

5 SAFETY

5.1 OVERVIEW

Ensuring that roadways are safe and comfortable for all users is an important part of local quality of life and requires actions at the statewide, regional, and local levels. The 2045 MTP considers locations with high numbers and rates of crashes and proposes general strategies to reduce traffic fatalities and serious injuries. This MTP also considers severity of crashes, which is an important supplemental factor to the rate of crashes—in some cases interventions may seek to reduce the severity of crashes but may not necessarily reduce the number of crashes.

The intent of this analysis is to identify priorities and inform investments across the FMPO region.

Across the US there is increasing awareness of the issue of roadway safety, yet outcomes are worsening. As VMT has risen nationally and statewide in recent years, so too have the number of crashes and transportation-related fatalities. According to the World Health Organization, approximately 1.35 million people die each year due to traffic crashes.¹⁰ In the US, almost 40,000 people lost their lives and an estimated 4.4 million people were seriously injured due to car-related crashes in 2019.¹¹ Traffic fatalities take a toll on individuals and entire communities and there are serious health-care costs and health consequences; billions of dollars are spent each year due to health costs from traffic crashes, air pollution, and physical inactivity.¹²

Safety goals can be addressed through programs and infrastructure design techniques that alter behavior in positive ways. Many locations with high crash rates are the result of roadway designs where travel speeds are contextually incompatible with adjacent land use. NMDOT and FMPO have both taken steps to address this dynamic through design manuals that encourage

Transportation and Public Health

Our transportation systems play a vital role in encouraging or discouraging healthy behaviors and the overall health of communities. How we design our streets matter. Traditionally, streets were designed using a vehicle-centric approach, resulting in unsafe places to walk, bike, roll, or cross the street and placing bicyclists and pedestrians at greater risk. However, designing streets with people in mind provides everyone the opportunity to move safely and freely throughout a community regardless of mode, helps prevent the incidence of motor vehicle crashes, and supports healthier communities.

In other words, transportation is a social determinant of health. The conditions in the environments in which people live, learn, work, and play that affect a wide range of health and quality-of-life outcomes (Healthy People 2020). Creating safer transportation systems in FMPO areas will help foster a healthier population, society, and workforce.

¹⁰ WHO Road Traffic Injuries. <https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries>.

¹¹ NSC Fatality Estimates. <https://www.nsc.org/road-safety/safety-topics/fatality-estimates>

¹² RWJF How Does Transportation Impact Health? <https://www.rwjf.org/en/library/research/2012/10/how-does-transportation-impact-health-.html>

designs and vehicle travel speeds more appropriate for the roadway users and surrounding land uses. These include the FMPO Complete Streets Design Guide and the NMDOT Road Diet Design Guide.

5.2 FEDERAL AND STATEWIDE POLICIES AND INITIATIVES

5.2.1 Performance Targets

Safety is a central goal among national and statewide transportation legislation and policy initiatives. The MAP-21 federal transportation legislation established safety as one of its seven National Goal Area while the FAST Act requires that performance targets be set at the statewide and MPO levels in the more recent FAST Act.

In January 2020, the FMPO adopted a resolution to embrace the state established performance measures, the NMDOT Safety Targets for 2020, as their commitment to improve transportation safety. These annual targets are required by 23 CFR 490 and must be in accordance with the final rule on the Highway Safety Improvement Program.¹³ It should be noted that the performance targets were developed at a time when VMT and crash rates were expected to increase annually. The NMDOT targets adopted by the FMPO are related to the following measures:

- Number of Total Fatalities
- Number of Serious Injuries
- Fatalities per 100 million VMT
- Serious Injuries per 100 million VMT
- Number of Non-motorized Fatalities and Serious Injuries

5.2.2 Statewide Safety Programs and Initiatives

NMDOT engages in various state-level planning and policy initiatives that coordinate safety strategies. These programs also help NMDOT and agencies across the state access federal funding for safety initiatives. In addition, NMDOT has developed new guidelines for roadway design and project development that emphasize safety. This includes the NMDOT Road Diet Design Guide, which encourages the reconfiguration of certain roadways to provide on-street bikeways and reduce risks of rear-end collisions.

