TRUTH OR CONSEQUENCES, NM

MULTIMODAL TRANSPORTATION SAFETY PLAN

2021

NMDOT

TRUTH OR CONSEQUENCES NEW MEXICO

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INTRODUCTION

Transportation safety planning became a priority of transportation planning with the passing of the Transportation Equity Act for the 21st Century (TEA-21) and continues to be a priority in subsequent federal transportation authorization legislation. Transportation safety planning is multidisciplinary, community-wide, multimodal, proactive, and most importantly, collaborative. The process encourages and relies on local stakeholders and public engagement. This approach allows stakeholders and residents to prioritize opportunities to improve transportation safety based on observations from their community. The resulting safety plan can help direct efforts and resources toward achieving a shared safety vision. Federal law requires the transportation planning process to be consistent with each state's Strategic Highway Safety Plan (SHSP), a Highway Safety Improvement Program (HSIP) requirement. HSIP is the core federal-aid program supporting efforts to significantly reduce crash-related fatalities and serious injuries on all public roads using a data-driven, strategic approach. HSIP not only funds the safety planning process but may also support the implementation of practical and effective countermeasures identified during the process.

PURPOSE OF THE TRUTH OR CONSEQUENCES TRANSPORTATION SAFETY PLAN

New Mexico has the highest rate of pedestrian fatalities nationally and has been amongst the top five states for pedestrian fatalities over the last nine years[1]. Moreover, New Mexico has been in the top quartile for 18 out of 26 years for vehicular fatalities between 1994-2019[2]. Between 2015 and 2019, over one thousand people annually suffered serious injuries on New Mexico Public roads[3]. Mitigating these challenges is the driving force behind helping New Mexico communities address transportation safety issues. The New Mexico Department of Transportation (NMDOT) views Transportation Safety Plans as foundations for communities to address transportation safety challenges, as well as to pursue funding opportunities at the federal, state, regional, and local levels.

The planning process provided a forum for the City of Truth or Consequences (T or C) and local stakeholders to provide context, input, and feedback to guide the plan's development. The NMDOT's Planning Division, City of T or C, and Lee Engineering partnered to develop this safety plan. Other collaborators include NMDOT District 1, Sierra County Road Department, T or C Police Department, City of Williamsburg, and T or C Municipal Schools. This multidisciplinary and inclusive collaboration identified primary safety concerns and countermeasures to enhance safety for pedestrians, bicyclists, and motorists in T or C. The community envisions improved roadway safety for residents and visitors through increased vehicle speed limit compliance, suitable pedestrian facilities, accessibility, striping and signage, and reducing intersection conflicts. The countermeasures detailed in this safety plan enhance transportation safety by calming traffic, improving pedestrian accessibility, Americans with Disabilities Act (ADA) compliance, and communicating roadway conditions.

STUDY AREA

T or C is located in the Rio Grande Valley of southern New Mexico between Las Cruces and Albuquerque in Sierra County. In the early 1900s, the town was known as Hot Springs, New Mexico, because of its healing geothermal mineral waters. Today, the spas and bathhouses in the Hot Springs Bathhouse and Commercial Historic District in downtown T or C continue to drive tourism along with the area's one-of-a-kind shops, museums, galleries, eclectic art scene, and monthly Art Hop. These attractions generate significant pedestrian, bicycle, and motor vehicle traffic. The City of T or C has identified pedestrian safety concerns downtown and in two highly trafficked corridors in the north end of T or C. These corridors provide access to the City's schools, elementary through high school, and hospital. The multimodal usage of these areas calls for ensuring the safety of vulnerable road users, such as pedestrians and bicyclists.

This safety plan has three focus areas, as highlighted in Figure 1. The first Focus Area is Downtown T or C. Focus Area 2 is Smith Avenue east of N. Date Street, Silver Street between Smith Avenue and N. Silver Street, N Silver Street between Silver Street and Marie Street, and Silver Street to E. 9th Avenue. This corridor provides access to T or C Elementary School, Sierra Vista Hospital, and Sierra Health Care. Lastly, Focus Area 3 is New School

[1] National Highway Traffic Safety Administration, “Traffic Safety Facts Annual Report Tables.”
[2] New Mexico Department of Transportation, Traffic Safety Division, “FARS Encyclopedia: States - Fatalities and Fatality Rates 1994-2019.”
[3] New Mexico Department of Transportation, Traffic Safety Division, “New Mexico Traffic Crash Annual Report 2019.”

Road/N. Pershing Street between N. Date Street and Marie Street. This corridor is the access point for T or C Middle School and Hot Springs High School.

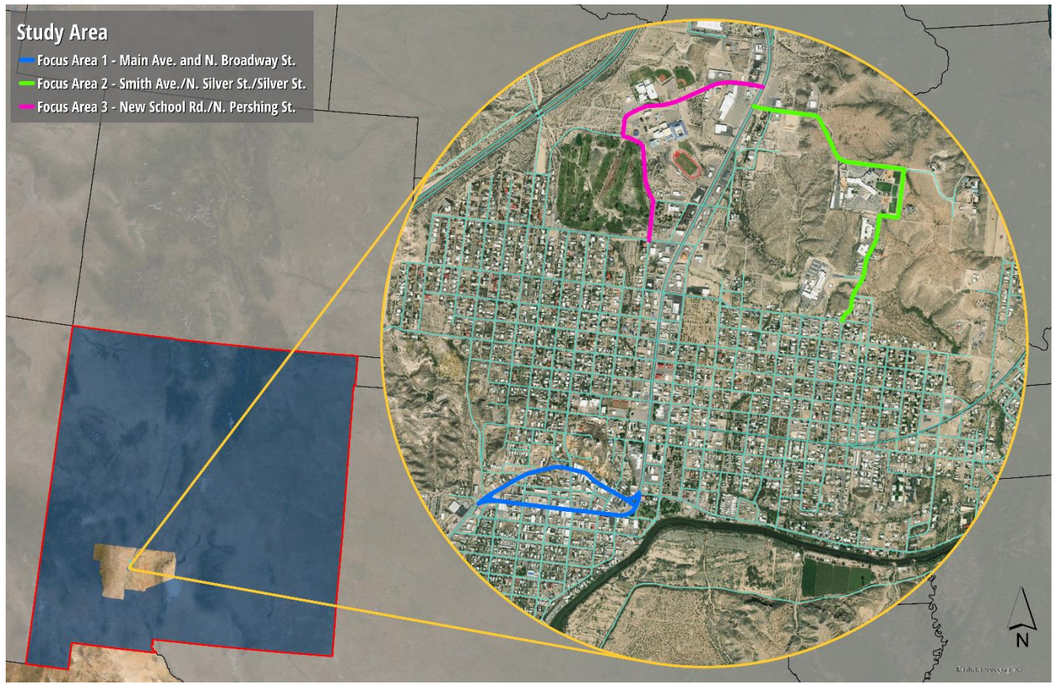


Figure 1: Focus Areas - Truth or Consequences, NM

Demographics And Socioeconomic Profile

Table 1 shows a selection of census data describing T or C. T or C is a small city with a population of approximately 6,000. The Median Household Income in T or C is fifty-two percent lower than New Mexico's Median Household Income, and more than twelve percent of households in T or C do not have a vehicle available for use. In addition, approximately one-fourth of the population is living with a disability. Figure 2 shows the age distribution of residents in T or C and New Mexico. The population of T or C residents tends to be older, as evidenced by the higher median age of 51.5 years old relative to New Mexico's median age of 38.6 years old.

Table 1: Selected Demographic and Socioeconomic Data, Source: 2015-2019 American Community Survey 5-Year Estimates

	T or C	New Mexico
Population	5,894	2,092,454
Median Age	51.5	38.6
Median Household Income	$23,988	$49,754
Poverty Rate	33.4%	18.2%
Employment Rate	39.2%	54.1%
Rate of Households Without a Vehicle	12.4%	7.6%
Disability Status	26.9%	16.0%

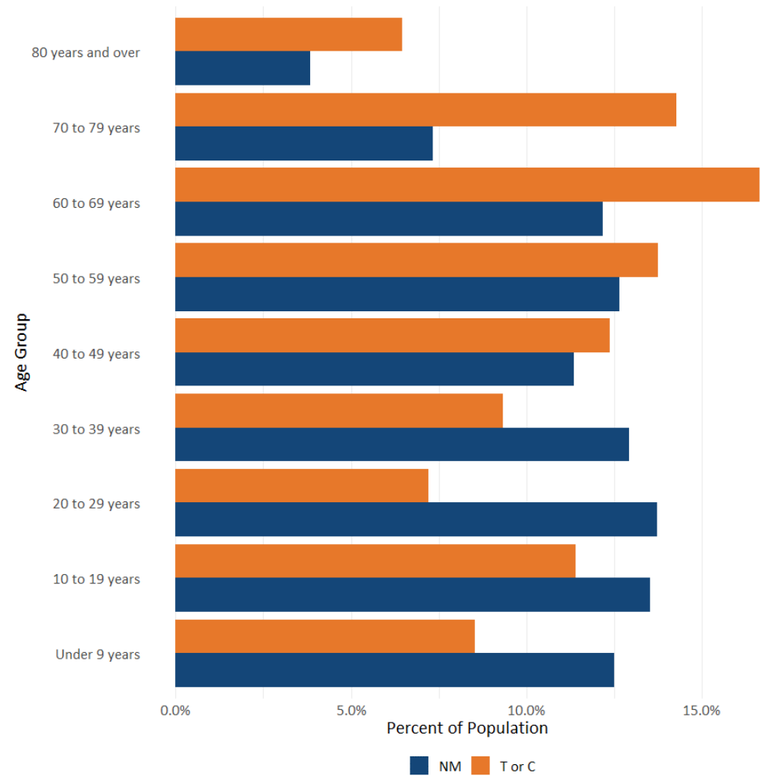


Figure 2: Age Distribution by Geography

Walking and bicycling may reflect one's travel preferences, but mode choice results from an individual's financial situation, city of residence, commute time and distance, and physical ability. Non-motorized commuting generally increases as household incomes decline and ages increase[4]. Table 2 shows individuals' mode share when traveling to work in T or C and New Mexico. The percentage of T or C residents who commute by walking to work is almost six percent, more than double the statewide rate.

Table 2: Means of Transportation to Work, Source: 2015-2019 American Community Survey 5-Year Estimates

Commute Mode	T or C	New Mexico
Drove Alone	77.3%	80.4%
Carpool	9.1%	10.0%
Public Transportation	0.3%	1.1%
Walked	5.6%	2.0%
Bicycle	0.7%	0.6%
Other means	2.9%	1.0%
Worked from home	4.1%	4.9%

Previous And Concurrent Studies and Plans

New Mexico 2016 Strategic Highway Safety Plan (SHSP) - The SHSP is the overarching transportation safety plan for the state. The Plan establishes a vision of "Safe Mobility for Everyone." The SHSP identifies 10 High-Priority Emphasis Areas, including impaired driving, speeding, pedestrians, and motorcycles. These areas are determined by the frequency each factor contributes to fatal and serious injury crashes. The SHSP also details 10 Priority Emphasis Areas, including bicycles, heavy vehicles, and transit. For these Emphasis Areas, the SHSP recommends several strategies using the 4Es: engineering, education, enforcement, and emergency medical services (EMS).

New Mexico Prioritized Statewide Bicycle Network Plan (2018) - The New Mexico Prioritized Statewide Bicycle Network Plan outlines a statewide bicycle network utilizing the state's existing highway network. This Plan classifies New Mexico's highways by tiers indicating each segment's benefit level from bicycle infrastructure and the preferred bicycle infrastructure treatments. The New Mexico Prioritized Statewide Bicycle Network Plan considers how to best provide New Mexico residents and visitors with a safe and connected bicycle network at the statewide level.

NMDOT Statewide Pedestrian Safety Action Plan (PSAP) (2021) - The PSAP provides a five-year framework of actions to reduce the number of pedestrian-involved injuries and fatalities in New Mexico.

I-25 Business Loop Roundabouts (2020) - The purpose of the proposed roundabouts on I-25 Business Loop 11/N. Date Street, at New School Road and Smith Avenue, is to improve safety by reducing traveling speeds, improving intersection sight distance, and improving access management throughout the corridor.

T or C Downtown Master Plan (2014) – Adopted in 2014, the Downtown Master Plan aims to create a more attractive destination for locals and tourists in T or C. The Plan proposes physical improvements to the streetscapes, intersections, and public spaces by creating a wayfinding system, increasing parking opportunities, addressing drainage challenges, and preserving historic properties in the Hot Springs Bathhouse and Commercial District.

TRAFFIC CONDITIONS AND SAFETY ASSESSMENT

Traffic Volumes In T or C

The project team obtained Annual Average Daily Traffic (AADT) on I-25 Business Loop 11 through T or C from the NMDOT Traffic Data Management System. In addition, the team conducted traffic counts. The average of four counters, located north and south of Downtown on N. Date and S. Broadway Streets, show a decrease in traffic volumes of nearly two percent per year between 2009 and 2020. Independent of this historical data, the project team collected vehicle volumes, vehicle classifications, and speed profiles of vehicles traveling through the study corridors in the focus areas of T or C. Downtown, video cameras collected pedestrian and bicycle activity. Deployment of the video cameras and pneumatic tubes was completed in late February 2021. As the data was collected during the winter amid the COVID-19 pandemic, the project team acknowledges that the collected data does not necessarily reflect typical traffic activity during non-pandemic times or peak tourism season in T or C. However, important traffic data trends emerged and guided the

[4] McKenzie, “Modes Less Traveled—Bicycling and Walking to Work in the United States: 2008–2012.”

plan. The following sections detail the observations made from the collected data for each of the focus areas.

Focus Area 1 - Main Avenue and N. Broadway Street

Existing Conditions

The project team conducted T or C field visits on March 12th and 27th of 2021 to understand the context of the community and conduct a transportation asset inventory of the study corridor. Main Avenue and N. Broadway Street form a one-way couplet through downtown T or C, as shown in Figure 5 A one-way couplet is a pair of one-way streets carrying traffic in opposite directions. These corridors comprise a portion of I-25 Business Loop 11 and are owned and maintained by NMDOT. In T or C, Main Avenue carries southbound traffic from N. Date Street to S. Broadway Street. Main Avenue comprises two 11.5-foot wide driving lanes with parallel on-street parking lining both sides of the driving lanes for most of the corridor. S. Pershing, Jones, S. Foch, Clancy, and McAdoo Streets form stop-controlled intersections on the south side of Main Avenue. N. Pershing street, N. Foch Street, Garst Street, Matson Avenue, and Poplar Street create stop-controlled intersections with Main Avenue from the north.

N. Broadway Street carries northbound traffic from N. Broadway Street to N. Date Street via two 11.5-foot wide lanes. Similar to Main Avenue, parallel on-street parking is available on both sides of the driving lanes. McElroy Avenue, Post, and Mims Streets form stop-controlled intersections at N. Broadway on the south side, as Jones Street on the north side. On Clancy, Daniels, S. Foch, or S. Pershing Streets, motorists traveling north or south also encounter stop-controlled intersections when reaching N. Broadway Street.

The Hot Springs Bathhouse and Commercial Historic District is located in Focus Area 1 and generates significant pedestrian activity downtown. Previous efforts created a safe pedestrian-friendly environment beginning with the posted speed limit of 25 miles per hour (MPH). On N. Broadway Street, ADA-accessible sidewalks at least 6-feet wide exist on both sides of the street. Likewise, ADA Accessible sidewalks at least 4-feet wide exist for most of the Main Avenue corridor. However, no sidewalk exists on the north side of Main Avenue between N. Foch and Garst Streets. Marked crosswalks are available at each intersection on Main Avenue and N. Broadway Street.

Walking through Downtown T or C reveals an effort to create a pedestrian-friendly environment. The marked crosswalks, pedestrian traffic signs, and at least 4-foot wide sidewalks through most of the Main Avenue and N. Broadway Street corridors are evidence of improving pedestrian safety and comfort. The countermeasures in this plan aim to build upon and enhance these previous efforts.

Figure 3: Traffic Sign Inventory, Main Ave.

Figure 4: Traffic Sign Inventory, N. Broadway St.

Data Collection

The project team conducted pneumatic tube counts and collected video data to quantify the multimodal traffic activity in Focus Area 1 between February 18, 2021, and February 21, 2021. Pneumatic tube counters yielded motor vehicle classifications, volumes, and speeds. Pneumatic tube counters were deployed on Main Avenue near S. Pershing and McAdoo Streets and N. Broadway Street near S. Pershing and Post Streets. In addition, video data were collected at two locations on Main Avenue and two locations on N. Broadway Street. The video cameras and pneumatic tubes were deployed at the locations shown in Figure 5. The cameras provided insight into pedestrian and bicycle activity in the focus area.

Figure 5: Video Camera and pneumatic tube deployments in Focus Area 1.

Traffic Volumes

Figure 6 through Figure 9 show the vehicle traffic volume profiles for Main Avenue. Figure 6 and Figure 7 are weekly vehicle volumes, while Figure 8 and Figure 9 are weekend volumes. The hourly traffic profiles are consistent between weekdays and weekends. These profiles indicate an absence of a morning and evening peak hour—the east end of the corridor experiences slightly higher traffic volumes than the west end.

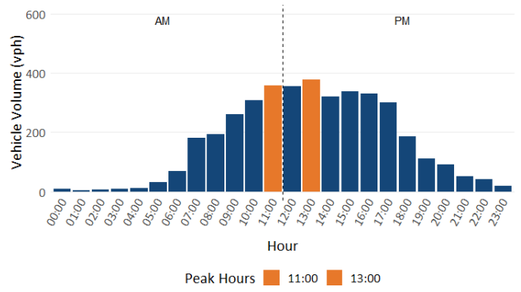


Figure 6: Average weekday vehicle volumes by hour, Main Ave. near McAdoo St.

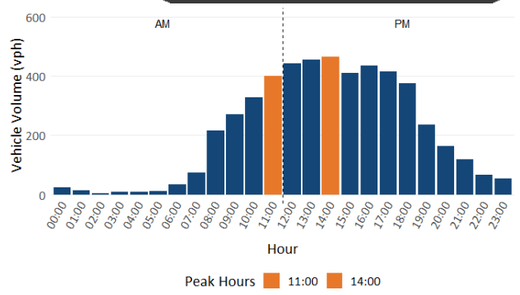


Figure 7: Average weekday vehicle volumes by hour, Main Ave. near S. Pershing St.

Figure 8: Average weekend vehicle volumes by hour, Main Ave. near McAdoo St.

Figure 9: Average weekend vehicle volumes by hour, Main Ave. near S. Pershing St.

Similar traffic profiles exist on N. Broadway Street as Main Avenue. Figure 10 through Figure 13 show the vehicle traffic volume profiles for N. Broadway Street. Traffic volumes peak during mid-day hours, with increased traffic volumes observed on the corridor's east end.

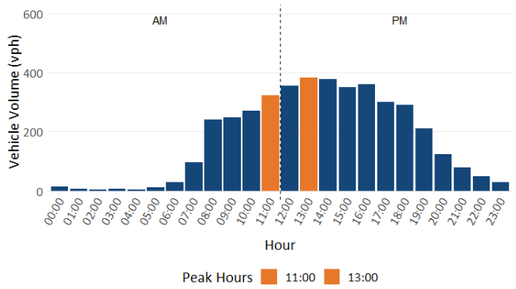


Figure 10: Average weekday vehicle volumes by hour, N. Broadway St. near Post St.

