The background of the cover page features a brick wall with a mural. The mural includes a circular emblem with a sun and a landscape, and text that is partially visible: "OF PAR" at the top and "INCORPORATED 1921" at the bottom. A large, semi-transparent blue overlay covers the right side of the page, and a vertical orange line is positioned to the left of the title text.

CITY OF PARLIER TRAFFIC CALMING & SAFETY ENHANCEMENT PLAN APPENDICES

APPENDIX A

Land Use & Zoning Analysis



Land Use & Zoning Analysis

TRAFFIC CALMING AND SAFETY ENHANCEMENT PLAN

OCTOBER 2020

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INTRODUCTION AND PURPOSE

Pedestrian and bicyclist infrastructure are governed by existing plans, policies, and regulations from a variety of sources at the regional, State, and federal levels. This analysis evaluates how existing policies and regulations influence pedestrian and bicyclist safety and infrastructure development. The goal of this review is to identify both potential obstacles and pathways to the development of safe pedestrian and bicyclist infrastructure to help increase road safety for all users.

This analysis is one step of the planning process that will culminate in a Traffic Calming and Safety Enhancement Plan for the City of Parlier, which the City received a grant from Caltrans to complete. The final plan will combine this analysis with historical collision data, community input, and an existing conditions survey to develop design concepts to improve the safety of Manning Avenue. The final plan will also identify additional focused improvement recommendations around school sites. Concurrently, the Fresno Council of Governments (Fresno COG) is developing an Eastside Transportation Corridor Improvement Study, which focuses on Manning Avenue and Academy Avenue. The recommendations of this analysis and the final Traffic Calming and Safety Enhancement Plan will be coordinated with that effort.

APPROACH AND ORGANIZATION

This analysis first considers previously-prepared reports, such as Recommendations to Improve Pedestrian Safety in the City of Parlier, which includes background information, safety data, and community experiences. These documents typically culminate in recommendations to improve road safety. Report documents are helpful for identifying current conditions in the City, as well as what documents, policies, and resources already exist to help improve road safety.

This analysis also considers policy documents, such as Fresno COG's Regional Transportation Plan (RTP) and Active Transportation Plan (ATP), which include goals and action items related to road safety. These documents are helpful for identifying gaps in policy that will need to be addressed in order to effectively improve pedestrian and bicyclist safety in Parlier. These policies are enacted and enforced by the final type of document addressed in this analysis: implementation documents. This includes Parlier's Zoning Ordinance and Improvement Standards Drawings.

Following the review of report, policy, and implementation documents, this analysis makes recommendations related to necessary amendments to existing plans, policies, and regulations. This document will be used to inform potential projects and programs employed by the City to improve bicyclist, pedestrian, and driver safety. Additionally, it will be used to guide future areas of study and to consolidate the efforts of previous documents, such as the report documents considered in this analysis, and concurrent projects, such as the Eastside Transportation Corridor Improvement Study.

WALKABILITY

An area's walkability is a measure of how safe, pleasing, and functional it is to walk in the area. Walking has demonstrated health and environmental benefits, and for many is a primary mode of transportation. There are four main aspects of street design that dictate how walkable an area is: utility, safety, comfort, and interest. For some, walking may be one of the only feasible transportation options, while others decide whether to walk based on these factors. Building walkable spaces also benefits non-pedestrians. People tend to enjoy downtown and entertainment districts because they offer plenty to do within a reasonable distance and create a fun and exciting atmosphere on the street. These same features are also inherently safe and enjoyable for pedestrians.

Utility can be addressed by ensuring that residential uses and commercial and other destinations, like schools or parks, are in close-enough proximity to promote walking. The distance people are willing to walk to reach their destination is referred to as their walkshed. A typical walkshed is approximately a quarter-mile, which equates to approximately 5-7 minutes of walking.¹ While a quarter-mile walkshed is average, it should also be noted that the distance people are willing to walk is influenced by factors such as the destination and available pedestrian infrastructure. While providing important facilities within the typical quarter-mile walkshed will be the goal, a slightly larger walkshed may be more feasible for Parlier.

Pedestrian safety increases when pedestrians and cars are physically separated and when cars are traveling at lower speeds. Bike paths, street parking, and street trees can all help put distance and physical barriers between pedestrians and moving cars. The speed at which cars move directly affects the risk of fatality to pedestrians if struck by the vehicle. Fatality risk for pedestrians increases with speed relatively slowly until the vehicle hits speeds of 30 miles per hour. After that point, risk of fatality increases much more rapidly: fatality rates may be up to 5.5 times higher at 40 mph than at 30 mph.²

Many methods for increasing pedestrian comfort are related to pedestrian safety. For example, street trees, which can serve as a physical barrier between cars and pedestrians, also provide shade and aesthetic qualities. For a comfortable and pleasant pedestrian space, sidewalks should not have any gaps and should also have street furnishings, such as benches, tables, and trash receptacles.

While part of an interesting walk is dictated by the destination, it is also determined by building façades and how frequently they change. For increased visual interest, building façades should change approximately every 200 feet. Designing at that scale keeps pedestrians' interests in mind and is known as designing at a "human" scale.

FOUR FACTORS OF WALKABILITY

Utility: *Are there destinations worth walking to? Is it more convenient to walk than to drive?*

Safety: *Is there a sidewalk or designated path? Are pedestrians protected from moving vehicles?*

Comfort: *Is the path shaded? Is the street designed with pedestrians in mind?*

Interest: *Are building façades well-designed and unique? Are there frequent changes in façade?*

¹Plater-Zyberk, J. S. (2017, February 7). Great idea: Pedestrian shed and the 5-minute walk. (R. Steuteville, Interviewer)

²London Department for Transport. (2010). *Relationship between Speed and Risk of Fatal Injury: Pedestrians and Car Occupants*. London: London Department for Transport.

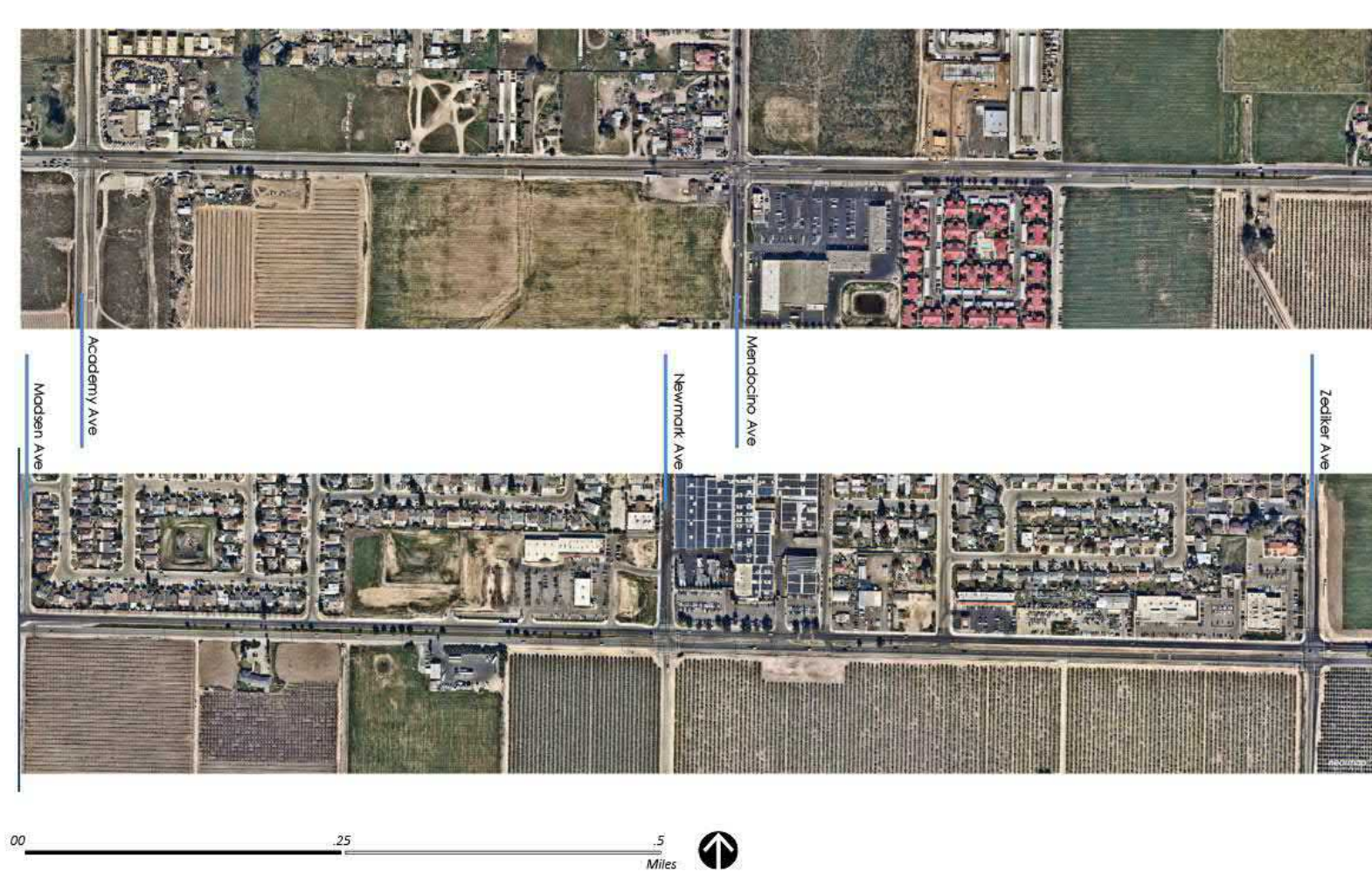
PROJECT AREA

While many recommendations for improving road safety will be applicable to the City of Parlier on a broad geographic scale, it should be noted that the geographic focus of this analysis is the Manning Avenue corridor. Manning Avenue primarily runs along the southern portion of the existing City limits and serves as the primary east-west connection from State Route 99 (SR 99) to Orange Cove. It is a four-lane arterial but lacks the consistent bicyclist and pedestrian infrastructure that would make it a viable transportation corridor for all road users. The City of Parlier General Plan directs much of the City's growth and development to occur south of Manning Avenue, increasing the need for adequate and safe connections across the arterial.

EXISTING CONDITIONS

Manning Avenue in Parlier remains bordered by primarily undeveloped agricultural land. The north side has some residential development backing onto the street between Madsen Avenue and Orit Avenue. There are also commercial uses, including discount stores, auto repair shops, and restaurants, along the north side. The south side is primarily located within Fresno County but does have some developed uses within the City limits. The Salandini Villa Apartments are located between Mendocino Avenue and Whitner Avenue and is next to fast food uses and a grocery store. The north side has monolithic sidewalks through most of the City limits, but there are some gaps where development has not yet occurred. The south side has significant gaps in sidewalk where parcels have not yet developed within the City limits or where parcels have not yet been annexed into the City. Of note is that much of the southern half of Manning Avenue is within Fresno County, which can pose a challenge when considering improvements on the street. Manning Avenue's major (half-mile) intersections with Academy, Mendocino, Newmark, and Zediker Avenues are signalized, while other secondary intersections have either a stop sign controlling side street movements or no traffic controls. Block sizes between these major intersections are approximately half a mile, or 2,640 feet, while block length between secondary intersections is between 500 and 1,000 feet. It should be noted that Manning Avenue is designated as an arterial.

Figure 1, Aerial with City Limits (2020)



POLICY AND REGULATORY FRAMEWORK

REPORT DOCUMENTS

Recommendations to Improve Pedestrian Safety in the City of Parlier (2014)

Document Background

The Safe Transportation Research Center (SafeTREC) and California Walks (CalWalks) facilitated a pedestrian safety action-planning workshop in Parlier to identify opportunities to increase the safety of the community's walking infrastructure and produce data to assist with grant applications. The document identifies connectivity and walkability issues and makes recommendations based on participant feedback gathered as two groups walked along Manning Avenue, Zediker Avenue, and various side streets.

Connectivity Issues

Participants in the workshop identified the following connectivity and walkability issues:

- Faded or missing crosswalks
- Walking behavior, such as pedestrians not waiting for a signal or crossing outside of a designated crosswalk
- Broken, unlevel, or obstructed sidewalks
- Speeding traffic
- Flooding
- Lack of pedestrian signals (i.e., crosswalk controls)
- Obscured signage
- Poor traffic lane markings
- Insufficient crossing time
- Turning conflicts between drivers and pedestrians

Recommendations

The following recommendations were identified by SafeTREC and CalWalks as key next steps for improving walkability and traffic safety in Parlier:

1. Pursue the Active Transportation Program (ATP) grant and other funding sources for comprehensive pedestrian and bicyclist infrastructure planning
2. Improve walking conditions for students traveling from the west side of the City to S. Ben Benavidez Elementary and Parlier Junior High Schools
3. Install sidewalk on Manning Avenue between Mendocino and Madsen Avenues (completed in 2020)
4. Install a rectangular rapid flashing beacon at the intersection of Mendocino Avenue and Tuolumne Street (completed in 2018)
5. Develop a community-driven active transportation master plan
6. Evaluate installation of edge lines on Mendocino Avenue and other locations to clearly demarcate travel lanes from parking lanes, which will narrow the perceived travel lane to encourage lower driver speeds

RECTANGULAR RAPID FLASHING BEACON

A rectangular rapid flashing beacon is a pedestrian-crossing sign with a signal light that can be activated by a pedestrian whenever they are ready to cross the street. The sign and flashing lights provide more visibility of crossing pedestrians, increasing road safety.

Fresno County Comprehensive Economic Development Strategy (2016)

Document Background

The 2016 Fresno County Comprehensive Economic Development Strategy (CEDS) prepared by the Fresno County Economic Development Corporation (EDC) documents the economic and political landscape that shapes local economic development efforts in unincorporated Fresno County plus its 14 medium- and small-size cities. The City of Parlier qualifies as a small city.

The CEDS report can be used to pursue public works and technical assistance grants from the U.S. Economic Development Administration, as well as additional federal and state funding.

Identified Transportation Safety Issues

The CEDS report identifies the low-cost housing available in Parlier as an asset that can attract residents and businesses to the area. However, poor street maintenance and lack of fiscal resources to fund infrastructure and service improvements suggest that transportation issues are also impacting economic growth in Parlier. Furthermore, the report identifies downtown revitalization and city beautification as worthwhile approaches to economic development for the City.

Recommendations

The following recommendations, put forth by the CEDS report in relation to economic development, would also help improve walkability and traffic safety:

1. Implement improvements to the downtown and streetscapes that facilitate public gatherings and encourage people to spend more time there
2. Continue city beautification projects, especially those within the streetscape
3. Improve backbone transportation infrastructure
4. Strengthen connections between community needs and available resources

POLICY DOCUMENTS

Parlier Active Transportation Plan (2018)

Document Background

The Fresno County Regional Active Transportation Plan (ATP) was adopted by the Fresno COG Policy Board in February 2018. This document is meant to help each jurisdiction in the County identify needed bicyclist and pedestrian projects as well as to enable agencies to qualify for funding to implement the necessary projects.

Connectivity Issues

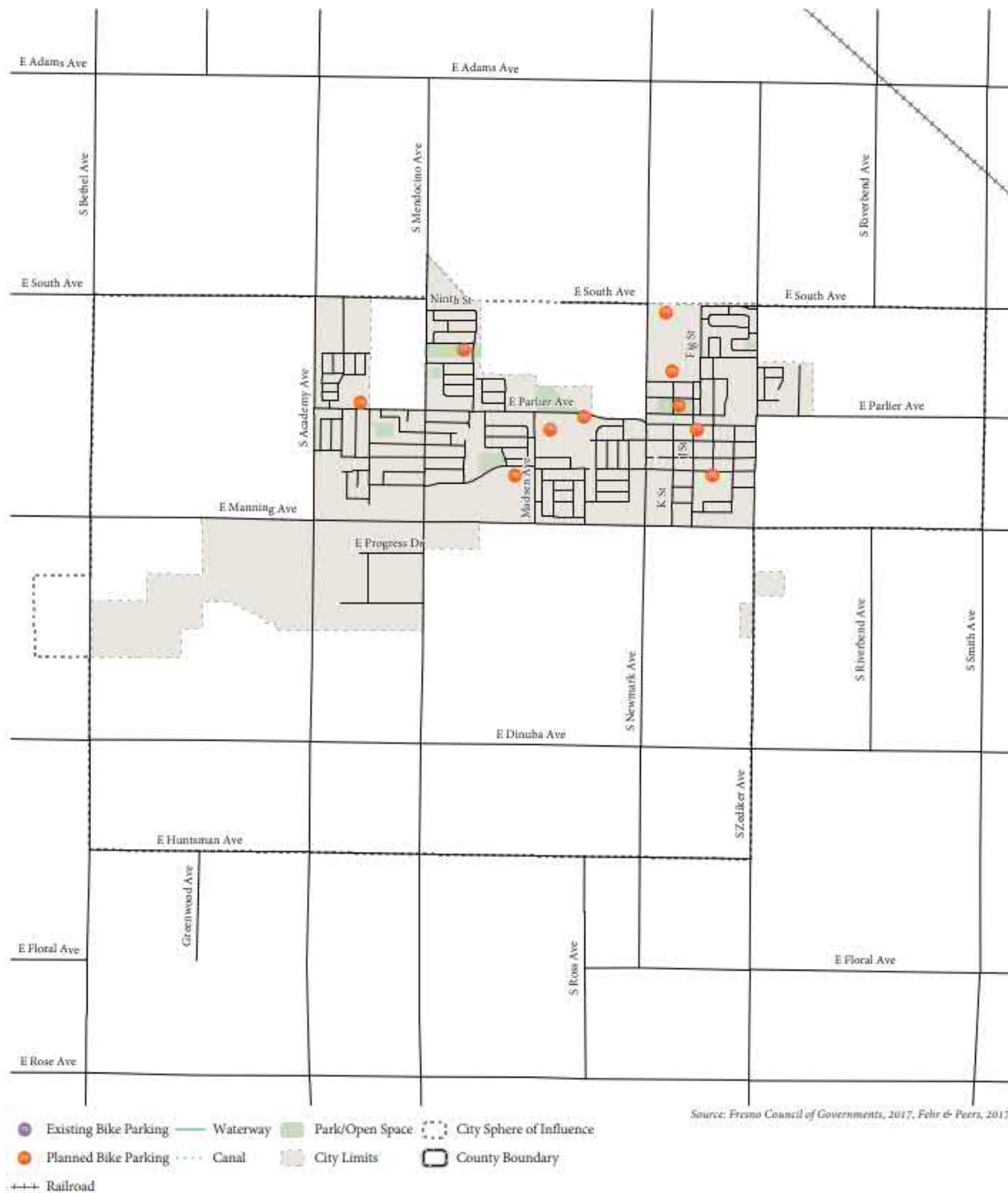
The ATP identifies two main issues related to bicyclist and pedestrian infrastructure in Parlier. First, at the time the plan was completed, there was no bicycle parking available within the City. Without storage available at key destinations, bicycling is not an effective alternative to a private automobile for many people. **Figure 2** and **Figure 3** come from the ATP and map key destinations and recommended bicycle parking facilities, respectively.