Strategic Highway Safety Plan (2016)

The Strategic Highway Safety Plan (SHSP) coordinates safety-related programs and strategies for reducing fatal and serious injury crashes on New Mexico roads. Highway Safety Improvement Program (HSIP) funds may be used for projects that address needs and issues identified in the SHSP. General priority areas include reducing unsafe driving behaviors including distracted and

¹³ 23 CFR Part 490 Safety Performance Measurement Final Rule.
<https://safety.fhwa.dot.gov/hsip/rulemaking/>

impaired driving and addressing locations with high numbers of crashes through design. The SHSP is a requirement for the use of HSIP funding and is updated regularly.

Highway Safety Plan (2017)

The Highway Safety Plan (HSP) reviews safety conditions and crash data across New Mexico and provides data-driven strategies to address the safety issues on NM highways for motorists, bicyclists, and pedestrians, and to reduce crashes resulting in fatalities of those users. The HSP is required by the National Highway Traffic Safety Administration (NHTSA) and enables NMDOT to access funds for safety-related programs. Strategies in the HSP for increasing safety include educational efforts to increase safe driving habits and create awareness of the presence of non-motorists. Notable among NMDOT programs and campaigns are the ENDWI and DNTXT initiatives and the Look for Me campaign to raise motorist awareness of pedestrians and bicyclists.



Pedestrian Safety Action Plan

NMDOT is currently developing a Pedestrian Safety Action Plan that identifies policies and strategies at the statewide level to address the high pedestrian fatality rates and create safer conditions along roadways across New Mexico. *Outreach and plan development are expected to take place over the course of 2020 and early 2021.*

5.3 CRASH ANALYSIS

5.3.1 Statewide and Regional Conditions

Safety strategies and policy initiatives should respond to identified safety concerns. Crash rates in combination with crash severity data are commonly used to assess roadway safety and determine locations with the greatest safety concerns. This plan considers summary data provided by NMDOT and analyzes individual crash locations across the FMPO region from 2013 to 2017 to gain an understanding of safety issues and to help identify policy priorities and potential transportation investments.

According to the *New Mexico Traffic Crash Annual Report (2018)*, fatal and serious injury crashes rose in New Mexico from 2014 to 2018 (see Figure 5-1). San Juan County ranked 6th among New Mexico counties for total number of crashes, including an increase from 1,800 in 2014 to 1,931 in 2018; however, the County experiences relatively low crash rates relative to other counties and is well below the New Mexico average (99.9 crashes per 100 million VMT versus 171.5 crashes per 100 million VMT at the state-level).

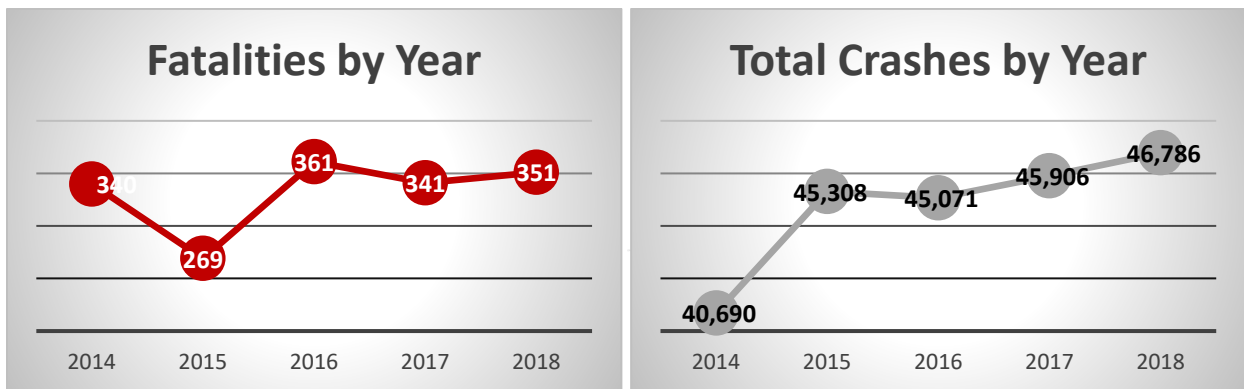
Classifying Severe Crashes

The most common injury scale used in police reports is the KABCO Injury Classification Scale, which uses the following severity levels:

- **K** – Killed
- **A** – Suspected Serious Injury
- **B** – Suspected Minor Injury
- **C** – Possible Injury
- **O** – No apparent Injury (Property Damage Only)

Killed and Serious Injury crashes are often grouped together in a metric known as “KSI”. This metric is used as a way to understand the most severe crashes.