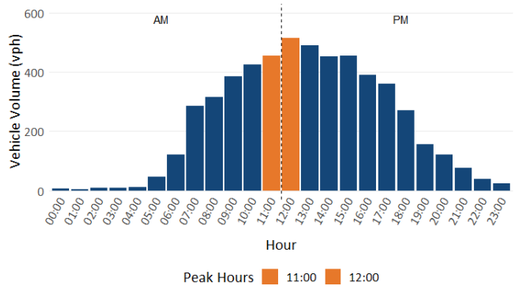


Figure 11: Average weekday vehicle volumes by hour, N. Broadway St. near S. Pershing St.

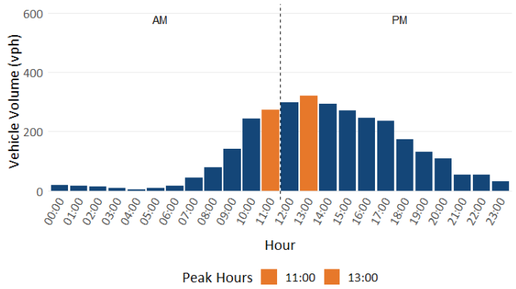


Figure 12: Average weekend vehicle volumes by hour, N. Broadway St. near Post St.

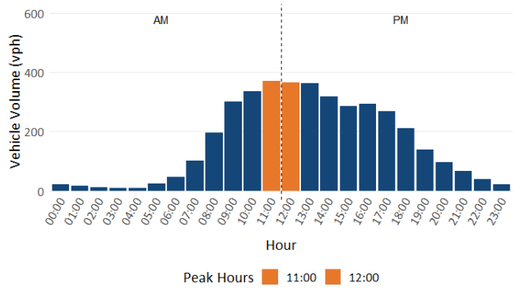


Figure 13: Average weekend vehicle volumes by hour, N. Broadway St. near S. Pershing St.

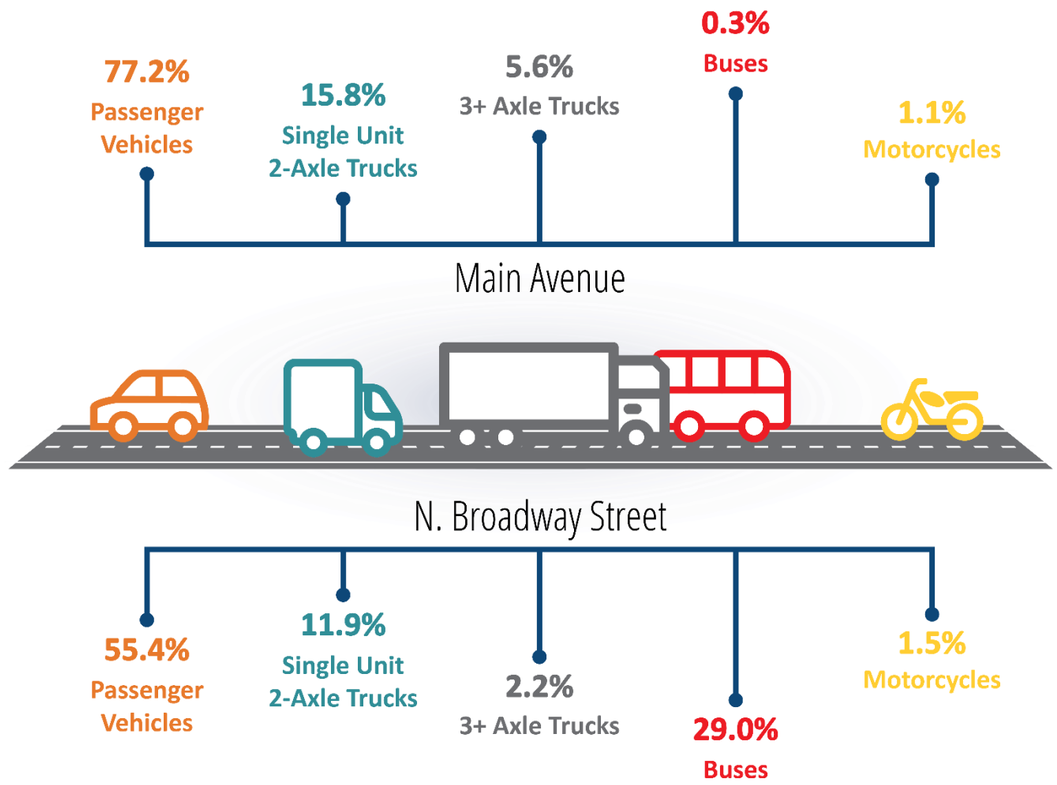


Figure 14: Percentage of vehicle classifications in Focus Area 1.

Vehicle Classification

The pneumatic tube counters also provided insight into the types of vehicles traveling through Focus Area 1. Vehicle classifications are identified by vehicle axle spacing. A summary of these vehicle classifications is listed in Figure 14. Passenger vehicles were the most common vehicle class in both corridors; this class includes passenger cars and trucks. Single unit two-axle trucks comprised a significant portion of traffic through downtown T or C. Vehicles in this class include delivery trucks, flatbeds, small public transit vans, recreational vehicles, and dual rear wheel passenger trucks (dually trucks). Larger trucks with three axles or more, such as semi-trucks and cement trucks, accounted for around two percent of the vehicular traffic in T or C. Of note, a significant amount of bus traffic traveled through the Broadway corridor compared to Main Avenue. Finally, a small percentage of motorcycles were observed traveling through the study corridor.

Vehicle Speeds

The project team developed the vehicular traffic speed profiles in Focus Area 1 from the tube counter data. Figure 15 and Figure 16 are the speed profile distributions of observed vehicle speeds on Main Avenue for each tube counter location. Figure 15 shows that the 50th percentile speed at S. Pershing Street was 24 MPH, and the 85th percentile speed was 27 MPH. These observations indicate that half of the observed traffic was compliant with the posted speed limit of 25 MPH. Figure 16 shows the speed profile near McAdoo Street. At this location, the 50th percentile speed is 31 MPH, and the 85th percentile is 35 MPH. These speeds indicate that more than half of the observed traffic exceeded the posted speed limit by 6 MPH or more. Moreover, fifteen percent of vehicular traffic exceeded the

posted speed limit by at least 10 MPH. Figure 15 and Figure 16 suggest that motorists increase their moving speed as they travel east to west through the central business district of T or C.

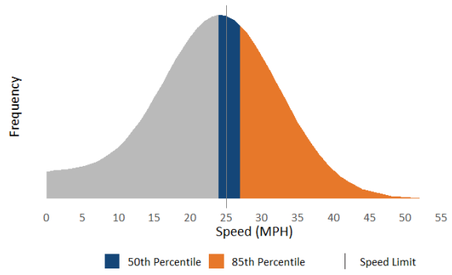


Figure 15: Speed profile distribution of motor vehicles at Main Ave. near S. Pershing St.

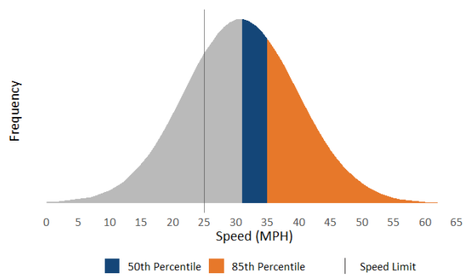


Figure 16: Speed profile distribution of motor vehicles at Main Ave. near McAdoo St.

Figure 17 and Figure 18 are the speed profile distributions of observed vehicle speeds on N. Broadway Street at Post and S. Pershing Streets. Figure 17 shows that the 50th percentile speed at Post Street was 25 MPH, and the 85th percentile speed was 28 MPH. These observations indicate that half of the observed traffic was compliant with the posted speed limit of 25 MPH. Figure 18 shows the speed profile near S. Pershing Street. At this location, the 50th percentile speed is 26 MPH, and the 85th percentile is 29 MPH. These speeds indicate that almost half of the observed traffic complied with the posted speed limit and fifteen percent of vehicular traffic exceeded the posted speed limit by more than 4 MPH. Like Main Avenue, the speed profile distributions suggest that motorists increase their speed as they travel through downtown T or C.

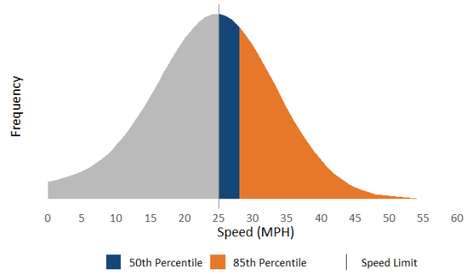


Figure 17: Speed profile distribution of motor vehicles at N. Broadway St. near Post St.

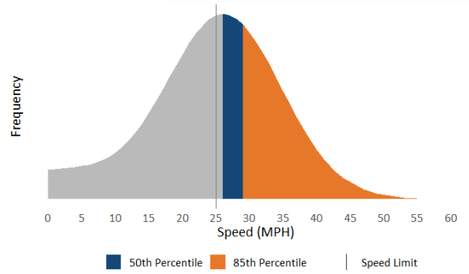


Figure 18: Speed profile distribution of motor vehicles at N. Broadway St. near S. Pershing St.

Pedestrian Activity

The video camera deployments allowed the project team to observe pedestrian and bicyclist traffic activity. Cameras were placed at four locations in Focus Area 1. Cameras on main were located at Jones and S. Foch Streets. The camera at Jones was located on the north side of Main Avenue and captured activity on the roadway west of Geronimo Springs Museum. The other camera was placed at Foch Street and faced east on Main Avenue. Two cameras were deployed on N. Broadway Street and Daniels Street. One camera faced east while the other faced west. Table 3 summarizes the observed pedestrian activity. Cameras were programmed to record data between 6:00 AM and 6:00 PM; these hours were chosen due to available daylight during the winter.

The camera observations indicated high pedestrian activity on Main Avenue near Jones Street and moderate foot traffic on N. Broadway Street for Thursday and Friday. Activity near Jones Street was higher on Thursday and Friday due to US Post Office and BBVA Bank business. On Saturday and Sunday, pedestrian activity was higher on N. Broadway Street and slowed on Main Avenue. The elevated activity on N. Broadway over the weekend suggests that there are more attractions generating tourists and pedestrian activity in this corridor.

Table 3: Pedestrian volumes by day and location

Location		Thursday (2/18/21)	Friday (2/19/21)	Saturday (2/20/21)	Sunday (2/21/21)
Main Ave.	**Jones St.**	78	95	25	18
	S Foch St.	11	38	19	23
N. Broadway St.	**Daniels St. (E)**	33	50	84	56
	Daniels St. (W)	54	40	32	19

Bicycle Activity

Table 4 shows bicycle activity was higher on N. Broadway Street than Main Avenue. Higher numbers of bicyclists using N. Broadway Street indicate bicyclists are more often traveling east through Downtown. Additionally, bicyclists may prefer using other routes when traveling west to avoid the elevation increase as Main Avenue approaches Foch Street.

Table 4: Bicycle volumes by day and location

Location		Thursday (2/18/21)	Friday (2/19/21)	Saturday (2/20/21)	Sunday (2/21/21)
Main Ave.	**Jones St.**	0	3	0	1
	S Foch St.	1	1	2	2
N. Broadway St.	**Daniels St. (E)**	2	3	1	1
	Daniels St. (W)	7	0	7	4

Existing Conditions

The observed bicycle and pedestrian activity data were collected days after a snowstorm in February 2021 during the COVID-19 pandemic. During non-pandemic times, February is outside the typical bicycle season. The project team believes bicycle and pedestrian activity is underrepresented by this data and expects increased bicycle volumes during seasons with more pleasant weather. We recommend follow-up pedestrian and bicycle counts during the non-winter months, especially over weekends.

Crash Data Summary

This study analyzed five years of crashes occurring in the Focus Areas between 2014 and 2018 provided by the University of New Mexico, Geospatial and Population Studies, Traffic Research Unit. Crash data provided is from reported crashes to law enforcement, and this data often fails to capture other minor crashes, unreported crashes, or near-misses. Crash data is extracted from crash reports filed by law enforcement officers. The following injury codes identify crash severity in New Mexico:

- K – Killed (Fatal)
- A – Incapacitated (Serious Injury)
- B – Visible Injury
- C – Complaint of Injury
- O – No Apparent Injury or Property Damage Only

The crash data analysis did not include Complaint of Injury crashes (C), Property Damage Only crashes (O), minor crashes, unreported crashes, or near-misses.

Crash Data Analysis

Of the reported crashes in Focus Area 1, two were fatal, and one resulted in a serious injury. Two minor injury crashes involved pedestrians, and none involved bicycles or transit vehicles. Crash severity for crashes in Focus Area 1 between 2014 and 2018 is summarized in Table 5. The single fatal crash resulted in two fatalities, and two crashes left three people with serious injuries. These crashes accounted for nearly forty-three percent of all crashes, while crashes resulting in minor injuries (visible injuries) were responsible for the remaining fifty-seven percent of crashes.

Table 5: Crashes by severity, Focus Area 1 (2014-2018)

Crash Severity	Crashes	Percentage
Fatal (K)	1	14.3%
Serious Injury (A)	2	28.6%
Visible Injury (B)	4	57.1%
Total	7	100.00%

While a significant percentage of crashes resulted in fatalities or serious injuries, the rate of less severe crashes should not be ignored. In addition to the more severe crashes, the less severe crashes signal a safety challenge and present an opportunity to address their top contributing factors to proactively reduce the possibility of crashes resulting in fatalities or serious injuries. Table 6 is a summary of the top contributing factors for crashes occurring within the study area. The top contributing factor for the fatal crash was Speed Too Fast for Conditions. Driver inattention was a top contributing factor for three crashes, one that resulted in a serious injury.

Table 6: Crashes by top contributing factor and severity, Focus Area 1

Contributing Factor	Fatal (K)	Serious Injury (A)	Visible Injury (B)	Total
Driver Inattention	0	1	2	3
Made Improper Turn	0	0	1	1
Speed Too Fast for Conditions	1	0	0	1
Other – No Driver Error	0	1	0	1
Pedestrian Error	0	0	1	1
Total	1	2	4	7

Multimodal Crashes

Transportation safety becomes more of a concern when modes of transportation other than motor vehicles are involved; a greater danger is posed to pedestrians, bicyclists, and other modes of active transportation when colliding with a motor vehicle. Fortunately, crashes in T or C that occurred during our analysis period did not involve bicyclists. However, one crash involved a pedestrian and resulted in minor injury. Table 7 is a summary of crashes involving pedestrians and bicyclists.

Table 7: Pedestrian and Bicycle Involved crashes by severity, Focus Area 1 (2014-2018)

Crash Severity	Pedestrian Involved	Bicyclist Involved
Fatal (K)	0	0
Serious Injury (A)	0	0
Visible Injury (B)	1	0

Focus Area 2 – Smith Avenue/N. Silver Street/Silver Street

Existing Conditions

The project team also visited Focus Area 2 during the site visits in March 2021. The Smith Avenue and Silver Street corridors provide access to T or C Elementary School from N. Date Street and E. 9th Street. These corridors also offer access to Sierra Vista Hospital and Sierra Health Care. The paved roadways are 26-feet wide and unmarked. The speed limit on Smith Avenue is 25 MPH for eastbound motorists entering from N. Date Street. The 25 MPH speed limit continues for approximately 2,000 feet until the school zone begins, and the speed limit reduces to 15 MPH. A 15 MPH speed zone continues Silver and N. Silver Streets until E. 9th Avenue. When motorists enter Focus Area 2 from the south, the speed limit on Silver Street is 25 MPH. Approximately 1,000 feet from the intersection at E. 9th Avenue, a school zone begins, and the speed limit reduces to 15 MPH. The school zone continues around the school property on N. Silver Street and Smith Avenue until it ends approximately 1,000 feet from the intersection at N. Date Street. Motorists encounter a stop sign at N. Date Street when traveling west on Smith Avenue. Likewise, motorists traveling south on Silver Street come to a two-way stop-controlled intersection at E. 9th Street. An all-way stop-controlled intersection is present at N. Silver and Silver Streets northeast of the school's property. Pedestrian infrastructure is minimal in Focus Area 2, with approximately 1,000 feet of sidewalk on the south side of Smith Avenue just due west of the school.

Figure 19: Traffic Sign Inventory, Smith Ave.

Figure 20: Traffic Sign Inventory, Silver St.

Figure 21: Pneumatic tube deployments in Focus Area 2.

Data Collection

The project team measured motorists' traffic activity in Focus Area 2 using pneumatic tube data collected between February 18, 2021, and February 21, 2021. As in Focus Area 1, pneumatic tube counters yielded motor vehicle classifications, volumes, and speeds. Pneumatic tube counters were deployed on Smith Avenue east of T or C Elementary School and Silver Street north of Madeline Street. The posted speed limit in these areas was 25 MPH. The pneumatic tubes were deployed at the locations shown in Figure 21.

Traffic Volumes

Figure 22 through Figure 25 show the vehicle traffic volume profiles for Focus Area 2. Figure 22 and Figure 23 are weekly vehicle volumes, while Figure 24 and Figure 25 are weekend volumes. These figures indicate the corridors are much busier on weekdays than on weekends. The weekday morning peak hour is 8:00 AM on Smith Avenue and 7:00 AM on Silver Street, with weekday afternoon peak hours being 3:00 PM on Smith and 2:00 PM on Silver. The weekday volumes indicate a daily traffic pattern driven by the school schedule.

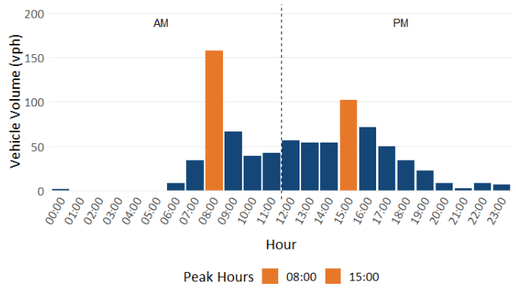


Figure 22: Average weekday vehicle volumes by hour, Smith Ave.

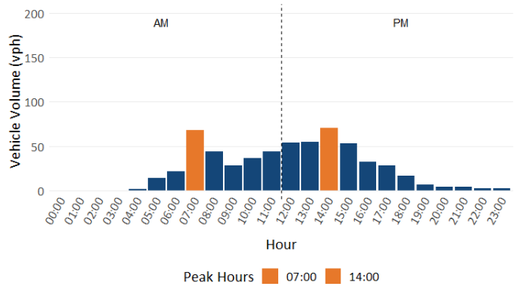


Figure 23: Average weekday vehicle volumes by hour, Silver St.

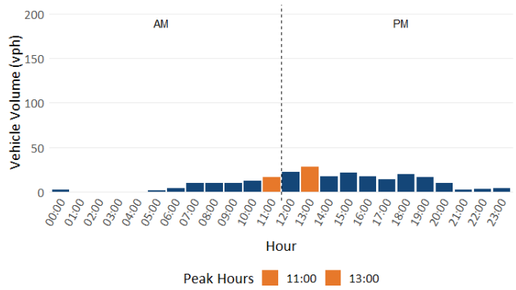


Figure 24: Average weekend vehicle volumes by hour, Smith Ave.

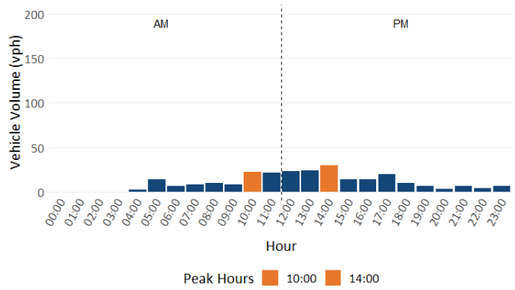


Figure 25: Average weekend vehicle volumes by hour, Silver St.

