Eleventh Street Corridor
Multimodal and Engineered Feasibility Study

Prepared for the City of Lakeport

Submitted by
W-Trans

June 30, 2020

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Executive Summary

Project Purpose

This study was undertaken to analyze alternatives and develop recommendations to enhance transportation access and safety along the Eleventh Street corridor in the City of Lakeport. The analysis focused on improving pedestrian and bicycle facilities and access to transit, while ensuring that the needs of vehicular traffic are adequately served.

Study Area

The study area includes Eleventh Street from SR 29 at the western limits of the City of Lakeport east to North Main Street. While focusing on improvements along Eleventh Street, parallel streets were also considered for improvements in the eastern section of the corridor due to the constrained environment along Eleventh Street.

Existing Conditions

Eleventh Street includes two travel lanes along the entire corridor, and the central section of the corridor includes a two-way left turn lane (TWLTL). Sidewalks are intermittent and of variable quality, as they are narrow and partially obstructed by utility poles at many locations. Bike lanes are present along Eleventh Street from SR 29 to Pool Street.

The section of the corridor from Pool Street to North Main Street features mostly residential development on adjacent parcels. This section is the primary access route to the 11th Street Plaza shopping center from the center of Lakeport and also the most constrained part of the corridor.

Traffic volumes along the corridor range from approximately 3,800 to 10,200 vehicles per day. The 85th percentile speeds range from 39 mph at the western end of the corridor to 30 mph at the eastern end. The corridor had a relatively low rate of collisions compared to statewide averages, with the exception of the Eleventh Street/North Forbes Street intersection, which had a rate more than three times the statewide average. Traffic operations were analyzed at seven intersections, and all were found to have acceptable levels of delay.

Community Engagement

The study included a robust community engagement effort to solicit input from Lakeport area residents, especially those living along the corridor and associated with businesses in the area. The engagement strategies included:

- Two community workshops – 35 attendees.
- Online interactive map – 253 comments submitted.
- Resident door-to-door contacts – 15 interviews.
- Business phone contacts – 12 interviews.
- Tables at "National Night Out" and County Fair – 80 contacts.
- Regular meetings with the Technical Advisory Group, including representatives from the City of Lakeport Community Development and Public Works Departments, Lake Area Planning Council, Lake Transit, and Lake County Department of Public Works.
- Presentations to City of Lakeport Traffic Safety Advisory Committee, Lake Area Planning Council Technical Advisory Committee, and Lakeport City Council.

Key Issues

Numerous issues were identified through the technical analysis and input from the public and other stakeholders:

Pedestrian Access – Sidewalks are intermittent throughout the corridor, impacting pedestrian access, especially for people with disabilities. Where sidewalks exist, they are partially obstructed by utility poles. Cross streets also lack continuous sidewalks.

Street Crossings – Residents expressed concerns about safety crossing at various intersections along the Eleventh Street corridor.

Bicycle Access – No designated bicycle facilities exist between Pool Street and North Main Street. Residents expressed concerns about the safety of bicycling along that part of the corridor given the volume and speed of vehicle traffic.

Traffic Safety – The Eleventh Street/North Forbes Street intersection was identified as the site of a high number of collisions.

Right-of-Way – The right-of-way for the roadway and sidewalk is a prescriptive easement, which may result in challenges in implementing improvements. Based on previous analysis conducted by the City of Lakeport, a right-of-way of 55 feet was assumed to be the maximum space available for all cross-section alternatives.

Alternatives

Five cross-section alternatives were developed for the segment from Pool Street to North Main Street. While improving pedestrian access was identified as the highest priority for the study, the alternatives each prioritized different objectives in addition to pedestrian access, including bicycle access and vehicle circulation.

Recommendations

The Recommended Plan includes the following elements:

Segment 1 (SR 29 to U.S. Post Office)

- Added buffer to existing bike lanes.
- Paved pedestrian path along the south side of Eleventh Street from SR 29 to Central Park Avenue.
- Continuous sidewalks along the north side of Eleventh Street from Central Park Avenue to the eastern end of the segment.

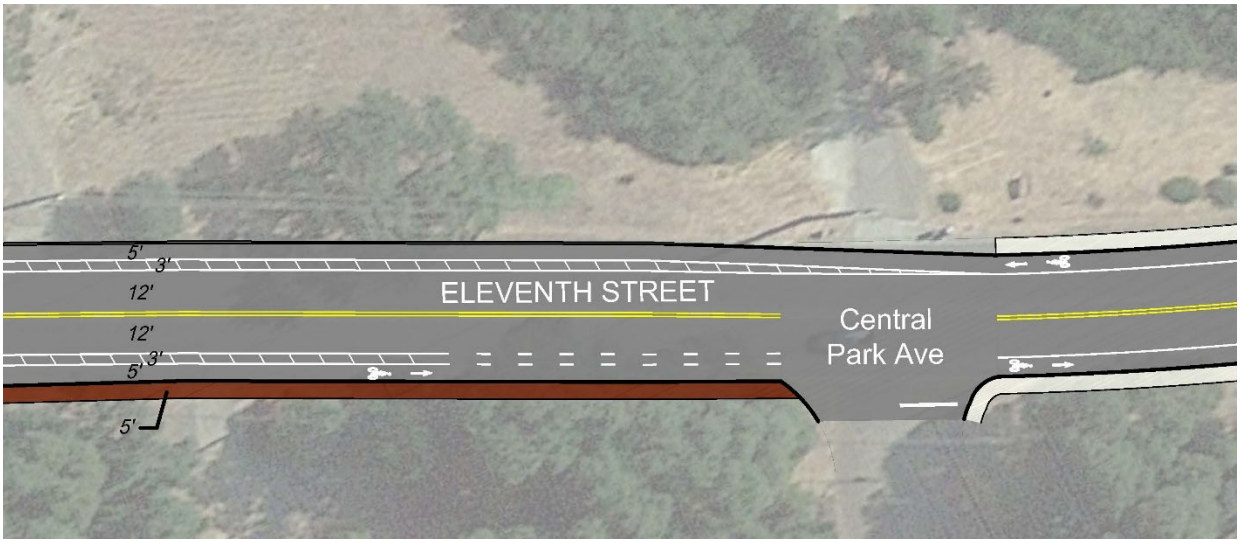
Segment 2 (U.S. Post Office to Pool Street)

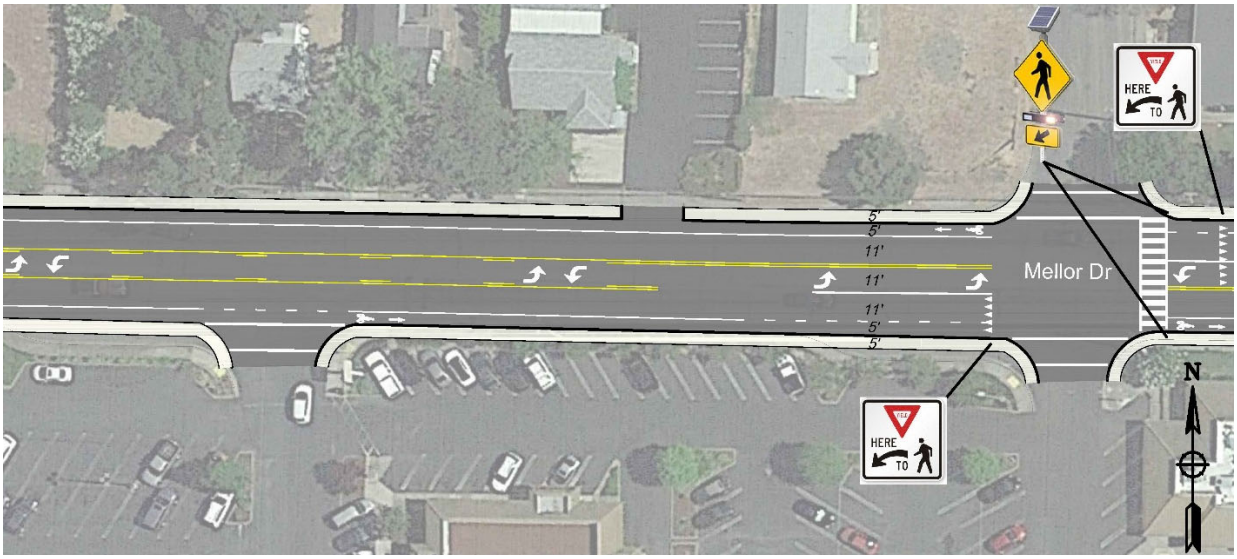
- Realignment of curbs, restriping of bike lanes, and addition of crosswalks along the shopping center frontage to establish clearly defined paths of travel for vehicles, pedestrians, and bicyclists.
- Narrowing of travel lanes and two-way left turn lane.
- Continuous sidewalks along north side of Eleventh Street.
- Improved pedestrian crossings, including a flashing beacon at the crossing at Mellor Drive.

Segment 3 (Pool Street to North Main Street)

- Widening of street from current paved width of 32 feet to 35 feet.
- Restriping of roadway to establish two 12-foot travel lanes and an 11-foot two-way left turn lane.
- Construction of curb and gutter and completion of sidewalks along both sides of the street, including curb ramps at intersections.
- Relocation of utility poles so they will not obstruct pedestrian access.
- Construction of mini-roundabout at intersection of Eleventh Street/North Forbes Street.
- Implementation of bicycle boulevard on Tenth Street from North Forbes Street to Pool Street, including construction of multi-use path to connect Manzanita Street to Pool Street.
- Improved pedestrian crossings, including flashing beacons at the crossings at Pool Street and High Street.
- Provision of pedestrian-scale lighting at crosswalks.

Sample sections of the concept plan for the Recommended Plan are presented in Plate 1.





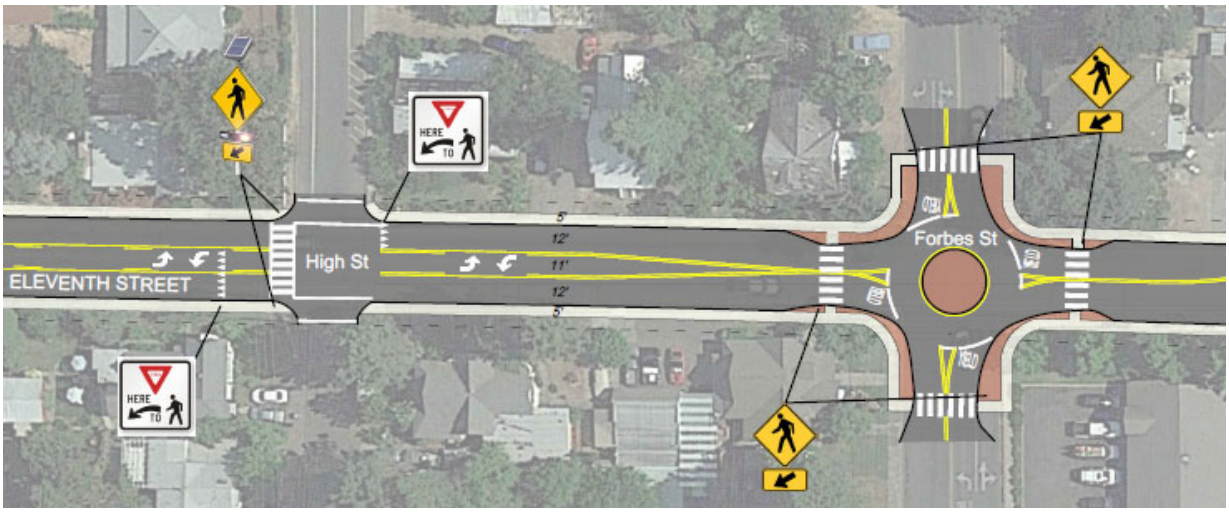


Plate 1 Sample Sections of Recommended Plan (see Appendix H for full concept plan)

Conclusions and Implementation Issues

The estimated cost of design and construction of the Recommended Plan is $3,545,500. The time frame for implementation will depend on several factors, including the acquisition of easements where needed and securing the funding, which will largely come from competitive grants.

Introduction and Setting

Introduction

Eleventh Street is one of the primary east-west routes for vehicular traffic through the City of Lakeport, a key roadway connecting State Route (SR) 29 to the center of Lakeport and the local street network. In the interest of serving all users of the corridor, the Lake Area Planning Council (Lake APC) secured a State Highway Account Sustainable Transportation Planning Grant to analyze alternatives to improve multimodal transportation options and safety along the Eleventh Street corridor. This project was undertaken to develop projects in support of statewide and regional transportation goals and policies as well as County and local policies from various efforts including the 2016 *Active Transportation Plan for Lake County* and the City of Lakeport's General Plan.

Overall Project Objectives

The stated objectives for the project were as follows:

- Utilize existing right-of-way on Eleventh Street to maximum public benefit.
- Provide multi-modal access through the corridor from SR 29 to Main Street.
- Minimize impact to adjacent land uses, in particular to the constrained area east of Pool Street.
- Improve safety by planning for pedestrian improvements (and street crossings) that are free of obstacles, are of adequate width, and meet Americans with Disabilities Act (ADA) standards.
- Provide a bicycle route to connect Scott Valley Road and SR 29 with Main Street and the downtown core.
- Improve access to public transit.
- Identify a preferred location for an intersection/junction at Eleventh Street with a planned Collector Street that will provide future access to the Corridor from northern residential neighborhoods and Alden Avenue.

Study Area

The study area includes primarily Eleventh Street from SR 29 to North Main Street, a distance of just under one mile. While the portion of the study area from SR 29 to Pool Street focuses exclusively on Eleventh Street, the segment between Pool Street and North Main Street includes additional streets that could support improved east-west circulation, bounded by Clearlake Avenue to the north and Seventh Street to the south. Eleventh Street is one of the few east-west routes through the City of Lakeport and other than Lakeport Boulevard has the only interchange with SR 29 that provides access to the City.

Project Partners

Lake APC selected the consultant team to develop recommendations to enhance the Eleventh Street corridor. The consultant team led the preparation of the plan, conducted the technical analysis, and developed and analyzed the alternatives that were considered for the project. Additionally, they led the community engagement effort to solicit input from community stakeholders. Lake APC also established a Technical Advisory Group (TAG) to guide the project and provide ongoing feedback to the consultant team. TAG members included representatives from the City of Lakeport Community Development and Public Works Departments, Lake County Public Works Department, Lakeport Traffic Safety Advisory Committee, Lake Transit, and Caltrans District 1.

Planning Context

The City of Lakeport and Lake County have developed and adopted previous plans that include policies related to multimodal mobility and safety as well as recommendations for improvements along the Eleventh Street corridor. Below is a brief summary of those plans and the recommendations that are relevant to the current study.

City of Lakeport General Plan 2025 (Adopted in 2009)

The City of Lakeport General Plan (2009) includes numerous provisions for enhancing pedestrian and bicycle facilities. The Plan notes the lack of sidewalks in many neighborhoods and identifies general priorities, including providing sidewalks along both sides of streets leading to public transit facilities. To move toward improved sidewalk coverage, the City requires sidewalks as part of all new development as well as the inclusion of sidewalks or pedestrian paths in all new street improvements. To identify priority sidewalk locations, the Plan calls for a citywide inventory and map of existing sidewalks in relation to schools, parks, and major arterials. To date, the City does not have a comprehensive map of pedestrian facilities.

To encourage greater bicycle use, the General Plan calls for an increase the number of Class I and II facilities as well as bike storage at public transit facilities, commercial/office developments and schools. Requirements for new development projects were identified as a means to move toward this expansion of the bicycle facilities network. End-of-trip facilities were also recognized as an important part of bicycle-supportive infrastructure, and bicycle parking is required as part of all new parking facilities in excess of five spaces. Bikeways along the entire Eleventh Street corridor were included in the City's bikeway plan map that is included in the General Plan. Several streets intersecting with Eleventh Street were also identified for new bikeways: Central Park Avenue, Mellor Drive, Forbes Street, and the proposed Alden Avenue extension.

The General Plan also calls for an amendment to the Zoning Ordinance to require such bicycle-related amenities as bike racks/storage facilities for commercial/office, industrial and high-density residential developments as well as park facilities. Table 1 lists the key General Plan policies and programs related to pedestrian and bicycling infrastructure.

Table 1 – Lakeport General Plan Transportation Element Policies	
General Plan Policy/ Program Number	**Policy/Program Heading and Text**
Policy T 21.1	**Improve the Bikeways System.** Create and maintain a safe, convenient and effective bikeway system.
Program T 21.1-a	Implement the bikeway route system.
Program T 21.1-e	Construct bikeways according to the standards established by Caltrans Planning and Design Criteria for Bikeways.
Policy T22.1	**Dedication of Right-of-Way.** Require the dedication of land for the development of bicycle facilities in all new major land developments or for proposed developments located in an area designated as part of the Bikeways Plan.
Policy T 23.1	**Update Bikeways Plan.** Update the Bikeways Plan within five years of adoption of the Transportation Element consistent with the Regional Bikeway Plan developed by the Lake County/City Area Planning Council.
Policy T 25.1	**Improve Pedestrian Facilities.** Create and maintain a safe and convenient pedestrian system.
Program T 25.1-b	Permit, where appropriate, asphalt pedestrian pathways in low density single family residential areas in lieu of curb, gutter and sidewalk configurations taking into account community sentiment, frontage improvements on adjacent streets, potential for nearby additional infill development., soils conditions, and other relevant factors.
Policy T 26.1	**Sidewalks in New Street Improvements.** Include sidewalks or pedestrian paths in all new street improvements.
Policy T 29.1	**Handicapped Accessibility.** Improve accessibility for the handicapped.
Program T 29.1-a	Continue to review all projects for handicapped access and require the installation of curb cuts, ramps and other improvements facilitating handicapped access in conformance with Title 24 of the California Administrative Code. Upgrade existing facilities as required by Title 24.
Policy T 30.1	**Street Lighting.** Consider streetlight installation, designed for pedestrian rather than vehicular lighting requirements in areas, where moderate to heavy pedestrian traffic is expected and to improve safety.
Policy T 33.1	**Additional Sidewalks in Existing Residential Areas.** The City shall endeavor to use all feasible and available means to construct sidewalks in priority areas.
Policy T 40.1	**Increased Safety and Accessibility.** Provide roadway improvements to increase safety and accessibility for both motorists and pedestrians and to reduce congestion on existing streets
Program T 40.1-b	Evaluate the feasibility of installing additional pedestrian crossings wherever necessary.
Policy T 41.1	**Traffic Separation.** Separate vehicular, bicycle and pedestrian traffic wherever possible.
Policy T 43.1	Public Participation. Seek public participation in the preparation and implementation of regional and local transportation plans

Lake County Regional Transportation Plan (2017)

The *Lake County Regional Transportation Plan* (RTP) highlights the county's demographics and why facilities for walking and bicycling are of such importance to the local population. The County has a relatively high percentage of residents age 65 and older of 19.8 percent, compared to 13.3 percent statewide, and a median income substantially below that of the statewide average. These groups rely less on driving and more on transit and walking to meet their transportation needs. In addition, 21.2 percent of residents were classified as disabled, more than double the statewide figure, so designing facilities to meet ADA requirements is especially important locally.

The RTP identified the challenges of redesigning Eleventh Street for all users though several improvements for the corridor were included in the fiscally constrained RTP project list: 1) roundabout at the intersection of Eleventh Street/Central Park Avenue, 2) roundabout at the intersection of Eleventh Street/Main Street, and 3) extend Alden Avenue south to Main Street near Central Park Avenue. As far as long-term needs for which funding must be identified, the plan identified Eleventh Street from SR 29 to North Main Street. Regarding potential enhancements focused on the needs of bicyclists and pedestrians, the RTP incorporated the Active Transportation Plan of Lake County as its nonmotorized element.

Lake County Active Transportation Plan (2016)

The Lake County Active Transportation Plan identified and prioritized countywide priorities for projects to enhance access and safety for bicycling and walking, including safe routes to school. One of the high priority projects was bike lanes along Eleventh Street from SR 29 to North Main Street. The plan also included other proposed bikeway projects providing connections to the Eleventh Street corridor, as indicated in Table 2. No priority pedestrian projects were identified for the Eleventh Street corridor.

Table 2 – Active Transportation Plan Projects Along Eleventh Street Corridor in Lakeport

Street	Project Limits	Bikeway Type	Priority
Forbes St	Eleventh St to Martin St	Class II	Medium
Main St	Clear Lake Ave to Lakeport Blvd	Class II	Medium
Tenth St	Pool St to Main St	Class III	High
Pool St	Eleventh St to Tenth St	Class III	High
Mellor Dr	Eleventh St to Twentieth St	Class III	Low
Central Park Ave	Eleventh St to Spurr St	Class III	Low
Alden Ave	Eleventh St to Twentieth St	Class III	Low

In addition to the project list, the Plan included a focus on mechanisms to implement the identified projects by identifying potential funding sources, recommending policies to include bicycle and pedestrian infrastructure (bikeways, sidewalks, and end-of-trip facilities such as bicycle parking) as part of development and roadway construction projects. Other implementation strategies included developing partnerships with schools, public health professionals, and state and local agencies. Implementation of a count program to conduct ongoing tracking of bicycling and walking was recommended, important for maintaining current priorities and in securing funding. The Plan noted that a Project Study Report for the Eleventh Street corridor would help to further define the needed improvements and identify appropriate funding sources.

Lake Walks Study/Lake County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019)

This countywide study includes recommendations for pedestrian access and safety improvements throughout Lake County. The study recommends 40 high priority projects, including pedestrian improvements along the Eleventh Street corridor from Central Park Avenue to North Main Street. Specific projects identified in the Plan:

- Continuous sidewalks on the south side of Eleventh Street from Central Park Avenue to North Main Street.
- Continuous sidewalks on the north side of Eleventh Street from the Villa Shopping Center to Mellor Drive.
- Reconfigure or potentially close some of the multiple driveways to the 11th Street Plaza.
- Crosswalks across Eleventh Street at Mellor Drive, North Brush Street, and North Forbes Street.
- Sidewalks on North High Street on west side of street from Eleventh Street to 16th Street.
- Four-way crosswalks and bulb-outs at Eleventh Street/North Main Street.

Lake County Transit Development and Marketing Plan (2015)

This plan largely focuses on Lake Transit bus service, operational issues, and recommended improvements. It was closely coordinated with the development of the *Lake County 2014-2015 Coordinated Public Transit-Human Services Transportation Plan*, as the community engagement effort informed both initiatives. The recommendations related to the Eleventh Street corridor focused on improving access to bus stops. Of particular concern was the lack of continuous sidewalks in the vicinity of bus stops, which was especially problematic for seniors and people with disabilities. Other recommended improvements could potentially impact transit use in the Eleventh Street corridor, such as providing 1) signage at bus stops to clearly mark the passenger waiting areas and describe the schedule and route; 2) shelters; and 3) more frequent stop locations.

The plan recommended that Lake Transit undertake a comprehensive study of bus stop improvements to provide sound recommendations on the priority improvements to bus stops, recommended amenities and their respective costs. This study has been completed, but no recommendations were made for the stops in the study area.

City of Lakeport Economic Development Strategic Plan, 2017-2022 (July 2017)

Under the goal of expanding and supporting business retention and attraction efforts, the plan cites Policy CD 2.1 from the Community Design Element of Lakeport's General Plan, which calls for ensuring safe and convenient pedestrian and bicycle access to commercial areas.

Lake County Regional Blueprint Plan (2010)

The Regional Blueprint Plan developed a comprehensive approach to future development in Lake County, and improved multimodal transportation is a theme running through several of the Plan's guiding principles. This included creating more walkable and bikeable neighborhoods. Among infrastructure needs identified through the plan are the following:

- Connected sidewalks
- Pedestrian-scale lighting
- Bicycle facilities, including bike lanes and a continuous bike route around the lake
- Facilities that would meet the needs of people with disabilities, such as the addition of curb ramps where needed

The "Balanced Growth" approach that was adopted as the vision for the Plan included an emphasis on new developments along major transportation routes. The future development pattern would be complemented by enhanced facilities for pedestrians, bicyclists, and transit users to enable greater use of these transportation modes.

Existing Corridor Conditions

The Eleventh Street corridor consists of three sections that have distinctly different characteristics. The portion of the study area east of Pool Street is largely an interconnected grid network. North Main Street and North Forbes Street include commercial and institutional uses, but otherwise the neighborhood is almost entirely residential. While Eleventh Street is flat, many of the streets to the north and south feature significant grades and pavement quality is poor along many streets. Between Pool Street and the post office the south side of the street is commercial, largely consisting of the 11th Street Plaza shopping center and several banks and medical facilities. Between the post office and the Eleventh Street/SR 29 interchange the corridor is lined with very low density residential and agricultural uses.

Eleventh Street has no traffic signals. There are stop controls at the street's eastern terminus at North Main Street; at the western end of the project area is the SR 29 interchange. All other streets intersecting with Eleventh Street are stop-controlled on the side-street approaches.

Facilities for nonvehicular traffic are of varying quality. There are numerous gaps in the sidewalk along Eleventh Street as well as the other streets in the eastern part of the study area and there are few marked crosswalks. There are bike lanes between Pool Street and SR 29. Lake Transit provides bus service to the shopping center and to two additional stops at the eastern end of the project area. Routes with stops in the study area provide direct access to destinations in Lakeport, along the south side of Clear Lake to the City of Clearlake, and to Ukiah. Communities along the north shore of the lake can be reached by transferring to another route.

Perhaps the greatest challenge in implementing improvements along Eleventh Street between Pool Street and North Main Street is that there is a prescriptive right-of-way. Certification of the right-of-way will need to be completed before any recommendations extending beyond existing facilities can be implemented.

Overview of Active Mode Facilities

Transit Operations

Lake Transit provides service within Lakeport and to other communities within Lake County. Lake Transit also offers Lakeport Dial-A-Ride during the same days and hours as the local bus routes within three-quarters of a mile of the regular fixed route bus service. Dial-A-Ride provides curb-to-curb service.

Pedestrian Facilities

The Eleventh Street corridor is characterized by sidewalks which are intermittent, narrow, and partially obstructed at numerous locations by utility poles. Crosswalks are provided at several uncontrolled crossing locations. Curb ramps to meet the requirements of the Americans with Disabilities Act (ADA) are not consistently provided throughout the corridor.

Bicycle Network

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

- **Class IV Bikeway** – also known as a separated bikeway, is a bikeway for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation (or, "buffer") may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking. (Note: *Caltrans Design Information Bulletin Number 89, Class IV Bikeway Guidance*, December 2015, provides detailed guidance on Class IV Bikeways.)

Conditions by Segment

Segment 1 - State Route 29 to Post Office

This segment is approximately 1,500 feet long and consists of two travel lanes. The pavement width is approximately 38 feet wide and the posted speed limit is 35 mph. Land uses are mostly low-density residential and agricultural, with the exception of a commercial building adjacent to the post office. The only intersection in the segment other than at the interchange is at Central Park Avenue.

Pedestrian Facilities

There are no sidewalks on the north side of Eleventh Street in this segment. On the south side there are sidewalks along approximately half of the street between the post office and Central Park Avenue. A worn path is visible in the unpaved area where sidewalks are not present, indicating pedestrian traffic.

Bicycle Facilities

Class II bike lanes are marked from Pool Street to east of the SR 29 interchange, as can be seen in Plates 2 and 3.

Plate 2 Eleventh Street at SR 29 Interchange

Plate 3 Eleventh Street West of Post Office

Transit Facilities

There are no stops in this segment of the corridor.

Parking

On-street parking is prohibited along this segment. Off-street parking is available at commercial uses west of the post office site.

Segment 2 – Post Office to Pool Street

The segment of Eleventh Street from Pool Street to the Post Office is approximately 1,500 feet long. The primary land use is the shopping center on the south side of the street, and there are several additional commercial lots. The north side of the street is primarily residential. The curb-to-curb width is approximately 48 feet and there is a two-way left-turn lane to facilitate access into and out of the commercial sites along the south side of Eleventh Street. There are right-turn pockets at each of the shopping center's five driveways. The posted speed is 30 mph. West of Pool Street, the only intersecting street is Mellor Drive, which provides connectivity to the northern part of Lakeport via Sixteenth Street.

Pedestrian Facilities

There are continuous sidewalks along the south side of Eleventh Street, while sidewalks on the north side of the street are intermittent. Where sidewalks are present on the north side of the street, utility poles partially obstruct pedestrian access. On the south side of the street, the poles are located behind the sidewalk and do not obstruct the walkway.

Along the front of the shopping center the pedestrian path of travel is not clearly defined across the shopping center driveways. The driveways are wide, and with the exception of the driveway opposite the Mellor Drive intersection, there are no marked crosswalks. Curb ramps and detectable warnings (also known as truncated domes) to serve people with disabilities are present at the crossings, although due to the lack of crosswalks the pedestrian path of travel is not clearly delineated.

There are marked crosswalks at the intersections with Pool Street and Mellor Drive. Pedestrian crossing signage is present at both crossings.

Bicycle Facilities

Bike lanes are present along this segment of Eleventh Street, as can be seen in Plates 4 and 5. While some signage and pavement markings are in place, along the shopping center frontage there are no pavement markings other than the bike lane striping and no bike lane signage.

Plate 4 Eleventh Street at Shopping Center Entrance

Plate 5 Eleventh Street across from Shopping

Transit Facilities

There are bus stops for Lake Transit Routes 4, 4a, and 8 adjacent to Safeway in the shopping center and on Eleventh Street east of Mellor Drive in the eastbound direction. Both stops are marked with signs and the stop at Safeway includes a bench. Routes 4 and 4a operate only in the eastbound direction along Eleventh Street and have no stops on Eleventh Street west of Safeway.

Lake Transit staff has indicated that the location of the bus stop located adjacent to the Safeway creates circulation issues. As the bus turns left toward the driveway to exit the shopping center, there is not sufficient room for the bus to complete the turn as it approaches Eleventh Street. As a result, the bus blocks the driveway for vehicles attempting to enter the shopping center from Eleventh Street.

Parking

On-street parking is prohibited along this segment. On-site parking is provided at the shopping center and offices on Eleventh Street. On-street parking is generally available along the local streets north and south of Eleventh Street where there is sufficient space available.

Segment 3 - Pool Street to North Main Street

While the streets in this portion of the study area form an interconnected grid, circulation is challenging due to several factors. The streets are narrow – most are less than 30 feet wide – and the neighborhoods have hilly topography. Pavement quality is very poor. South of Eleventh Street, north-south traffic is concentrated primarily on North Forbes Street and North Main Street, which are flat and connect through to the center of Lakeport. North of Eleventh Street, most drivers travel on High Street to access the northern part of the city. The Clearlake Avenue/High Street intersection has restricted turning movements as drivers traveling in a northbound direction from either North Forbes Street or North Main Street approach the intersection traveling westbound on Clearlake Avenue and turn right onto High Street, while southbound traffic does the reverse.

Land uses along this part of Eleventh Street are entirely residential except for commercial uses between Pool Street and Manzanita Street and between North Forbes Street and North Main Street. Other streets in this portion of the study area are low-volume residential streets, with the exceptions of North Main Street, North Forbes Street, and the segment of Clearlake Avenue between High Street and North Main Street. North Main Street and North Forbes Street are the primary north-south streets through downtown Lakeport and the study area and serve various commercial and institutional uses, including several churches.

The posted speed limit on Eleventh Street is 30 mph. The right-of-way along this segment is prescriptive, and the precise locations of property lines are unknown. It is approximately five feet from the curb to the back-of-sidewalk on both sides of the street. The paved roadway is 32 feet wide from curb-to-curb and is currently striped for two travel lanes. On-street parking is prohibited.

There are no bus stops on this segment of Eleventh Street. There are bus stops along the periphery of this part of the study area, with eastbound trips served on Clearlake Avenue at the intersection of Forbes Street and on North Main Street at Seventh Street (northbound) and Eighth Street (southbound).

Pedestrian Facilities

There are numerous gaps in the sidewalks along Eleventh Street, especially on the north side of the street, as can be seen in Plate 6 and Plate 7. The existing sidewalks are typically 3.5 feet wide, but utility poles are located in the center of the sidewalk at several locations, resulting in very narrow clearance and partially obstructing pedestrian access. Vegetation is overgrown at some locations, further obstructing pedestrian access. At the corners, curb ramps are generally not present, and where they are present there are no detectable warnings. These facilities would be especially challenging for people with disabilities to navigate.

Plate 6 Eleventh Street at North Street

Plate 7 Eleventh Street at North High Street

There is a marked crosswalk with pedestrian crossing signage across Eleventh Street at the intersection with North High Street. However, there are no sidewalks on either end of the crosswalk along North High Street or on the south side of Eleventh Street at that location. There are also marked crosswalks across Eleventh Street at the Eleventh Street/Pool Street intersection and across North Main Street at the Eleventh Street/ North Main Street intersection. Sidewalks are present along the intersecting streets at both locations.

Sidewalks are generally intermittent along other streets in the study area with the exceptions of the two primary north-south routes, North Main Street and North Forbes Street.

Bicycle Facilities

The only designated bicycle facilities in this portion of the study area are bike lanes on Clearlake Avenue between North High Street and North Main Street in the eastbound direction.

Transit Facilities

There are no bus stops along this portion of Eleventh Street. There are bus stops in this part of the study area at the intersections of Clearlake Avenue/North Forbes Street (Route 8), North Main Street/Seventh Street (Routes 7 and 8), and North Main Street/9th Street (Routes 4, 4a, 7, and 8).

Parking

On-street parking is prohibited along this segment. On-site parking is provided at offices with frontage along Eleventh Street. On-street parking is generally available on other streets in this portion of the study area.

Traffic Conditions

Daily Traffic Volumes

Daily vehicle traffic volumes were collected at four locations along Eleventh Street in February 2019. The results are included in Appendix A. Daily traffic volumes along the corridor range from about 3,800 to 10,200 vehicles per day as summarized in Table 3. Plates 8 through 11 show the directional volumes at each of the four locations by time of day.

Table 3 – Eleventh Street Daily Traffic Volumes (vehicles per day)

Location	Eastbound	Westbound	Total
Between N Main St and N Forbes St	1,930	1,917	3,847
Between N Forbes St and N High St	2,997	3,716	6,713
Between Pool St and Mellor Dr	4,901	4,451	9,352
Between Central Park Ave and SR 29 N Ramps	5,424	4,814	10,238

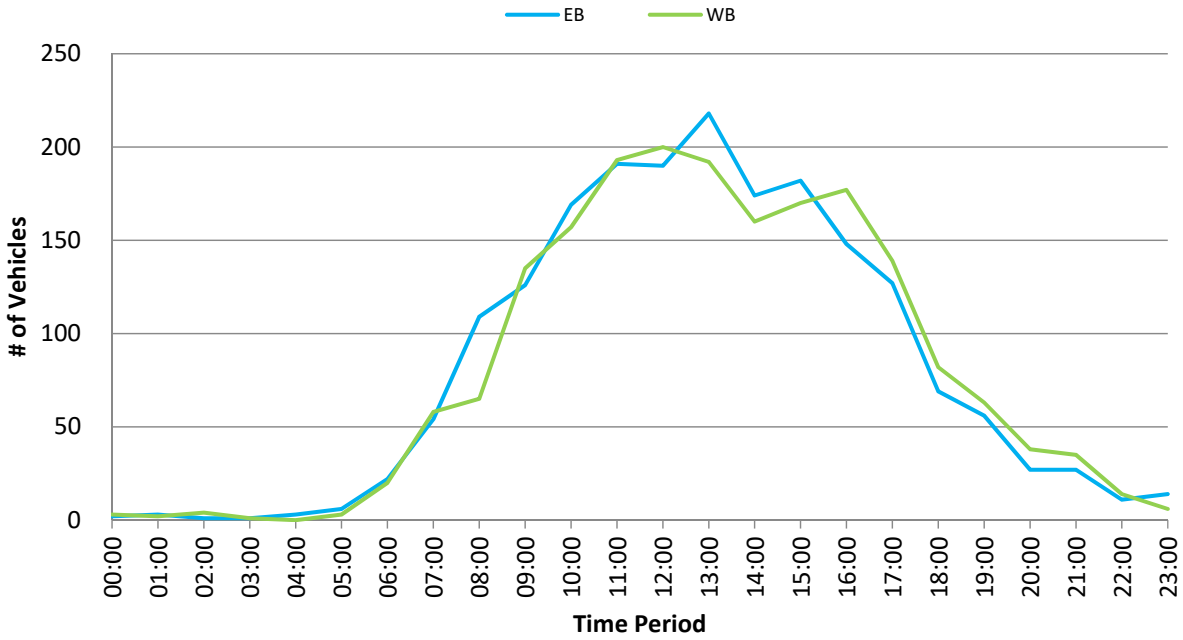


Plate 8 Eleventh Street Volumes (Between North Main Street and North Forbes Street)

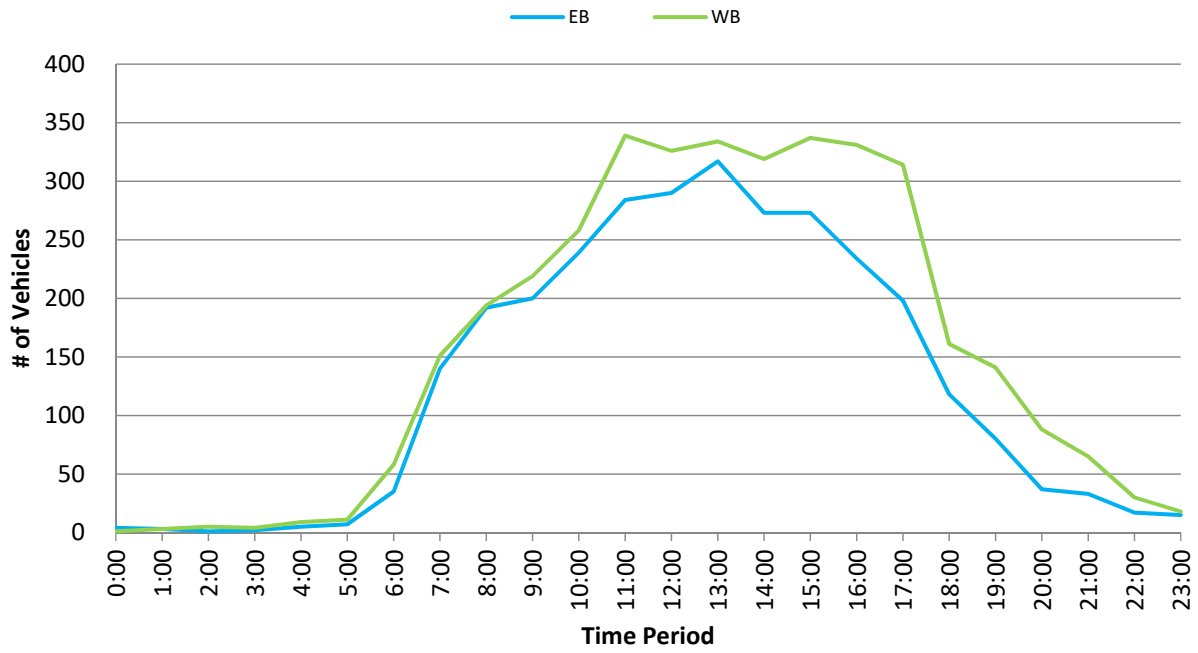


Plate 9 Eleventh Street Volumes (Between North Forbes Street and North High Street)

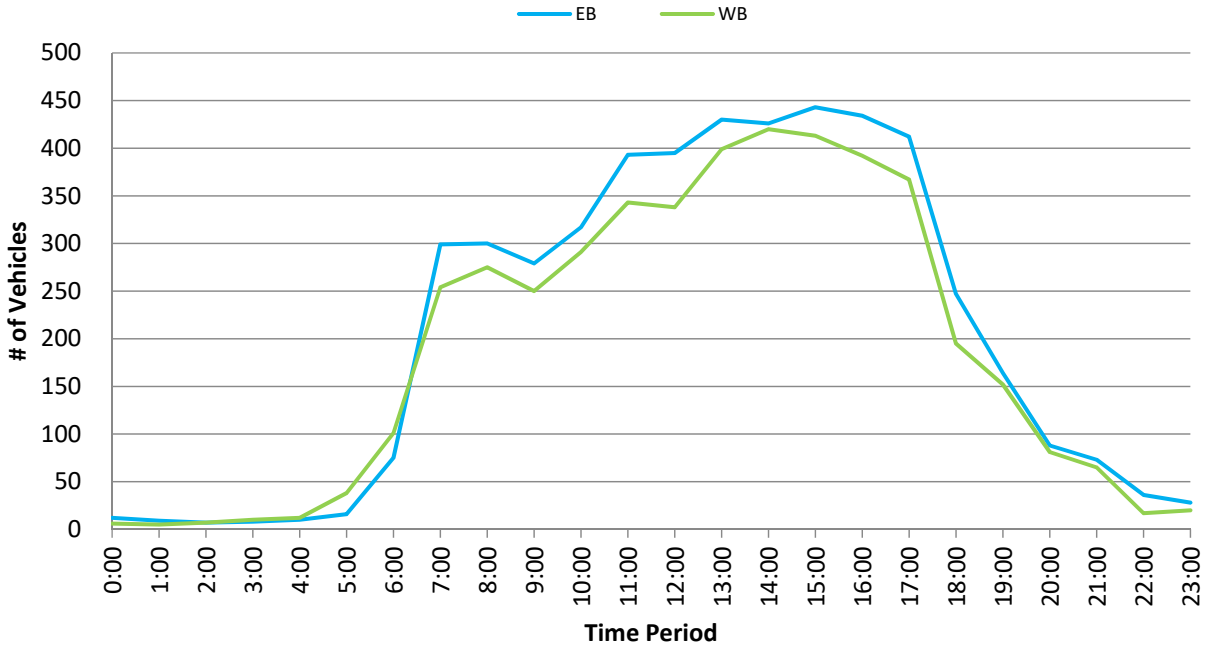


Plate 10 Eleventh Street Volumes (Between Pool Street and Mellor Drive)

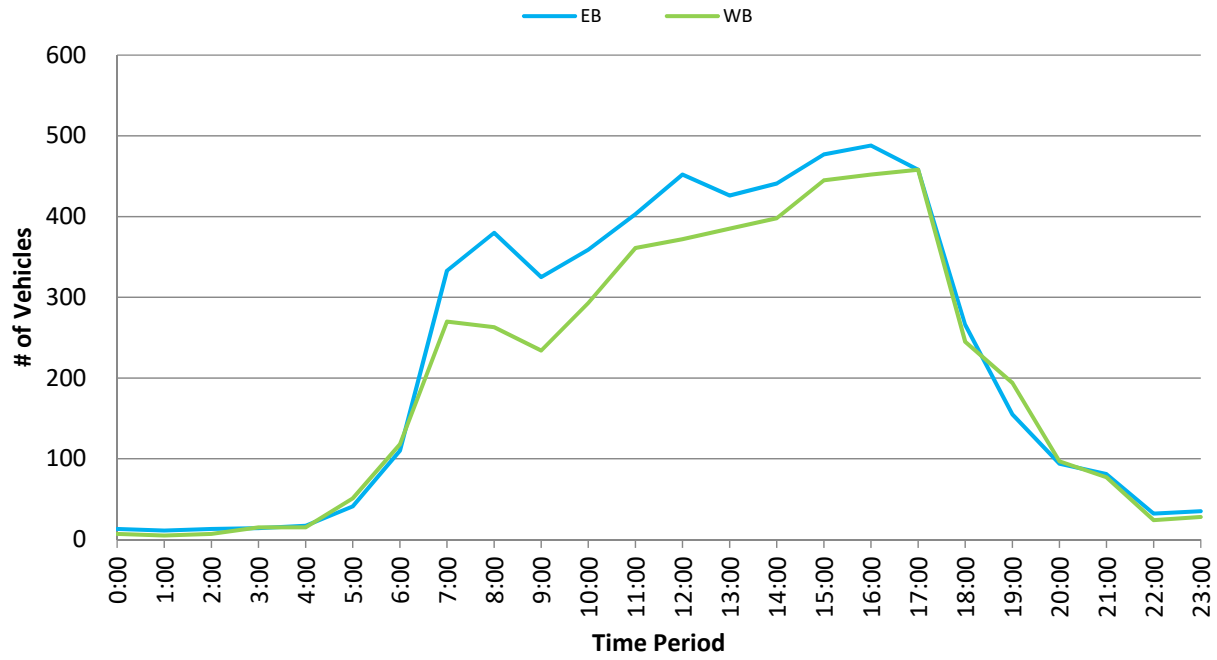


Plate 11 Eleventh Street Volumes (Between Central Park Avenue and SR 29 North Ramps)

Vehicle Travel Speeds

Speeds were surveyed on February 12 and 20, 2019 at the following locations on the corridor:

- Between North Forbes Street and North High Street
- Between Pool Street and Mellor Drive
- Between Central Park Avenue and the SR 29 North Ramps

Due to varying conditions on Eleventh Street, the speed limits range from 30 to 35 mph. Table 4 summarizes the speed survey results by segment together with the posted speed limits. As indicated, Eleventh Street between North Forbes Street and North High Street was the only location where the 85th percentile speed did not exceed the current speed limit. At the other locations, the 85th percentile speed exceeded the speed limit by four to five mph. The speed survey results are included in Appendix B.

Table 4 – Summary of Speed Surveys on Eleventh Street

Study Street Segment	Critical Speed (85th percentile)	Existing Speed Limit	Speed Difference (+/-)
Between N Forbes St and N High St	30	30	0
Between Pool St and Mellor Dr	35	30	**+5**
Between Central Park Ave and SR 29 N Ramps	39	35	**+4**

Notes: Speed is shown in miles per hour; **Bold** = 85th percentile speed higher than the posted speed limit

Intersection Operations

The study included a detailed evaluation of operation at the following intersections on the corridor:

1. SR 29 South Ramps/Eleventh Street

2. SR 29 North Ramps/Eleventh Street
3. Eleventh Street/Mellor Drive-Shopping Center Driveway
4. Eleventh Street/Pool Street
5. Eleventh Street/North High Street
6. Eleventh Street/North Forbes Street
7. Eleventh Street/North Main Street

Intersection Levels of Service

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using the unsignalized methodology for two-way stop-controlled intersections published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2018, as applied by the Synchro 8 software package. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. The "Two-Way Stop-Controlled" methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The ranges of delay associated with the various levels of service are indicated in Table 5.

Table 5 – Two-Way Stop-Control Intersection Level of Service Definitions

LOS	Two-Way Stop-Controlled
A	Delay of 0 to 10 seconds
B	Delay of 10 to 20 seconds
C	Delay of 20 to 35 seconds
D	Delay of 35 to 55 seconds
E	Delay of 55 to 80 seconds
F	Delay greater than 80 seconds

Reference: *Highway Capacity Manual,* 6th Edition, Transportation Research Board, 2018

Under existing conditions, the study intersections operate acceptably at LOS A overall and LOS C or better on the minor street approaches. A summary of the intersection level of service calculations is contained in Table 6. The calculations are included in Appendix C.

Table 6 – Existing Peak Hour Intersection Levels of Service					
Study Intersection ***Approach***		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	SR 29 S Ramps/Eleventh St	8.4	A	8.6	A
	Southbound (SR 29) Approach	*20.0*	*C*	*21.1*	*C*
2.	SR 29 N Ramps/Eleventh St	4.9	A	5.9	A
	Northbound (SR 29) Approach	*13.3*	*B*	*16.8*	*C*
3.	Eleventh St/Mellor Dr-Shopping Center Dwy	1.2	A	3.3	A
	Northbound (Shopping Center Dwy) Approach	*12.8*	*B*	*25.9*	*D*
	Southbound (Mellor Dr) Approach	*13.0*	*B*	*13.7*	*B*
4.	Eleventh St/Pool St	2.4	A	1.3	A
	Northbound (Pool St) Approach	*18.2*	*C*	*17.6*	*C*
	Southbound (Pool St) Approach	*11.8*	*B*	*11.7*	*B*
5.	Eleventh St/N High St	2.3	A	2.1	A
	Northbound (N High St) Approach	*15.9*	*C*	*20.0*	*C*
6.	Eleventh St/N Forbes St	6.5	A	6.7	A
	Northbound (N Forbes St) Approach	*13.0*	*B*	*16.2*	*C*
	Southbound (N Forbes St) Approach	*11.2*	*B*	*11.3*	*B*
7.	Eleventh St/N Main St	2.6	A	4.0	A
	Eastbound (Eleventh St) Approach	*11.5*	*B*	*11.2*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Access Analysis

Left-Turn Lane Warrants

While the middle segment of the study corridor includes a two-way left turn lane, the eastern segment consists of only two travel lanes. In considering alternative cross-sections, the need for a left turn lane was considered. The intersection of Eleventh Street at North Forbes Street was identified for additional analysis as North Forbes Street is one of the major north-south routes through this part of Lakeport.

The need for a left-turn lane was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method for Prioritizing Intersection Improvements*, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues.

Using existing peak hour volumes as well as safety criteria, the warrant analysis indicates that a left-turn lane is not warranted on Eleventh Street at North Forbes Street during either of the peak periods evaluated. The calculations for the left-turn lane warrants are included in Appendix D.

Collision History and Safety Conditions

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is October 1, 2013 through September 30, 2018.

As presented in Table 7, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2016 Collision Data on California State Highways*, California Department of Transportation (Caltrans). All seven intersections, with the exception of Eleventh Street/North Forbes Street, had lower collision rates than the statewide averages within the most recent five-year period indicating that these intersections are generally operating acceptably with regards to safety. None of the reported collisions involved pedestrians or bicyclists. Collision rate calculations are provided in Appendix E.

Table 7 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2013-2018)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. SR 29 S Ramps/Eleventh St	0	0.00	0.23
2. SR 29 N Ramps/Eleventh St	1	0.05	0.23
3. Eleventh St/Mellor Dr-Shopping Center Dwy	0	0.00	0.23
4. Eleventh St/Pool St	2	0.13	0.23
5. Eleventh St/N High St	0	0.00	0.23
6. Eleventh St/N Forbes St	10	**0.76**	0.23
7. Eleventh St/N Main St	2	0.16	0.23

Notes: c/mve = collisions per million vehicles entering; **Bold** = a collision rate higher than the statewide average

The collision history of the intersection of Eleventh Street/North Forbes Street was evaluated in more detail due to the collision rate being higher than the statewide average for similar facilities. Nine of the 10 collisions that occurred at this intersection were broadside collisions, and seven collisions were due to right-of-way violations.

As shown in Table 8, the calculated collision rate for each study segment was compared to the statewide average rate for similar facilities. The three study segments had lower collision rates than the statewide average for similar facilities, which indicates that the study segments are generally operating acceptably with regards to safety.

Table 8 – Collision Rates for the Eleventh Street Study Segments

Study Roadway Segments	Number of Collisions (2013-2018)	Calculated Collision Rate (c/mvm)	Statewide Average Collision Rate (c/mvm)
1. SR 29 to Post Office	1	0.26	0.85
2. Post Office to Pool St	3	0.58	1.05
3. Pool St to Main St	1	0.30	0.89

Notes: c/mvm = collisions per million vehicles miles

Potential Crosswalk Enhancements

Pedestrian counts were collected at the intersections of Eleventh Street with North Main Street, North Forbes Street, North High Street, Pool Street, and Mellor Drive. The crosswalk on the east leg of the Eleventh Street/Mellor Street intersection had the highest number of pedestrians, with seven recorded during the peak hour. The other crossings of Eleventh Street had zero or one pedestrians during the peak hour.

A pedestrian crosswalk warrant evaluation was completed for the crossing of Eleventh Street at Mellor Street using the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) 2014 and national pedestrian safety improvement warrants published by the National Cooperative Highway Research Program (NCHRP Report 562, 2006) for each of the following device options:

- Pedestrian hybrid beacon (HAWK) – CA MUTCD and/or NCHRP
- In-Roadway Warning Lights (IRWL) – CA MUTCD and /or NCHRP
- Rectangular Rapid Flashing Beacon (RRFB) – CA MUTCD and/or NCHRP

The suitability of a location for crossing enhancements is largely dependent on the width of the crossing, vehicle traffic volume, and pedestrian volume. On the date the traffic counts were taken, the a.m. peak hour was determined to be between 7:30 am and 8:30 am, when there were 660 vehicles recorded on Eleventh Street at the Mellor Street intersection and seven pedestrians crossing at this location. Based on the analysis, these volumes are insufficient to meet the warrants for a High intensity Activated crosswalk (HAWK) beacon, In-Roadway Warning Lights (IRWL), or Rectangular Rapid Flashing Beacon (RRFB).

Since the low number of pedestrian crossings may be related to inadequate pedestrian infrastructure – such as gaps in the existing sidewalks along Eleventh Street and obstructions along the existing sidewalks – an analysis was conducted to determine the number of additional peak hour pedestrian crossings that would be needed to meet the warrants for additional crossing enhancements. Based on the peak hour vehicle volumes that were collected, there would need to be 13 additional pedestrians crossing to meet the warrant for crossing enhancements based on the NCHRP warrants.

The crosswalk warrant results are included in Appendix F.

Community Engagement

Introduction

The community engagement process was designed to be open and inclusive, and to solicit input from a representative cross-section of Lakeport residents and stakeholders. The TAG worked with the consultant team to guide the outreach process and development of the project alternatives. Members of the TAG included representatives from the Lake Area Planning Council (Lake APC), City of Lakeport Community Development Department, City of Lakeport Public Works Department, City of Lakeport Traffic Safety Advisory Committee, Lake County Transit, Lake County Public Works Department, and Caltrans District 1. The TAG identified events, venues, and other opportunities to solicit feedback and best practices to engage residents and stakeholders, including disadvantaged community members.