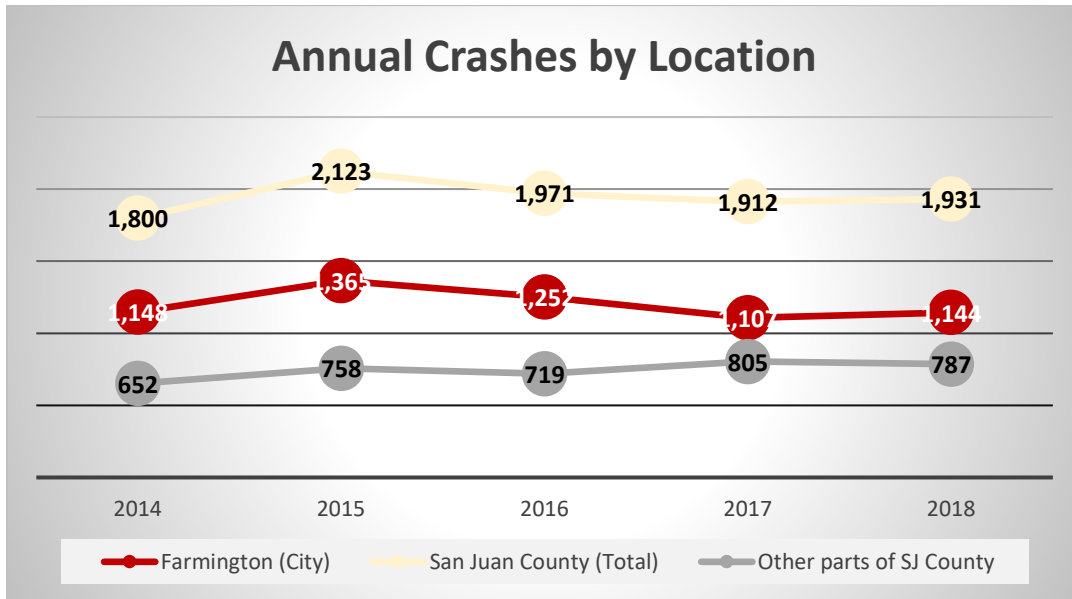
Figure 5-1: Statewide Crash Data (2014-2018)



Due to its high concentration of economic activity and population, the majority of crashes in the FMPO region take place in the City of Farmington. Crashes occur in the City of Farmington at rates above the statewide average (about 26 crashes per 1,000 residents in Farmington versus 22.3 crashes per 1,000 residents statewide), although Farmington does have a rate below most peer cities.¹⁴ Among the cities in New Mexico with more than 40,000 residents, only Rio Rancho had lower crash rates, while Albuquerque (34.4 crashes per 1,000 residents) and Las Cruces (34.5 crashes per 1,000 residents) featured rates well above the Farmington average.

¹⁴ Farmington has a higher rate compared to the state (about 35 traffic fatalities per 100,000 residents in Farmington compared to 17.8 traffic fatalities per 100,000 residents statewide). This is notable given that New Mexico is among the top five states with the highest fatality rates in the country. IIHS, Fatality Statistics by State; <https://www.iihs.org/topics/fatality-statistics/detail/state-by-state>

Figure 5-2: Annual Crashes in Farmington and San Juan County (2014-2018)



When further assessing severity by mode, it is clear bicycle and pedestrian crashes are disproportionately severe when compared to motor vehicle crashes. Table 5-3 groups crash severity into KSI (fatal and seriously injured crashes) and non-KSI crashes. While 31% of pedestrian crashes and 9% of bicyclist crashes result in fatality or serious injury, only 3% of motor vehicle crashes have a severe outcome. Pedestrian crashes comprise 17% of all fatal and serious injury crashes but only 1% of crashes overall.