Vehicle Classification

A summary of the vehicle classifications in Focus Area 2 is summarized in Figure 26. Passenger vehicles and buses are the most common vehicles traveling these corridors. Single unit two-axle trucks also made up a significant percentage of traffic in Focus Area 2. Larger trucks with three axles or more and motorcycles make up only a small percentage of traffic through these corridors.

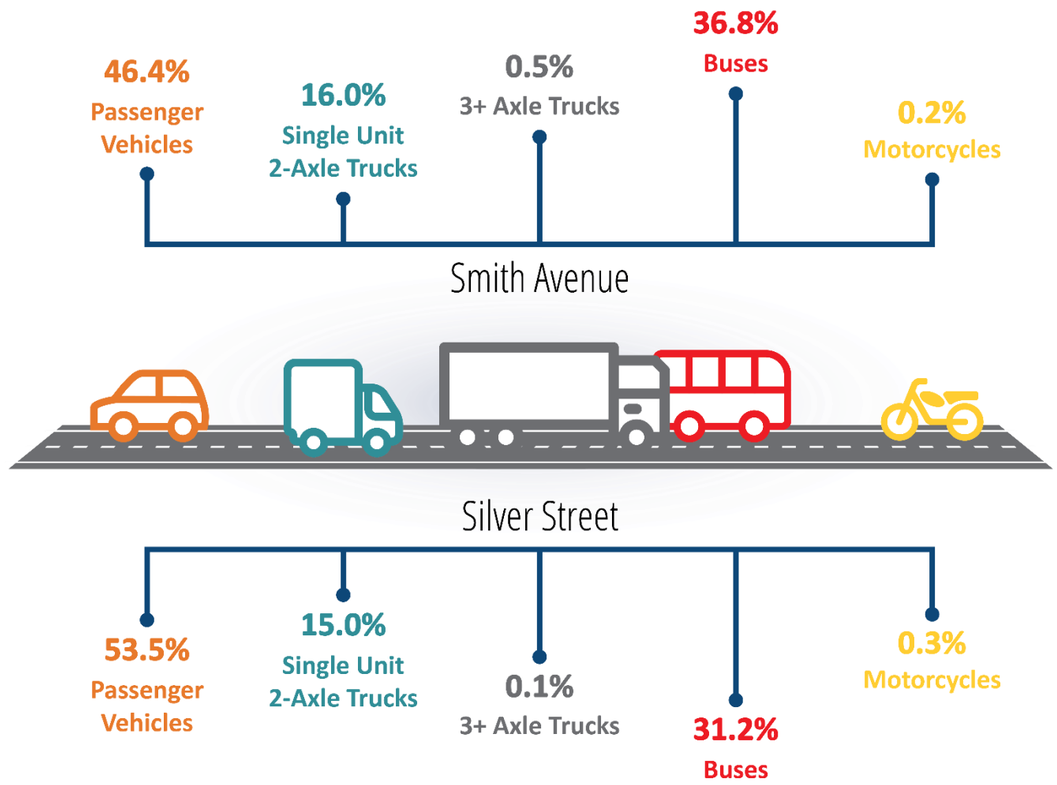


Figure 26: Percentage of vehicle classifications, Focus Area 2.

Vehicle Speeds

The speed profile distribution of observed vehicle speeds on Smith Avenue west of T or C Elementary School is shown in Figure 27. The 50th percentile speed was 26 MPH, and the 85th percentile speed was 31 MPH. These observations indicate that half of the observed traffic was compliant with the posted speed limit of 25 MPH and fifteen percent of vehicular traffic exceeded the posted speed limit by at least 5 MPH. Figure 28 shows the speed distribution profile of vehicles on Silver Street north of Madeline Street. The 50th and 85th percentile speeds are similar on Smith Avenue at 27 MPH and 31 MPH, respectively. Nearly half of the observed traffic was compliant with the posted speed of 25 MPH, and fifteen percent of traffic exceeded it by 6 MPH.

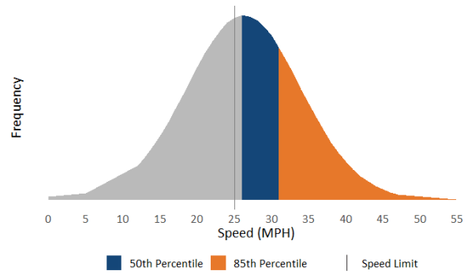


Figure 27: Speed profile distribution of motor vehicles on Smith Ave.

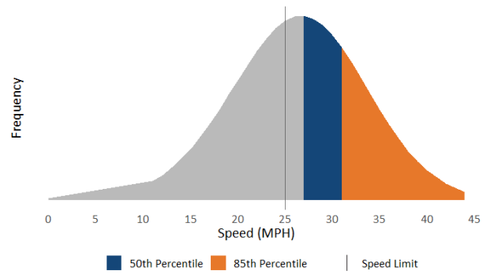


Figure 28: Speed profile distribution of motor vehicles on Silver St.

Crash Data Analysis

There were two reported crashes in Focus Area 2 between 2014 and 2018. Crash severity for the crashes is summarized in Table 8. Both crashes resulted in minor injuries (visible injuries).

Table 8: Crashes by severity, Focus Area 2 (2014-2018)

Crash Severity	Crashes	Percentage
Fatal (K)	0	0.0%
Serious Injury (A)	0	0.0%
Visible Injury (B)	2	100.0%

Table 9 is a summary of the top contributing factors for crashes occurring within the study area. Driver inattention was the top contributing factor for both crashes. Nether crash involved a pedestrian or a bicyclist. Fortunately, these crashes did not result in a fatality or serious injury, only minor visible injuries. It is important to note that none of the reported crashes took place through the length of Focus Area 2. The crashes occurred at the intersection of Smith N. Date Streets. This intersection will undergo a reconfiguration to a roundabout designed to addresses pedestrian safety and accessibility.

Table 9: Crashes by top contributing factor and severity, Focus Area 2

Contributing Factor	Fatal (K)	Serious Injury (A)	Visible Injury (B)	Total
Driver Inattention	0	0	2	2
Total	0	0	2	2

Focus Area 3 - New School Road/N. Pershing Street

Existing Conditions

Focus Area 3 is New School Road west of N. Date Street to N. Pershing Street and N. Pershing Street from New School Road to Marie Street. These corridors also provide access to Hot Springs High School and T or C Middle School. The paved asphalt on New School Road and N. Pershing Street is 36-feet wide between N. Date Street, the southernmost driveway of Hot Springs High School. From there until Barton Street, the asphalt roadway narrows to 32-feet. Between Barton and Marie Streets, the roadway is 44-feet wide. Lane markings exist at N. Date Street, at the eastern parking lot driveway of Hot Springs High School, and the western parking lot driveway of T or C Middle School. Marked crosswalks exist on New School Road between T or C Middle School and Hot Springs High School.

A 15 MPH school zone begins on New School Road, 1,000 feet from N. Date Street, extending approximately 3,000 feet, ending on N. Pershing Road a hundred feet before Barton Street. Motorists encounter a stop sign at N. Date Street when traveling east on New School Road. Likewise, southbound motorists on N. Pershing encounter an all-way stop at Barton Street and a two-way stop approaching Marie Street. Similar to Focus Area 2, pedestrian infrastructure is minimal, with approximately 1,400 feet of sidewalk on the south side of New School Road between N. Date Street and the eastern driveway of Hot Springs High School.

Figure 29: Traffic Sign Inventory, New School Rd.

Figure 30: Traffic Sign Inventory, N. Pershing St.

Data Collection

Pneumatic tube data collected between February 18, 2021, and February 21, 2021, quantified motorist traffic activity in Focus Area 3. A pneumatic tube counter was deployed on New School Road east of T or C Middle School and Hot Springs High School. Another tube counter collected traffic data on N. Pershing Street north of Barton Street. The posted speed limit in these areas is 15 MPH. The pneumatic tubes were deployed at the locations shown in Figure 31

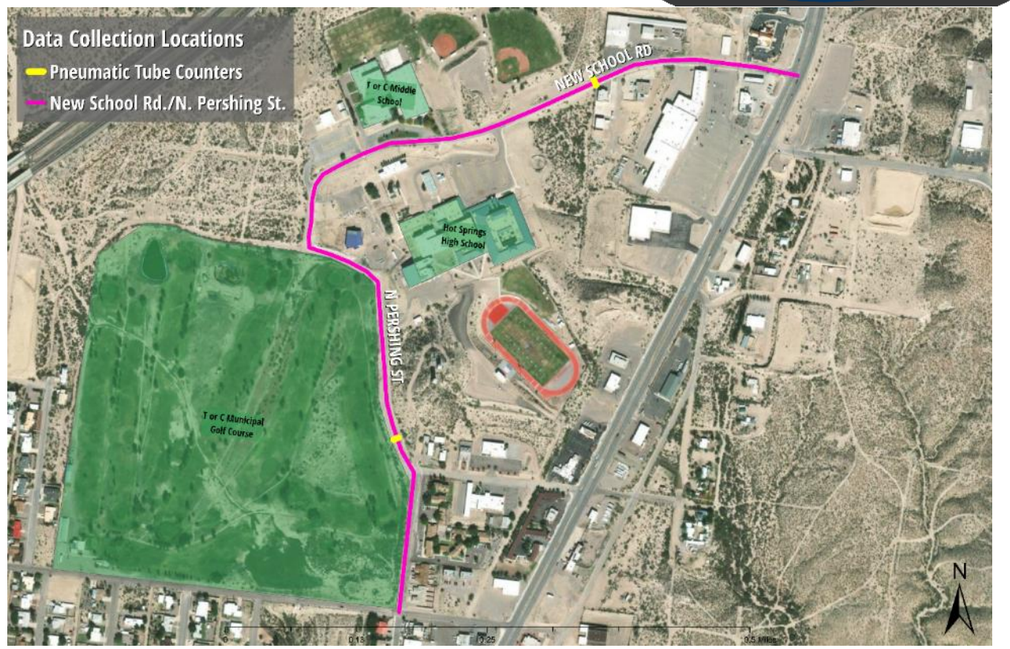


Figure 31: Pneumatic tube deployments in Focus Area 3.

Traffic Volumes

Figure 32 through Figure 35 show the vehicle traffic volume profiles for Focus Area 2. Figure 32 and Figure 33 are weekly vehicle volumes, while Figure 34 and Figure 35 are weekend volumes. Like Focus Area 2, the traffic in these corridors is primarily because of the schools. The weekday traffic volumes show a clear diurnal pattern, with both counter locations reporting peak hours of 7:00 AM and 3:00 PM. The traffic volumes during the weekend are much less than during the weekdays.

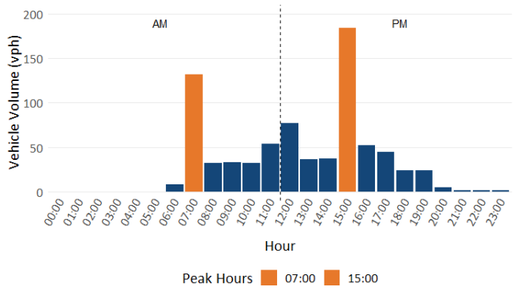


Figure 32: Average weekday vehicle volumes by hour, New School Rd.

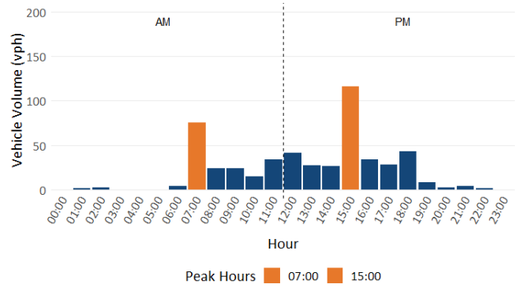


Figure 33: Average weekday vehicle volumes by hour, N. Pershing St. near Barton St.

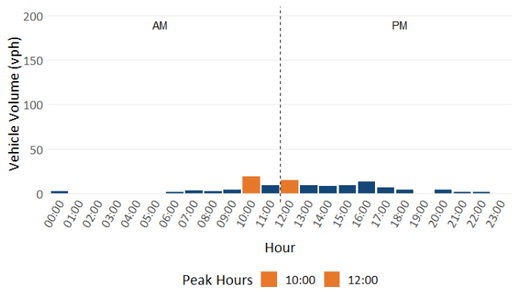


Figure 34: Average weekend vehicle volumes by hour, New School Rd.

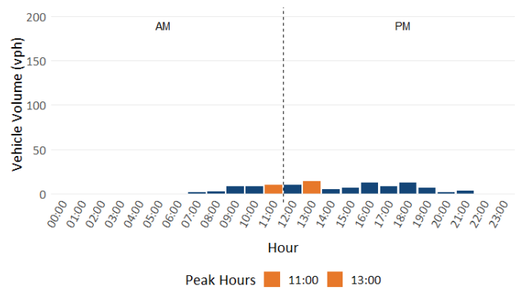


Figure 35: Average weekend vehicle volumes by hour, N. Pershing St. near Barton St.

Vehicle Classification

A summary of the vehicle classifications in Focus Area 3 is summarized in Figure 36. Passenger Vehicles and buses comprise most vehicles traveling the New School Road section. In contrast, single-unit two-axle trucks and buses made up the highest percentage of traffic on N. Pershing Street. Larger trucks with three axles or more were also much more common. Finally, motorcycles comprised a small percentage of traffic in Focus Area 3.

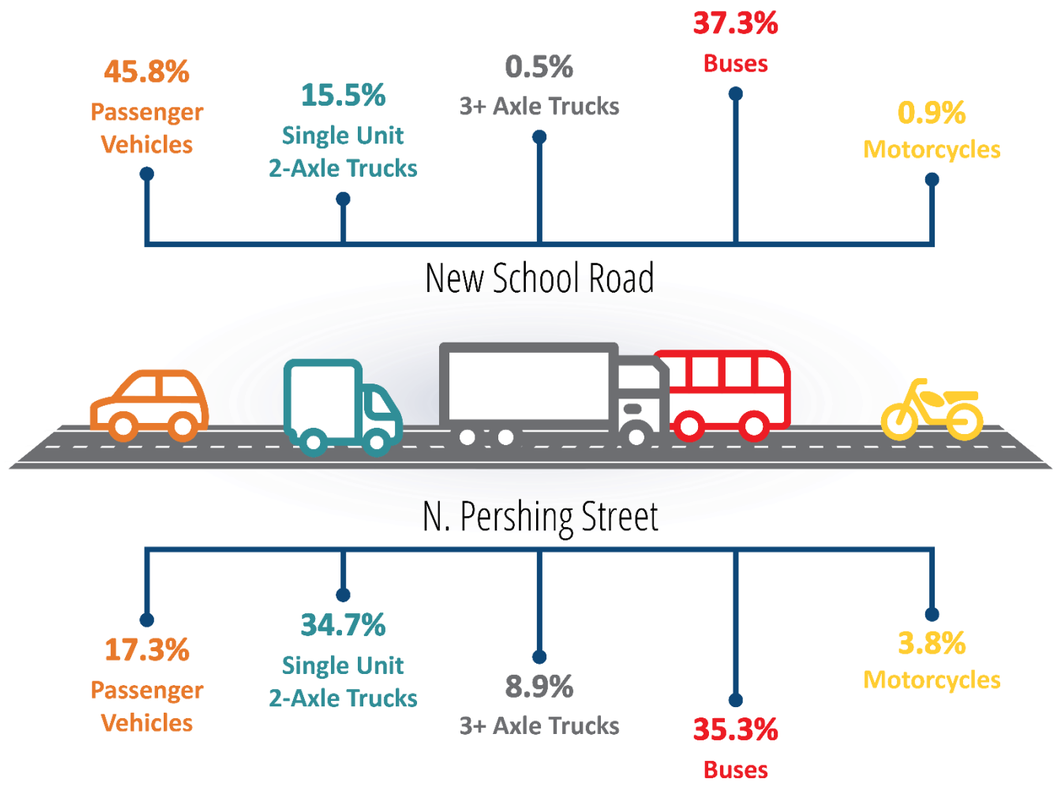


Figure 36: Percentage of vehicle classifications in Focus Area 3.

Vehicle Speeds

The speed profile distribution of observed vehicle speeds on New School Road east of T or C Middle School is shown in Figure 37. The 50th percentile speed was 23 MPH, and the 85th percentile speed was 29 MPH. These observations indicate that more than half of the observed traffic exceeded the posted speed limit of 15 MPH by 8 MPH. Fifteen percent of vehicular traffic exceeded the posted speed limit by at least 14 MPH. The bidirectional speed profile for New School Road indicates that many motorists in this corridor do not comply with the school zone's posted speed limit. Figure 38 shows the speed distribution profile of vehicular traffic on N. Pershing Street north of Barton Street. The 50th and 85th percentile speeds were 29 MPH and 40 MPH, respectively. Over half of the observed traffic

exceeded the posted speed of 25 MPH by 4 MPH, and fifteen percent of traffic exceeded it by 15 MPH. This speed profile distribution suggests that motorists reduce their speeds in the 15 MPH school zone but are still not compliant with the posted speed limit.

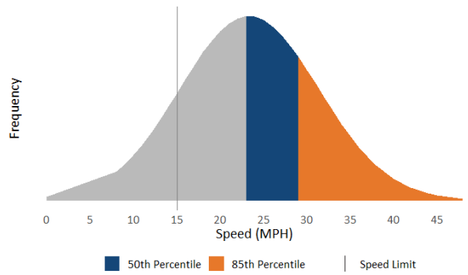


Figure 37: Speed profile distribution of motor vehicles on New School Rd.

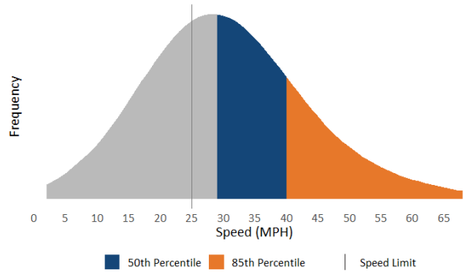


Figure 38: Speed profile distribution of motor vehicles on N. Pershing St.

Crash Data Analysis

Reported crashes in Focus Area 3 were negligible between 2014 and 2018, with only one reported crash. The crash resulted in a serious injury, with the top contributing factor attributed to driver inattention. This crash occurred at the intersection of New School Road and N. Date Street. This intersection will also undergo a redesign to a roundabout designed to consider pedestrian accessibility and safety. Fortunately, there were no reported crashes involving pedestrians or bicyclists.

PUBLIC INVOLVEMENT PROCESS

Stakeholders and the public shared thoughts, concerns, and feedback through multiple avenues throughout the planning process. The community members provided input during virtual meetings, via email correspondence, and by commenting on the virtual meeting registration pages. As shown in Figure 39, the project schedule demonstrates the planning process and community engagement.

Figure 39: Schedule for Truth or Consequences Transportation Safety Plan

The COVID-19 pandemic and related restrictions required stakeholder and public meetings to be held virtually via Microsoft Teams. Despite this challenge, T or C community members participated in the Plan's development. Table 10 lists the participants in the planning process.