Figure 2: Parlier Key Destinations



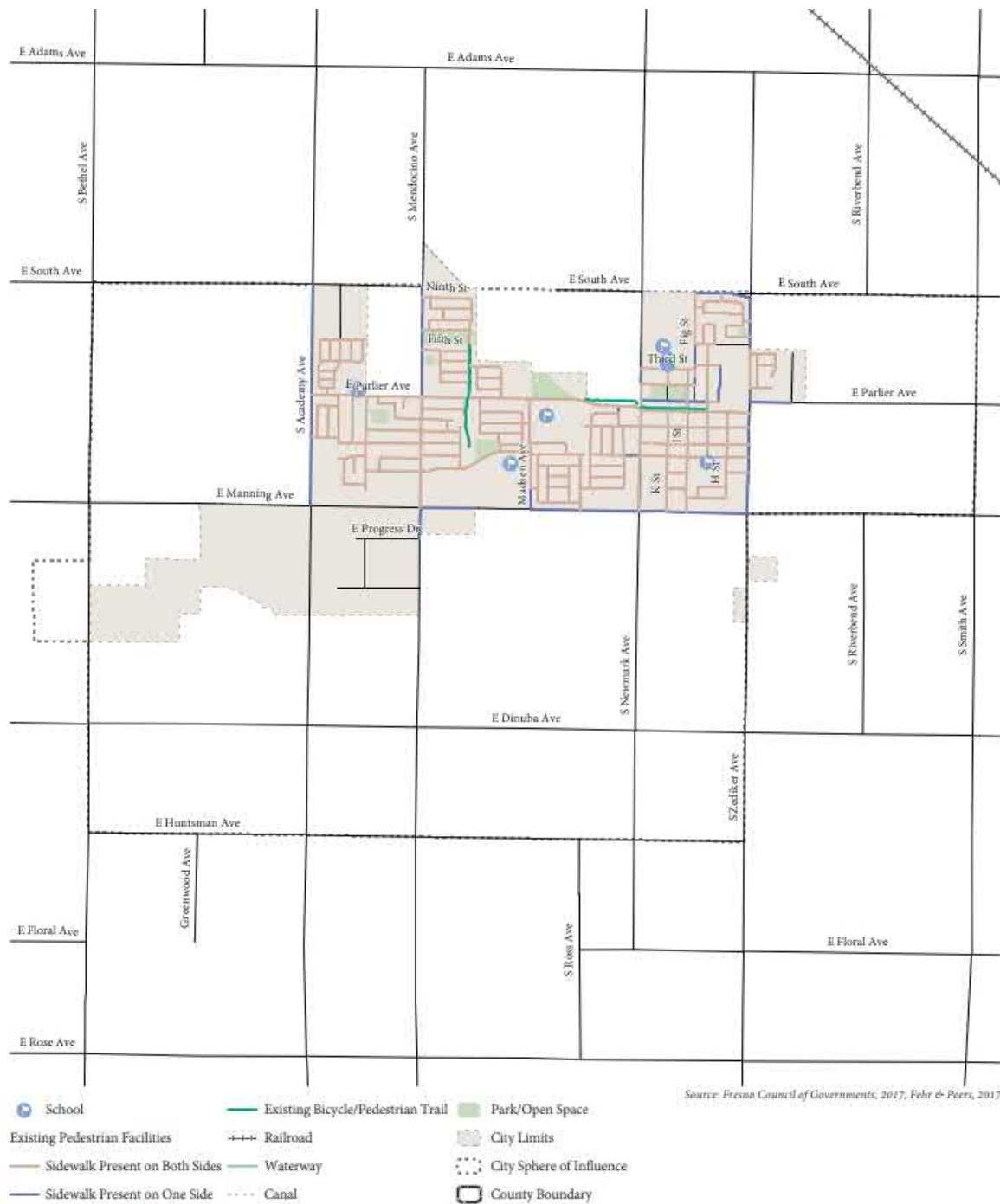
Source: Fresno Council of Governments, 2017, Fehr & Peers, 2017

Figure 3: Parlier Recommended Bicycle Parking Locations



Second, the City is generally well-connected by sidewalks, but there are some key infrastructure gaps along Manning Avenue. While there is sidewalk on the north side of much of Manning Avenue, there are also significant gaps on both sides of the street. Manning Avenue is a busy arterial but is also a vital east-west route through the City and to neighboring cities, such as Fowler to the west and Reedley and Orange Cove to the east. Pedestrian infrastructure gaps are mapped in **Figure 4**, which also comes from the ATP.

Figure 4: Parlier Existing Pedestrian Infrastructure



Policy Summary

When the ATP was completed, Parlier had plans to construct approximately 1.4 miles of sidewalk and 15.5 miles of bicycle paths. The plan also recommended 10 bicycle parking areas that would serve key destinations in the City. Finally, the plan also recognized the necessity of adding a mid-block pedestrian cross on Manning Avenue between Mendocino and Madsen Avenues. Of these identified actions, only the sidewalk on the north side of Manning Avenue between Mendocino and Madsen Avenues has been constructed.

Recommendations

The following recommendations are outlined in the Fresno County Regional ATP for the City of Parlier:

1. Complete the sidewalks and bicycle paths already identified for construction in the ATP
2. Construct bicycle parking at key destinations, particularly at locations identified in Figure 2
3. Add pedestrian facilities along Manning Avenue, including sidewalk and mid-block crossings between Mendocino and Madsen Avenues
4. Include pedestrian facilities along industrial streets

Regional Transportation Plan (2018)

Document Background

The RTP is a document prepared by Fresno COG that is designed to review regional transportation impacts and the infrastructure needed over a 30-year planning period. It also assigns priority levels to the specific infrastructure projects each jurisdiction will need to complete. RTPs are conducted every four years and an update by Fresno COG is currently underway.

Policy Summary

While many goals and policies in the RTP focus on aspects of the transportation network that operate outside of Parlier's jurisdiction, improving bicyclist and pedestrian infrastructure and supporting these transportation modes as healthy and sustainable alternatives to private automobile travel is a major theme throughout the plan. Applicable goals in the 2018 RTP include:

- Maximize bicycling and walking through their recognition and integration as valid and healthy transportation modes in transportation planning activities
- Safe, convenient, and continuous routes for bicyclists and pedestrians of all types that interface with and complement a multimodal transportation system
- Improved bicycle and pedestrian safety through education, engineering, and enforcement
- Increased development of the regional bikeways system, related facilities, and pedestrian facilities by maximizing funding opportunities
- Improved mobility and accessibility for all, including protected populations in accordance with federal and State statutes

Additionally, the following applicable policies are found in the RTP:

- Integrate transportation modes through a coordinated transportation systems management process
- Improve multimodal mobility and accessibility for all people

- Decisions on improvements to the transportation system shall take into account the effective use of all modes and facilities
- Encourage jurisdictions to ensure that the needs of pedestrians, bicyclists, and individuals with disabilities are included in the project review process
- Encourage local jurisdictions to promote public transit, walking and bicycling, carpooling, vanpooling, and ridesharing as viable and convenient alternatives to driving
- Enhance all residents' access to areas of opportunity (jobs, education, etc.), healthy food, clinics, and hospitals
- Support safe routes to schools
- Promote accessible and safe transportation options for seniors and persons with physical disabilities
- Encourage active transportation projects and public transit that will provide transportation options other than private autos and will advance public health
- Develop a convenient, safe, and efficient interface between transportation modes

Furthermore, a number of policies require Fresno COG to coordinate with, encourage, and support member agencies with regional transportation planning that increases the safety of all transportation modes. Currently, Fresno COG is conducting the Eastside Transportation Corridor Improvement Study, which focuses on Manning Avenue and Academy Avenue. Close coordination between the City's project and COG's project, including the sharing of background research and public outreach efforts, has been beneficial.

Recommendations

The RTP does not provide any discrete steps the City of Parlier should take to address walkability and pedestrian safety in the City. However, its goals and policies provide a good framework for prioritizing infrastructure projects.

Parlier General Plan (2010)

Document Background

The City of Parlier's General Plan was adopted by the City Council in December 1998 and amended in February 2010. The primary purpose of the General Plan is to guide development in the City. The General Plan's Circulation Element is intended to coordinate the design and development of facilities used to transport people and property. Further, the Circulation Element guides the development and improvement of the City's circulation system to support existing and planned development. The Land Use Element considers the City's current development and anticipated future needs to create a land use plan that permits and encourages development that meets goals identified by stakeholders and City staff during the General Plan process.

Policy Summary

Policies in the General Plan outline development goals and priorities. A number of these policies relate to transportation throughout the City, especially impacting what infrastructure is available to bicyclists and pedestrians. The current General Plan recognizes the importance of creating a land use pattern and promoting site designs that encourage people to walk, bicycle, or use public transportation. Furthermore, policies in the Circulation Element explicitly require developments to "provide a safe walking environment

for pedestrians” (Circulation Element policy 5.11.A 2). Land use policies, such as promoting the consolidation of Neighborhood Commercial centers and requiring pedestrian links to residential areas help to ensure new development considers all users of the transportation network. Additionally, the General Plan identifies Manning Avenue as an area for implementing a Boulevard Overlay district, which would provide special design criteria for areas that serve as entrances to the City. There are no policies in the General Plan that would inhibit the development of pedestrian and bicyclist road networks.

Land Use Summary

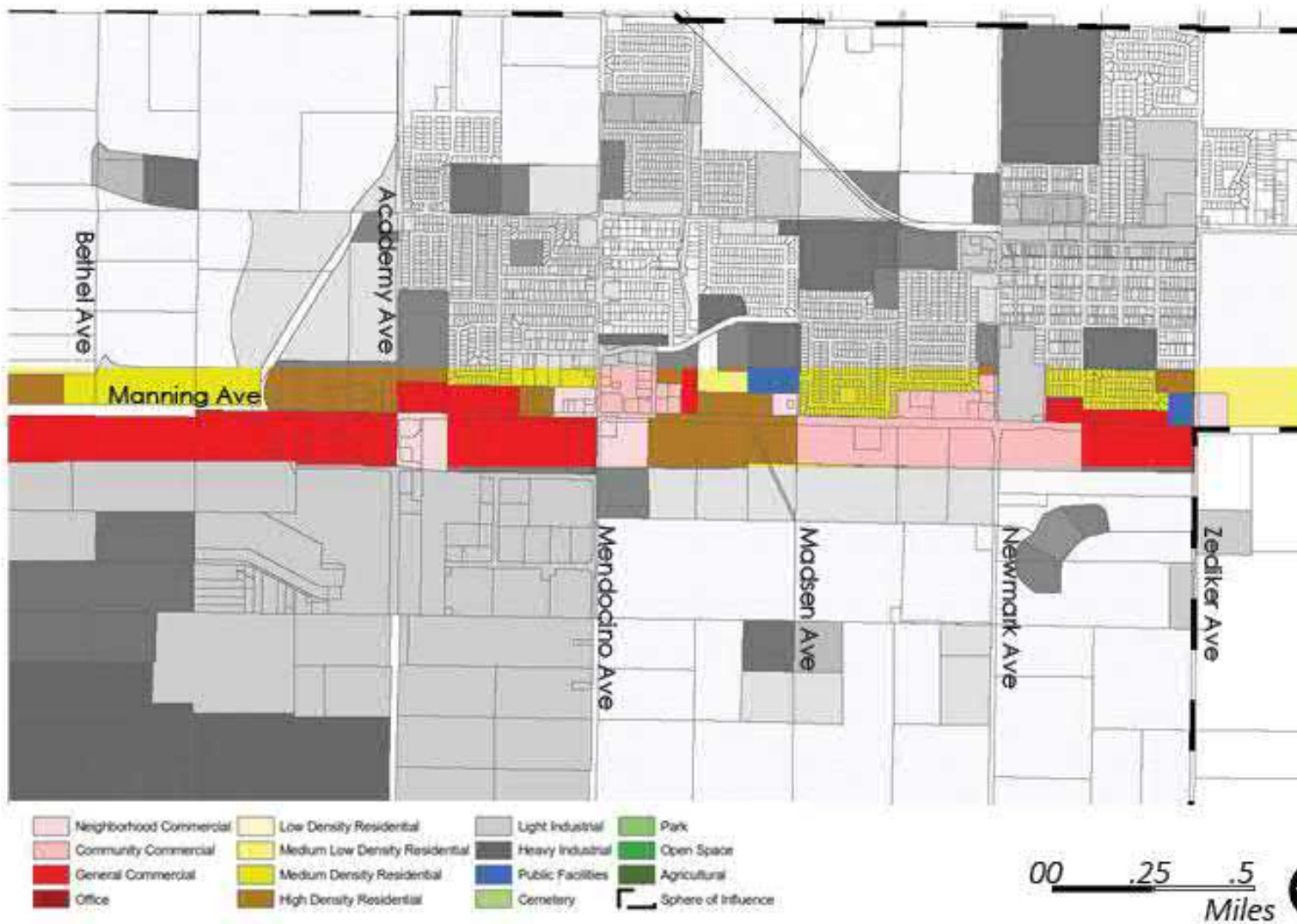
The Land Use Element primarily designates Manning Avenue for commercial uses, including Neighborhood Commercial, Community Commercial, and General Commercial designations. Additionally, there are sections of High Density Residential planned on the north side west of Academy Avenue and the south side between Mendocino and Madsen Avenues. Residential land uses are also planned on the north side of Manning Avenue on the east and west edges of town, though at lower densities, as shown in **Figure 5**. These residential uses, especially on the south side of Manning Avenue, face significant connectivity issues. Services, including schools, are overwhelmingly located north of Manning Avenue. The lack of pedestrian and bicyclist infrastructure, including features such as sidewalks, pedestrian street crossings, and bicycle paths and parking, further contribute to the difficulty of navigating this area of Parlier without a personal vehicle.

Actions

The General Plan includes the following actions relative to improving bicyclist and pedestrian safety and mobility:

1. Develop a comprehensive bicycle plan for the City
2. Require newly developing areas to provide for bicycle facilities along major roadways
3. Pursue funding to retrofit the existing urban area to accommodate bike lanes

Figure 5: General Plan Land Use Along Manning Avenue



IMPLEMENTATION DOCUMENTS

Parlier Zoning Ordinance

Document Background

The primary role of the Zoning Ordinance is to implement the goals and policies established in the General Plan. The zoning ordinance stipulates the standards a development proposal must comply with in order to be approved and is designed to implement the policies of the General Plan and its various elements. The City of Parlier's Zoning Ordinance was adopted in 1968. Over the years, this ordinance was modified in 1988, 2015, and 2017. A comprehensive update of the Zoning Ordinance is currently underway.

Summary

Parlier's Zoning Ordinance includes a number of provisions that work to ensure pedestrian and bicyclist safety. For example, before a development can be approved, the Planning Commission (or equivalent approval body) must determine that pedestrian and vehicular safety and welfare are protected. However, the provision also requires that traffic congestion related to these projects be avoided. While traffic does have negative consequences for a community, focusing primarily on reducing traffic congestion often results in increased vehicular speeds and generally does not have a positive effect on pedestrian or bicyclist safety.

PRIORITIZING VEHICLE CONVENIENCE OVER PEDESTRIAN SAFETY

Planning policies in many jurisdictions prioritize automotive convenience over pedestrian safety by requiring certain levels of service be met. Level of service describes how quickly cars are able to flow through an area. A large number of fast-moving vehicles moving through an area poses a threat to pedestrians. The priority must first be the safety of all road users, followed by quick and efficient movement.