Community outreach and engagement was broken down into two phases to ensure that community feedback shaped final recommendations in this study. The first phase of outreach engaged residents and stakeholders (students and youth, seniors, people with disabilities, residents, diverse groups, visitors, and businesses) in an intensive and highly participatory public process to assess and document safety conditions, location and frequency of trips utilizing non-motorized modes (walking, bicycling, and transit use) and motorized forms of transportation. The second phase of outreach engaged these same residents and stakeholder groups to provide feedback on draft designs that were based on the priorities identified during the first phase of community outreach. A summary of the community engagement activities, process and key feedback received is described in the following discussion. All publications, flyers, and materials used to solicit feedback, the cumulative data gathered during Phase I and Phase II of the outreach effort, and the list of outreach recipients are included in Appendix G.

Strategies to Attract Participation

The consultant team worked with the City of Lakeport and other TAG members to identify the most effective avenues to reach members of the community and raise awareness of the Eleventh Street corridor planning effort. Flyers regarding meetings and participation opportunities were distributed both as hard copies and online to a contact list that included local news media, social media, partner agency listservs, the local chamber of commerce and other groups. Paper fliers were distributed to central locations and on bulletin boards. To help ensure that those residents most directly impacted by any future projects were aware of this planning effort, City staff delivered flyers to each house along the Eleventh Street corridor.

Outreach Phase I - Shape Draft Alternatives

The first phase of the outreach process included the following components:

- Community Workshop #1 (May 14, 2019)
- Wikimapping Online Interactive Tool (July – October 2019)
- Eleventh Street Property Owner Door-to-Door Interviews (August 2019)
- Phone Surveys with Businesses (August 2019)w
- Community Engagement Booths at Public Events
    1. National Night Out (August 6, 2019)
    2. Lake County Fair (August 29 – September 1)

These activities and the comments received through this process are summarized below.

Community Workshop 1

The first community workshop was held from 6 to 8 p.m. on May 14, 2019 at Lakeport City Hall (see Plate 12). The purpose of the workshop was to work with residents and stakeholders to establish priorities and refine concepts for improved access and safety along the Eleventh Street corridor for users of all modes of transportation. The workshop format included an opening presentation of the project purpose and goals, timeline, and existing conditions in the corridor.

Plate 12 Workshop participants providing their ideas to staff and the consultant team

Following the presentation, attendees were invited to participate in an interactive activity with large table maps and display boards to offer their ideas, identifying specific locations where there are issues and opportunities for transportation improvements. Input from the first community workshop and subsequent input throughout the Phase I community outreach process provided a basis for the development of draft design concepts presented at the second community workshop. Concerns that were identified by multiple participants included:

- Sidewalk gaps between North Main Street and Pool Street.
- People with disabilities were especially impacted by the lack of sidewalks and curb ramps between North Main Street and Pool Street. Wheelchair users had been observed in the street, as there were no other alternatives for travel along Eleventh Street.
- Safety concerns regarding vehicular traffic at the Eleventh Street/North Forbes Street. One resident indicated that she lived adjacent to the intersection and that that her house had been struck by a vehicle after a collision.

WikiMapping Online Interactive Tool (July - October 2019)

In addition to in-person events, an online interactive map was set up to enable participants to identify specific locations where they had difficulty walking, biking, riding transit, and driving, as well as important bicycling and

walking destinations in the project area. In addition to providing their own comments, participants were able to view and respond to comments posted by others on the map. A total of 254 comments were received. Key feedback included:

- Pedestrian-related issues were the top priority based on feedback received. Key issues included difficulty crossing and walking along Eleventh Street from SR 29 to Main Street.
- There was mixed feedback related to bicycle improvements on Eleventh Street from Pool Street to Main Street. There were a similar number of comments indicating a desire for striped and/or protected bicycle lanes as there were raising concern that the roadway is too narrow to accommodate bicycle lanes.
- The unpaved pathway between Manzanita Street and Pool Street should be improved to better connect Tenth Street to the Safeway Shopping Center.
- There is a perception that the conditions at the intersections of Eleventh Street with Tunis Street, Forbes Street and Brush Street are dangerous for all roadway users. A number of concerns were cited, such as vehicle speeds and overgrown vegetation obstructing visibility of motor vehicles, pedestrians and bicycle traffic.

Plate 13 shows a display of the comments provided through the WikiMapping online mapping tool.

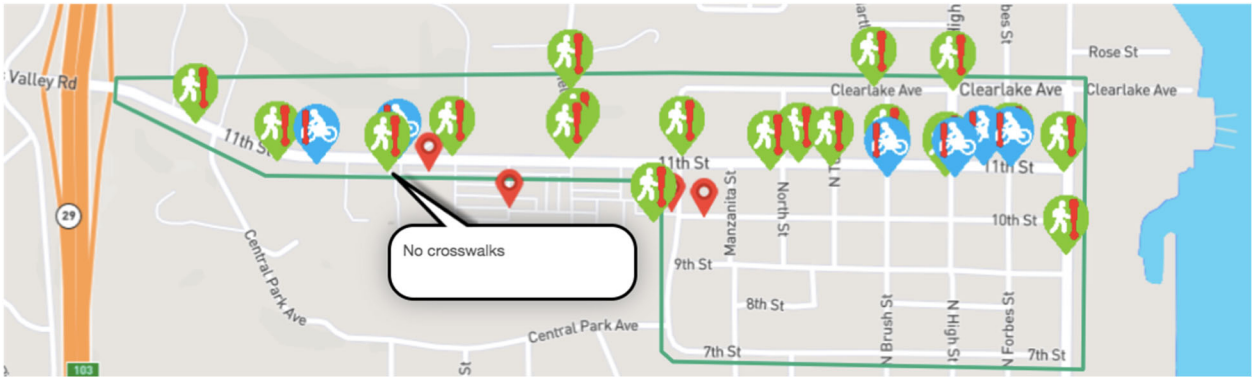


Plate 13 Concerns and priorities of participants were entered online through the WikiMapping tool

Property Owner Interviews (August 2019)

The consultant team conducted door-to-door interviews of residents of properties with Eleventh Street frontage. The intent of the survey was to solicit input from those residents that are most familiar with conditions along Eleventh Street and that would be most impacted by improvements implemented along the corridor.

The interview approach was undertaken after an initial attempt to reach out to property owners in the corridor, as flyers with links to an online survey were mailed to the addresses of all property owners on file with the City of Lakeport, whether or not they were located along Eleventh Street or in the City. However, only one response was received. Given the importance of engaging with the community, the TAG and the project team developed a door-to-door surveying approach.

In total, the consultant team surveyed 15 property owners or renters along Eleventh Street. Pedestrian-related issues were the top concern. Other concerns included vehicle speeds and safety of pedestrians crossing the roadway near Safeway and across Eleventh Street between Pool Street and North Main Street. Respondents expressed support for continuous and wider sidewalks with more grade separation between the sidewalk and the roadway (currently the roadway is near or at the same level as the sidewalk in many locations).

Business Phone Surveys (August 2019)

An effort was also made to engage with representatives of business along Eleventh Street as they are another stakeholder group that would be most directly impacted by transportation improvements in the area. The project

team conducted phone interviews with 12 business representatives in the project area to solicit their ideas regarding key issues and opportunities for improvements along the corridor based on their experience.

Pedestrian-related issues were the top concern. Similar to the property owners and renters surveyed, business representatives expressed concern about vehicle speeds and safety of pedestrians crossing the roadway. Among pedestrian needs, the highest priorities were to improve sidewalk connectivity and widen the sidewalks along Eleventh Street from the 11th Street Plaza shopping center area to Main Street.

Community Engagement Booths at "National Night Out" (August 6, 2019) and the Lake County Fair (August 29 - September 1)

The consultant team, Lake APC and/or City staff participated in two large-scale community events to solicit input from additional area residents as well as visitors to Lakeport. Booths at the events included maps of the project area; "sticky dots" which participants could use to identify problem areas and opportunity areas for walking, biking, transit users, and drivers; as well as comment cards for general comments and feedback. In total, staff spoke with approximately 30 community members at the National Night Out and 80 community members at the Lake County Fair (see Plate 14). Both events took place in the City of Lakeport.

Plate 14 Lake County Fair Table

As with the resident and business interviews, pedestrian-related issues were identified as the top concern along the corridor. The most commonly cited concerns included vehicle speeds, safety of pedestrians crossing the roadway, and the need for continuous sidewalks along Eleventh Street from SR 29 to Main Street.

Outreach Phase II – Refine/Prioritize Draft Concept Plans

The second phase of the outreach effort included the following:

- Community Workshop #2 (November 6, 2019)
- Presentation to the Traffic Safety Advisory Committee (March 19, 2020)
- Presentation to Lake APC Technical Advisory Committee (TAC) Meeting (March 19, 2020)
- Presentation and Final Plan Adoption at City of Lakeport City Council Meeting (May 26, 2020)
- Presentation to Lake APC Board of Directors (June 3, 2020)

As discussed in the Potential Alternatives chapter, the priorities identified by participants in the first phase of the outreach effort were important input to the development of the project concepts for the corridor. These alternatives were presented for additional community feedback in the second community workshop and were then further refined by the TAG. Additional feedback on the proposed improvements was then solicited from the Traffic Safety Advisory Committee and Lake APC Technical Advisory Committee, whose recommendations were forwarded to the Lakeport City Council, which approved a motion to endorse the Plan.

Best Practices and Potential Improvement Measures

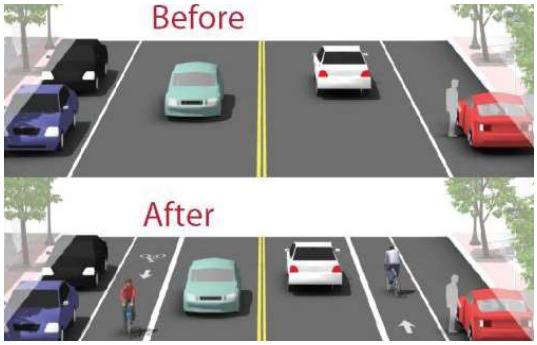
Based on the goals of the project and needs identified throughout the corridor, a toolbox of design treatments was developed for use in determining the potential project alternatives. The toolbox options were presented at the first community workshop and to the TAG for feedback. While some of these treatments primarily benefit one mode of transportation, in many cases there are benefits to mobility for all users as well as safety benefits, as described below.

Sidewalk/Walkway

- Provides dedicated space for pedestrians
- Increases safety by providing protection for pedestrians
- Improves access for people with disabilities

Narrow Lanes

- Provides visual cue to drivers to reduce speeds
- Frees up space to be reallocated for other purposes



Rectangular Rapid Flashing Beacon

- Increase driver awareness of pedestrians
- Pedestrian-activated using push-button
- Effective near schools and other locations with high pedestrian volumes
- Can be solar powered, relatively low cost

Pedestrian Scale Lighting

- Improves visibility of pedestrians crossing the street
- Enables pedestrians to more easily see their surroundings
- Greater visibility promotes public safety

Crosswalks

- Raises awareness and visibility of presence of pedestrians to drivers
- Encourages walking
- Guides pedestrians to recommended roadway-crossing locations

Class I Bikeway/Walking Path

- Bicyclist and pedestrian route separated from vehicle traffic
- May provide access along otherwise unavailable routes

Class II Bike Lane

- Allocates separate roadway space for drivers and bicyclists
- Improves conditions for bicyclists by giving them exclusive right of way
- Increases awareness and visibility of presence of bicyclists to drivers
- Promotes cycling

Buffered Bike Lane

- Provides greater distance and separation between motor vehicles and bicyclists
- Provides space for bicyclists to pass another bicyclist without encroaching into the vehicle travel lane
- Especially beneficial along higher speed roadways
- Encourages bicycling by contributing to the perception of safety among users of the bicycle network

Bike Lane Conflict Zone Markings

- Raises awareness of bicyclists at intersection or driveway crossings
- Increases bicyclist perception of safety
- Can be colored white or green

Mini-Roundabout

Mini-roundabouts can be deployed at intersections instead of traffic signals or stop controls. They offer the same benefits as larger roundabouts, but are designed for use in smaller intersections where traffic operates at slower speeds. They include a mountable island in the center, which enables larger vehicles – such as buses, trucks, and emergency vehicles – to navigate the intersection. Mini-roundabouts are best suited for streets with 85th percentile speeds of 30 mph or less and traffic volumes of 15,000 vehicles per day, and the radius typically ranges between 45 and 90 feet. As a result of eliminating left turning movements in the intersection and reducing speeds, mini-roundabouts have been found to reduce collisions by 30 percent compared to signalized intersections. The major benefits of mini-roundabouts are:

- Maintaining slow vehicle speeds
- Reducing collisions
- Reducing traffic delay by keeping all traffic moving

Bicycle Boulevard

- Helps slow vehicle traffic
- Provides sense of safety for bicyclists in mixed traffic environment
- Can be customized for local conditions

Painted Intersections

- Indicates a neighborhood residential street
- Opportunity for community participation in design and implementation

Gateway Treatments

- Provides an expressionn of community identity
- Traffic calming potential; encourages lower speeds
- Driver notification of arrival; signal to motorist that they are approaching a populated area

Curb Ramps and Detectable Warnings

- Provides access for wheelchair users
- Provides cues for visually impaired pedestrians

Signage/Striping

- Raise awareness of drivers to presence of bicyclists and pedestrians
- Provides guidance to all roadway users

Raised Median Pedestrian Refuge Island

- Reduces crossing distance
- Provides pedestrians protection from vehicular traffic
- Allows pedestrians to cross one direction of traffic at a time
- Slows and calms traffic

Potential Alternatives

Based on previously adopted plans, analysis of conditions, and input from the public, multiple alternatives were developed, as described below. These alternatives were intended to provide a range of options that met the purpose of the project. The discussion below includes potential cross-section modifications for each of the three segments of the corridor – SR 29 to the U.S. Post Office (Segment 1), U.S. Post office to Pool Street (Segment 2), and Pool Street to North Main Street (Segment 3). For Segment 3 – the segment with the greatest physical constraints – five alternative cross-sections were developed.

In addition to the cross-section options, numerous design elements were identified to enhance conditions for bicycling, walking, or driving, as described in the best practices chapter. These design elements could potentially be included in any of the cross-section alternatives. This approach provided flexibility in developing the preferred alternative. As previous public input had emphasized improved pedestrian facilities as the highest priority need for the corridor, all alternatives for each segment included sidewalks on both sides of the street from Central Park Avenue to North Main Street.

Segment 1 - SR 29 to Post Office

As a main entry point into Lakeport from SR 29, this segment features the highest recorded vehicle speeds in the corridor. The 85th percentile speed was 39 mph, higher than the posted speed of 35 mph. There are no sidewalks along this segment except for intermittent sidewalks along the south side of Eleventh Street between Central Park Avenue and the Post Office. There appears to be some demand for pedestrian facilities as there is a worn, unpaved foot path along the south side of the street from Central Park Avenue to the northbound SR 29 off-ramp. The pavement along this segment is 40 feet wide, including two 15-foot travel lanes and two five-foot bike lanes.

The proposed alternative includes the following elements:

- **Buffered bike lanes** – There is sufficient space available within the existing paved roadway to add a three-foot wide striped buffer between the travel lanes and bike lanes, while maintaining 12-foot travel lanes. The buffer would provide a greater sense of protection for bicyclists from the adjacent vehicle traffic while continuing to provide adequate width for large vehicles and without impacting traffic flow.

- **Asphalt path** – While curb and gutter are generally recommended for pedestrians in more developed areas, an asphalt path could be constructed to replace the existing unpaved foot path. The asphalt path would be a cost-effective alternative to curb and gutter and could adequately serve pedestrians in this lightly used portion of this segment.

- **Sidewalk** – Continuous sidewalks would be completed on both sides of Eleventh Street from Central Park Avenue to the post office. The future extension of Alden Avenue is anticipated to intersect Eleventh Street across from Central Park Avenue, creating a four-way intersection.

Current conditions and the proposed alternative for Segment 1 are presented in Plates 15 and 16.

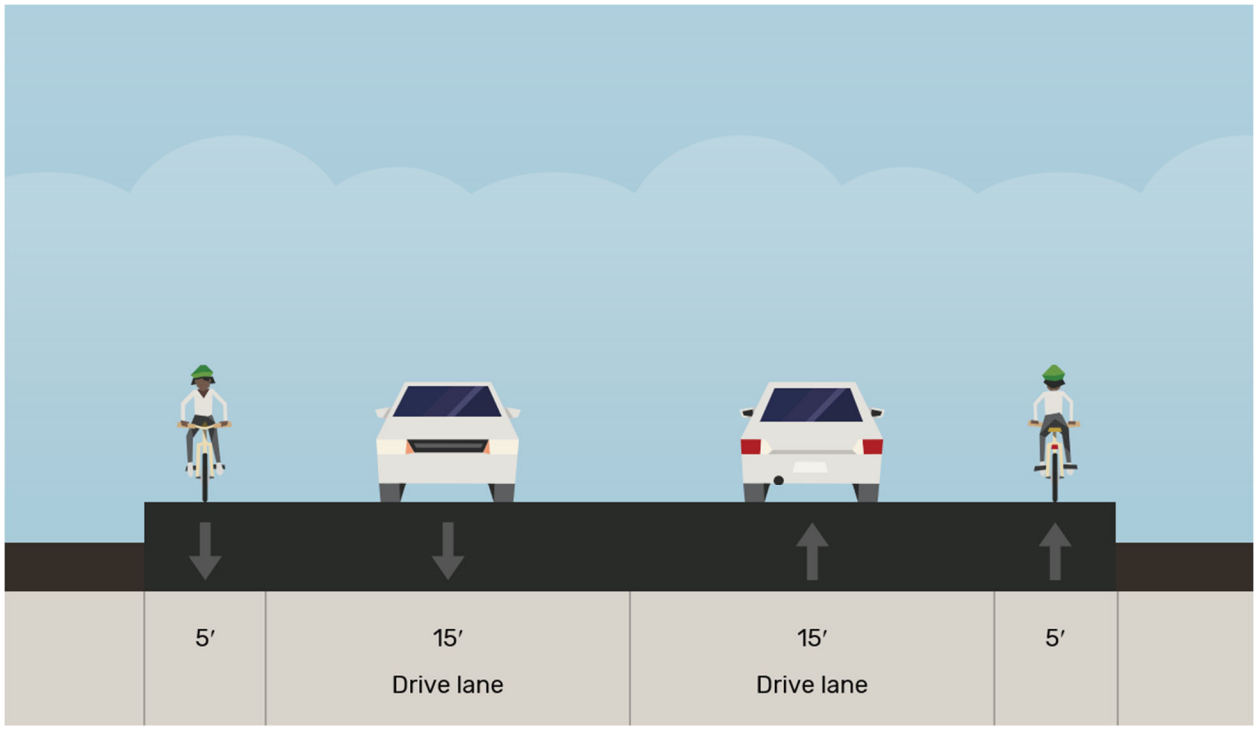


Plate 15 SR 29 to U.S. Post Office (Segment 1) – Existing

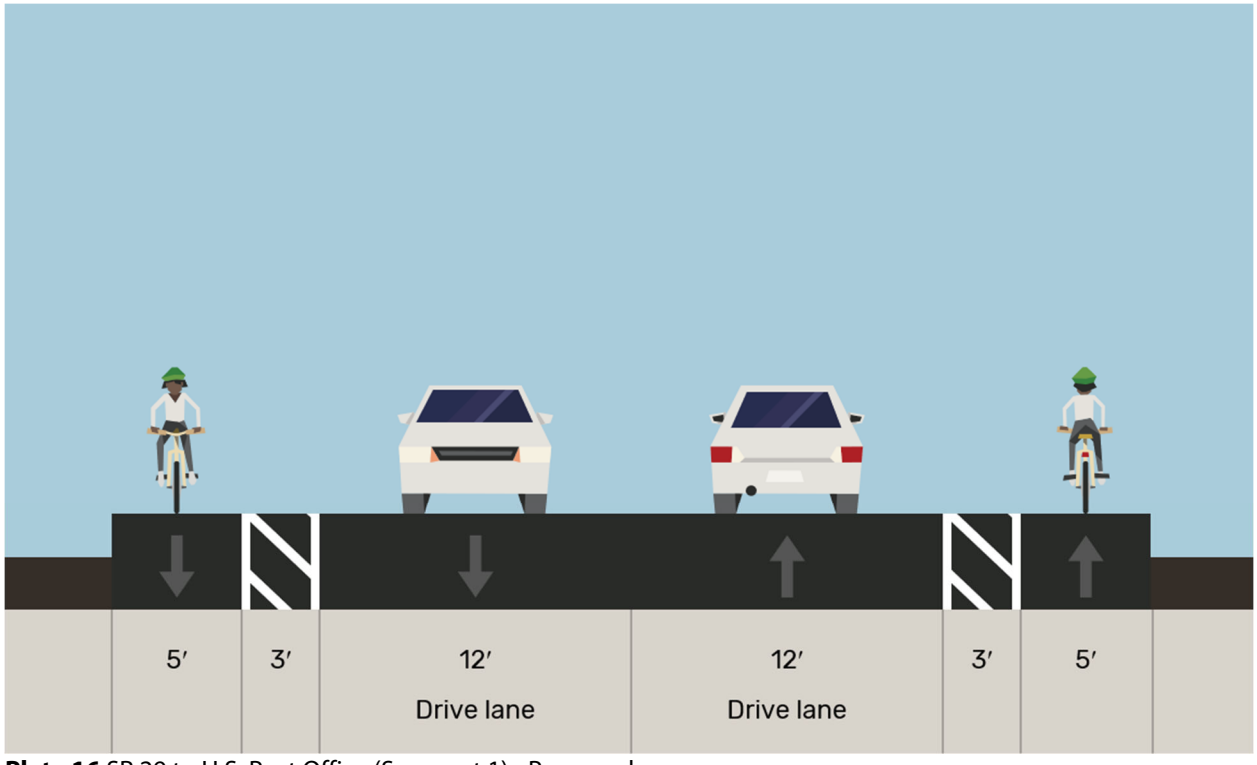


Plate 16 SR 29 to U.S. Post Office (Segment 1) - Proposed

Segment 2 – U.S. Post Office to Pool Street

This segment has the most complete pedestrian and bicycle facilities, with bike lanes along the entire segment and continuous sidewalks along the shopping center frontage. Sidewalks along the north side of the street are fragmented, narrow, and partially obstructed by utility poles. This is also the widest of the three corridor segments, with a curb-to-curb width of 48 feet. The primary development along this segment is the 11th Street Plaza shopping center along the south side of Eleventh Street, which includes five access driveways. Only one alternative was developed for this segment, as facilities for bicyclists and pedestrians could be added without negatively impacting vehicular circulation.

The proposed alternative includes the following elements:

- **Narrow lanes** – The width of the existing two-way left turn lane would be reduced from 14 feet to 11 feet and the existing travel lanes narrowed from 12 feet to 11 feet. This should encourage slower speeds and provide additional space within the roadway for other design treatments, as described below.

- **Continuous sidewalks along north side of street** – A new five-foot wide sidewalk would be constructed from the existing curb toward the centerline of the roadway. The space for the new sidewalk would be available as a result of the reduction of the travel lane width. Narrowing the street would have the added benefit of reducing the crossing distance, reducing the exposure of pedestrians to vehicle traffic.

- **Modified shopping center frontage** – Along the south side of Eleventh Street, several improvements are recommended to provide a more comfortable experience for pedestrians and bicyclists and to provide more clearly designated space for all users in the roadway. The turnouts for eastbound right turning vehicles at the shopping center driveways and the associated pavement markings have created an unclear path of travel for eastbound drivers, bicyclists, and pedestrians at the driveway openings. Based on the traffic volumes in this segment, these turnouts are not needed to provide adequate access.

  Reconstructing the curb and gutter so that the curb is aligned along this segment, removing the turnouts, and providing clear pavement markings and signage could clarify the path of travel for all users. This includes the addition of bike lane conflict zone markings, which would provide a dashed line across the driveway openings.

- **Modified shopping center driveways** – Pedestrian safety could be enhanced by narrowing the driveway openings and reducing the curb radii while still accommodating larger vehicles needing to enter the shopping center. This would shorten the exposure distance for pedestrians crossing the driveways and reduce speeds of eastbound vehicles entering the shopping center. Crosswalks would be installed across the driveways to provide a clear path of travel for pedestrians. Curb ramps would be constructed at the appropriate locations to enable pedestrians to cross in front of exiting vehicles seeking to turn onto Eleventh Street.

- **Improve crossings across Eleventh Street** – To raise the awareness of drivers to pedestrians crossing the street, rectangular rapid flashing beacons (RRFBs) would be installed at the crossings of Eleventh Street/Mellor Drive and Eleventh Street/Pool Street. RRFBs have been shown to significantly increase yielding behavior by motorists to pedestrians crossing the street. Mellor Street is the only street in this portion of the corridor that provides connectivity to the northern part of Lakeport. While the number of pedestrians counted at this intersection during the a.m. and p.m. peak commute hours did not meet the guidelines for installation of RRFBs, it is anticipated that pedestrian volumes would increase with the enhancement of pedestrian infrastructure throughout the area. Pedestrian crossing signage and advance yield markings for motorists (also known as "shark's teeth") would also help raise the awareness of drivers to the presence of pedestrians. The RRFB was proposed for the Pool Street intersection due to its proximity to destinations including medical offices and a Lake Transit bus stop.

The existing conditions along this segment and the proposed alternative are presented in Plates 17 and 18.

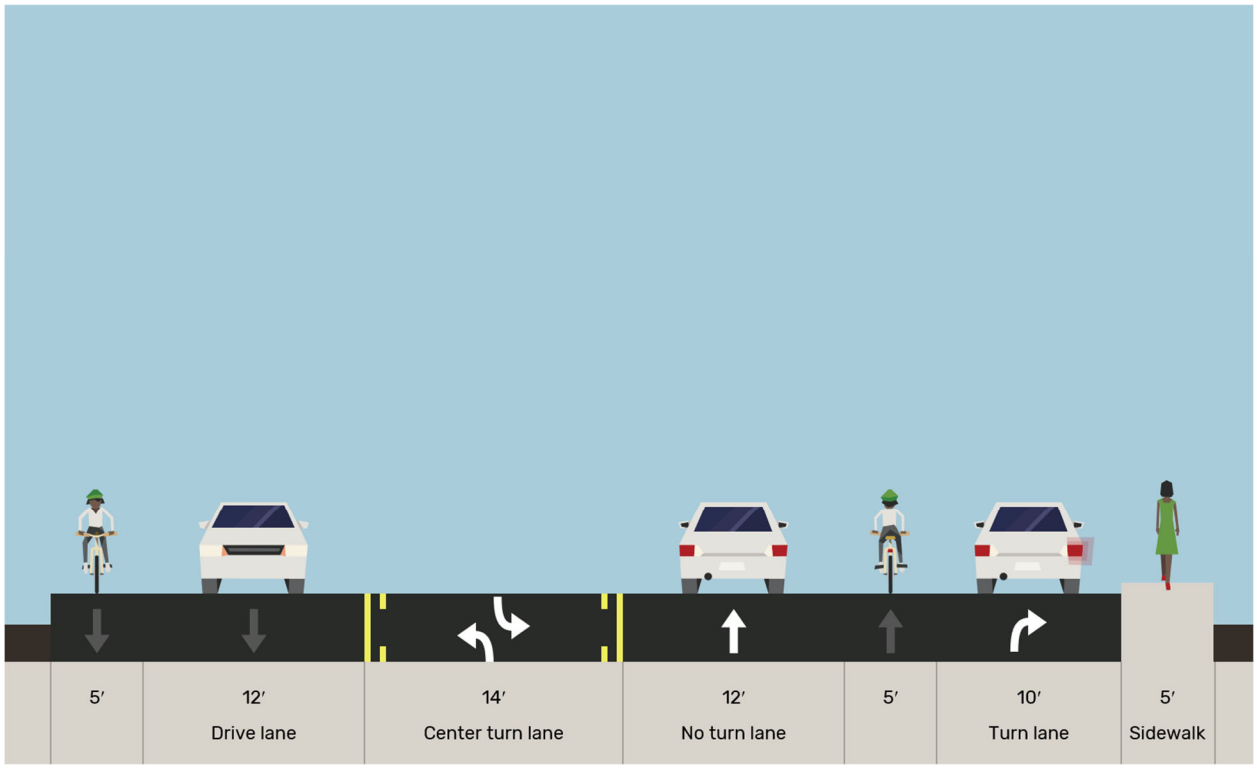


Plate 17 U.S. Post Office to Pool Street (Segment 2) - Existing

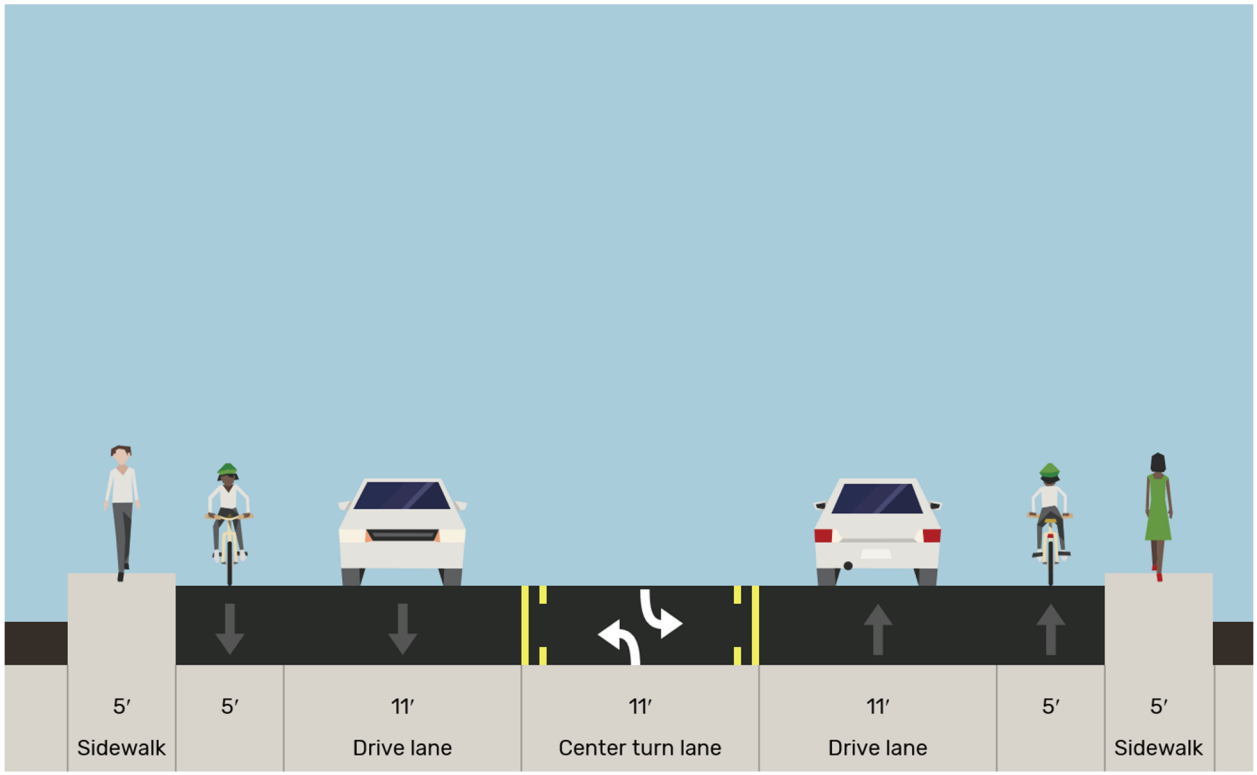


Plate 18 U.S. Post Office to Pool Street (Segment 2) – Proposed

Segment 3 - Pool Street to North Main Street

The portion of the Eleventh Street corridor from Pool Street to North Main Street has significant constraints, including the presence of utility poles in the sidewalk and houses constructed in close proximity to the edge of the roadway. Given the limited space available, parallel routes were considered in the alternatives analysis to develop options for providing facilities for bicyclists. However, based on the high priority placed on providing adequate pedestrian accommodations in the corridor, each of the alternatives included sidewalks along both sides of the street for this segment. In terms of meeting the need of other modes using alternatives routes, there were numerous challenges as the topography, narrow widths, and lack of connectivity limit the number of feasible options. Four alternatives were developed for Segment 3.

Based on previously conducted analysis for this segment by the City, a maximum right-of-way width of 55 feet was used for the alternatives. This was done to minimize the impact on property owners, residents, and businesses whose parcels have frontage along Eleventh Street.

The current configuration of Segment 3 is presented in Plate 19.

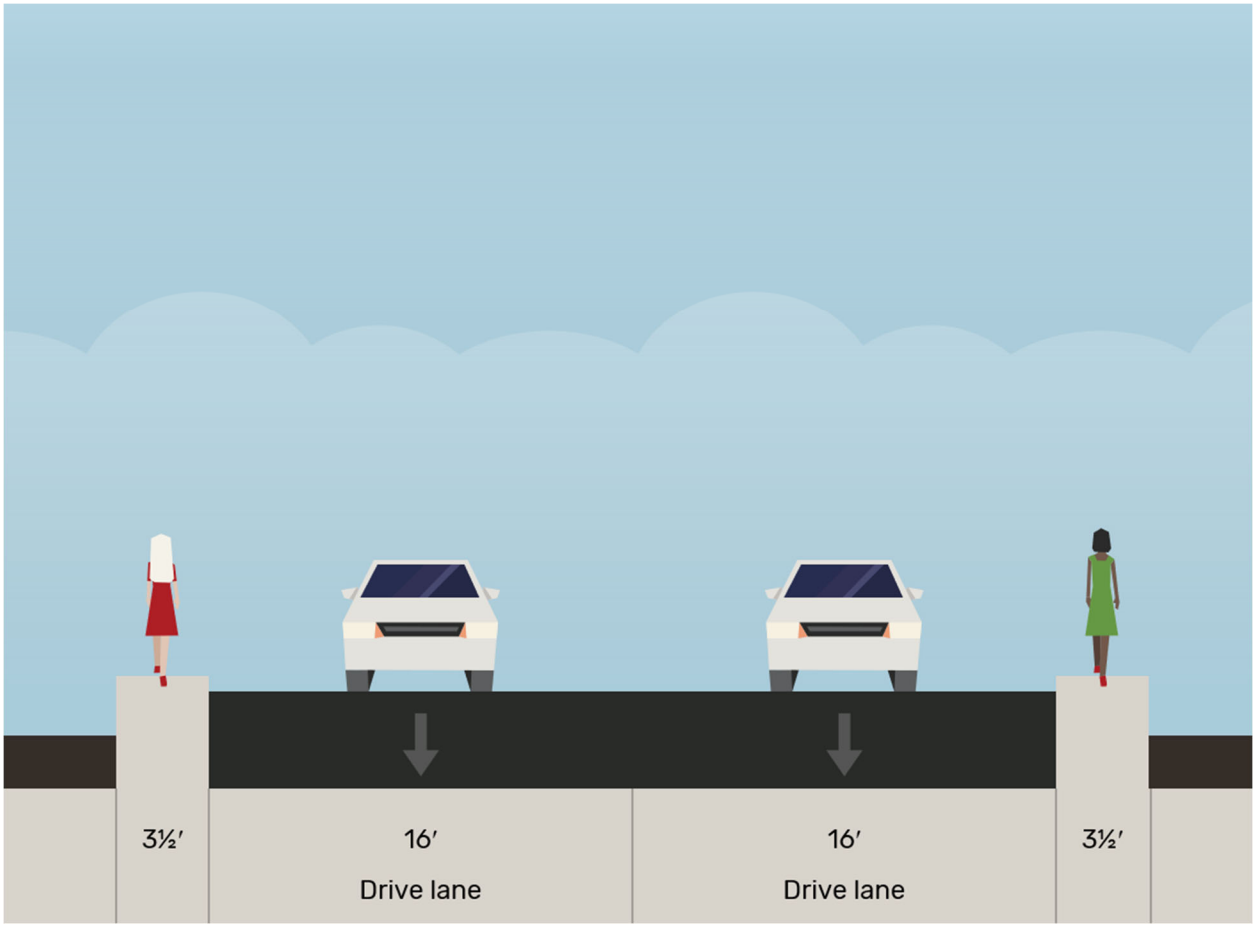


Plate 19 Pool Street to North Main Street (Segment 3) – Existing

Alternative 1 - Optimal Facilities for All Users

This alternative was developed to illustrate the potential impacts of providing the preferred facility design for all user groups – drivers, pedestrians, and bicyclists – along Eleventh Street. Unlike Alternatives 2 through 4, no consideration was given to the potential impacts on adjacent property owners, as this alternative was developed

to provide decision-makers with a better understanding of the extent of these impacts and the potential compromises that would need to be made to implement a realistic alternative.

- **Required Right-of-Way** – 62 feet.
- **Lane Configuration** – Two 11-foot travel lanes.
- **Bike Lanes** – 5-foot bike lanes.
- **Sidewalks** – Continuous 5-foot sidewalks along both sides of the street.
- **Buffers** – A 2-foot striped buffer between the bike lanes and vehicle travel lanes and a 3-foot landscape buffer.
- **Other** – Utilities would be undergrounded and relocated in a 5-foot public utility easement.

The cross-section for Alternative 1 is presented in Plate 20.

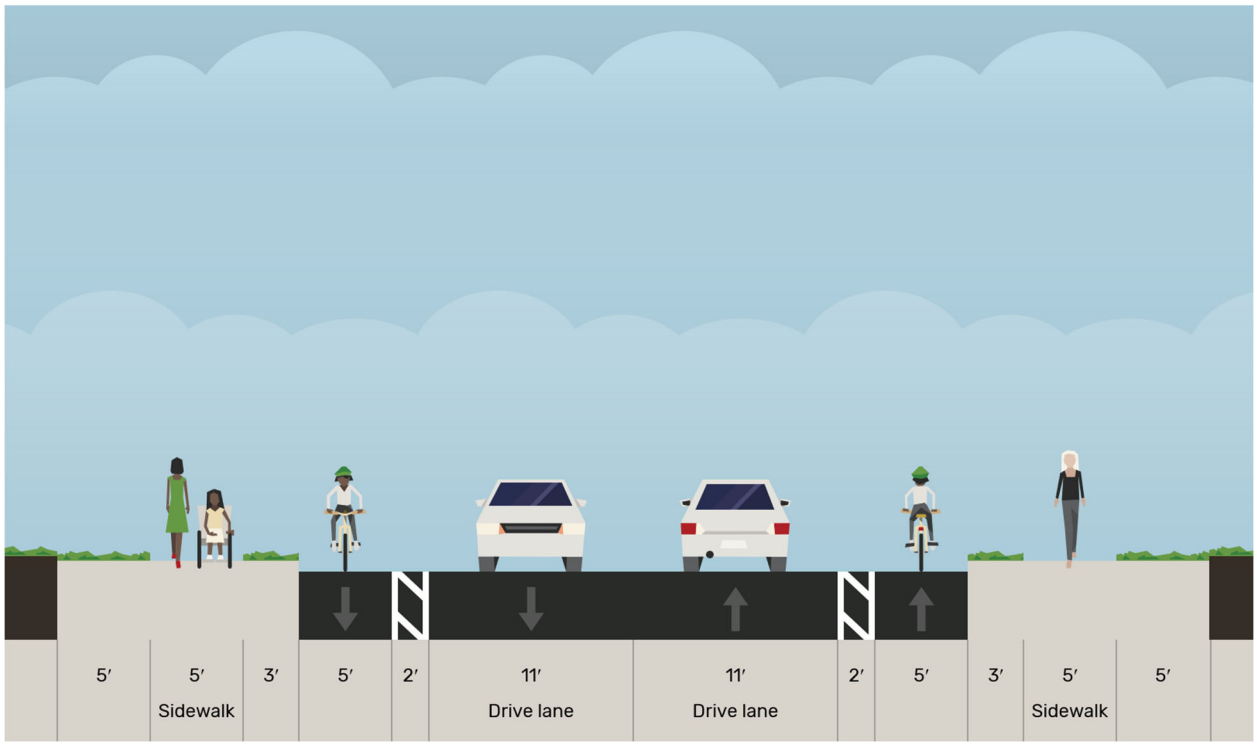


Plate 20 Pool Street to North Main Street (Segment 3) – Alternative 1

Alternative 2 - Acceptable Facilities for All Users

The goal of this alternative was to provide facilities for all users along Eleventh Street but minimize impacts on adjacent property owners and use a more cost-effective approach that would support near-term implementation.

- **Right-of-Way Required** – 55 feet.
- **Lane Configuration** – Two 11-foot travel lanes.
- **Bike Lanes** – 5-foot bike lanes.
- **Sidewalks** – Continuous 6.5-foot sidewalks along both sides of the street
- **Other** – Utility poles to be relocated to 5-foot public utility easement.

The cross-section for Alternative 2 is presented in Plate 21.

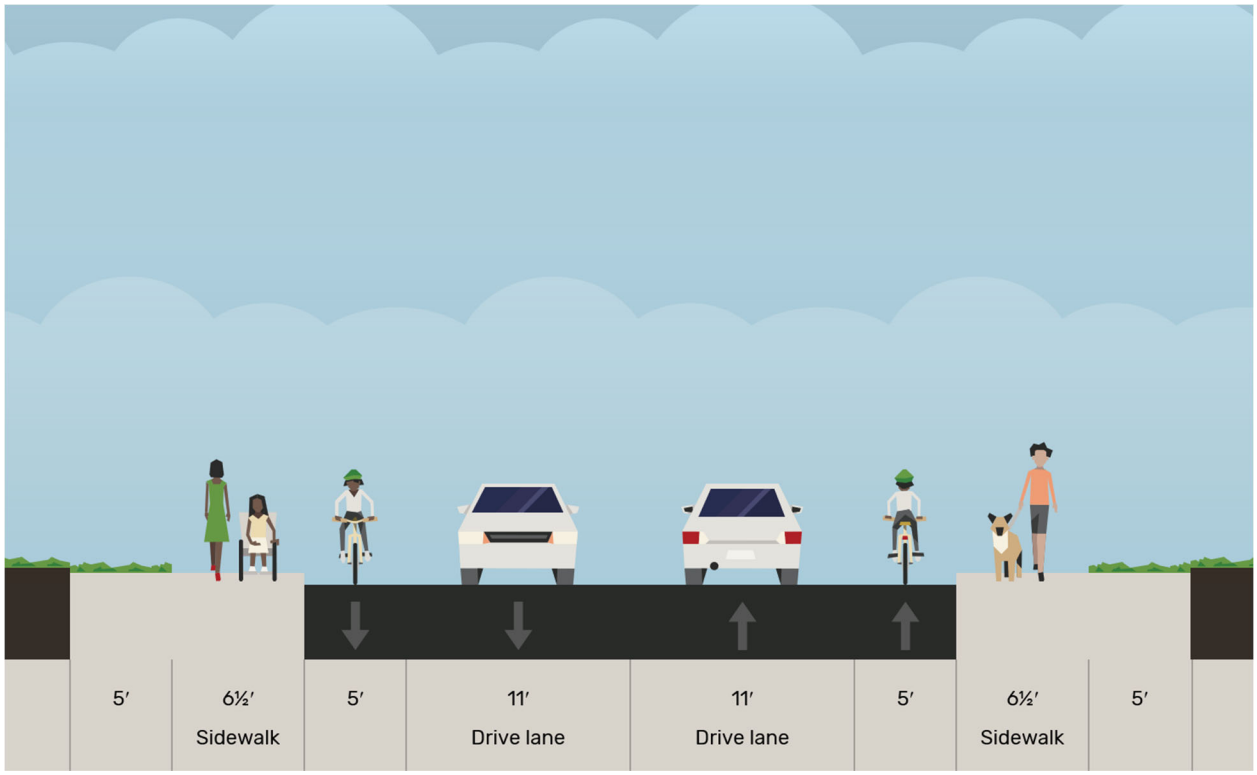


Plate 21 Pool Street to North Main Street (Segment 3) – Alternative 2

Alternative 3 - Narrow Roadway

Under this alternative, Eleventh Street would be designed primarily to serve vehicular traffic and pedestrians, while the primary bicycle route through the area would be along a bicycle boulevard on Tenth Street from Manzanita Street to North Main Street. Since Tenth Street has very low traffic volumes, significant traffic calming measures would be unnecessary at this time. As described below, Alternative 3a was developed as an interim option, while Alternative 3b would be the long-term option.

Recommended elements of a bicycle boulevard, which would be included in Alternatives 3a and 3b:

- **Pavement markings** – Bicycle boulevard pavement markings help communicate to bicyclists and motorists that the street is designed to serve as a slow-speed bicycle-friendly route.

- **Signage** – The Caltrans *Manual on Uniform Traffic Control Devices* (CA MUTCD) and the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* includes bicycle boulevard signage. Many agencies have also developed custom signs to brand their facilities.

- **Change direction of existing stop signs** – The intersections of Tenth Street/North Brush Street and Tenth Street/North Forbes Street are two-way stop-controlled with stop signs facing Tenth Street. To facilitate through bicycle traffic along Tenth Street, the stop signs at the Tenth Street/North Brush Street intersection could be relocated to face North Brush Street, as both streets have very low traffic volumes. However, as North Forbes Street is a major north-south route through Lakeport, those signs would need to continue to face Tenth Street.

- **Painted intersection** – To help define the Tenth Street corridor as a neighborhood street, one or more intersections along Tenth Street could be modified to include a mural or design on the pavement. Community members could work with artists and the City to develop a design and to implement the project.

- **Enhanced crossing at Tenth Street/North Forbes Street intersection** – Due to the traffic volumes along North Forbes Street, it is recommended that the stop signs at the Tenth Street/North Forbes Street intersection remain facing Tenth Street traffic. To facilitate crossing North Forbes Street by bicyclists, it is recommended that the existing crosswalk be enhanced with high visibility striping and that signage be installed facing traffic on Forbes Street to help drivers anticipate the presence of bicyclists crossing at this location.

- **Multi-use path (Class I bikeway) connection** – To provide connectivity from Manzanita Street to Pool Street, a multi-use path could be constructed along an existing City-owned right-of-way, which is currently an informally used unpaved path.

Alternative 3a (Interim Design)

This alternative would narrow Eleventh Street between Pool Street and North Main Street by constructing new sidewalks toward the centerline from the existing curb on both sides of the street and complete the gaps in the existing sidewalks. Since the existing sidewalks – where they are in place – are only 3.5 feet wide and are narrowed further at the locations of utility poles, this additional sidewalk would provide a clear space that would meet the minimum requirements of the Americans with Disabilities Act (ADA); at locations where poles are not present, the sidewalks would be 6.5 feet wide. The construction of the new sidewalk would narrow the width of the street by six feet, reducing the crossing distance for pedestrians and visually narrowing the roadway for drivers, which typically reduces speeds.

- **Right-of-Way Required** – 39 feet.
- **Lane Configuration** – Two 13-foot travel lanes.
- **Bike Lanes** – No designated bicycle facilities on Eleventh Street, bicycle boulevard/multi-use path to be provided along Tenth Street.
- **Sidewalks** – 6.5-foot sidewalks, partially obstructed by utility poles, minimum required clearance to be provided at these locations.
- **Other** – Utility pole relocation not required.

The cross-section for Alternative 3a is presented in Plate 22.

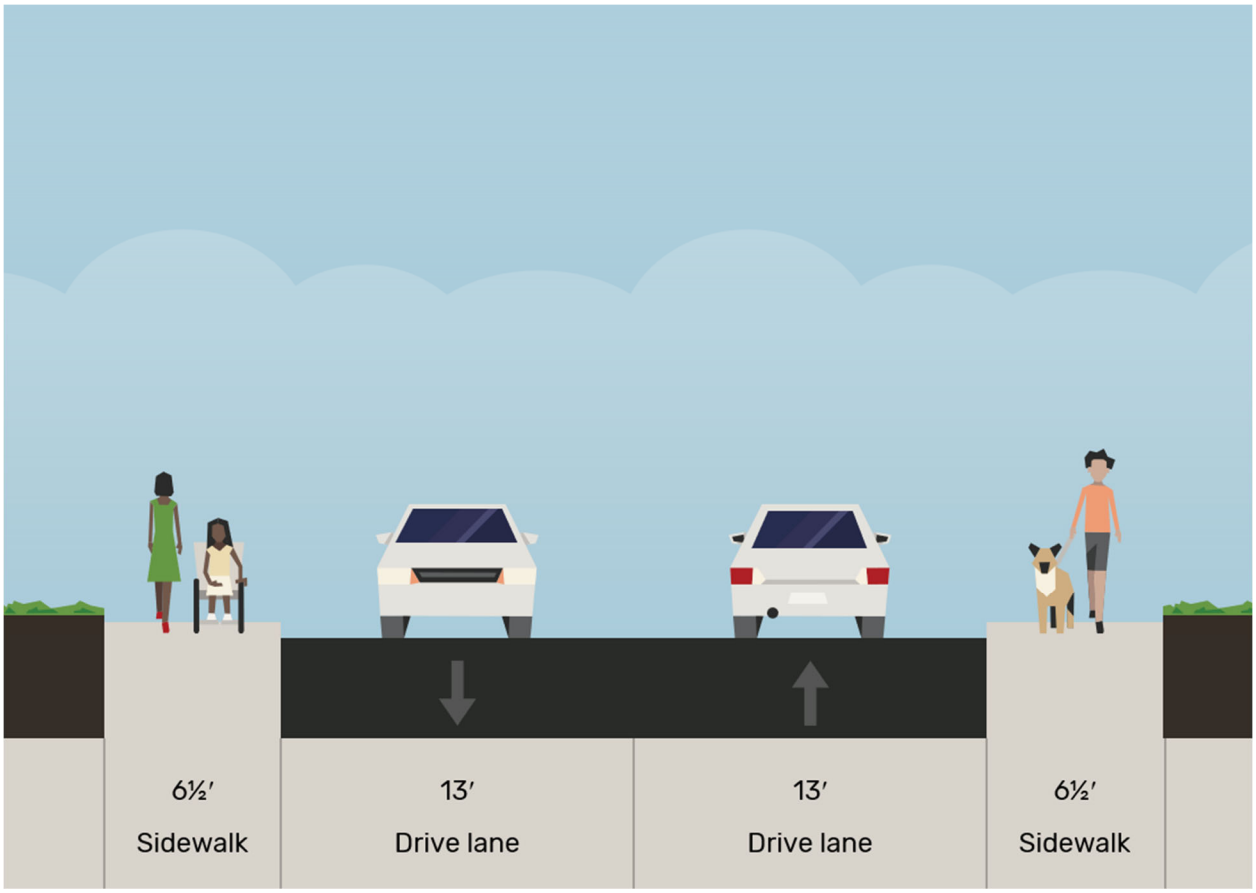


Plate 22 Pool Street to North Main Street (Segment 3) – Alternative 3a

Alternative 3b (Long-Term Design)

A long-term vision to ultimately replace Alternative 3a, this alternative would also provide sidewalks by widening them toward the centerline of the roadway, but it assumes that the utility poles would be undergrounded or relocated. This would remove the obstructions from the pedestrian path of travel and establish continuous 6.5-foot sidewalks along the entire segment. In addition, a landscape strip would be included between the curb and the sidewalk, buffering pedestrians from vehicular traffic. As a result, this alternative would remain within the 55-foot right-of-way assumed by most of the alternatives.

- **Right-of-Way Required** – 55 feet.
- **Lane Configuration** – Two 13-foot travel lanes.
- **Bicycle Facilities** – No designated bicycle facilities on Eleventh Street, bicycle boulevard/multi-use path to be provided along Tenth Street.
- **Sidewalks** – Continuous 6.5-foot sidewalks along both sides of the street
- **Other** – Utility pole relocation or undergrounding required.

The cross-section for Alternative 3b is presented in Plate 23.