Table 10: T or C Transportation Safety Plan Participants

PARTICIPANT	AFFILIATION
Rick Dumiak	T or C Resident
Traci Alvarez	City of T or C
Bruce Swingle	City of T or C
Sandra Whitehead	City of T or C
OJ Hechler	City of T or C
Victor Rodriguez	City of T or C
Linda DeMarino	MainStreet T or C
John Masterson	MainStreet T or C
Dagoberto Varela	New Mexico Gas Company
Andreas Linnan	NMDOT District 1
Harold Love	NMDOT District 1
Trent Doolittle	NMDOT District 1
Ami Evans	NMDOT District 1
Debra Hudson	NMDOT Multimodal Planning and Programs Bureau
Neala Krueger	NMDOT Multimodal Planning and Programs Bureau
Tracy Estes	Passion Pie Cafe
Billy Neely	Sierra County Road Department
Kathleen Sloan	Sierra County Sun
Theresa King	Sierra Grande Lodge
David Dawdy	Sophia Unity Foundation
Angela Rael	South Central Council of Governments
Joe McClintock	South Central Council of Governments
Jay Armijo	South Central Council of Governments
Jaymi Simms	South Central Council of Governments
Eliana Orozco	T or C Municipal School District
Randall Aragon	T or C Municipal School District
Channell Segura	T or C Municipal School District
Deputy Chief Baker	T or C Police Department
Susan Buhler	T or C Resident
Daniel Holm	T or C Resident
Ann	T or C Resident
Sophia Peron	T or C Resident
James Boyd	T or C Resident
Ron Pacourek	T or C Resident
Rebecca Speakes	T or C Resident
Tom Sharpe	T or C Resident
Dennis Dunnum	T or C Resident
Susan Todd	T or C Resident
Amanda Cardona	Village of Williamsburg

Two rounds of meetings occurred during the planning process. The first round took place in April 2021, following the data collection and analysis. During this initial round of meetings, the project team shared the collected data and elicited feedback regarding the project team's observations. Community members offered input not observed through the data collection process and helped the project team understand the community's perceptions of transportation safety in the study's focus areas. Some of the feedback is presented below:

Participant Feedback and Input:

- Resident 1 - "Where are the handicapped parking spaces in downtown TrC?, There are NONE! NO PARKING SPACE STRIPING OR DESIGNATION in 18 years!"
- Resident 2 – "Cool. I thought it was a very good presentation, thank you. I'm very concerned about the speed on Broadway and Main, no question. I thought those were great suggestions. Sidewalks definitely needed…I like the pedestrian slow-downs and I definitely like the gateway idea. I think it definitely funnels people down, it gets them mentally thinking different, getting them off the cell phone, and just makes them slow down another five to ten miles per hour, so thank you very much for those suggestions."
- Resident 3 – "Would like to see the traffic slowed down on Main St. The corner of Main and Foch desperately needs a four way stop, or a simple lens change from yellow to red. We have nothing more than a raceway at present."
- Resident 4 – "The curve of main street and the parking nearby at Foch and Main have been sore spots for the community for years. A speeder recently flipped their vehicle due to ineffective traffic calming measures. There's a visibility issue at Foch and Main for northbound travelers which DOT "solved" by removing 4 parking spaces, which caused local merchants great concern."
- South Central Council of Governments Staff 1 – "Each area is used by all modes of transportation, specifically pedestrian. It would be nice to have the areas more pedestrian friendly and even designed to encourage pedestrian and bicycle traffic."
- City Staff 1 – "Sidewalks non existing or in poor shape."

These initial meetings aided the project team in understanding the safety vision of the community. They envision making T or C a safer place for residents and visitors to walk, ride a bicycle, and drive by addressing the following safety challenges:

- Motor vehicle speed compliance
- Pedestrian safety
- Lack of pedestrian infrastructure
- Non-uniform traffic control devices (signs and pavement markings)
- Non-compliance with ADA Accessible Standards

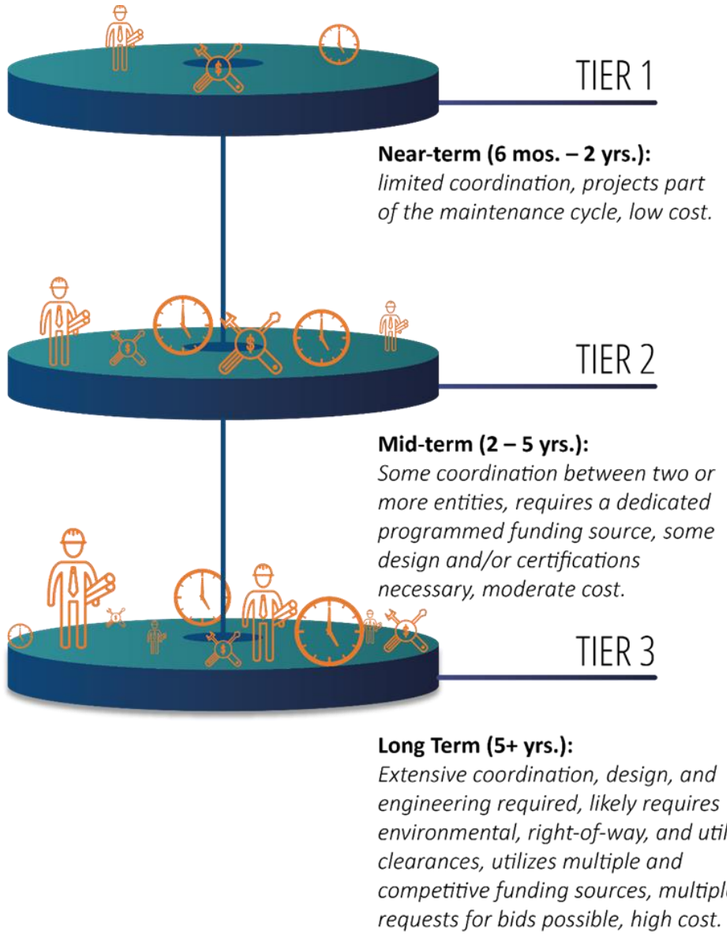
Combining this qualitative information with the empirical data, the project team identified an initial set of countermeasures and mitigation strategies. The second round of meetings took place over the summer of 2021. In May, the stakeholders shared their initial feedback on the recommended countermeasures. The project team took this feedback and further developed the countermeasure plan. In July, the project team held a final community public meeting to share and obtain feedback on recommended countermeasures. Following the final public meeting, the project team briefed the T or C City Commission on the progress of the Transportation Safety Plan to ensure alignment before finalizing the safety plan.

Community Impacts of Crashes

Costs associated with motor vehicle crashes can substantially impact the local economy. These costs come from lost wages, medical expenses, administrative expenses, motor vehicle damage, and employer uninsured costs. Furthermore, unsafe traffic conditions can impact community members not directly involved or injured in a crash. Property Damage Only crashes can affect residents if they experience damage to their property resulting from a crash. Crashes resulting in a fatality, serious injury, or even near-miss crashes can contribute to residents not feeling safe living in their community. Additionally, traffic crashes typically occupy a driving lane on the road until local authorities and emergency services can respond which result in local businesses losing profits due to a car crash and the necessary emergency service vehicles blocking their storefront.

COUNTERMEASURES AND STRATEGIES

The following sections discuss the recommended countermeasures for the Focus Areas. These countermeasures are not prescriptive, nor a package, rather a toolbox of strategies to address the observed challenges. The recommended countermeasures are Tiered, with each increasing Tier reflecting increasing cost, complexity, and amount of time to implement. All countermeasures are contingent on funding and program priorities. Assuming funding is available, and a countermeasure is programmed, the Tiers are:



The countermeasures may be additive or stand-alone. When combined with an in-street pedestrian sign, marked continental crosswalks may have a synergistic effect. Marked crosswalks alone reduce motorist's speeds[5] while installing in-street pedestrian signs in advance of the crosswalk can reduce the mean speed by 4 to 5 MPH while increasing

[5] Federal Highway Administration, "The Effect of Crosswalk Markings on Vehicle Speeds in Maryland, Virginia, and Arizona."

yielding compliance[6]. Others, such as the recommended Dynamic Speed Feedback Signs (DSFS), may only be effective for a brief period and should be used with regular speed enforcement.

Studies have found an association between vehicle speed and the likelihood of pedestrian fatality in the event of a crash[7]. Figure 40 shows that this association is not linear but exponential, indicating that motor vehicle speed is a critical factor in pedestrian safety. This plan seeks to proactively prevent pedestrian fatalities and injuries by recommending countermeasures to calm traffic in the three Focus Areas. Based on the observed safety challenges, a recurring theme of the following countermeasures is to reduce adverse pedestrian and motor vehicle conflicts by focusing on speed limit compliance.

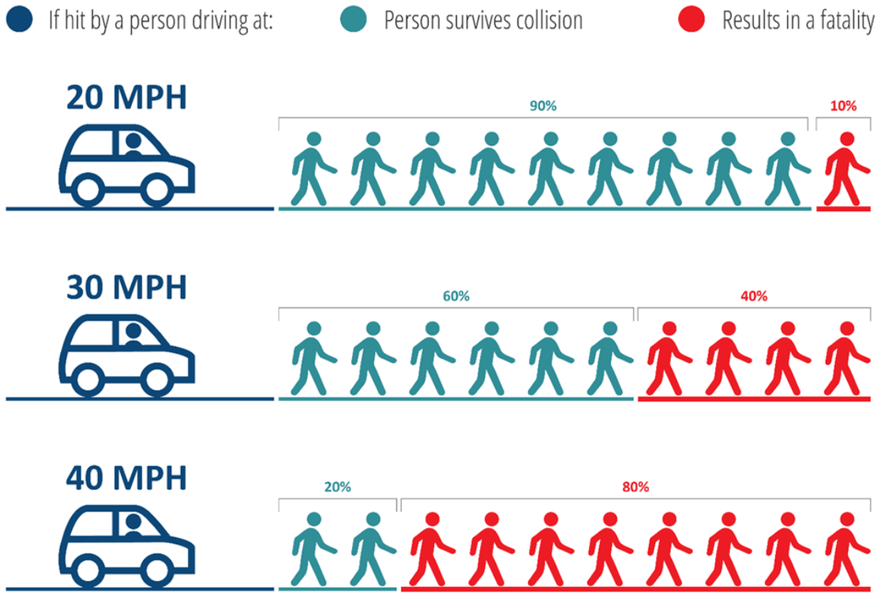


Figure 40: Likelihood of pedestrian fatality by vehicle speed - adapted from San Francisco MTA Vision Zero Action Plan, February 2015

[6] Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings: Follow Up Report."

[7] Pasanen, "Driving Speeds and Pedestrian Safety: A Mathematical Model."

Focus Area 1 – Main Avenue

This section details the recommended countermeasure plan for Focus Area 1 by discussing the Main Avenue and N. Broadway Street corridors individually. Main Avenue corridor countermeasure goals are to improve compliance with the 25 MPH speed limit, enhance ADA Accessibility, and ensure roadway signs are compliant with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). The MUTCD details the standards by which traffic control devices, including road markings, roadway signs, and traffic signals, are designed and used.

Figure 41: Focus Area 1, Main Ave.

Some countermeasures are recommended for the entirety of the Focus Area. Corridor-wide countermeasures include repainting the center line and edge line striping. In conjunction with the repainting, the driving lanes will be narrowed with 6-inch wide striping creating driving lanes 10-feet wide on Main Avenue and Broadway instead of the existing 11.5-foot width. The available asphalt roadway remains the same, but the narrowed driving lane serves as a traffic calming feature to aid with speed limit compliance. Studies have found a relationship between lane width and vehicle moving speeds. As shown in Figure 42, narrower lanes tend to reduce vehicle speeds at a rate of 3 MPH for every foot of reduction in driving lane width. The details of the narrowed driving lanes are discussed for each section of the study corridor.

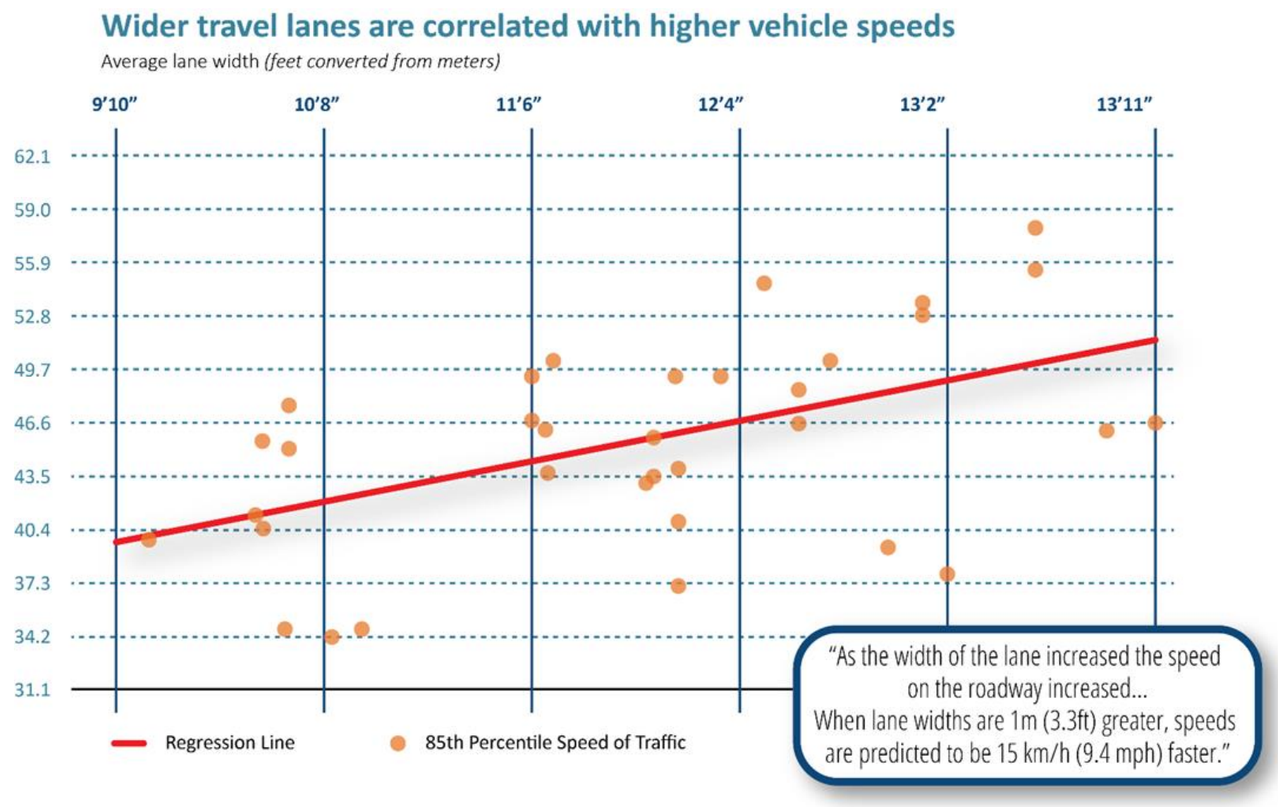
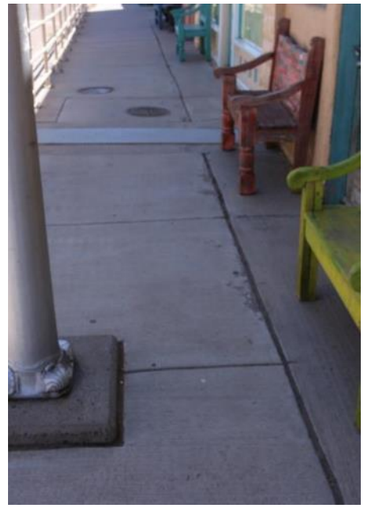
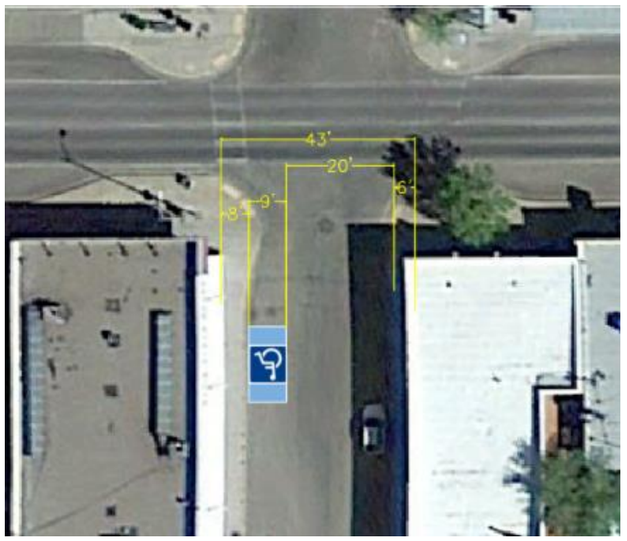


Figure 42: Average lane width by 85th percentile speed - Source: https://nacto.org/wp-content/themes/sink_nacto/views/design-guides/retrofit/urban-street-design-guide/images/lane-width/wider-travel-lanes-graph.png

ADA standards apply to pedestrian facilities. These standards state that public facilities are for everyone's use, including people with disabilities. ADA guidelines for sidewalks require a minimum width of 36-inches; a firm, stable, and slip-resistant surface; free of trip hazards such as broken or lifted sidewalks; a minimum slope of 1:20; and curb ramps. The images on the right are from Downtown T or C, and they show, from left to right, a lifted portion of the concrete, a narrow and unlevel path, and a sidewalk covered in erosion. All these hazards can pose safety challenges for pedestrians, especially pedestrians with disabilities. This safety plan recommends developing a regular maintenance schedule to keep the accessible paths in Downtown T or C usable.



Another accessibility concern in Downtown T or C is the lack of accessible parking spaces. Most public parking in Focus Area 1 is on-street, parallel parking. The US Access Board Proposed Public Rights-of-Way Accessibility Guidelines (PROWAG) outline the minimum required number of accessible parking spaces as a portion of the total number of marked or metered parking spaces on a given block[8]. This plan recommends following the PROWAG guidelines to implement accessible parking spaces throughout Focus Area 1.



[8] "U.S. Access Board - Chapter R2."

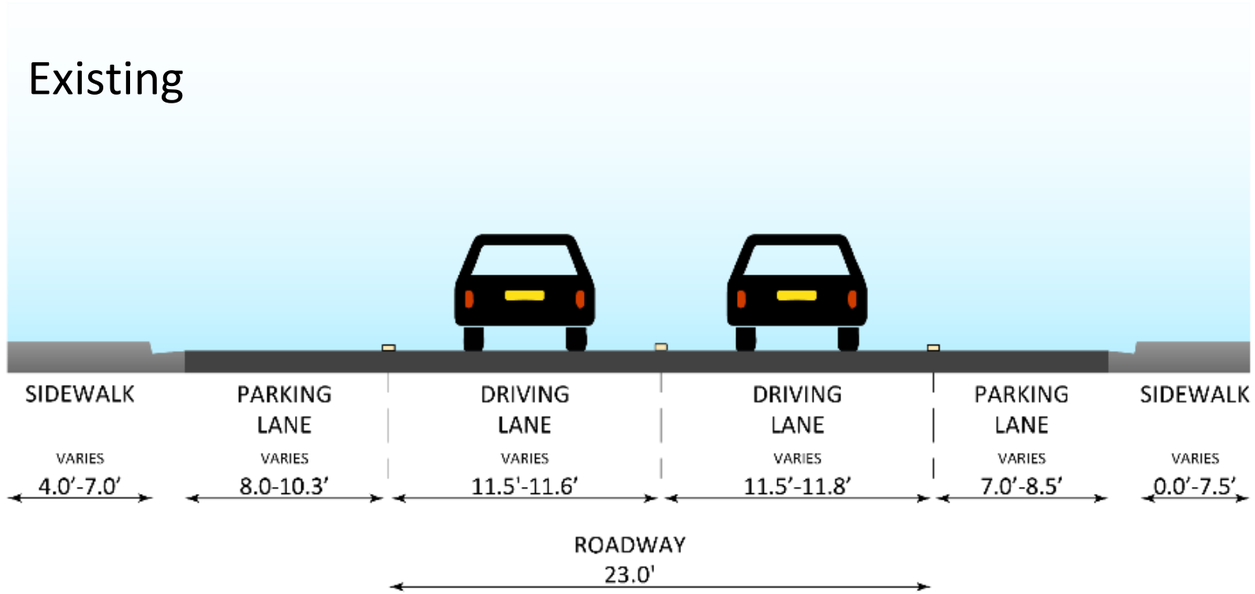


Figure 43: Existing typical section, Main Ave.