Table 5-1: Crash Severity by Mode (2013-2017)

Crash Severity	Pedestrian Crashes	Bicycle Crashes	Motor Vehicle Crashes	Total
KSI	38	4	188	230
Non-KSI	83	83	8,012	8,138
Total	121	47	8,200	8,368

Table 5-2 provides summary crash data for FMPO jurisdictions from 2013 to 2017 (the most recent years for which individual crash location information is available). The table includes average annual number of crashes, pedestrian- and bicycle-involved crashes, and the rate of crashes as measured in VMT per crash and per 1,000 residents. Among FMPO member agencies, Farmington has the highest amount of crashes as well as the highest rate of crashes, as measured in VMT per crash. Other than the unincorporated portion of the MPO, Bloomfield experiences the fewest number of crashes per resident, while Kirtland experiences the fewest crashes per VMT. Kirtland, which experiences a high level of through-traffic relative to its population, experiences crashes at about the average rate of the MPO region.

Table 5-2: Crash Data by Area – Total Crashes (2013-2017)

Location	Population	Daily VMT	Total Crashes	Ped-Involved	Bike-Involved	Annual Average	Crash Rate per 1,000 Residents	Annual VMT per Crash
Aztec	6,567	152,611	583	12	6	116.6	17.8	95,545
Bloomfield	7,996	83,670	459	4	1	91.8	11.5	66,535
Kirtland	884	49,607	165	7	1	33.0	37.3	109,737
Farmington	45,582	885,247	5,426	80	36	1,085.2	23.8	59,549
Rest of SJC*	35,897	913,528	1,735	18	3	347.0	9.7	192,183
MPO Total	96,926	2,084,663	8,368	121	47	1,673.6	17.3	90,930

*Includes the portion of San Juan County in the MPO region only

Table 5-3: Crash Data by Area – Severe Crashes (2013-2017)

Location	Population	Daily VMT	Total Crashes	Fatalities	Serious Injuries	Minor / Possible Injuries	Non-Injury Crashes	Share of Crashes Classified as Severe
Aztec	6,567	152,611	583	2	8	205	358	1.7%
Bloomfield	7,996	83,670	459	3	6	168	282	2.0%
Kirtland	884	49,607	165	6	1	67	91	4.2%
Farmington	45,582	885,247	5,426	16	135	2,421	2,854	2.8%
Rest of SJC*	35,897	913,528	1,735	21	76	636	1,002	5.6%
MPO Total	96,926	2,084,663	8,368	48	226	3,497	4,597	3.3%

*Includes the portion of San Juan County in the MPO region only

5.3.2 Intersection Analysis and Regional Hot Spots

To complement the aggregate data available at the large geography level, the MTP evaluated crash data from 2013 to 2017 for FMPO member entities to better understand the locations and sources of crashes. In general, crashes for all FMPO areas are clustered around US and NM highways, particularly near town centers and along main streets. The roadway with the greatest incidences of crashes is East Main St in Farmington (NM 516), where 6 of the 7 intersections with the highest number of crashes are located. The intersection of US 64 (Murray Dr) and NM 317 (Bisti Hwy) is noteworthy for having the one of the highest incidences of crashes plus the highest rate for any intersection across the region. In addition, this intersection has the highest number of KSI crashes. Locations where

The majority of total and serious crashes in the US occur at intersections – a typical two-lane intersection has approximately 32 conflict points including through and turning movements.

major highways intersect are also noteworthy, including the intersections of NM 516 with Chaco St and US 550, as well as the major intersections of US 550 in Bloomfield.

Figure 5-3: Heat Map of Reported Crashes (2013-2017)