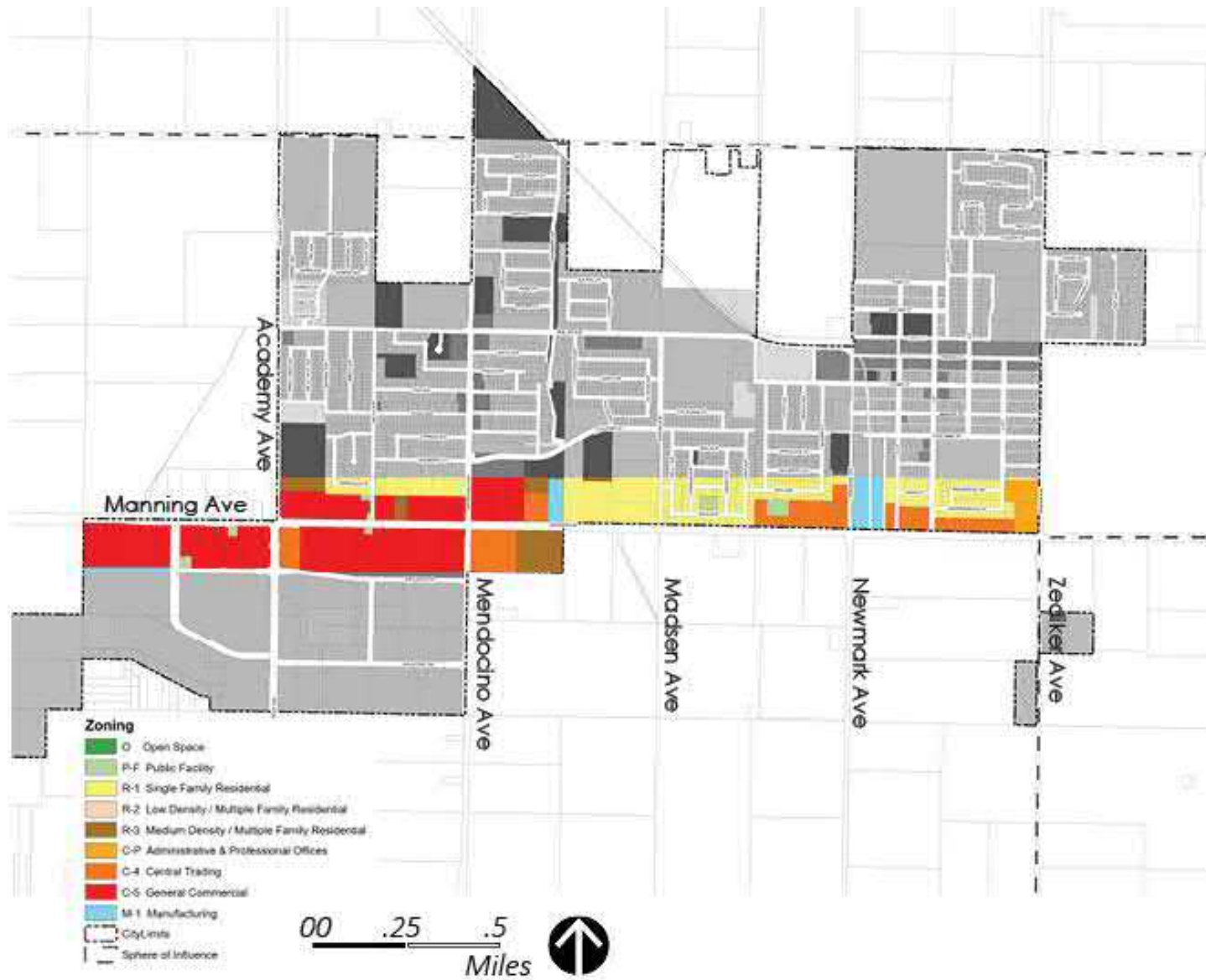
There are also a few notable gaps between the Zoning Ordinance and best planning practices and General Plan policies related to transportation. Most notably, the Boulevard Overlay, recommended to be implemented along Manning Avenue in the General Plan, does not exist. Neither do provisions for bicycle parking, although the California Green Building Standards Code mandates minimal bicycle parking provisions for non-residential buildings, including schools.

Zoning Designations

The Zoning Ordinance implements the General Plan, so the zone districts present along Manning Avenue should be compatible with the land use designations from the Land Use Element. However, there are known discrepancies between the General Plan and Zoning Map along Manning Avenue. These are primarily in the commercial areas located between Newmark Avenue and Zediker Avenue and between Mendocino Avenue and Madsen Avenue. The City is currently updating its Zoning Ordinance and Zoning Map to correct some of these inconsistencies.

The properties along the Manning Avenue corridor are zoned primarily for commercial development, although there are lower-density residential zones on the east and west sides of the corridor and high density residential zones on the north and south sides of Manning Avenue in the central portion of the corridor. Permitted commercial uses along Manning Avenue include retail, general services, and hotels and motels, among others. Small sections along Manning Avenue also permit residential and light industrial uses, as shown in *Figure 6*.

Figure 6: Zoning Districts Along Manning Avenue



Parlier Subdivision Ordinance

Document Background

The Parlier Subdivision Ordinance, among other things, defines certain subdivision design standards that typical subdivisions must adhere to and plays a significant role in specifying procedures related to the creation of new parcels. Projects that go above and beyond these standards are allowed to propose them as special standards in a Planned Development. However, the Planned Development process increases the time and cost of a project and does not facilitate the proposal of alternative standards. The Subdivision Ordinance also plays a significant role in how new parcels are connected through the dedication and improvement of public infrastructure. A comprehensive update of the Subdivision Ordinance is underway in conjunction with the Zoning Ordinance update.

Summary

Many General Plan policies related to opportunities for improved walkability have not been codified into the Subdivision Ordinance, limiting their effectiveness. Additionally, some elements of the Subdivision Ordinance are counter-productive to improving walkability and pedestrian safety, including:

- Allowing of cul-de-sacs up to 450 feet in length,
- Alleys not being permitted for single-family residential uses, and
- Blocks length of up to 1,320 feet.

Streets that facilitate connections with existing and planned development create more pedestrian-friendly spaces that are also easier for all road-users to navigate. Alleys can be developed as pedestrian-friendly and character-giving spaces, as well. Alleys can also increase the availability of on-street parking and reduce the amount of vehicular traffic on streets by relocating driveway and garage access to the alley. Increased street parking can help reduce vehicular speed and increase pedestrian and bicyclist safety. Smaller block sizes can also limit vehicular speed and facilitate more pedestrian crossings and linkages.

The Subdivision Ordinance does not include any regulations that specifically relate to increased pedestrian and bicyclist safety.

Parlier Standard Drawings

Document Background

The City of Parlier maintains a list of Public Works Standard Specifications, which provide minimum standards for the design, materials, and methods of construction for streets, storm drains, sanitary sewers, and domestic water supply facilities within the City. By utilizing standard drawings, the design, construction, and maintenance of public works projects can be easily controlled and estimated.

Summary

Parlier Public Works Standard Specifications include standards relating to street design, streetlights, pedestrian ramp design, traffic calming features, and street trees, as summarized below.

Street Design Standards

The following table summarizes the street design requirements for road types defined in the Parlier Works Standard Specifications.

Street Type (Standard Drawing No.)	Right-of-Way Width	Sidewalk Width ^{1, 2}	Paved Width ³	Planter Width	Design Speed	Lanes of Travel	On-street Parking
Residential Local (ST-3)	60 ft	5 ft	40 ft	4.5 ft	25 mph	2	Yes
Modified Residential Local (ST-3A, ST-3B)⁴	50 ft	4 to 4.5 ft	40 ft	0 ft	25 mph	2	Yes
Major Collector Residential (ST-4)	80 ft	5 ft	60 ft	4.5 ft	40 mph	2-4	Yes
Major Collector Commercial (ST-5)	80 ft	9.5 ft	60 ft	0 ft	40 mph	2-4	Yes
Major Arterial (ST-6)	84 ft	7-9 ft	64 ft	0-2 ft	40 mph	2-4	Yes
Expressway (ST-7)	106 ft	9 ft	86 ft	0 ft	50 mph	4 + 1 turn	Yes
Major Industrial (ST-26)	80 ft	0 ft	64 ft	7.5 ft	40 mph	2-4	Yes
Minor Industrial (ST-27)	60 ft	0 ft	40 ft	9.5 ft	40 mph	2	Yes

¹ Monolithic sidewalk. Does not include curb width.

² Assumes sidewalk on both sides of street.

³ Measured from curb face to curb face.

⁴ Modified residential street standards are only for cul-de-sac and non-through streets.

These standards ensure street design accounts for multiple road users, including drivers, pedestrians, and bicyclists. However, changes could be made that increase the safety of non-vehicular road users and thus the overall safety of the street. In addition to features like wider sidewalks and dedicated or protected bike lanes, small changes, such as requiring grate openings to run perpendicular to bicycle traffic, can make a big difference in creating a safe environment for non-vehicular road users.

Streetlight Standards

Streetlights ensure adequate visibility during nighttime hours and help to define an area's ambience. Standards such as mounting height, setback from curb, and spacing between streetlights determine how bright and well-lit the streetscape is. These standards are identified in the following table. Manning Avenue, as a designated arterial, requires a streetlight mounting height of 31 feet and spacing of 160 to 200 feet.

Street Type	Streetlight Mounting Height	Pole Setback from Curb	Streetlight Spacing
Residential Local	26 ft	1 ft	180 to 240 ft
Major Collector	29.5 ft	2 ft	180 to 220 ft
Major Arterial	31 ft	2 ft	160 to 200 ft
Expressway	31 ft	2 ft	150 to 180 ft

The temperature and color of light has a significant impact on how people perceive it. Warmer light lends itself well to a positive and natural atmosphere, while cooler light can increase visibility but creates a more artificial atmosphere. The City of Parlier currently requires streetlights to be fitted with LED modules that produce a color correlated temperature (CCT) of 4000 Kelvin with a minimum Color Rendering Index (CRI) of 65. This standard promotes cooler and brighter lights which, while promoting greater visibility, can disrupt circadian rhythms and decrease ambience.³

³ American Medical Association. CSAPH Report 2-A-16: Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting.

Pedestrian Ramp Standards

The City of Parlier standard drawings require one curb ramp facing the center of the intersection. This directs pedestrians, especially pedestrians that require mobility assistance that cannot move over the curb, into the middle of the intersection. Directional ramps that provide a ramp in each crossing direction are easier to navigate and safer for pedestrians. They direct pedestrians onto the street they are attempting to cross, rather than into the center of the intersection.



Single pedestrian ramp, [City of La Palma](#)



Directional pedestrian ramp, [New York City Department of Transportation](#)

Traffic Calming Standards

Parlier currently has design standards for both speed humps and speed cushions. Speed humps must be constructed out of asphalt concrete while the speed cushions are prefabricated out of recycled rubber. These traffic calming features can be required by the City Engineer and are used to regulate the speed of vehicular traffic. When used in conjunction with pedestrian crossings, they can increase pedestrian safety when crossing the street. The City of Parlier does not currently have any requirements for other traffic calming features like rapid flashing beacons or bulb-outs. Both of these features increase pedestrian visibility, and bulb-outs also decrease the distance pedestrians must cross within the intersection. Tighter curb radii can also protect pedestrians by decreasing the speed at which vehicles take corners. Furthermore, the development of a standard for speed tables, which allow pedestrians to cross on a raised crossing, would increase pedestrian safety and convenience.



Speed cushions, [NACTO](#)



Speed table, [NACTO](#)



Curb extension or bulb-out, [NACTO](#)

Street Tree Standards

Street trees provide shade and cooling for pedestrians and can greatly improve the atmosphere of the streetscape. Street trees, when planted between the street and the sidewalk, also serve as a protective buffer between road activity and pedestrians. To be most effective, trees should be placed at regular intervals that provide consistent shade and buffers. The City of Parlier does not currently have a spacing requirement for street tree wells identified in their standard drawings.

ANALYSIS & RECOMMENDED AMENDMENTS

Parlier does have some policies in place that explicitly work to enhance pedestrian and bicyclist safety on the road. Additionally, the City has identified projects that will further protect all road users and increase the viability of non-vehicular travel modes, such as the installation of additional bicycle lanes and parking. At the same time, however, some City policies run counter to the goal of pedestrian and bicyclist safety by prioritizing vehicular speed and efficiency.

Many of the documents considered in this analysis provide recommended actions to increase road safety in Parlier. While some of these actions have been taken, others have not or require an ongoing commitment that should be maintained. In addition to the recommended actions of the documents, amendments to the following documents will help increase road user safety.

PARLIER GENERAL PLAN

The General Plan Land Use Element establishes a variety of commercial and residential land uses along Manning Avenue. Primarily, the development of residential uses on the south side of Manning Avenue, without being accompanied by sufficient pedestrian infrastructure, will result in connectivity issues that are especially difficult to navigate for residents on the south side of Manning who do not have access to a personal vehicle. Most of the parcels along Manning Avenue are agricultural land that has not yet been developed into the planned residential or commercial land uses envisioned by the General Plan. However, one apartment complex has already been developed on the south side of Manning Avenue. This use, along with other existing and planned residential uses on the south side of the street, lacks sufficient pedestrian and bicycle connections to services located along and north of Manning Avenue.

The following actions are recommended to help increase connectivity for pedestrian and bicycle users and improve road user safety:

1. Reassess the land use plan to ensure pedestrians and bicyclists are not separated from necessary goods and services by allowing commercial and service uses in proximity to residential uses and planning for sufficient, connected pedestrian and bicycle infrastructure.
2. Consider identifying areas of high pedestrian activity, such as areas around school sites, parks, or specific commercial areas (e.g., Fresno Street, portions of Manning Avenue) and develop policies that focus on prioritizing design features that promote pedestrian and bicyclist safety.

PARLIER ZONING ORDINANCE

General Plan land use designations are implemented through the Zoning Ordinance, which identifies allowed uses within each zoning district and provides development standards for the allowed uses. Because the Zoning Ordinance implements the General Plan, many of the same issues identified in the General Plan Land Use Summary are also present on the Zoning Map.

Along Manning Avenue, commercial parcels, particularly General Commercial parcels, may present an opportunity to encourage the development of character-driven spaces that produce a more pedestrian-friendly streetscape. The Zoning Ordinance can be used as a tool to ensure development is safe and enjoyable for all types of road users. For instance, the Zoning Ordinance can require new commercial buildings to be located close to the street, with parking in the rear, increasing pedestrian safety.

STREET AND BUILDING PROXIMITY

Parking lots between sidewalks and building entrances create an additional barrier to pedestrian access. Parking lots can be hazardous to pedestrians because they are spaces designed primarily for vehicles. Moving buildings closer to the street with parking lots in the back increases safety and helps create a human-scale streetscape.

The following amendments to the Zoning Ordinance are recommended to help increase road user safety:

1. Adopt a Boulevard Overlay along Manning Avenue that enhances the primary entrances to the City and requires a higher standard of bicycle and pedestrian amenities. Reevaluate the allowed use table to promote auto-oriented uses, such as gas stations and drive-throughs, at the entrances to the City. Focus uses that generate higher pedestrian activity, such as retail uses, in certain areas, such as the central portion of the Manning Avenue corridor.
2. Require multifamily residential developments to comply with the voluntary residential standards of the California Green Code for bicycle parking.
3. Provide allowances in the Zoning Ordinance for bicycle parking stalls in excess of minimum standards in-lieu of vehicle parking stalls.
4. Reduce and/or limit parking requirements for projects in areas where high pedestrian activity is expected or desired.
5. Amend commercial zone district setbacks to establish maximum front yard building setbacks where on-street parking is available, especially where wider sidewalks are appropriate and where high pedestrian-generating activity is concentrated.
6. Update the findings of approval required for land use permits so they equally weigh vehicular, bicycle, and pedestrian modes and focus on the safety of all users.
7. Require non-residential uses to provide for pedestrian connections within the development and to surrounding parcels and/or public rights-of-way.

PARLIER SUBDIVISION ORDINANCE

The Subdivision Ordinance also implements General Plan policies. It dictates design and improvement standards applicable to the subdivision of property, including the layout of residential subdivisions and features like sound walls and roads. Connectivity and consistency in pedestrian facilities between subdivisions can help facilitate non-vehicular modes of travel and pedestrian safety.

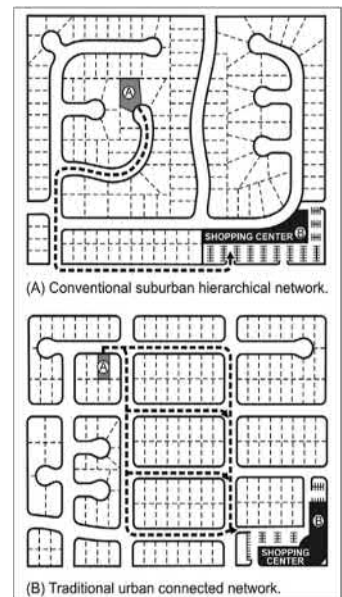
The following amendments to the Subdivision Ordinance are recommended to help increase and walkability:

1. Establish maximum block lengths of 1,320 feet for arterials and collectors and 440 feet for residential local streets.
2. Require justification for residential cul-de-sacs and blocks in excess of typical block lengths.
3. Require cul-de-sacs to provide a pedestrian connection when feasible, to an adjacent street.
4. Encourage street design that facilitates connections with existing and future streets.
5. Allow for alleys to be integrated into subdivision designs.
6. Consider implementing standards outlined in *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, published by the Institute of Transportation Engineers. The document includes specific standard recommendations related to street width, block length, and more.
7. Consider establishing an optional pre-application review process for subdividers to submit a proposal for planning staff to review consistency with General Plan policies and connectivity requirements.
8. Facilitate more direct pedestrian connections between residential planned land uses and the following land uses, where feasible:
 - a. Commercial and office
 - b. Schools
 - c. Parks

These connections help shorten the overall length of trips as traffic is dispersed on local streets rather than directed entirely onto main thoroughfares.

DESIGNING WALKABLE URBAN THOROUGHFARES

This document was developed by the Institute of Transportation Engineers to provide practical guidelines for the design of major urban streets in a way that promotes their use by all road users, including pedestrians and bicyclists. It focuses on how to find context specific design solutions that consider the local context.



Connection map from [Designing Walkable Urban Thoroughfares](#), page

PARLIER STANDARD SPECIFICATIONS

While the standard drawings do provide for pedestrian and bicyclist use of the street, many of the design features limit functionality for non-vehicular road users. For example, while a 4-foot sidewalk is ADA compliant, a wider sidewalk allows for more pedestrians to safely and comfortable use the sidewalk at the same time. Additionally, a universal pedestrian ramp that orients pedestrians to the middle of the intersection, as opposed to a directional ramp, can be difficult to navigate and force the pedestrian into traffic.

The following amendments to the Standard Specifications are recommended to help increase road user safety and walkability, specifically for non-vehicular modes:

1. Consider implementing standards outlined in *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, published by the Institute of Transportation Engineers. The

document includes both process considerations, such as testing designs, as well as specific standard recommendations related to target speeds, street width, block length, and more.

