locations that need more attention. The HFIN is not a predictive tool, however; it does reflect repeating patterns over time. When combined with the land use context, Road Diet Candidates, and other types of crash analyses it can be incredibly useful for determining prime locations for safety improvements.

The following statistics make it clear that t**his targeted approach of improving the most dangerous roadways and intersections is in and of itself one of the most strategic approaches to enhancing roadway safety in the region.**

- The HFIN links that have an HFIN Score that is two times the regional mean or higher make up only 2.5 percent of the major roadway network but contain 26 percent of the fatalities and 40 percent of the injury crashes.
- The HFIN links that have an HFIN score simply above the regional mean make up only 8 eight percent of the major roadways but contain 47 percent of the fatal crashes and 64 percent of the injury crashes.


High Fatality Injury Network All Modes
Metropolitan Planning Organization
RTSAP
Rio Rancho
Pueblo of Santa Ana
Bernalillo
Pueblo of Sandia
Corrales
SANDOVAL COUNTY
BERNALILLO COUNTY
Los Ranchos
Albuquerque
Edgewood
Tijeras
25
40
Valencia County Inset
Pueblo of Isleta
Bosque Farms
Los Lunas
Peralta
Belen
Rio Communities
Severe Crash Rates
1 to 1.5x Mean
1.5 to 2x Mean
Above 2x Mean
Segment Crashes
Below Mean
1 to 1.5x Mean
1.5 to 2x Mean
Above 2x Mean
MRMPO
MR COG
Miles 0 1.5 3
Equity Index
0.0 - 0.2
0.21 - 0.4
0.41 - 0.6
0.61 - 0.8
0.81 - 1.0

THE HFIN DATA AND MAPS

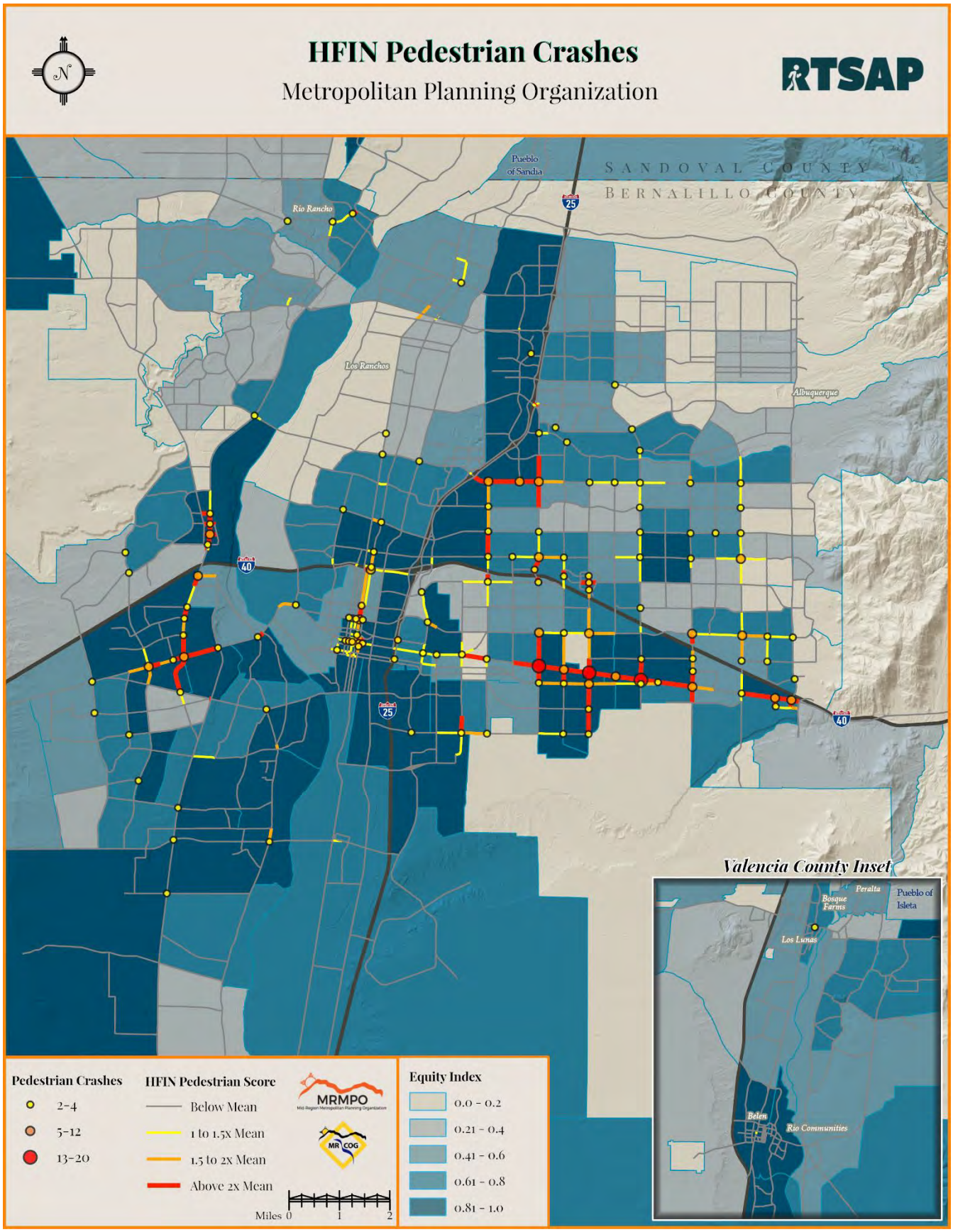
The HFIN features intersection rates using five years of the latest available crash data and an average of the latest five years of approaching traffic volumes data. An average intersection crash rate and an average number of fatalities plus injuries per mile is calculated.