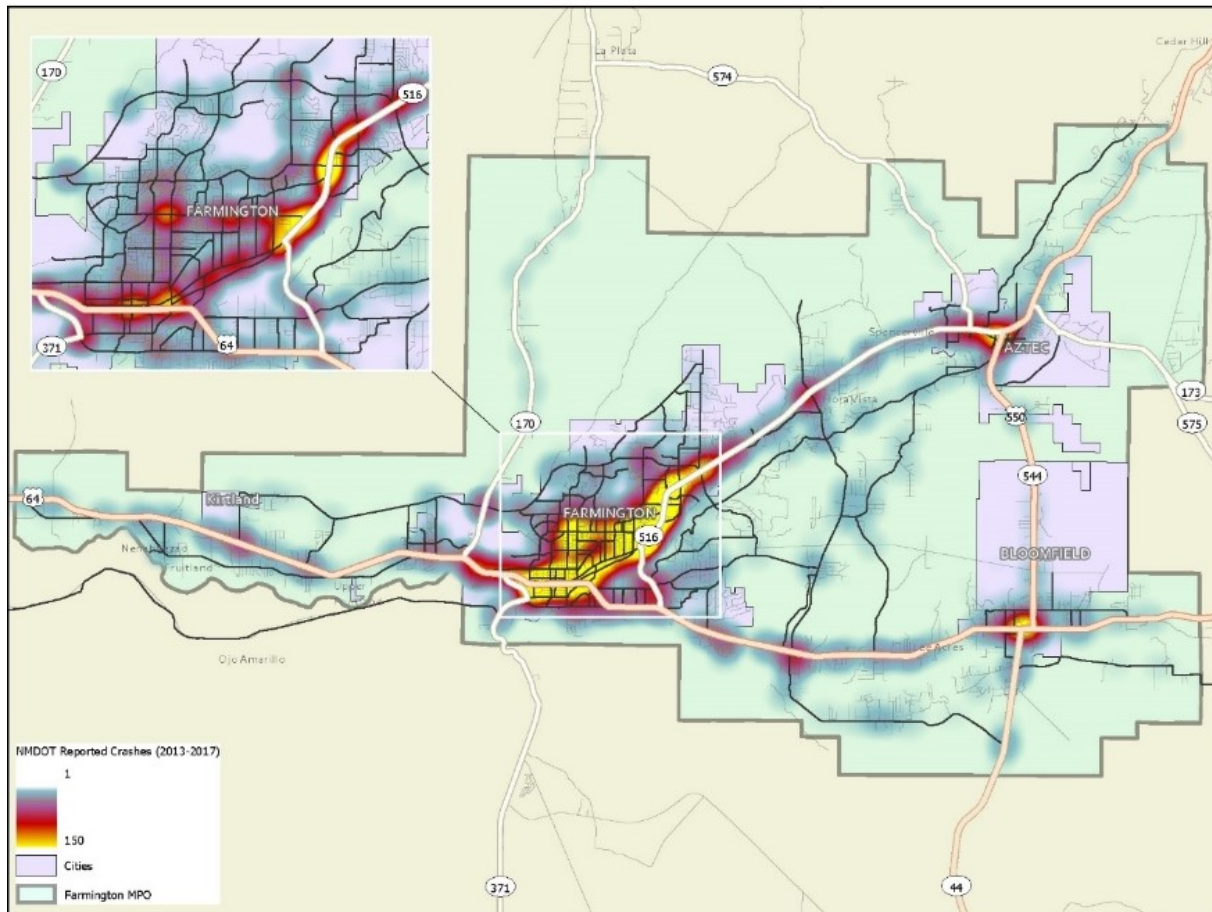


Table 5-4: Intersections with the Highest Number of Crashes in the FMPO Region

Intersection	Location	5-Year Total Crashes	KSI Crashes	Total Crashes per Year	Daily Trips	Trips per Crash
NM 516 (E Main St) & 30th St	Farmington	158	0	31.6	42,654	492,681
NM 516 (E Main St) & E 20th St	Farmington	145	3	29.0	49,204	619,292
US 64 (Murray Dr) & NM 317 (Bisti Hwy)	Farmington	92	5	18.4	15,852	314,455
NM 516 (E Main St) & English Rd	Farmington	92	1	18.0	52,587	1,043,156
NM 516 (E Main St) & Cliffside Dr	Farmington	90	0	18.0	41,143	834,289
NM 516 (E Main St) & Browning Pkwy	Farmington	88	1	17.6	32,379	671,496