2. Add street standards that accommodate planter strips or tree wells between the sidewalk and the paved area to buffer the pedestrian area from vehicular traffic.
3. Provide an exceptions process that can facilitate pedestrian-friendly designs that are not otherwise accommodated by the standard drawings.
4. Modify tree well standards to establish minimum and maximum spacing requirements to provide for a continuous tree canopy when fully mature.
5. Modify streetlight standards to require lamps with a Color Rendering Index (CRI) value of at least 80, as they produce more accurate colors, aiding in nighttime visibility as promoted by guidelines on Crime Prevention Through Environmental Design (CPTED).
6. Modify streetlight standards to require lamps with a Color Correlated Temperature (CCT) of approximately 2,700 to 3,000 Kelvin.
7. Adopt a streetlight standard that includes the provision of pedestrian-scale lighting, for use in Boulevard Overlay areas or other pedestrian activity areas where pedestrian activity is greatest. These streetlights should be mounted at a pedestrian-scale height and spaced accordingly.
8. Modify curb return standards, where appropriate, to provide for bulb-outs to reduce pedestrian crossing length where on-street parking is required. Where on-street parking is not provided, reduce curb radius to increase turning radius to reduce vehicle turning speeds.
9. Implement a speed table standard to allow pedestrians to cross mid-block without the need of ramps, in high-pedestrian, low-vehicular speed areas, or for extraordinarily long blocks.
10. Allow angled back-in parking stalls on public streets to reduce vehicle collisions when exiting and allowing easy trunk access.
11. Include a standard for directional pedestrian ramps.
12. Establish an industrial street standard and require sidewalks on both sides of the street.

APPENDIX B

Street Improvement Descriptions

STREET IMPROVEMENT DESCRIPTIONS

TIGHTER CURB RADII

The curb radius determines how tight a corner is, and thus impacts the speed at which cars are able to move around the corner. A tighter curb radius requires cars to navigate at a slower speed, which can provide a safer experience for pedestrians by increasing the time for drivers to react to pedestrians in the intersection and by reducing the speed of the car and the energy of any potential collision.

Appropriate curb radii can vary widely. On wide, high-speed streets such as Manning Avenue, a curb radius of 45 feet would be appropriate. However, in areas with increased pedestrian activity, curb radii no higher than 25 feet should be considered.

CURB RADII

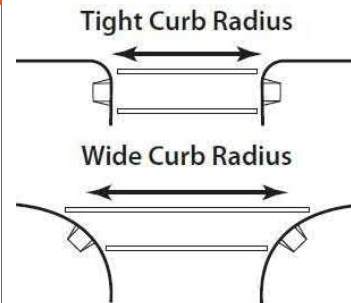


Image: wordpress.com

NARROW LANE WIDTHS

Narrow traffic lane widths help to reduce the visual lane for drivers. A narrower lane decreases the speed at which drivers feel safe operating at, thus promoting slower driving speeds. Permitted lane widths vary depending on the posted speed limit and the intended use of the roadway.

PEDESTRIAN LEADING SIGNAL INTERVALS

Pedestrian leading intervals change the pedestrian “walk” signal before vehicle signals change. This gives pedestrians a chance to move into the intersection crossing before vehicles begin their movement, which can assist in preventing conflicts with turning vehicles. Pedestrians are more visible when they can move into the intersection before vehicles begin making their turns.

STREET TREES

Street trees serve multiple purposes. Not only are they aesthetically pleasing and assist in placemaking they also provide shade to the sidewalk, which can be extremely helpful for keeping sidewalk temperatures comfortable and safe for pedestrians. Furthermore, when trees are placed between the sidewalk and the street, they provide a buffer between fast-moving street traffic and pedestrians. Other types of barriers, such as bollards, can also provide the safety benefit, although these features typically are not able to assist with placemaking or pedestrian comfort in the same way trees are.

STREET TREES



Image: wordpress.com

BIKE BOXES

Bike boxes are created out of green paint at intersections. They alert drivers to bike traffic while also providing bicyclists with an opportunity to move to the front of the intersection, thus allowing them to move at the beginning of the signal cycle. This can increase their visibility and decrease the likelihood of a collision with vehicle traffic.

SHORT CROSSWALKS

Wide traffic lanes also result in lengthy intersections for pedestrians to traverse. These wide intersections leave pedestrians exposed to vehicular traffic for greater distances and can be difficult to cross in the time provided by the signal.

Strategies that reduce crosswalk distance for pedestrians can help protect pedestrians from traffic conflicts. **Bulb-outs** provide a **curb extension** into the intersection so pedestrians can move past the parking lane before entering the crosswalk. Not only does this decrease the crossing distance for pedestrians, but it can also help increase their visibility to motorists by allowing them into the line of sight for the drivers without entering the intersection.

SMALLER BLOCK SIZES

The distance between pedestrian crossings should also be considered. Many block sizes along Manning Avenue are approximately one-half mile. Reducing the block length provides more crossing opportunities and increases both pedestrian and vehicular connectivity. Furthermore, long block lengths can result in increased pedestrian crossings outside designated crosswalks, contributing to unsafe practices (i.e., jay walking). Providing **mid-block crossings** can help protect pedestrians and make walking a more convenient, safe, and viable transportation option.

FLASHING CROSSWALK BEACON

Flashing crosswalk beacons can be activated by pedestrians via a push button and alert drivers that pedestrians are entering the crosswalk with flashing lights. These beacons are usually placed at mid-block crossings, where drivers may not be expecting pedestrian activity.

BIKE BOX



Image: nacto.org

BULB-OUTS



Image: nacto.org

MID-BLOCK CROSSING



Image: nacto.org

FLASHING BEACON



Image: www.gilmore-assoc.com

RAISED CROSSWALK

Raised crosswalks, also called traffic tables, are longer, flat speed bumps. This requires drivers to slow when moving across the crosswalk. Additionally, it negates the need for pedestrian ramps to street level since the crosswalk has been raised to be level with the sidewalk.

DIRECTIONAL PEDESTRIAN RAMPS

Directional pedestrian ramps consist of two ramps, each one pointing directly into the street that will be crossed, thus channeling pedestrian traffic only onto the street that will be crossed. At present, most pedestrian ramps along Manning Avenue and throughout the City are universal, meaning each street corner has one ramp that points towards the center of the intersection, forcing pedestrians towards the center of the intersection where cars will be moving during the crossing cycle. Installation of pedestrian ramps is required for compliance with the American with Disabilities Act (ADA) and is vital for equitable mobility for those with mobility disabilities. ADA compliant intersection crossings also tend to promote safer intersection behavior for all intersection users.

PEDESTRIAN PUSH BUTTONS

Pedestrian signals at intersections can be either automatic or activated by a push button. While automatic signals are usually preferred from a walkability and connectivity perspective, signals activated by a push button may also be appropriate. Predictability and consistency between various intersections is key to assisting pedestrians in navigating crossings. It should be obvious that the button is necessary to activate the “walk” signal, and timing and light cycles should be consistent between intersections. Auditory pedestrian signals provide auditory cues that the walk signal is visible and assist pedestrians with visual impairments.

ALTERNATIVE CROSSWALK MATERIALS

Increasing the visibility of the crosswalk alerts drivers to the likelihood of pedestrians crossing the street and assists pedestrians in finding safe places to cross. Varying the material for crosswalks can draw the attention of drivers to pedestrians using the crosswalk. Bricks and differing cement make excellent crosswalk materials, but even a brightly painted crosswalk can accomplish a similar effect. Selection and design of the alternative materials is also a placemaking opportunity.

RAISED CROSSWALK



Image: internetigloo.com

DIRECTIONAL RAMPS



Image: Provost & Pritchard

PEDESTRIAN PUSH BUTTON



Image: Provost & Pritchard

ALTERNATIVE MATERIALS



Image: cactx.com

VISIBLE BIKE LANES

Bike lanes provide designated infrastructure for bicyclists, helping to differentiate between the speeds at which motor vehicles, bicycles, and pedestrians are capable of traveling. There are multiple classes of bike lanes, which range from signage denoting the presence of bicyclists, to bollards separating an on-street lane, to multi-use paths completely separate from the right-of-way.

Increased bike lane width can also be beneficial to creating a larger buffer between bicyclists and vehicular traffic. They can also serve to reduce traffic lane widths, thereby decreasing the speed at which drivers feel comfortable operating their vehicles.

BIKE LANES



Image: Provost & Pritchard

TRANSIT PRIORITY

Multi-modal transportation options is a key factor in the walkability of a place. Places that provide quality transit infrastructure and bicycling options are also quite walkable by nature. A number of methods to increase transit priority on the road can be helpful in improving walkability and general mobility. Bus-only lanes, even temporary ones, permit buses to move more easily through traffic and facilitate loading and un-loading by easing the transition back into traffic. Special signal sensors can ensure buses do not wait at red lights for lengthy periods of time. Finding a balance of transit priority methods improves the overall experience for people who make use of multiple modes of travel.

Permanent fixtures such as bus bulbs, which look similar to bulb-outs and separate buses from road traffic when they are making drop-offs and pick-ups, can help facilitate loading and un-loading the bus, decreasing the necessary stop time, and can also help ease the reintegration of the bus into traffic.

TRANSIT



Image: news.trimet.org

FREQUENT TRANSIT ROUTES

Although there are several design elements specifically related to pedestrian infrastructure that make more walkable places, the key to truly walkable design is a multi-modal transportation system that provides legitimate alternatives to private automobiles. Transit infrastructure is a key feature of any multi-modal system. Public buy-in is vital to a successful transit system. Transit systems, buses especially, are subject to public perception in a way that significantly impacts their ridership.¹ When making decisions about how to structure the transit system, focusing on high-quality, frequent routes with significant ridership can be more impactful than having a wide service area with long wait times and low ridership.

¹ Fitt, Helen. 2016. "Habitus and the lower cruiser: How low status deters bus use in a geographically limited field." *Journal of Transport Geography* 228-233.

HUMAN SCALE SIGNAGE

Including signage at a human scale helps pedestrians navigate the area, which is especially helpful in commercial areas where people unfamiliar to the area may congregate. Consistency in signage increases the navigability, and thus the connectivity, of a place. Furthermore, well-designed signage can help define the feel of the community.

LANDSCAPING IMPROVEMENTS

Landscaping, including street trees, improve the aesthetic quality of the street. Additionally, larger landscaping features can provide shade and protection from passing vehicles on the street. Landscaping should not, however, block sight lines for pedestrians or drivers.

PUBLIC REALM DESIGN STANDARDS

Public realm design standards focus on improvements primarily within the public right-of-way, including the sidewalk and public open space. These standards can include requirements for street trees and furnishings which can help to make the street a safer and more enjoyable place for pedestrians. Additionally, design standards can designate appropriate sidewalk widths based on the intended use and setting. Increased sidewalk width provides ample space for pedestrian traffic in both directions and required street furnishings and trees that increase safety and enjoyment of the area.

ENTRY MONUMENTATION

Entry monumentation provides placemaking benefits and alerts drivers to an increase in pedestrian activity associated with entering the town.

INFILL DEVELOPMENT

Promoting infill development on vacant lots helps ensure the higher density and mix of uses that makes places walkable and convenient without private vehicles. Sprawling development is not feasibly navigated by pedestrians, so more dense infill development patterns can provide and more effectively support alternative transportation methods within a community.

WAYFINDING SIGNAGE



Image: mailboxesandsigns.com

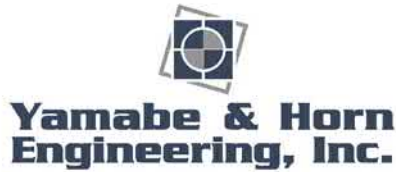
ENTRY MONUMENTATION



Image: cedarrapidtexasedc.com

APPENDIX C

Stakeholder Interview Summaries (Observational Information)



2985 North Burl Avenue, Ste 101
Fresno, CA 93727
(559) 244-3123
(559) 244-3120 fax
www.yandhengr.com

Memo

Date: 05/28/2020

To: Sara Allinders, Provost & Pritchard

From: Philip Romero, City Engineer

Re: Parlier Traffic Calming Plan - Meetings

This is a summary of the meeting with the Parlier Public Works Department, Domingo Morales on May 28, 2020 at 9:00 a.m. with regards to historical observations and problem areas within the city limits. Mr. Morales discussed that the main traffic safety issues are with intersections in general, but mainly surrounding schools. He mentioned better crosswalks and signage at locations

E. PARLIER AVENUE AND AVILA STREET – Crosswalk

- Vehicles drive at high speed and don't stop at crosswalk.

E. PARLIER AVENUE AND "J" STREET

- Vehicles parking in E. Parlier Avenue park too close to the intersection causing sightline issues.
- Would like to see more red curbs at intersections to help with sight lines.

MARTINEZ ELEMENTARY SCHOOL - North side of E. Parlier Avenue between S. Academy and S. Mendocino Avenues

- Traffic issues E. Parlier Avenue along the front of the school.

PARLIER HIGH SCHOOL/BRLETIC ELEMENTARY SCHOOL – North side of 3rd Street and West side of Fig Avenue

- Traffic issues "K" Street and 3rd Avenue intersections.
- Traffic issues "J" Street and 3rd Avenue intersections.
- Traffic issues at 4th Street and Fig Avenue.
- Traffic issues at 3rd Street and Fig Avenue.



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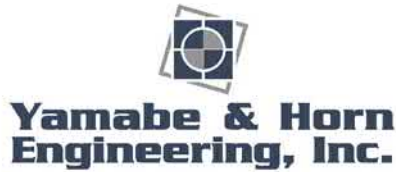
Memo

CESAR CHAVEZ ELEMENTARY SCHOOL – South side of Tuolumne Street and west side of “H” Street

- Not enough parking space on parking lot, causes traffic backup in Tuolumne Street.
- “I” Street crosswalks.
- “J” Street crosswalks.
- “H” Street crosswalks.

GENERAL COMMENTS

- Wants more red painted curbs to help with sight lines at intersections throughout the City.
- Wants additional crosswalks throughout the City.
- Wants better signage throughout City.
- Wants additional parking spaces at schools.



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Memo

Date: 05/28/2020

To: Sara Allinders, Provost & Pritchard

From: Philip Romero, City Engineer

Re: Parlier Traffic Calming Plan - Meetings

This is a summary of the meeting with the Parlier Police Department, Sgt. David Cerda on May 28, 2020 at 9:00 a.m. with regards to historical observations and problem areas within the city limits. Sgt. Cerda discussed that the main traffic safety issues are with Manning Avenue, Academy Avenue and Zediker Avenue and the streets surrounding all schools.

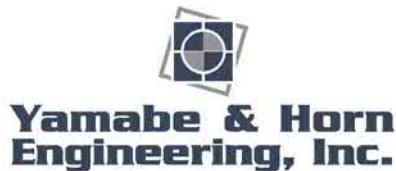
E. MANNING AVENUE – Between S. Academy and S. Zediker Avenues

- Manning Avenue's main issue is the higher speeds both eastbound and westbound.
- With higher speeds, cars turning from side streets or businesses onto E. Manning Avenue through breaks in the median island that across all lanes. Locations include: Dollar General, Saladini Apartments, Sun West, "K" Street and "J" Street.

MARTINEZ ELEMENTARY SCHOOL - North side of E. Parlier Avenue between S. Academy and S. Mendocino Avenues

- The diagonal parking is an issue for cars backing into E. Parlier Avenue along the front of the school.
- Pedestrian traffic from residents living on the south side of E. Parlier Avenue crossing to the north side of E. Parlier Avenue (school side) at S. Smyrna where there is no crosswalk striping or signage and S. Milton Avenue where there is only crosswalk striping.
- S. Wrico Avenue has a stop sign and flashing signs, but traffic does not always stop for pedestrians.
- Parents crossing the street at non-intersections ("J" walking) is a constant problem.
- Police constantly controlling traffic at Martinez Elementary School.

PARLIER HIGH SCHOOL/BRLETIC ELEMENTARY SCHOOL – North side of 3rd Street and West side of Fig Avenue



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Memo

- Traffic backs up on "K" Street waiting to turn onto 3rd Street at "T" Intersection waiting for available parking along 3rd Street and diagonal parking.
- The diagonal parking is an issue for cars backing into Parlier Avenue along the front of the Brletic Elementary School.

CESAR CHAVEZ ELEMENTARY SCHOOL – South side of Tuolumne Street and west side of "H" Street

- Not enough parking space on parking lot, causes traffic backup in Tuolumne Street.
- East bound traffic sits in Tuolumne Street waiting
- Pedestrian traffic from the north side of Tuolumne crossing at crosswalks holds up traffic and causes backups

BENEVIDES ELEMENTARY SCHOOL – South side of Tuolumne Street and west side of Madsen Avenue

- Westbound traffic sits in Tuolumne Street at Erica Avenue waiting to enter parking lot.
- Double left lane (Suicide Lane) stops short of Erica Avenue and causes confusion for drivers turning into parking lot
- Eastbound traffic backs up waiting to turn into parking lot and curbside parking.

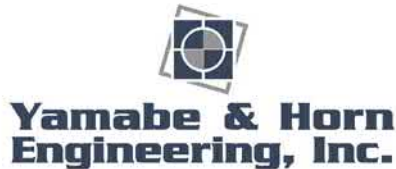
PARLIER JUNIOR HIGH SCHOOL – South side of Parlier Avenue and east side of Madsen Avenue

- Red curbs along E. Parlier Avenue causes confusion for cars looking for parking.
- Vehicles park along red curb.
- Bus drop-off is painted red, vehicles can't use bus drop-off.
- Teachers/staff choose to park along Parlier Avenue instead of parking lot taking parking for vehicles wanting to drop-off.
- Traffic signal helps with pedestrian traffic.

MAXCO – West side of S. Zediker Avenue north of Fresno Street

- Vehicles turning from "I" Street onto Fresno Street have sight line issues with block wall along the solar panels. Vehicles have to pop out to see traffic.
- Trees and signs block view of vehicles turning onto Fresno Street.

MENDOCINO AUTO – North side of E. Manning Avenue and east side of S. Academy Avenue



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Memo

- Business employees park on the east side of S. Academy Avenue between the drive approach and the intersection not leaving enough room for cars turning northbound from E. Manning Avenue. Police would like to see red curb at this location for safety.

SALADINI VILLA APARTMENTS – South side of E. Manning Avenue

- Pedestrians crossing from south side of E. Manning Avenue to north side of E. Manning Avenue ("J" Walking) is a constant problem.
- Police would like to add fence in the median island to keep pedestrians from crossing between S. Mendocino Avenue and Madsen Avenue.