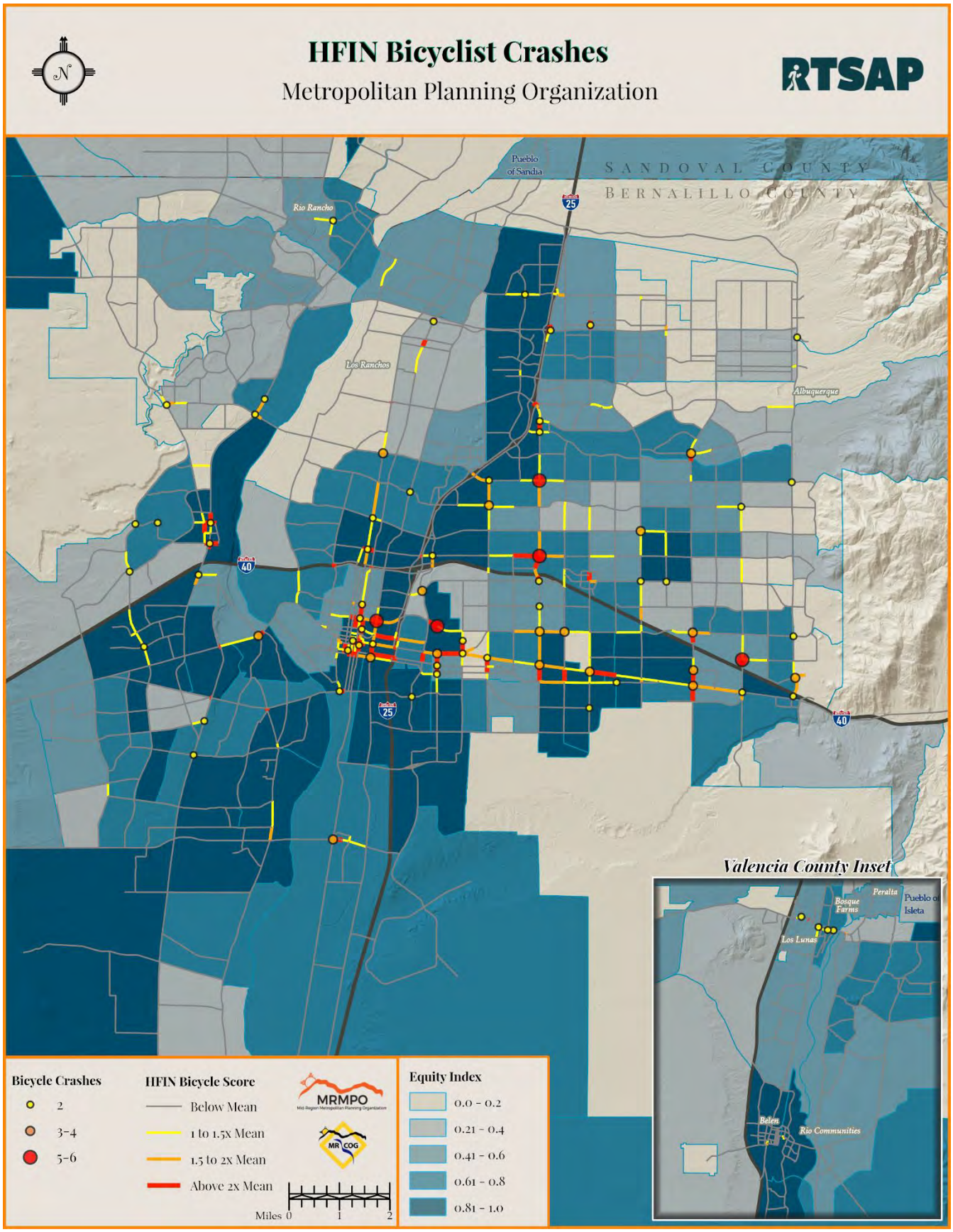
The roadway network consists of collectors and arterials, and intersections include those where two major roadways intersect. Interstates were not included because they are maintained and operated by the NMDOT and are accounted for in the State Highway Safety Plan.