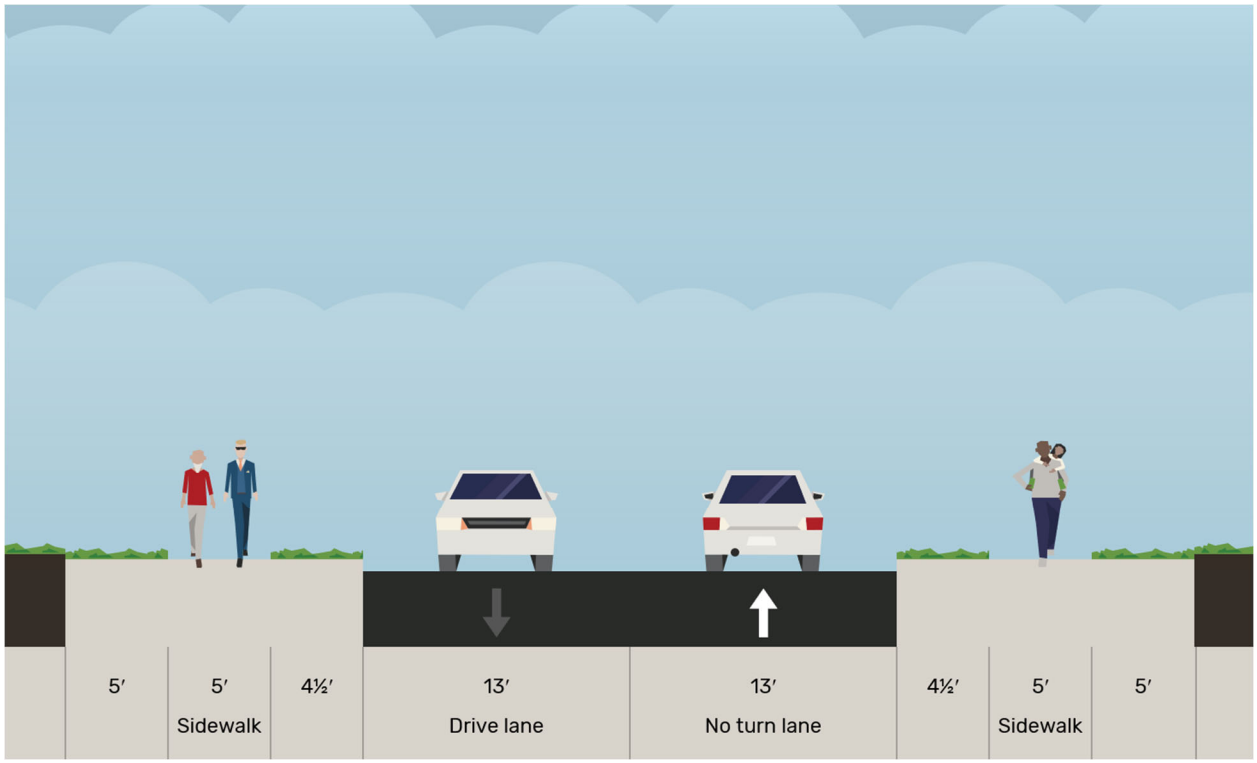


Plate 23 Pool Street to North Main Street (Segment 3) – Alternative 3b

Alternative 4 - Two-Way Left Turn Lane

This alternative would reconfigure the existing roadway by widening the roadway from 32 feet to 35 feet, striping the roadway to provide two 11-foot travel lanes and a 12-foot two-way left-turn lane to facilitate vehicle circulation along the corridor. Since there are currently no traffic signals or stop controls for traffic along Eleventh Street, this alternative was developed as a way to facilitate turns onto cross streets while minimizing delays for east-west traffic along Eleventh Street.

Continuous 5-foot sidewalks would be constructed along the entire length of the segment. A 5-foot public utility easement would be established between the sidewalk and the adjacent homes to enable the utility poles to be relocated outside the sidewalk area.

- **Right-of-Way Required** – 55 feet.
- **Lane Configuration** – Two 12-foot travel lanes and 11-foot two-way left turn lane.
- **Bicycle Facilities** – No designated bicycle facilities on Eleventh Street, bicycle boulevard/multi-use path to be provided along Tenth Street.
- **Sidewalks** – Continuous 5-foot sidewalks along both sides of the street.
- **Other** – Utility poles to be relocated or undergrounded along public utility easement.

The proposed cross-section for Alternative 4 is presented in Plate 24.

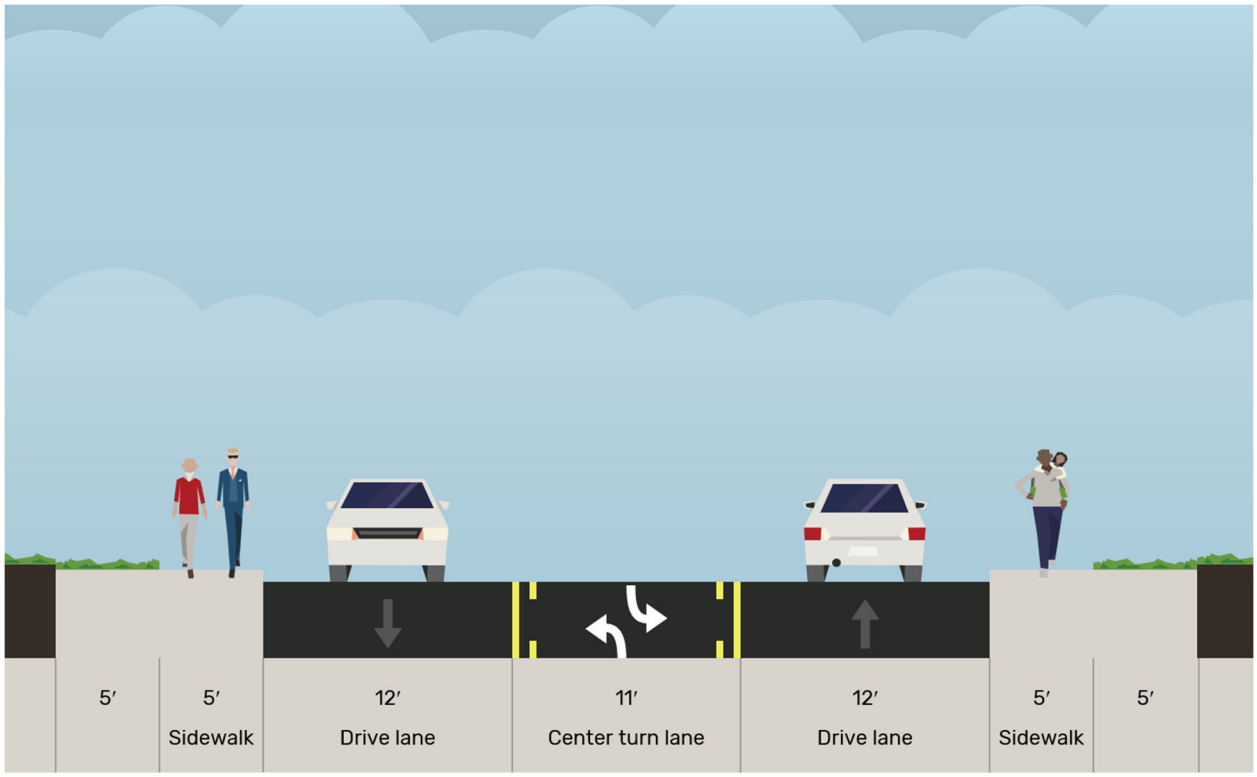


Plate 24 Pool Street to North Main Street (Segment 3) – Alternative 4

Alternative 5 - Eleventh/Clearlake One-Way Couplet

Under this alternative, Eleventh Street would accommodate eastbound vehicular traffic, while westbound traffic would be directed to Clearlake Avenue. Since Clearlake Avenue only extends as far as Pool Street, westbound vehicles would be required to turn left at Pool Street to access Eleventh Street, turning right onto Eleventh to continue westward. West of Pool Street, Eleventh Street would accommodate traffic in both directions. Since this configuration would include only one travel lane along Eleventh Street in Segment 3, the remaining roadway space could be reallocated to facilities for pedestrians and bicyclists.

- **Right-of-Way Required** – 55 feet.
- **Lane Configuration and Traffic Flow** – One eastbound travel lane along Eleventh Street. Westbound traffic along Clearlake Avenue and Pool Street.
- **Bike Lanes** – 6-foot bike lanes would be provided, plus a 3.5-foot buffer between the bike lanes and the vehicle travel lanes.
- **Sidewalks** – Continuous 6.5-foot sidewalks along both sides of the street.
- **Other** – Utility poles to be relocated to public utility easement. Clearlake Avenue/North High Street intersection would need to be redesigned to accommodate the proposed traffic flow.

The proposed cross-section for Alternative 5 is presented in Plate 25.

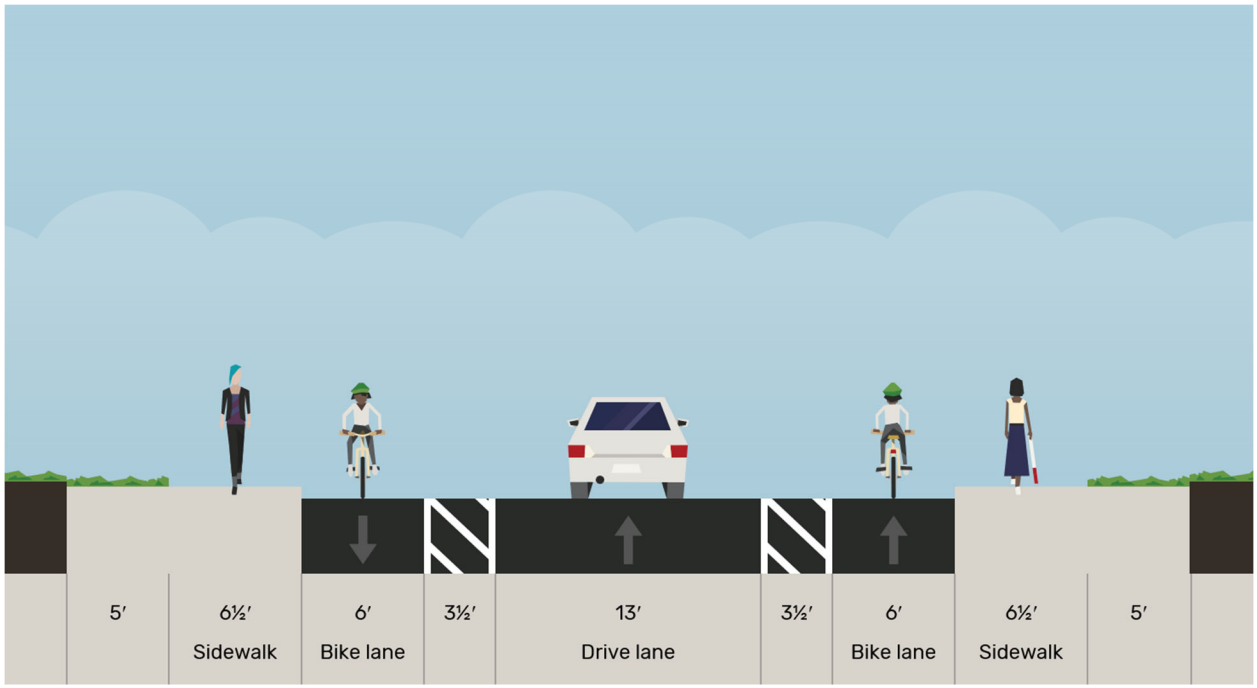


Plate 25 Pool Street to North Main Street (Segment 3) – Alternative 5

Design Elements

In addition to the alternative cross-sections described above, a number of the design elements described in the best practices chapter were recommended for consideration, as described below. These design elements could potentially be included in any of the cross-section alternatives.

- **Mini-Roundabout at Eleventh Street/North Forbes Street Intersection** – As noted earlier, the Eleventh Street/North Forbes Street intersection is the site of 10 of the 15 collisions recorded along the Eleventh Street corridor. Of the 10 collisions, seven were identified as related to right-of-way violations. A mini-roundabout at this location would reduce the number of conflict points and eliminates all left-turn movements through an intersection, as indicated in Plate 26. While there is not sufficient land available for a full-size roundabout at this location without significant impacts on neighboring properties, a mini-roundabout could be constructed at this location with minimal impacts to adjoining properties.

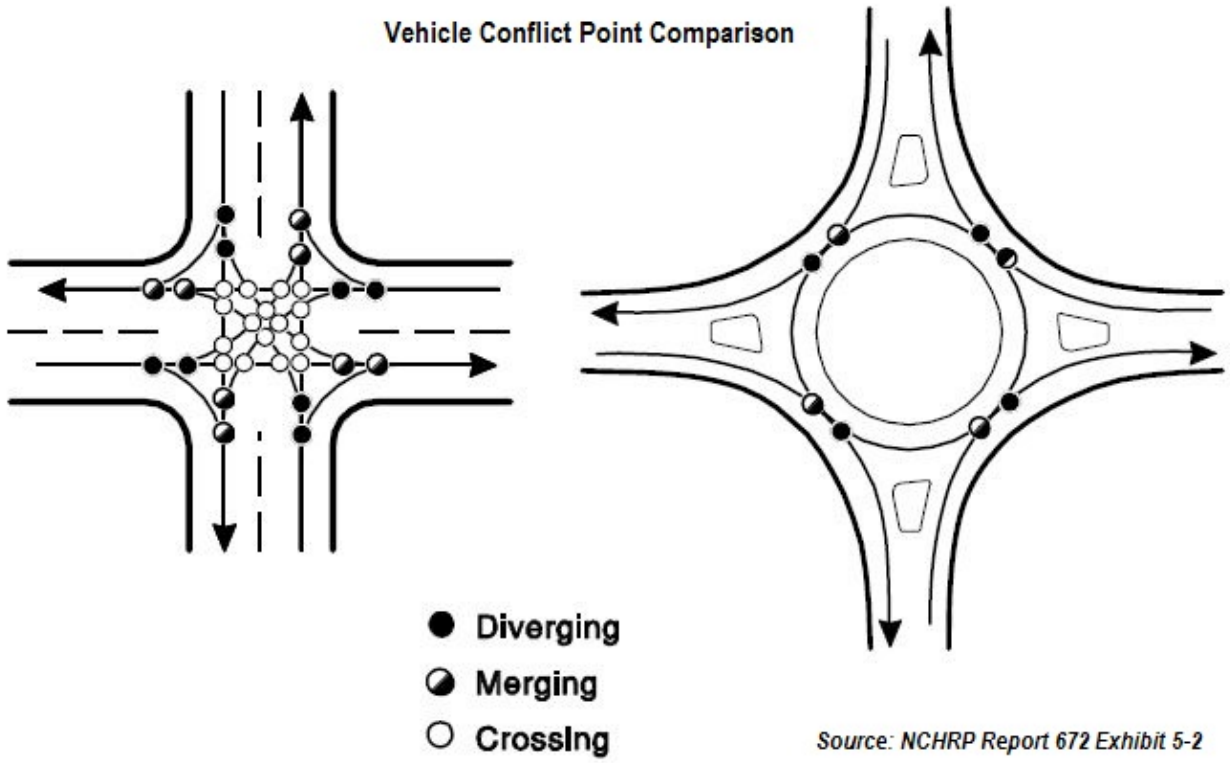


Plate 26 Reduced conflict points with roundabout compared to conventional four-way intersection

Since the alternatives generally assumed that a 45-foot cross-section plus an additional 10 feet for a public utility easement would be available, additional right-of-way would be required. To be consistent with these alternatives, the preliminary design concept for the mini-roundabout assumed that the available right-of-way would be 45 feet. The land required beyond this area would be approximately 90 square feet, the majority of which would be from the southeast corner of the intersection where there is landscaping in an office parking lot. Plate 27 illustrates the mini-roundabout concept, including the additional right-of-way required.

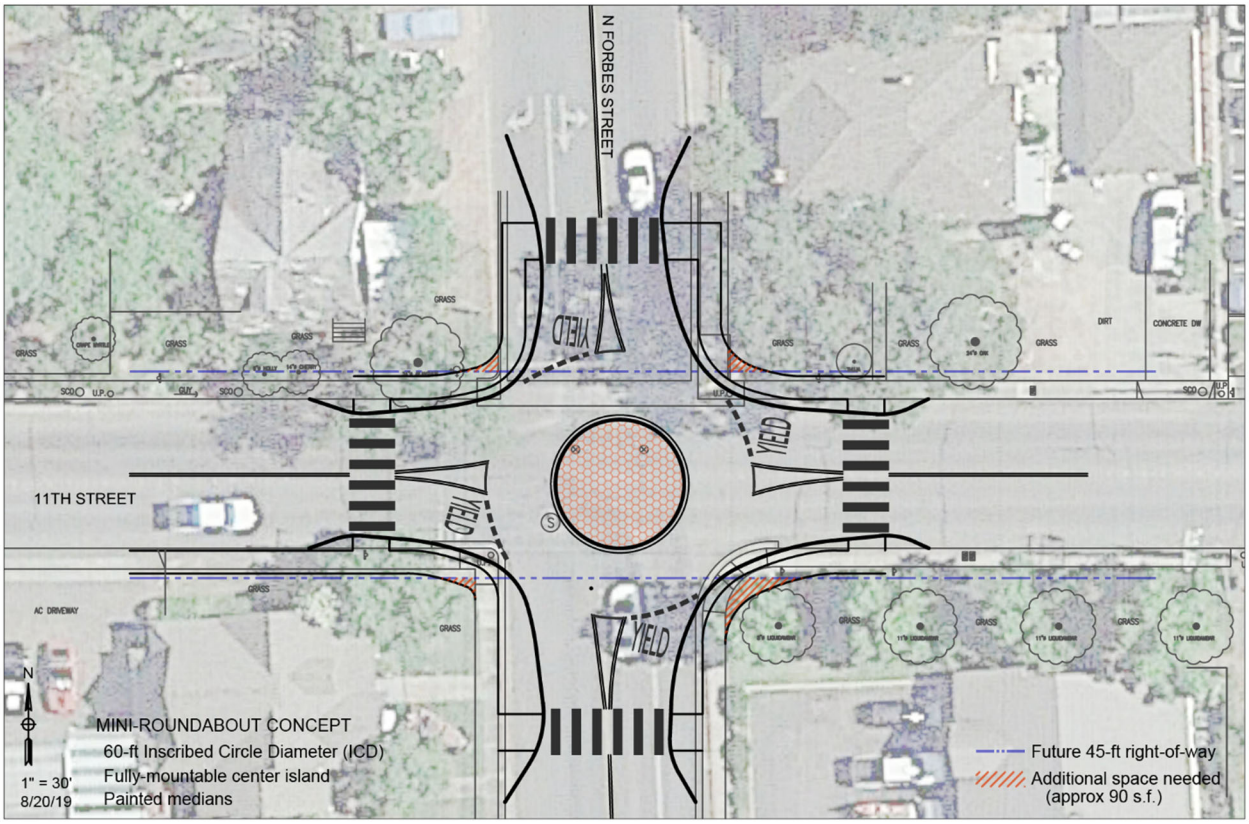


Plate 27 Mini-roundabout concept plan for Eleventh St/North Forbes St intersection

- **Bicycle Boulevard** – The bicycle boulevard was identified as a component of Alternatives 3a, 3b, and 4 and it would provide the only designated bicycle facilities in the corridor between Pool Street and North Main Street. However, it could also be included as an element in Alternatives 1 and 2 – which include bike lanes – to serve as a low-traffic option for bicyclists uncomfortable in riding adjacent to higher-speed traffic.

- **Multi-Use Path** – The City currently owns right-of-way between Manzanita Street and Pool Street, continuing the Tenth Street corridor. A multi-use path along this right-of-way would provide connectivity for pedestrians and bicyclists and provide connectivity from North Main Street to Pool Street for users of the proposed bike boulevard.

- **Painted Intersection** – Several low-volume intersections along Tenth Street between North Forbes Street and Manzanita Street would be good candidates for a painted intersection. This feature would help to highlight that Tenth Street is intended to have slow-moving traffic and would also provide an opportunity for local residents to help design and implement a public art project to beautify their neighborhood.

- **Curb Ramps and Detectable Warnings** – These features are important for meeting the needs of people with disabilities and would be required at locations throughout the project area in accordance with the Americans with Disabilities Act (ADA) guidelines.

- **Pedestrian scale lighting** – Lighting, especially at crosswalks, would help enhance the visibility of pedestrians to drivers. Pedestrian scale lighting uses shorter poles than typical street lighting, keeping the light focused primarily on pedestrians and minimizing impacts on the surrounding community.

- **Rectangular Rapid Flashing Beacons (RRFB) –** RRFBs are proposed for crossings of Eleventh Street at the intersections of Mellor Drive, Pool Street, and High Street. Mellor Drive and Pool Street serve the primary commercial destinations along the corridor, including the 11th Street Plaza shopping center and medical

offices. The enhanced Pool Street crossing would also support a bicycle boulevard on Tenth Street, as bicyclists continuing along the Eleventh Street corridor would be able to use the RRFB to help cross Eleventh Street to access the bike lanes. High Street was identified as an important crossing as it is the primary north-south route in this part of Lakeport, providing direct access to the Lake County library and the public schools.

- **Radar Feedback Sign** – A radar feedback sign could support reduction of speeds as vehicles approach the center of Lakeport from SR 29. The posted speed limit decreases from 35 mph to 30 mph at the U.S. Post Office driveway where the roadway configuration changes and the two-way left turn lane begins.

- **Crosswalk Signing and Markings** – Various treatments can be used to enhance the visibility of pedestrian crossings. These include two-sided pedestrians crossing signs, "continental" or "zebra-style" crosswalk markings, and advanced yield markings (also known as "shark's teeth"), which are shown in Plate 28.

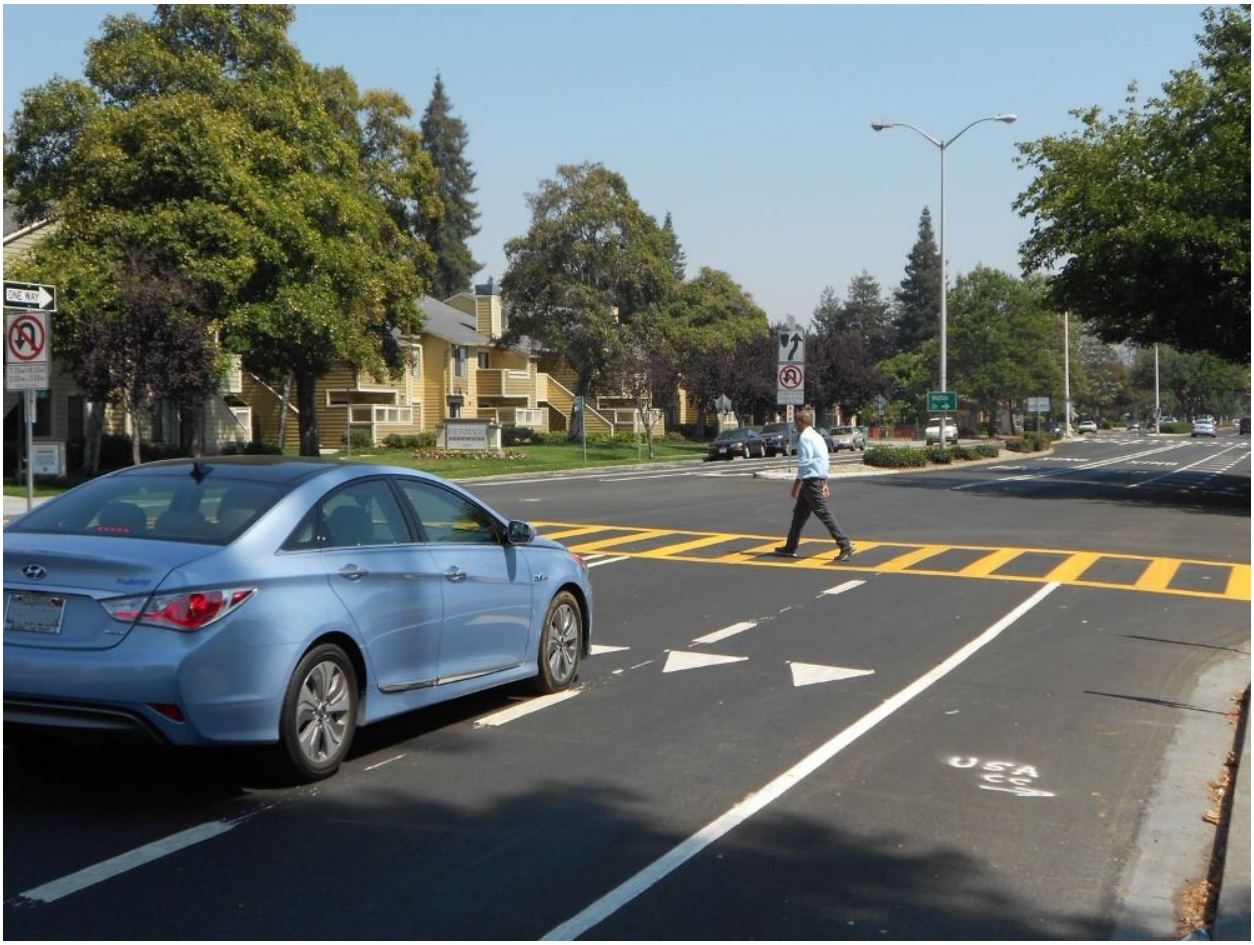


Plate 28 Advance yield markings direct drivers to yield to pedestrians before reaching the crosswalk

Evaluation of Alternatives

Alternatives were evaluated based on the combination of results of the technical analysis, input from the general public and TAG, policies and projects from previously adopted plans, and the goals identified for this plan. The alternatives evaluation process consisted of the following steps:

- Alternatives Screening – Pool Street to North Main Street
- Input from General Public
- Alternatives Assessment
- Input collected at presentations to TAG, Traffic Safety Advisory Committee, Lake APC TAC, Lakeport City Council, Lake APC Board of Directors

Alternatives Screening - Pool Street to North Main Street (Segment 3)

The alternatives developed for the portion of the corridor west of Pool Street (Segments 1 and 2) included recommendations to enhance pedestrian and bicycle facilities but without major modifications to traffic flow. However, the potential cross-sections for Segment 3, east of Pool Street, could have a wide range of impacts on vehicle circulation. To keep the study focused on feasible options, the preliminary alternatives identified for this segment were reviewed for fatal flaws to determine if they should undergo further consideration. Alternatives 1 and 5 were determined to have undesirable impacts, based on conflicts with goals of the study, comments received in the first phase of the community engagement process, or concerns identified by that TAG:

- **Alternative 1: Optimal Facilities for All Users**

  This alternative would have provided the preferred width and buffering for all users of the Eleventh Street corridor – automobiles, trucks, buses, bicyclists, and pedestrians. However, based on the right-of-way required for this alternative, at least nine homes would lose part of their frontage as they are located within the required right-of-way. As a result of this potential impact on the neighborhood, this alternative was eliminated from further consideration.

- **Alternative 5: Eleventh/Clearlake One-Way Couplet**

  The proposed one-way couplet would relocate the westbound travel lane off Eleventh Street between Pool Street and North Main Street, making additional space available for use by other transportation modes. As a result, this alternative would have provided comfortable accommodations for bicyclists and pedestrians along this portion of Eleventh Street.

  However, this configuration was determined to have problematic impacts on circulation patterns, especially for large vehicles. To access 11th Street Plaza and other points west vehicles traveling from the center of Lakeport would no longer be able to turn left onto Eleventh Street; instead they would be directed to Clearlake Avenue, to Pool Street, and back onto Eleventh Street. The intersection of Clearlake Avenue/North High Street would need to be redesigned as westbound traffic is not currently permitted through the intersection.

  Of greater concern is the anticipated impacts of this alternative on large vehicle traffic. Eleventh Street currently serves as a bus route for Lake Transit, a route for school buses, and a primary route for trucks entering the City from SR 29. In addition, many summer visitors to Lakeport drive oversized vehicles. The circuitous route described above would be challenging for large vehicles to navigate, and the downhill slope along Pool Street from Clearlake Avenue to Eleventh Street could pose safety concerns.

These impacts were determined to be sufficiently problematic that this alternative was removed from further consideration. Other potential concerns with this alternative such as impacts on intersection operations were therefore not analyzed.

Input from the Public

Community Workshop #2 took place on November 6, 2019, at Lakeport City Hall, with the focus on soliciting feedback on the alternatives for Segment 1, Segment 2, and the three remaining alternatives for Segment 3. Alternatives 2, 3 and 4 were presented to attendees for consideration. Alternatives 3a and 3b were presented as a single alternative, as 3a was intended to be an interim solution. The presentation also included a recommended set of design elements selected from the best practices section of this report. Community members were asked to rank and provide comments on the alternatives and design elements using a comment card (included in Appendix G). Approximately 20 community members attended the workshop. A poll of attendees found that the majority of the attendees did not attend the previous community workshop.

Community Workshop Themes

The major themes raised at the first community workshop included:

- Community members consistently supported pedestrian-related improvements, including sidewalks, crosswalks, and lighting improvements.

- Community members expressed several concerns about the addition of bicycle lanes on Eleventh Street east of Pool Street: 1) the existing curb-to-curb width is narrow and the addition of bike lanes could require taking of private property; 2) widening and completing the network of sidewalks on both sides of Eleventh Street is a higher priority improvement than installing bicycle lanes, which could require narrower sidewalks if installed; and 3) Due to traffic volumes and vehicle speeds along Eleventh Street, a bicycle boulevard along Tenth Street and a path connection between Pool Street and Manzanita Street were identified as a preferable alternative to provide enhanced bicycle access along the Eleventh Street corridor.

- Regarding the three alternatives for Segment 3, Alternative 3 was ranked highest, followed by Alternatives 2 and 4. Subsequent discussion of the alternatives indicated that Alternative 3 was generally preferred since the proposed sidewalks would be constructed toward the centerline of the roadway and would therefore have a reduced impact on property owners with Eleventh Street frontage.

Alternatives Assessment

Following the workshop, the TAG undertook a more in-depth analysis of the three alternatives for Segment 3. Upon further review of Alternative 3, Lakeport Public Works Department and Fire Department staff expressed concerns that the reduction of the roadway width would pose challenges for their operations. Currently the roadway is 32 feet wide from curb to curb, and the reduction in the existing roadway width from 32 to 26 feet would constrain the ability of maintenance crews for activities such as street or utility repair work to reroute and maintain traffic flow. In addition, Eleventh Street is the only east-west route in the area that connects the waterfront to SR 29, so it serves not only as a major traffic route but is also critical for emergency vehicle response. As the street grid in not interconnected along the entire corridor, there is a lack of viable alternative routes in the area. Based on these considerations, this alternative was eliminated from further consideration.

The remaining alternatives developed for each segment were evaluated to determine their potential benefits as well as negative impacts.

While both of the alternatives for Segment 3 would provide continuous sidewalks along Eleventh Street – identified by the public as the greatest need along this segment – they otherwise feature distinctly different

emphases. Both alternatives would require the same right-of-way. The key elements of each alternative are as follows:

- Alternative 2 would retain the existing two-lane configuration for vehicle traffic and would provide bicycle facilities to serve two different groups of bicyclists: 1) a bike lane along Eleventh Street that would serve bicyclists who are comfortable riding adjacent to vehicle traffic, and 2) a bicycle boulevard along Tenth Street, a street with very low traffic volumes and slow vehicle speeds, that would serve other riders. The bike lanes along Eleventh Street would result in a continuous bike facility along the study corridor from SR 29 to North Main Street.

- Alternative 4 would add a two-way left-turn lane to enhance vehicle circulation along Eleventh Street, while the bicycle boulevard would serve as the recommended bicycle route. The two-way left-turn lane would facilitate left turns for traffic along Eleventh Street, as through traffic could continue to flow while left-turning vehicles wait for a gap in the opposing traffic.

Under both alternatives, the bicycle boulevard would offer the benefit of providing bicycle access to the 11th Street Plaza shopping center in a low-traffic environment without needing to ride along Eleventh Street. Alternatives 2 and 4 are compared in more detail in Table 9.

Table 9 – Eleventh Street Corridor Study – Benefits of Alternatives 2 and 4		
Criterion	**Segment 3**	
	Alternative 2 (Bike Lanes on Eleventh St)	**Alternative 4 (2-Way Left Turn Lane)**
1. Pedestrian access/safety	Continuous 6.5′ sidewalk, bike lanes buffer pedestrians from vehicle lane	Continuous 5′ sidewalk
2. Bicycle access/safety (includes Tenth St)	Includes bike lane for riders comfortable in mixed traffic environment, bike boulevard for others	Bike boulevard, bicyclists share lane with vehicles on Eleventh St
3. Speed reduction	May have a moderate speed reduction effect by visually narrowing lanes	May result in a moderate increase in speed by reducing delay
4. Vehicular traffic flow	No impact	Moderate improvement due to reduction in delay
5. Impact on adjacent property owners	55′ right-of-way, only building impacted is shed	55′ right-of-way, only building impacted is shed
6. Supports previous plans		
Lake Co. Active Transportation Plan	Bike lane on Eleventh St, bike boulevard on Tenth St	Bike boulevard on Tenth St
Lakeport General Plan	Bike facility on Eleventh St, facility type not indicated	Bike facility on Eleventh St, facility type not indicated
7. Cost/ease of implementation	Cost of Alternative 4 cost due to required roadway widening	
8. City staff support	Staff opposes bike lane on Eleventh St	Recommended by staff
8. Input from Traffic Safety Advisory Committee, Lake APC TAC, Lakeport City Council	Not supported	Endorsed by all entities

Mini-Roundabout

A mini-roundabout was proposed for the Eleventh Street/North Forbes Street intersection to address the high collision rate, and more specifically the large number of broadside collisions. The proposal received positive support from workshop attendees, as several participants offered anecdotes about their own experiences or observations with safety concerns at that intersection. TAG members and the Lakeport Police Department also offered their support for the mini-roundabout concept as a promising option for reducing the number of collisions. The mini-roundabout is compatible with the designs of both Alternative 2 and Alternative 4.

As noted in the best practices chapter, mini-roundabouts are distinguished from full-size roundabouts by their smaller radius, which particularly impacts vehicles such as buses and trucks needing to turn at the intersection. To accommodate these vehicles, the center island of a mini-roundabout is designed to be fully mountable. The consultant team reviewed the preliminary mini-roundabout design with the Lakeport Fire Department, Lakeport Police Department, Lake Transit, and the Lakeport Unified School District to identify any concerns regarding the ability of their vehicles to navigate the mini-roundabout and no concerns were expressed. Plate 29 illustrates

how buses could navigate the mini-roundabout at the Eleventh Street/North Forbes Street intersection based on the proposed design.

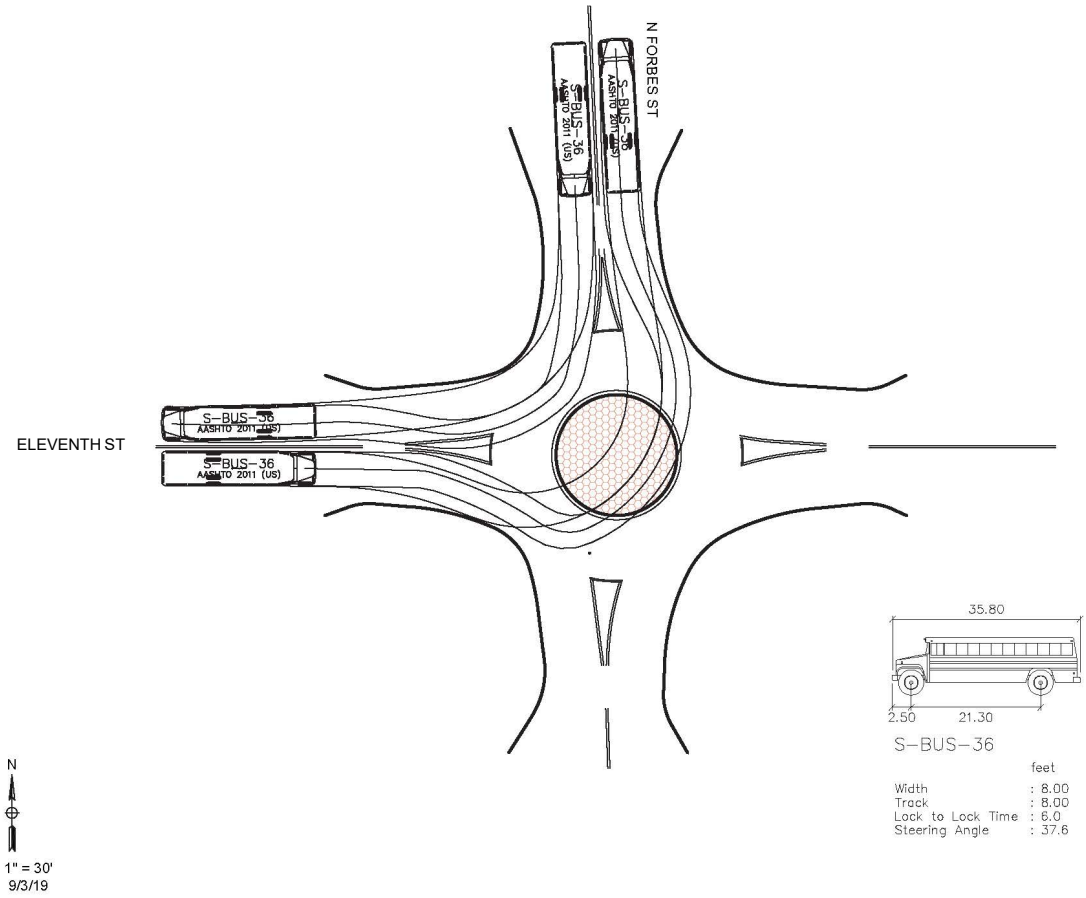


Plate 29 Mountable curb on the central island would enable the proposed mini-roundabout to accommodate left turns for vehicles with large turning radii

Recommended Plan

Following the analysis of the alternatives and design elements, the draft plan was presented to the following groups for review and public comment:

- Technical Advisory Group (December 18, 2019)
- Lake Area Planning Council Technical Advisory Committee (March 19, 2020)
- Traffic Safety Advisory Committee (April 6, 2020)
- Lakeport City Council (May 26, 2020)
- Lake Area Planning Council Board of Directors (June 3, 2020)

Presentation of the draft plan included the recommended alternatives for Segment 1 and Segment 2. For Segment 3, Alternatives 2 and 4 were both presented for discussion and comment at each meeting. All of the five entities listed above endorsed Alternative 4 for inclusion in the recommended plan.

Table 10 summarizes the final plan recommendations, including the key project elements, the major issues identified through the planning process for those locations, and how the proposed improvements would address those concerns.

Table 10 – Eleventh Street Corridor Study – Alternatives Comparison			
Improvement Type ***Location***	**Key Project Elements**	**Concern Identified through Technical Analysis or Public Input**	**How Proposal Would Address Concerns and Other Project Benefits**
Cross-Section Alternatives			
SR 29 to U.S. Post Office (Segment 1)	Buffered bike lanes	Highest vehicle speeds in Eleventh St. corridor	Increase separation between bicyclists and vehicle traffic
	Pedestrian path	Existing dirt path indicates demand for pedestrian facilities	Provide paved surface for pedestrians
U.S. Post Office to Pool St (Segment 2)	Remove turnouts, modify bike lane striping, add crosswalks	Turnouts not clearly marked, bike lane striping unclear, missing crosswalks across driveways, wide driveways allow vehicles to turn at higher speeds	Clearly mark path of travel for drivers, bicyclists, and pedestrians
	RRFB at Eleventh St/ Mellor Dr	Difficult to cross the street	Increase driver yielding to pedestrians
	RRFB at Eleventh St/ Pool St	Difficult to cross the street	Increase driver yielding to pedestrians
Pool St to N Main St (Segment 3)	Continuous sidewalks	Narrow sidewalks, gaps, obstructed by utility poles	Provide continuous paved walkway and curb ramps for people with disabilities
	Two-way left turn lane	Potential backups as left-turning vehicles wait for gap in traffic	Facilitate left turns for east-west traffic
Design Elements (Segment 3, Alternative 2 or 4)			
Eleventh St/ N High St	RRFB	Difficult to cross the street	Increase driver yielding to pedestrians
Eleventh St/ N Forbes St	Mini-roundabout	High vehicle collision rate	Improve intersection safety, maintain traffic flow
Tenth St	Bike boulevard and path connection	High traffic volumes on Eleventh St problem for bicyclists	Low traffic alternative for east-west bicycle access in Eleventh St corridor
	Painted intersection	Bicycle boulevard unfamiliar to Lakeport residents	Communicate to drivers to maintain slow speeds

The project elements for each segment are described below, and excerpts of the concept plans for each segment are presented in Plates 30, 31, and 32. The full concept plan for the entire corridor is presented in Appendix H.

Segment 1 - SR 29 to U.S. Post Office

- Restripe roadway to include two 12-foot travel lanes and 5-foot bike lanes, separated by a 3-foot striped buffer.
- Pave 5-foot asphalt pathway along the south side of the roadway from SR 29 northbound ramps to Central Park Avenue.

- Construct curb, gutter, and sidewalk from Central Park Avenue to U.S. Post office on both sides of Eleventh Street.
- Relocate utility pole to provide adequate clearance for pedestrians.

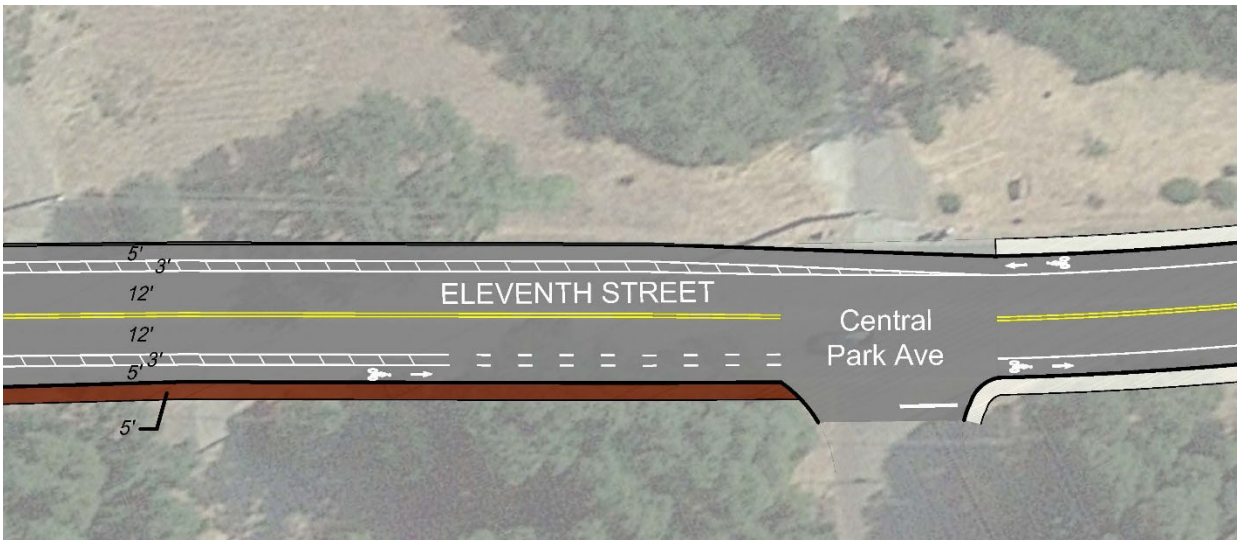


Plate 30 Selected portion of Segment 1 Preferred Alternative

Segment 2

- Construct continuous 5-foot sidewalks along the north side of Eleventh Street (built toward centerline of roadway, narrowing existing street width).
- Reconstruct curb along the south side of Eleventh Street, eliminating right-turn pockets at shopping center driveways.
- Add crosswalks across each shopping center driveway.
- Modify bike lane striping to include dashed lines across shopping center driveways.
- Add enhanced crossing treatments at the intersection of Eleventh Street/Mellor Drive, including advance yield markings, double-sided pedestrian crossing signs, and rectangular rapid flashing beacons (RRFB).

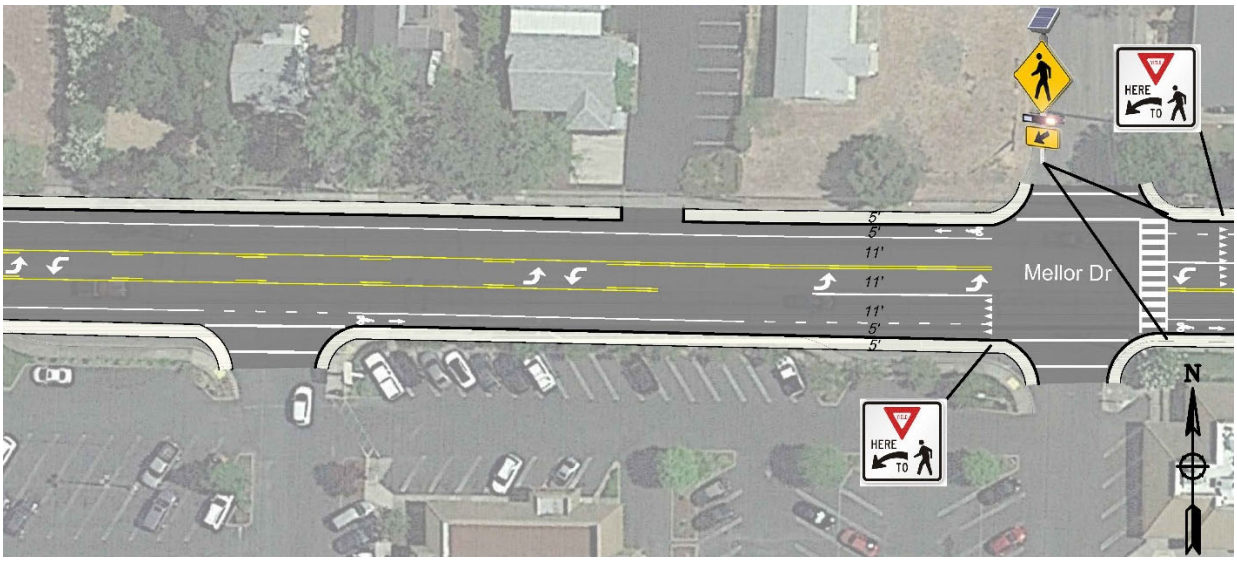


Plate 31 Selected portion of Segment 2 Preferred Alternative

Segment 3 – Pool Street to Main Street

- Construct mini-roundabout at the Eleventh Street/Forbes Street intersection.
- Relocate utility poles to public utility easement to provide adequate clearance for pedestrians.
- Widen roadway from 32 feet to 35 feet and restripe roadway to include two twelve-foot travel lanes and a two-way left turn lane.
- Construct curb, gutter and sidewalk along the north and south sides of the street for the entire segment.
- Add enhanced crossing treatments at the intersections of Eleventh Street/Pool Street and Eleventh Street/High Street, including advance yield markings, double-sided pedestrian crossing signs, and rectangular rapid flashing beacons (RRFB).
- Add pavement markings and signage to establish a bike boulevard along Tenth Street from Main Street to Manzanita Street. Relocate stop signs from Tenth Street to Brush Street at the Tenth Street/Brush Street intersection to maintain the flow of bicycle traffic.
- Develop a Class I multi-use path along City-owned right-of-way between Manzanita Street and Pool Street, providing an extension of the bike boulevard.

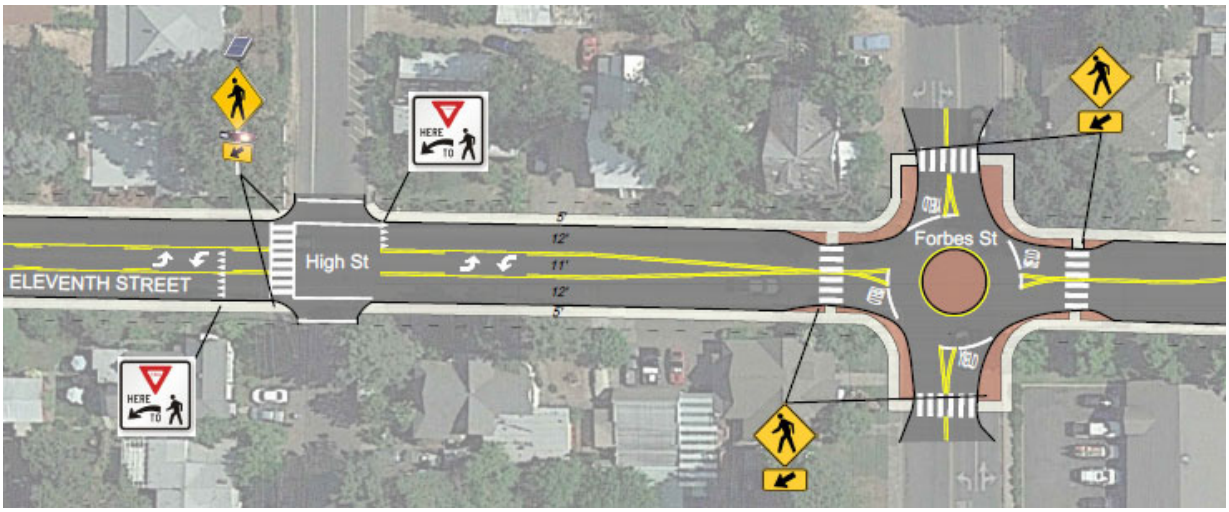


Plate 32 Selected portion of Segment 3 Preferred Alternative

Cost Estimate of Recommended Plan

Planning-level cost estimates were developed for the recommended plan. The total project cost was estimated to be $3,545,542, which is summarized by segment in Table 11. The detailed cost estimates are presented in Appendix I.

Table 11 – Eleventh Street Corridor Study Recommended Plan – Planning-Level Cost Estimate

Segment	Item	Cost
SR 29 to U.S. Post Office (Segment 1)	Asphalt path	$50,000
	Curb, gutter, sidewalk	$127,200
	Curb ramps	$12,000
	Striping	$15,800
	Pavement markings	$500
	Signage	$3,000
Segment 1 subtotal		$208,500
U.S. Post Office to Pool St (Segment 2)	Curb, gutter, sidewalk	$236,400
	Eliminate right-turn lane, reconstruct curb	$250,000
	Curb ramps	$92,000
	Striping	$27,000
	Pavement markings	$3,400
	Signage	$9,000
	Streetlights	$50,000
	RRFB	$60,000
Segment 2 subtotal		$727,800
Pool St to N Main St (Segment 3)	Curb, gutter, sidewalk	$384,000
	Curb ramps	$200,000
	Roadway widening	$555,000
	Striping	$19,200
	Pavement markings	$4,100
	Signage	$6,000
	Streetlights	$75,000
	RRFB	$30,000
	Mini-roundabout	$450,000
Segment 3 subtotal		$1,723,300

Tenth St Bike Boulevard	Striping	$1,200
	Pavement markings	$4,500
	Signage	$12,000
	Crosswalk Art	$20,000
	Multi-use path	$30,000
Bike boulevard subtotal		$67,700
Subtotal		$2,727,300
Contingency (30%)		$818,200
Total		**$3,545,500**

Implementation and Funding

Key implementation issues

Implementing a project of this scope will be a multi-year process, potentially involving several phases. The ability of the City to move forward on implementing the recommended improvements will depend on numerous factors, including the items described below.

Right-of-Way

The most critical implementation issue to address will be securing the right-of-way to implement improvements between Pool Street and North Main Street. While the recommended plan would not impact any structures along Eleventh Street, the right-of-way issues involve each parcel along this segment, requiring the City to work with numerous property owners. This would primarily impact the City's ability to implement sidewalks along this segment. In addition, resolution of the right-of-way issues are required to establish a public utility easement to accommodate the proposed relocation of utility poles along this segment.

Public Engagement

As corridor improvements advance in the design process, the City should continue outreach to local stakeholders, particularly property owners, business owners, and residents that would be most impacted by the planned improvements. Future public engagement efforts should also focus on continuing to include disadvantaged communities in this process as they are likely to be disproportionately impacted by facilities that will impact walking, bicycling, and transit access.

Potential Funding Sources

The Active Transportation Program (ATP) is California's largest funding program for bicycle and pedestrian projects. Awarded by the California Transportation Commission and administered by Caltrans, ATP formerly consisting of several smaller programs, including the Bicycle Transportation Account (BTA), Safe Routes to School (SRTS), Transportation Alternatives Program (TAP), and a portion of the Recreational Trails Program (RTP). Originally funded for approximately $120 million per year, that amount nearly doubled with the passage of the Road Repair and Accountability Act of 2017 (more commonly known as SB 1). ATP awards funds to projects based on their support for the following program goals:

- Increase the proportion of trips accomplished by biking and walking
- Increase safety and mobility for non-motorized users
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals
- Enhance public health
- Ensure that disadvantaged communities fully share in the benefits of the program
- Provide a broad spectrum of projects to benefit many types of active transportation users

The first four funding cycles have been awarded. The Cycle 5 statewide call for projects is anticipated to be issued in spring of 2020. More information about ATP can be found at the CTC and Caltrans web pages:

CTC ATP web page: https://catc.ca.gov/programs/active-transportation-program

Caltrans ATP web page:
https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/active-transportation-program

Next steps

Project Phasing

As noted above, resolving the right-of-way issues will be required to implement improvements between Pool Street and North Main Street. However, there are numerous other project elements that can be implemented more easily and will provide significant value to the community as stand-alone projects. It is recommended that the City work to secure the right-of-way necessary while at the same time seeking funding to design and construct the following elements of the project:

- Segment 1 improvements – buffered bike lanes, pedestrian path, sidewalks
- Segment 2 improvements – curb realignment, bike lane striping, sidewalks, RRFB at Mellor Drive and Pool Street intersections
- Tenth Street Bicycle Boulevard – pavement markings and signage
- Manzanita Street to Pool Street path connection

This set of improvements would provide significant benefits to east-west pedestrian and bicycle access and safety throughout the study area and could potentially be packaged as a single grant project.

The proposed Eleventh Street/North Forbes Street mini-roundabout could also potentially be implemented without resolving the right-of-way issues and could be funded as a stand-alone project. This project could improve safety at this intersection, which has been the site of most of the collisions in this corridor.

Other Related Projects/Issues

- *Bus stops* – The design and location of the existing bus stop adjacent to the Safeway should be evaluated as part of the redesign of the driveways. Lake Transit staff has indicated that there are circulation issues with the bus exiting the parking lot, blocking vehicles from entering the parking lot. Without consideration of this issue, the removal of the turnout at this location could result in stopped vehicle traffic on Eleventh Street.

- *North-south circulation* – While the scope of this plan was limited to enhancing east-west circulation, comments received during the community engagement process also identified concerns regarding north-south circulation, especially connections to High Street.