The first countermeasure to improve speed limit compliance in this section is to narrow the driving lane width. Main Avenue's existing traveled-way cross-section is 23-feet wide with two 11.5-foot driving lanes for vehicles traveling in either direction. Figure 43: Existing typical section, Main Ave.Figure 43 shows the existing roadway configuration on Main Avenue.

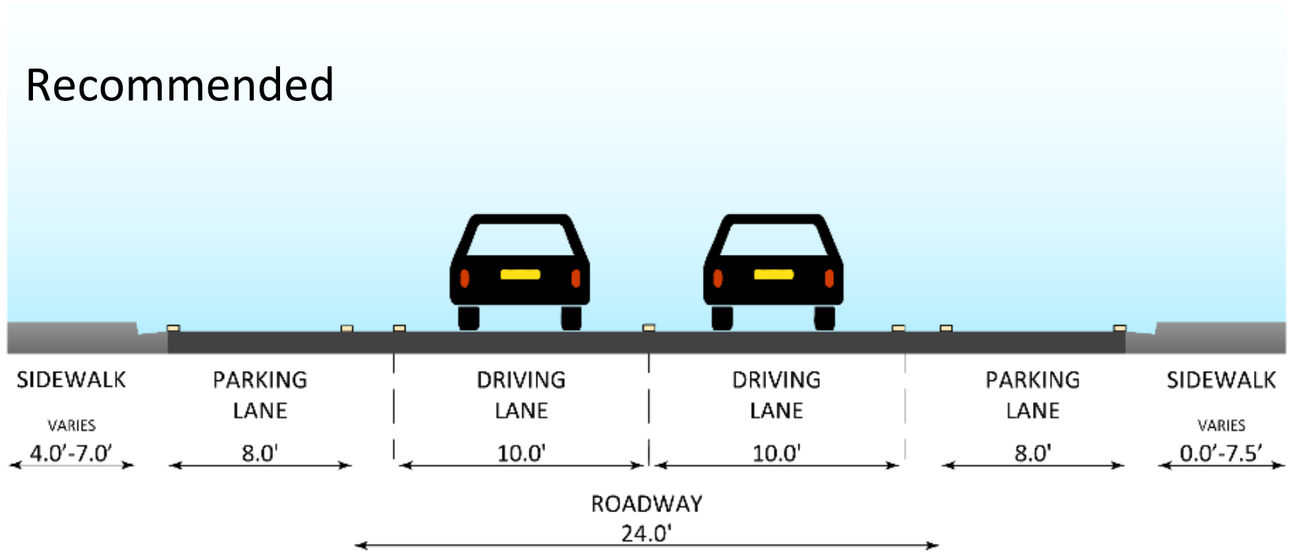


Figure 44: Recommended typical section, Main Ave.

The project team recommends narrowing the lanes to 10-feet, as shown in Figure 44. This is a Tier 1 strategy that uses centerline and edge line striping to narrow the driving lanes but does not impact the available asphalt of the driving lanes needed by larger vehicles to travel safely on I-25 Business Loop 11.

Figure 45: Existing conditions of crosswalk markings, Main Ave.

Figure 46: Crosswalk locations, Main Ave.

Figure 47:Freshly striped continental crosswalk.

Figure 48: R1-6 Pedestrian gateway treatment

Pedestrian activity is higher in Focus Area 1 due to the public-facing businesses throughout the Hot Springs Bathhouse and Commercial Historic District of T or C. The safety plan recommends refreshing the striping of the marked continental crosswalks, as seen in Figure 47, in this section as a Tier 1 countermeasure. Figure 45 is an example of the condition of the existing crosswalk markings. Figure 48 shows an in-street pedestrian sign that creates a vertical presence for drivers to alert them to yield for pedestrians. This plan recommends installing in-street pedestrian signs on the centerline and edge lines of the driving lanes. Studies show that these combined treatments have high compliance rates for yielding/stopping for pedestrians and encouraging reduced motor vehicle speeds[9].

[9] Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings"; Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings: Follow Up Report."

Figure 50: Conflict intersection, Main Ave. and Poplar St.

Figure 49: Recommend bollard installation.

The City of T or C identified Poplar Street and Main Avenue as a conflict intersection. Southbound motorists on Poplar Street desiring to travel east on N. Broadway Street regularly cut through the private property on the northeast corner of the intersection. By doing so, motorists access the Post Street turn just before Main Avenue merges with N. Broadway Street. This maneuver is a safety concern because pedestrian traffic regularly uses this area to access Bullocks supermarket on the corner of N. Broadway and Post Streets. The safety plan recommends installing bollards on the left turn lane providing access to N. Broadway Street from Main Avenue to discourage the unsafe vehicular maneuver.

Focus Area 1 – N. Broadway Street

Similar to Main Avenue, N. Broadway Street corridor countermeasure goals are to improve compliance with the 25 MPH speed limit, enhance ADA Accessibility, and ensure roadway signs are MUTCD compliant.

Figure 51: Focus Area 1, N. Broadway St.

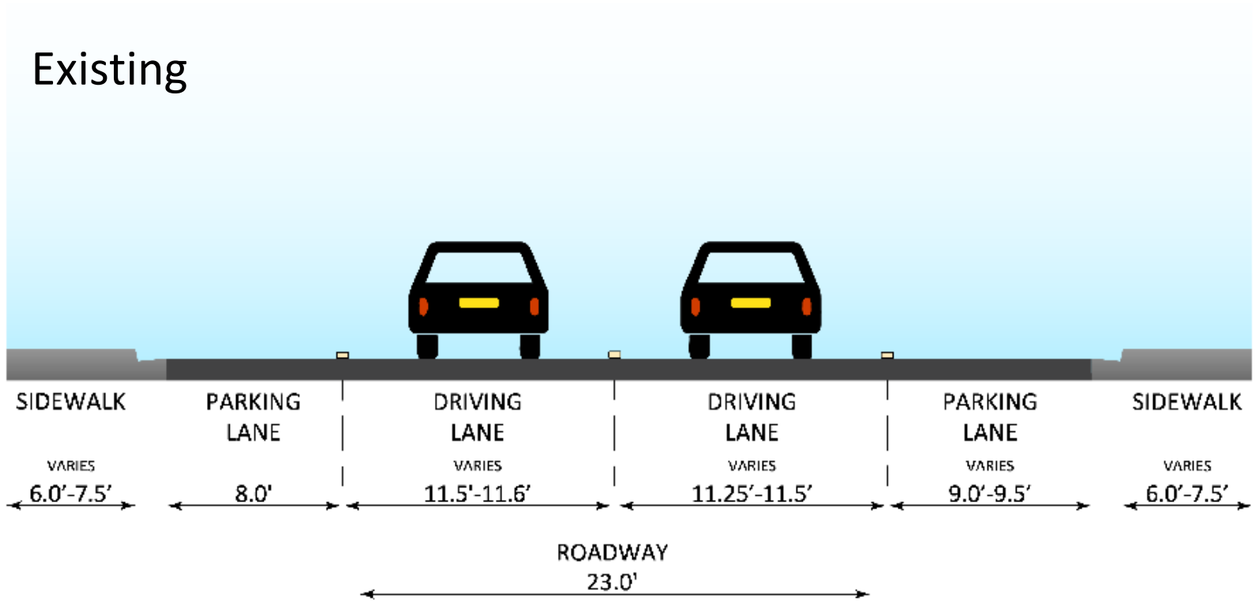


Figure 52: Existing typical section, N. Broadway St.

Similar to the recommendations for Main Avenue, this plan recommends narrowing the driving lane width on N. Broadway Street. Figure 52 shows the NMDOT right-of-way with the existing roadway configuration on N. Broadway Street. The current traveled way cross-section is 23-feet wide with two 11.5-foot driving lanes for vehicles traveling in either direction.

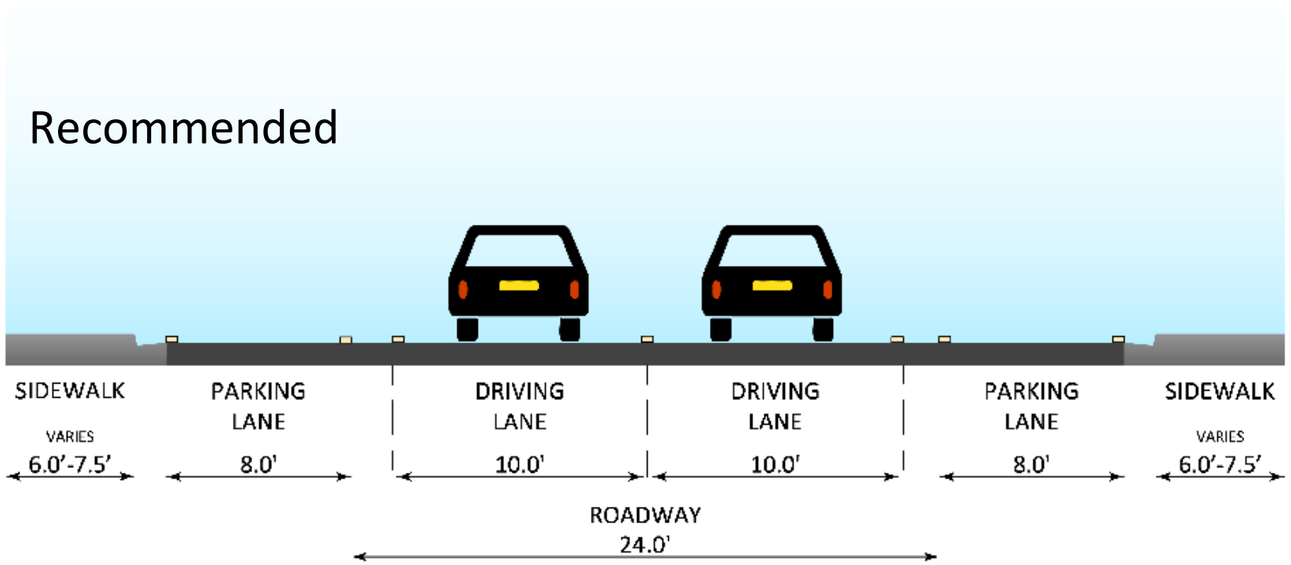


Figure 53: Recommended Typical section, N. Broadway St.

The project team recommends narrowing the lanes to 10-feet, as shown in Figure 53. This is a Tier 1 strategy that uses centerline and edge line striping to narrow the lanes without impacting the available asphalt of the driving lanes needed by larger vehicles to navigate I-25 Business Loop 11 safely.

Warning signs alert roadway travelers to unusual or unexpected conditions. As shown in Figure 54, Focus Area 1 contains signs alerting drivers to expect and accommodate pedestrians crossing the street. The existing signs, W11a-2, have a pedestrian symbol and crosswalk lines. This sign is no longer in the MUTCD.

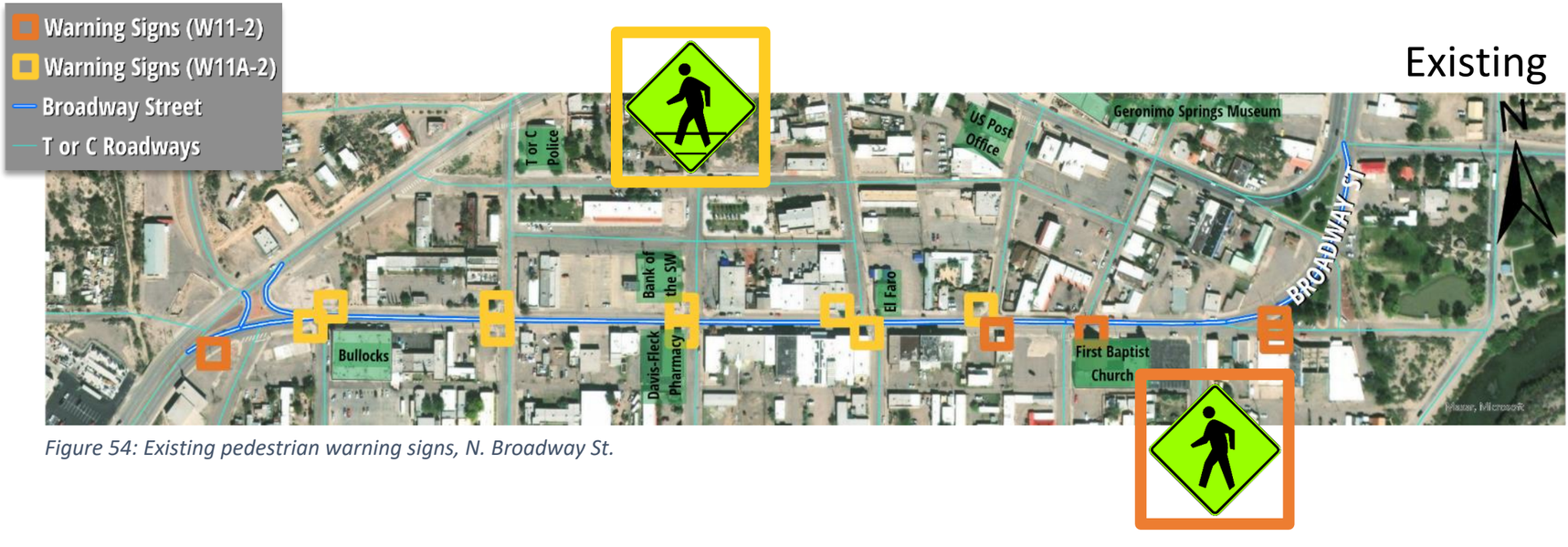


Figure 54: Existing pedestrian warning signs, N. Broadway St.

A Tier 1 recommendation is to replace the pedestrian crossing signs with the latest version of the sign without crosswalk striping. The MUTCD is occasionally updated to accommodate changes in transportation needs, new technologies, and traffic management strategies. The correct sign to use is W11-2. Also, no pedestrian warning signs are installed at the crosswalk at Broadway and Mims Streets. This countermeasure ensures continuity and consistency of the message to expect pedestrian traffic.

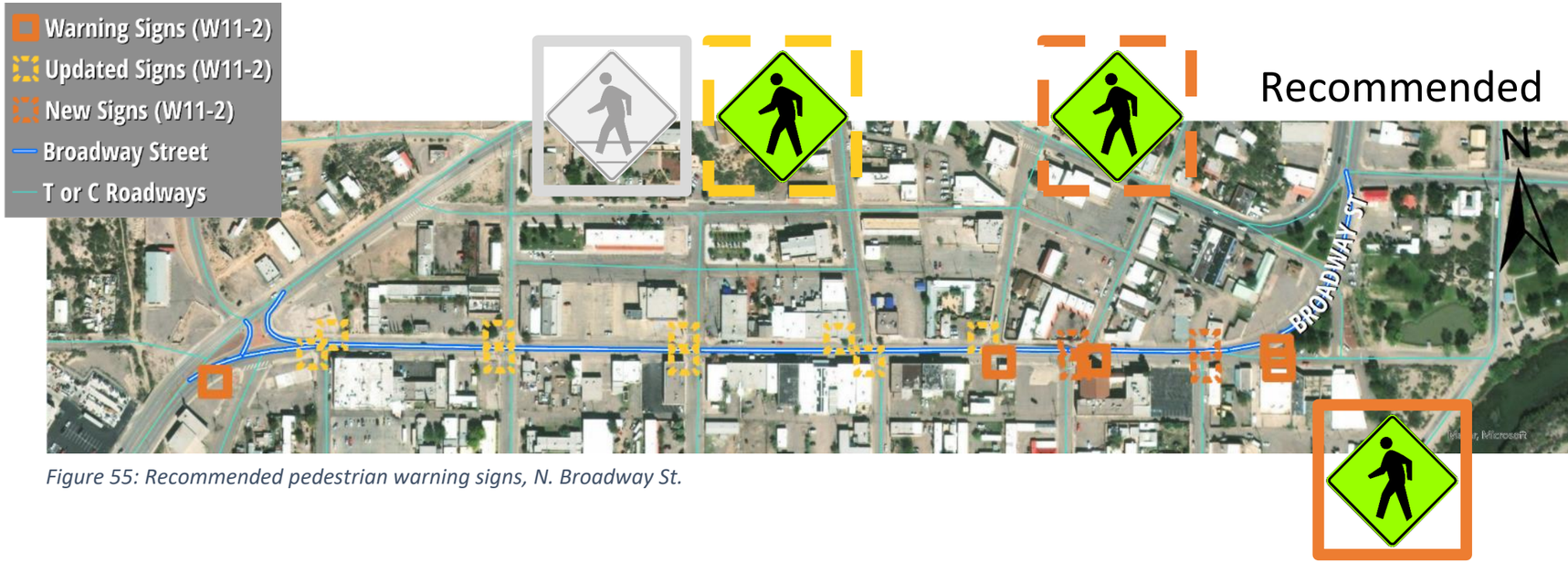


Figure 55: Recommended pedestrian warning signs, N. Broadway St.

Figure 56: Existing conditions of crosswalk markings, N. Broadway St.

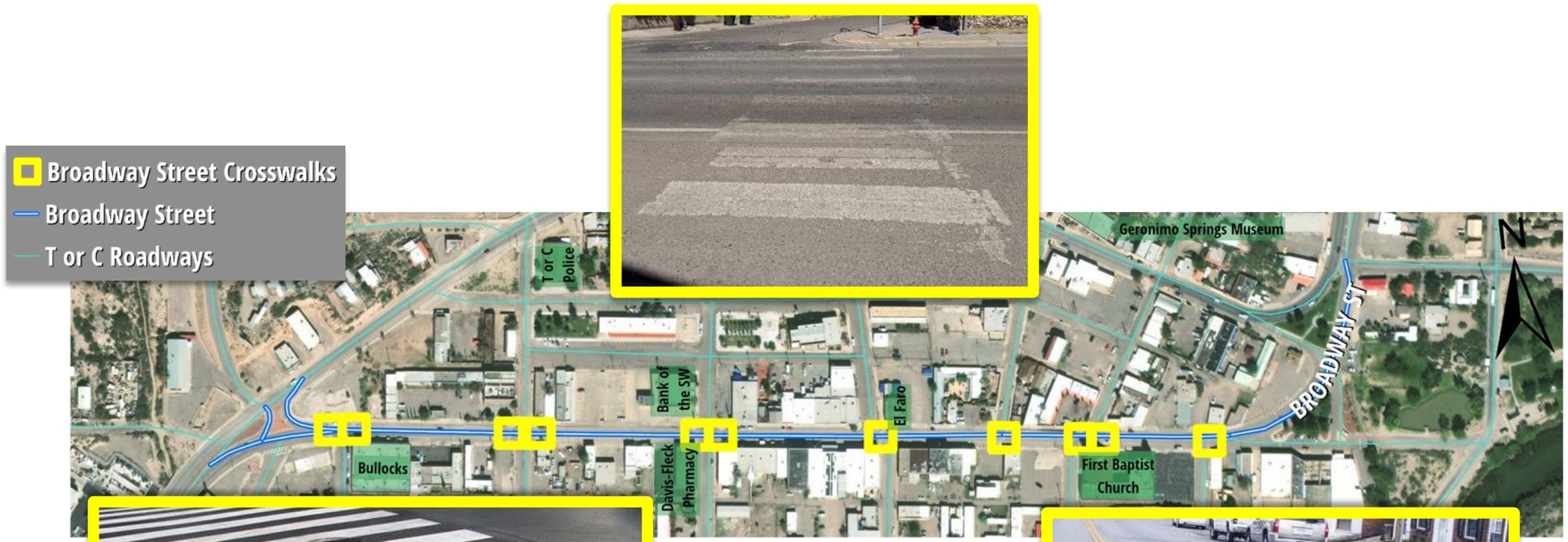


Figure 57: Freshly striped continental crosswalk.