PARKWOOD APARTMENTS – East side of S. Mendocino Avenue north of E. Parlier Avenue

- Vehicles turning from apartments onto S. Mendocino Avenue have sight line issues with vehicles having to pop out to see traffic.
- Police would like to see red curbs at driveways to allow better sight lines.
- Police would like to allow parking on west side of S. Mendocino Avenue.

BELLA VISTA APARTMENTS – East side or S. Whitener Avenue south of E. Parlier Avenue

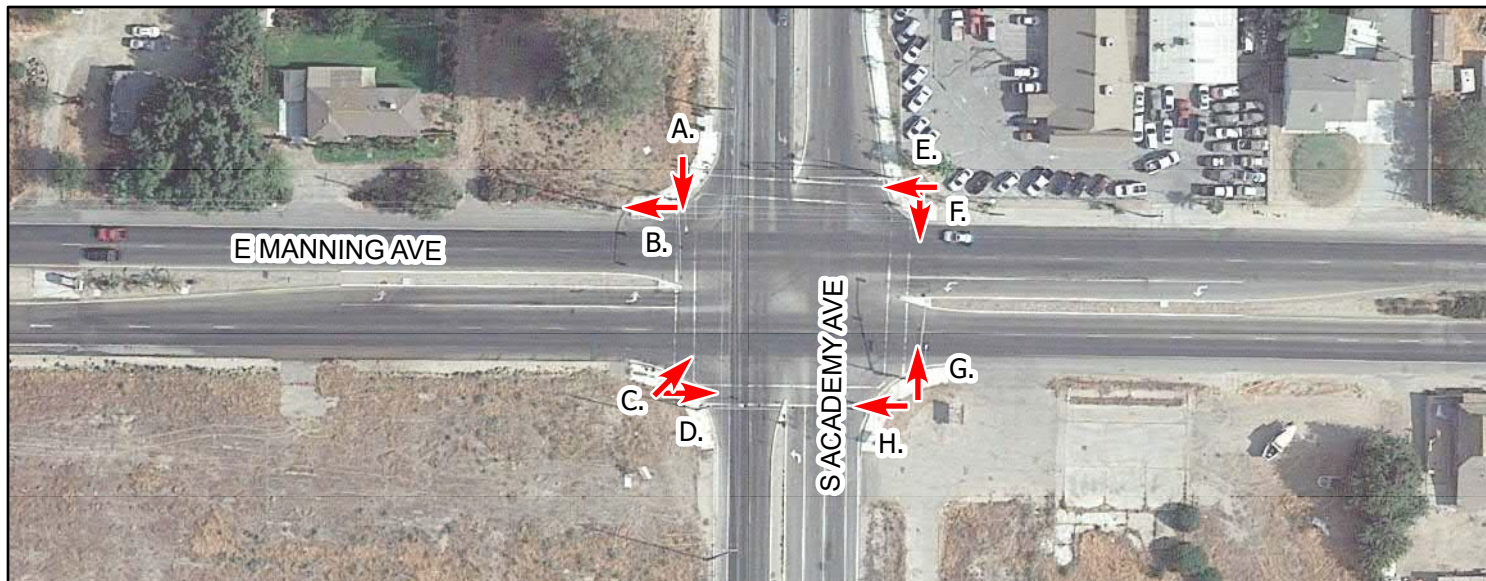
- Parking in front of residences a constant battle between apartment tenants and residents.
- Currently, apartment tenants are not allowed to park along residences.
- Parking permits are required for residents.

GENERAL COMMENTS

- Not enough bike lanes - High volume of residents ride bikes
- Need additional crosswalks
- Need additional parking spaces at schools

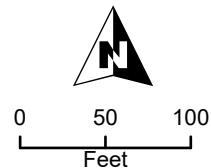
APPENDIX D

Traffic Safety Studies (Qualitative Analysis & Field Assessments)



Traffic Safety Study

S Academy Ave and E Manning Ave Intersection

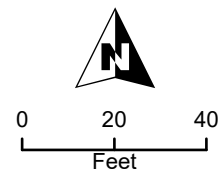


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Traffic Safety Study

S Academy Ave and E Manning Ave Intersection

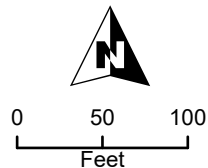


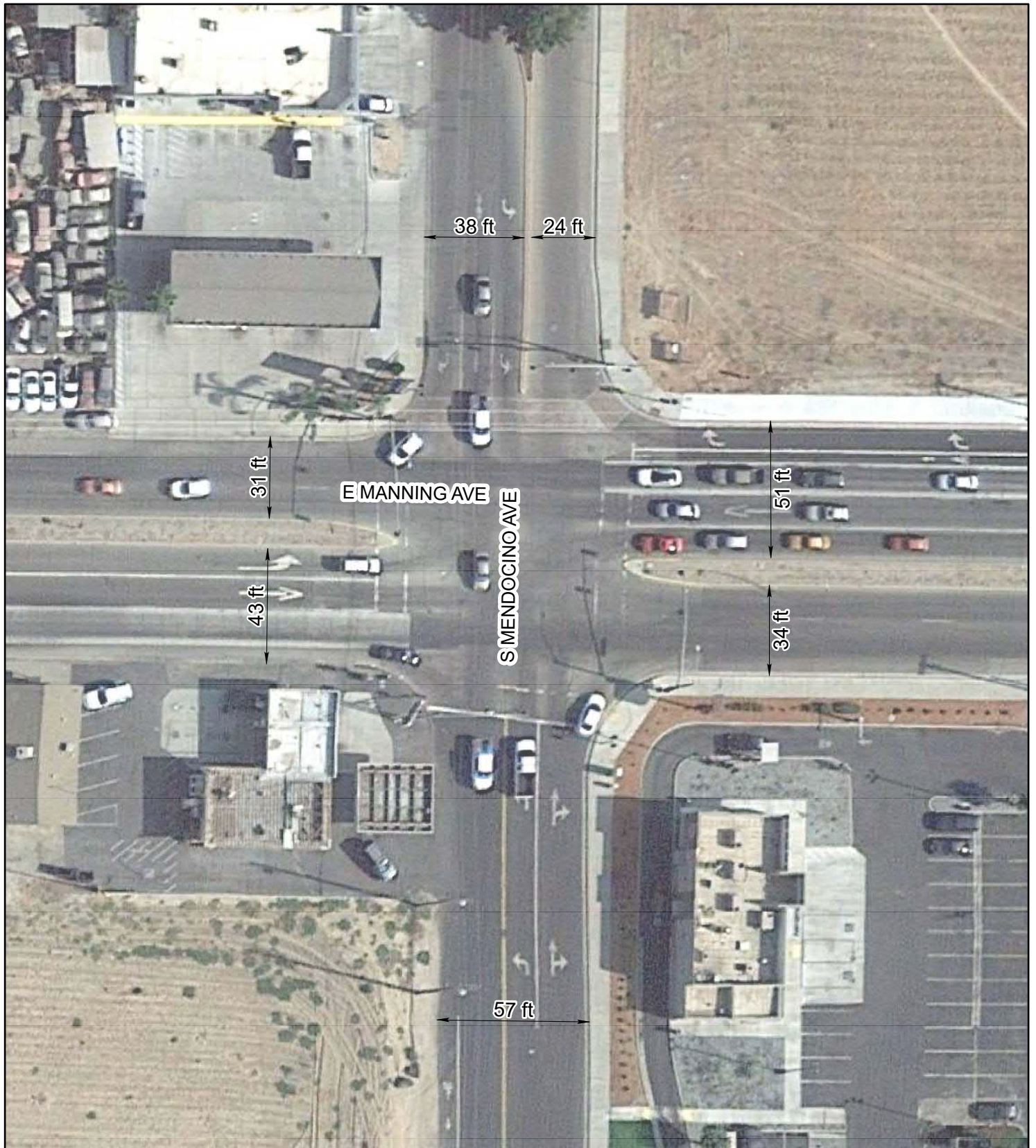
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Traffic Safety Study

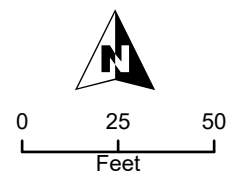
S Mendocino Ave and E Manning Ave Intersection



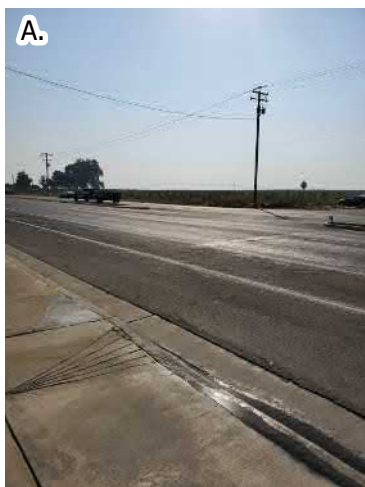


Traffic Safety Study

S Mendocino Ave and E Manning Ave Intersection

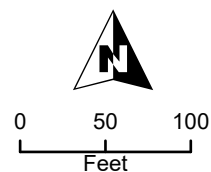


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Traffic Safety Study

S Whitner Ave and E Manning Ave Intersection

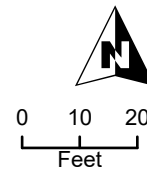


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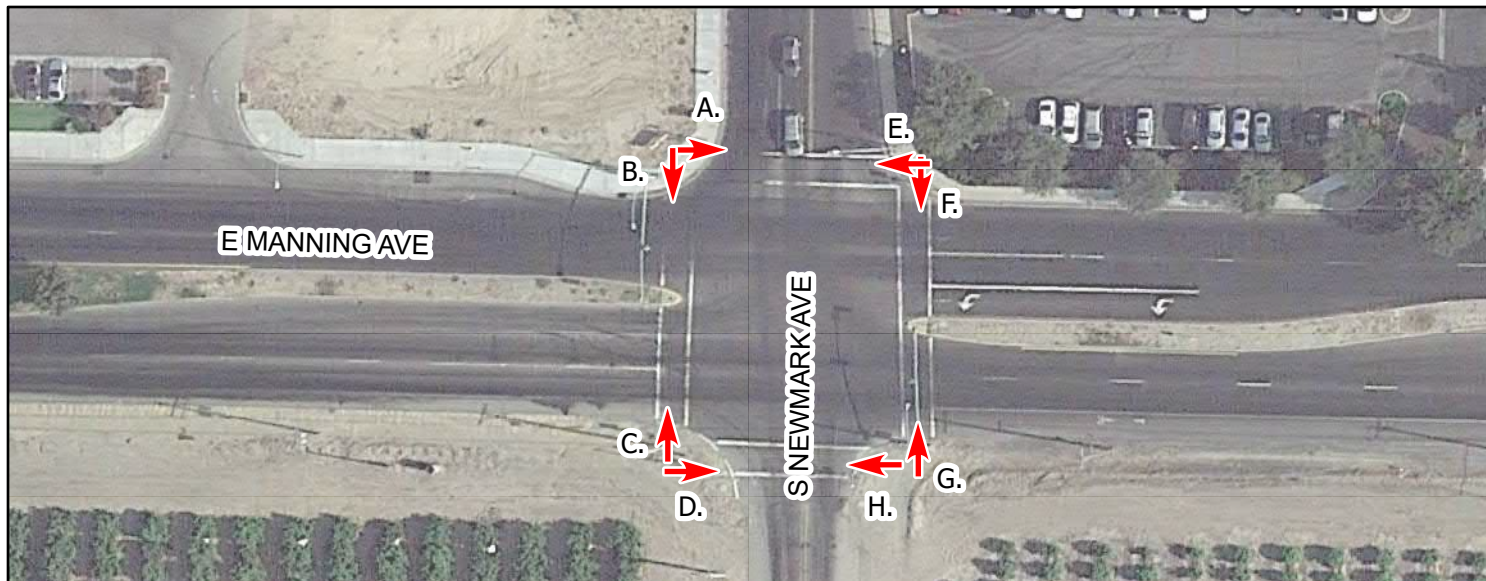


Traffic Safety Study

S Whitner Ave and E Manning Ave Intersection

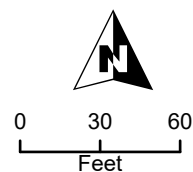


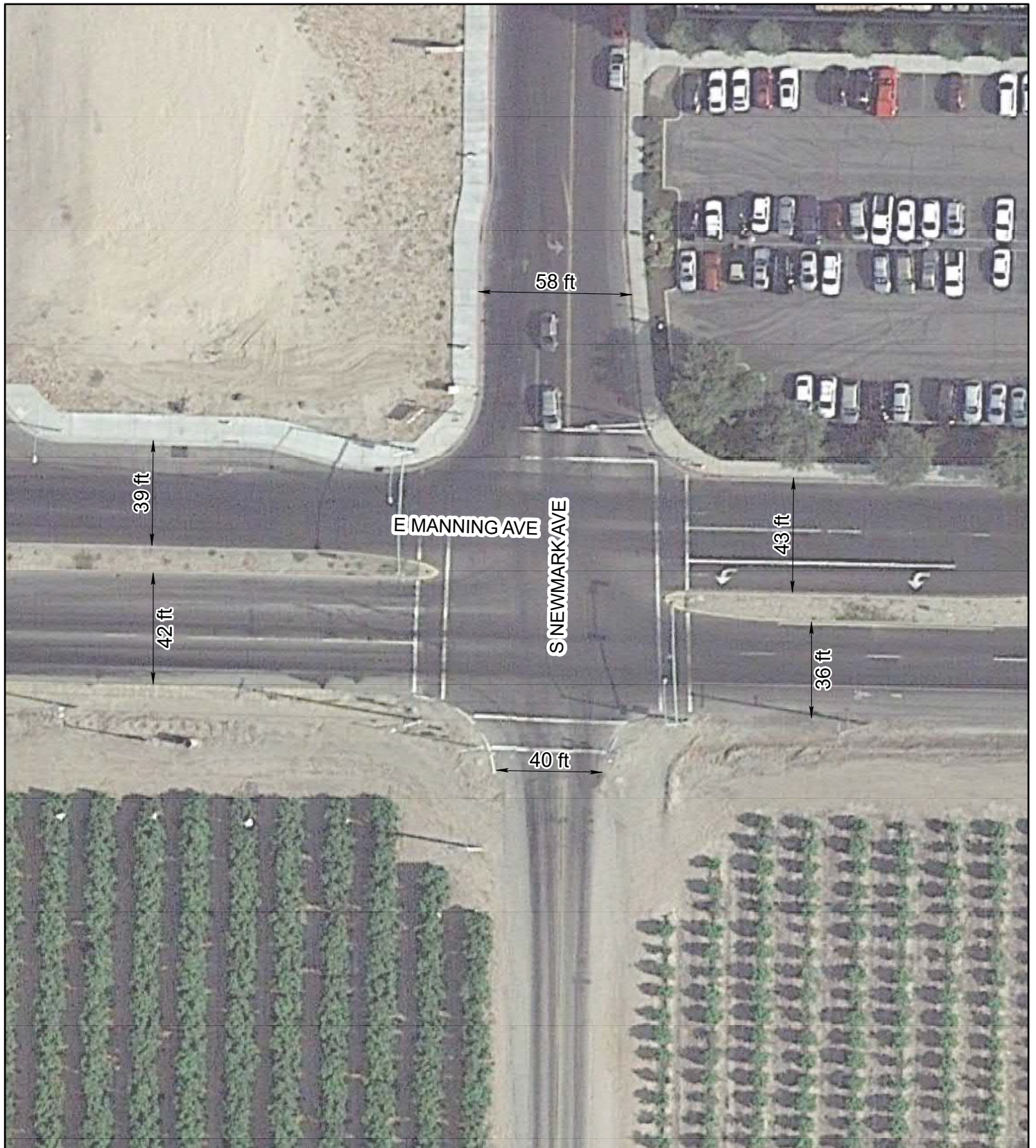
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Traffic Safety Study

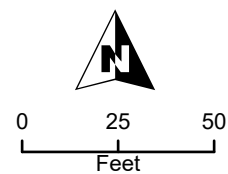
S Newmark Ave and E Manning Ave Intersection





Traffic Safety Study

S Newmark Ave and E Manning Ave Intersection

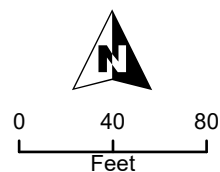


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Traffic Safety Study

S Zediker Ave and E Manning Ave Intersection

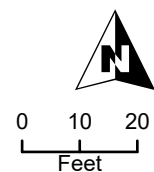


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Traffic Safety Study

S Zediker Ave and E Manning Ave Intersection



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A.



B.



C.



D.



E.

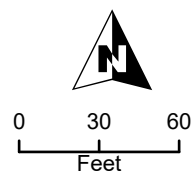


F.