- *Roundabout at Eleventh Street/Central-Park Avenue-Alden Avenue intersection* – The City's General Plan calls for the extension of Alden Avenue to Eleventh Street, where it would intersect opposite Central Park Avenue. A roundabout has previously been identified for that intersection. In addition to circulation benefits, this could also serve as a gateway treatment for vehicles entering Lakeport from SR 29.

Study Participants and References

Study Participants

Technical Advisory Group (TAG)

John Speka – *Project Manager, Lake Area Planning Council*
Dave Brown – *City of Lakeport Traffic Safety Advisory Committee*
Lisa Davey-Bates – *Lake Area Planning Council*
Scott De Leon, Todd Mansell – *Lake County Public Works Department*
Wanda Gray – *Lake Transit*
Douglas Grider – *City of Lakeport Public Works Department*
Kevin Ingram – *City of Lakeport Community Development Department*
Alexis Kelso – *Caltrans District 1*

Consultant Team

W-Trans

Dalene J. Whitlock, PE, PTOE – *Principal in Charge*
Zack Matley, AICP – *Principal*
Barry Bergman, AICP – *Senior Transportation Planner*
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Katia Wolfe – *Graphics*
Alex Scrobonia – *Editing/Formatting*

Local Government Commission

Josh Meyer – *Director, Community Planning Programs*
Cayla McDonell – *Project Manager*

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Appendix A

Traffic Counts

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Prepared by NDS/ATD

VOLUME

11th St Bet. Main St & Forbes St

Day: Wednesday
Date: 2/20/2019

City: Lakeport
Project #: CA19_8076_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,930	1,917	3,847

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		2		4		12:00			49		51		100	
00:15			0		1		1		12:15			42		49		91	
00:30			0		0		0		12:30			39		47		86	
00:45			0	2	0	3	0	5	12:45			60	190	53	200	113	390
01:00			0		0		0		13:00			56		50		106	
01:15			0		2		2		13:15			49		53		102	
01:30			3		0		3		13:30			60		45		105	
01:45			0	3	0	2	0	5	13:45			53	218	44	192	97	410
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02:15			0		3		3		14:15			54		47		101	
02:30			0		0		0		14:30			40		42		82	
02:45			0	1	1	4	1	5	14:45			38	174	28	160	66	334
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03:15			0		0		0		15:15			38		47		85	
03:30			0		0		0		15:30			48		40		88	
03:45			1	1	0	1	1	2	15:45			59	182	33	170	92	352
04:00			1		0		1		16:00			39		57		96	
04:15			0		0		0		16:15			45		38		83	
04:30			0		0		0		16:30			32		41		73	
04:45			2	3	0		2	3	16:45			32	148	41	177	73	325
05:00			0		1		1		17:00			32		53		85	
05:15			1		1		2		17:15			31		39		70	
05:30			2		0		2		17:30			33		31		64	
05:45			3	6	1	3	4	9	17:45			31	127	16	139	47	266
06:00			5		1		6		18:00			22		23		45	
06:15			4		4		8		18:15			17		22		39	
06:30			6		7		13		18:30			18		19		37	
06:45			7	22	8	20	15	42	18:45			12	69	18	82	30	151
07:00			8		11		19		19:00			17		12		29	
07:15			9		12		21		19:15			15		22		37	
07:30			15		9		24		19:30			13		18		31	
07:45			22	54	26	58	48	112	19:45			11	56	11	63	22	119
08:00			18		17		35		20:00			12		15		27	
08:15			26		19		45		20:15			3		10		13	
08:30			29		16		45		20:30			5		7		12	
08:45			36	109	13	65	49	174	20:45			7	27	6	38	13	65
09:00			25		27		52		21:00			8		15		23	
09:15			28		33		61		21:15			7		7		14	
09:30			33		36		69		21:30			8		9		17	
09:45			40	126	39	135	79	261	21:45			4	27	4	35	8	62
10:00			35		36		71		22:00			4		1		5	
10:15			46		38		84		22:15			2		3		5	
10:30			47		35		82		22:30			3		3		6	
10:45			41	169	48	157	89	326	22:45			2	11	7	14	9	25
11:00			45		44		89		23:00			3		2		5	
11:15			48		49		97		23:15			5		2		7	
11:30			53		47		100		23:30			2		0		2	
11:45			45	191	53	193	98	384	23:45			4	14	2	6	6	20
TOTALS				687		641		**1328**	**TOTALS**				1243		1276		**2519**
SPLIT %				51.7%		48.3%		**34.5%**	**SPLIT %**				49.3%		50.7%		**65.5%**

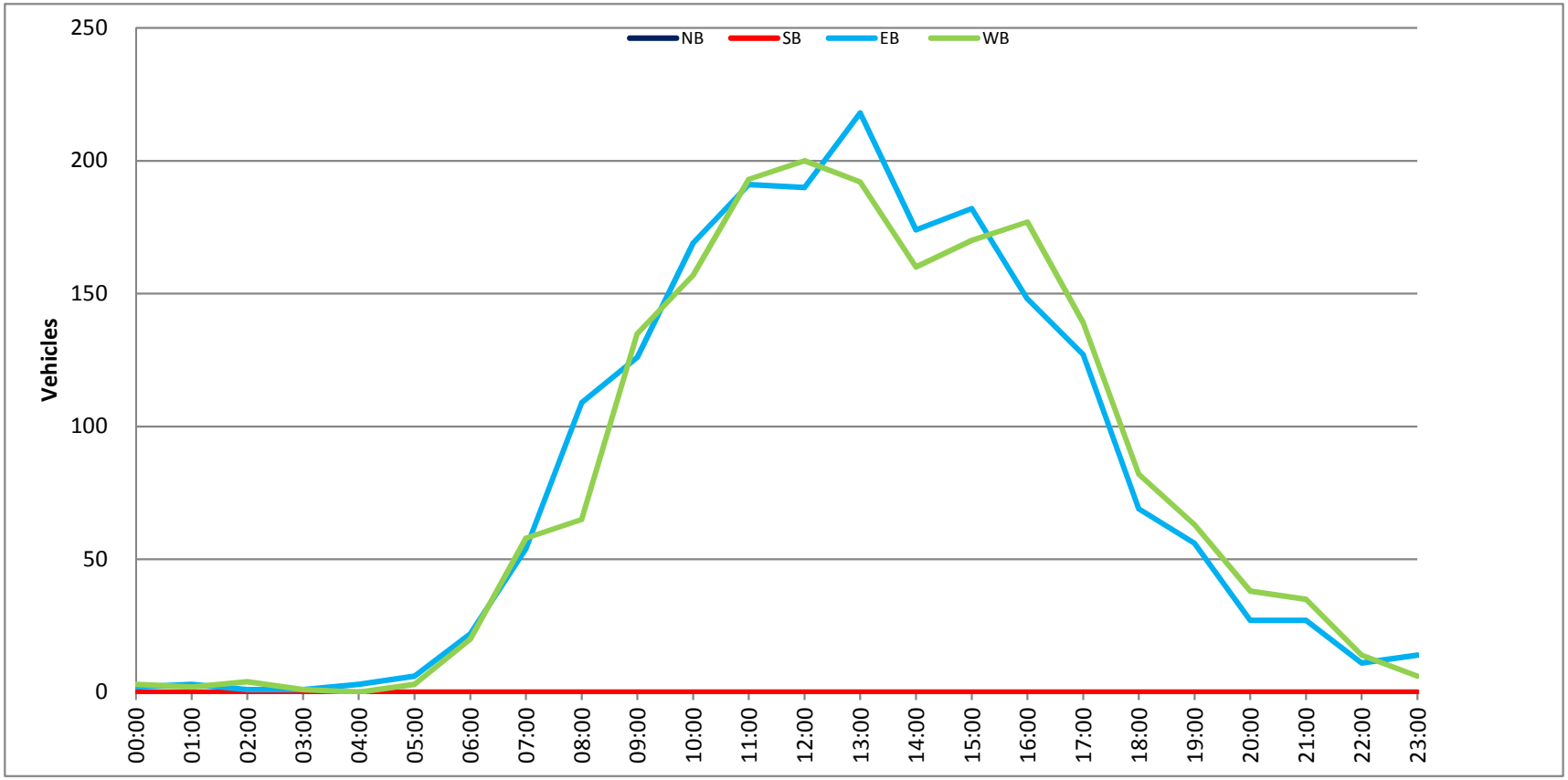
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,930	1,917	3,847

AM Peak Hour				11:15		11:15		**11:15**	**PM Peak Hour**				12:45		12:30		**12:45**
AM Pk Volume				195		200		**395**	**PM Pk Volume**				225		203		**426**
Pk Hr Factor				0.920		0.943		**0.988**	**Pk Hr Factor**				0.938		0.958		**0.942**
7 - 9 Volume	0	0		163		123		**286**	**4 - 6 Volume**	0	0		275		316		**591**
7 - 9 Peak Hour				08:00		07:45		**08:00**	**4 - 6 Peak Hour**				16:00		16:00		**16:00**
7 - 9 Pk Volume	0	0		109		78		**174**	**4 - 6 Pk Volume**	0	0		148		177		**325**
Pk Hr Factor	0.000	0.000		0.757		0.750		**0.888**	**Pk Hr Factor**	0.000	0.000		0.822		0.776		**0.846**

Prepared by NDS/ATD

Project #: CA19_8076_001 **City:** Lakeport

Location: 11th St Bet. Main St & Forbes St **Date:** 2/20/2019



Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

11th St Bet. Forbes St & N High St

Day: Wednesday
Date: 2/20/2019

City: Lakeport
Project #: CA19_8076_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,997	3,716	6,713

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
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0:15	0	0	1		1		2		12:15	0	0	66		79		145	
0:30	0	0	1		0		1		12:30	0	0	65		74		139	
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1:30	0	0	3		0		3		13:30	0	0	89		81		170	
1:45	0	0	0	3	1	3	1	6	13:45	0	0	70	317	68	334	138	651
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3:15	0	0	0		4		4		15:15	0	0	71		96		167	
3:30	0	0	0		0				15:30	0	0	68		77		145	
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6:15	0	0	7		10		17		18:15	0	0	33		43		76	
6:30	0	0	8		23		31		18:30	0	0	35		39		74	
6:45	0	0	16	35	19	58	35	93	18:45	0	0	19	118	31	161	50	279
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7:15	0	0	24		31		55		19:15	0	0	22		39		61	
7:30	0	0	38		33		71		19:30	0	0	17		34		51	
7:45	0	0	59	140	54	151	113	291	19:45	0	0	12	80	32	141	44	221
8:00	0	0	54		56		110		20:00	0	0	14		32		46	
8:15	0	0	41		57		98		20:15	0	0	8		20		28	
8:30	0	0	51		41		92		20:30	0	0	5		18		23	
8:45	0	0	46	192	40	194	86	386	20:45	0	0	10	37	18	88	28	125
9:00	0	0	42		41		83		21:00	0	0	6		20		26	
9:15	0	0	43		64		107		21:15	0	0	10		18		28	
9:30	0	0	51		56		107		21:30	0	0	10		12		22	
9:45	0	0	64	200	58	219	122	419	21:45	0	0	7	33	15	65	22	98
10:00	0	0	50		71		121		22:00	0	0	7		6		13	
10:15	0	0	62		54		116		22:15	0	0	3		7		10	
10:30	0	0	63		65		128		22:30	0	0	4		8		12	
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11:00	0	0	66		77		143		23:00	0	0	3		6		9	
11:15	0	0	66		91		157		23:15	0	0	6		3		9	
11:30	0	0	73		83		156		23:30	0	0	2		6		8	
11:45	0	0	79	284	88	339	167	623	23:45	0	0	4	15	3	18	7	33
TOTALS				1112		1252		2364	TOTALS				1885		2464		4349
SPLIT %				47.0%		53.0%		35.2%	SPLIT %				43.3%		56.7%		64.8%

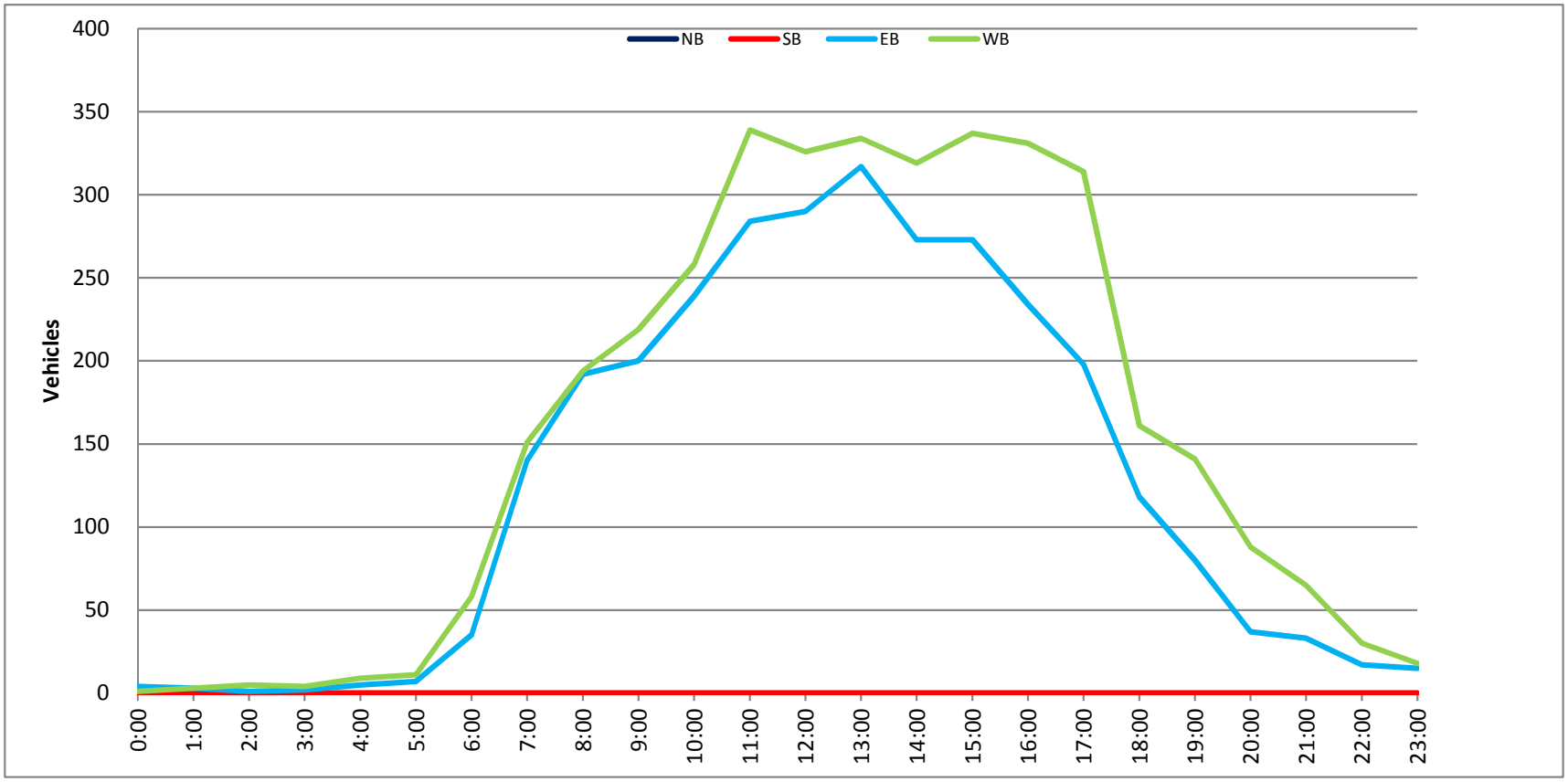
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,997	3,716	6,713

AM Peak Hour				11:15	11:15	11:15	PM Peak Hour				12:45	16:30	12:45
AM Pk Volume				296	350	646	PM Pk Volume				328	359	679
Pk Hr Factor				0.937	0.962	0.967	Pk Hr Factor				0.921	0.816	0.976
7 - 9 Volume	0	0		332	345	677	4 - 6 Volume	0	0		432	645	1077
7 - 9 Peak Hour				7:45	7:45	7:45	4 - 6 Peak Hour				16:00	16:30	16:15
7 - 9 Pk Volume	0	0		205	208	413	4 - 6 Pk Volume	0	0		234	359	570
Pk Hr Factor	0.000	0.000		0.869	0.912	0.914	Pk Hr Factor	0.000	0.000		0.900	0.816	0.885

Prepared by NDS/ATD

Project #: CA19_8076_002 **City:** Lakeport

Location: 11th St Bet. Forbes St & N High St **Date:** 2/20/2019



Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

11th St Bet. Pool St & Mellor Dr

Day: Tuesday
Date: 2/12/2019

City: Lakeport
Project #: CA19_8076_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,901	4,451	9,352

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00	0	0	4		1		5		12:00	0	0	92		108		200	
0:15	0	0	6		1		7		12:15	0	0	94		82		176	
0:30	0	0	1		2		3		12:30	0	0	85		88		173	
0:45	0	0	1	12	2	6	3	18	12:45	0	0	124	395	60	338	184	733
1:00	0	0	2		2		4		13:00	0	0	101		96		197	
1:15	0	0	2		1		3		13:15	0	0	119		95		214	
1:30	0	0	4		2		6		13:30	0	0	96		98		194	
1:45	0	0	1	9	0	5	1	14	13:45	0	0	114	430	110	399	224	829
2:00	0	0	3		4		7		14:00	0	0	113		100		213	
2:15	0	0	3		2		5		14:15	0	0	108		101		209	
2:30	0	0	1		0		1		14:30	0	0	96		109		205	
2:45	0	0	0	7	1	7	1	14	14:45	0	0	109	426	110	420	219	846
3:00	0	0	2		0		2		15:00	0	0	108		96		204	
3:15	0	0	3		4		7		15:15	0	0	114		142		256	
3:30	0	0	0		4		4		15:30	0	0	105		84		189	
3:45	0	0	3	8	2	10	5	18	15:45	0	0	116	443	91	413	207	856
4:00	0	0	3		3		6		16:00	0	0	123		111		234	
4:15	0	0	2		3		5		16:15	0	0	105		86		191	
4:30	0	0	1		0		1		16:30	0	0	101		99		200	
4:45	0	0	4	10	6	12	10	22	16:45	0	0	105	434	96	392	201	826
5:00	0	0	4		6		10		17:00	0	0	99		130		229	
5:15	0	0	2		4		6		17:15	0	0	105		92		197	
5:30	0	0	5		12		17		17:30	0	0	108		78		186	
5:45	0	0	5	16	16	38	21	54	17:45	0	0	100	412	67	367	167	779
6:00	0	0	5		14		19		18:00	0	0	85		48		133	
6:15	0	0	13		25		38		18:15	0	0	63		65		128	
6:30	0	0	26		33		59		18:30	0	0	56		40		96	
6:45	0	0	31	75	29	101	60	176	18:45	0	0	43	247	42	195	85	442
7:00	0	0	41		50		91		19:00	0	0	45		55		100	
7:15	0	0	53		56		109		19:15	0	0	47		33		80	
7:30	0	0	83		65		148		19:30	0	0	45		37		82	
7:45	0	0	122	299	83	254	205	553	19:45	0	0	27	164	27	152	54	316
8:00	0	0	107		85		192		20:00	0	0	24		31		55	
8:15	0	0	78		76		154		20:15	0	0	31		23		54	
8:30	0	0	54		57		111		20:30	0	0	15		17		32	
8:45	0	0	61	300	57	275	118	575	20:45	0	0	18	88	10	81	28	169
9:00	0	0	53		59		112		21:00	0	0	24		19		43	
9:15	0	0	66		78		144		21:15	0	0	22		15		37	
9:30	0	0	74		46		120		21:30	0	0	16		14		30	
9:45	0	0	86	279	67	250	153	529	21:45	0	0	11	73	17	65	28	138
10:00	0	0	81		68		149		22:00	0	0	16		6		22	
10:15	0	0	83		75		158		22:15	0	0	9		4		13	
10:30	0	0	75		72		147		22:30	0	0	4		4		8	
10:45	0	0	78	317	76	291	154	608	22:45	0	0	7	36	3	17	10	53
11:00	0	0	80		75		155		23:00	0	0	7		7		14	
11:15	0	0	96		82		178		23:15	0	0	2		4		6	
11:30	0	0	107		88		195		23:30	0	0	10		1		11	
11:45	0	0	110	393	98	343	208	736	23:45	0	0	9	28	8	20	17	48
TOTALS				1725		1592		**3317**	**TOTALS**				3176		2859		**6035**
SPLIT %				52.0%		48.0%		**35.5%**	**SPLIT %**				52.6%		47.4%		**64.5%**

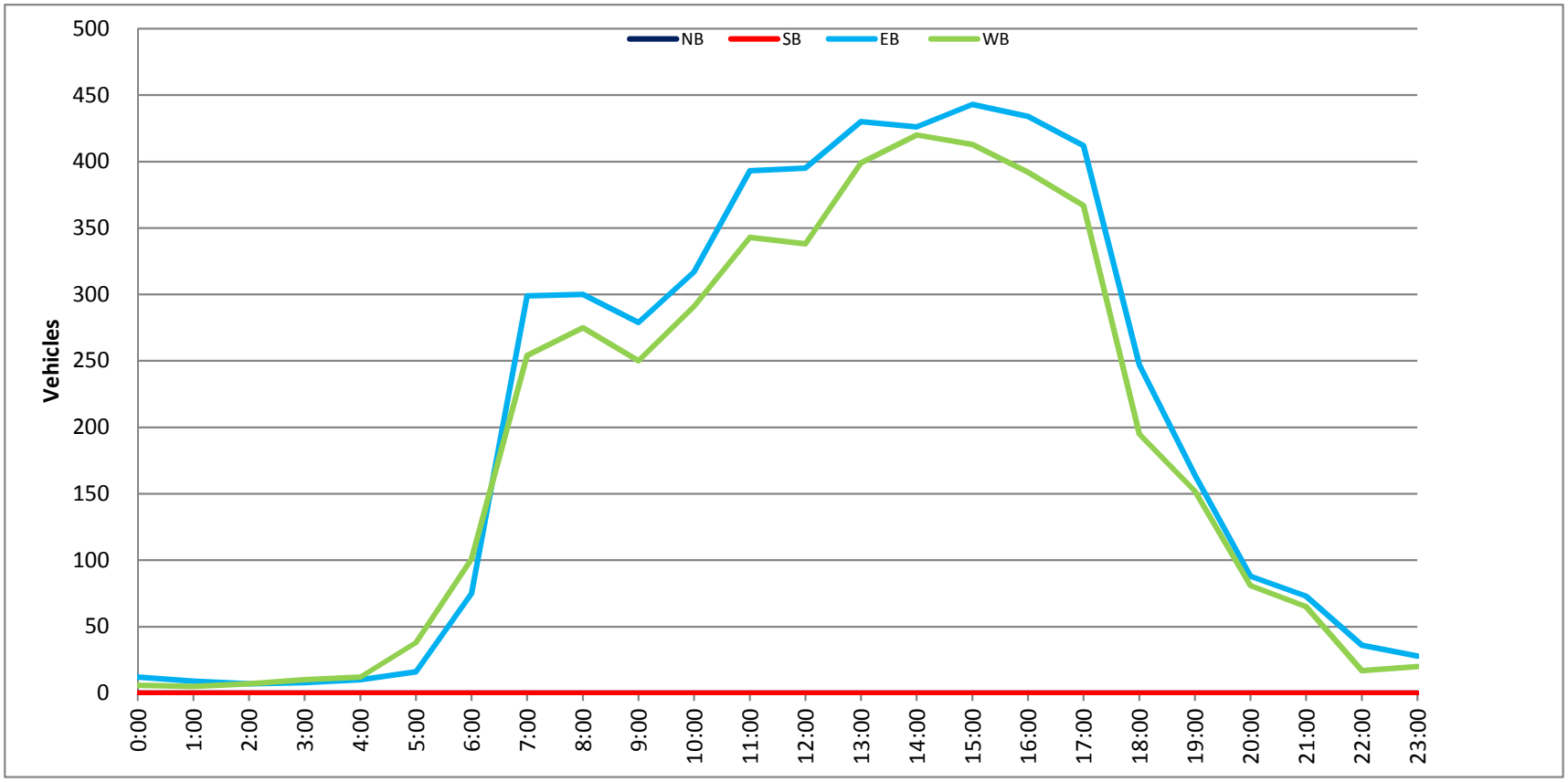
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,901	4,451	9,352

AM Peak Hour				11:15		11:15		**11:15**	**PM Peak Hour**				15:15		14:30			**15:15**
AM Pk Volume				405		376		**781**	**PM Pk Volume**				458		457			**886**
Pk Hr Factor				0.920		0.870		**0.939**	**Pk Hr Factor**				0.931		0.805			**0.865**
7 - 9 Volume	0	0		599		529		**1128**	**4 - 6 Volume**	0	0		846		759			**1605**
7 - 9 Peak Hour				7:30		7:30		**7:30**	**4 - 6 Peak Hour**				16:00		16:30			**16:30**
7 - 9 Pk Volume	0	0		390		309		**699**	**4 - 6 Pk Volume**	0	0		434		417			**827**
Pk Hr Factor	0.000	0.000		0.799		0.909		**0.852**	**Pk Hr Factor**	0.000	0.000		0.882		0.802			**0.903**

Prepared by NDS/ATD

Project #: CA19_8076_003 **City:** Lakeport

Location: 11th St Bet. Pool St & Mellor Dr **Date:** 2/12/2019



Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

11th St Bet. Central Park Ave & SR 29 N Ramps

Day: Tuesday
Date: 2/12/2019

City: Lakeport
Project #: CA19_8076_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,424	4,814	10,238

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00	0	0	3		1		4		12:00	0	0	129		120		249	
0:15	0	0	6		1		7		12:15	0	0	96		98		194	
0:30	0	0	1		2		3		12:30	0	0	98		75		173	
0:45	0	0	3	13	3	7	6	20	12:45	0	0	129	452	79	372	208	824
1:00	0	0	3		2		5		13:00	0	0	116		88		204	
1:15	0	0	3		0		3		13:15	0	0	113		95		208	
1:30	0	0	3		3		6		13:30	0	0	93		96		189	
1:45	0	0	2	11	0	5	2	16	13:45	0	0	104	426	106	385	210	811
2:00	0	0	5		4		9		14:00	0	0	125		104		229	
2:15	0	0	3		2		5		14:15	0	0	116		85		201	
2:30	0	0	1		0		1		14:30	0	0	108		114		222	
2:45	0	0	4	13	1	7	5	20	14:45	0	0	92	441	95	398	187	839
3:00	0	0	3		1		4		15:00	0	0	118		115		233	
3:15	0	0	3		4		7		15:15	0	0	117		124		241	
3:30	0	0	1		5		6		15:30	0	0	120		113		233	
3:45	0	0	7	14	5	15	12	29	15:45	0	0	122	477	93	445	215	922
4:00	0	0	2		5		7		16:00	0	0	120		120		240	
4:15	0	0	3		2		5		16:15	0	0	137		107		244	
4:30	0	0	3		1		4		16:30	0	0	109		132		241	
4:45	0	0	9	17	7	15	16	32	16:45	0	0	122	488	93	452	215	940
5:00	0	0	5		9		14		17:00	0	0	119		147		266	
5:15	0	0	10		8		18		17:15	0	0	112		106		218	
5:30	0	0	13		16		29		17:30	0	0	113		119		232	
5:45	0	0	13	41	18	51	31	92	17:45	0	0	114	458	86	458	200	916
6:00	0	0	18		16		34		18:00	0	0	87		70		157	
6:15	0	0	21		23		44		18:15	0	0	64		75		139	
6:30	0	0	29		42		71		18:30	0	0	71		59		130	
6:45	0	0	42	110	37	118	79	228	18:45	0	0	44	266	41	245	85	511
7:00	0	0	42		56		98		19:00	0	0	43		67		110	
7:15	0	0	62		66		128		19:15	0	0	37		41		78	
7:30	0	0	97		72		169		19:30	0	0	45		43		88	
7:45	0	0	132	333	76	270	208	603	19:45	0	0	30	155	43	194	73	349
8:00	0	0	127		75		202		20:00	0	0	29		40		69	
8:15	0	0	108		78		186		20:15	0	0	27		26		53	
8:30	0	0	62		61		123		20:30	0	0	24		22		46	
8:45	0	0	83	380	49	263	132	643	20:45	0	0	14	94	9	97	23	191
9:00	0	0	67		55		122		21:00	0	0	23		20		43	
9:15	0	0	73		63		136		21:15	0	0	29		17		46	
9:30	0	0	81		63		144		21:30	0	0	18		17		35	
9:45	0	0	104	325	53	234	157	559	21:45	0	0	11	81	23	77	34	158
10:00	0	0	80		67		147		22:00	0	0	14		6		20	
10:15	0	0	94		84		178		22:15	0	0	5		7		12	
10:30	0	0	90		64		154		22:30	0	0	1		7		8	
10:45	0	0	95	359	78	293	173	652	22:45	0	0	12	32	4	24	16	56
11:00	0	0	78		89		167		23:00	0	0	7		13		20	
11:15	0	0	112		84		196		23:15	0	0	7		6		13	
11:30	0	0	108		84		192		23:30	0	0	10		3		13	
11:45	0	0	105	403	104	361	209	764	23:45	0	0	11	35	6	28	17	63
TOTALS				2019		1639		**3658**	**TOTALS**				3405		3175		**6580**
SPLIT %				55.2%		44.8%		**35.7%**	**SPLIT %**				51.7%		48.3%		**64.3%**

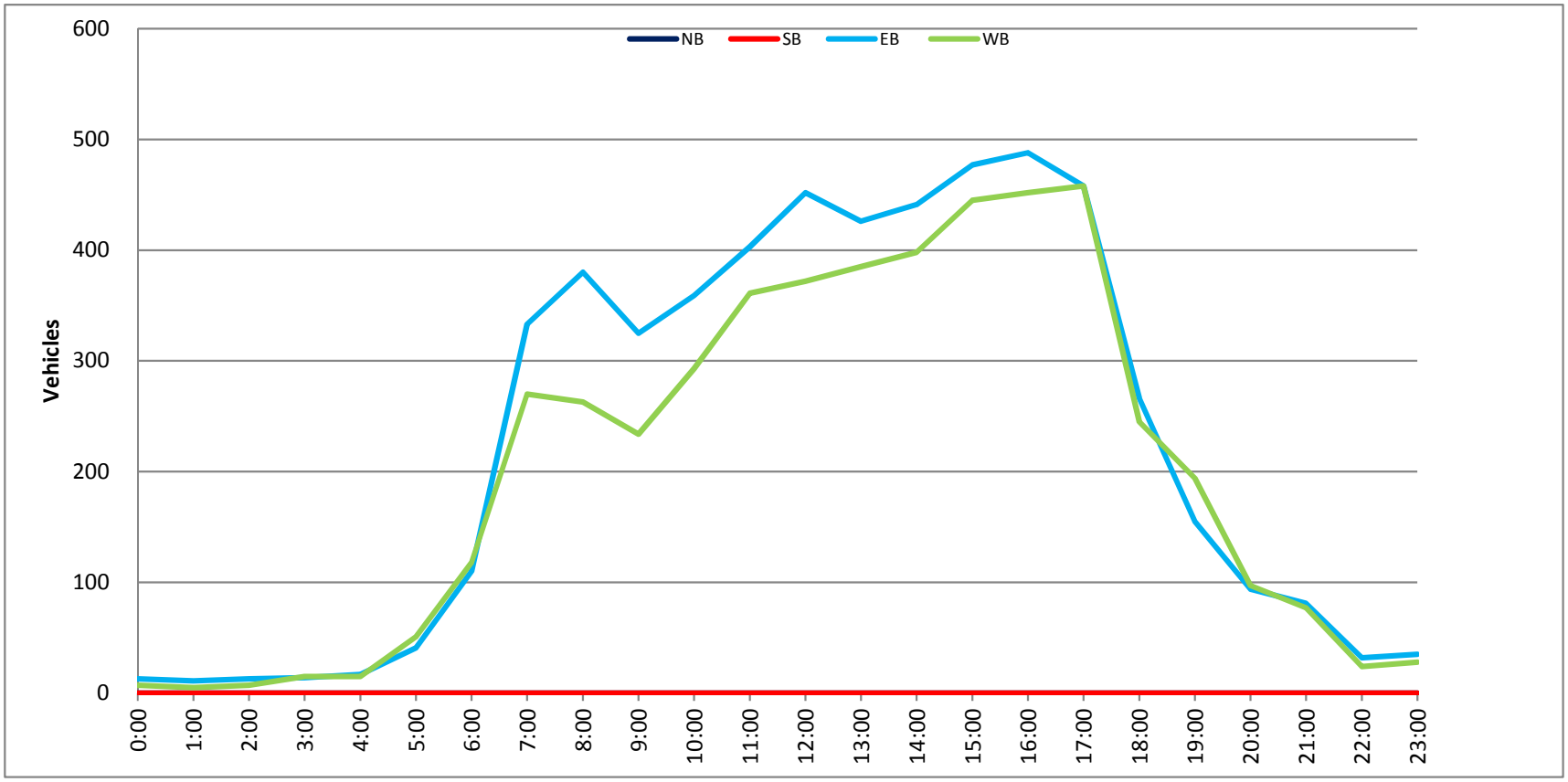
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,424	4,814	10,238

AM Peak Hour				7:30		11:30		**11:15**	**PM Peak Hour**				15:30		16:15			**16:15**
AM Pk Volume				464		406		**846**	**PM Pk Volume**				499		479			**966**
Pk Hr Factor				0.879		0.846		**0.849**	**Pk Hr Factor**				0.911		0.815			**0.908**
7 - 9 Volume	0	0		713		533		**1246**	**4 - 6 Volume**	0	0		946		910			**1856**
7 - 9 Peak Hour				7:30		7:30		**7:30**	**4 - 6 Peak Hour**				16:00		16:15			**16:15**
7 - 9 Pk Volume	0	0		464		301		**765**	**4 - 6 Pk Volume**	0	0		488		479			**966**
Pk Hr Factor	0.000	0.000		0.879		0.965		**0.919**	**Pk Hr Factor**	0.000	0.000		0.891		0.815			**0.908**

Prepared by NDS/ATD

Project #: CA19_8076_004 **City:** Lakeport

Location: 11th St Bet. Central Park Ave & SR 29 N **Date:** 2/12/2019



Appendix B

Speed Survey

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SPEED

11th St Bet. Forbes St & N High St

Day: Wednesday
Date: 2/20/2019

City: Lakeport
Project #: CA19_8076_002

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	1	2	2	0	0	0	0	0	0	0	0	5
1:00	0	0	1	0	4	1	0	0	0	0	0	0	0	6
2:00	1	0	1	3	0	0	1	0	0	0	0	0	0	6
3:00	0	3	1	2	0	0	0	0	0	0	0	0	0	6
4:00	0	2	7	3	2	0	0	0	0	0	0	0	0	14
5:00	0	3	6	6	2	1	0	0	0	0	0	0	0	18
6:00	0	18	26	30	16	3	0	0	0	0	0	0	0	93
7:00	0	40	95	112	38	6	0	0	0	0	0	0	0	291
8:00	0	33	119	134	87	13	0	0	0	0	0	0	0	386
9:00	2	39	103	180	84	11	0	0	0	0	0	0	0	419
10:00	3	39	159	224	61	11	0	0	0	0	0	0	0	497
11:00	2	69	236	263	47	6	0	0	0	0	0	0	0	623
12:00 PM	6	52	239	234	77	7	1	0	0	0	0	0	0	616
13:00	1	56	271	250	69	4	0	0	0	0	0	0	0	651
14:00	3	73	201	227	81	6	1	0	0	0	0	0	0	592
15:00	4	63	228	239	69	7	0	0	0	0	0	0	0	610
16:00	5	66	152	241	87	12	2	0	0	0	0	0	0	565
17:00	2	66	177	192	66	9	0	0	0	0	0	0	0	512
18:00	2	38	80	114	42	2	1	0	0	0	0	0	0	279
19:00	1	26	67	79	43	3	2	0	0	0	0	0	0	221
20:00	0	23	41	36	22	3	0	0	0	0	0	0	0	125
21:00	2	12	33	31	19	1	0	0	0	0	0	0	0	98
22:00	0	8	15	17	6	1	0	0	0	0	0	0	0	47
23:00	0	5	13	4	9	1	1	0	0	0	0	0	0	33
Totals	34	734	2272	2623	933	108	9							6713
% of Totals	1%	11%	34%	39%	14%	2%	0%							100%

AM Volumes	8	246	755	959	343	52	1	0	0	0	0	0	0	2364
% AM	0%	4%	11%	14%	5%	1%	0%							35%
AM Peak Hour	10:00	11:00	11:00	11:00	8:00	8:00	2:00							11:00
Volume	3	69	236	263	87	13	1							623
PM Volumes	26	488	1517	1664	590	56	8	0	0	0	0	0	0	4349
% PM	0%	7%	23%	25%	9%	1%	0%							65%
PM Peak Hour	12:00	14:00	13:00	13:00	16:00	16:00	16:00							13:00
Volume	6	73	271	250	87	12	2							651

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	677	10%	1267	19%	1077	16%	3692	55%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
11th St	Summary	21	26	26	30	34	6713

Prepared by National Data & Surveying Services

SPEED

11th St Bet. Pool St & Mellor Dr

Day: Tuesday
Date: 2/12/2019

City: Lakeport
Project #: CA19_8076_003

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	2	2	7	5	1	1	0	0	0	0	0	18
1:00	0	0	0	2	5	4	2	1	0	0	0	0	0	14
2:00	0	0	0	4	8	2	0	0	0	0	0	0	0	14
3:00	0	0	2	5	6	4	1	0	0	0	0	0	0	18
4:00	0	0	1	5	12	4	0	0	0	0	0	0	0	22
5:00	0	3	2	17	20	10	2	0	0	0	0	0	0	54
6:00	1	2	7	42	85	32	6	1	0	0	0	0	0	176
7:00	2	8	29	116	253	134	11	0	0	0	0	0	0	553
8:00	4	7	29	96	301	118	18	2	0	0	0	0	0	575
9:00	3	13	63	151	238	52	9	0	0	0	0	0	0	529
10:00	0	13	54	226	240	70	5	0	0	0	0	0	0	608
11:00	1	24	67	265	315	61	3	0	0	0	0	0	0	736
12:00 PM	1	13	78	253	322	62	4	0	0	0	0	0	0	733
13:00	2	18	71	276	365	85	11	1	0	0	0	0	0	829
14:00	6	24	86	268	367	86	8	1	0	0	0	0	0	846
15:00	2	24	90	272	346	120	2	0	0	0	0	0	0	856
16:00	2	13	61	257	387	100	6	0	0	0	0	0	0	826
17:00	2	10	59	257	336	105	10	0	0	0	0	0	0	779
18:00	1	9	37	139	200	53	3	0	0	0	0	0	0	442
19:00	1	3	39	102	125	41	5	0	0	0	0	0	0	316
20:00	0	3	17	46	78	23	2	0	0	0	0	0	0	169
21:00	0	2	11	31	73	16	4	1	0	0	0	0	0	138
22:00	0	3	6	13	26	3	2	0	0	0	0	0	0	53
23:00	0	1	1	16	23	7	0	0	0	0	0	0	0	48
Totals	28	193	812	2861	4138	1197	115	8						9352
% of Totals	0%	2%	9%	31%	44%	13%	1%	0%						100%

AM Volumes	11	70	256	931	1490	496	58	5	0	0	0	0	0	3317
% AM	0%	1%	3%	10%	16%	5%	1%	0%						35%
AM Peak Hour	8:00	11:00	11:00	11:00	11:00	7:00	8:00	8:00						11:00
Volume	4	24	67	265	315	134	18	2						736
PM Volumes	17	123	556	1930	2648	701	57	3	0	0	0	0	0	6035
% PM	0%	1%	6%	21%	28%	7%	1%	0%						65%
PM Peak Hour	14:00	14:00	15:00	13:00	16:00	15:00	13:00	13:00						15:00
Volume	6	24	90	276	387	120	11	1						856

Directional Peak Periods All Speeds	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	1128		12%	1562		17%	1605		17%	5057		54%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
11th St	Summary	26	31	31	35	39	9352

Prepared by National Data & Surveying Services

SPEED

11th St Bet. Central Park Ave & SR 29 N Ramps

Day: Tuesday
Date: 2/12/2019

City: Lakeport
Project #: CA19_8076_004

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	3	6	7	2	2	0	0	0	0	0	**20**
1:00	0	0	0	2	9	4	0	1	0	0	0	0	0	**16**
2:00	0	0	1	3	7	8	1	0	0	0	0	0	0	**20**
3:00	0	0	0	3	12	10	4	0	0	0	0	0	0	**29**
4:00	0	0	2	5	12	9	3	1	0	0	0	0	0	**32**
5:00	0	0	1	12	37	32	9	1	0	0	0	0	0	**92**
6:00	2	1	6	20	90	85	24	0	0	0	0	0	0	**228**
7:00	0	1	10	43	240	229	72	8	0	0	0	0	0	**603**
8:00	0	0	5	42	227	278	83	7	1	0	0	0	0	**643**
9:00	0	0	3	40	241	225	44	6	0	0	0	0	0	**559**
10:00	1	0	1	40	246	288	70	5	1	0	0	0	0	**652**
11:00	0	0	5	62	288	314	86	9	0	0	0	0	0	**764**
12:00 PM	0	0	9	65	382	311	51	6	0	0	0	0	0	**824**
13:00	0	0	1	51	327	334	91	6	1	0	0	0	0	**811**
14:00	0	0	2	52	361	339	79	5	1	0	0	0	0	**839**
15:00	0	1	5	80	401	355	72	7	1	0	0	0	0	**922**
16:00	0	1	3	67	396	383	81	9	0	0	0	0	0	**940**
17:00	1	1	3	59	410	358	79	4	1	0	0	0	0	**916**
18:00	0	0	7	60	218	177	45	3	1	0	0	0	0	**511**
19:00	0	1	7	37	149	127	27	1	0	0	0	0	0	**349**
20:00	0	0	4	28	84	54	18	3	0	0	0	0	0	**191**
21:00	0	0	3	22	75	47	11	0	0	0	0	0	0	**158**
22:00	0	0	0	8	26	14	7	1	0	0	0	0	0	**56**
23:00	0	0	0	7	25	22	3	4	2	0	0	0	0	**63**
Totals	**4**	**6**	**78**	**811**	**4269**	**4010**	**962**	**89**	**9**					**10238**
% of Totals	0%	0%	1%	8%	42%	39%	9%	1%	0%					100%

AM Volumes	3	2	34	275	1415	1489	398	40	2	0	0	0	0	3658
% AM	0%	0%	0%	3%	14%	15%	4%	0%	0%					36%
AM Peak Hour	6:00	6:00	7:00	11:00	11:00	11:00	11:00	11:00	8:00					11:00
Volume	2	1	10	62	288	314	86	9	1					764
PM Volumes	1	4	44	536	2854	2521	564	49	7	0	0	0	0	6580
% PM	0%	0%	0%	5%	28%	25%	6%	0%	0%					64%
PM Peak Hour	17:00	15:00	12:00	15:00	17:00	16:00	13:00	16:00	23:00					16:00
Volume	1	1	9	80	410	383	91	9	2					940

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Speeds	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	1246		12%	1635		16%	1856		18%	5501		54%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
11th St	Summary	31	35	35	39	43	10238

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Appendix C

Intersection Level of Service Calculations

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Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	62	51	201	59	0	0	0	0	131	1	0
Future Vol, veh/h	0	62	51	201	59	0	0	0	0	131	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	69	57	223	66	0	0	0	0	146	1	0

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	126	0	0	610	638	66
Stage 1	-	-	-	-	-	-	512	512	-
Stage 2	-	-	-	-	-	-	98	126	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1460	-	0	458	394	998
Stage 1	0	-	-	-	-	0	602	536	-
Stage 2	0	-	-	-	-	0	926	792	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1460	-	-	385	0	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	0	-
Stage 1	-	-	-	-	-	-	506	0	-
Stage 2	-	-	-	-	-	-	926	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.1	20
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1460	-	385
HCM Lane V/C Ratio	-	-	0.153	-	0.381
HCM Control Delay (s)	-	-	7.9	0	20
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.5	-	1.7

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	196	0	0	211	72	31	0	247	0	0	0
Future Vol, veh/h	7	196	0	0	211	72	31	0	247	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	231	0	0	248	85	36	0	291	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	333	0	-	-	-	0	538	580	231
Stage 1	-	-	-	-	-	-	247	247	-
Stage 2	-	-	-	-	-	-	291	333	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1226	-	0	0	-	-	504	426	808
Stage 1	-	-	0	0	-	-	794	702	-
Stage 2	-	-	0	0	-	-	759	644	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1226	-	-	-	-	-	500	0	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	500	0	-
Stage 1	-	-	-	-	-	-	788	0	-
Stage 2	-	-	-	-	-	-	759	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	756	1226	-	-	-
HCM Lane V/C Ratio	0.433	0.007	-	-	-
HCM Control Delay (s)	13.3	8	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.2	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	348	13	15	272	8	2	0	11	6	2	27
Future Vol, veh/h	20	348	13	15	272	8	2	0	11	6	2	27
Conflicting Peds, #/hr	0	0	0	8	0	7	1	0	8	7	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	45	-	45	55	-	-	-	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	441	16	19	344	10	3	0	14	8	3	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	361	0	0	465	0	0	906	898	457	908	909	357
Stage 1	-	-	-	-	-	-	499	499	-	394	394	-
Stage 2	-	-	-	-	-	-	407	399	-	514	515	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1198	-	-	1096	-	-	257	279	604	256	275	687
Stage 1	-	-	-	-	-	-	554	544	-	631	605	-
Stage 2	-	-	-	-	-	-	621	602	-	543	535	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1190	-	-	1088	-	-	233	264	595	239	261	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	264	-	239	261	-
Stage 1	-	-	-	-	-	-	538	528	-	613	590	-
Stage 2	-	-	-	-	-	-	577	588	-	515	519	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	12.8	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	480	1190	-	-	1088	-	-	239	557
HCM Lane V/C Ratio	0.034	0.021	-	-	0.017	-	-	0.021	0.07
HCM Control Delay (s)	12.8	8.1	-	-	8.4	-	-	20.4	12
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	344	15	9	238	5	13	7	11	4	4	64
Future Vol, veh/h	39	344	15	9	238	5	13	7	11	4	4	64
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	420	18	11	290	6	16	9	13	5	5	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	298	0	0	438	0	0	884	845	431	855	851	297
Stage 1	-	-	-	-	-	-	525	525	-	317	317	-
Stage 2	-	-	-	-	-	-	359	320	-	538	534	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1263	-	-	1122	-	-	266	300	624	278	297	742
Stage 1	-	-	-	-	-	-	536	529	-	694	654	-
Stage 2	-	-	-	-	-	-	659	652	-	527	524	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1261	-	-	1122	-	-	226	285	623	255	282	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	285	-	255	282	-
Stage 1	-	-	-	-	-	-	516	509	-	666	645	-
Stage 2	-	-	-	-	-	-	577	643	-	487	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3	18.2	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	311	1261	-	-	1122	-	-	618
HCM Lane V/C Ratio	0.122	0.038	-	-	0.01	-	-	0.142
HCM Control Delay (s)	18.2	8	-	-	8.2	0	-	11.8
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	139	196	3	2	206	3	3	4	1	0	0	0
Future Vol, veh/h	139	196	3	2	206	3	3	4	1	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	239	4	2	251	4	4	5	1	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	256	0	0	243	0	0	838	841	241
Stage 1	-	-	-	-	-	-	581	581	-
Stage 2	-	-	-	-	-	-	257	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1309	-	-	1323	-	-	336	301	798
Stage 1	-	-	-	-	-	-	559	500	-
Stage 2	-	-	-	-	-	-	786	693	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1309	-	-	1323	-	-	285	0	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	285	0	-
Stage 1	-	-	-	-	-	-	474	0	-
Stage 2	-	-	-	-	-	-	786	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.4	0.1	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	340	1309	-	-	1323	-	-
HCM Lane V/C Ratio	0.029	0.129	-	-	0.002	-	-
HCM Control Delay (s)	15.9	8.2	0	-	7.7	0	-
HCM Lane LOS	C	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	93	88	3	72	0	28	59	0	0	107	117
Future Vol, veh/h	21	93	88	3	72	0	28	59	0	0	107	117
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	70	-	-	-	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	108	102	3	84	0	33	69	0	0	124	136

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	85	0	0	210	0	0	428	298	160	334	349	86
Stage 1	-	-	-	-	-	-	207	207	-	91	91	-
Stage 2	-	-	-	-	-	-	221	91	-	243	258	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1512	-	-	1361	-	-	537	614	885	620	575	973
Stage 1	-	-	-	-	-	-	795	731	-	916	820	-
Stage 2	-	-	-	-	-	-	781	820	-	761	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1511	-	-	1361	-	-	377	601	884	556	563	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	377	601	-	556	563	-
Stage 1	-	-	-	-	-	-	781	718	-	899	818	-
Stage 2	-	-	-	-	-	-	568	818	-	675	682	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3	13	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	377	601	1511	-	-	1361	-	-	563	971
HCM Lane V/C Ratio	0.086	0.114	0.016	-	-	0.003	-	-	0.221	0.14
HCM Control Delay (s)	15.5	11.8	7.4	0	-	7.7	0	-	13.2	9.3
HCM Lane LOS	C	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.3	0.4	0	-	-	0	-	-	0.8	0.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	84	49	120	273	23
Future Vol, veh/h	8	84	49	120	273	23
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	101	59	145	329	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	608	345	358	0	-	0
Stage 1	344	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	459	698	1201	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	436	697	1200	-	-	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	779	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	2.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	663	-	-
HCM Lane V/C Ratio	0.049	-	0.167	-	-
HCM Control Delay (s)	8.2	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	49	43	233	100	0	0	0	0	134	3	9
Future Vol, veh/h	0	49	43	233	100	0	0	0	0	134	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	44	240	103	0	0	0	0	138	3	9

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	95	0	0	656	678	103
Stage 1	-	-	-	-	-	-	583	583	-
Stage 2	-	-	-	-	-	-	73	95	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1499	-	0	430	374	952
Stage 1	0	-	-	-	-	0	558	499	-
Stage 2	0	-	-	-	-	0	950	816	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1499	-	-	357	0	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	0	-
Stage 1	-	-	-	-	-	-	463	0	-
Stage 2	-	-	-	-	-	-	950	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5.5	21.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1499	-	372
HCM Lane V/C Ratio	-	-	0.16	-	0.405
HCM Control Delay (s)	-	-	7.9	0	21.1
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.6	-	1.9

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	198	0	0	321	173	70	3	299	0	0	0
Future Vol, veh/h	17	198	0	0	321	173	70	3	299	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	211	0	0	341	184	74	3	318	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	525	0	-	-	-	0	680	772	211
Stage 1	-	-	-	-	-	-	247	247	-
Stage 2	-	-	-	-	-	-	433	525	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1042	-	0	0	-	-	417	330	829
Stage 1	-	-	0	0	-	-	794	702	-
Stage 2	-	-	0	0	-	-	654	529	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1042	-	-	-	-	-	409	0	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	409	0	-
Stage 1	-	-	-	-	-	-	778	0	-
Stage 2	-	-	-	-	-	-	654	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.7	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	694	1042	-	-	-
HCM Lane V/C Ratio	0.57	0.017	-	-	-
HCM Control Delay (s)	16.8	8.5	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	3.6	0.1	-	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	371	14	48	380	11	40	4	33	2	5	34
Future Vol, veh/h	43	371	14	48	380	11	40	4	33	2	5	34
Conflicting Peds, #/hr	3	0	6	12	0	9	6	0	12	9	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	45	-	45	55	-	-	-	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	399	15	52	409	12	43	4	35	2	5	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	426	0	0	1049	1037	423	1058	1046	430
Stage 1	-	-	-	-	-	-	503	503	-	528	528	-
Stage 2	-	-	-	-	-	-	546	534	-	530	518	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1129	-	-	1133	-	-	205	231	631	203	228	625
Stage 1	-	-	-	-	-	-	551	541	-	534	528	-
Stage 2	-	-	-	-	-	-	522	524	-	533	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1119	-	-	1120	-	-	174	207	617	173	205	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	207	-	173	205	-
Stage 1	-	-	-	-	-	-	522	513	-	508	499	-
Stage 2	-	-	-	-	-	-	461	495	-	472	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.9	25.9	13.7
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	254	1119	-	-	1120	-	-	173	475
HCM Lane V/C Ratio	0.326	0.041	-	-	0.046	-	-	0.008	0.09
HCM Control Delay (s)	25.9	8.4	-	-	8.4	-	-	26	13.3
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0.1	-	-	0	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	379	12	5	369	1	11	1	8	1	2	34
Future Vol, veh/h	32	379	12	5	369	1	11	1	8	1	2	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	416	13	5	405	1	12	1	9	1	2	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	406	0	0	429	0	0	928	909	423	914	915	406
Stage 1	-	-	-	-	-	-	493	493	-	416	416	-
Stage 2	-	-	-	-	-	-	435	416	-	498	499	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1153	-	-	1130	-	-	248	275	631	254	273	645
Stage 1	-	-	-	-	-	-	558	547	-	614	592	-
Stage 2	-	-	-	-	-	-	600	592	-	554	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1153	-	-	1130	-	-	226	265	631	243	263	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	265	-	243	263	-
Stage 1	-	-	-	-	-	-	541	531	-	596	588	-
Stage 2	-	-	-	-	-	-	560	588	-	529	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	17.6	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	307	1153	-	-	1130	-	-	574
HCM Lane V/C Ratio	0.072	0.03	-	-	0.005	-	-	0.071
HCM Control Delay (s)	17.6	8.2	-	-	8.2	0	-	11.7
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	151	196	0	3	344	3	2	5	0	0	0	0
Future Vol, veh/h	151	196	0	3	344	3	2	5	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	166	215	0	3	378	3	2	5	0	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	381	0	0	215	0	0	933	934	215
Stage 1	-	-	-	-	-	-	547	547	-
Stage 2	-	-	-	-	-	-	386	387	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1177	-	-	1355	-	-	295	266	825
Stage 1	-	-	-	-	-	-	580	517	-
Stage 2	-	-	-	-	-	-	687	610	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1177	-	-	1355	-	-	247	0	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	0	-
Stage 1	-	-	-	-	-	-	485	0	-
Stage 2	-	-	-	-	-	-	687	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.7	0.1	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	247	1177	-	-	1355	-	-
HCM Lane V/C Ratio	0.031	0.141	-	-	0.002	-	-
HCM Control Delay (s)	20	8.6	0	-	7.7	0	-
HCM Lane LOS	C	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0	-	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	131	73	1	169	0	110	83	1	0	59	80
Future Vol, veh/h	9	131	73	1	169	0	110	83	1	0	59	80
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	70	-	-	-	-	60
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	149	83	1	192	0	125	94	1	0	67	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	233	0	0	486	407	192	453	448	194
Stage 1	-	-	-	-	-	-	212	212	-	195	195	-
Stage 2	-	-	-	-	-	-	274	195	-	258	253	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1380	-	-	1335	-	-	492	533	850	517	506	847
Stage 1	-	-	-	-	-	-	790	727	-	807	739	-
Stage 2	-	-	-	-	-	-	732	739	-	747	698	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1379	-	-	1334	-	-	391	527	849	442	500	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	527	-	442	500	-
Stage 1	-	-	-	-	-	-	783	720	-	800	738	-
Stage 2	-	-	-	-	-	-	593	738	-	643	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	16.2	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	391	529	1379	-	-	1334	-	-	500	845
HCM Lane V/C Ratio	0.32	0.18	0.007	-	-	0.001	-	-	0.134	0.108
HCM Control Delay (s)	18.5	13.3	7.6	0	-	7.7	0	-	13.3	9.8
HCM Lane LOS	C	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	1.4	0.7	0	-	-	0	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	121	159	199	189	10
Future Vol, veh/h	8	121	159	199	189	10
Conflicting Peds, #/hr	3	2	2	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	139	183	229	217	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	824	228	231	0	-	0
Stage 1	226	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	343	811	1337	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	807	1333	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	3.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	728	-	-
HCM Lane V/C Ratio	0.137	-	0.204	-	-
HCM Control Delay (s)	8.1	-	11.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.8	-	-