Figure 58: R1-6 Pedestrian gateway treatment

Pedestrian activity is at its highest on N. Broadway Street in Focus Area 1. As such, this safety plan recommends refreshing the striping of the marked crosswalks, as shown Figure 57, in this section as a Tier 1 countermeasure. Figure 56 shows an example of the condition of the existing crosswalk markings. The image on the bottom right shows an in-street pedestrian sign that creates a vertical presence for drivers to alert them to yield for pedestrians. This plan recommends installing in-street pedestrian signs on the centerline and edge lines of the driving lanes. Studies show that these combined treatments have high compliance rates for yielding/stopping for pedestrians and encouraging reduced motor vehicle speeds[10].

[10] Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings"; Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings: Follow Up Report."

Figure 59: Vehicles traveling against traffic flow, N. Broadway St.

The project team identified two other conflict intersections in Focus Area 1. The first is at Broadway and S. Foch Streets at the northern approach to Broadway from S. Pershing Street. The challenge at these intersections is that they are not aligned. This vehicular maneuver is not prohibited but poses a safety challenge because the maneuver requires motorists to travel against one-way traffic flow, albeit briefly, when crossing Broadway.

Figure 60: Conflict intersections on N. Broadway St. at S. Foch St. and S. Pershing St.

To proactively prevent crashes at these intersections, this plan recommends implementing a diverter median on the northbound approach of S. Foch Street at N. Broadway Street. Also, at the southbound approach on S. Pershing Street at N. Broadway Street, construct a traffic diverter that does not allow motorists to make the illegal maneuver to continue south on S. Pershing Street. These countermeasures will prohibit these unsafe movements and enhance the pedestrian experience by shortening the distance when crossing the street from east to west and vice versa.

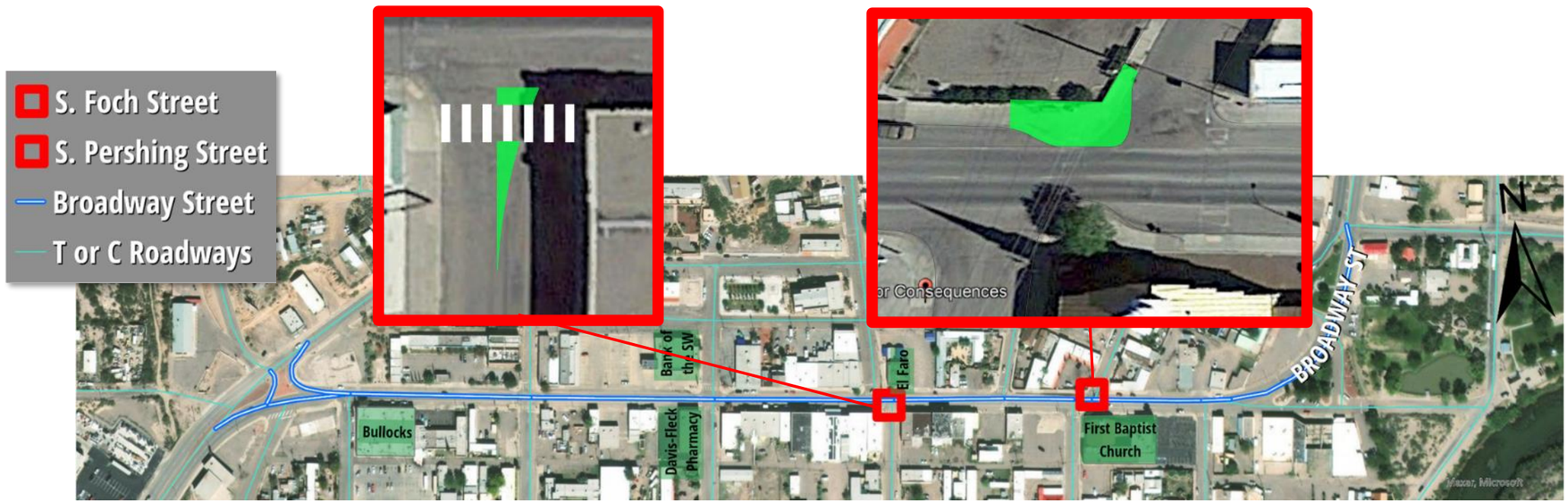


Figure 61: Recommended countermeasures at conflict intersections, N. Broadway St.

Figure 62: Community gateway feature, example

Figure 63: Potential community gateway sites.

The final recommended countermeasure to aid in compliance with a 25 MPH speed limit is constructing a community gateway feature. A gateway feature enhances the aesthetics of the roadway, communicates the values and identity of the community, and reinforces that the roadway environment has changed. The gateway feature is recommended as an initiative for the community to pursue.

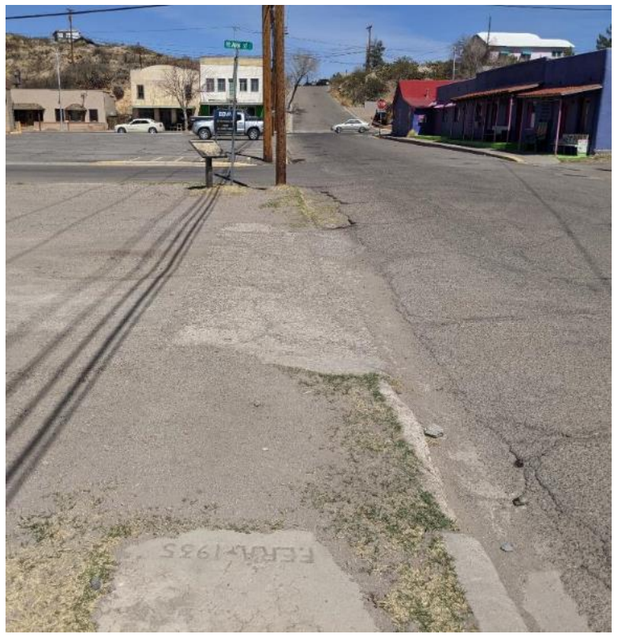


Figure 64: Existing conditions of pedestrian infrastructure in downtown T or C on city owned streets.

Several community initiatives emerged in Focus Area 1. First, the recommended safety countermeasures apply to Main Avenue and N. Broadway Street, facilities maintained by NMDOT. However, pedestrian facilities, like that shown in Figure 64 on S. Pershing, Jones, Foch, Sims, McAdoo, Daniels, and Clancy Streets are overlooked regarding maintenance. Where sidewalks exist, they pose a safety challenge for any pedestrian, are not comfortable to use, and do not adhere to ADA standards. This plan recommends pedestrian facility maintenance and improvements to enhance safety throughout Downtown T or C.

This plan also recommends regular speed enforcement on Main Avenue and N. Broadway Street to ensure speed limit compliance since this area is heavily trafficked by pedestrians.

Another community initiative, to improve multimodal accessibility, is to advertise availability of The Shuttle. The Shuttle can aid with reducing congestion in Focus Area 1, improve mobility for locals and visitors, and improve the equity of T or C's transportation system. Part of this effort could include installing transit shelters at the stops in the N. Broadway Street corridor. Figure 66 shows an example of a transit shelter that may be considered.

Figure 65: Logo for The Shuttle, Sierra county's public transit.

Figure 66: Transit shelter, example.

The final community initiative for Focus Area 1 is to pursue a roadway exchange and transfer ownership from NMDOT to the City of T or C. Doing so would allow the community to directly pursue certain changes to how the roadway is used, e.g., on street parking, traffic control device applications, and the ability to implement a road diet allowing room for bicycle facilities and enhanced pedestrian facilities.

Focus Area 2 – Smith Avenue

The countermeasure goals on Smith Avenue are to improve speed limit compliance, enhance pedestrian accessibility and safety, and ensure roadway signs are MUTCD compliant.

Figure 67: Focus Area 2, Smith Ave.

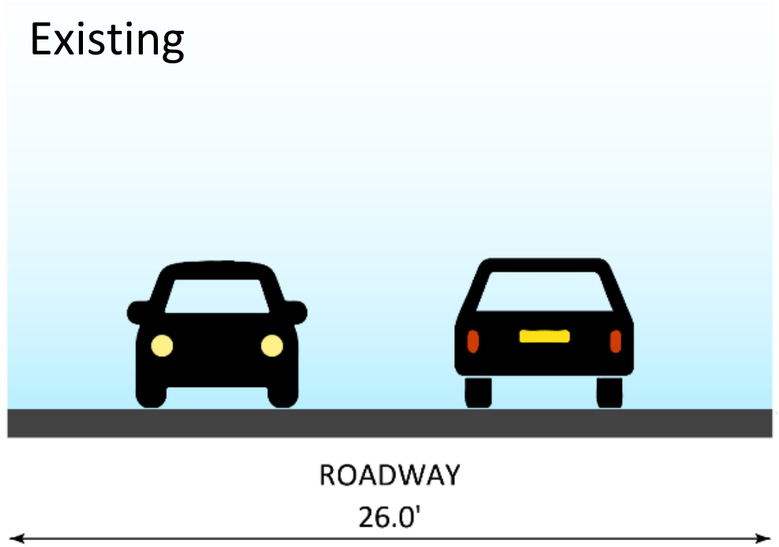


Figure 68: Existing typical section, Smith Ave.

The existing asphalt roadway on Smith Avenue in Focus Area 2 is 26-feet wide with no lane markings. Figure 68 shows a typical cross-section of this segment.

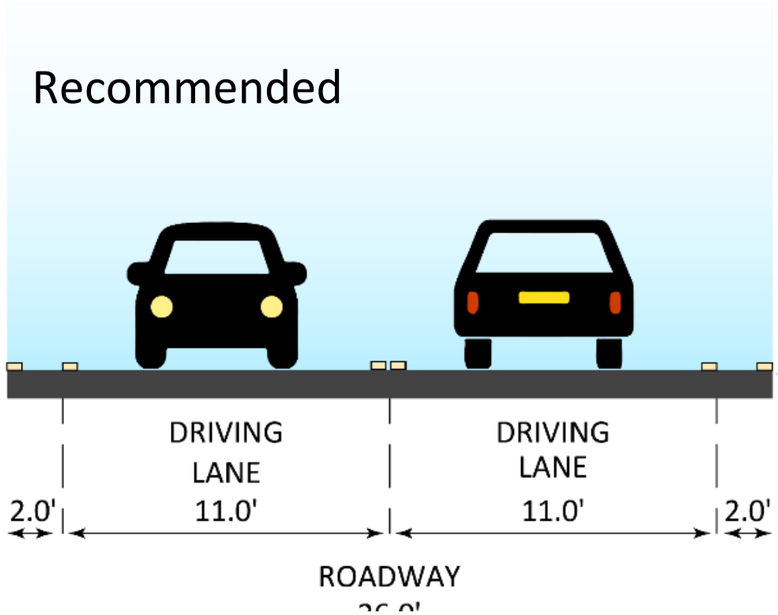


Figure 69: Recommended typical section, Smith Ave.

The recommended countermeasure is to add centerline and edge line striping marking 11-foot lanes, as shown in Figure 69. This Tier 1 strategy uses 6-inch centerline and edge line striping to call attention to the narrow driving lanes without impacting the available asphalt.

The purpose of regulatory signs is to notify roadway users about pertinent traffic laws and regulations. The existing regulatory speed limit and warning signs in Smith Avenue are shown in Figure 70. In this section, the speed limit is reduced to 15 MPH from 25 MPH for eastbound motorists. The speed reduction is to provide safe driving speeds around T or C Elementary School. The first recommendation is to update the school speed limit assemblies to indicate 15 MPH on a conditional basis and install plaques indicating that the 15 MPH speed limit is during specific hours or when children are present, as shown in Figure 71. Additionally, install another 15 MPH speed limit sign augmented with a Dynamic Speed Feedback Sign (DSFS) near the school's western entrance for eastbound motorists. Lastly, update the outdated pedestrian warning signs at the crosswalk.

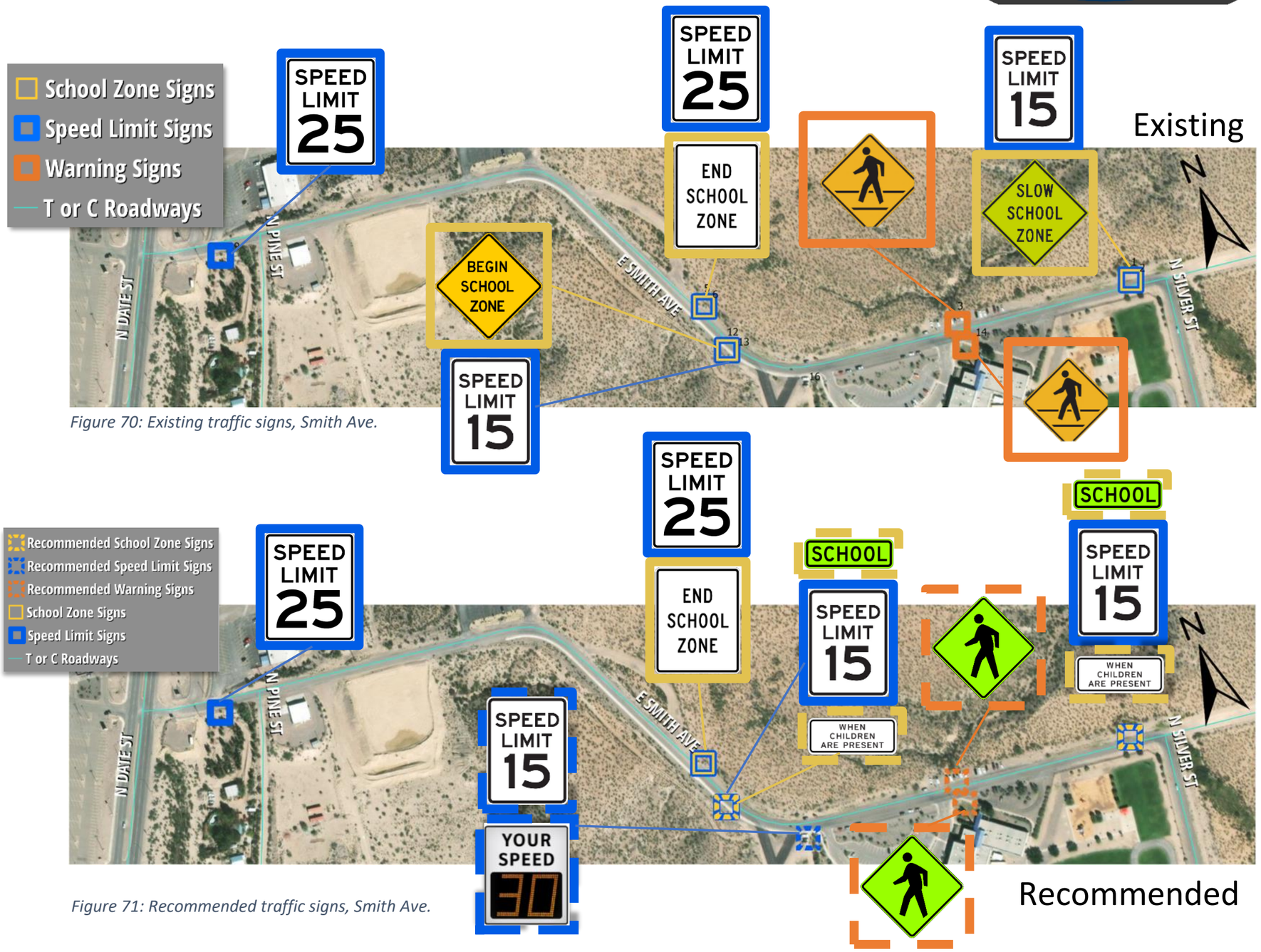


Figure 70: Existing traffic signs, Smith Ave.

Figure 71: Recommended traffic signs, Smith Ave.

Figure 72: Existing conditions of crosswalk markings, Smith Ave.

Figure 73:Freshly striped continental crosswalk.

Figure 74: R1-6 Pedestrian gateway treatment.

Pedestrian safety and accessibility are of utmost importance in Focus Area 2 due to the likelihood of children walking through this corridor. The safety plan recommends refreshing the striping of the marked crosswalk as a Tier 1 countermeasure. Figure 72 is an example of the condition of the existing crosswalk marking. Figure 74 shows an in-street pedestrian sign that creates a vertical presence for drivers to alert them to yield for pedestrians. This plan recommends installing in-street pedestrian signs on the centerline and edge lines of the driving lanes in each direction of travel. Studies show that these combined treatments have high compliance rates for yielding/stopping for pedestrians and encouraging reduced motor vehicle speeds[11].

[11] Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings"; Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings: Follow Up Report."

Figure 75 shows recommended sidewalks in Focus Area 2. This is a Tier 2 countermeasure as it will require multiple funding sources and some design work. The sidewalks would provide additional pedestrian accessibility by filling in the gap from N. Date Street to the existing sidewalk west of T or C Elementary School. This countermeasure will also enhance pedestrian safety by providing a space to walk that is safely out of the way of vehicular traffic.

Figure 75: Recommended sidewalks, Smith Ave.

Figure 76: Detail of recommended sidewalk, southeast corner of N. Date St. and Smith Ave.

Focus Area 2 – Silver Street

The countermeasure goals on Silver Street are to improve speed limit compliance, enhance pedestrian accessibility and safety, and ensure roadway signs are MUTCD compliant.

Figure 77: Focus Area 2, N. Silver St.

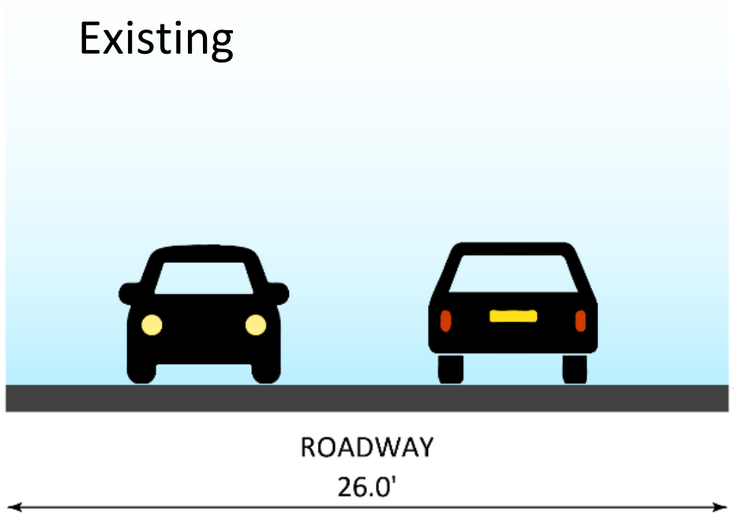


Figure 78: Existing typical section, N. Silver St.

The existing asphalt roadway on Silver Street in Focus Area 2 is 26-feet wide with no lane markings. Figure 78 shows a typical cross-section of this segment.