Intersection	Location	5-Year Total Crashes	KSI Crashes	Total Crashes per Year	Daily Trips	Trips per Crash
NM 516 (E Main St) & N Hutton Ave	Farmington	84	1	17.0	40,477	879,400
N Hutton Ave & E 20th St	Farmington	80	2	16.0	19,668	448,665
NM 516 (E Main St) & Beckland Dr	Farmington	77	1	15.4	34,792	824,616
W Main St & W Apache St	Farmington	77	4	15.0	28,882	684,541
N Butler & E 20th St	Farmington	72	1	14.0	26,081	661,081
E Broadway & S Butler Ave	Farmington	69	1	13.8	21,052	556,810
NM 170 (La Plata Hwy) & Twin Peaks Blvd	Farmington	66	2	13.0	15,011	415,077
NM 516 (E Main St) & N Clayton Ave	Farmington	64	3	13.0	36,886	1,051,827
N Sullivan Ave & E 20th St	Farmington	63	1	13.0	21,120	611,795
NM 516 (E Main St) & E Pinon Hills Blvd	Farmington	62	3	12.0	39,759	1,170,325
NM 516 (E Main St) & N Butler Ave	Farmington	61	1	12.0	22,273	666,364
W Broadway St & N Main St	Farmington	59	0	12.0	20,178	624,150
US 550 (1st St) & US 64	Bloomfield	59		11.8	27,056	836,902
W Main St & W Murray Dr	Farmington	59	1	11.8	32,856	1,016,308
Scott Ave & San Juan Blvd	Farmington	57	1	11.0	18,774	601,097
Pinon Hills Blvd & College Blvd	Farmington	56	2	11.2	14,546	474,044
NM 516 & CR 3535/350	San Juan County	56	1	11.2	27,813	906,406
E Main St & Villa View Dr	Farmington	54	0	10.8	26,650	900,671
S Browning Pkwy and Wildflower Dr	Farmington	54	0	10.8	19,906	672,749
NM 516 & Chaco St	Aztec	53	0	10.6	25,871	890,824
E Main St & Herrera Rd	Farmington	53	1	10.6	39,479	1,359,418
E 20 th St & Farmington Ave	Farmington	52	1	10.4	9,201	322,920
US 550 (Bloomfield Blvd) & US 64	Bloomfield	49	0	9.8	27,679	1,030,902
US 64 & NM 170	Farmington	49	1	9.8	27,185	1,012,503
N Clayton Ave & E 20 th St	Farmington	47	0	9.4	6,307	244,899
W Main St & W Broadway	Farmington	46	1	9.2	20,178	800,540
US 64 & CR 350/5500	San Juan County	46	1	9.2	24,883	987,206
E Main St & Plaza Ctr	Farmington	44	0	8.8	38,300	1,588,580
US 64 & NM 516	Farmington	43	1	8.6	32,178	1,365,694
US 64 & CR 6500	Kirtland	41	2	8.2	40,111	1,785,429
E Main St & N Sullivan Ave	Farmington	40	1	8.0	18,980	865,963
NM 516 & US 550	Aztec	38	0	7.6	46,432	2,229,958

5.3.3 Kirtland

Although there are no intersections in the Town of Kirtland among the region’s hot spots for crashes, the US 64 corridor was identified by stakeholders as an area of concern. Specifically, US 64 serves as the community’s main street and bisects the business district. Primary safety strategies along the corridor include sidewalks and additional designated crossings, as well as access management efforts that consolidate turning movement locations and reduce the potential conflicts in the continuous center turn lane. To provide safer conditions for pedestrians and bicyclists, the Town of Kirtland and San Juan County have pursued a series of multi-use trails along major roads with connections to area schools.

5.3.4 Contributing Factors

Crash data was also analyzed based on severity, type, and source (see Table 5-1 to Table 5-5). The majority of crashes involve another vehicle (70.3%), while top contributing factors include driver inattention (18.8%), failure to yield (16.2%), and drivers following too closely (15.6%). A little more than one percent of crashes were pedestrian-involved (1.4%) and less than one percent were bicycle-involved (0.6%). It is important to note that analysis of top contributing factors is imprecise and should be considered for general planning purposes only. Issues include subjectivity in reporting and incomplete data in crash reports.