Appendix D

Warrant Analysis

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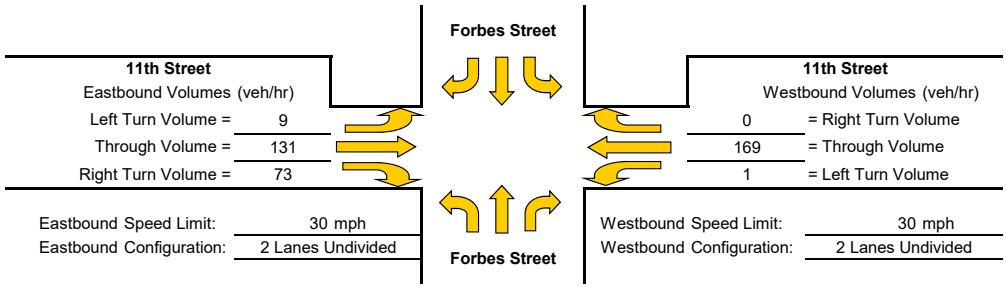
Turn Lane Warrant Analysis - 4 Legged Intersections

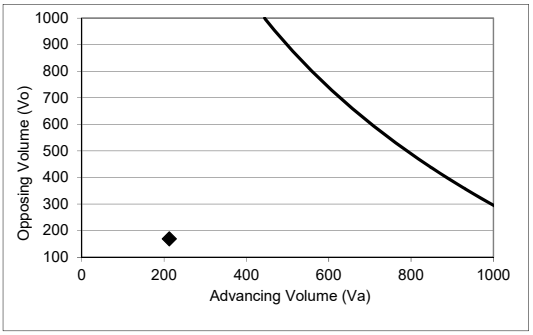
Study Intersection: 11th Street/Forbes Street
Study Scenario: Weekday PM Peak Hour

Direction of Analysis Street: East/West



Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt: 4.2 %
Advancing Volume Threshold AV: 1157 veh/hr
If AV<Va then warrant is met

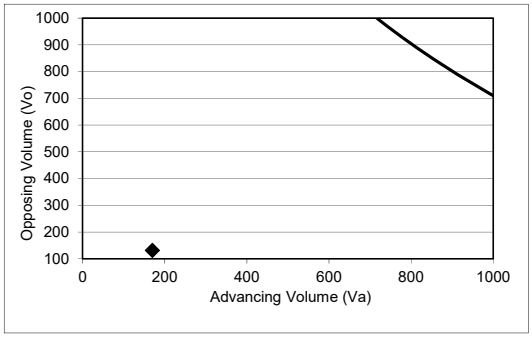


◆ Study Intersection
Two lane roadway warrant threshold for: 30 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Westbound Left Turn Lane Warrants

Percentage Left Turns %lt: 0.6 %
Advancing Volume Threshold AV: 1948 veh/hr
If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 30 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Note: If one direction has a left turn lane warranted, a left turn lane should be installed on the other side as well

Eastbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold: AV = 737.8
Advancing Volume Va = 213
If AV<Va then warrant is met: No

Right Turn Lane Warranted: **NO**

Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold: AV = 1050.1
Advancing Volume Va = 170
If AV<Va then warrant is met: No

Right Turn Lane Warranted: **NO**

Eastbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -1100
Advancing Volume Va = 213
If AV<Va then warrant is met: Yes

Right Turn Taper Warranted: **YES**

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 170
If AV<Va then warrant is met: -

Right Turn Taper Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, Jan. 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981. The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

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Appendix E

Collision Rate Calculations

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Intersection Collision Rate Calculations

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 1: State Route 29 South Ramps & 11th Street

Date of Count: Tuesday, February 12, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 5700
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{5{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 2: State Route 29 North Ramps & 11th Street

Date of Count: Wednesday, February 20, 2019

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
ADT: 10800
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{1 \times 1{,}000{,}000}{10{,}800 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.05 c/mve**	**0.0%**	**100.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 3: 11th Street & Mellor Drive-Shopping Center Dwy

Date of Count: Wednesday, February 20, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 9900
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{9{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 4: 11th Street & Pool Street

Date of Count: Tuesday, February 12, 2019

Number of Collisions: 2
Number of Injuries: 0
Number of Fatalities: 0
ADT: 8600
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{2 \times 1{,}000{,}000}{8{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.13 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 5: 11th Street & North High Street

Date of Count: Tuesday, February 12, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 7000
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{7{,}000 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 6: 11th Street & Forbes Street

Date of Count: Tuesday, February 12, 2019

Number of Collisions: 10
Number of Injuries: 6
Number of Fatalities: 0
ADT: 7200
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{10 \times 1{,}000{,}000}{7{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.76 c/mve**	**0.0%**	**60.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 7: 11th Street & North Main Street

Date of Count: Tuesday, February 12, 2019

Number of Collisions: 2
Number of Injuries: 0
Number of Fatalities: 0
ADT: 6900
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{2 \times 1{,}000{,}000}{6{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.16 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 8: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 9: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 10: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 11: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 12: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 13: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 14: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 15: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 16: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 17: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 18: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Intersection # 19: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 20: &

Date of Count: Saturday, January 0, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{0 \times 365 \times 0}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.30 c/mve**	**0.7%**	**40.3%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

SEGMENT COLLISION RATE CALCULATIONS

Eleventh Street Corridor Multimodal Engineered Feasibility Study

Location: Eleventh St between SR 29 and Post Office

Date of Count: Tuesday, February 12, 2019
ADT: 10,200

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: ≤55
Terrain: Flat

Segment Length: 0.2 miles
Direction: East/West

$$\frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Segment Length} \times \text{Number of Years}}$$

$$\frac{1 \times 1{,}000{,}000}{10{,}200 \times 365 \times 0.21 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Segment	**0.26 c/mvm**	**0.0%**	**100.0%**
Statewide Average*	**0.85 c/mvm**	**2.4%**	**40.1%**

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2013 Collision Data on California State Highways, Caltrans

Location: Eleventh St between Post Office and Pool St

Date of Count: Tuesday, February 12, 2019
ADT: 9,400

Number of Collisions: 3
Number of Injuries: 3
Number of Fatalities: 0
Start Date: October 1, 2013
End Date: September 30, 2018
Number of Years: 5

Highway Type: Conventional 3 lanes
Area: Rural

Segment Length: 0.3 miles
Direction: East/West

$$\frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Segment Length} \times \text{Number of Years}}$$

$$\frac{3 \times 1{,}000{,}000}{9{,}400 \times 365 \times 0.3 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Segment	**0.58 c/mvm**	**0.0%**	**100.0%**
Statewide Average*	**1.05 c/mvm**	**2.7%**	**42.7%**

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2013 Collision Data on California State Highways, Caltrans

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Appendix F

Pedestrian Crossing Warrants

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Pedestrian Hybrid Beacon (HAWK) Signal Warrant

Low-Speed Roadway

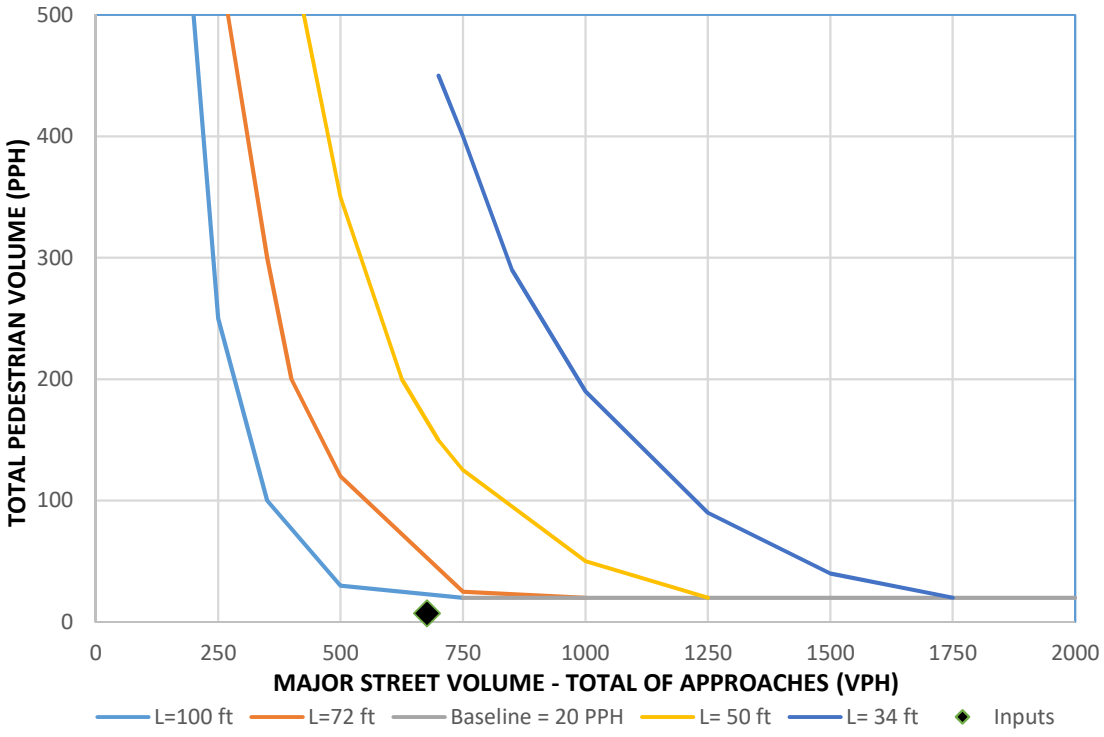
Project Name: LAK013

Scenario: AM Existing
Location: 11th St/Mellor Dr
Date of Count: Tuesday, February 12, 2019

Speed Limit: 30 mph
Crosswalk Length: 52 feet

Major Street Approach Volume: 660 VPH
Pedestrians Crossing: 7 PPH

WARRANT MET? **NO**



Note: Installation of a HAWK Singal is warranted when the plotted point (see graph above) falls above the curve representing the corresponding crosswalk length (L).

If the length (L) of the crosswalk does not match one displayed on the graph, interpolate between existing curves to find the position of the curve representing the crosswalk length being analyzed.

Reference: California Manual on Uniform Traffic Control Devices (MUTCD) 2014 Edition

Pedestrian Hybrid Beacon (HAWK) Signal Warrant

Low-Speed Roadway

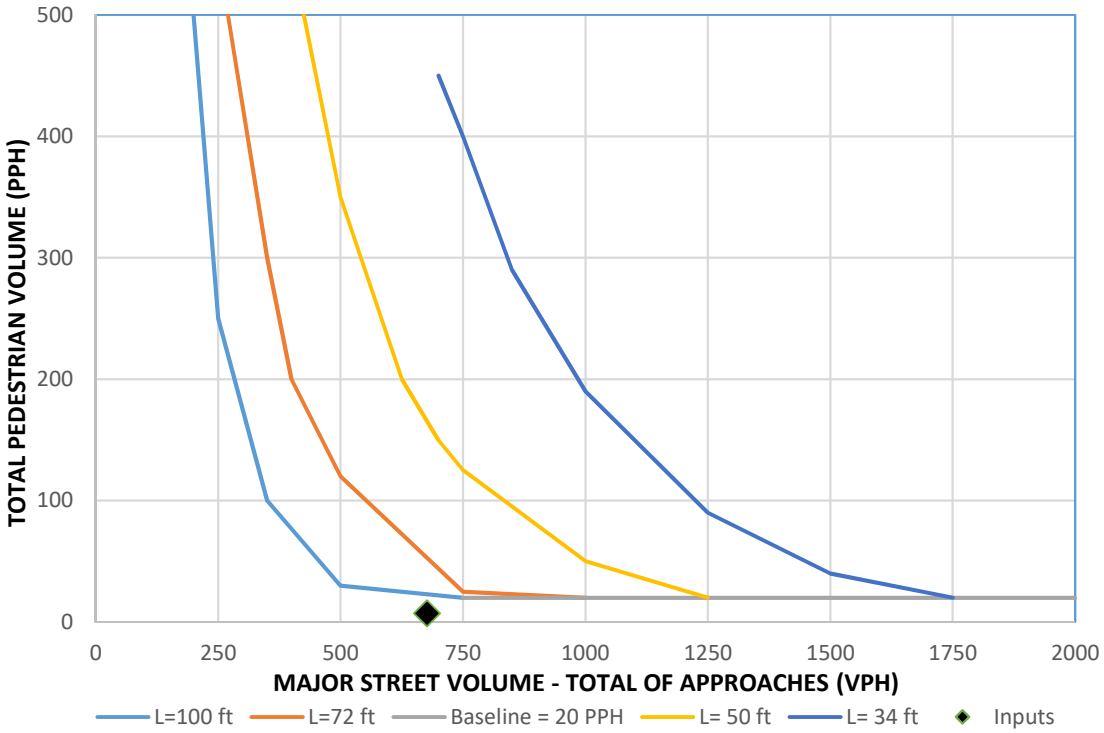
Project Name: LAK013

Scenario: AM Existing
Location: 11th St/Mellor Dr
Date of Count: Tuesday, February 12, 2019

Speed Limit: 30 mph
Crosswalk Length: 52 feet

Major Street Approach Volume: 845 VPH
Pedestrians Crossing: 6 PPH

WARRANT MET? **NO**



Note: Installation of a HAWK Singal is warranted when the plotted point (see graph above) falls above the curve representing the corresponding crosswalk length (L).

If the length (L) of the crosswalk does not match one displayed on the graph, interpolate between existing curves to find the position of the curve representing the crosswalk length being analyzed.

Reference: California Manual on Uniform Traffic Control Devices (MUTCD) 2014 Edition

TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information

Analyst: Steve Weinberger	Major Street: 11th St
Analysis Date: 13-May-19	Minor Street or Location: Mellor Dr
Data Collection Date: 2/12/2019	Peak Hour: AM PEAK (Existing)

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 - 35 mph or less
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?

2a	Peak-hour pedestrian volume (ped/h), vp	**2a**	7
	○If 2a ≥ 20 ped/h, then go to Step 3.		**Consider TCD Treatment**
	○If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		

Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?

3a	Major road volume, total of both approaches during peak hour (veh/h), V maj-s	**3a**	660
3b	○Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC	**3b**	448.97
	•SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 **OR**		
	•[(0.00021 3a² - 0.74072 3a + 734.125)/0.75]		
3c	○If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	**3c**	448.9677333
3d	○If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	**3d**	448.9677333
	○If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		

Step 4: Estimate pedestrian delay.

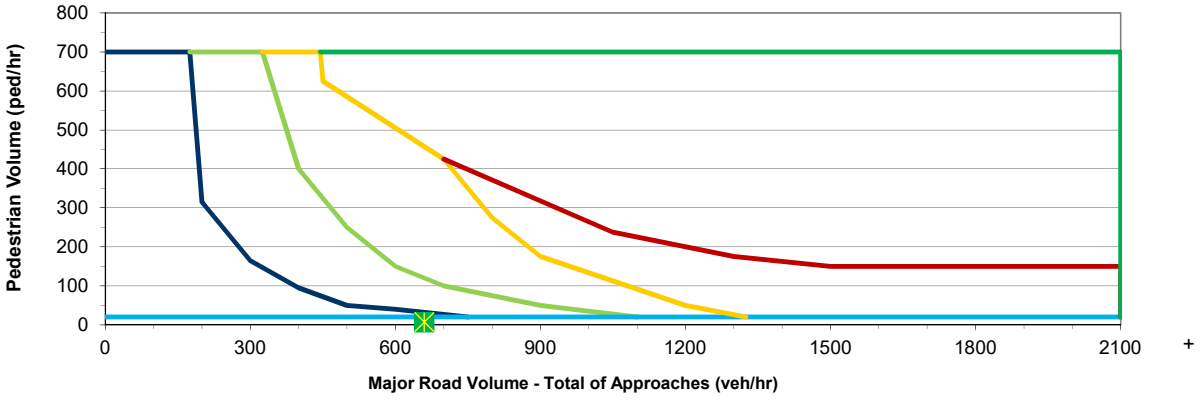
4a	Pedestrian crossing distance, curb to curb (ft), L	**4a**	52
4b	Pedestrian walking speed (ft.s), Sp	**4b**	3.5
4c	Pedestrian start-up time and end clearance time (s), ts	**4c**	7
4d	○Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	**4d**	21.86
4e	Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	**4e**	660
4f	○Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	**4f**	0.18
4g	○Average pedestrian delay (s/person), dp = $(e^{v\,tc}$ - v tc - 1) / v OR [$(e^{4f \times 4d}$-4f x 4d - 1) / 4f]	**4g**	272.63
4h	○Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600]	**4h**	0.53
	(this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.		

Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.

5a	Expected motorist compliance at pedestrian crossings in region, Comp = high or low	**5a**	LOW

Total Pedestrian Delay Dp (**4h**) and Comp (**5a**)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	DO NOT USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	DO NOT USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	USE CROSSWALK

Roadway Configuration: 50' Wide, <35 mph, Vped = 3.5 ft/s



LEGEND
Study Intersection
Signal
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Striped Crosswalk
No Treatment

DESCRIPTIONS OF TREATMENT TYPE

RED	ENHANCED-HIGH VISIBILITY/ACTIVE WHEN PRESENT	
	Active When Present	**Enhanced/High Visibility**
• Midblock Signal	• In Roadway Warning Lights	• In-Street Crossing Signs
	• Passive/Pushbutton Flashing Beacons	• High Visibility Signs/Markings
• Half Signal		• Pedestrian Refuge Islands
	• Pedestrian Crossing Flags	• Raised Crosswalks
		• Curb Extensions
• HAWK	• Rapid Rectangular Flashing Beacons	• Advanced Signage
		• Advanced Stop/Yield Lines
		• Constant Flashing Yellow Beacons

TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information

Analyst:	Steve Weinberger	Major Street:	11th St
Analysis Date:	13-May-19	Minor Street or Location:	Mellor Dr
Data Collection Date:	2/12/2019	Peak Hour:	PM PEAK (Existing)

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 - 35 mph or less
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?

2a	Peak-hour pedestrian volume (ped/h), vp	**2a**	6
	○If 2a ≥ 20 ped/h, then go to Step 3.		**Consider TCD Treatment**
	○If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		

Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?

3a	Major road volume, total of both approaches during peak hour (veh/h), V maj-s	**3a**	845
3b	○Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC	**3b**	344.22
	•SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 **OR**		
	•[(0.00021 3a² - 0.74072 3a + 734.125)/0.75]		
3c	○If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	**3c**	344.2158
3d	○If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	**3d**	344.2158
	○If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		

Step 4: Estimate pedestrian delay.

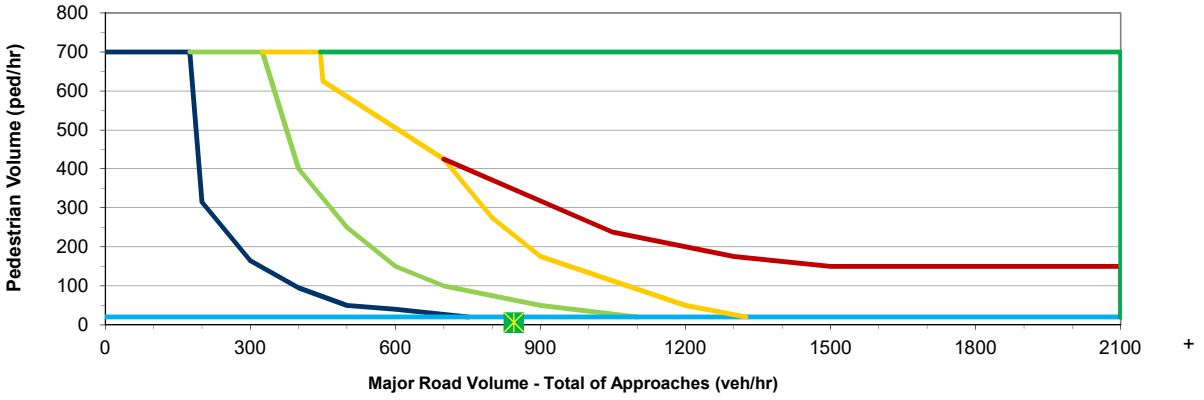
4a	Pedestrian crossing distance, curb to curb (ft), L	**4a**	52
4b	Pedestrian walking speed (ft.s), Sp	**4b**	3.5
4c	Pedestrian start-up time and end clearance time (s), ts	**4c**	7
4d	○Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	**4d**	21.86
4e	Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	**4e**	845
4f	○Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	**4f**	0.23
4g	○Average pedestrian delay (s/person), dp = $(e^{v\,tc}$ - v tc - 1) / v OR [$(e^{4f \times 4d}$-4f x 4d - 1) / 4f]	**4g**	694.21
4h	○Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600]	**4h**	1.16
	(this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.		

Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.

5a	Expected motorist compliance at pedestrian crossings in region, Comp = high or low	**5a**	LOW

Total Pedestrian Delay Dp (**4h**) and Comp (**5a**)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	DO NOT USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	DO NOT USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	USE CROSSWALK

Roadway Configuration: 50' Wide, <35 mph, Vped = 3.5 ft/s



LEGEND
Study Intersection
Signal
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Striped Crosswalk
No Treatment

DESCRIPTIONS OF TREATMENT TYPE

RED	ENHANCED-HIGH VISIBILITY/ACTIVE WHEN PRESENT	
	Active When Present	**Enhanced/High Visibility**
• Midblock Signal	• In Roadway Warning Lights	• In-Street Crossing Signs
		• High Visibility Signs/Markings
• Half Signal	• Passive/Pushbutton Flashing Beacons	• Pedestrian Refuge Islands
		• Raised Crosswalks
	• Pedestrian Crossing Flags	• Curb Extensions
		• Advanced Signage
• HAWK	• Rapid Rectangular Flashing Beacons	• Advanced Stop/Yield Lines
		• Constant Flashing Yellow Beacons

TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information

Analyst:	Steve Weinberger	Major Street:	11th St
Analysis Date:	13-May-19	Minor Street or Location:	Mellor Dr
Data Collection Date:	2/12/2019	Peak Hour:	AM PEAK (Threshold)

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 - 35 mph or less
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?

2a	Peak-hour pedestrian volume (ped/h), vp	**2a**	20
	○If 2a ≥ 20 ped/h, then go to Step 3.		
	○If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		

Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?

3a	Major road volume, total of both approaches during peak hour (veh/h), V maj-s	**3a**	660
3b	○Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC •SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 **OR** •[(0.00021 3a² - 0.74072 3a + 734.125)/0.75]	**3b**	448.97
3c	○If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	**3c**	448.9677333
3d	○If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c. ○If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.	**3d**	448.9677333

Step 4: Estimate pedestrian delay.

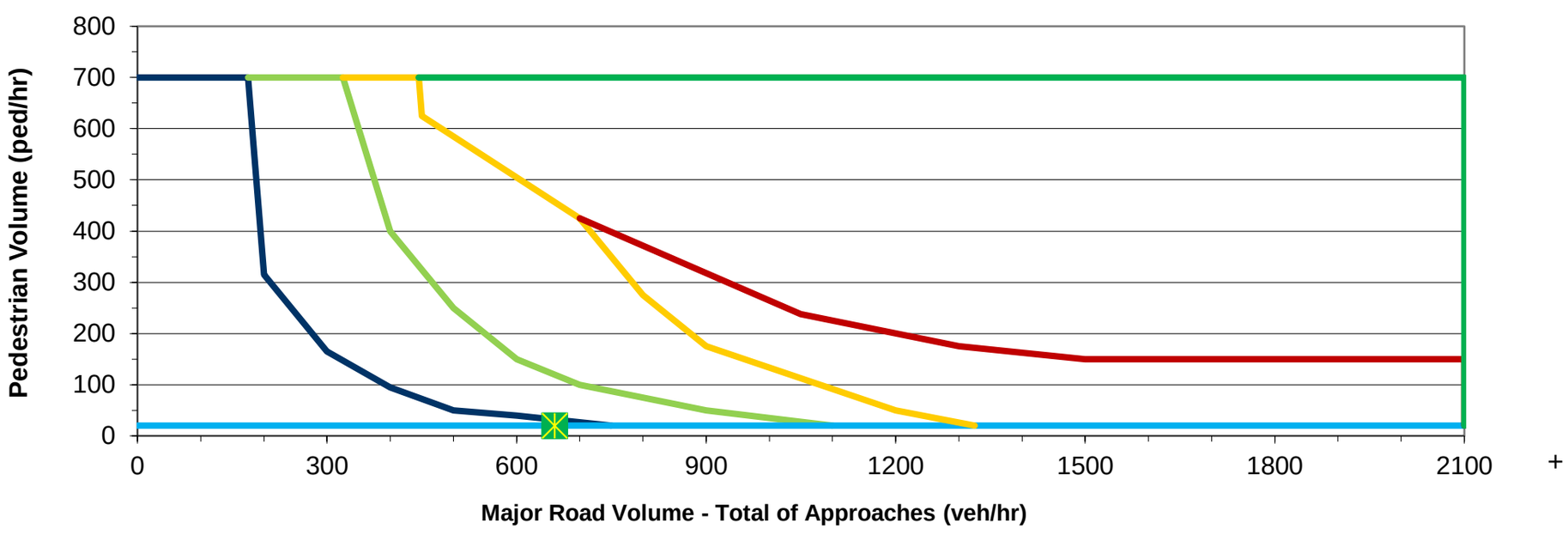
4a	Pedestrian crossing distance, curb to curb (ft), L	**4a**	52
4b	Pedestrian walking speed (ft.s), Sp	**4b**	3.5
4c	Pedestrian start-up time and end clearance time (s), ts	**4c**	7
4d	○Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	**4d**	21.86
4e	Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	**4e**	660
4f	○Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	**4f**	0.18
4g	○Average pedestrian delay (s/person), dp = ($e^{v\ tc}$ - v tc - 1) / v OR [($e^{4f\ x\ 4d}$-4f x 4d - 1) / 4f]	**4g**	272.63
4h	○Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600] (this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	**4h**	1.51

Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.

5a	Expected motorist compliance at pedestrian crossings in region, Comp = high or low	**5a**	LOW

Total Pedestrian Delay Dp (**4h**) and Comp (**5a**)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	DO NOT USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	DO NOT USE CROSSWALK

Roadway Configuration: 50' Wide, <35 mph, Vped = 3.5 ft/s



LEGEND
Study Intersection
Signal
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Striped Crosswalk
No Treatment

DESCRIPTIONS OF TREATMENT TYPE

RED	ENHANCED-HIGH VISIBILITY/ACTIVE WHEN PRESENT	
	Active When Present	**Enhanced/High Visibility**
• Midblock Signal • Half Signal • HAWK	• In Roadway Warning Lights • Passive/Pushbutton Flashing Beacons • Pedestrian Crossing Flags • Rapid Rectangular Flashing Beacons	• In-Street Crossing Signs • High Visibility Signs/Markings • Pedestrian Refuge Islands • Raised Crosswalks • Curb Extensions • Advanced Signage • Advanced Stop/Yield Lines • Constant Flashing Yellow Beacons

TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information

Analyst:	Steve Weinberger	Major Street:	11th St
Analysis Date:	13-May-19	Minor Street or Location:	Mellor Dr
Data Collection Date:	2/12/2019	Peak Hour:	PM PEAK (Threshold)

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 - 35 mph or less
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?

2a	Peak-hour pedestrian volume (ped/h), vp	**2a**	20
	○If 2a ≥ 20 ped/h, then go to Step 3.		
	○If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		

Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?

3a	Major road volume, total of both approaches during peak hour (veh/h), V maj-s	**3a**	845
3b	○Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC •SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 **OR** •[(0.00021 3a² - 0.74072 3a + 734.125)/0.75]	**3b**	344.22
3c	○If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	**3c**	344.2158
3d	○If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c. ○If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.	**3d**	344.2158

Step 4: Estimate pedestrian delay.

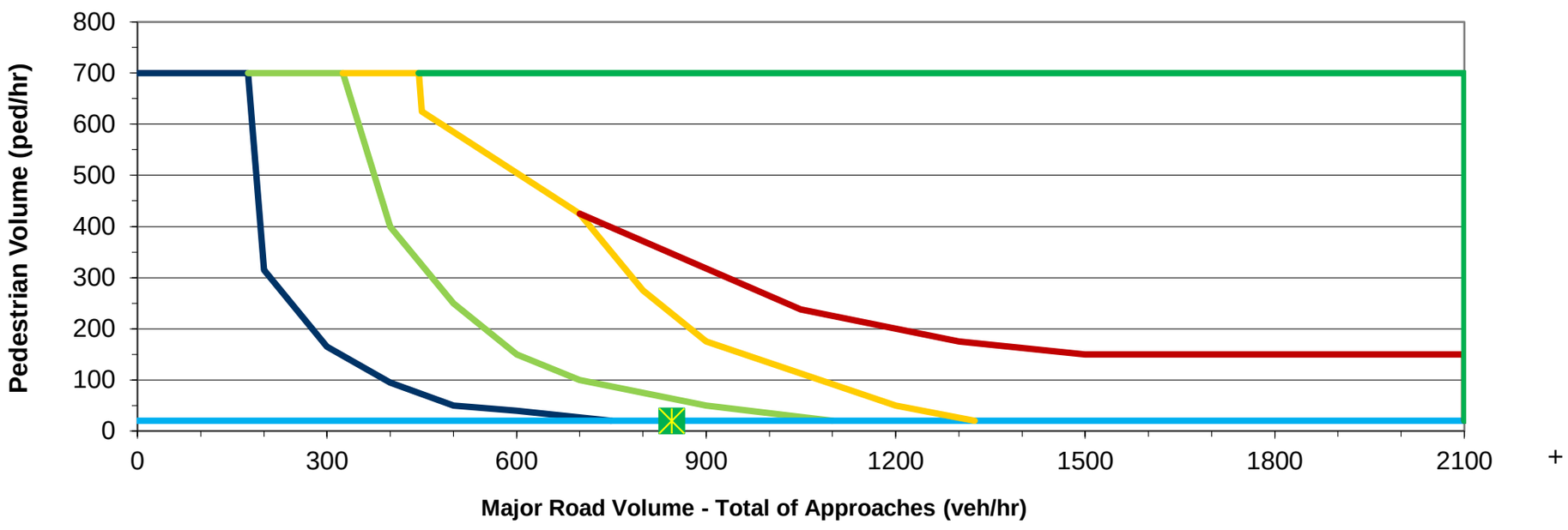
4a	Pedestrian crossing distance, curb to curb (ft), L	**4a**	52
4b	Pedestrian walking speed (ft.s), Sp	**4b**	3.5
4c	Pedestrian start-up time and end clearance time (s), ts	**4c**	7
4d	○Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	**4d**	21.86
4e	Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	**4e**	845
4f	○Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	**4f**	0.23
4g	○Average pedestrian delay (s/person), dp = ($e^{v\ tc}$ - v tc - 1) / v OR [($e^{4f\ x\ 4d}$-4f x 4d - 1) / 4f]	**4g**	694.21
4h	○Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600] (this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	**4h**	3.86

Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.

5a	Expected motorist compliance at pedestrian crossings in region, Comp = high or low	**5a**	LOW

Total Pedestrian Delay Dp (**4h**) and Comp (**5a**)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	DO NOT USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	DO NOT USE CROSSWALK

Roadway Configuration: 50' Wide, <35 mph, Vped = 3.5 ft/s



LEGEND
Study Intersection
Signal
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Striped Crosswalk
No Treatment

DESCRIPTIONS OF TREATMENT TYPE

RED	ENHANCED-HIGH VISIBILITY/ACTIVE WHEN PRESENT	
	Active When Present	**Enhanced/High Visibility**
• Midblock Signal • Half Signal • HAWK	• In Roadway Warning Lights • Passive/Pushbutton Flashing Beacons • Pedestrian Crossing Flags • Rapid Rectangular Flashing Beacons	• In-Street Crossing Signs • High Visibility Signs/Markings • Pedestrian Refuge Islands • Raised Crosswalks • Curb Extensions • Advanced Signage • Advanced Stop/Yield Lines • Constant Flashing Yellow Beacons

Appendix G

Community Engagement

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Community Workshops
Outreach and Results

Help create a welcoming and accessible town core for Lakeport residents and visitors.

11th Street Corridor Study

Community Workshop

Tuesday, May 14

6-8 p.m.

City Hall Council Chambers
225 Park Street
Lakeport, CA 95453
(Between 2nd & 3rd Streets)

Project team members will be available after 7 PM to discuss your needs and interests.

Help us improve access and safety for walking, bicycling, and transit users on 11th Street and in the surrounding area!

Snacks and refreshments will be provided.

Families and children welcome!

LAKE APC

CITY OF Lakeport CALIFORNIA

Funding for the 11th Street Corridor Multi-Modal Engineered Feasibility Study is paid for by a grant from the California Department of Transportation.

For more information:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

Ayuda a crear un centro de ciudad acogedor y accesible para los residentes y visitantes de Lakeport.

Estudio del Corredor de la Calle 11

Taller Comunitario

Martes, 14 de Mayo

6-8 p.m.

Cámaras del Consejo del Ayuntamiento
225 Park Street
Lakeport, CA 95453
(Entre la Calle Segunda y Tercera)

Los miembros del equipo del proyecto estarán disponibles después de las 7 PM para discutir sus necesidades e intereses.

¡Ayúdenos a mejorar el acceso y la seguridad para peatones, ciclistas y usuarios de tránsito en la Calle 11 y en los alrededores!

Habrá bocadillos y refrescos.

¡Familias y niños Bienvenidos!

LAKE APC

CITY OF Lakeport CALIFORNIA

Los fondos para el estudio de viabilidad de corredor de la Calle 11 son pagados por una subvención del Departamento de Transporte de California.

Para más información:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

May 14 Community Workshop Sign-in Sheet

Name	Affliliation	Email	Phone
Tina Scott	Board of Supervisor	Tina.scott@lakecountyca.gov	
George Spurr	City Council	gspurr@cityoflakeport.com	
Ruby Jones	Resident	1150 N High St	
Stan Jones	Resident		
Kevin M Ingram	City of Lake Port	Kingram@cityoflakeport.com	
Evette Salvadori	Lakeport		
Melody Bolster	Lakeport		
Bill Bolster	Lakeport		
Selzanna Lyons	Resident/ Park RGC	Dandylyonsoos7@sbcglobal.net	
Bill Graham	Residents		707-262-1967
Jim & Trish Williams	Resident	210 11th st	707-263-7713
Ken Wicks	Planning Commissioner	kevicksjr@yahoo.com	707-245-8317
Bart Hutt	Home Owner	berthutt@saulc.nett	707-771-2555
Mike Wergt		4150 Genevieve St Lakeport	
Lance & Kristi Domagalski		1075 11st – kintgonecrazy@hotmail.com	707-349-6446

Help create a welcoming and accessible town core for Lakeport residents and visitors.

11th Street Corridor Study

Community Workshop

Wednesday, November 6

6-8 p.m.

City Hall Council Chambers
225 Park Street
Lakeport, CA 95453
(Between 2nd & 3rd Streets)

Join us to preview and provide feedback on a series of potential safety and access improvements for pedestrians, bicyclists and transit users on 11th Street and the surrounding area. Your feedback will help shape the recommendations in the 11th Street Corridor Study, which will be finalized in early 2020.

Snacks and refreshments will be provided.

Families and children welcome!

LAKE APC

CITY OF Lakeport CALIFORNIA

Funding for the 11th Street Corridor Multi-Modal Engineered Feasibility Study is paid for by a grant from the California Department of Transportation.

For more information:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

Ayuda a crear un centro de ciudad acogedor y accesible para los residentes y visitantes de Lakeport.

Estudio del Corredor de la Calle 11

Taller Comunitario

Miércoles, 6 de Noviembre

6-8 p.m.

Cámaras del Consejo del Ayuntamiento
225 Park Street
Lakeport, CA 95453
(Entre la Calle Segunda y Tercera)

Participe en una reunión para revisar y dar comentarios sobre una serie de medidas para mejorar la seguridad y el acceso para peatones, ciclistas y usuarios de transporte público en la Calle 11 y su alrededor. Sus opiniones nos ayudarán a preparar el "Estudio del Corredor de la Calle 11" a principios de 2020.

Habrá bocadillos y refrescos.

¡Familias y niños Bienvenidos!

LAKE APC

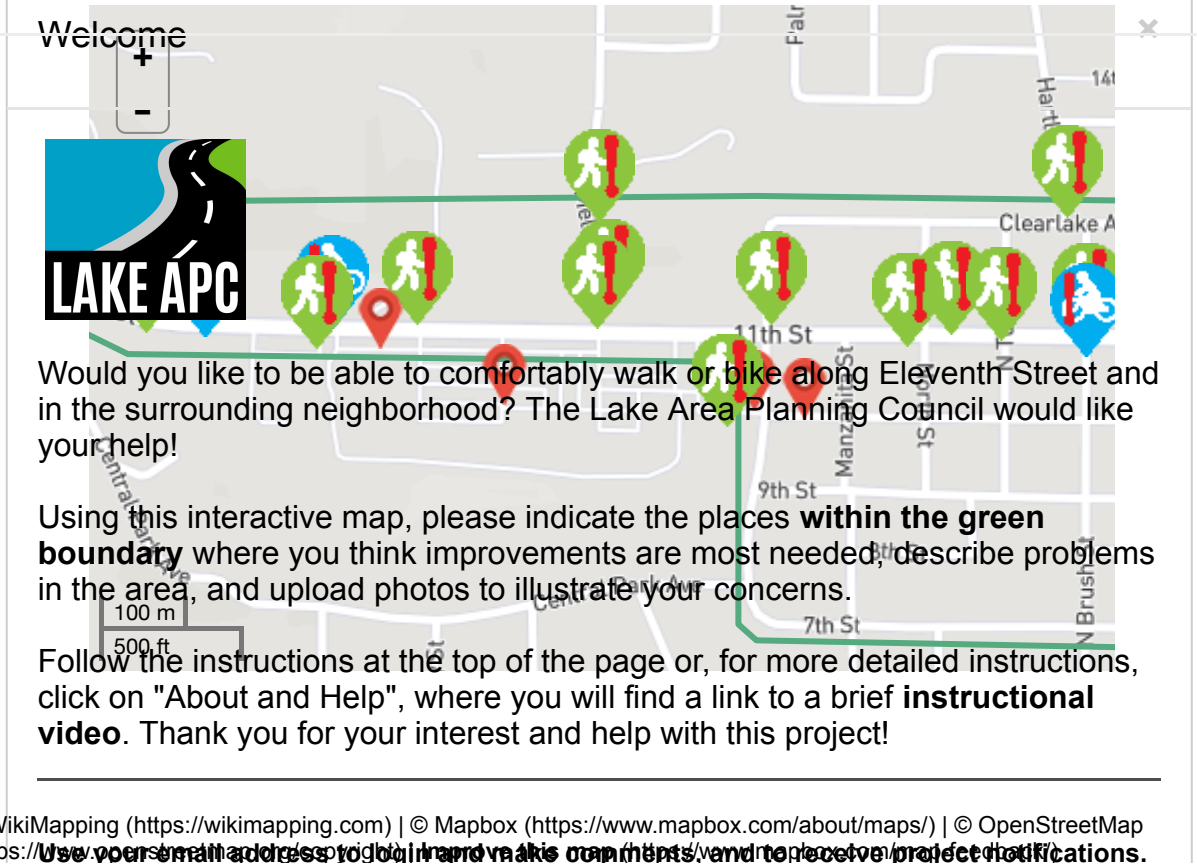
CITY OF Lakeport CALIFORNIA

Los fondos para el estudio de viabilidad de corredor de la Calle 11 son pagados por una subvención del Departamento de Transporte de California.

Para más información:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

11th Street corridor study seeks input from community on needed improvements

ELIZABETH LARSON POSTED ON TUESDAY, 23 JULY 2019 03:52 23 JULY 2019



LAKEPORT, Calif. – Community members who have ideas about how to improve transportation along 11th Street in Lakeport are asked to take part in an ongoing study looking at measures that will benefit bikes, pedestrians, buses and forms of travel besides vehicles.

The Lake Area Planning Council is working with W-Trans, in partnership with the city of Lakeport, to conduct the
11th Street Corridor Multi-Modal Engineered Feasibility Study (https://wikimapping.com/11th-st-corridor.html)
.

W-Trans and the council also are working on a plan for the Highway 20 corridor between Nice and Glenhaven,
as Lake County News has reported (https://www.lakeconews.com/index.php/news/61866-highway-20-traffic-calming-project-seeks-public-comment-on-interactive-map)
.

The work is paid for by Sustainable Communities Planning Grants from Caltrans, said John Speka of the Lake Area Planning Council.

Speka said that program is just for planning grants, not capital construction costs.

The 11th Street corridor is one of the main entrances into Lakeport. It's busy with vehicles, is narrow, has no bike lanes, is closely bordered on both sides by homes, does not have sidewalks on both sides of the road and, in some cases, sidewalks are extremely narrow and have utility poles in the middle of them.

The plan calls for analyzing transportation alternatives on the roadway, in a study area that has the Highway 29 freeway as the west boundary, North Main Street as the east boundary, with Clear Lake Avenue the northern boundary and extending to Seventh and Pool streets to North Main Street as the southern boundary.

"The product of this study is intended to provide several options to improve multi-modal access through the constrained Eleventh Street corridor," the request for proposals for the plan explains. That document goes on to state, "Ultimately, the goal of the project is to enable Project Study Reports to be prepared from its products (engineered feasibility)."

Among the project objectives are utilizing the existing right-of-way on the 11th Street corridor to provide multimodal access along the corridor, minimizing adjacent land uses, improving pedestrian safety by planning for improvements, providing a bicycle route through the corridor that connects Scotts Valley Road and Highway 29 with Main Street and the city's downtown, improving access to public transit and identifying a preferred location for an intersection/junction at 11th Street with a planned collector street that will provide future access to the Corridor from northern residential neighborhoods and Alden Avenue, according to planning documents.

Barry Bergman of W-Trans said the plan will analyze the area's obvious constraints and topography, will look at accommodating different modes of transportation and will result in a concept design.

Public meetings on the planning began this spring, as Lake County News has reported.

Bergman said the most common input was lack of sidewalks and utility poles blocking them, noting that the existing sidewalks are pretty narrow.

"The utility poles make it that much more difficult, especially for people in wheelchairs," he said.

Now, they're reaching out to ask the community to give input on an online map, which will be the focus of public outreach over the coming month as they prepare to draft a plan that will undergo further public vetting.

Bergman said they want more community input before doing the design work. As they gather that

information they're also talking to city staff, analyzing collision and traffic data, and putting all of that together to apply it to the eventual recommendations.

Cayla McDonell of the Lake Area Planning Council said the council is doing community engagement and outreach.

She said the city and the council recently sent out fliers that talk about the project with a link to the Wikimaps interactive mapping tool, with posts also being made on Web sites and social media.

McDonell said they also are finalizing surveys of business and property owners. She said she will be calling and reaching out to businesses along 11th Street and some immediately adjacent or those on perpendicular streets, and then sending out to them the survey link to a separate online survey for property owners.

Bergman added that getting such input from business owners is critical to the study.

McDonell said she will be at two upcoming events, National Night Out in Lakeport on Tuesday, Aug. 6, and at the Lake County Fair on Aug. 31 or Sept. 1.

She said they haven't yet determined the dates for the next community input event, which is expected to take place toward the end of the year.

Bergman said they are tentatively looking at having more public meetings in October, before the holidays, to ask for input on the three alternatives they are working on, with input from city staff and stakeholders. That input will help flesh the recommendations out further.

Dalene Whitlock, a principal of W-Trans, said at that point people will get to weigh in on their preferences on the alternatives.

That additional input, said Bergman, will help further define what specific things to include in the planning and will influence what, eventually, comes out in the preliminary designs.

He said the alternative with the most public support won't necessarily be selected, as they have to look at if it will work. Right-of-way and other issues will have to be analyzed before making a final decision.

"We're really just coming up with facility recommendations," he said.

Because this is a planning grant, Bergman said the matter of building a project is still to be determined, and that this is a process.

How it's ultimately funded is going to be based on the opportunities that arise and piecing different funding together, Bergman said.

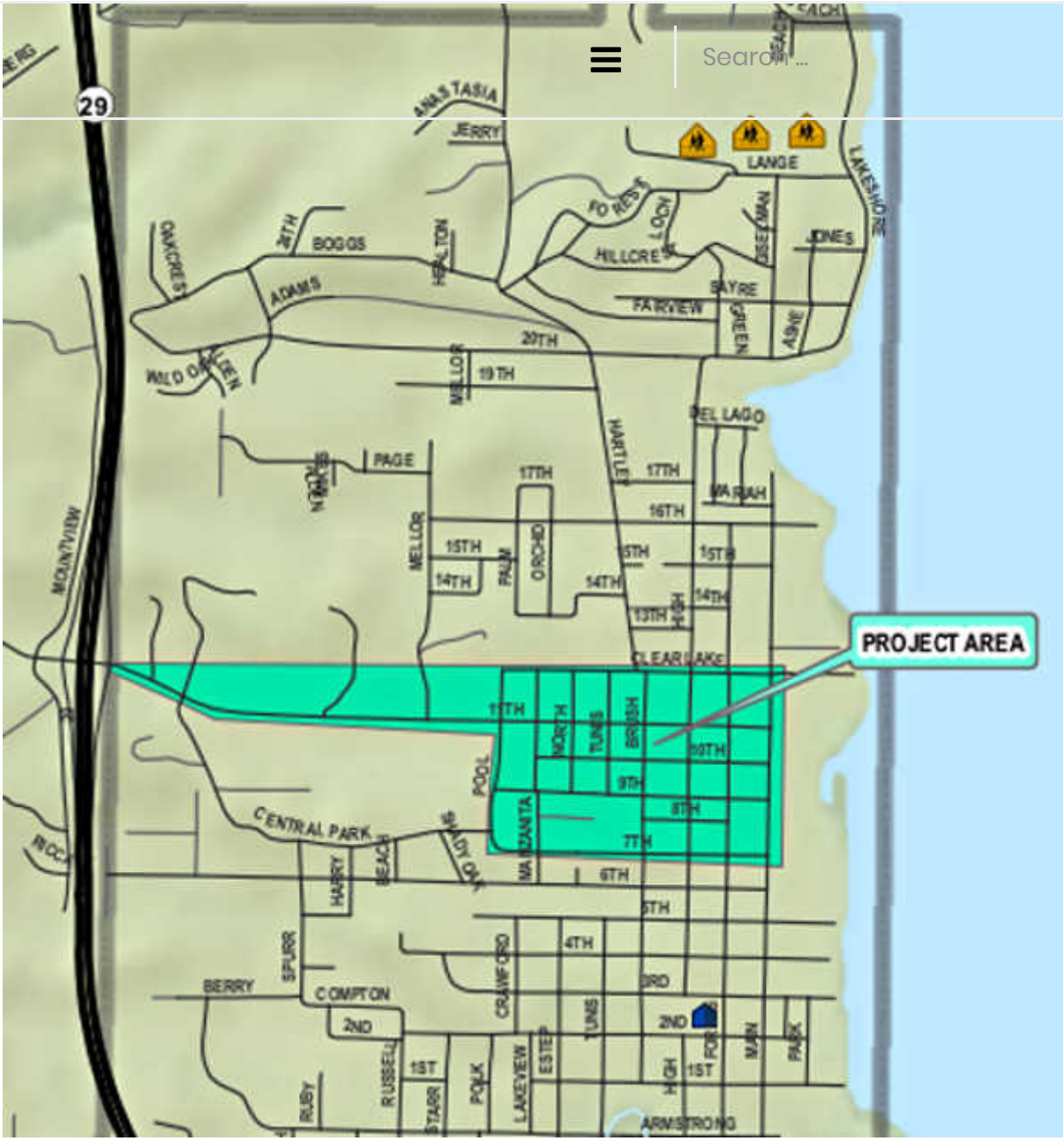
Speka said there are a couple of potential sources for future funding, including Caltrans' Active Transportation Program, which funds projects for nonmotorized transportation, like bikes and walking.

He said one of the main goals of the planning project is to be ready to apply for those types of grants, which cycle through every two years.

Similarly, the Highway 20 project now under way would be looking at similar grants, Speka said.

Both planning projects are on a similar timeline, Speka said, with the Lake Area Planning Council expected to get the final drafts and consider their approval in the spring.

Email Elizabeth Larson at elarson@lakeconews.com (mailto:elarson@lakeconews.com). Follow her on Twitter, @ERLarson, or Lake County News, @LakeCoNews.



The 11th Street Corridor Multi-Modal Engineered Feasibility Study area. Image courtesy of the Lake Area Planning Council.

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Cayla McDonell <cmcdonell@lgc.org>

11th Street Corridor Study Post on Nextdoor
1 message

Brad Rasmussen <brasmussen@lakeportpolice.org>
To: cmcdonell@lgc.org
Cc: Brad Rasmussen <brasmussen@lakeportpolice.org>

9:35 PM Mon Oct 21

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Chief of Police Brad Rasmussen, Lakep

Community Workshop - 11th Street

Community Workshop - 11th Street Corridor S

Join the city to preview and provide feedback
access improvements for pedestrians, bicyclis
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the 11th Street Corridor Study, which will be fi
refreshments will be provided. Families and cl

DATE/TIME/LOCATION

Wednesday, November 6
6-8 p.m.

City Hall Council Chambers 225 Park Street L
3rd Streets)

3 min ago · Subscribers of Lakeport Police Depa

Brad Rasmussen
Chief of Police
Lakeport Police Department
Main: 707-263-5491
Cell: 707-367-6035

Stand with anybody that stands right, stand with him while he is right and part with him when he goes wrong. - **Abraham Lincoln**

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Community

Community Workshop - 11th Street Corridor Study

Community Workshop - 11th Street Corridor Study

Join the city to preview and provide feedback on a series of potential safety and access improvements for pedestrians, bicyclists and transit users on 11th Street and the surrounding area. Your feedback will help shape the recommendations in the 11th Street Corridor Study, which will be finalized in early 2020. Snacks and refreshments will be provided. Families and children welcome

DATE/TIME/LOCATION

Wednesday, November 6
6-8 p.m.

City Hall Council Chambers 225 Park Street Lakeport, CA 95453 (Between 2nd & 3rd Streets)

Address/Location
Lakeport Police Department
2025 S Main St
Lakeport, CA 95453

Contact
Emergency: 9-1-1
Non-emergencies: 707-263-5491

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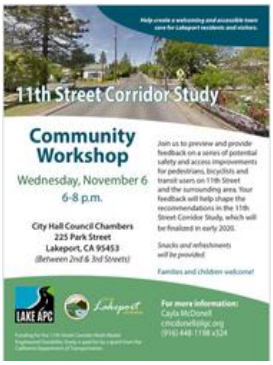

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Join the city to preview and provide feedback on a series of potential safety and access improvements for pedestrians, bicyclists and transit users on 11th Street and the surrounding area. Your feedback will help shape the recommendations in the 11th Street Corridor Study, which will be finalized in early 2020. Snacks and refreshments will be provided. Families and children welcome

DATE/TIME/LOCATION
Wednesday, November 6
6-8 p.m.