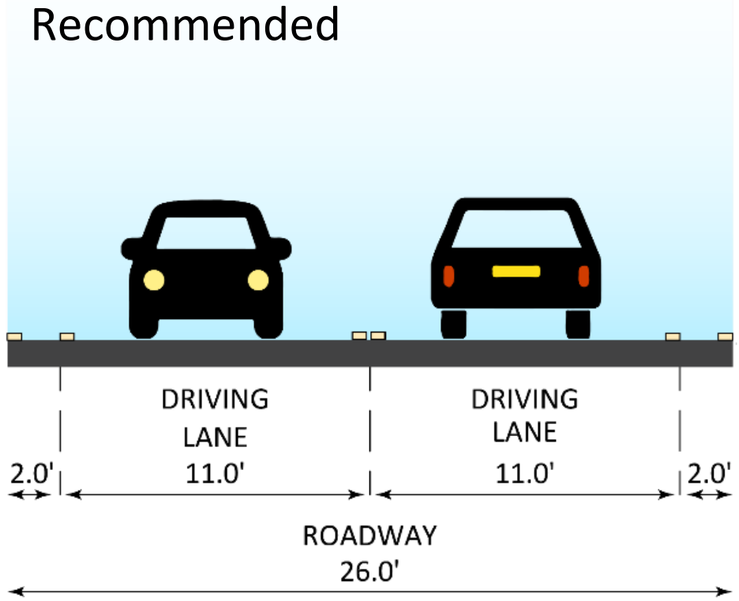


Figure 79: Recommended typical section, N. Silver St.

The recommended countermeasure is to add centerline and edge line striping marking 11-foot lanes, as shown in Figure 79. This Tier 1 strategy uses 6-inch centerline and edge line striping to call attention to the narrow drive lanes without impacting the available asphalt.

The existing regulatory speed limit and warning signs on Silver and N. Silver Streets are shown in Figure 81. In this section, the speed limit is reduced to 15 MPH from 25 MPH for northbound motorists approaching T or C Elementary. This plan recommends Tier 1 countermeasures similar to the Smith Avenue corridor. The first recommendation is to update the school speed limit assemblies to indicate 15 MPH on a conditional basis and install plaques indicating that the 15 MPH speed limit is during specific hours or when children are present, as shown in Figure 80. Additionally, install another 15 MPH speed limit sign augmented with a Dynamic Speed Feedback Sign (DSFS) approximately 250 feet in advance of N. Silver Street for northbound motorists. Lastly, replace the outdated "Slow School Zone" signs with school speed limit assemblies indicating a 15 MPH speed and appropriate conditional plaques.

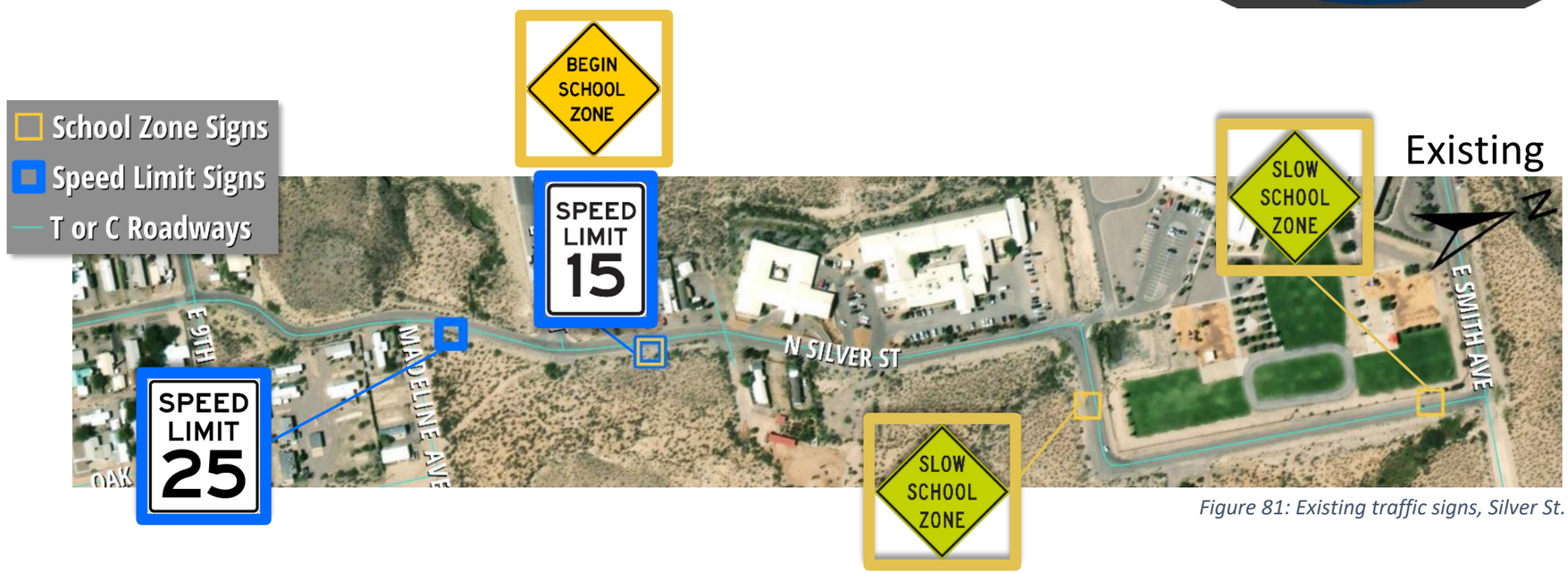


Figure 81: Existing traffic signs, Silver St.

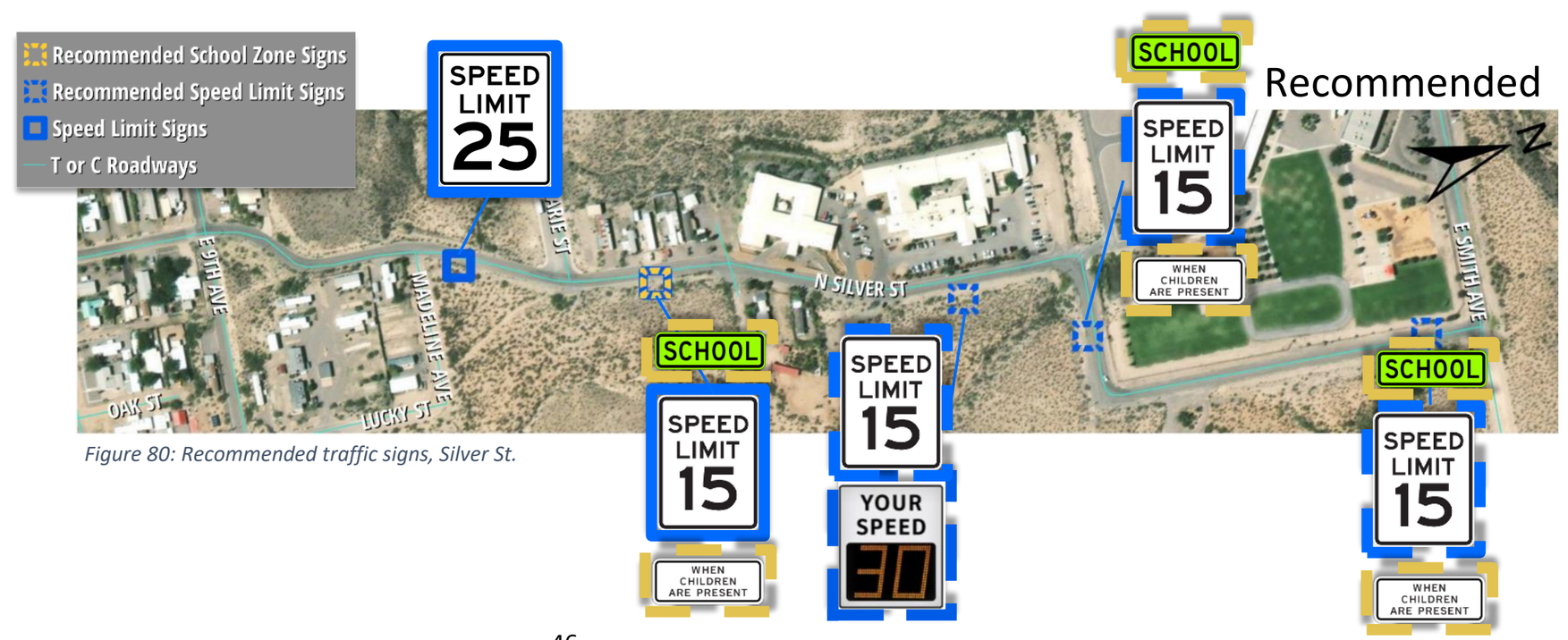


Figure 80: Recommended traffic signs, Silver St.

Figure 82: Detail of recommended sidewalk at northwest corner of Silver St. and Smith Ave.

Figure 83: Recommended Tier 2 sidewalks, Silver St.

Figure 83 shows recommended sidewalks on the west side of Silver Street in Focus Area 2. This Tier 2 countermeasure would provide pedestrian accessibility from the residences south of E. 9th Street to the hospital and T or C Elementary School. This countermeasure will also enhance pedestrian safety by providing a space to walk that is safely out of the way of vehicular traffic.

Figure 84: Recommended sidewalks on T or C Elementary School property.

This plan recommends constructing sidewalks on the school's property to ensure pedestrian safety by providing connectivity from the recommended sidewalk on Silver Street. This sidewalk will allow children to access the school from the south side of campus instead of walking along Silver Street, around the sporting fields.

Figure 85: Detail of recommended sidewalk at north east corner of Silver St. and Smith Ave.

Figure 86: Recommended Tier 3 sidewalks, Silver St.

The final countermeasure in Focus Area 2 is to construct sidewalks on the east side of Silver Street from E. 9th Street to Smith Avenue and around the sporting fields at T or C Elementary School.

Focus Area 3 – New School Road

The countermeasure goals on New School Road are to achieve motor vehicle speed compliance, enhance pedestrian safety and accessibility, and ensure signs and pavement markings are uniform and MUTCD compliant.

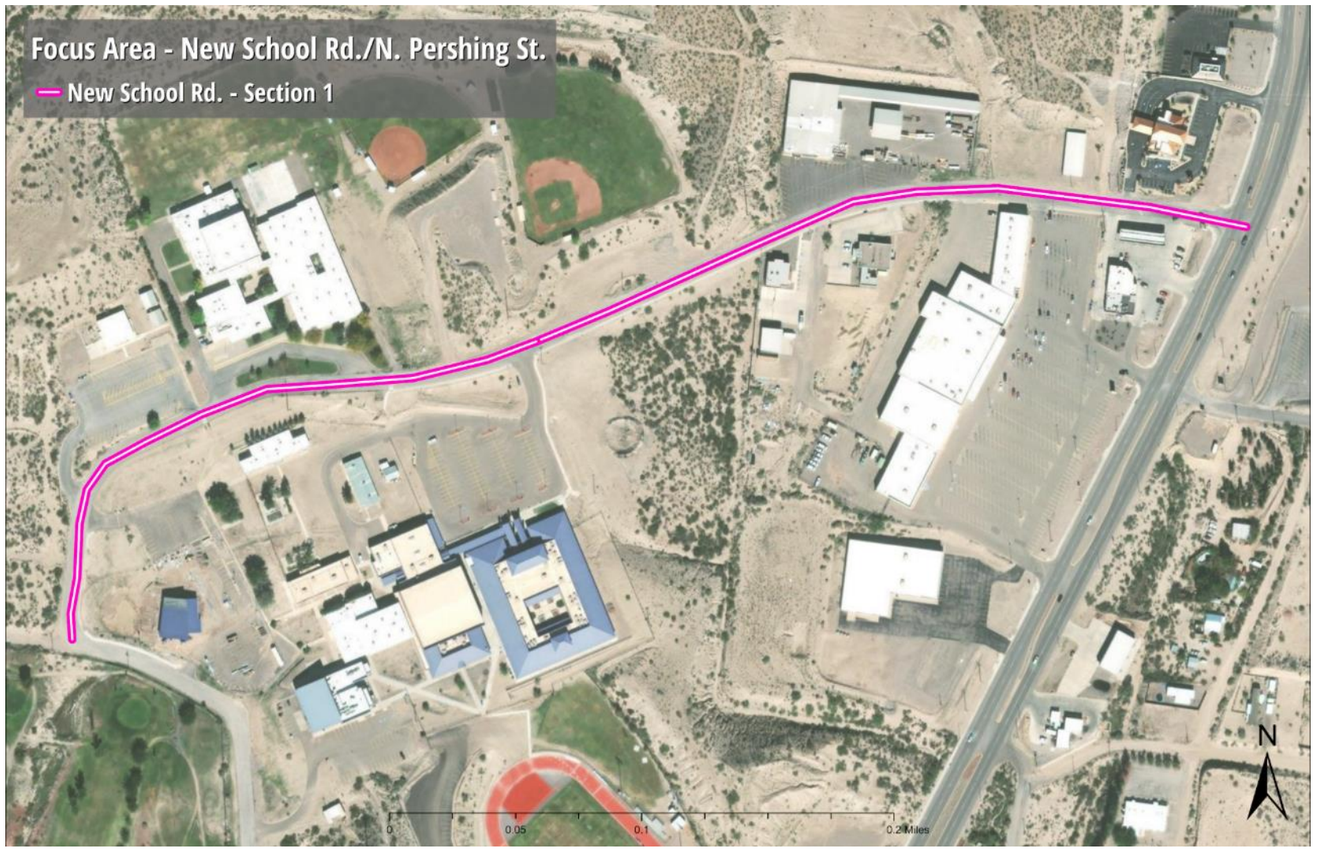


Figure 87: Focus Area 3, New School Rd.

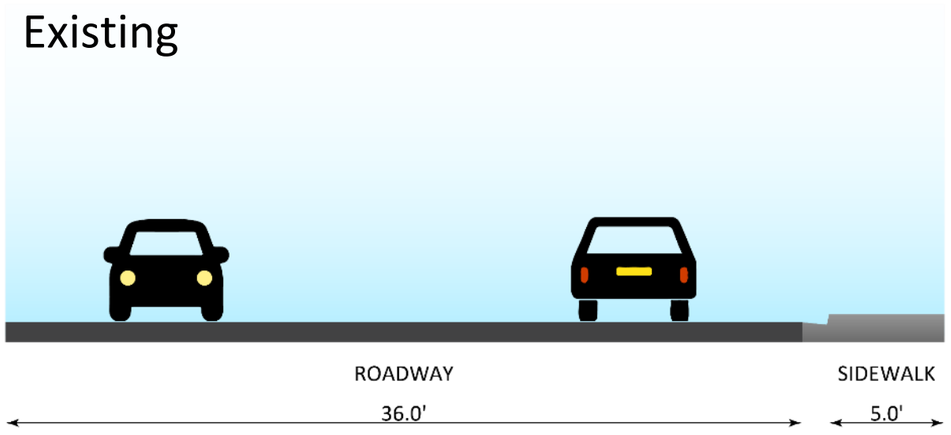


Figure 88: Existing typical section, New School Rd.

The existing asphalt roadway is 36-feet wide with lane markings for left turns at N. Date Street, the eastern parking lot driveway of Hot Springs High School, and the western parking lot driveway of T or C Middle School. Figure 88 shows a typical cross-section of this road segment.

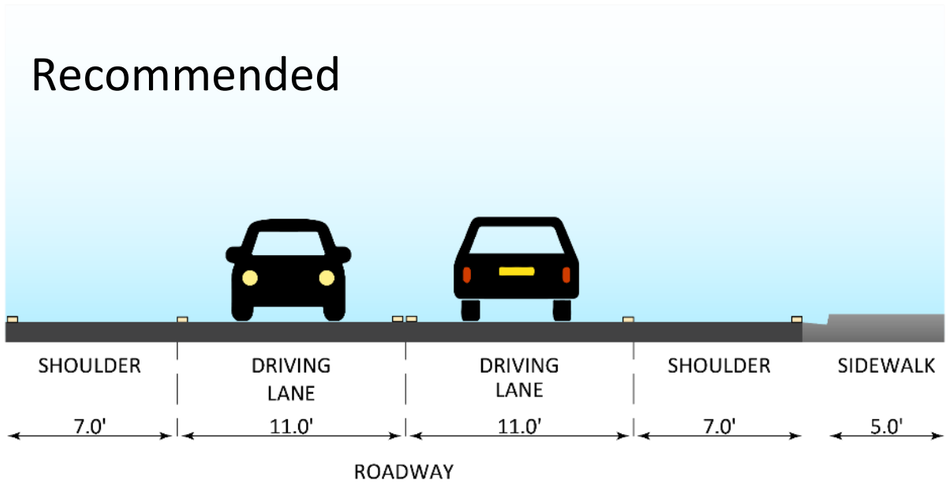


Figure 89: Recommended typical section, New School Rd.

As in previous sections, the initial recommended countermeasure is to narrow the driving lanes to a width of 11 feet, as shown in Figure 89. This Tier 1 strategy uses 6-inch centerline and edge line striping to narrow the driving lanes without impacting the available asphalt.

The existing regulatory speed limit and warning signs on New School Road are shown in Figure 91. In this section, the speed limit is 15 MPH. The first recommendation is to change the speed limit to 25 MPH, update the school speed limit assemblies to indicate 15 MPH on a conditional basis, and install plaques indicating that the 15 MPH speed limit is during specific hours or when children are present, as shown in Figure 90. Additionally, install another 15 MPH speed limit sign augmented with a Dynamic Speed Feedback Sign (DSFS) as motorists approach the schools from the east. Lastly, update the outdated pedestrian warning signs at the crosswalk.

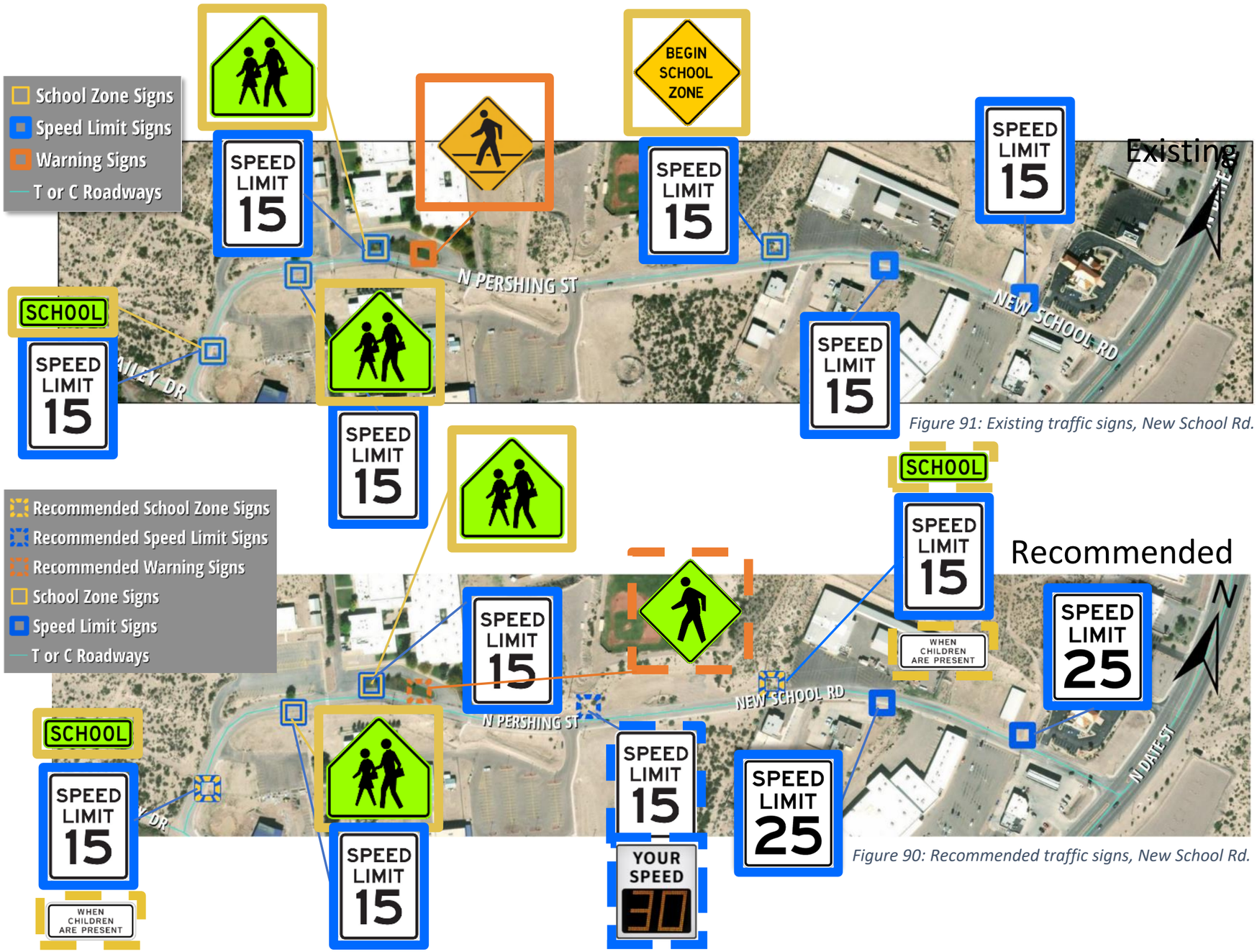


Figure 91: Existing traffic signs, New School Rd.