Traffic Safety Study

S Mendocino Ave and E Cypress Ave Intersection

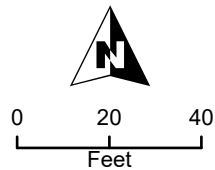


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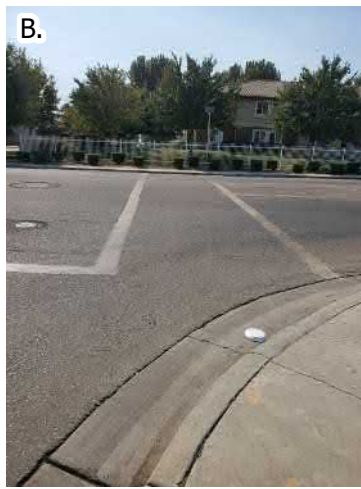


Traffic Safety Study

S Mendocino Ave and E Cypress Ave Intersection

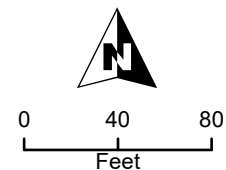


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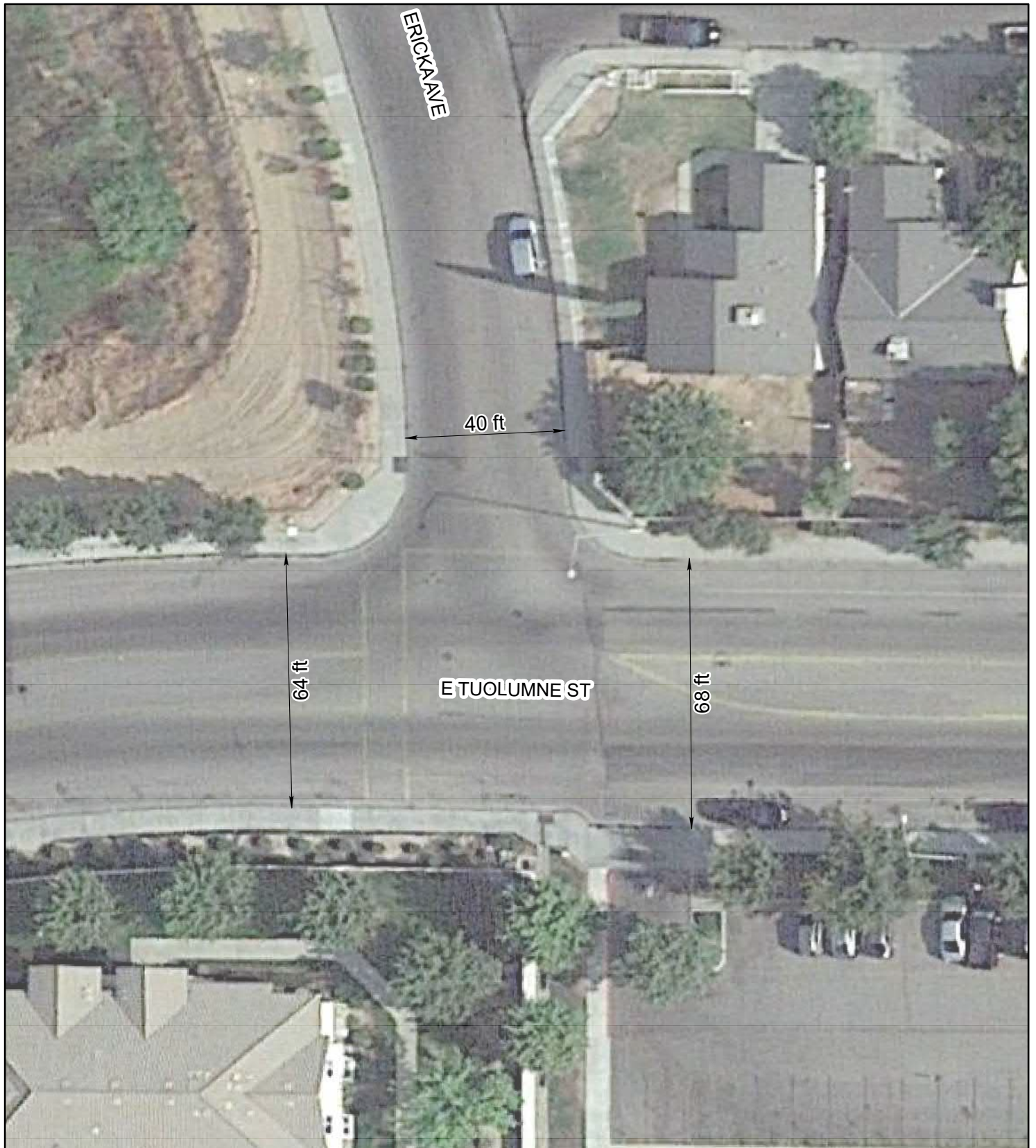


Traffic Safety Study

Ben Benavidez Elementary School Intersection

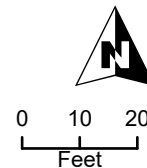


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Traffic Safety Study

Ben Benavidez Elementary School Intersection

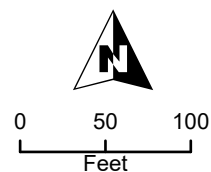


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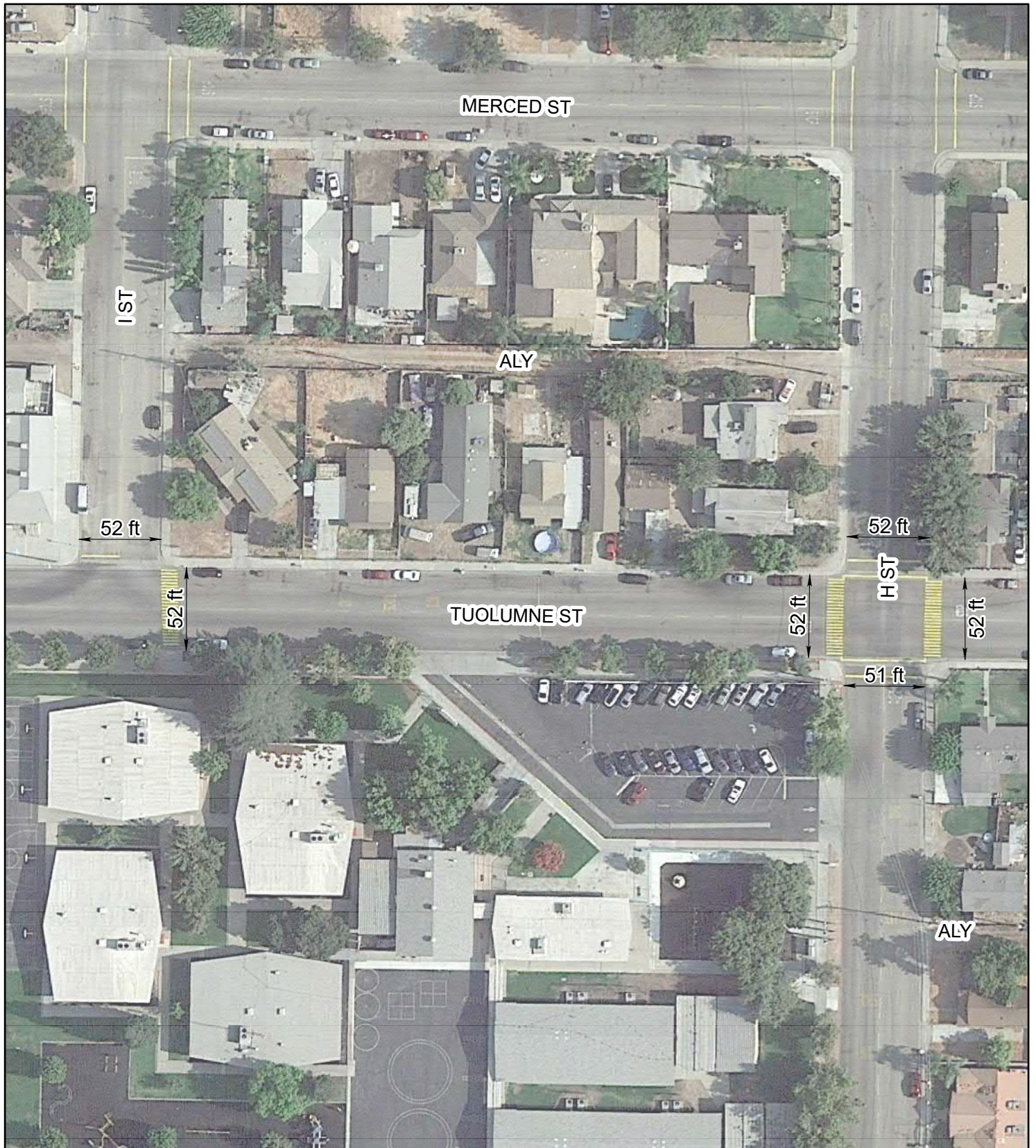


Traffic Safety Study

Cesar Chavez Elementary School

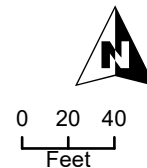


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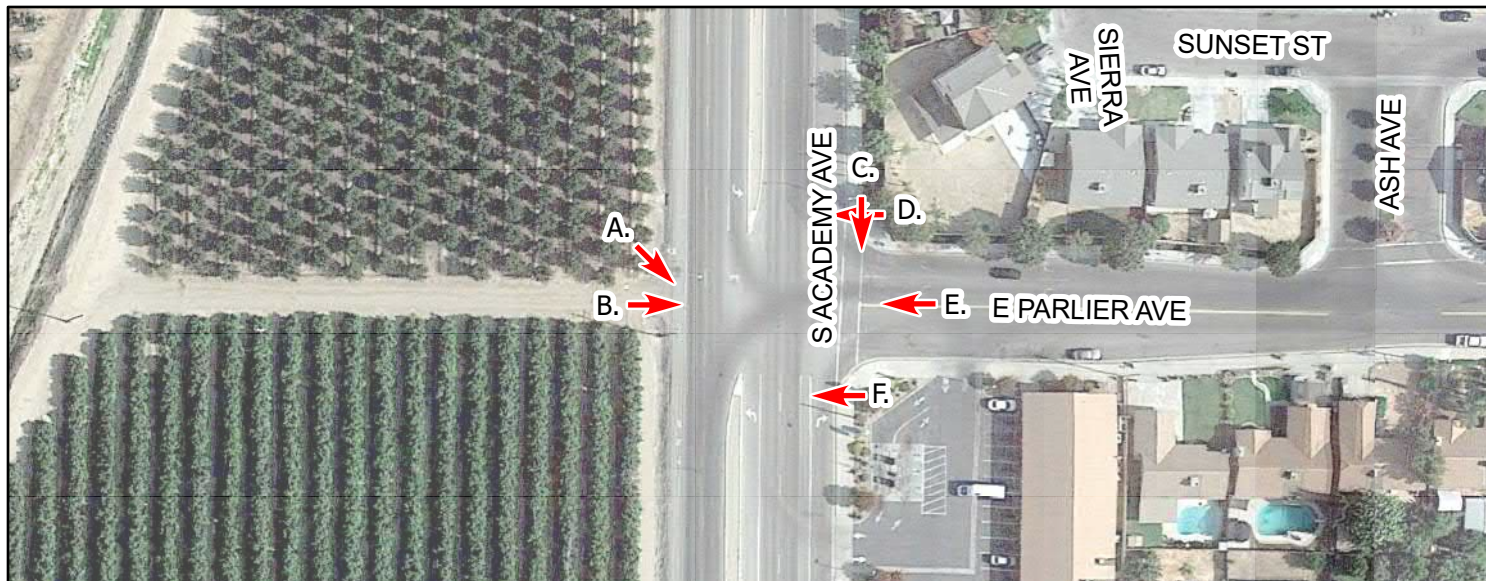


Traffic Safety Study

Chezar Chavez Elementary School



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A.



B.



C.



D.



E.

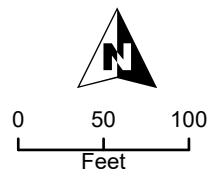


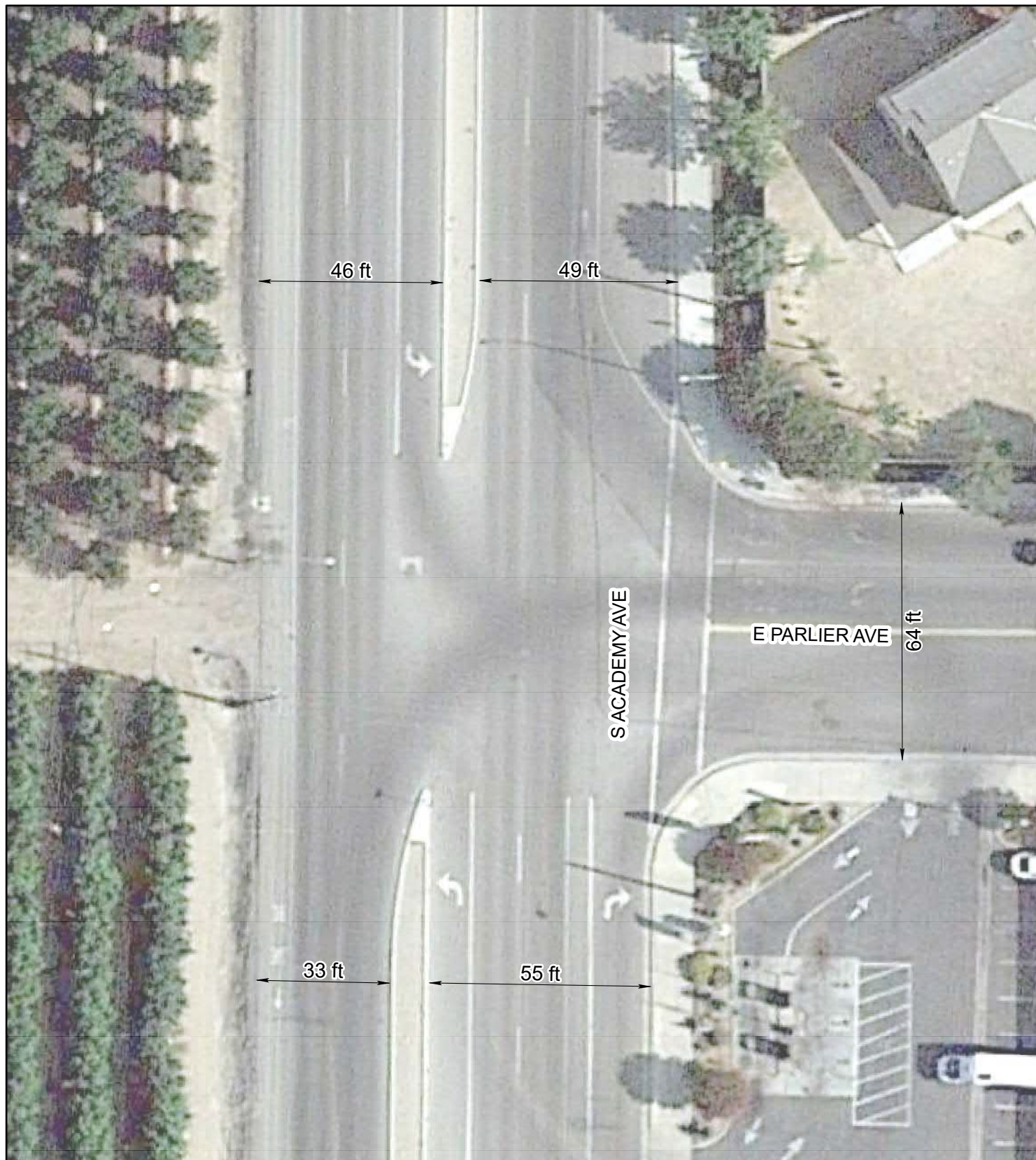
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Traffic Safety Study

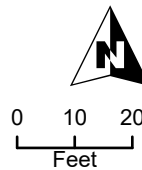
S Academy Ave and E Parlier Ave Intersection



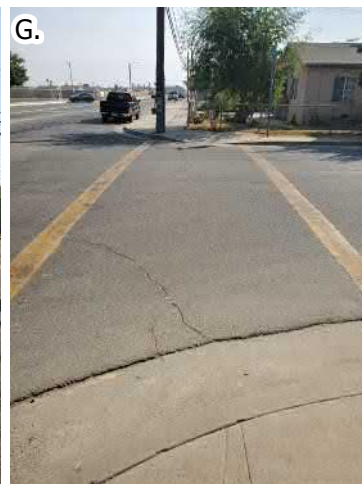
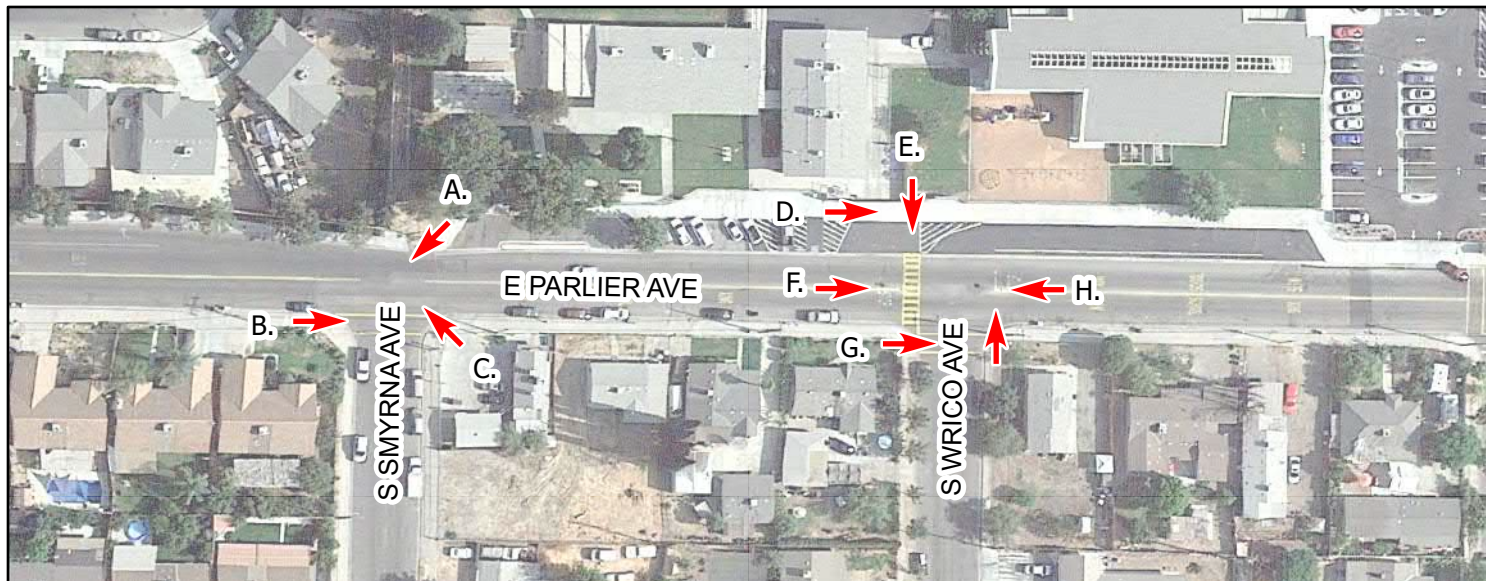


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S Academy Ave and E Parlier Ave Intersection