City Hall Council Chambers 225 Park Street Lakeport, CA 95453 (Between 2nd & 3rd Streets)

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Community Workshop - 11th Street Corridor Study

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Community Workshop - 11th Street Corridor Study!
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Wednesday, 11/6
6-8 pm @ City Hall

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Community Workshop - 11th Street Corridor Study

Join the city to preview and provide feedback on a series of potential safety and access improvements for pedestrians, bicyclists and transit users on 11th Street and the surrounding area. Your feedback will help shape the recommendations in the 11th Street Corridor Study, which will be finalized in early 2020. Snacks and refreshments will be provided. Families and children welcome

DATE/TIME/LOCATION

Wednesday, November 6
6-8 p.m.

City Hall Council Chambers 225 Park Street Lakeport, CA 95453
(Between 2nd & 3rd Streets)

Lake County News

20 hrs ·

The community workshop will take place from 6 to 8 p.m. Wednesday, Nov. 6, in the council chambers at Lakeport City Hall, 225 Park St.

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Community workshop planned on 11th Street Corridor Study

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NEWS > GOVERNMENT

Traffic safety improvements on Highway 20 and Lakeport's 11th Street to be discussed

By AIDAN FREEMAN | afreeman@record-bee.com |
May 13, 2019 at 3:23 pm

LAKE COUNTY — Residents will have the opportunity to discuss several planned roadway improvement studies at multiple public meetings in Lake County this week.

Representatives from the Santa Rosa-based traffic engineering firm W-Trans will attend a meeting at Lakeport City Hall on Tuesday from 6 p.m. to 8 p.m. to seek input from the public on the Lake Area Planning Council and City of Lakeport-backed 11th Street Corridor Multi-Modal Engineered Feasibility Study.

On Wednesday, Western Region Town Hall member Margaret Sanders will provide an update on her recent meeting with Caltrans District 1 Chief Traffic Safety Officer David Morgan, who attended the town hall's March meeting to discuss residents' ongoing concerns about pedestrian safety and traffic speeds along the Northshore section of Highway 20. WRTH Chair Gene Paleno said Monday that Sanders had met with Morgan last week, and that she will be summarizing that meeting on Wednesday.

Sanders will be "bringing all the townspeople up to speed," Paleno said.

On Thursday, the W-Trans firm will seek input from Northshore residents on the Highway 20 Traffic Calming Plan & Feasibility Study at a meeting at the Lucerne Alpine Senior Center from 6 p.m to 7 p.m.

Immediately following that meeting, the firm will make a presentation during the Lucerne Area Town Hall meeting concerning the Highway 20 traffic calming plan.

Both the 11th Street corridor and Highway 20 design studies have been funded by grants awarded last year to the Lake APC. Each grant—both Caltrans Sustainable Transportation Planning Sustainable Communities Grants—totals roughly $148,000.

W-Trans planner Barry Bergman said Monday that the meetings in Lucerne and Lakeport are part of the first stage of the firm's data-collection efforts which will guide what is to be designed to improve the 11th Street corridor and Highway 20 for bicycle and pedestrian use.

Bergman said the firm will be trying to "get a sense of what issues people feel are important" in order to find what things can be done to best improve bicycle and pedestrian access at both locations.

Bergman noted that the Caltrans grant awarded to Lake APC for W-Trans' work pursuant to the Highway 20 traffic calming plan does not pertain to all of the Northshore stretch of Highway 20, rather to four specific sections of it, namely Nice, Lucerne, Glenhaven and Clearlake Oaks. The Upper Lake section of the highway, he said, will not be studied using these grant funds.

Bergman noted that more funding would be needed to complete any designs and

“Ultimately we would come up with some recommendations for the project,” he said. Then it’s a question of how the county and Caltrans would proceed.

The Lake APC meeting regarding the 11th Street corridor will be held Tuesday from 6 p.m. to 8 p.m. at Lakeport City Hall, 225 Park Street.

The Western Region Town Hall meeting will be held Wednesday at 5 p.m. at the Habematolel Tribal Room, 9470 Main Street in Upper Lake.

The Lake APC meeting regarding the Highway 20 traffic calming plan will be held Thursday from 6 p.m. to 7 p.m. at the Lucerne Alpine Senior Center, 3985 Country Club Drive.

The Lucerne Area Town Hall meeting will succeed Thursday’s Lake APC meeting at 7 p.m. in the same location.

Tags: Caltrans, City of Lakeport, Highway 20, Lucerne Area Town Hall, newsletter, West Region Town Hall

Aidan Freeman

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	2
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	3

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	2
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	5
Bike lanes with separation (buffer) from vehicle traffic	5
Bike lanes with WHITE dashed lines across major driveways	5
Bike lanes with GREEN dashed lines across major driveways	5
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	1
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	1

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	#1
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	#1
Sidewalks on at least one side of the roadway	3
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	3
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	
Bike lanes with separation (buffer) from vehicle traffic	1
Bike lanes with WHITE dashed lines across major driveways	
Bike lanes with GREEN dashed lines across major driveways	5
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	5
Multi-use path connection between Manzanita St. and Pool St.	5
Painted intersection	5
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	2

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	3
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	# 1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	No No

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	5
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	3
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	3
Pedestrian lighting Light Suck	1
Standard bike lanes (as currently exist west of Pool Street)	5
Bike lanes with separation (buffer) from vehicle traffic	5
Bike lanes with WHITE dashed lines across major driveways	5
Bike lanes with GREEN dashed lines across major driveways	5
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	5
Multi-use path connection between Manzanita St. and Pool St.	5
Painted intersection	5
Mini-roundabout at 11th St/Forbes St intersection	2
Bus stop improvements to lighting, waiting areas, and pedestrian access	1

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	2
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	3

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	3
Sidewalks on at least one side of the roadway	4
Sidewalks on both sides of the roadway	2
Pedestrian crossing signs	2
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	3
Bike lanes with separation (buffer) from vehicle traffic	4
Bike lanes with WHITE dashed lines across major driveways	3
Bike lanes with GREEN dashed lines across major driveways	2
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	4
Multi-use path connection between Manzanita St. and Pool St.	2
Painted intersection	5
Mini-roundabout at 11th St/Forbes St intersection	2
Bus stop improvements to lighting, waiting areas, and pedestrian access	2

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	5
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	4

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	3
Sidewalks on both sides of the roadway	2
Pedestrian crossing signs	2
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	2
Bike lanes with separation (buffer) from vehicle traffic	4
Bike lanes with WHITE dashed lines across major driveways	4
Bike lanes with GREEN dashed lines across major driveways	4
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	2
Painted intersection	1
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	1

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	5
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	5

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	3
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	3
Bike lanes with separation (buffer) from vehicle traffic	3
Bike lanes with WHITE dashed lines across major driveways	4
Bike lanes with GREEN dashed lines across major driveways	2
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	1
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	3

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	2
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	3

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	
Sidewalks on at least one side of the roadway	
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	
Standard bike lanes (as currently exist west of Pool Street)	1
Bike lanes with separation (buffer) from vehicle traffic	1
Bike lanes with WHITE dashed lines across major driveways	
Bike lanes with GREEN dashed lines across major driveways	
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	
Painted intersection	
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	Put speed limit signs!
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	Not taking property
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	No Way

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	Fix the Flippin pot-holes in Lake Co.
Sidewalks on at least one side of the roadway	Put speed limit signs up!!!
Sidewalks on both sides of the roadway	Do not take property!
Pedestrian crossing signs	Good idea
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	Do not take property!
Pedestrian lighting	Good idea
Standard bike lanes (as currently exist west of Pool Street)	Bike lanes on 10th
Bike lanes with separation (buffer) from vehicle traffic	Bike Lanes on 10th
Bike lanes with WHITE dashed lines across major driveways	Bike Lanes on 10th
Bike lanes with GREEN dashed lines across major driveways	Bike Lanes on 10th
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	
Multi-use path connection between Manzanita St. and Pool St.	Better idea
Painted intersection	Beautify 11th St. is a joke
Mini-roundabout at 11th St/Forbes St intersection	Stupid idea
Bus stop improvements to lighting, waiting areas, and pedestrian access	Good idea

11th St. has no Flipping Speed Limit Signs!

11th Street Corridor Study Comment Card	
Alternatives Feedback – Pool St. to Main St.	**Ranking**
Alternative 2 – Provide facilities for all users on 11th St.	4
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	4

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	
Sidewalks on at least one side of the roadway	1
Sidewalks on both sides of the roadway	
Pedestrian crossing signs	2
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	
Standard bike lanes (as currently exist west of Pool Street)	
Bike lanes with separation (buffer) from vehicle traffic	
Bike lanes with WHITE dashed lines across major driveways	
Bike lanes with GREEN dashed lines across major driveways	
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	
Mini-roundabout at 11th St/Forbes St intersection	
Bus stop improvements to lighting, waiting areas, and pedestrian access	

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	5

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	1
Sidewalks on both sides of the roadway	5
Pedestrian crossing signs	2
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	
Standard bike lanes (as currently exist west of Pool Street)	2
Bike lanes with separation (buffer) from vehicle traffic	1
Bike lanes with WHITE dashed lines across major driveways	1
Bike lanes with GREEN dashed lines across major driveways	2
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	5
Mini-roundabout at 11th St/Forbes St intersection	2
Bus stop improvements to lighting, waiting areas, and pedestrian access	1

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	2
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	3

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	
Sidewalks on at least one side of the roadway	5
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	1
Standard bike lanes (as currently exist west of Pool Street)	4
Bike lanes with separation (buffer) from vehicle traffic	5
Bike lanes with WHITE dashed lines across major driveways	5
Bike lanes with GREEN dashed lines across major driveways	5
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	2
Painted intersection	3
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	1

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	4
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	5
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	5

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	2
Sidewalks on at least one side of the roadway	2
Sidewalks on both sides of the roadway	5
Pedestrian crossing signs	
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	5
Pedestrian lighting	
Standard bike lanes (as currently exist west of Pool Street)	
Bike lanes with separation (buffer) from vehicle traffic	
Bike lanes with WHITE dashed lines across major driveways	
Bike lanes with GREEN dashed lines across major driveways	
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	
Multi-use path connection between Manzanita St. and Pool St.	
Painted intersection	2
Mini-roundabout at 11th St/Forbes St intersection	5+
Bus stop improvements to lighting, waiting areas, and pedestrian access	

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	#1
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	1
Sidewalks on at least one side of the roadway	5
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	prefer RRFB's
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	1
Pedestrian lighting	
Standard bike lanes (as currently exist west of Pool Street)	1
Bike lanes with separation (buffer) from vehicle traffic	3
Bike lanes with WHITE dashed lines across major driveways	Prefer green 3
Bike lanes with GREEN dashed lines across major driveways	1
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	3
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	Only one I know of is located in Safeway side parking lot. This is already well lit.

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	5
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	3
Sidewalks on at least one side of the roadway	3
Sidewalks on both sides of the roadway	1
Pedestrian crossing signs	1
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	2
Pedestrian lighting	4
Standard bike lanes (as currently exist west of Pool Street)	1
Bike lanes with separation (buffer) from vehicle traffic	where they exist
Bike lanes with WHITE dashed lines across major driveways	some designation that is
Bike lanes with GREEN dashed lines across major driveways	1 noticeable
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	1
Multi-use path connection between Manzanita St. and Pool St.	1
Painted intersection	2
Mini-roundabout at 11th St/Forbes St intersection	1
Bus stop improvements to lighting, waiting areas, and pedestrian access	2

11th Street Corridor Study Comment Card

Alternatives Feedback – Pool St. to Main St.	Ranking
Alternative 2 – Provide facilities for all users on 11th St.	
Alternative 3 – Narrow 11th St. to shorten pedestrian crossings	5
Alternative 4 – Add 2-way Left Turn Lane on 11th St.	

Design Element Feedback	Rate on Scale of 1 through 5 (1 = strong like, 5 = strong dislike)
Crosswalks	5
Sidewalks on at least one side of the roadway	1
Sidewalks on both sides of the roadway	5
Pedestrian crossing signs	5
Rectangular Rapid Flashing Beacon (RRFB) to signal to drivers that pedestrians are crossing the roadway	5
Pedestrian lighting	4
Standard bike lanes (as currently exist west of Pool Street)	4
Bike lanes with separation (buffer) from vehicle traffic	4
Bike lanes with WHITE dashed lines across major driveways	4
Bike lanes with GREEN dashed lines across major driveways	2
"Bicycle boulevard" on 10th Street to slow traffic and improve for bicycling	2
Multi-use path connection between Manzanita St. and Pool St.	4
Painted intersection	5
Mini-roundabout at 11th St/Forbes St intersection	5
Bus stop improvements to lighting, waiting areas, and pedestrian access	2

Local Government Commission
Leaders for Livable Communities

Cayla McDonell <cmcdonell@lgc.org>

Re: comments from 11th St workshop

1 message

Cayla McDonell <cmcdonell@lgc.org> Mon, Nov 11, 2019 at 3:53 PM
To: Barry Bergman <bbergman@w-trans.com>

Hi Barry,

Just went through the rankings we received from the comment cards and the results are below. We only received written comments from the one lady who kept saying that Lakeport is full of "flunkies, junkies & (monkeys?)" ... I forget what the third one was! Her comments are reflected in the results below.

Alternatives:

- Most preferred alternative: Alternative 3 (Average ranking: 1.5)
- Ranked #2: Alt. 2 (Average ranking: 2.2)
- Ranked #3: Alt 4 (Average ranking: 2.9)

Design Concepts: 1 = most preferred, 3 = least preferred. Listed in descending order.

- Bus stop improvements (1.5 average)
- Pedestrian lighting (1.6)
- Ped. crossing signage (1.7)
- Crosswalks (1.81)
- 10th St Bike Blvd (1.85)
- RRFBs (1.9)
- Roundabout at Forbes/11th (2.071)
- Sidewalks on both sides of road (2.076)
- 10th St connection across Manzanita & Pool w/multiuse path (2.1)
- Standard bike lane (that currently exist w. of Pool St.) (2.8)
- Sidewalks on 1 side of road (2.9)
- Painted intersection (3.1)
- Bike lane w/buffer (3.2)
- Bike lane w/green dashed lines (3.3)
- Bike lane w/white dashed lines (3.7)

Cayla McDonell
Community Design Project Manager

Local Government Commission
Leaders for Livable Communities
980 9th Street, Suite 1700
Sacramento, CA 95814-2736
(916) 448-1198 ext. 324
cmcdonell@lgc.org

On Mon, Nov 11, 2019 at 1:58 PM Barry Bergman <bbergman@w-trans.com> wrote:

> No, unfortunately we get a lot fewer holidays than government folks.
>
> **Barry Bergman**
>
> **AICP Senior Planner**
>
> cid:image001.jpg@01D07780.766B09F0

Office 707.542.9500
490 Mendocino Avenue, Suite 201 Santa Rosa, CA 95401

www.w-trans.com

From: Cayla McDonell <cmcdonell@lgc.org>
Sent: Monday, November 11, 2019 1:55 PM
To: Barry Bergman <bbergman@w-trans.com>
Subject: Re: comments from 11th St workshop

Yes, absolutely I can do this.

I didn't think you were working today!

Cayla McDonell

Community Design Project Manager

Local Government Commission
Leaders for Livable Communities

980 9th Street, Suite 1700

Sacramento, CA 95814-2736

(916) 448-1198 ext. 324

cmcdonell@lgc.org

On Mon, Nov 11, 2019 at 1:45 PM Barry Bergman <bbergman@w-trans.com> wrote:

> Hi Cayla,
>
> You have the comment forms from the workshop, yes? Can you summarize them and forward me the info when you get a chance? I want to get a handle on how we would recommend responding prior to the TAG mtg. Thanks!
>
> **Barry Bergman**
>
> **AICP Senior Planner**
>
> cid:image001.jpg@01D07780.766B09F0
>
> **Office** 707.542.9500
> 490 Mendocino Avenue, Suite 201 Santa Rosa, CA 95401
>
> **www.w-trans.com**

11th Street Corridor Study Community Workshop

Wednesday, November 6th 6-8pm

Please Sign In

First and Last Name	Address of Residence	Contact (Email/Phone)
Sally Owens	125 16th St.	707-263-6777
~~Fran~~ Terri Kunkel	150 - 11th St	(707) 234-1241
VICKI L. HAYS	550A Clearlake Ave	707.263.6169 (off). First 5
RICHARD VANDER JAGT	1393 Scotts Valley Rd	707 263 8953
Sue Zeek	570 9th St	707 349-2680
Jeff Warrenburg	1800 S. Main St	Jeff@paradisestate.com
Ruby + Stan Jones	1150 N High St	chip5425@netzero.com
Tina Scott	4175 Lakeshore Blvd	Tina.Scott@lakecountyca.gov
ARIEL CARMONA	1005 Alpine Court Kville	ariel carmona@redcardbee.com
Douglas Grider	591 Martin St	707-489-3311
BRAD RASMUSSEN	2025 S. MAIN ST, LAKEPORT	707-263-9650 BRASMUSSEN@LAKEPORTPOLICE.ORG
Kevin M. Ingram	225 Park St. (City Hall)	707-263-5615 Kingram@cityoflakeport.com
Jessica Johns	610 11th St.	(707) 514-8479 jessicalifornia27@gmail.com
George Spurr	1301 N Forbes St	707 367 5070 mrciss@prodigy.net
Francisco Cervantes	790 11th st.	707-245-1532 Patron2312@Gmail.Com

Wikimaps Outreach and Results

Help create a welcoming and accessible town core for Lakeport residents and visitors.

11th Street Corridor Study

We Want To Hear From You!

Please provide your feedback on the interactive map at the following link by **August 9, 2019:**

wikimapping.com/11th-St-Corridor.html

Where would you like to walk and bike on 11th Street and the surrounding area? While walking and bicycling, do you experience unsafe conditions or challenges getting to where you want to go?

Lake Area Planning Council (APC), in partnership with the City of Lakeport, is looking at expanding bicycle, pedestrian, and transit use and improving safety and access for all road users along the 11th Street corridor and nearby roadways.

Our next outreach phase will include surveying businesses and property owners along 11th Street and other major streets. Community outreach will continue into Summer and Fall of 2019.

LAKE APC

CITY OF Lakeport CALIFORNIA

Funding for the 11th Street Corridor Multi-Modal Engineered Feasibility Study is paid for by a grant from the California Department of Transportation.

For more information:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

We Want To Hear From You!

Help create a welcoming and accessible town core for Lakeport residents and visitors!

Where would you like to walk and bike on 11th Street and the surrounding area? While walking and bicycling, do you experience unsafe conditions or challenges getting to where you want to go?

Please provide your feedback on the interactive map at the following link:

wikimapping.com/11th-St-Corridor.html

LAKE APC

CITY OF Lakeport CALIFORNIA

For more information:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

We Want To Hear From You!

Help create a welcoming and accessible town core for Lakeport residents and visitors!

Where would you like to walk and bike on 11th Street and the surrounding area? While walking and bicycling, do you experience unsafe conditions or challenges getting to where you want to go?

Please provide your feedback on the interactive map at the following link:

wikimapping.com/11th-St-Corridor.html

LAKE APC

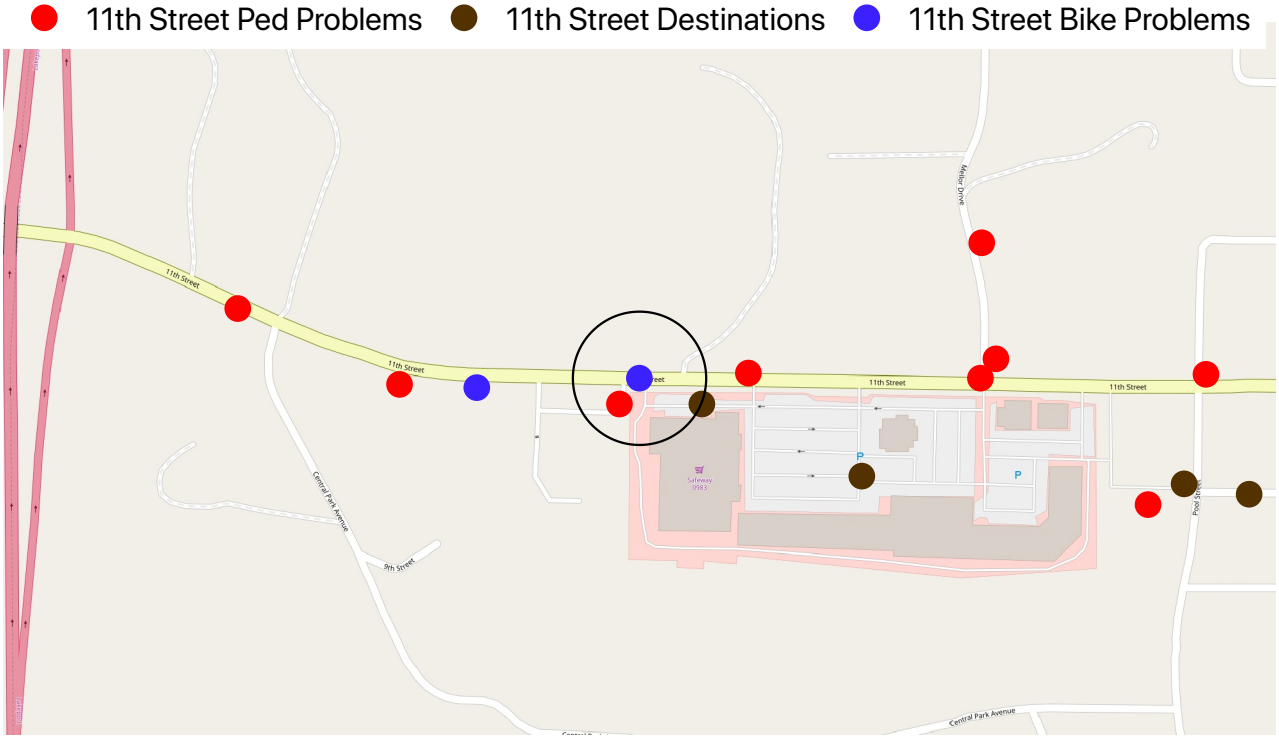
CITY OF Lakeport CALIFORNIA

For more information:
Cayla McDonell
cmcdonell@lgc.org
(916) 448-1198 x324

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Street is too narrow for both bikes and cars

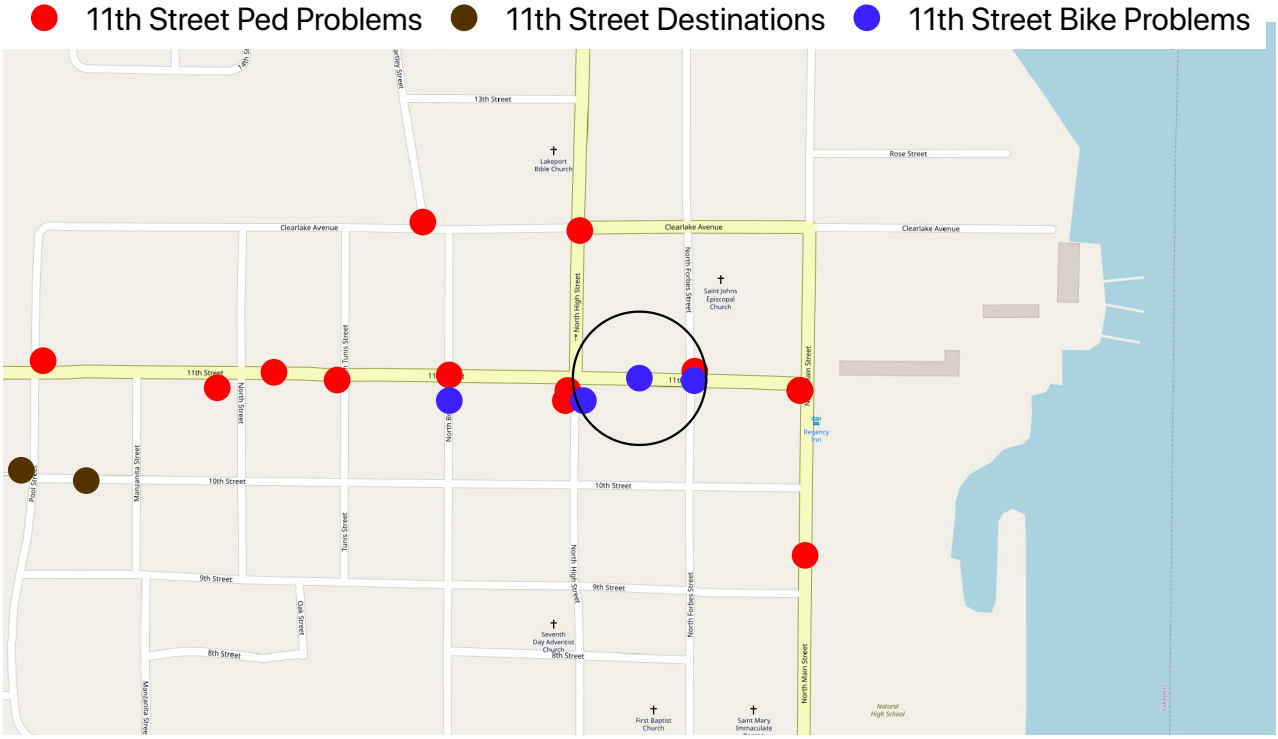
There is enough right of way on most of 11th Street - Need to restripe the roadway to add bikelanes on both sides of 11th street and narrow the lanes.

Net likes: 11

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic

Street is too narrow for both bikes and cars

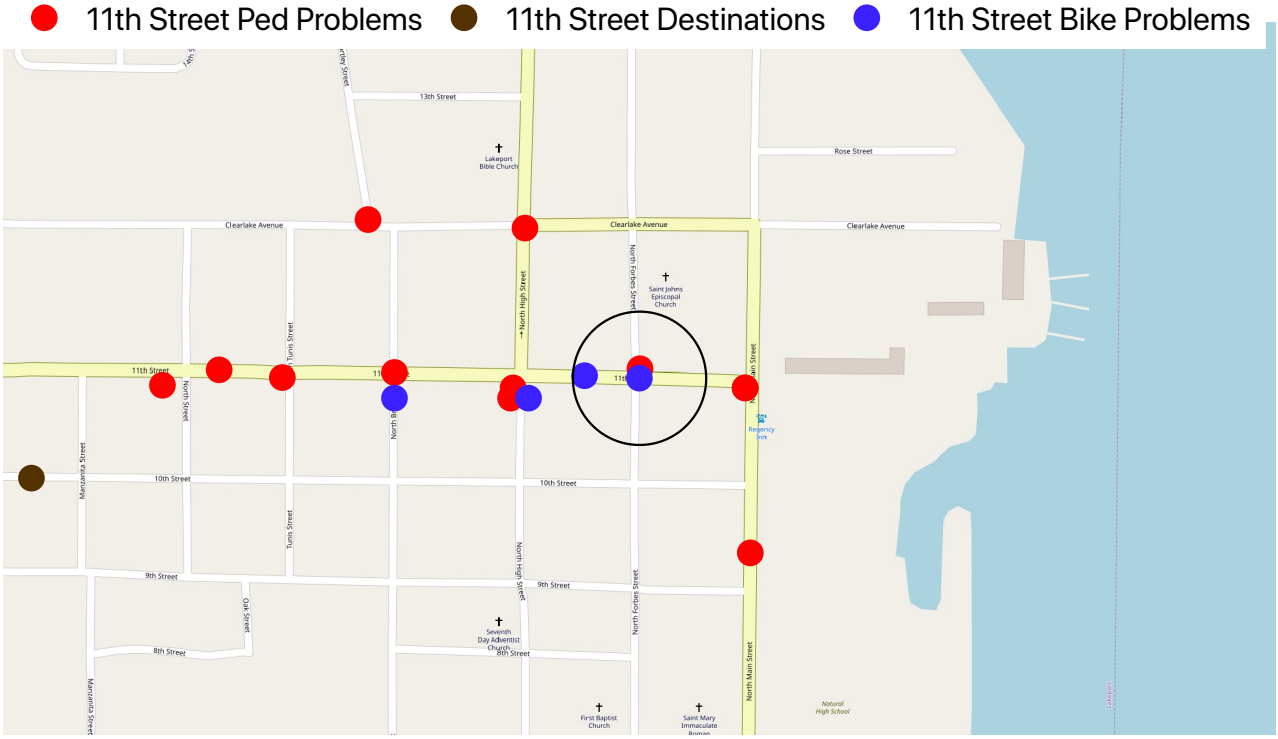
Eleventh St is an arterial road that leads to the major freeway in the area. This road is too narrow and does not have wide enough sidewalks or designated bike lanes for safe and smooth traffic flow.

Net likes: 7

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Too much traffic

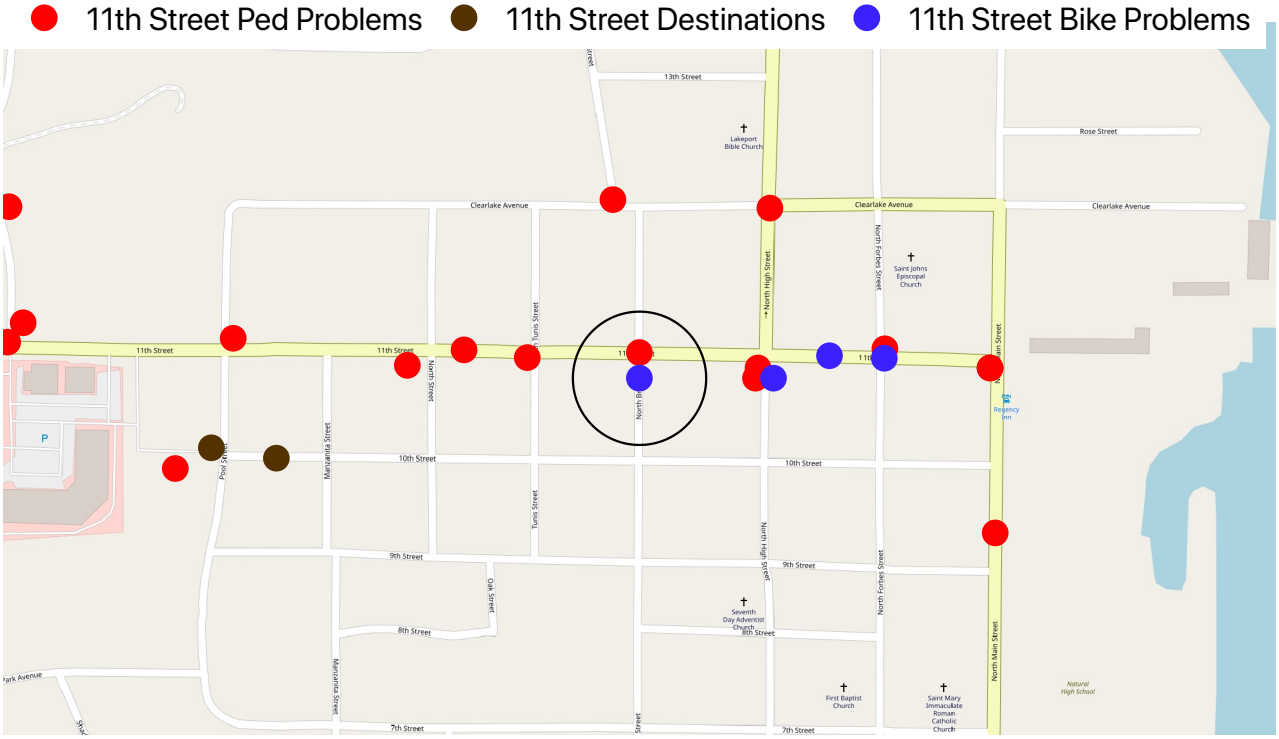
The intersection of Eeventh St and N Forbes St is commonly impacted by traffic collisions. This intersection is dangerous for motorists, pedestrians and bikes.

Net likes: 3

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

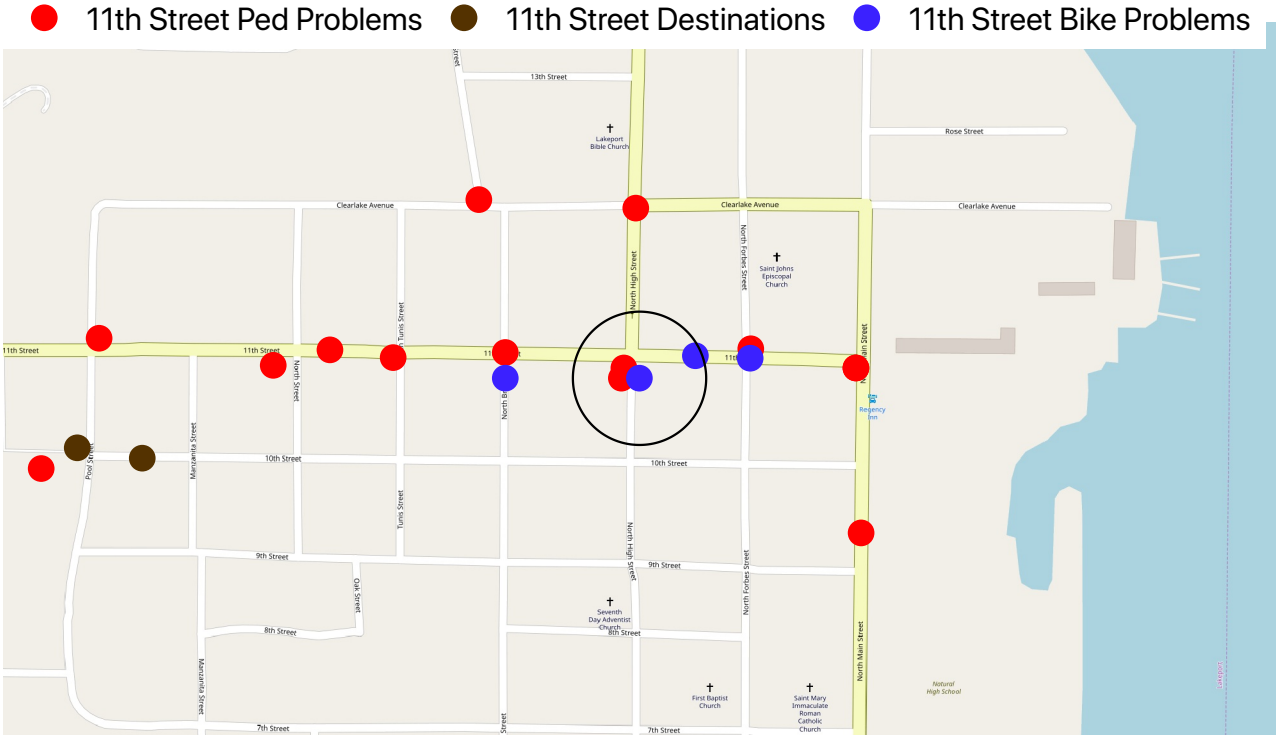
Summary of comments for this point

Other (please describe below)
Cars pulling out from Brush Street cannot see bikes (or cars) on their left because of the plants.

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue



Base Map: Open Street Map

Summary of comments for this point

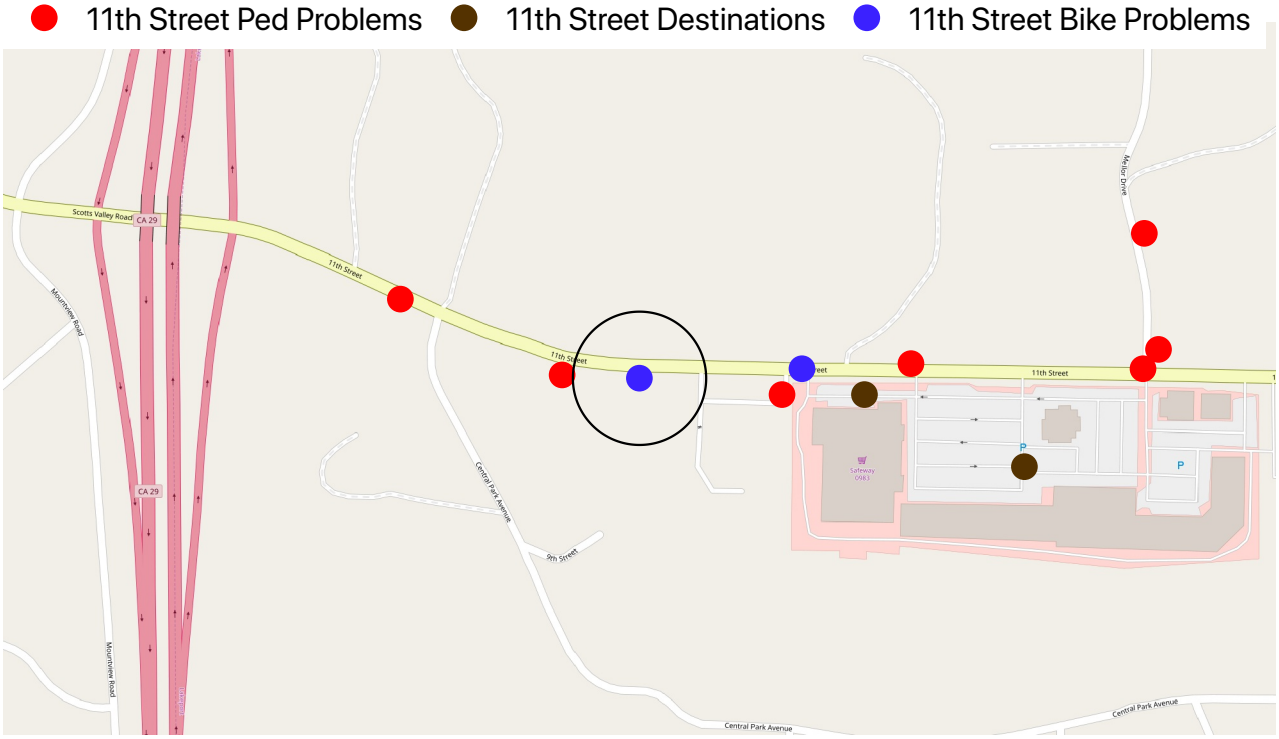
Cars pulling out from High Street & other side streets cannot see bicyclists (or other cars) on their left because of the plants. Adding sidewalks and/or trimming back bushes would increase the distance drivers can see oncoming bikes and cars without pulling into the traffic lanes on 11th Street.

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Bike issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic

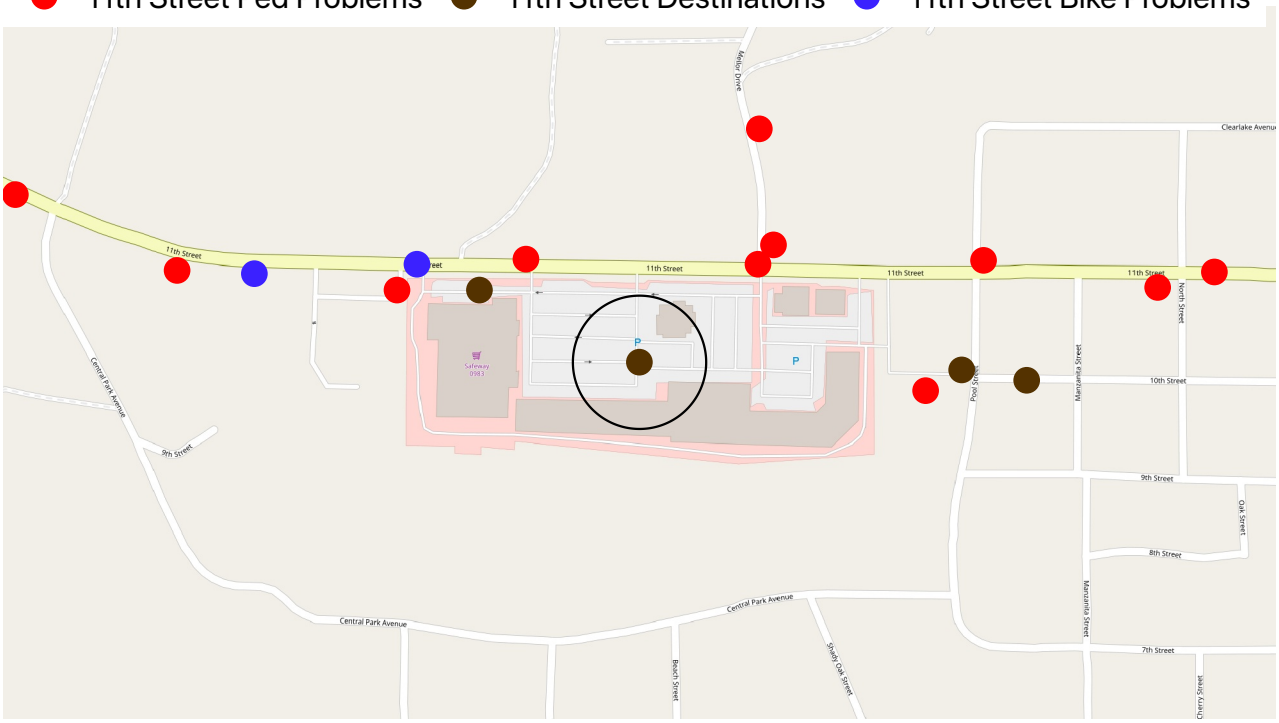
Street is too narrow for both bikes and cars
Other (please describe below)

Net likes: 3

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Destination

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

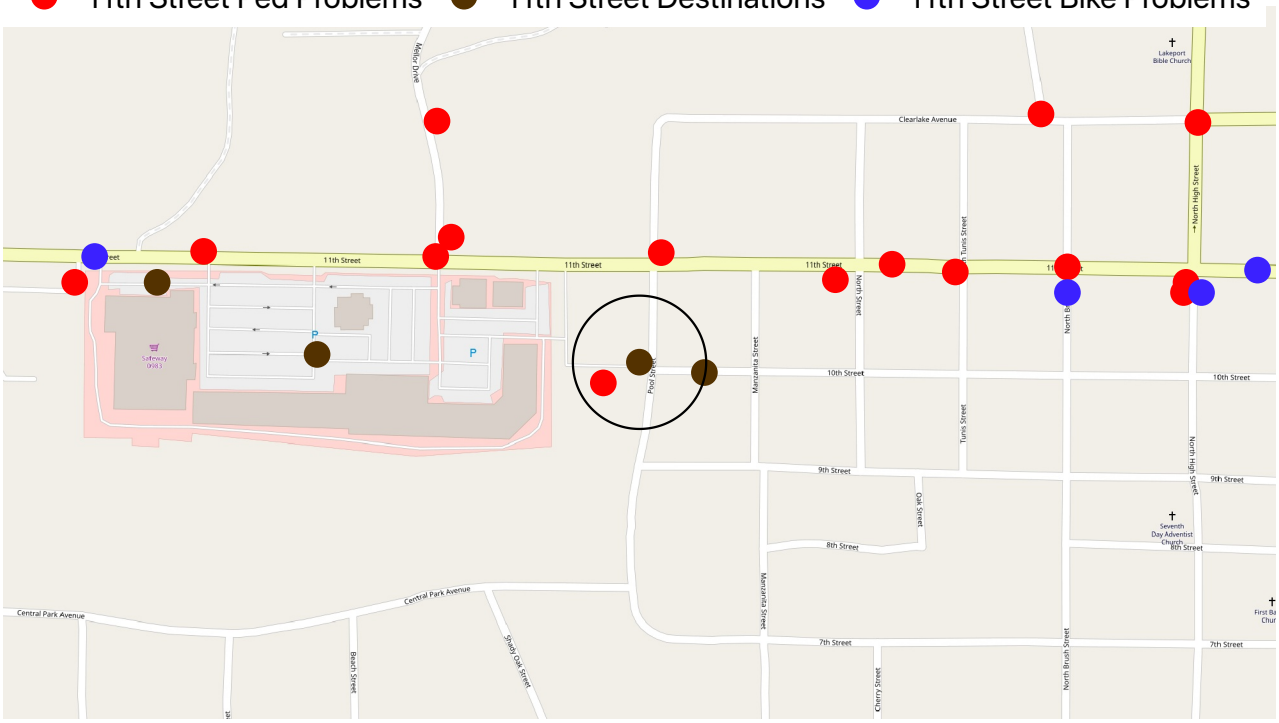
Shopping

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Destination

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Shopping
Dining/entertainment

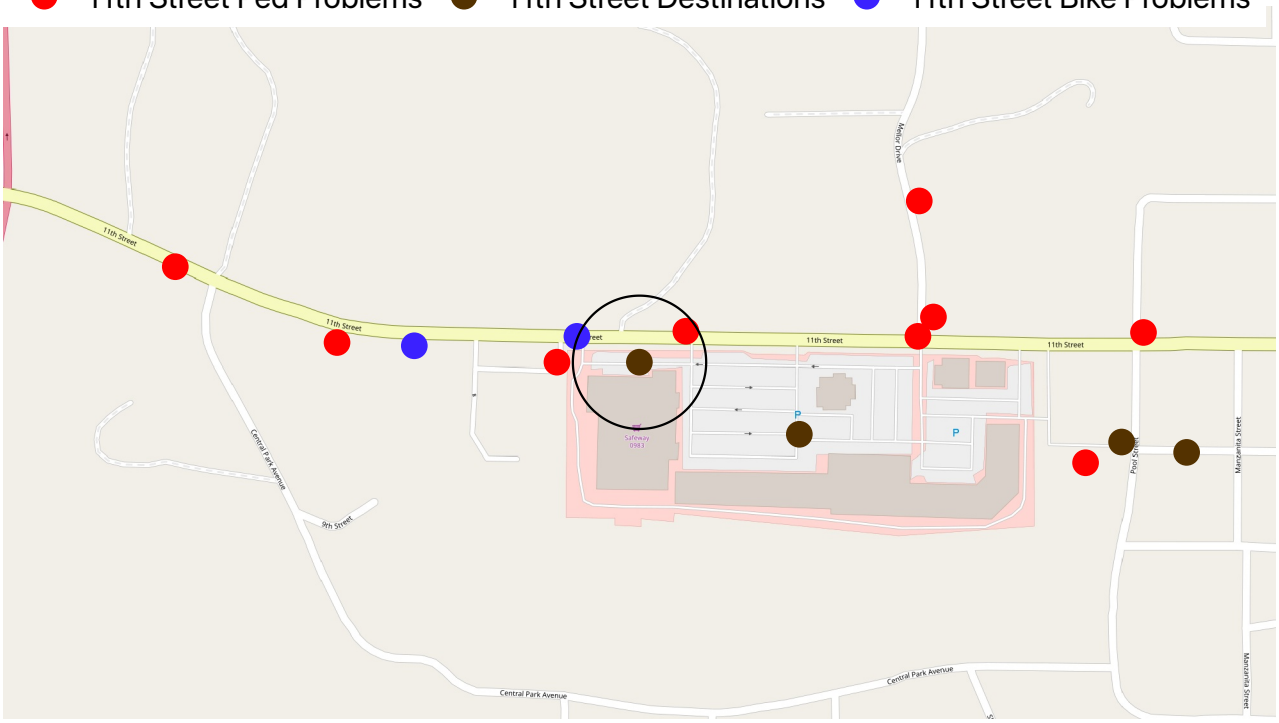
Recreation
Other (please describe below)
route to/from downtown
need to accommodate people in wheelchairs and power chairs.

Net likes: 2

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Destination

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Shopping

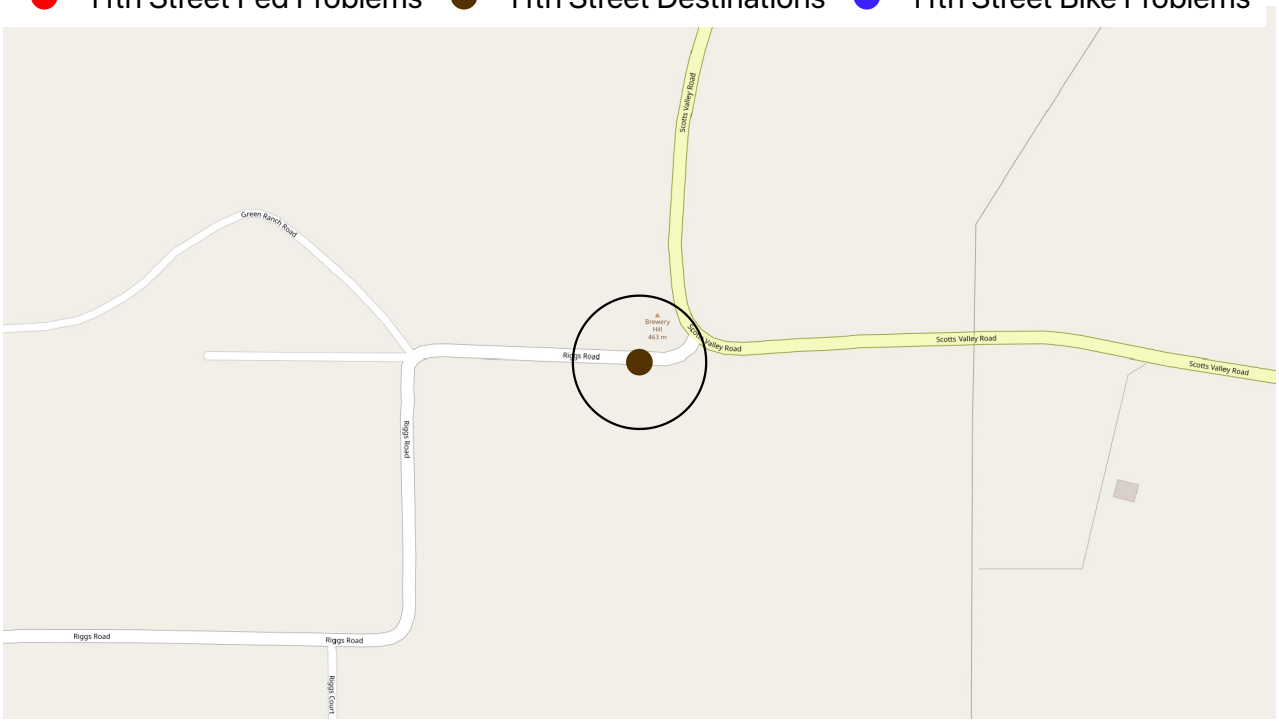
Other (please describe below)
Lake Transit bus stop - covered bus stop where people can wait for the bus out of the rain / direct sun. Most other bus stops are not sheltered.