Figure 90: Recommended traffic signs, New School Rd.

Existing

The pavement markings indicating left and through movements at T or C Middle School and Hot Springs High School are not compliant with MUTCD standards.

Figure 92: Existing pavement markings, New School Rd.

Recommended

This plan recommends removing the existing markings and refreshing the roadway communications with MUTCD compliant striping, as shown in Figure 93. This is a Tier 1 countermeasure.

Figure 93: Fresh MUTCD compliant pavement markings.

Figure 94: Existing conditions of crosswalk markings, New School Rd.

Figure 95: Freshly striped continental crosswalk.

Figure 96: R1-6 Pedestrian gateway treatment.

Like Focus Area 2, pedestrian safety and accessibility are of utmost importance due to the likelihood of children walking through this corridor. This safety plan recommends refreshing the striping of the marked crosswalks as a Tier 1 countermeasure. Figure 94 is an example of the condition of the existing crosswalk marking. Figure 96 shows an in-street pedestrian sign that creates a vertical presence for drivers to alert them to yield for pedestrians. This plan recommends installing in-street pedestrian signs on the centerline and edge lines of the driving lanes in each direction of travel. Studies show that these combined treatments have high compliance rates for yielding/stopping for pedestrians and encouraging reduced motor vehicle speeds[12].

[12] Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings"; Van Houten and Hochmuth, "Evaluation of R1-6 Gateway Treatment Alternatives For Pedestrian Crossings: Follow Up Report."

Figure 97 shows recommended sidewalks on New School Road in Focus Area 3. This Tier 2 countermeasure provides pedestrian accessibility and connectivity from the eastern crosswalk to T or C Middle School and from the west crosswalk to the existing sidewalk at Hot Springs High School. This countermeasure will also enhance pedestrian safety by providing a space to walk that is safely out of the way of vehicular traffic. This plan recommends constructing ADA-compliant sidewalks on Hot Springs High School's property that provide connectivity from the crosswalks to enhance pedestrian safety further, as shown in Figure 98. ADA accessibility is vital in these locations for accessing the crosswalks because Hot Springs High School is lower in elevation than New School Road.

Figure 97: Recommended Tier 2 sidewalks, New School Rd.

Figure 98: Recommended ADA paths on Hot Springs High School property.

Focus Area 3's final recommended countermeasure is to construct sidewalks throughout the New School Road Corridor. This Tier 3 countermeasure will provide a safe space for pedestrians to move through the corridor without sharing the road with motor vehicles.

Figure 99: Recommended Tier 3 sidewalks, New School Rd.

Focus Area 3 – N. Pershing Street

The countermeasure goals on N. Pershing Street are to achieve motor vehicle speed compliance, enhance pedestrian safety and accessibility, and ensure signs are uniform and MUTCD compliant.

Figure 100: Focus Area 3, N. Pershing St.

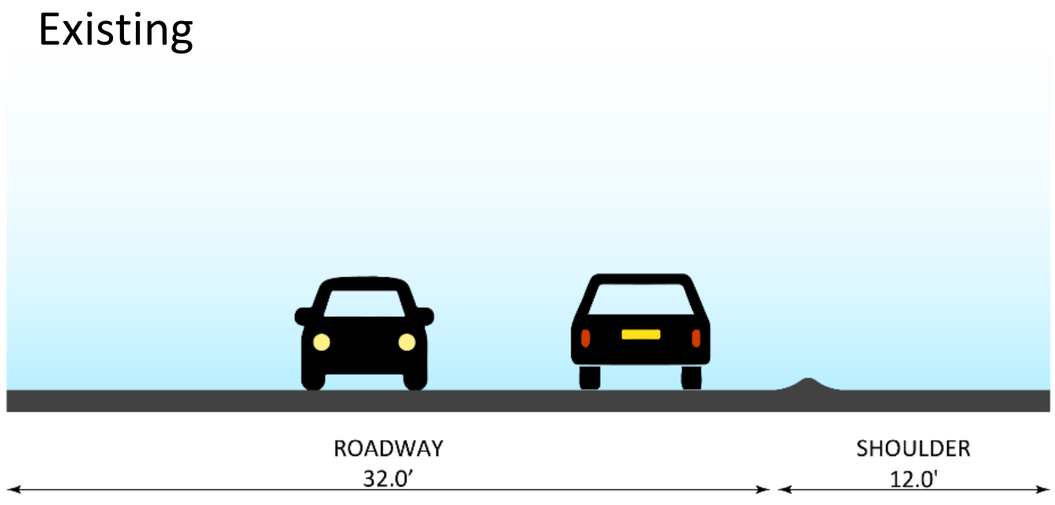


Figure 101: Existing typical section, N. Pershing St.

As shown in Figure 101, the paved asphalt is 32-feet wide without lane markings and a 12-foot wide pedestrian walkway of the east side of the street. Between Barton and Marie Streets, the roadway is 44-feet wide.

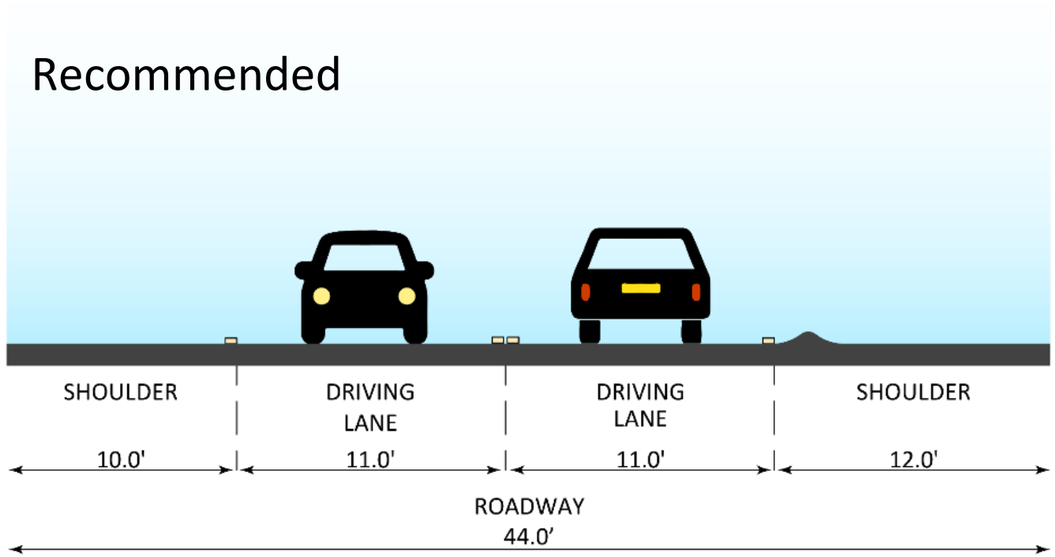


Figure 102: Recommended Typical section, N. Pershing St.

As with the other streets, this plan recommends narrowing the driving lanes to a width of 11-feet, as shown in Figure 102. This Tier 1 strategy uses 6-inch centerline and edge line striping to narrow the driving lanes without impacting the available asphalt.

The existing regulatory speed limit and warning signs on N. Pershing Street are shown in Figure 103. In this section, the speed limit is 15 MPH. The first recommendation is to change the speed limit to 25 MPH, update the school speed limit assemblies to indicate 15 MPH on a conditional basis, and install plaques indicating that the 15 MPH speed limit is during specific hours or when children are present, as shown in Figure 104. Additionally, install another 15 MPH speed limit sign augmented with a Dynamic Speed Feedback Sign (DSFS) as motorists approach the Hot Springs High School from the south.

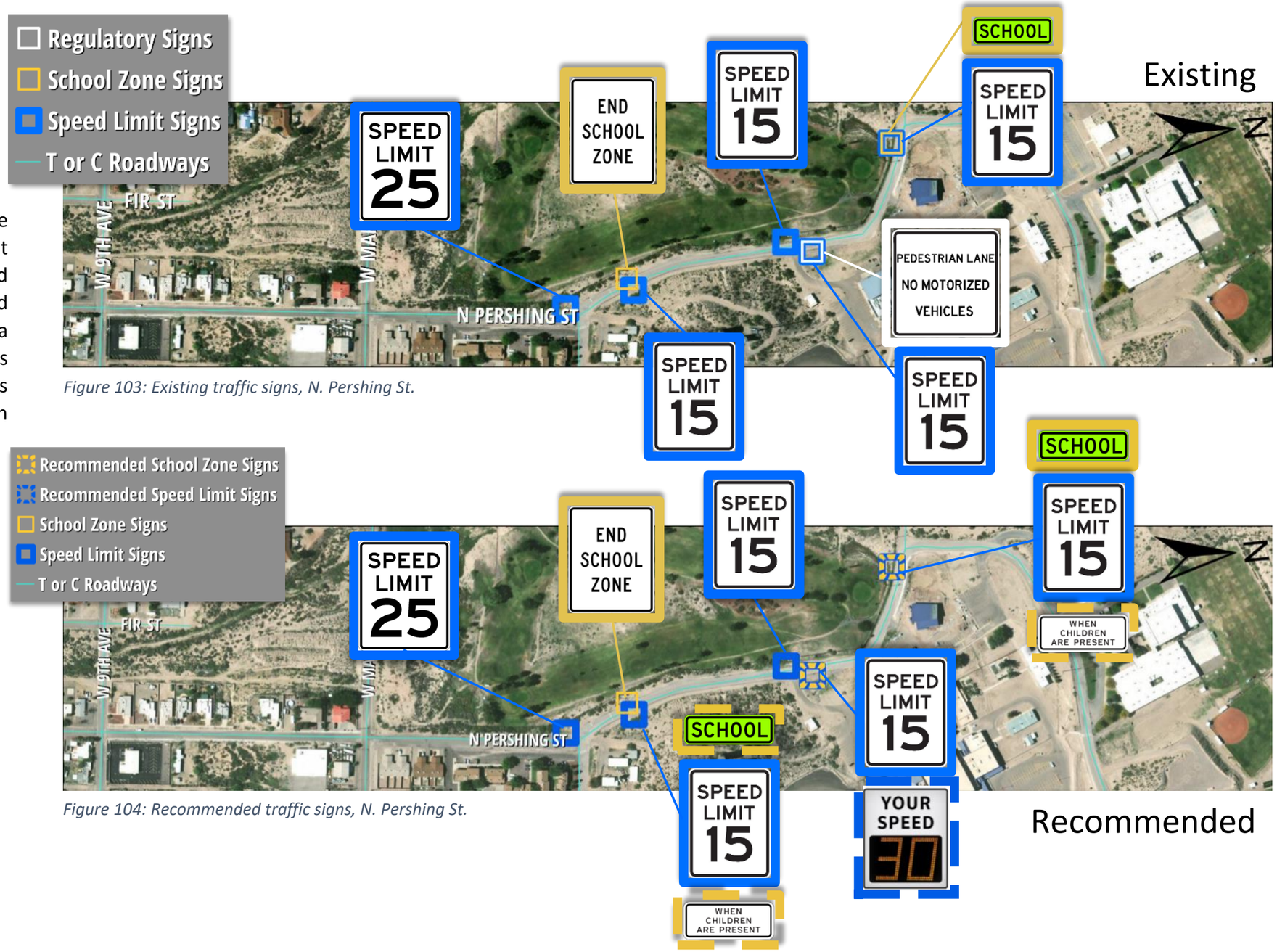


Figure 103: Existing traffic signs, N. Pershing St.

Figure 104: Recommended traffic signs, N. Pershing St.

Figure 105 shows recommended sidewalks on the east side of N. Pershing Street in Focus Area 3. This Tier 2 countermeasure provides pedestrian accessibility from the residences south of Marie Street to T or C Middle School and Hot Springs High School. This countermeasure will also enhance pedestrian safety by providing a space to walk that is safely out of the way of vehicular traffic.

Figure 105: Recommended Tier 2 sidewalks, N. Pershing St.

Figure 106: Detail of recommended sidewalk at northeast corner of N. Pershing St. and New School Rd.

PLAN TO MEASURE PROGRESS/SUCCESS

The purpose of the safety countermeasures presented in the T or C Transportation Safety Plan is to address and mitigate the high rate of pedestrian and vehicular fatalities and injuries on New Mexico public roads. On a statewide scale, NMDOT is required to set annual targets for five performance measures:

- Number of Total Fatalities
- Number of Serious Injuries
- Fatalities per 100 million vehicle miles traveled (VMT) or fatality rate
- Serious Injuries per 100 million VMT or serious injury rate
- Number of Non-motorized Fatalities and Serious Injuries

The intent of the T or C Transportation Safety Plan is to help the State of New Mexico meet these safety targets by reducing the following: number of total fatalities, number of serious injuries, fatalities per 100 VMT traveled, serious injuries per 100 million VMT, and the number of non-motorized fatalities and serious injuries on all public roads in New Mexico. The recommended safety countermeasures in T or C are designed to enhance transportation safety by calming traffic, improving pedestrian accessibility, and reducing roadway congestion by increasing awareness of dedicated parking areas. Ensuring vehicle speed limit compliance can reduce the likelihood of a crash and, most importantly, the possibility of a crash resulting in a fatality or serious injury. Moreover, the recommended countermeasures create a safer environment for pedestrians and bicyclists. To measure the progress of transportation safety at the local level, the project team recommends comparing the baseline traffic and crash data collected in this plan to traffic and crash data corresponding to the completion of recommended countermeasures.

CONCLUSION

Table 11: Summary of countermeasures and trade-offs

Countermeasure	Tier	Focus Area 1		Focus Area 2		Focus Area 3		Challenges Addressed					Opinion of Probable Cost*	Considerations and Trade-offs
		Main Ave.	N. Broadway St.	Smith Ave.	Silver St.	New School Rd.	N. Pershing St.	Speed Limit Compliance	Multimodal Safety	Multimodal Accessibility	Traffic Control Device Compliance	ADA Compliance		
Narrow Driving Lanes	1	X	X					X	X				$18,000/mile	Encourages traffic calming, does not remove available asphalt for larger vehicles
Accessible Parking	2	X	X									X	$500/space	Coordination between NMDOT and City is necessary since spaces are recommended on city-owned corridors, potential right of way constraints
Sidewalk Maintenance	1	X	X						X	X		X	$500/sq.ft.	Continuous until a permanent solution is found.
Refresh Pavement Markings and Lane Striping	1	X	X					X	X		X		$18,000/mile	Enhances visibility of pavement markings, will need future maintenance
Stripe Center Lines and Edge Lines	1		X	X	X	X	X	X	X				$18,000/mile	May only be marginally effective in achieving traffic calming
Pavement Markings	1					X					X		$400/marking	Communicates roadway messages, maintains uniform messaging of traffic control devices
Update Signs	1		X	X	X	X	X	X	X		X		$400/sign	Communicates roadway messages, maintains uniform messaging of traffic control devices
Dynamic Speed Feedback Signs	2			X	X	X	X	X	X				$10,000/location	Will require power and maintenance, may only be effective for a short period after installation
ADA Accessible Sidewalks	2, 3			X	X	X	X		X	X		X	$700,000/mile	Some recommendations are subject to school approval, potential right-of-way constraints
R1-6 Gateway Treatments	1	X	X	X		X		X	X				$2,500/location	May need regular replacement if vehicles damage their structural integrity
Flexible Bollards	2	X							X				$5,000	May require excessive maintenance from being hit by vehicles, temporary solution to address access to Downtown from Poplar Street
Traffic Diverters	3		X						X				$30,000/location	May be an annoyance to roadway users

*Costs may vary if incorporated into planned roadway improvements or utility work.

Table 12: Summary of community initiatives and trade-offs

Community Initiatives	Focus Area 1		Focus Area 2		Focus Area 3		Challenges Addressed					Considerations and Trade-offs
	Main Ave.	N. Broadway St.	Smith Ave.	Silver St.	New School Rd.	N. Pershing St.	Speed Limit Compliance	Multimodal Safety	Multimodal Accessibility	Traffic Control Device Compliance	ADA Compliance	
The Shuttle		X						X	X			Coordination may be necessary, may need additional funding for additional service and transit facilities
Roadway Exchange	X	X										Coordination between City and NMDOT, Business Loop requirements, City will be responsible for maintenance and upkeep
Speed Enforcement	X	X	X	X	X	X	X	X				Coordination with law enforcement is necessary.
Pedestrian Facility Maintenance and Improvements	X	X						X	X		X	May be costly and take time, can enhance the appeal of Downtown T or C, requires regular maintenance and upkeep
Community Gateway Features	X	X					X					Should not impact visibility, will need to accommodate larger vehicles, must comply with NMDOT guidelines

NEXT STEPS

This Transportation Safety Plan serves as the foundation for the T or C Focus Areas and is intended to assist the community with addressing transportation safety issues, as well as pursue funding opportunities. Potential funding programs for the recommended safety countermeasures are described below:

- Highway Safety Improvement Program (HSIP) – HSIP is a Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land.
- Transportation Alternatives Program (TAP) - This federal program provides funding for bicycle and pedestrian infrastructure and activities. Safe Routes to School (SRTS) is eligible under TAP.
- Recreational Trails Program (RTP) – This federal program provides funding to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized uses.
- Congestion Mitigation and Air Quality (CMAQ) Improvement Program - This federal aid program provides funding for projects that aim to improve air quality and reduce congestion.
- Local Government Road Fund (LGRF) – This state funding program is available to New Mexico Tribal and Local Governments for project development, construction, reconstruction, improvement, maintenance or repair of public highways, streets and public school parking lots, acquisition of right-of-way, and in place material for construction or improvement.
- Capital Outlay - This New Mexico legislative initiative is a state funding program that supports projects to build, improve, or equip physical property that the public will use.
- Transportation Project Fund (TPF) – This state funding program supports planning, design, construction, and maintenance of transportation infrastructure on publicly owned facilities specifically non-State-owned and tribal land facilities.
- Community Development Block Grant Programs (CDBG) – The federal funding source supports activities that may address needs such as infrastructure, economic development projects, public facilities installation, community centers, housing rehabilitation, public services, clearance/acquisition, microenterprise assistance, code enforcement, homeowner assistance, etc.
- Federal Transit Administration (FTA) - Federal funding through the FTA supports projects for rail and bus transit and other transit projects and facilities that utilize highway systems.
- Great Blocks on MainStreet - Great Blocks assists rural New Mexico communities to compete for and secure financing for public placemaking, wayfinding, lighting/signage, gateway features, and street/pedestrian enhancements.