Table 5-5: Crashes by Type and Cause

Type	Count	Percent
Other Vehicle	5885	70.3%
Fixed Object	960	11.5%
Animal	473	5.7%
Parked Vehicle	316	3.8%
Pedestrian/Bicyclist	166	2.0%
Other	568	6.8%
Totals	8,368	100%

Cause	Count	Percent
Driver Inattention	1,572	18.8%
Failure to Yield	1,359	16.2%
Following Too Closely	1,305	15.6%
Other Types of Driver Error	849	10.1%
Alcohol/Drug Involved	660	7.9%
Excessive Speed	520	6.2%
Disregard Traffic Signal	362	4.3%
Other	1,741	20.8%
Total	8,368	100%

5.4 RECOMMENDATIONS AND ACTION ITEMS

Roadway safety is a priority shared by all member agencies; however, the appropriate countermeasures vary by location. Collaboration with NMDOT is also imperative to address the noteworthy amount of crashes found along state-owned highways and county roads. This section outlines safety-related action items that FMPO member agencies may pursue.

5.4.1 Infrastructure Design that Support Complete Streets and Address Crash Issues

To encourage safe design for bicyclists and pedestrians in locations where they are allowed to travel, FMPO agencies may consider traffic calming techniques, including road diets where there is excess roadway capacity. Design improvements that support Complete Streets and reduce motor vehicle speeds include the installation of pedestrian countdown signals, Leading Pedestrian Intervals (LPI), raised intersections/crosswalks, protected intersections, pavement flashers that are actively or passively actuated by pedestrians, and marked crosswalks.

- Increase funding, advance implementation, and improve maintenance activities for bike lanes, sidewalks, and trails across the region. Utilize bike buffers and landscape buffers to separate bicyclists and pedestrians from motorists and to increase user safety and comfort.
- Support the development of local Complete Streets policies, plans, guidelines, and standards.
- Update FMPO scoring criteria for statewide and federal funding to ensure inclusion of safety and Complete Streets metrics.
- Update road specifications to ensure that new bicycle and pedestrian facilities are designed with sufficient width and utilize buffers, when appropriate.
- If not addressed in a systemic safety analysis (recommended below as part of the regional safety action plan), fund and prepare safety studies for high-crash corridors and intersections to identify risk factors and countermeasures to reduce the number of crashes, with a focus on reducing fatal and severe injury crashes.
- Support implementation of evidence-based countermeasures in high-crash or high-risk locations. Table 5-6 includes countermeasures that are applicable to various risk factors. Resources available to assist in the identification of countermeasures include:

- [FHWA's Crash Modification Factors Clearinghouse](#) – A searchable, online database of countermeasures with associated Crash Modification Factors and related details.
- [FHWA Proven Safety Countermeasures](#) – A compilation of 20 research-proven countermeasures.
- [NHTSA's Countermeasures That Work](#) – A reference guide geared towards State Highway Safety Offices
- [NCHRP 15-63](#) – Guidance on Improving Pedestrian and Bicyclist Safety at Intersections
- [FHWA's PED/BIKESAFE](#) – Guidance and countermeasures selection system geared towards improving bicycle and pedestrian safety

Table 5-6: Countermeasure Toolkit

COUNTERMEASURES	RISK FACTORS							
	Poor Lighting	Arterials	4+ lanes	35mph+	No Crosswalks	Unprotected turns	Unsafe passing	No sidewalks
Medians & Pedestrian Crossing Islands		✓	✓	✓	✓	✓		
Pedestrian Hybrid Beacons (PHB)			✓		✓			
Road diet		✓	✓	✓				
Lane diet		✓	✓	✓				
Sidewalks		✓	✓	✓				✓
Crosswalks					✓			
Changing Speed Limits		✓	✓	✓			✓	
Leading Pedestrian Intervals (LPI)		✓				✓		
Rectangular Rapid Flashing Beacons (RRFB)					✓			
Crosswalk Visibility Enhancements	✓				✓			
Street lighting	✓					✓		
Separated bike lanes		✓		✓			✓	
Traffic calming				✓		✓		✓

5.4.2 Roadway Design/Access Management

Access management and other roadway design measures can reduce the risks of crashes by minimizing conflict points and reducing opportunities for user error.