Net likes: 2

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Destination

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

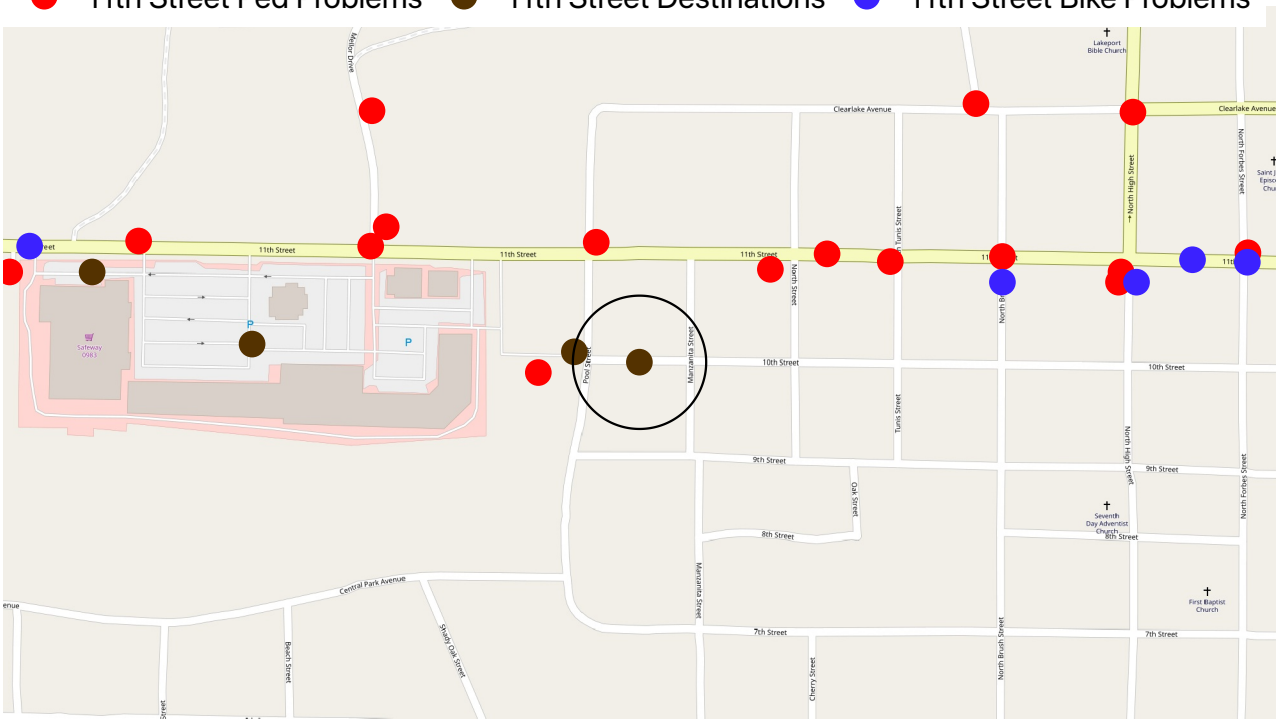
Recreation

Net likes:

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Destination

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Shopping
Dining/entertainment

Recreation

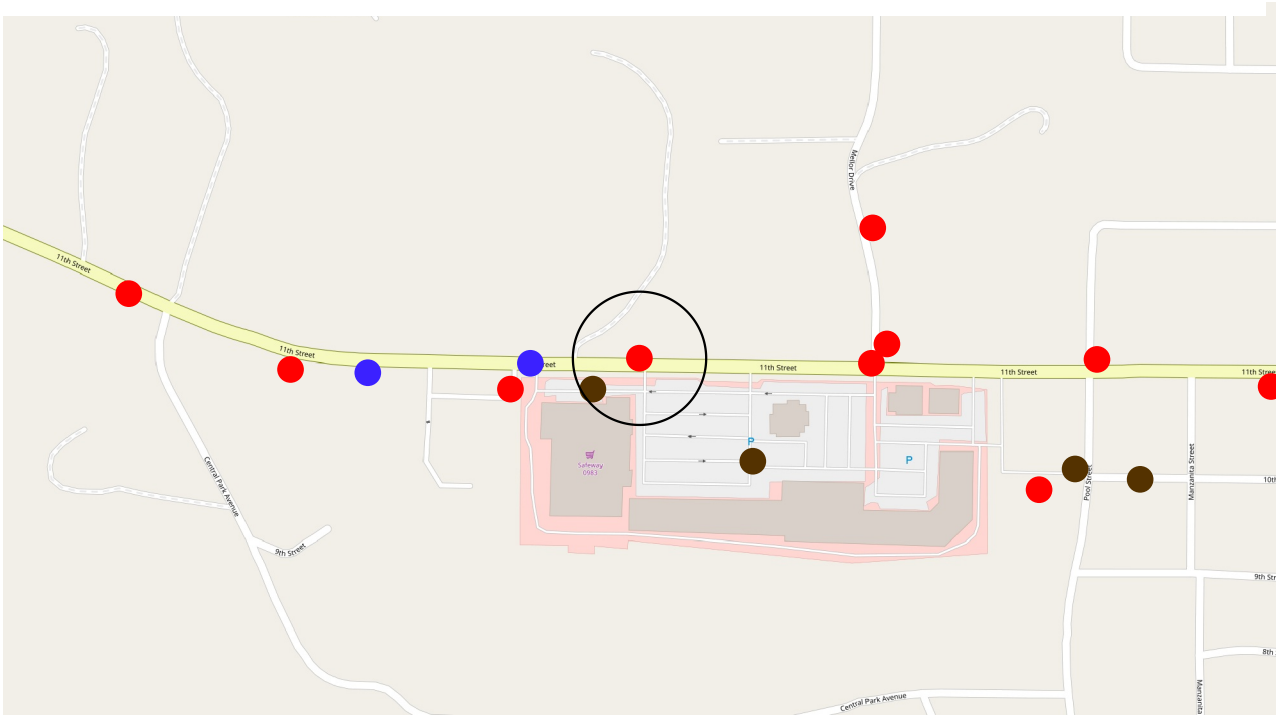
Bicycles should be routed down 10th street

Net likes:

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

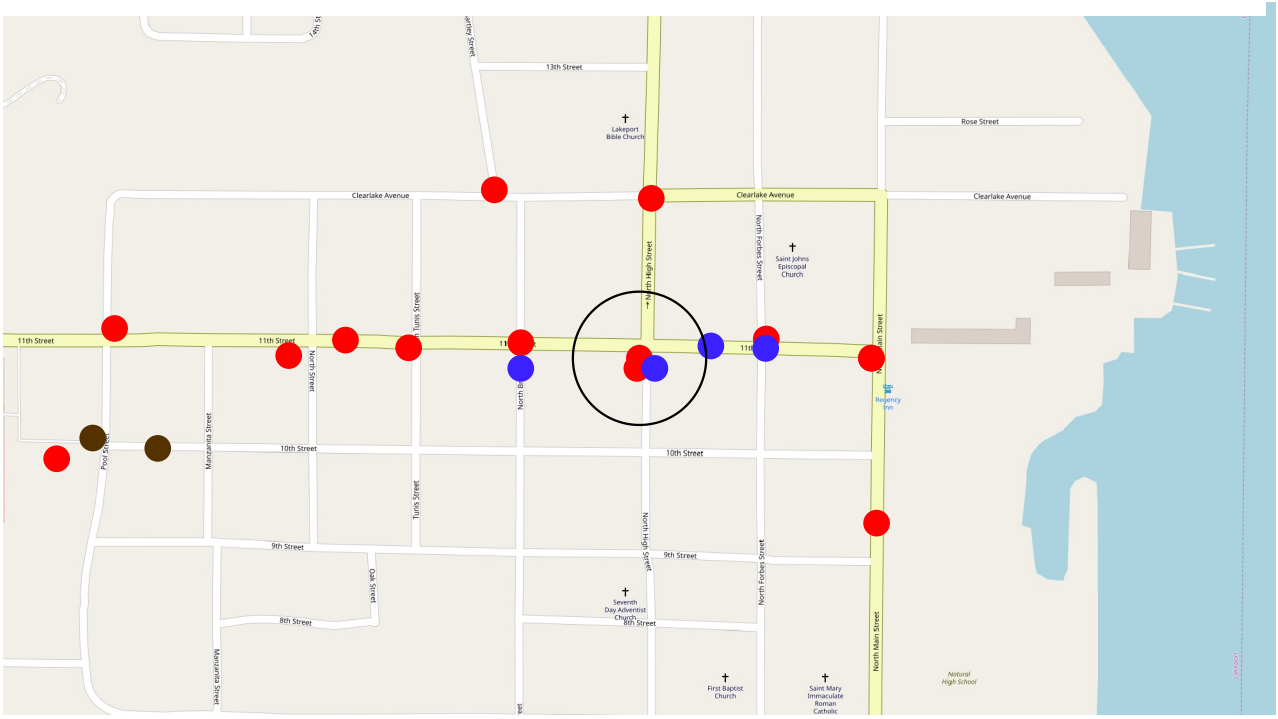
No crosswalks

Net likes: 5

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

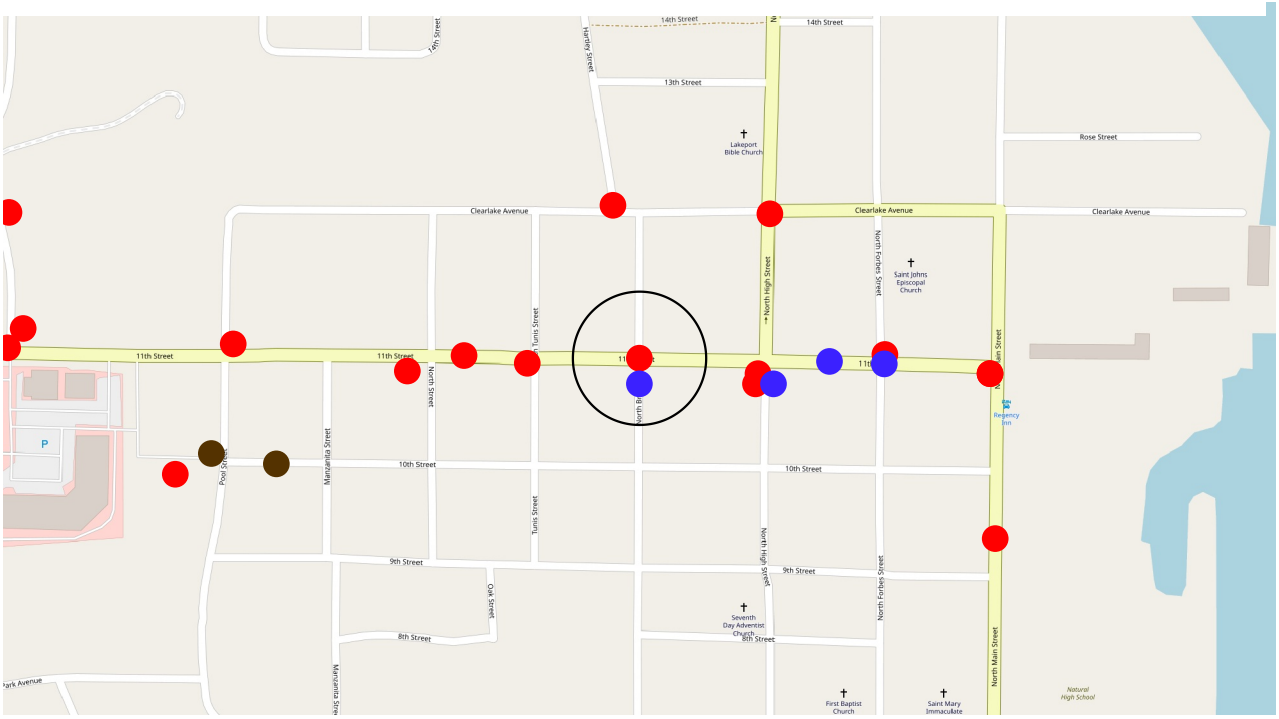
No sidewalks

Net likes: 4

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians

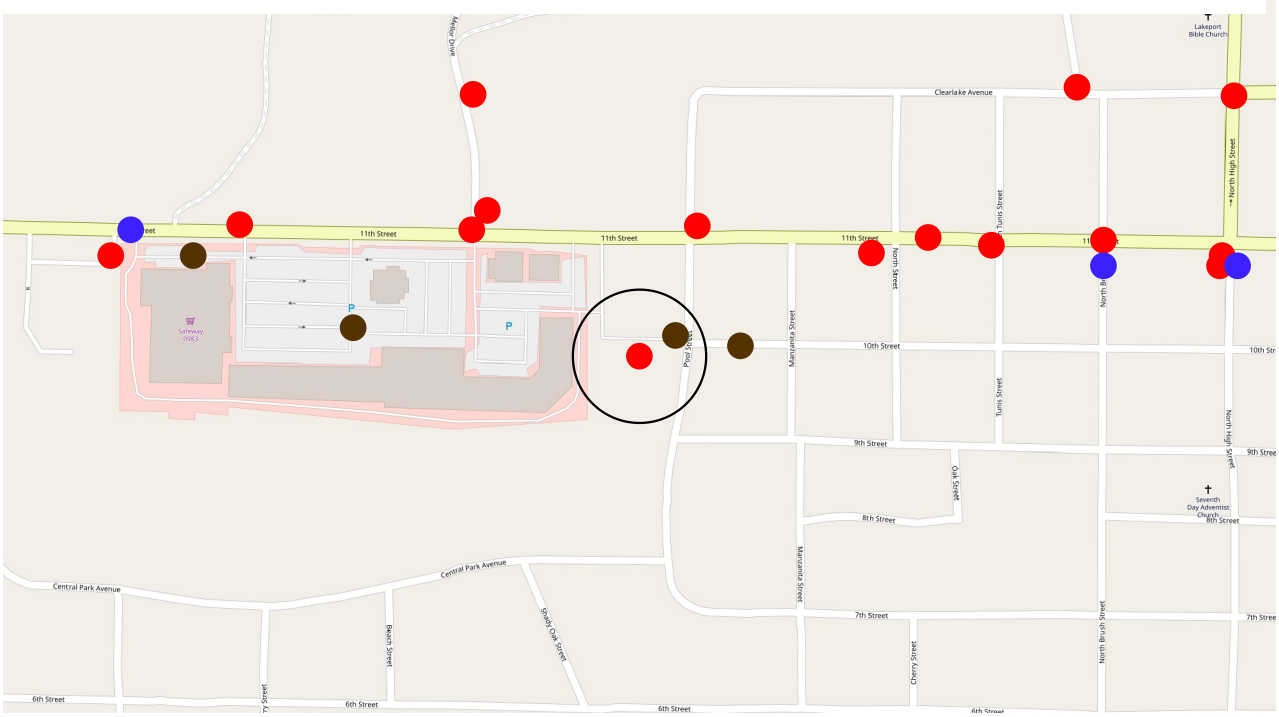
No crosswalks

Net likes: 9

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

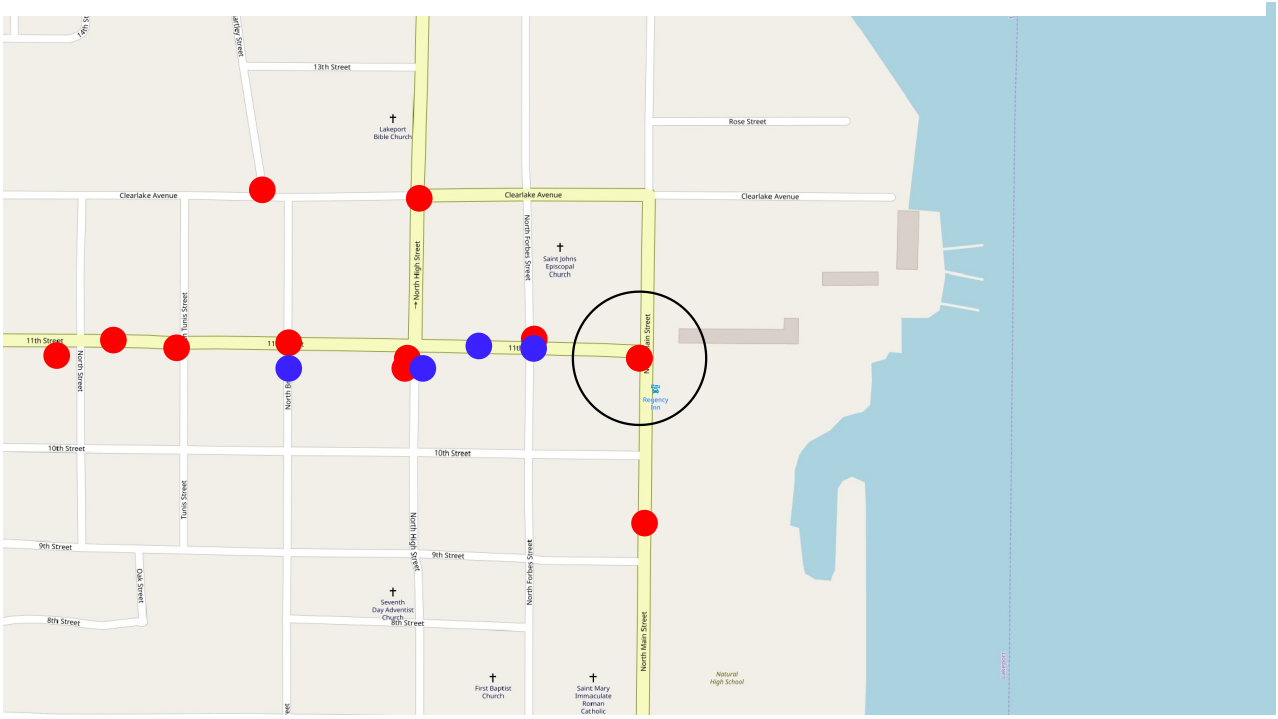
Other (please describe below)
The section between the west end of 10th street and Pool Street that crosses the creek should be improved for pedestrian crossing. This crossing provides a route for pedestrians to walk to/from downtown on 10th street which has much lower traffic volumes that 11th street. Sometimes the brush is so overgrown you can't even see that there is a path connecting Pool and 10th street.

Net likes: 4

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians

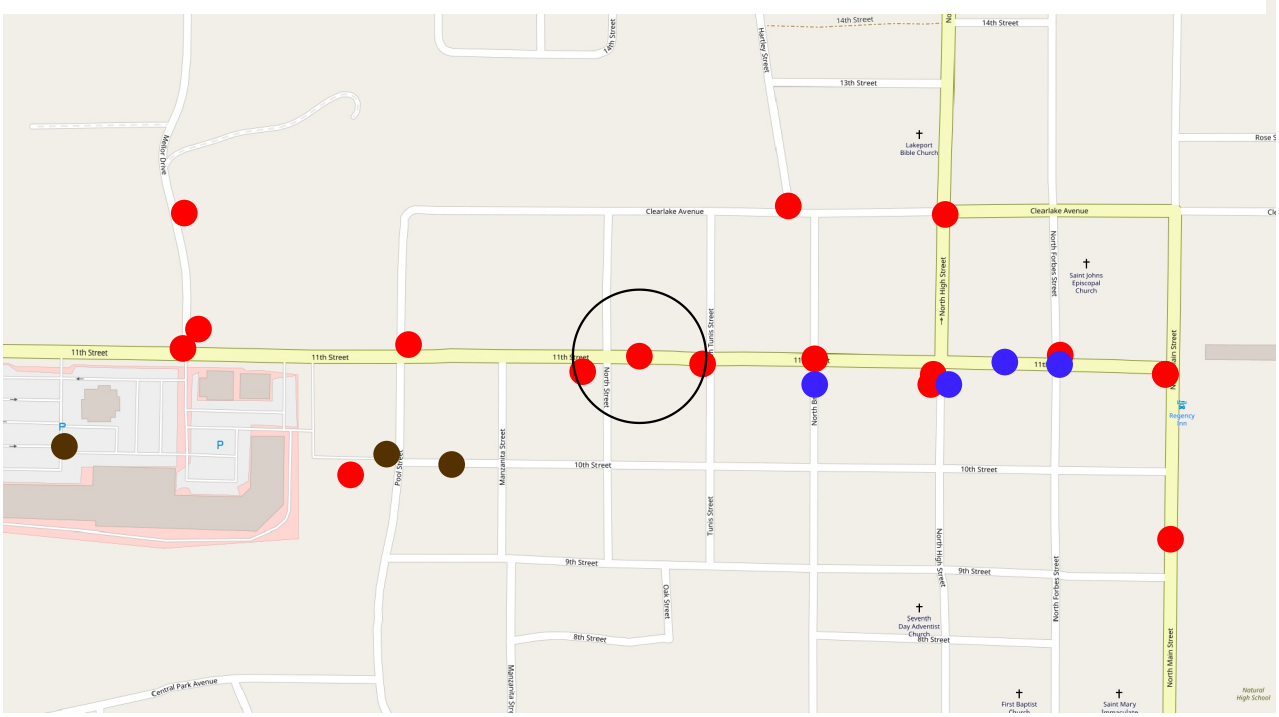
Other (please describe below)
put a roundabout here at 11th and Main street. it can be off set and use the empty lot on the southwest corner so the building on the northwest corner is not impacted.

Net likes: 11

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

No sidewalks

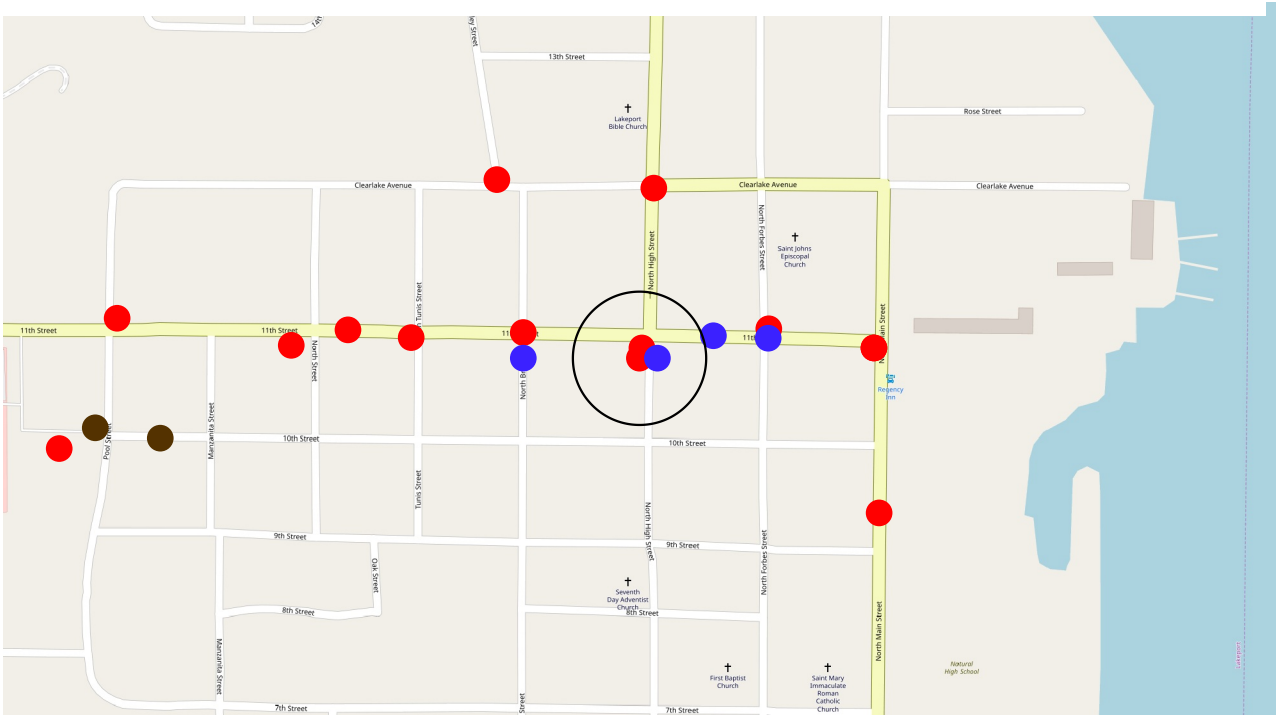
Other (please describe below)
underground the utilities to get rid of the poles on both sides of 11th Street.

Net likes: 4

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

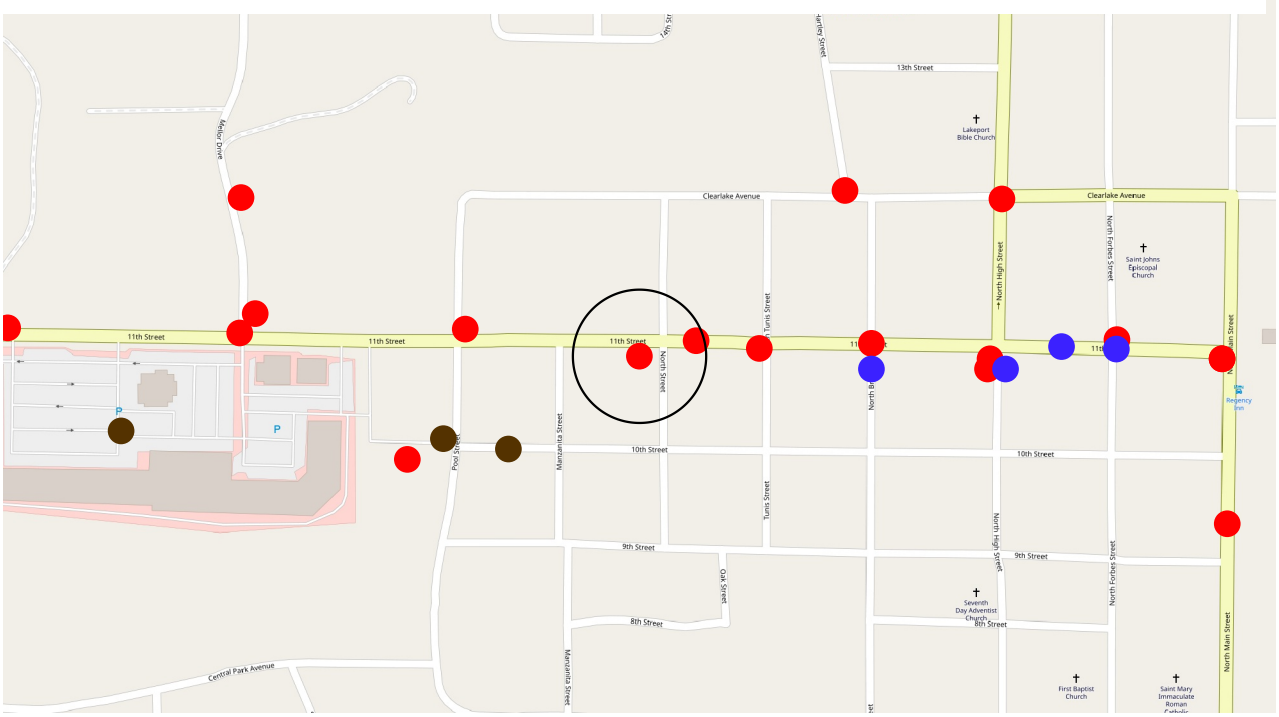
Other (please describe below)
poor visibility if you are attempting to cross in the crosswalk. Vehicles on 11th do not yield - Also traffic all along 11th travels at speeds well above the speed limit.

Net likes: 2

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

No sidewalks

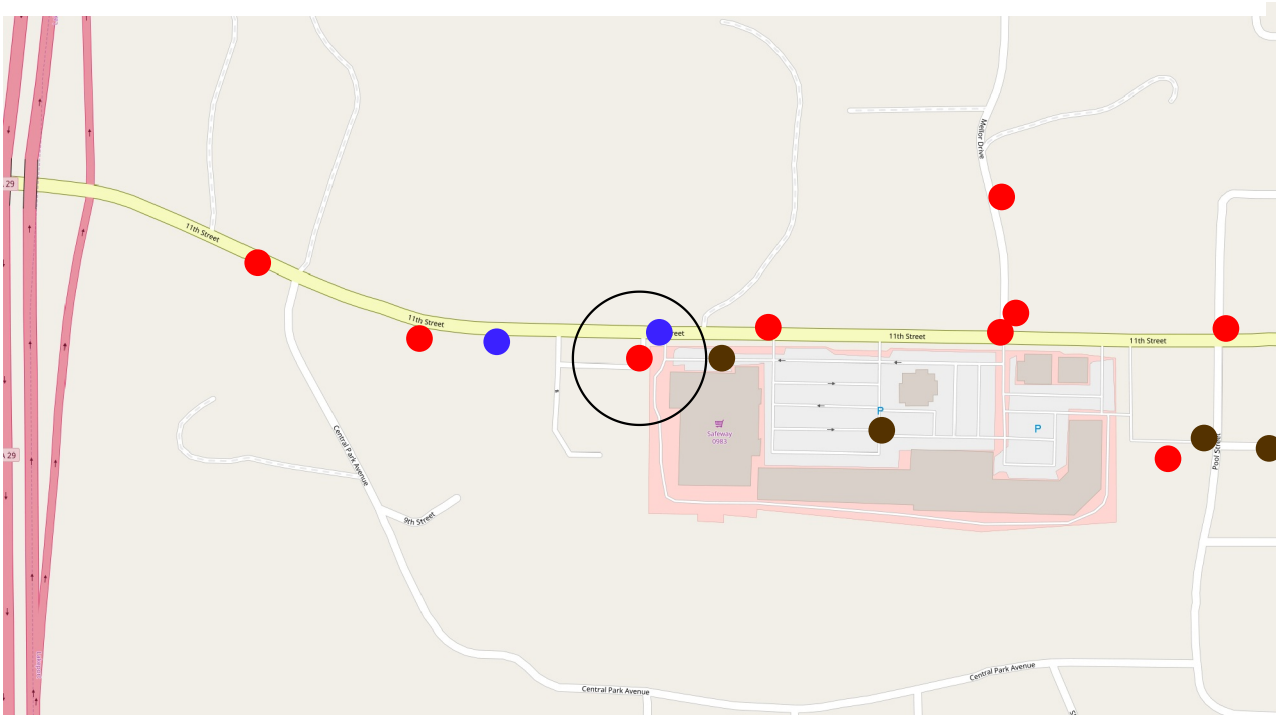
No side walks from this point to approx. N. High Street

Net likes: 5

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

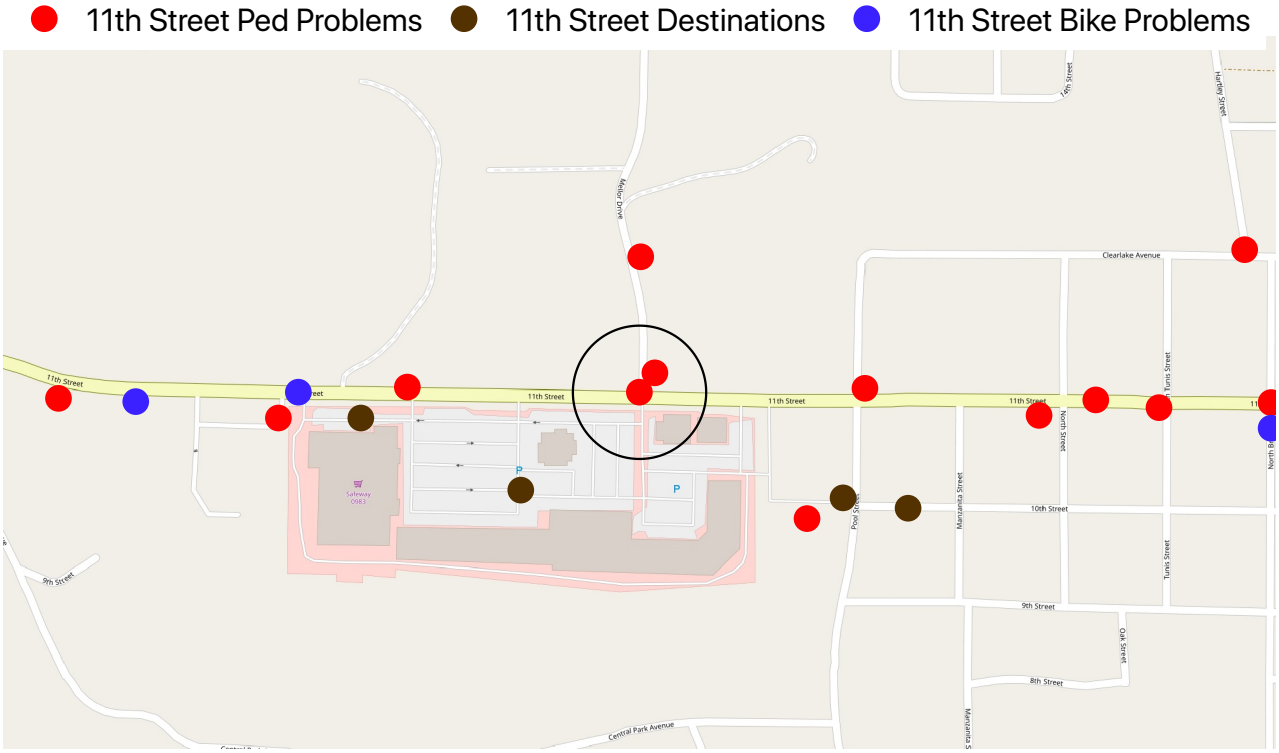
No sidewalks

there are no sidewalks in this location

Net likes: 0

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street

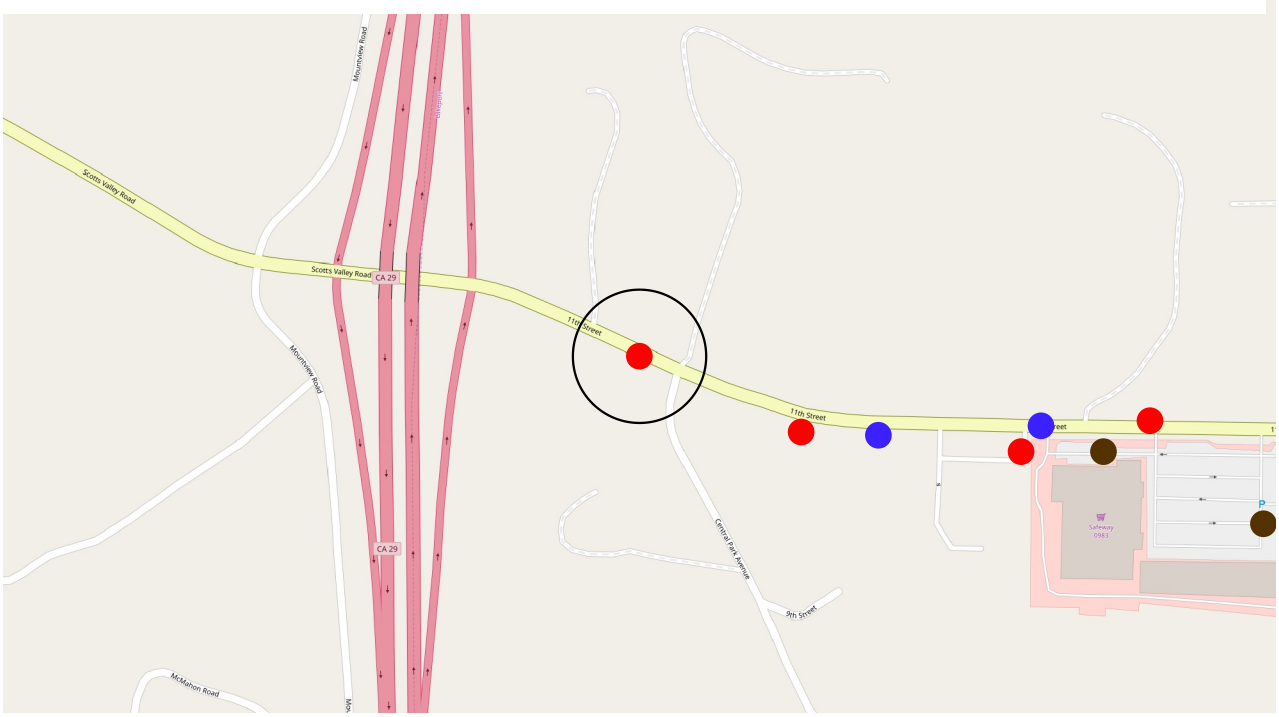
Other (please describe below)
A stop sign here would make it safer to cross.

Net likes: 6

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

Drivers do not yield to pedestrians
No sidewalks

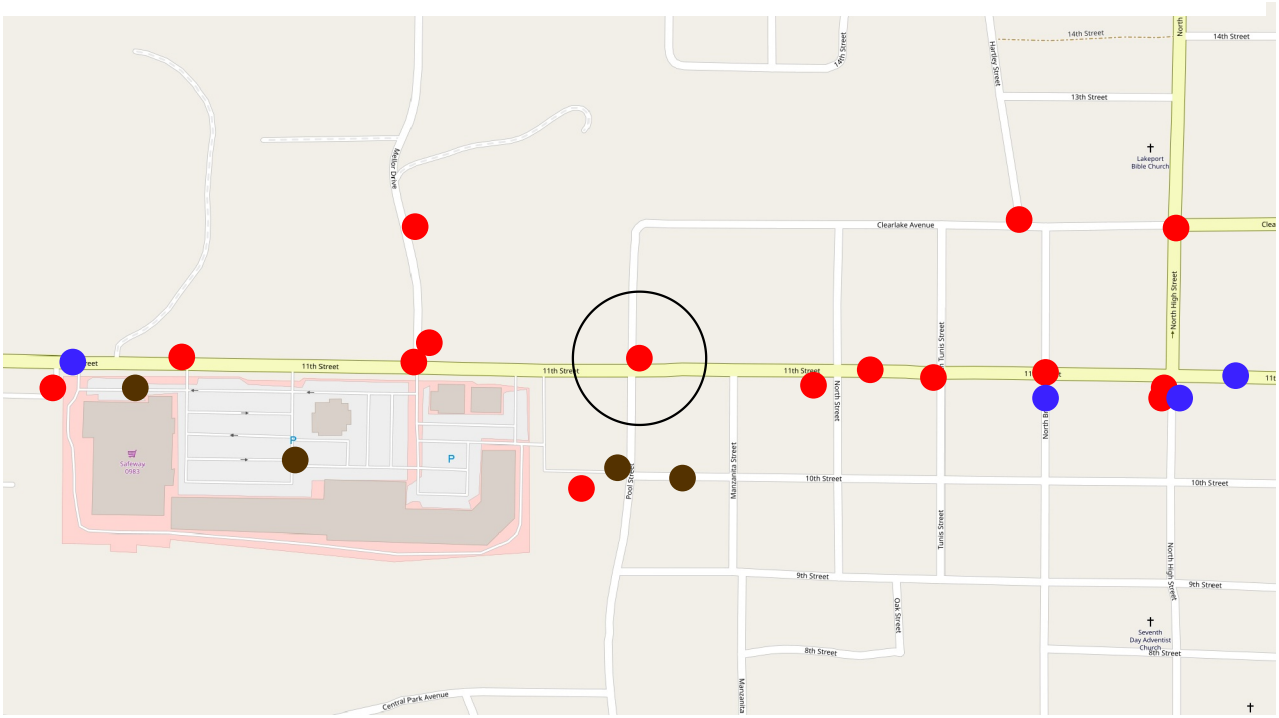
Speed limit should be lowered again to 35 MPH; cars will speed down Scotts Valley Rd into town or towards freeway onramps no matter what, so why encourage them further?

Net likes: 4

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

No sidewalks

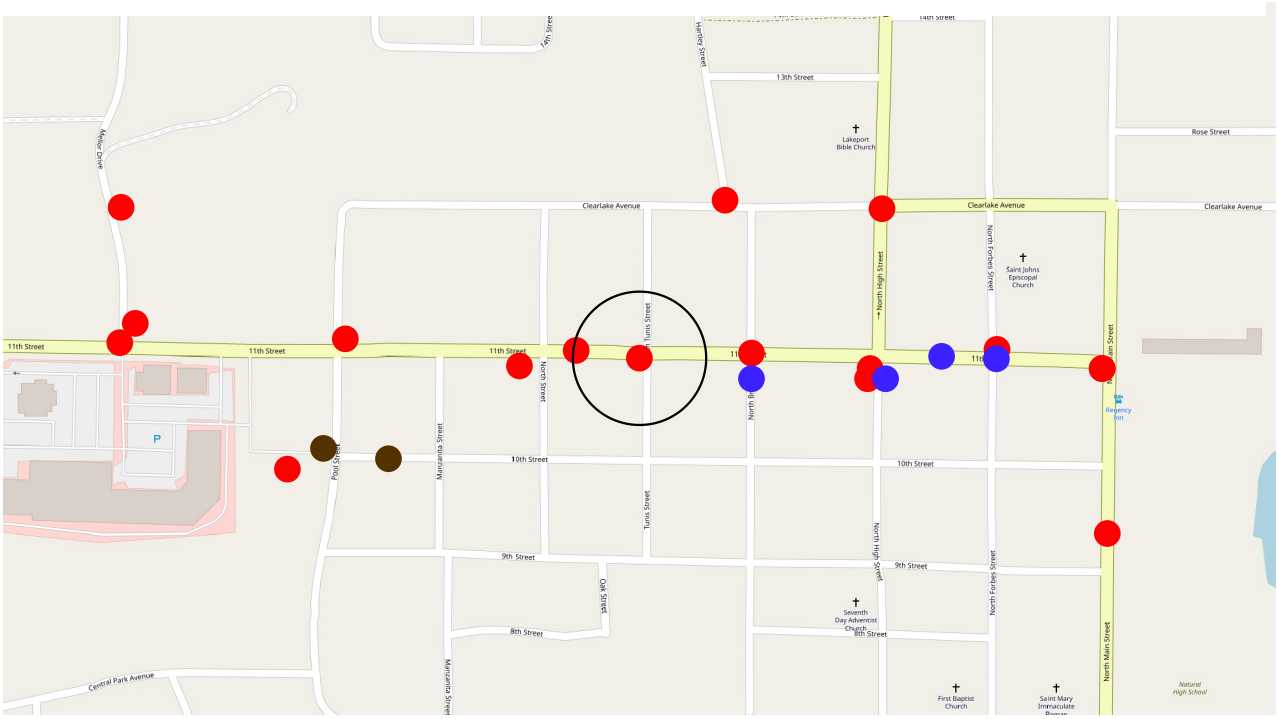
Even where there are sidewalks they are not flat and are not ADA accessible. Some spots are too narrow or too broken for wheelchairs.

Net likes: 4

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

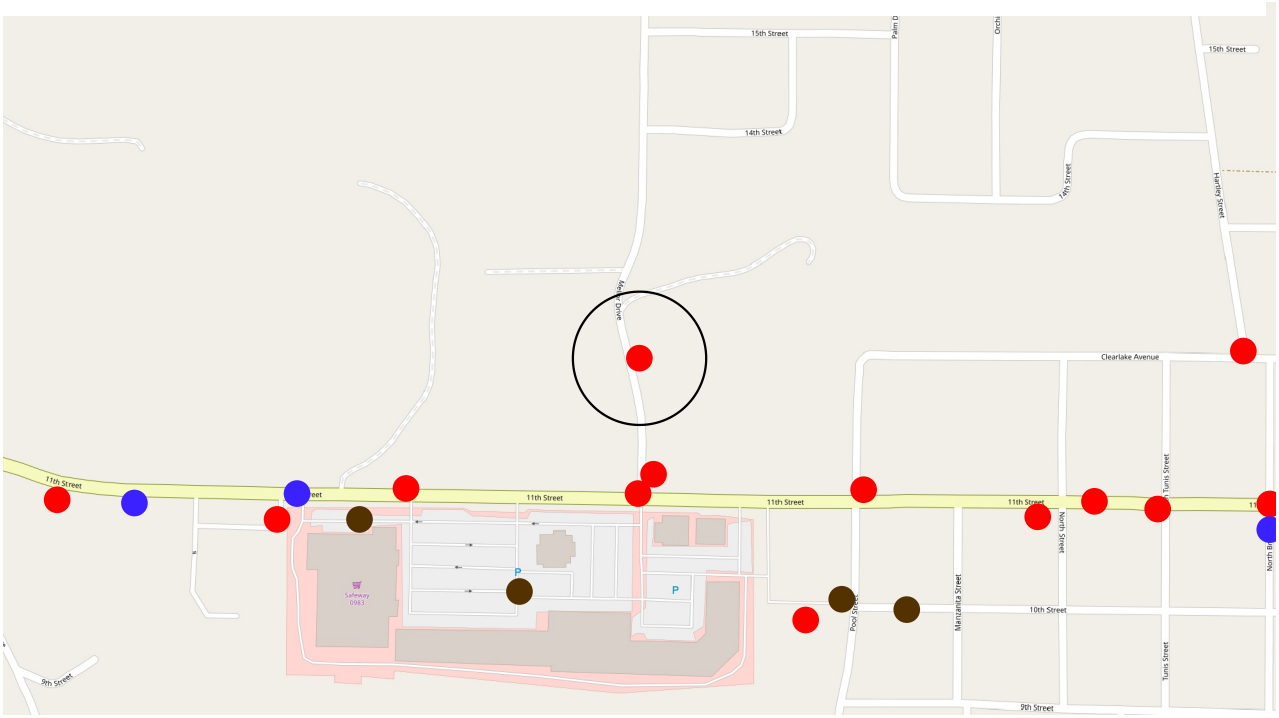
No sidewalks
No crosswalks
Other (please describe below)
Due to the slope, cars & peds on the south side are difficult to view - house with bamboo that is tall makes it difficult for westbound vehicles to see.

Net likes: 3

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

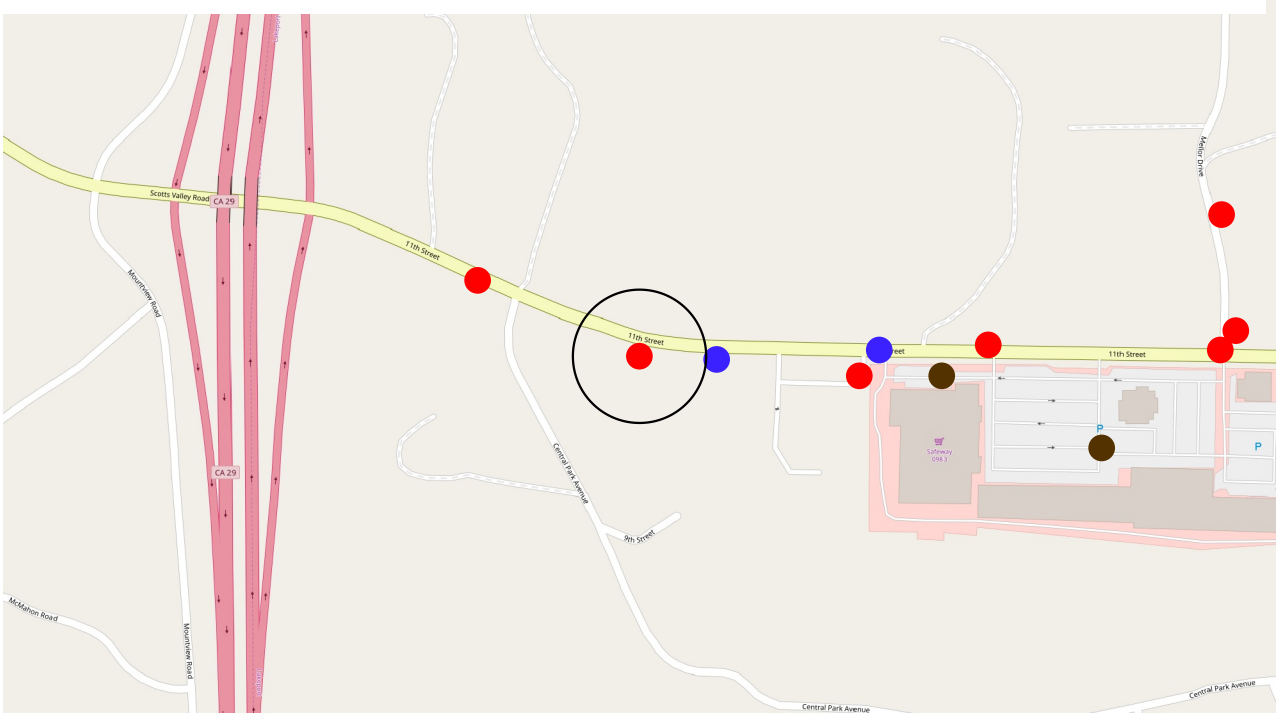
High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians
No sidewalks
No crosswalks

Net likes: 2

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

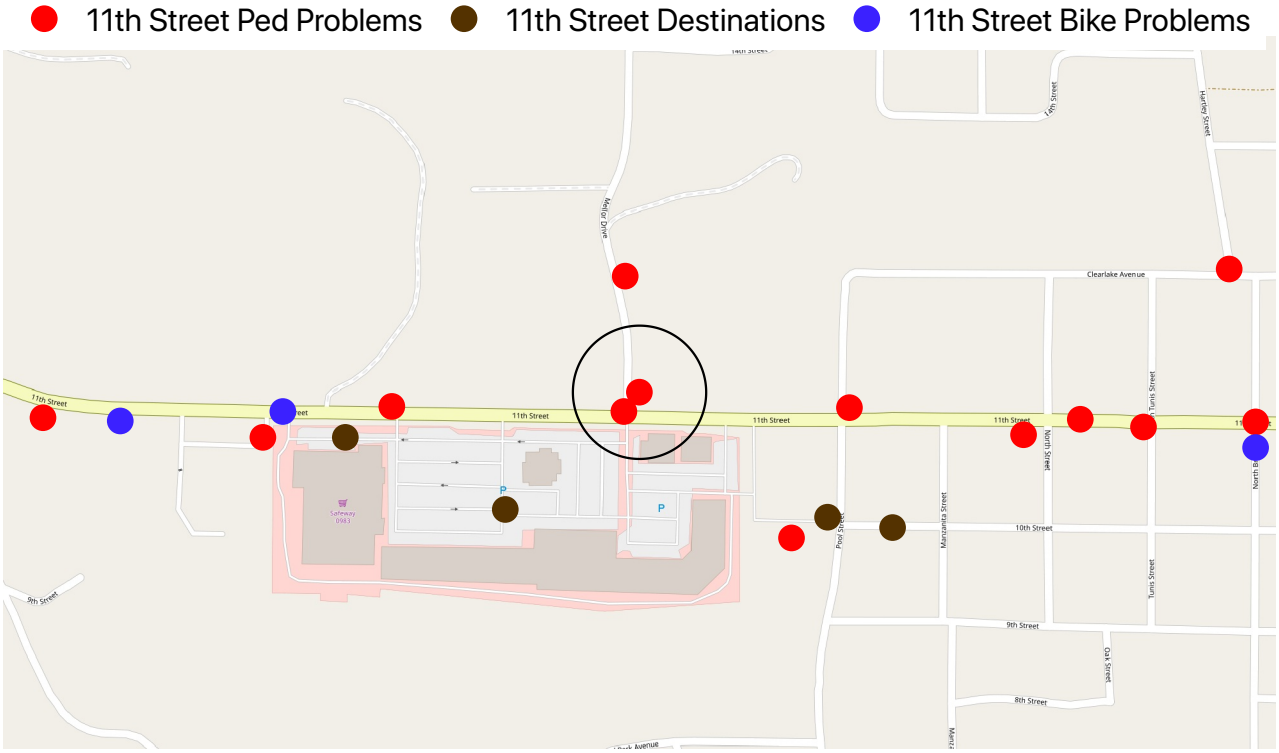
Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians
No sidewalks
No crosswalks

Net likes: 3

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians
No sidewalks
No crosswalks

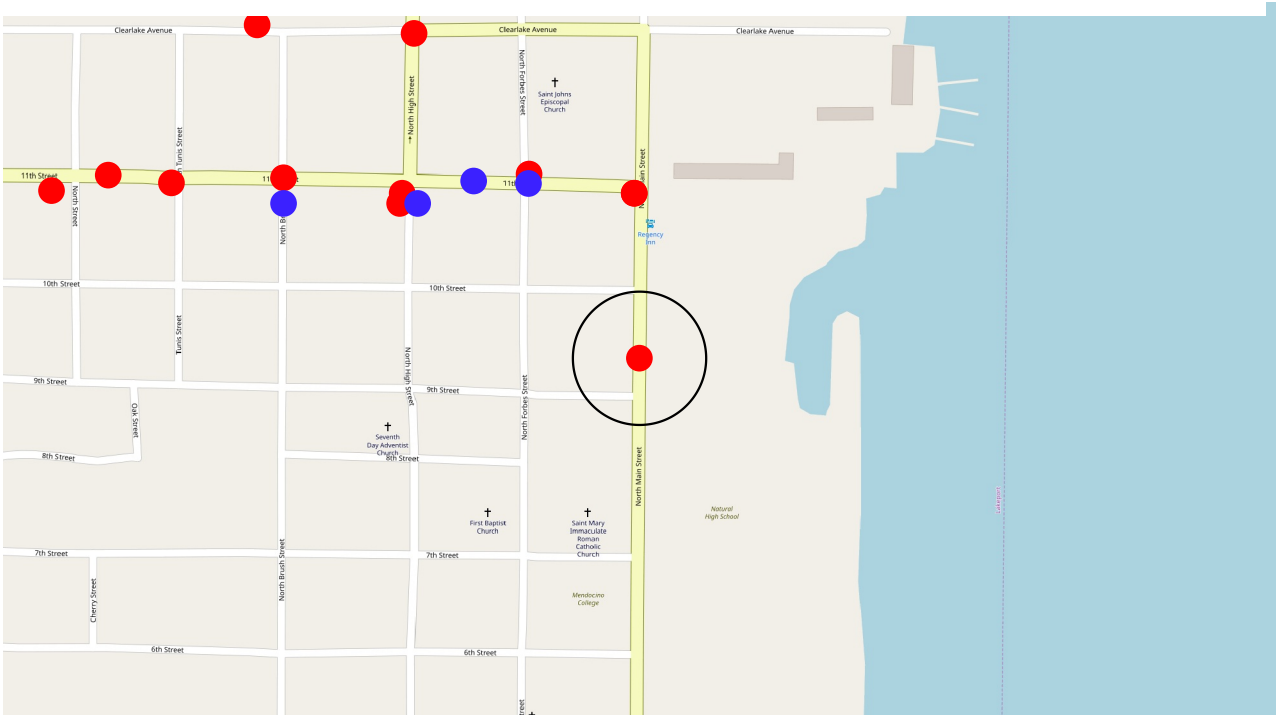
Unfortunately there's nowhere to really walk in this town between having no sidewalks and crazy drivers and the temperature it just isn't possible for most but sidewalks in city limits everywhere would definitely improve things

Net likes: 2

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians

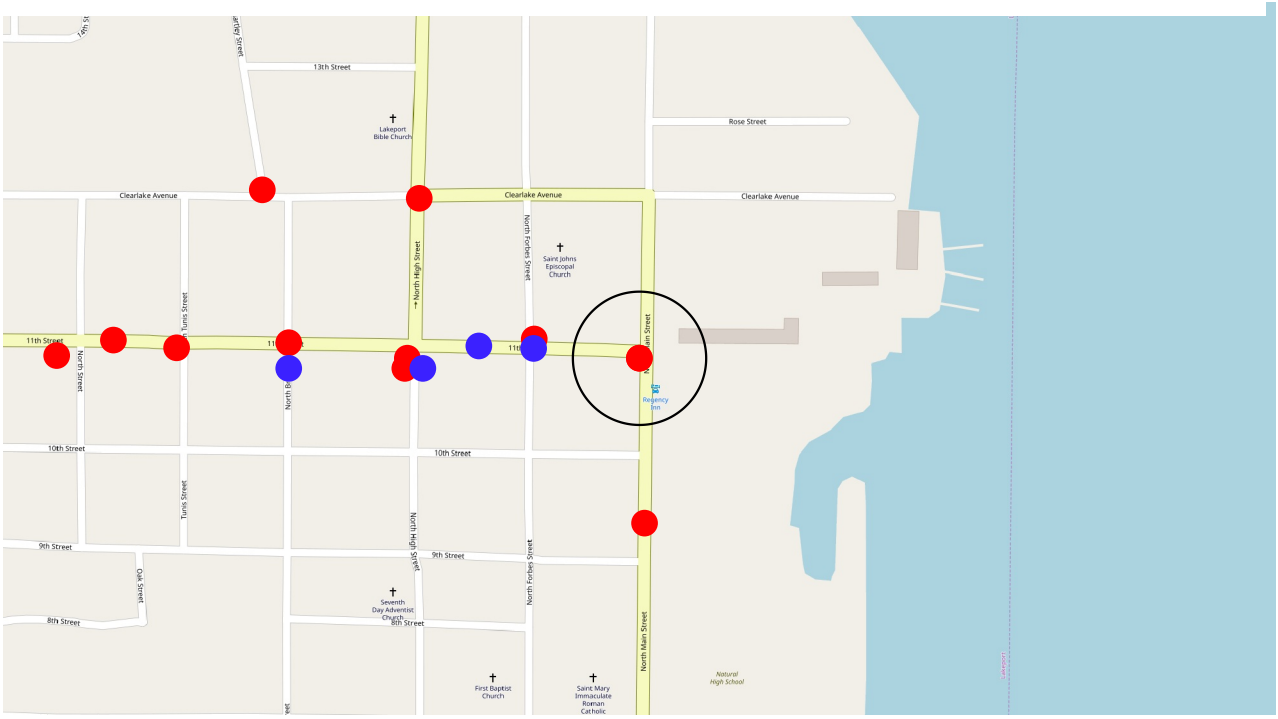
Between the Heat and the crazy drivers it's not possible to walk there was sidewalks everywhere and I don't think they're going to put in sidewalks for every street even though that would improve so many things in so many ways