Most of the data is located within the urban areas and this heavily influences the calculated mean. Due to this, Area Profiles were created for the more rural and Tribal areas of the region (by County) to take a closer look at the crash data information relative to the local sample of data.

*The formula for the HFIN Score for any given link is: (fatalities * 2) + injuries / length of link in miles. The formula for the HFIN Score for any given intersections is: (fatal + injury crashes) * 100,000 / 365 * a 5-year average of Approaching Volumes.*

COMPONENT	DESCRIPTION
Data Period and Source	Five years (2017-2021) of crash data made available by NMDOT and geocoded by UNM. Five years of ADT data for approaching intersections volumes (2017 to 2021) collected by MRMPO.
Consideration of Severity and weighting	Total number of fatal and injury crashes within 75 feet for intersection rates. Total number of fatalities and injuries for roadway segments within 100 feet. Fatalities were multiplied by 2 for roadway segments.
Roadway Network and Intersections	For roadway segments, all major roads were used except the Interstate. Interstates crashes were removed before selecting crashes. For intersections, major road intersections were created.
Normalization	Roadway segments were normalized by roadway segment length or per mile. Intersections were normalized by the latest approaching traffic volumes (average of latest 5 years of data). The Bicycle and Pedestrian HFIN intersection crashes show total crashes and are not normalized by traffic counts.
Equity	The MPO developed a map showing where the HFIN overlaps with the MRMPO Vulnerability Index (MVI) and recommends using this as an equal factor when developing priorities.
Data Limitations	The location of crashes is sometimes identified by the police officer according to the nearest intersection even when the crash may have taken place further away. Not all fields are filled out. There are limited years of Top Contributing Factor data. Pedestrian Error is not always correct because the understanding of the law is limited. Sometimes Pedestrian Error is selected when it is a bicycle involved. It is not a complete sample of all crashes.


HFIN Pedestrian Crashes
Metropolitan Planning Organization
RTSAP
Pueblo of Sandia
SANDOVAL COUNTY
BERNALILLO COUNTY
Rio Rancho
Los Ranchos
Albuquerque
25
40
Valencia County Inset
Bosque Farms
Peralta
Pueblo of Isleta
Los Lunas
Belen
Rio Communities
Pedestrian Crashes
2-4
5-12
13-20
HFIN Pedestrian Score
Below Mean
1 to 1.5x Mean
1.5 to 2x Mean
Above 2x Mean
MRMPO
MR COG
Miles 0 1 2
Equity Index
0.0 - 0.2
0.21 - 0.4
0.41 - 0.6
0.61 - 0.8
0.81 - 1.0


HFIN Bicyclist Crashes
Metropolitan Planning Organization
RTSAP
Pueblo of Sandia
SANDOVAL COUNTY
BERNALILLO COUNTY
Rio Rancho
Los Ranchos
Albuquerque
25
40
Valencia County Inset
Peralta
Bosque Farms
Pueblo of Isleta
Los Lunas
Belen
Rio Communities
Bicycle Crashes
2
3-4
5-6
HFIN Bicycle Score
Below Mean
1 to 1.5x Mean
1.5 to 2x Mean
Above 2x Mean
MRMPO
MR COG
Miles 0 1 2
Equity Index
0.0 - 0.2
0.21 - 0.4
0.41 - 0.6
0.61 - 0.8
0.81 - 1.0