- Fund and prepare corridor access management studies that reduce conflict points and control turning movements. Desired locations for access management include US 64 in the Kirtland area and NM 516 in east Farmington and unincorporated areas between Aztec and Farmington.
- Update local development standards to reduce the number of driveways, encourage shared parking, increase cross-parcel access, and improve pedestrian and bicycle access.

5.4.3 Enforcement

Enforcement can play a role in roadway and public safety. A data driven approach to enforcement can help to focus efforts on the violations that most contribute to fatal and serious

crashes. Relying on data in this way also offers an opportunity to improve the equity of enforcement efforts. Transportation-related enforcement measures include:

- Assessing traffic violations to ascertain which violations are the biggest contributors to fatal or severe injury crashes. Prioritize enforcement efforts on these violations. Compiling a regional inventory of traffic violations by location and referring to locations with high numbers of serious crashes and/or risk factors can also help guide enforcement efforts.
- Prioritizing enforcement efforts in locations with high levels of pedestrian activity, particularly on driver violations that may put pedestrians at risk such as failure to yield and speeding.
- Installing red light cameras to reduce signal running violations.
- Closely tracking and reporting all enforcement efforts to ensure they do not disproportionately impact low-income communities or communities of color.

5.4.4 Education Programs

Education programs help increase knowledge, skills, and behaviors specific to safely operating a motor vehicle or bicycle to reduce the risk of injuries and fatalities. These programs vary in content, format, and duration based on needs and resources, and are frequently developed through local schools and in partnership with Safe Routes to Schools Programs. Specific actions include:

- Motorist education programs, including media and advertising such as promotional videos, pamphlets, and billboards to encourage safer driver behavior.
- Driver training courses, including government agency programs for employees and information about sharing the road with bicyclists and pedestrians.
- Information published on social media by member agencies and FMPO that outlines safety tips to educate motorists about the rights of different roadway users, including pedestrians and bicyclists.

5.4.5 Regional Safety Action Plan & Commitment to Zero Deaths

With initial performance targets in place, FMPO is positioned to take additional steps to improve safety outcomes. A high priority effort to address transportation safety in the region is the development of a **regional safety action plan**. Safety action planning uses a data-driven, comprehensive approach to reduce fatalities and serious injuries on all roadways and aids in institutionalizing safety in transportation programs and projects. For FMPO, a safety plan would provide an opportunity to focus on objectives such as:

- Embracing a safe systems approach
- Identifying risk factors and high-risk corridors
- Determining policy and funding priorities
- Championing implementation of transformative complete streets projects

The regional safety action plan would provide the framework to support evaluation of progress over time. Often, regional safety action plans will incorporate systemic safety analyses (described below).

The regional safety action plan could build on current efforts by NMDOT to consider bicycle and pedestrian-specific safety measures as part of the Pedestrian Statewide Action Plan. This may include additional performance measures beyond crash rates, including the share of project funding dedicated to safety improvements and bicycle and pedestrian facilities, and connectivity, as measured by the number of crossing opportunities. Many states and local jurisdictions also participate in the Vision Zero movement and Toward Zero Deaths (TZD) initiatives that call for zero deaths as the only acceptable safety target. These efforts rely on a data-driven approach to eliminating fatal and severe injury crashes. Refer to *the Transportation Safety Planning and the Zero Deaths Vision: A Guide for Metropolitan Planning Organizations and Local Communities* for additional information and guidance on potential scope and best practices. Setting a target by making a formal commitment to a Toward Zero Deaths initiative is an important next step to guide transportation safety efforts moving forward. This commitment could be an overarching goal of a regional safety action plan.

5.4.6 Systemic Safety Analysis

While a high-level crash analysis is included in this chapter, conducting a full systemic safety analysis can provide a nuanced understanding of risk factors and enable a proactive focus on crash severity. Methods for conducting this analysis could include the Equivalent Property Damage Only (EPDO) method. In this method, dollar values are assigned to crashes based on severity and value of a statistical life. This ensures the crash analysis is focused towards human lives instead of the number of crashes without regard to their severity. A systemic analysis can also help identify nuanced crash types and risk factors that can inform actionable countermeasures. In addition, screening the roadway network using these risk factors can apply a proactive focus on locations where crashes are likely to occur, rather than where they have already happened. This type of crash analysis can be incorporated into the regional safety action plan, described above.