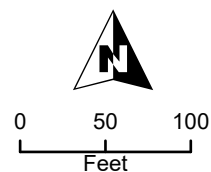


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Traffic Safety Study

John C. Martinez Elem. School Intersection

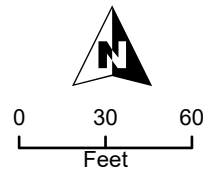


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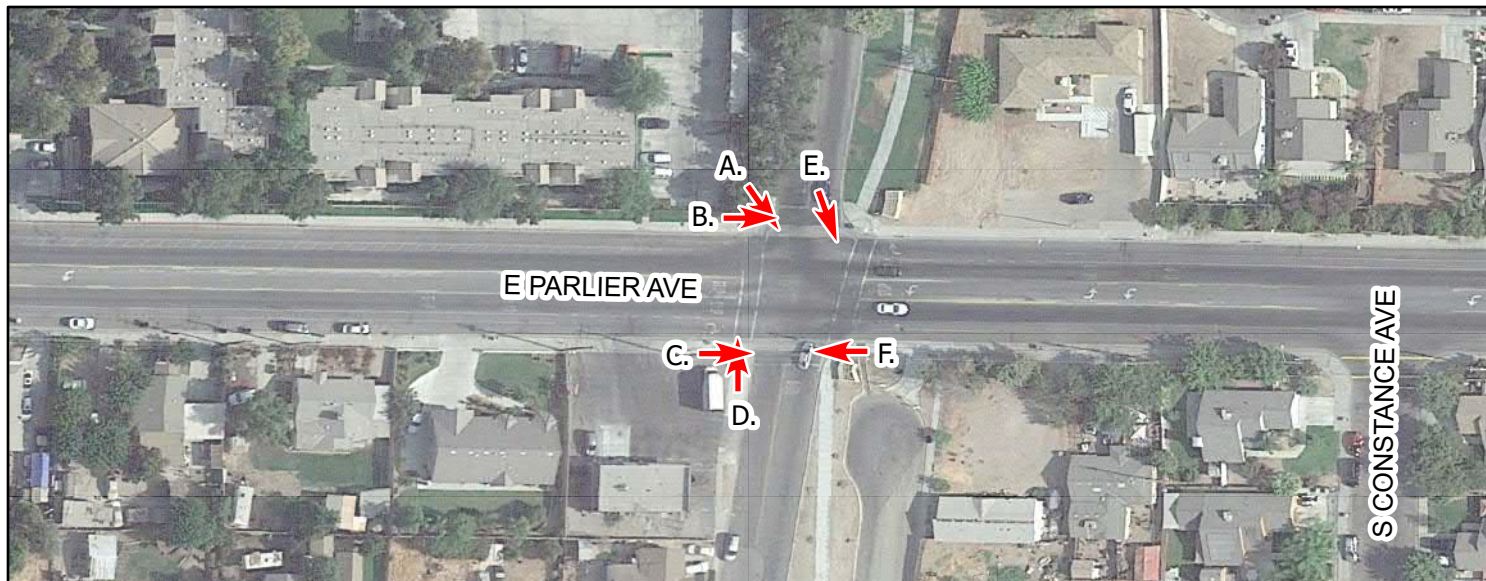


Traffic Safety Study

John C. Martinez Elem. School Intersection



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A.



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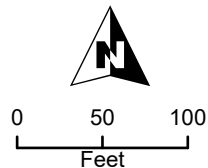


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Traffic Safety Study

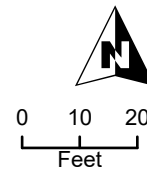
S Whitener Ave and E Parlier Ave Intersection

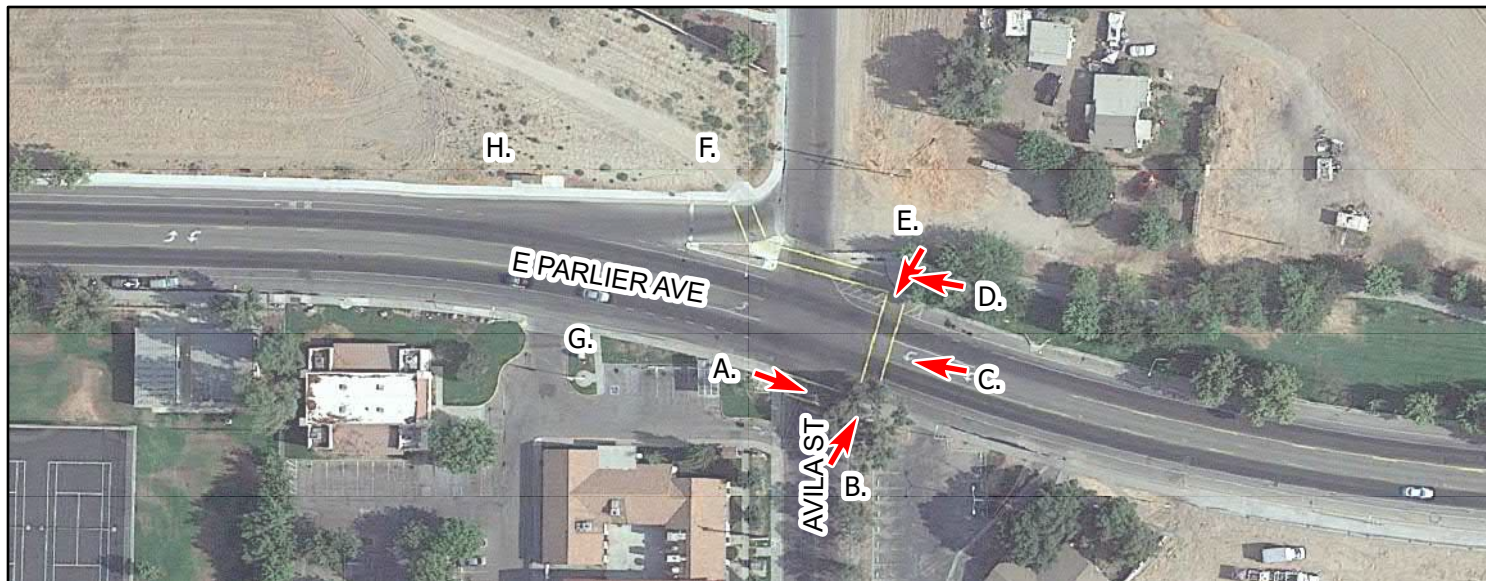




Traffic Safety Study

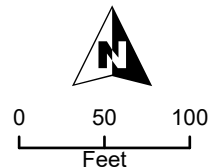
S Whitner Ave and E Parlier Ave Intersection





Traffic Safety Study

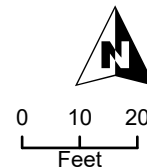
Avila St and E Parlier Ave





Traffic Safety Study

Avila St and E Parlier Ave Intersection



Yamabe & Horn
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20-189 Parlier Safety Countermeasures

Intersection ID	Intersecting Streets	Safety Concern(s)	Countermeasures Description	Estimated Cost
I-1	Manning Ave. and Academy Ave.	<ul style="list-style-type: none"> 25 total collisions at this intersection. 9 Collisions due to running of red light. 6 rear end collisions due to speeding. 	<ul style="list-style-type: none"> Install W3-3 Signal Ahead signage for Manning Avenue WB approach. Update/improve signal timing with emphasis on yellow change time and red clearance times. Check existing signal lens sizes and replace any 8 mm lenses with 12 mm lenses. Coordinate with the County of Fresno to install W3-5(45MPH) or W3-5a(45MPH) speed reduction signs for the EB approach of Manning Avenue. (Note: This countermeasure may not apply if EB Manning Ave is 50 MPH and not 45 MPH like the WB approach) Install vehicle speed feedback signs. 	N/A
I-2	Manning Ave. and Mendocino Ave.	<ul style="list-style-type: none"> 30 total collisions at this intersection. 1 Auto/Pedestrian accident resulting in injury <ul style="list-style-type: none"> 62 year old Pedestrian at fault entering during conflicting vehicle phase. 22 rear end collisions <ul style="list-style-type: none"> 4 rear ends due to running of red light. 13 rear ends due to speeding. 	<ul style="list-style-type: none"> Install W3-3 Signal Ahead signage for Manning Avenue EB and WB approaches. Strip "SIGNAL AHEAD" for lane #1 of Manning Avenue WB approach. Refresh existing lane #2 "SIGNAL AHEAD" striping. Update/improve signal timing with emphasis on yellow change time and red clearance times. Check existing signal lens sizes and replace any 8 mm lenses with 12 mm lenses. Install vehicle speed feedback signs. Upgrade existing pedestrian push buttons to current Audible Pedestrian Signal (APS) standards. 	N/A
I-3	Manning Ave. and Whitner Ave.	<ul style="list-style-type: none"> No traffic accidents recorded for this intersection for this study period. There have been safety concerns regarding NB vehicles making left turns through a high volume Manning Avenue. The total width crossed to make this movement is approximately 53 feet (two through lanes, one left turn and a median width) 	<ul style="list-style-type: none"> Modify existing median to a dual direction (major only EB & WB) left turn design similar to that at Manning Avenue and Madsen Avenue or a single direction left turn for WB only. 	N/A

Intersection ID	Intersecting Streets	Safety Concern(s)	Countermeasures Description	Estimated Cost
I-4	Manning Ave. and Newmark Ave.	<ul style="list-style-type: none"> 26 total collisions at this intersection. 15 rear end collisions 7 sideswipe collisions Collisions mainly due to speeding and red light running. 	<ul style="list-style-type: none"> Strip "SIGNAL AHEAD" for Manning Avenue EB approach lanes. Update/improve signal timing with emphasis on yellow change time and red clearance times. Check existing signal lens sizes and replace any 8 mm lenses with 12 mm lenses. Install vehicle speed feedback signs. 	N/A
I-5	Manning Ave. and Zediker Ave.	<ul style="list-style-type: none"> 16 total collisions at this intersection. 10 rear end collisions mainly due to speeding red light running. 2 right of way accidents 	<ul style="list-style-type: none"> New traffic signal improvements have been installed recently. The intersection should continue to be monitored to assess any changes to its crash frequency and crash types. Coordinate with the County of Fresno to Upgrade existing Manning Avenue WB approach "REDUCED SPEED AHEAD" signs to W3-5(45MPH) or W3-5a(45MPH) signs. Coordinate with the County of Fresno to Upgrade existing Manning Avenue WB approach W3-3 signs to Type 1 pole mounted W3-3 flashing beacon signs similar to EB approach at Manning Avenue and Academy Avenue. Install vehicle speed feedback signs. 	N/A
I-6	Tuolumne St. and Erica Ave.	<ul style="list-style-type: none"> No collisions reported for this intersection for this study period. Concerns on existing school pedestrian crossing at this intersection. Existing parking along the north and south sides of Tuolumne Street causes sight distance issues for children entering and crossing the road. The existing horizontal curve alignment of the eastbound approach compounds the sight distance issue. 	<ul style="list-style-type: none"> Crosswalk Option 1: Perform a sight distance triangle study and restrict parking on both sides of the road accordingly with no parking signs and painted red curbs. Crosswalk Option 2. Construct bulb out at the south side of the cross walk. Update all existing school zone traffic control signage and striping to current CAMUTCD standards. Install solar powered RRFB pedestrian crossing assembly. 	N/A

Intersection ID	Intersecting Streets	Safety Concern(s)	Countermeasures Description	Estimated Cost
I-7	Young Ave. and Mendocino Ave.	<ul style="list-style-type: none"> 4 total collisions at this intersection. 2 pedestrian involved accidents 2 rear end collisions due to improper turns 	<ul style="list-style-type: none"> Perform a sight distance triangle study and restrict parking on both sides of the road accordingly with no parking signs and painted red curbs. Clear or modify median landscaping within sight distance triangle. 	N/A
I-8	Academy Ave. and Parlier Ave.	<ul style="list-style-type: none"> 12 total collisions at this intersection. 2 pedestrian involved accidents, both fatal. Other collisions consists of rear ends (5), broadside (1), head-on (1), sideswipe (2) and hit object (1). <ul style="list-style-type: none"> Causes of these accidents were mainly due to right of way conflicts or improper turns. 	<ul style="list-style-type: none"> According to the proposed Traffic Impact Analysis for the Proposed GP Amendment and Sphere of Influence Expansion to the City of Parlier study performed in March 8, 2009 this intersection is projected to meet Warrant 3 for traffic signals in 2030. A traffic signal will help with the high frequency of right of way and turning related collisions. A new traffic signal should provide APS push buttons for pedestrian phases. 	N/A
I-9	Parlier Ave. and Whitner Ave.	<ul style="list-style-type: none"> 10 total collisions at this intersection. 5 pedestrian involved accidents. 5 rear end collisions. Majority of collisions due to speeding or right of way conflicts. 	<ul style="list-style-type: none"> Add "STOP AHEAD" striping for the NB and SB approaches. Add W3-1 advance warning signs to all approaches. Install vehicle speed feedback signs. 	N/A
I-10	Parlier Ave. and Whitner Ave.	<ul style="list-style-type: none"> 2 total collisions at this intersection. 1 pedestrian involved accidents due to speeding. 1 broadside collision due to improper turn. 	<ul style="list-style-type: none"> Add "STOP AHEAD" striping and W3-1 advance warning signs for the NB and SB approaches. Install vehicle speed feedback signs. 	N/A

Segment ID	Segment Street	Safety Concern(s)	Countermeasures Description	Estimated Cost
S-1	Tuolumne St. from J St. to H St.	<ul style="list-style-type: none"> No collisions reported for this segment for this study period. Concerns on existing school pedestrian crossing at Tuolumne Street and I Street. Existing parking along the north and south sides of Tuolumne Street causes sight distance issues for children entering and crossing the road. 	<ul style="list-style-type: none"> Crosswalk Option 1: Perform a sight distance triangle study and restrict parking on both sides of the road accordingly with no parking signs and painted red curbs. Crosswalk Option 2. Construct bulb out at both sides of the cross walk. Update all existing school zone traffic control signage and striping to current CAMUTCD standards. 	N/A
S-2	Parlier Ave. from Sunnyside Ave. to Milton Ave.	<ul style="list-style-type: none"> 6 collisions reported for this segment. 2 were pedestrian involved accidents. The segment is along the frontage of John C. Martinez Junior High School and there are concerns for student/pedestrian safety. 	<ul style="list-style-type: none"> Construct bulb out at north side of the crosswalk at Wrico Avenue. Update all existing school zone traffic control signage and striping to current CAMUTCD standards. Install solar powered RRFB pedestrian crossing assembly. Remove the non high visibility school crosswalk at Milton Avenue and consolidate it to the high visibility crosswalk just west at Wrico Avenue. Provide proper public information and notification for this change. 	N/A

APPENDIX E

Public Workshop Summaries

CITY OF PARLIER TRAFFIC CALMING & SAFETY ENHANCEMENT PLAN

WORKSHOP NO. 1 SUMMARY

JULY 1, 2020

On July 1, 2020, the consultant team for the City of Parlier's Traffic Calming & Safety Enhancement Plan presented at a public workshop held in conjunction with the Eastside Transportation Corridor Improvement Study (ETCIS). The workshop was held online via Zoom in consideration of state and local guidelines related to the COVID-19 pandemic. Presentation content was delivered in both English and Spanish. The digital platform allowed for each project team to present background on their respective tasks as well as hold an interactive question and answer session designed to solicit feedback on goals for the Manning Avenue corridor and beyond.

The purpose of this memo is to provide a summary of this outreach effort and includes:

- A summary of the project presentation.
- A summary of the feedback given via the Zoom web input tool.

SUMMARY OF PRESENTATION

The presentation given by the City of Parlier Traffic Calming & Safety Enhancement Plan (Plan) consultant team focused on introducing the Plan along with its background, goals, and projected timeline. The agenda included an introduction of the project team, the objectives and goals of the Plan, an overview of the project scope, the Plan's relationship to the ETCIS, a summary of project status, data collected so far, next steps, and future opportunities to participate.

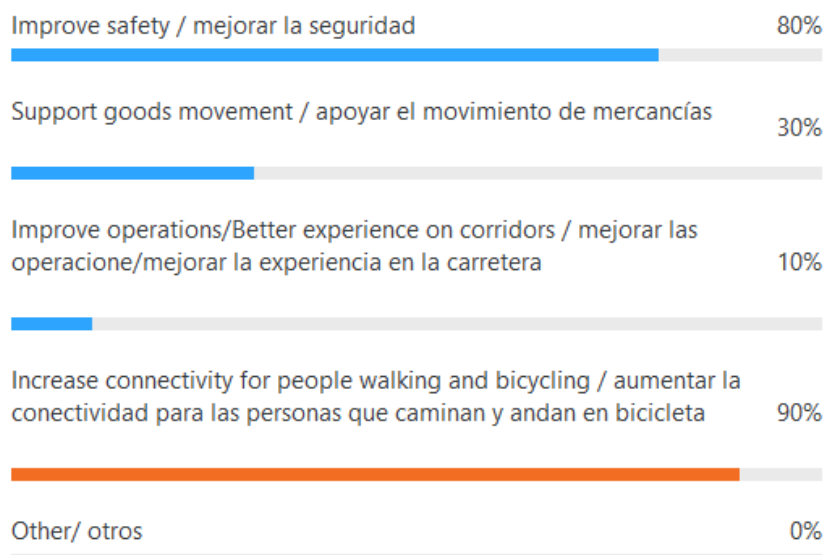
During these discussions, the consultant team shared with the public that the Plan will address excessive speed, irregular intersections, and accident-prone areas. The relationship to the ETCIS was also explained, citing shared goals, overlapping Manning Avenue focus area, and coordinated efforts with the goal of reducing redundancies.

SUMMARY OF STAKEHOLDER FEEDBACK

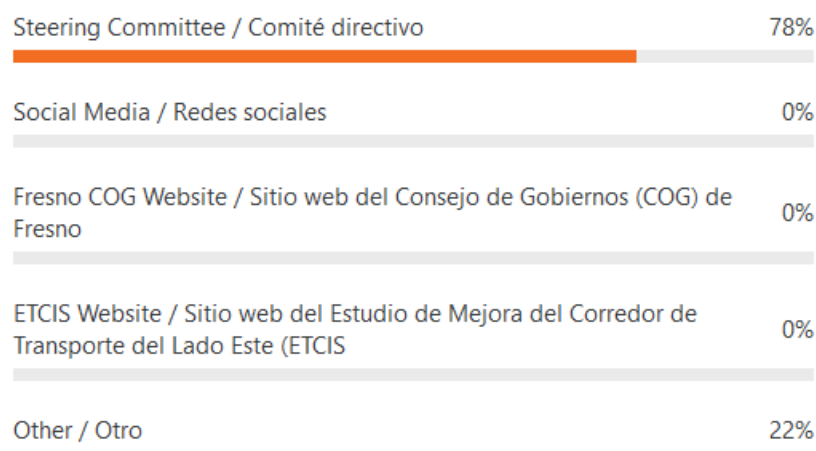
INTERACTIVE POLLING RESULTS

During the presentation, questions designed to gather feedback from participants focused on their preferences for the future of the project area were shared. The responses provided valuable feedback relevant to both the ETCIS and the Parlier Traffic Calming & Safety Enhancement Plan. Each question was presented via an interactive web polling tool available through the Zoom platform. The results of each question are summarized below:

1. WHAT ARE YOUR GOALS FOR THE ACADEMY CORRIDOR?



2. HOW DID YOU HEAR ABOUT TONIGHT'S WORKSHOP?



ADDITIONAL FEEDBACK AND DISCUSSIONS

In addition to interactive polling, the consultant teams held discussions and solicited comments from the workshop participants. Each question and a list of responses are summarized below. The responses provided by stakeholders helped inform future outreach locations and methods, as well as design recommendations described in the Plan.

1. WHAT WOULD YOU LIKE THE CORRIDOR TO LOOK LIKE IN 10 YEARS?

- Better bike facilities along the corridors and better connections (e.g., 4-lane to 2-lane road transitions).
- Improved safety for active transportation users.

2. WHAT AREA SHOULD WE FOCUS ON?

- Complete streets.
- Disadvantaged unincorporated communities (DUC) – more connection from the corridors to DUCs and/or labor camps that may be just off the corridor. Increase access to services and active transportation opportunities. With a focus on innovative transit options and improvements that respond to heat, rain/flooding, and school routes.
- Improved lighting along the corridors.
- Ensure that adequate right-of-way is reserved for bike lanes and at intersections provide space for bike pockets.
- Interagency coordination.
- Shoulders are very inconsistent and not free of debris. Pavement not level.
- Funding and future maintenance for new facilities.
- Ensure that community members provide feedback. Email surveys, grocery store survey, etc.

CITY OF PARLIER TRAFFIC CALMING & SAFETY ENHANCEMENT PLAN WORKSHOP NO. 2 SUMMARY

NOVEMBER 12, 2020

On October 17th, the consultant team for the City of Parlier's Traffic Calming & Safety Enhancement Plan conducted a public workshop. The workshop was held at R-N Market, located at 13639 E Manning Ave, Parlier, CA 93648 between the hours of 10:00 A.M. and 12:00 P.M. In consideration of state and local guidelines related to the COVID-19 pandemic, the event was conducted outdoors, and masks were required. The interactive poster format allowed stakeholders to gather only for the time it took to participate in the pre-planned activities at a location they were already frequenting.

The primary activity consisted of an interactive poster where community members responded to a specific prompt. The interactive poster was designed to gain an understanding of which areas within the City residents feel unsafe walking or biking. A secondary activity included a written survey, intended to solicit an understanding of the community's preferred outreach methods.

The purpose of this memo is to provide a summary of these outreach efforts and includes:

- A summary of the poster exercise.
- Photo documentation of the poster exercise.
- A summary of the community survey exercise.

SUMMARY OF POSTER ACTIVITY

The poster activity directed residents to provide feedback where they felt unsafe walking and biking around the City. Each participant was provided with colored round labels to place in areas they felt needed safety improvements. Blue dots represented areas unsafe for cyclists and orange dots represented areas unsafe for pedestrians.

Approximately 95 people were engaged to participate in the poster activity and approximately eight actively took part. Those unable to participate were given a printed copy of the workshop announcement to take with them. The announcement provided them with a link to an online interactive mapping tool provided by Fresno Council of Governments designed to capture community feedback on traffic related issues. Some of those unable to participate declined to as they reside outside of the City. Those that did participate often identified multiple locations for improvement.

Most locations identified as being unsafe are located around major intersections along Manning Avenue. There was an even amount of locations marked as unsafe for both pedestrians and cyclists along Manning Avenue. There were three additional pedestrian safety issues marked at Zediker and Tuolumne, along Zediker near the Maxco building, and along Avila Street between Parlier Avenue and South Avenue. There

were two additional locations marked as unsafe for cyclists along Costa Avenue near Parlier Avenue and in the southeastern part of the city along Bethel Avenue. Many comments were related to the lack of facilities or the condition of the facilities (e.g., debris in the right-of-way).

Some residents declined to participate in the poster activity but did provide helpful commentary on cyclist and pedestrian safety. Noteworthy commentary includes the following suggestions for safety improvements:

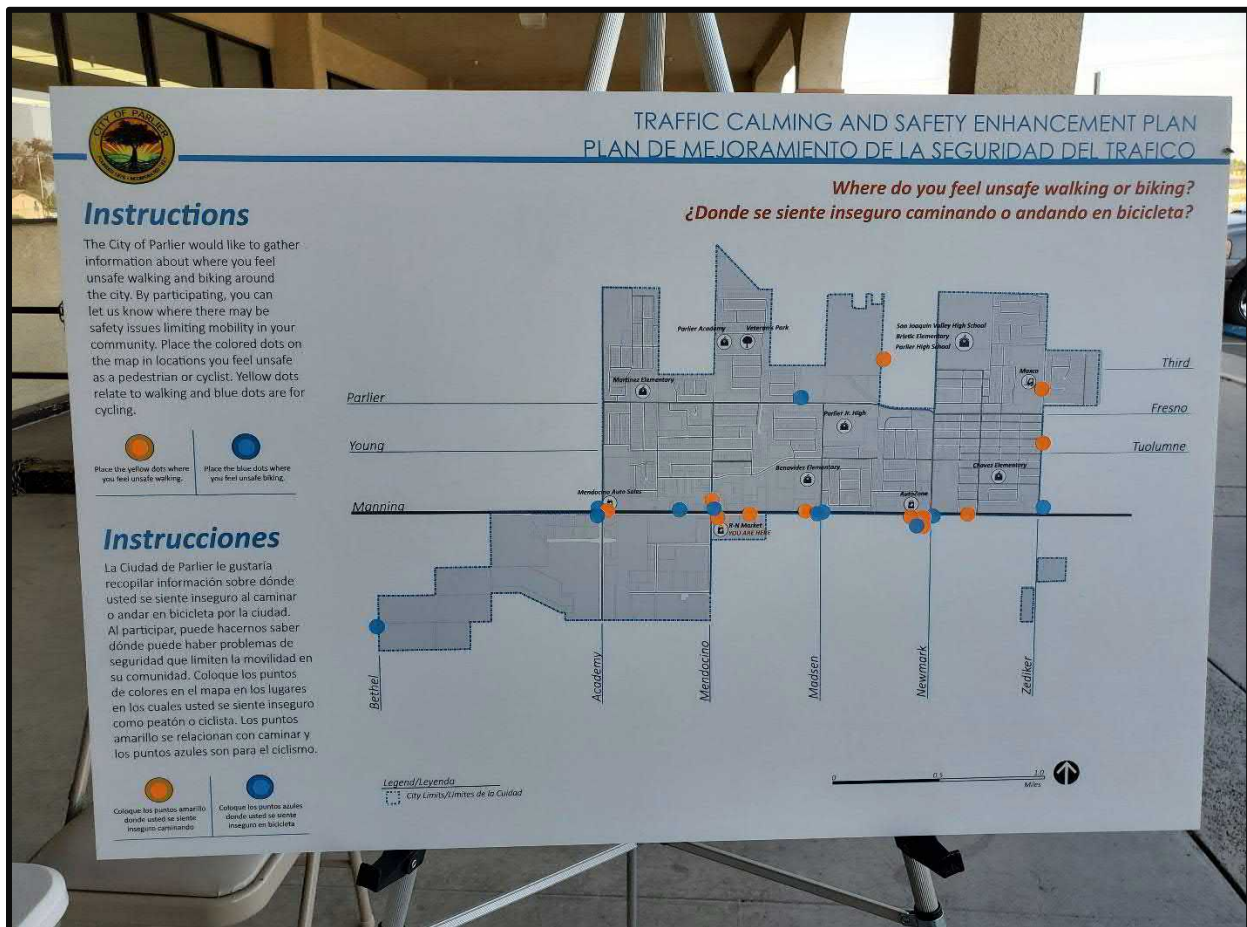
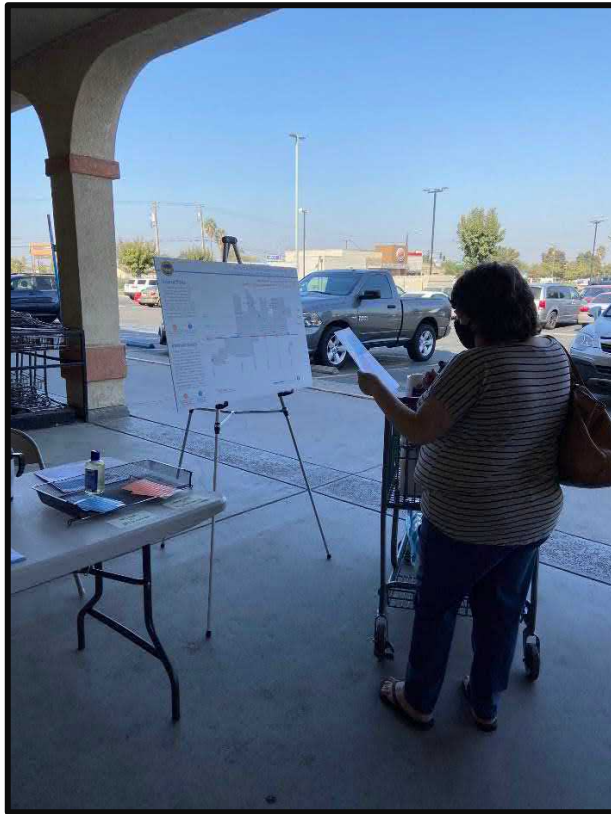
- Connect the trail to new homes north of Zediker.
- More street lighting is needed.
- Automobiles often do not stop for pedestrians in the crosswalk on Mendocino between Manning and Tuolumne.
- There is a general need to keep the street shoulders/sidewalks clear of debris.

Photos of community engagement and the results of the poster activity can be seen in the images that follow.

PHOTO SUMMARY OF POSTER EXERCISE





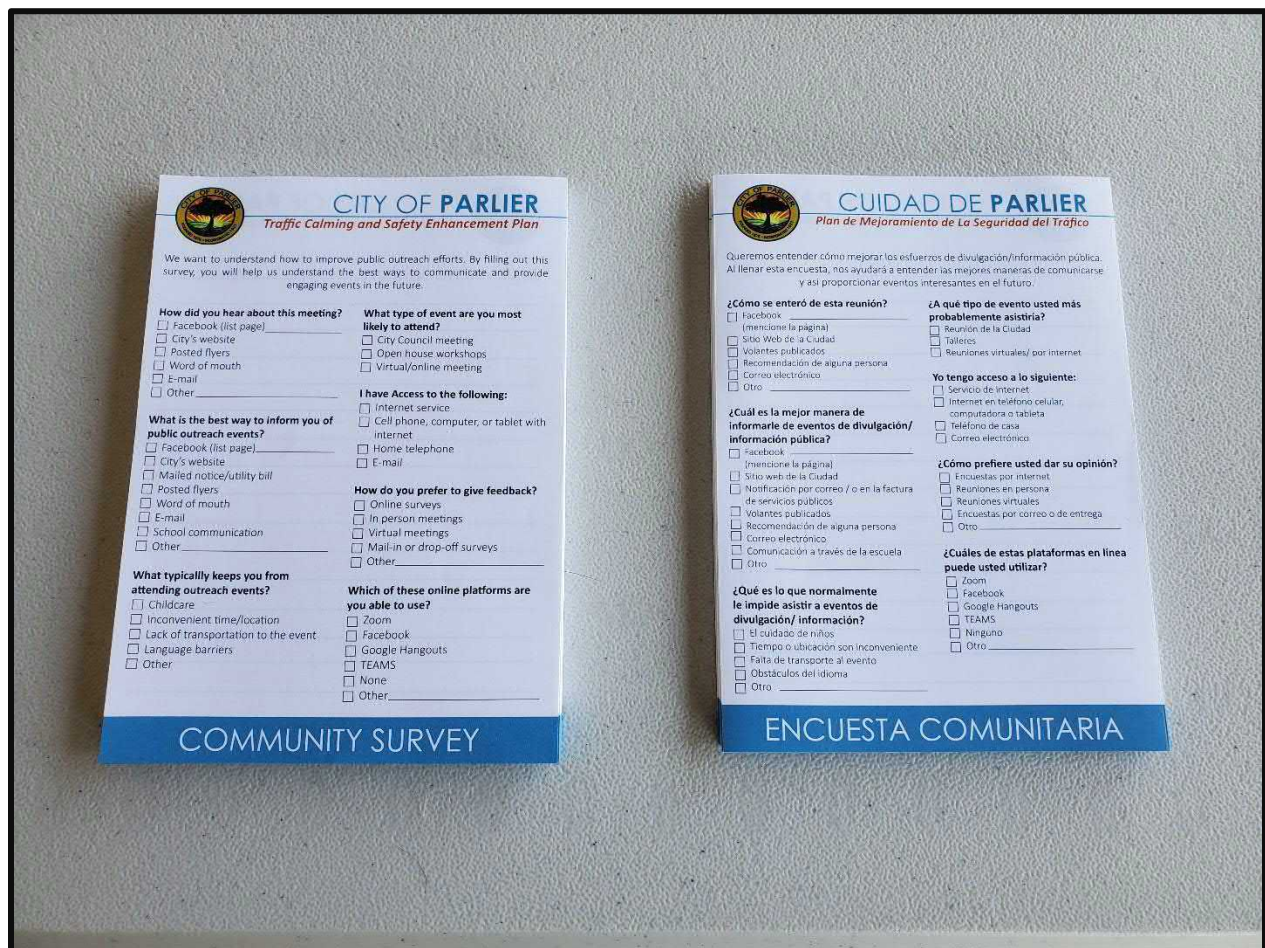


SUMMARY OF COMMUNITY SURVEY

The community survey contained seven questions related to public outreach methods, activities, and platforms. The intent of the survey was to help the consultant team and the City understand the best way to communicate with residents and provide engaging outreach events in the future. Approximately 95 community members were approached to take the community survey and three participated. Those unable to complete a survey during the event were given a copy and encouraged to submit it at City Hall as their schedule allows. While these surveys contain valuable information, the sample size collected was not large enough to form a comprehensive snapshot of community preferences.

Unused surveys were given to the City to be passed out at its discretion with the intent of gathering additional responses. There is also an opportunity for the survey to be digitized and distributed through an online platform as well as in hard copy format at future City events. Both English and Spanish surveys were available, as shown in the community survey photo below.

COMMUNITY SURVEY PHOTO



APPENDIX F

Benefit to Cost (B/C) Ratio Calculation Methodology

Appendix D: Benefit/Cost Ratio Calculations

This appendix includes the Benefit/Cost methodology used in the Caltrans calls-for-projects in the HSIP programs. The HSM, Part B - Chapter 7, includes more details on conducting Economic Appraisal for roadway safety projects. Local agencies will be required to utilize the HSIP Analyzer to calculate the B/C ratio as part of their application for HSIP funding. Starting in Cycle 7 call for projects, the fatality and severe injury costs have been combined for calculating the benefit. Because fatality figures are small and are a matter of randomness, this change is being made to reduce the possibility of selecting an improvement project on the basis of randomness.

$$1) \text{ Benefit (Annual)} = \sum_{s=0}^3 \frac{CRF \times N \times CC_{ave}}{Y}$$

- CRF : Crash reduction factor in each countermeasure.
- S : Severity (0: PDO, 1: Minor Injury, 2: Injury, 3: Severe Injury/Fatal). See the below table.
- N : Number of Crashes, in severity levels, related to selected countermeasure.
- Y : Crash data time period (Year).
- CC_{ave} : Crash costs in severity levels.

Severity (S)	Crash Severity *	Location Type	Crash Cost ***
3	**Fatality and Severe Injury Combined (KA)	Signalized Intersection	\$1,590,000
3		Non Signalized Intersection	\$2,530,000
3		Roadway	\$2,190,000
2	Evident Injury – Other Visible (B)		\$142,300
1	Possible Injury–Complaint of Pain (C)		\$80,900
0	Property Damage Only (O)		\$13,300

* The letters in parenthesis (K, A, B, C and O) refer to the KABCO scale; it is commonly used by law enforcement agencies in their crash reporting efforts and is further documented in the HSM.

** Figures were calculated based on an average Fatality (K) / Severe Injury (A) ratio for each area type, a crash cost for a Fatality (K) of \$7,219,800, and a crash cost of a Severe/Disabling Injury (A) of \$389,000. These costs are used in the HSIP Analyzer.

*** Based on Table 7-1, Highway Safety Manual (HSM), First Edition, 2010. Adjusted to 2020 Dollars.

$$2) \text{ Benefit (Life)} = \text{Benefit (annual)} \times \text{Years of service life}$$

$$3) \text{ Benefit/Cost Ratio (each countermeasure): } \text{Benefit Cost Ratio}_{(CM)} = \frac{\text{Benefit (Life)}_{(CM)}}{\text{Total Project Cost}_{(CM)}}$$

$$4) \text{ Benefit/Cost Ratio (project): } \text{Benefit/Cost Ratio (Project)} = \frac{\sum_{CM=1}^3 \text{Benefit (Life)}_{(CM)}}{\text{Total Project Cost}}$$