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

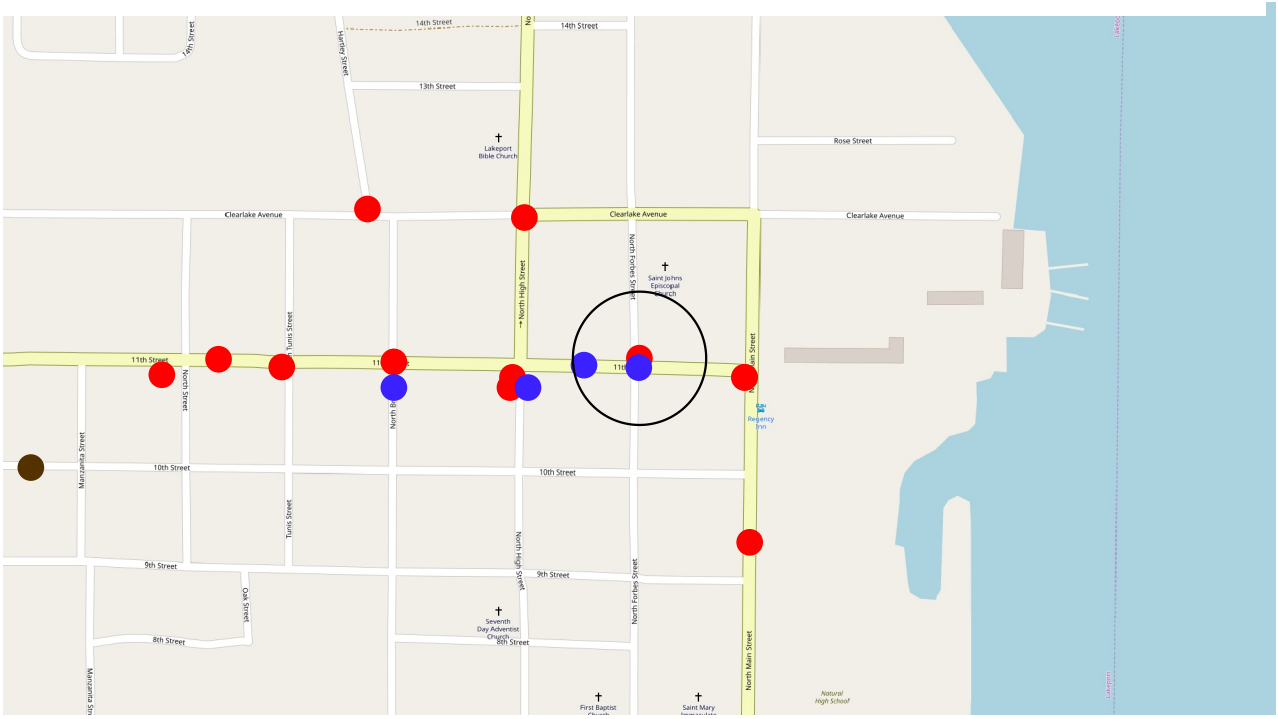
High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

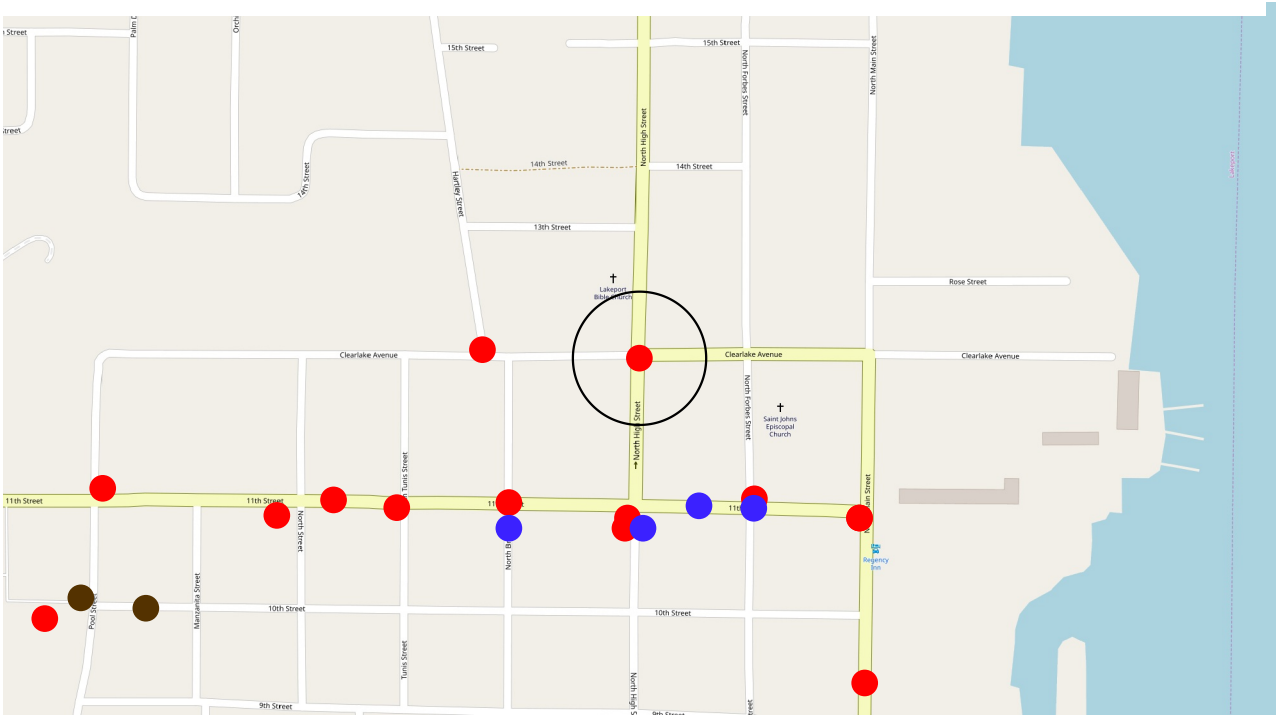
No crosswalks

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians

No crosswalks

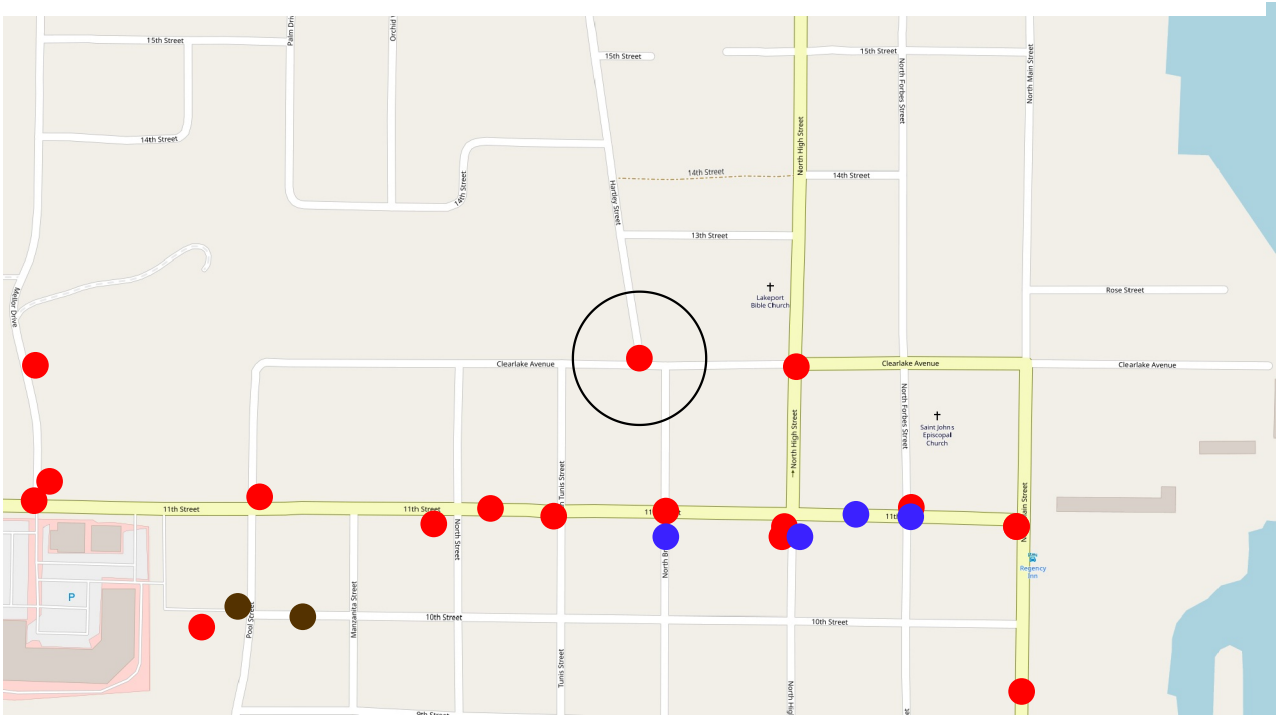
The way the street ends with the fence and the dead end sign I think is very dangerous I've seen accidents people almost get run over all kinds of different situations at all times

Net likes: 1

11th Street Corridor Results
From WikiMappoing Project
October 30, 2019

Pedestrian issue

11th Street Ped Problems 11th Street Destinations 11th Street Bike Problems



Base Map: Open Street Map

Summary of comments for this point

High speed traffic makes is difficult to cross the street
Drivers do not yield to pedestrians
No sidewalks
No crosswalks
Other (please describe below)
All the way up the street it's like a highway there's been numerous accidents in a few years all up and down Hartley

Net likes: 2

Business Interview Questions and Results

OWNER	Mailing Address	Phone	Contact	Q2 Have you observed or are you aware of any traffic safety issues (e.g., speeding or unsafe crossing areas) for pedestrians, bicyclists or motorists on or near 11th between Highway 29 and Main Street? If so, where (please indicate the nearest intersection or landmark)?	Q3 Have you observed or are you aware of any issues that make it challenging for pedestrians, bicyclists, or motorists to access destinations along 11th Street between Highway 29 and Main Street? Examples might include missing sidewalks or crosswalks, narrow sidewalks, and/or lack of bike lanes.	Q4 Overall, whether biking, walking, or driving a vehicle, what do you think is the most important thing that could be done to better serve the needs of residents and visitors using 11th Street?	Q5 Which types of improvements would you like to see that you believe would have a positive impact on your business, such as new/improved bicycle facilities, pedestrian facilities, and/or safer roads?	Q6 What haven't we covered that is important with regard to improving 11th Street to meet the needs of Lakeport's residents, visitors, customers and employers?
CRUMP BUCHLER& LA VELLE		(707) 263-5607	Office Manager Carol, lavelle. cbl@gmail.com					
SANDUCCI'S COTTAGE, talk quickly/get point	1090 N Main St, Lakeport, CA 95453	(707) 263-4956						
RENNE'S CAFÉ	1005 N Main St, Lakeport, CA 95453	(707) 263-1058	owner, cynthia parley give me call back	Driving on 11th crossing Forbes difficult with wrecks, could use more crosswalks on forbes near 11th and 10th/9th and main (slow people safer)	hard to cross 11th at any of the cross streets, forbes in particular		widen sidewalk and add sidewalks where missing	
OLD ENGLISH INN	675 N Main St, Lakeport, CA 95453	(707) 263-4317	Karen Mackie	sidewalk, better signage at main where people run light	no, although width of sidewalk is limited, especially with poles in sidewalk	difficult to put bike lane on 11th and think peple don't ride because south side of road is narrow, same with sidewalks, remove poles from sidewalk	removing poles on sidewalk that would assist 'sidewalk appeal. People walk and bike on south side since poles limit activity on north side. Don't think bikes would go on central because of hills. Good to connect bikes to freeway,	no
ANCORAGE INN LAKEPORT	950 N Main St, Lakeport, CA 95453	(707) 263-5417; ancorageinn91@yahoo.com	Raj	No.	No.	No	signage (gateway, activities like fishing and tourist destinations), lighting, trees, beautification to attract tourists	No.
TAILORED LIVING CHOICES LLC	916 N Forbes St, Lakeport, CA 95453	(707) 263-3859						
STRINGS & THINGS	901 N Main St, Lakeport, CA 95453	(707) 262-0622	Jim Williams	Lots of vehicle accidents and property damage at forbes & 11th. sidewalk on 11th doesn't have sidewalk so puts people out into yards or street	on main street not a crosswalk for people for quite a distance	wider on 11th street for bike lane. Bike lane separate. Widen 11th like it is near Safeway. Bike lane routed to 10th or 9th (9th might be better, fewer stop signs).	crosswalk crossing main.	When City repaved 11th (near Forbes), didn't scrape old asphalt so the curb is almost at street level. This creates an issue where cars easily drive up onto people's front yards instead of the curb stopping them.
ROMAN CATHOLIC PARISH OF SAINT MARY IMMACULATE	801 N Main St, Lakeport, CA 95453	(707) 263-4401; admin@stmaryslakeport.com	mon-thurs 9-4		No crosswalk near Natural High where there is a bus station			
LAKE COUNTY BIBLE FELLOWSHIP	727 N Forbes St, Lakeport, CA 95453	(707) 263-4327; rickbarnes27@gmail.com	mon-wed 9-3					
NORTH BAY MERCHANT SERVICES	1002 Eleventh St, Lakeport, CA 95453	(707) 263-6634	mon-fri 9-4					
CVS	949 Eleventh St, Lakeport, CA 95453	(707) 262-0244	Maribel Thurs, Charlene Mon					
SAFEWAY	1071 Eleventh St, Lakeport, CA 95453	(707) 263-8072						
DAVITA LAKEPORT DAILYSIS CENTER	804 Eleventh St Ste 2, Lakeport, CA 95453	(707) 263-7132	renee92@msn.com	Not enough crosswalks for school kids (in particular brush and 11th). Reduce speed on Brush and 11th. Not enough sidewalks. Crosswalk on Davita 2 people hit because vehicles don't slow down for peds. Likes turning lane near safeway, safer there. No sidewalks on north side of road is bad. Lots of traffic backing up at High st and 11th at peak traffic hour, so peds dart through traffic as they try to cross the street & lots of speeding and 11th and High. Left turn out of dialysis center onto 11th is dangerous/car/ped conflicts.	11th east of pool needs a lot of help. Road is on same level as sidewalk, so if people trip they are in the street.	wider sidewalks, better night lighting, landscaping protrudes into sidewalk so have to walk into street to get around and broken sidewalks/unlevel (near safeway/manzanita/north side). Make 11th st 1-way.	Signage to stop for peds (i.e. near courthouse) and flashing lights.	
A1 ALARM & LOCK	1171 Eleventh St, Lakeport, CA 95453	(707) 262-1010	Rick/Richard	Solid-double yellow striping in front of business driveway preventing access, bike lane paint north of the post office is fading. Dip on 11th near Sanducci's cottage makes people hit their cars into their parking lot and onto 11th St.			ECONOMIC DEVELOPMENT, A REASON TO COME!!! Skate park dead, bowling gone. Social space.	
FIRST AMERICAN TITLE COMPANY	805 Eleventh St, Lakeport, CA 95453	(707) 263-5686; pmulder@firstam.com	Anna or Pam - Tues am	On 11th near highway 29 heading east slopes as it enters commercial area so lots of people speed up	No sidewalk on 11th closer to Main street, west toward highway 29 side. No crosswalks where bus stops are. Sidwalks narrow or nonexistent east of pool.	Street signs old/need new ones on 11th. Watch for pedestrians sign east of pool on 11th. She walks elsewhere rather than 11th because it is narrow/no sidewalk.	Nothing other than what I stated previously. Improve conditions of the streets and sidewalks.	
UMPQUA BANK	805 Eleventh St, Lakeport, CA 95453	(707) 263-7500	Valerie	Trail behind shopping center that continues east from 9th has lots of kids and other who don't have cars. Conflicts where is crosses pool and in shopping center. Lots of people from 11th will cut through their parking lot to get to pool or vice versa. Not enough crosswalks on 11th, want slower speeds on 11th. Unsafe conditions on 11th divert bikes into their parking lot.	Lots of disabled and homeless people walking, benches for handicap people (lots wait in bank for bus since no bus bench) Bench near CVS/bank shopping center where lots of seniors/disabled take buses. No street extending from 10th due west, so cars drive through their parking lot since 11th is packed at peak hour.	crosswalk with a light with a 4-way stop. Animal crossing signs.	lighting on roadway for pedestrians	
ROUNTABLE PIZZA, talk quickly/get point	821 Eleventh St, Lakeport, CA 95453	(707) 263-8110	Max	Crossing with bikes difficult on 11th near roundtable	no	More and better sidewalks	no	no
PEOPLE SERVICES	870 Eleventh St, Lakeport, CA 95453	(707) 263-7714	Vicki	Hwy 29 exiting to 11th street, there is a right turn to the locksmith area where there is not enough space to slow and turn without being rear ended. Mellor Ave and 11th st - try to cross 11th (disabled) have a hard time crossing street due to speed and no signalized crossing and people try to speed up if someone is trying to cross or drive through behind or in front of someone crossing AND sunlight obscures crosswalk near sunrise/sunset. Pool and 11th (both sides of 11th) poor sidewalk quality since no sidewalks, utility poles, overgrown vegetation.	Lots of community members walk or disabled and try to cross into safeway lot. Crosswalks are nice, but need to stop traffic since vehicles still fly through crosswalks and don't seem to stop for pedestrians. Nowhere for bikes on 11th street - unsafe for bikes at all. 11th Street too wide due east at Pool - so people turning left are passed on the right by people trying to go straight or right where there isn't a lane - weird jog/11th too wide at this location. Taking a right on Main from 11th has poor visibility of traffic coming south on Main - have to stick your car out to see if traffic is coming. Lots of businesses at 11th and Main make navigating traffic when busy difficult - no clear indication of how goes first, where to exit, etc. 11th street from Mellor due west of Hwy 29 on the north side - no sidewalk or crosswalk for people who live on north side who need to get on south side of 11th (lots of disabled folks).	Sight-impared crossing improvements to crosswalks and signalized intersections (beeping crossing signal). Insufficient parking at their facility - use parking for employees at Safeway and employees have to cross 11th to get to work.	Fixing roads with potholes and dips (thinking dip on Mellor near 11th), onstructions to sidewalk (tree roats, disrepair.	no
CARDIOPULONARY ADVENTIST HEALTH CENTER	801 Eleventh St, Lakeport, CA 95453	(707) 263-3746# not working	New Number 707-263-3746					
SOUTHERN SMILE DENTAL PRACTICE	755 Eleventh St, Lakeport, CA 95453	(707) 263-7023		Speeding on 11th, High st. going north is dangeous cars can't see, no sidewalk on north side of 11th, no crosswalks east of Pool st. on 11th. Unsafe conditions on 11th divert bikes into their parking lot.	No street extending from 10th due west, so cars drive through their parking lot since 11th is packed at peak hour. Walking difficult generally since limited crosswalks and poor/non-existent sidewalks.	Sidewalks very important for people trying to access shopping center west of Pool st. Don't see many bicycles, mostly pedestrians on 11th.	11th st. is very busy, beautifying areas where there are businesses (ie., how they do it with Main street). Tie in business district (form based codes?)	No.
COMMUNITY FIRST CREDIT UNION	963 Eleventh St, Lakeport, CA 95453	(707) 468-0161						

Lake County Fair Results

Local Government Commission
Leaders for Livable Communities

Cayla McDonell <cmcdonell@lgc.org>

Re: how was the county fair?

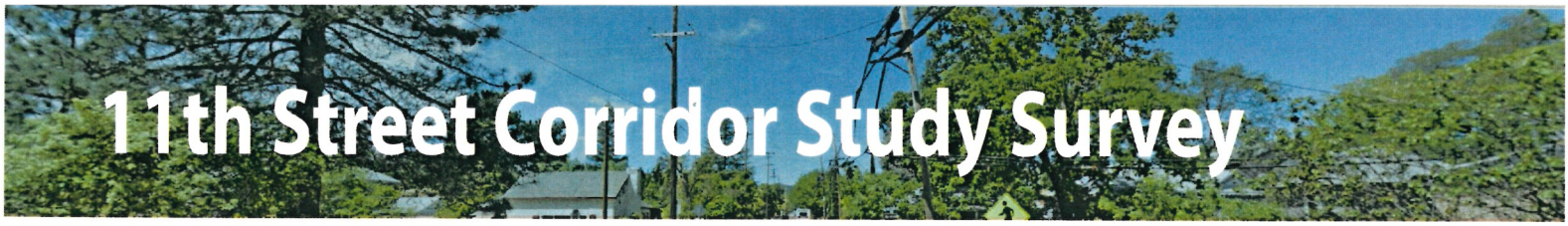
1 message

Cayla McDonell <cmcdonell@lgc.org> Wed, Sep 4, 2019 at 3:56 PM
To: Barry Bergman <bbergman@w-trans.com>
Cc: John Speka <spekaj@dow-associates.com>

Hi Barry --

We had a good amount of interest and participation at the table for both projects. Here are the results of our outreach and new information that we haven't heard to-date:

1. Contact information for 27 people
2. Comments for 11th St - 36 map, 9 card, 15 conversations with homeowners during door-to-door property owner survey (stopped at 14 additional houses with no one home; left a flyer)
    1. A few bicyclists indicated that they bike on 11th St. east of Pool St and east of the Safeway shopping center under Hwy 29. That is a connection point for a popular bicycle route. There is a need for safer bicycle facilities under Hwy 29. One person indicated that a significant other had been hit by a car by Hwy 29.
    2. Sidewalks and crosswalks/other safe crossing improvements west of Pool until Hwy 29. Residents who live here indicate they would like to connect with the safeway shopping center and walk on 11th st, however they feel unsafe doing so.
    3. Residents indicate that they see lots of people walking on 11th street or they like to use 11th street to get to/from destinations in the immediate area or to recreate (walk dog, stroller, etc). However, they see the sidewalks as unsafe, non-existant in some locations and uncomfortable to walk on due to the narrow widths, overgrown plants, and barriers such as utility poles.
    4. A major issue with visibility at cross streets along 11th street (east of Pool St) is that plants are overgrown. City and private property owners need to maintain this better.
    5. Bus route from Lakeport to Nice takes a long time. Desire express route/bus service.
    6. Homeowners along 11th St. perceive that vehicle speeds are higher at night.
    7. Bicyclists indicate that they often use 9th, 10th, and 11th streets when traveling east/west. They indicate that they would like future improvements to bicycle facilities (no matter which route is improved/designated as a bicycle path) to be well-lit.
    8. High and Pool streets are major connectors for children walking to/from the school bus, school bus pick up/drop off, and bicyclists traveling north/south in Lakeport.
3. Comments for Nice - 23 map, 2 card
    1. Lower speeds to 25 in town center rather than 35
    2. Better pedestrian lighting between Sayre and Dollar General
    3. Lighting, crosswalks, and safe intersection treatments crossing Hwy 20 at locations where people are trying to access public amenities (lots of people pointed out issues with crossing Hwy 20 near Keeling Ave, also near Sayre Ave to get to Chevron, Tower Mart, Wash and Dry, Hinman Park, and between Howard Ave and Keeling Ave)
    4. Lots of cars speed up and pass slower cars using the left turn lane west of Sayre Ave
    5. Passing lanes between Nice and Upper Lake to allow high-speed vehicle traffic to overtake slower vehicles so as to not pass them in the middle of the town.
    6. Interest in both bicycle and ped facilities
4. Comments for Lucerne - 10 map, 1 card
    1. Lower speeds to 25 in town center rather than 35
    2. Lighting, crosswalks, and safe intersection treatments crossing Hwy 20 at locations where people are trying to access public amenities (Alpine Park, Harbor Park)
    3. Roundabout at Hwy 20 and 13th Ave
    4. Passing lanes between Nice and Lucerne to allow high-speed vehicle traffic to overtake slower vehicles so as to not pass them in the middle of the town.
    5. Interest in both bicycle and ped facilities
    6. Roundabout at Hwy 20 and 13th Ave
5. Comments for Clearlake Oaks - 6 map
    1. Roundabout at the Y near Senior Community (the 'Y' was not on the map we had. Think this person referring to either Hwy 20 near Sulphur Bank Dr, Round Mountain Rd or Orchard Shore Dr.)
6. Comments for Glenhaven - 1 map



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- [x] Walk
- [x] Drive
- [ ] Bike
- [ ] Ride a bus

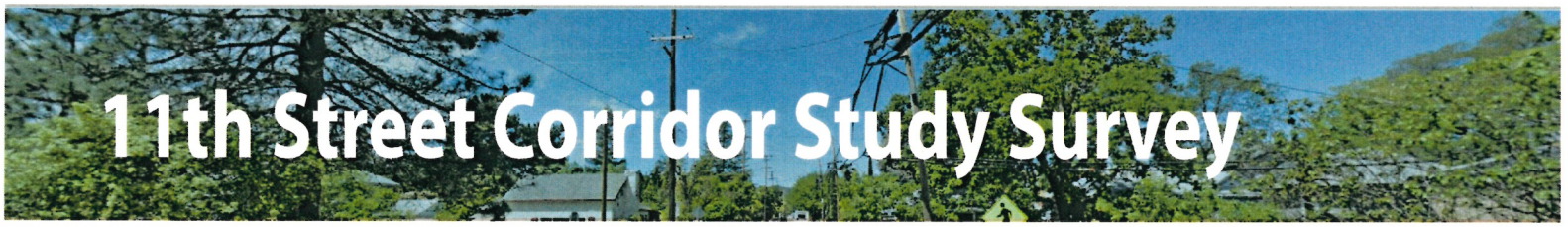
2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk: once a month
Drive: Daily
Bike: N/A
Bus: N/A

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

Yes



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1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- [ ] Walk
- [x] Drive
- [ ] Bike
- [ ] Ride a bus

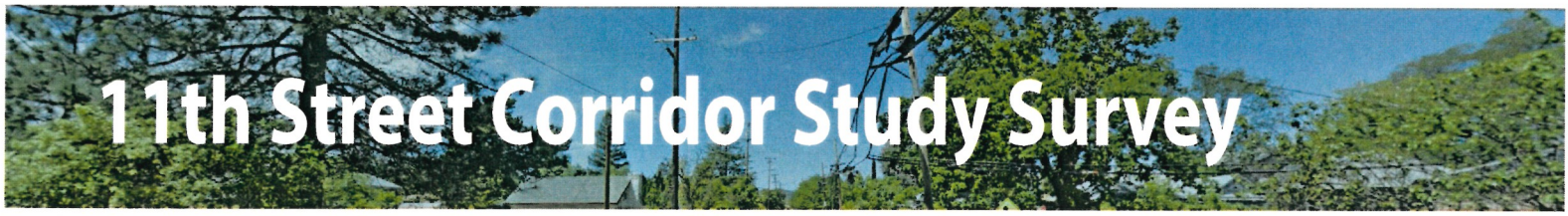
2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk: 0
Drive: daily
Bike: 0
Bus: 0

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

yes it needs Improvement + sidewalks for walking + bikes



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

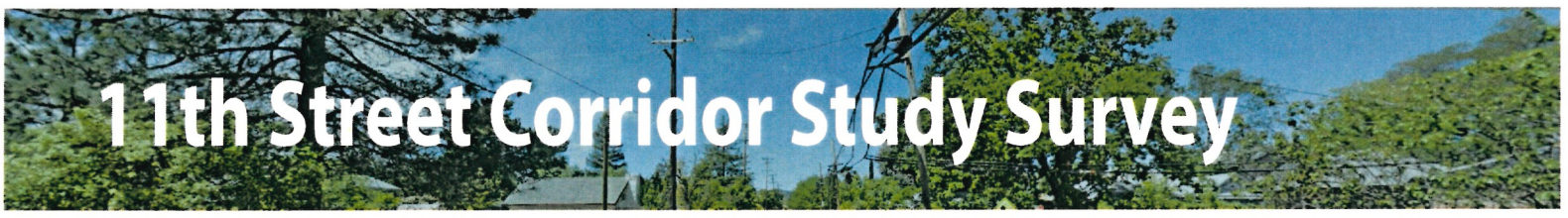
- ☐ Walk
- ☒ Drive
- ☐ Bike
- ☐ Ride a bus

2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk		Drive	2X week
Bike		Bus	

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- ☒ Walk
- ☐ Drive
- ☒ Bike
- ☒ Ride a bus

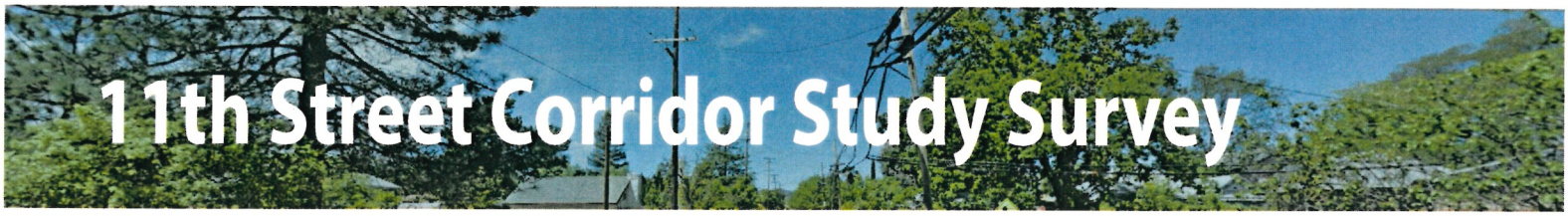
2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk	N/A	Drive	Daily
Bike	N/A	Bus	N/A

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

yes



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- ☐ Walk
- ☒ Drive
- ☐ Bike
- ☐ Ride a bus

2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

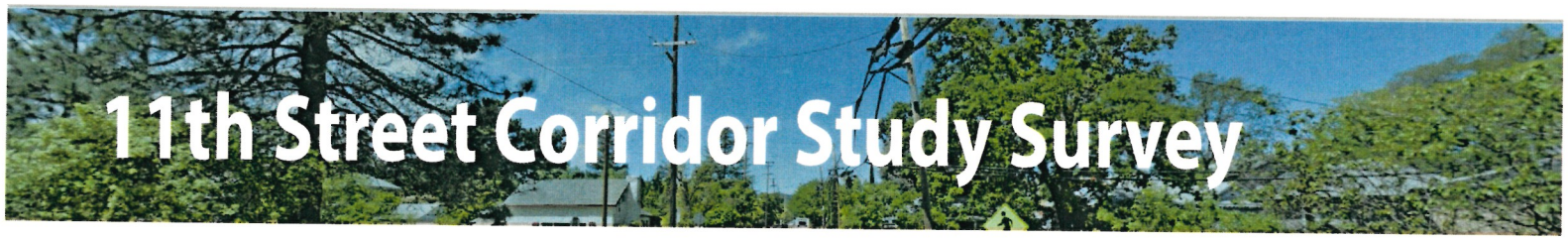
Walk: ____ Drive: 2 Times a week

Bike: ____ Bus: ____

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

Be careful crossing.



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- ☒ Walk
- ☑ Drive
- ☐ Bike
- ☐ Ride a bus

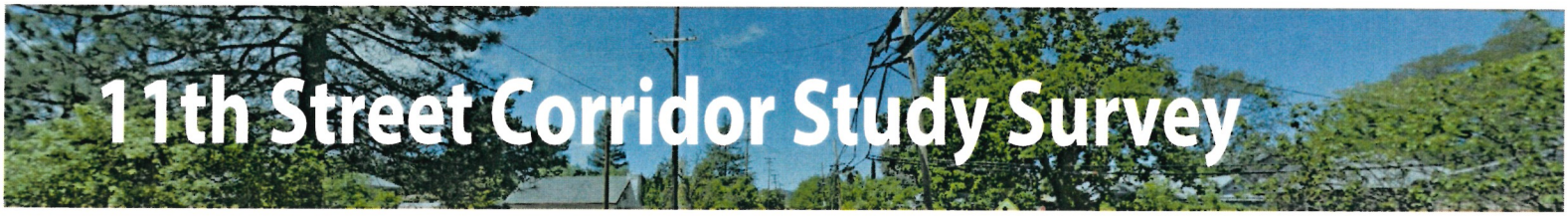
2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk: 1 year Drive: 1 day

Bike: ____ Bus: ____

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.? Its not a safe place to walk or ride a bike

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

- ☐ Walk
- ☒ Drive
- ☐ Bike
- ☐ Ride a bus

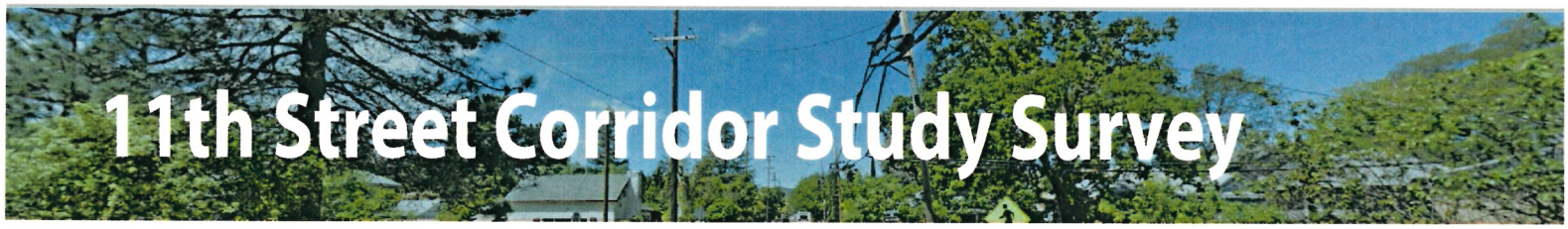
2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or (N/A))

Walk		Drive	
Bike		Bus	

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.? No

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

SIDE WALKS - need more at least All on ONE SIDE & remove the power pulls on that side of the sidewalk



11th Street Corridor Study Survey

1. Do you walk, bike, drive or take the bus on 11th Street? Check all that apply:

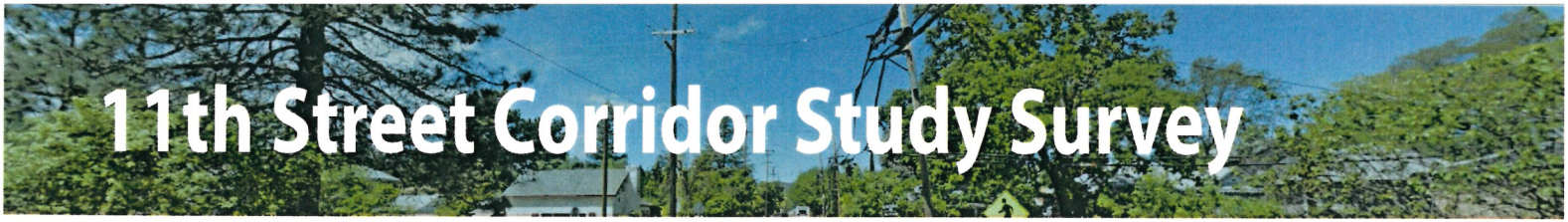
- ☐ Walk
- ☑ Drive
- ☐ Bike
- ☐ Ride a bus

2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk		Drive	Daily
Bike		Bus	

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)



11th Street Corridor Study Survey

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2. How often do you walk, bike, drive or take the bus on 11th Street? (indicate every day, once weekly, once monthly, less than monthly, or N/A)

Walk		Drive	daily
Bike		Bus	

3. Are you aware of traffic safety or access issues involving bicycles, pedestrians, or motor vehicles along 11th St.?

If so, indicate where and what issue. (This can include speeding, unsafe crossings, missing sidewalks, etc.)

- Speeding, getting onto 11th Street from Forbes.. especially when school gets out.
- overgrown bushes.
- Maybe flashing lights - bright yellow signs at crosswalks -

digital speed limit signs that tell you how fast your going - maybe will help with speed limits

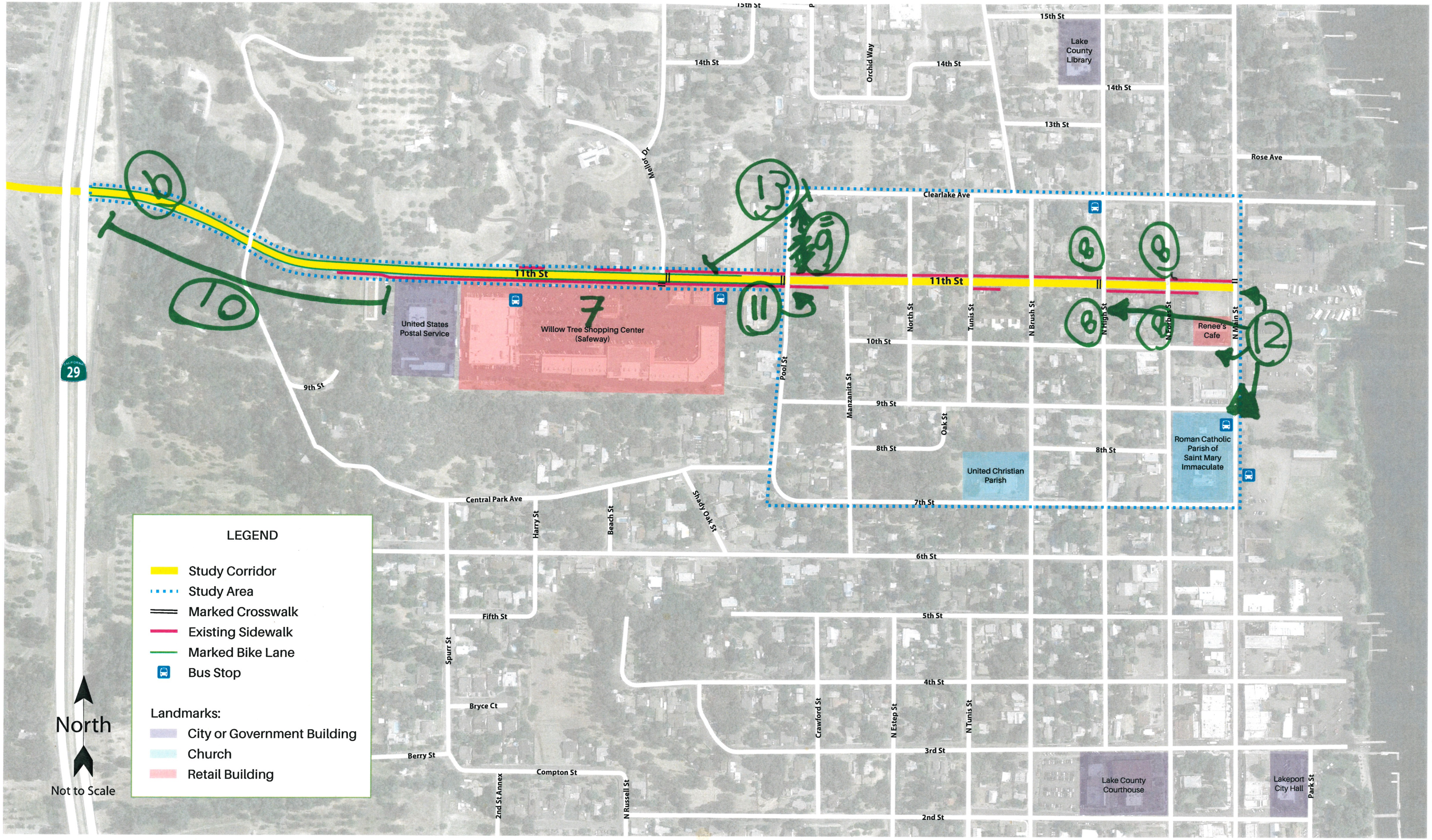
- Cameras that give tickets for speeders.

ELEVENTH STREET

Comment No.	Comment (Include location: e.g., ~~Lucerne at the intersection of Hwy 20 and 6th ave~~)
1	sidewalk from central park to SAFEWAY
2	Street Lights
3	Sidewalks - family friendly
4	have another through street or wider
5	Sidewalks, pedestrian walkways, & landscaping all add charm and draw tourists and locals!
3	sidewalks
3	sidewalks
3	Sidewalks
3	Sidewalks
3	Sidewalks and speed bumps → to slow down traffic
	sidewalks, Lights
	Better traffic flow at 11st/Main st intersection
*	Maintain tree & bush overgrown that limits visibility turning onto 11th st from side street
6	Need 4-way stop at ~~11~~ street + Forbes Need Traffic light or Stop Sign at willow Tree shopping center
*	Bike lane all along 11th
*	Use of Clearlake Ave as bike boulevard (wider than 11th)

LAKEPORT / 11TH ST.

Comment No.	Comment (Include location: e.g., ~~Lucerne at the intersection of Hwy 20 and 6th ave~~)
E of pool	Sidewalks
	4 way stop at Forbes + 11th
11th St	1. put utilities underground 2. better looking, not a nice drive into town
*	Dirt paths & no ramps & missing sidewalks make it hard to take a stroller
*	Stop signs & sidewalks (near safeway)
*	prefer sidewalks to bike path
8	lots & traffic on high st & forces (school traffic
*	cars don't yield to peds or other cars on 11th
*	flashing lights indicating when people crossing
*	sidewalks
9	Bicycle collision here
10	& lower speeds. lots of ~~people~~ vehicles drive quickly here
11	don't like where roadway narrows. confusing & dangerous
12	Take bike path on 10th & 9th and 11th to/from ~~to~~ Lakeshore Blvd. via high Street.
*	Make 11th st 1-way
*	sidewalk all along 11th st.
13	Connect clearlake ave sw across existing land where dialysis clinic is.



11th St
11th St
Clearlake Ave
15th St
14th St
13th St
Rose Ave
Lake County Library
United States Postal Service
Willow Tree Shopping Center (Safeway)
Renee's Cafe
Roman Catholic Parish of Saint Mary Immaculate
United Christian Parish
Lake County Courthouse
Lakeport City Hall
10th St
9th St
8th St
7th St
6th St
5th St
Fifth St
4th St
3rd St
2nd St
Central Park Ave
Mellor Dr
Orchid Way
Pool St
Manzanita St
North St
Tunis St
N Brush St
N High St
N Forbes St
N Main St
Oak St
Shady Oak St
Harry St
Beach St
Spurr St
Bryce Ct
Berry St
Compton St
2nd St Annex
N Russell St
Crawford St
N Estep St
N Tunis St
Park St
29
LEGEND
Study Corridor
Study Area
Marked Crosswalk
Existing Sidewalk
Marked Bike Lane
Bus Stop
Landmarks:
City or Government Building
Church
Retail Building
North
Not to Scale
7
8
8
8
9
9
10
11
12
13

Cumulative Outreach Methods and Results

Outreach Type	Category	Count	Comment	Theme	Location	Synopsis
Map - Lake Co. Fair	Motor Vehicles/Bicycles	1	Vehicle collision w/Bicycle	Bicycle Improvements	11th St near SR 29	
Business Interviews (11th St & Pool St)	Pedestrians	1	Sidewalks	Ped Improvements	11th St from SR 29 to Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Crosswalks	Ped Improvements	11th St from SR 29 to Pool St	
Business Interviews (11th St & Pool St); Business Interviews (11th St & Mellor Dr)(1)	Motor Vehicle	2	Cars speed up with slope headed east of SR 29	Motor Vehicle Speed	11th St from SR 29 to Safeway shopping center	
Wikimaps(4); Map - Lake Co. Fair; Property Owner Surveying (1)	Motor Vehicles	6	Lower vehicle speeds	Motor Vehicle Speed	11th St from SR 29 to Safeway shopping center	
Wikimaps; Business Interviews (11th St & Pool St)(1)	Bicycles	6	Street too narrow to fit bikes and cars	Motor Vehicle - AT Interface	11th St between Central Park Ave and Safeway shopping center	
Wikimaps	Pedestrians	9	Drivers don't yield to peds, no sidewalks, lower speeds to 35 mph	Motor Vehicle Speed w/Ped Improvements	11th St near Central Park Ave	
Wikimaps	Pedestrians	4	High speed traffic makes it challenging to cross roadway	Motor Vehicle Speed w/Ped Improvements	11th St between Central Park Ave and Safeway shopping center	
Wikimaps; Map - Lake Co. Fair (1)	Pedestrians	6	no sidewalks	Ped Improvements	11th St between Central Park Ave and Safeway shopping center	
Wikimaps	Pedestrians	4	No crosswalks	Ped Improvements	11th St between Central Park Ave and Safeway shopping center	
Business Interviews (11th St & Mellor Dr)	Pedestrians	1	Lots of disabled folks on north side of 11th St try to get to south side	Ped Improvements	11th St near Safeway Shopping Center	
Map - Lake Co. Fair	Motor Vehicles	2	Stop-control signal or stop signs	Motor Vehicle - Circulation	11th St at Safeway Shopping Center	
Property Owner Surveying	Motor Vehicle	1	people don't use right turn pockets	Motor Vehicle - General	11th St at Safeway Shopping Center	
Property Owner Surveying	Motor Vehicle	2	right turn pockets helpful	Motor Vehicle - General	11th St at Safeway Shopping Center	
Property Owner Surveying	Pedestrians	1	lots of people walk to safeway shopping center	Ped Improvements	11th St at Safeway Shopping Center	
Wikimaps; Property Owner Surveying (3); Business Interviews (11th St & Pool St)(1)	Pedestrians	9	More crosswalks	Ped Improvements	11th St at Safeway Shopping Center	
Map - Lake Co. Fair; Business Interviews (7th St & Main St)(1)	Pedestrians	2	Sidewalks	Ped Improvements	11th St at Safeway Shopping Center	
Wikimaps	Destinations	5	-		Safeway shopping center	
Wikimaps	Transit	3	Improved transit station w/shelter	Transit Improvements	Safeway shopping center	
Business Interviews (11th St & Pool St)	Pedestrians	1	Vegetration protrudes into sidewalks, forcing pedestrians onto street	Ped Improvements	11th St near Manzanita/Safeway	
Business Interviews (11th St & Pool St)	Pedestrians	1	Difficult to turn left onto 11th St. Near collisions with pedestrians and other cars	Motor Vehicle - AT Interface & Ped Improvements	11th near Dialysis Center	
Wikimaps; Map - Natl' Night Out (1)	Pedestrians	11	High speed traffic makes it challenging to cross roadway (suggest stop sign)	Motor Vehicle Speed w/Ped Improvements	11th St & Mellor Dr	
Map - Natl' Night Out	Pedestrians	1	RRFBs	Ped Improvements	11th St & Mellor Dr	
Wikimaps	Pedestrians	3	drivers don't yield to peds	Ped Improvements	11th St & Mellor Dr	
Wikimaps; Business Interviews (11th St & Mellor Dr) (1)	Pedestrians	4	no sidewalks	Ped Improvements	11th St & Mellor Dr	
Wikimaps	Pedestrians	3	No crosswalks	Ped Improvements	11th St & Mellor Dr	
Business Interviews (11th St & Mellor Dr)	Pedestrians	1	Fix dip in street	Motor Vehicle - General	11th St & Mellor Dr	
Business Interviews (11th St & Mellor Dr)	Pedestrians	1	Sight-impared crossing improvements to crosswalks and signalized intersections (beeping crossing signal).	Ped Improvements	11th St & Mellor Dr	
Wikimaps	Pedestrians	5	Existing sidewalks are not ADA accessible - too narrow, in disrepair and not flat.	Ped Improvements	11th St & Pool St	
Wikimaps	Pedestrians	5	No sidewalks	Ped Improvements	11th St & Pool St	
Map - Lake Co. Fair; Business Interviews (11th St & Mellor Dr) (1)	Motor Vehicles	2	Jog at intersection (11th St narrowing east of Pool St) dangerous and confusing	Motor Vehicle - Circulation	11th St & Pool St	
Property Owner Surveying	Pedestrians	1	Crosswalks for children from buses	Integrate Ped & Transit Improvements	11th St & Pool St	
Wikimaps; Property Owner Surveying (1); Business Interviews (11th St & Pool St)(1)	Pedestrians	10	Improve 10th Street for pedestrian access (much calmer than 11th st) from neighborhood area to Safeway shopping center. Brush overgrown here as well.	Ped Improvements	Unpaved 'road' on 10th St near Pool St & Safeway shopping center	
Wikimaps; Property Owner Surveying (1); Business Interviews (9th St & Main St)(1)	Bicycles	3	Bicycles should be routed down 10th St	Bicycle Improvements	10th St	
Property Owner Surveying	Pedestrians	1	Improve/add pedestrian scale lighting	Ped Improvements	10th St	
Business Interviews (9th St & Main St)	Bicycles	1	Bike Blvd	Bicycle Improvements	9th St	

Outreach Type	Category	Count	Comment	Theme	Location	Synopsis
Map - Lake Co. Fair	Pedestrians	2	Sidewalks	Ped Improvements	11th St east of Pool St	Even though comments vary regarding what should be done to improve sidewaks, I see the major theme here is to improve sidewalks generally (7 sidewalk comments total)
Business Interviews (11th St & Pool St)	Pedestrians	1	Road is on same level as sidewalk, so if people trip they are in the street.	Ped Improvements	11th St east of Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Sidewalks too narrow, so avoid 11th st	Ped Improvements	11th St east of Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Pedestrian scale lighting	Ped Improvements	11th St east of Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Add 'watch for pedestrians sign'	Ped Improvements	11th St east of Pool St	
Business Interviews (9th St & Main St)	Motor Vehicle	1	Widen 11th like it is near Safeway.	Motor Vehicle - General	11th St east of Pool St	
Business Interviews (11th St & Mellor Dr)	Pedestrians	1	Poor sidewalk quality (obstructions such as utility poles and overgrown vegetation). Complete sidewalk network	Ped Improvements	11th St east of Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Widen/add sidewalks	Ped Improvements	11th St east of Pool St.	
Business Interviews (11th St & Pool St)	Pedestrians	1	Connect sidewalks	Ped Improvements	11th St east of Pool St	
Business Interviews (11th St & Pool St)	Pedestrians	1	More crosswalks	Ped Improvements	11th St east of Pool St	
Property Owner Surveying	General	1	Narrow roadways	Motor Vehicle - General	11th St east of Pool St	
Map - Natl' Night Out	Bicycles	1	Divert bicycle traffic off of 11th (no suggestion for alternate route provided)	Bicycle Improvements	11th St	
Map - Lake Co. Fair; Business Interviews (W. of Safeway on 11th St) (1); Property Owner Surveying (1)	Aesthetic/Safety	4	Pedestrian scale lighting	Ped Improvements	11th St	
Map - Lake Co. Fair; Survey Card - Lake Co. Fair (1); Business Interviews (11th St & Pool St) (2); Business Interviews (W. of Safeway on 11th St)(1); Property Owner Surveying (6); wikimaps (8)	Motor Vehicles	19	Slow vehicle traffic	Motor Vehicle Speed	11th St	Generally calm traffic on 11th St
Map - Lake Co. Fair; Survey Card - Lake Co. Fair (2); Map - Natl' Night Out (1); Property Owner Surveying(5); Business Interviews (11th St & Pool St)(2)	Pedestrians	24	Sidewalks	Ped Improvements	11th St	
Survey Card - Lake Co. Fair; Map - Natl' Night Out (1)	Pedestrians	2	Contiguous sidewalk connection on at least 1 side of the street	Ped Improvements	11th St	
Map - Lake Co. Fair; Survey Card - Lake Co. Fair (1); Map - Natl' Night Out (2)	Motor Vehicles	4	Maintain plant overgrowth to improve visibility on side streets for vehicle traffic turning onto 11th St	Motor Vehicle	11th St	
Map - Lake Co. Fair; Map - Natl' Night Out (1)	Bicycles	2	Add bike lanes	Bicycle Improvements	11th St	
Map - Lake Co. Fair; Survey Card - Lake Co. Fair (1); Wikimaps (5); Business Interviews (7th St & Main St)(1); Property Owner Surveying (1)	Aesthetic/Pedestrian	9	Underground utility poles	General	11th St	
Map - Lake Co. Fair	Motor Vehicles/Pedestrians	1	Vehicle traffic doesn't yield to other peds or vehicles	Ped Improvements	11th St	
Map - Lake Co. Fair; Survey Card - Lake Co. Fair (1); Property Owner Surveying (1) Map - Natl' Night Out (4)	Pedestrians	7	Install RRFBs	Ped Improvements	11th St	
Map - Lake Co. Fair	Bicycles	1	Bikes on 11th, 10th, and 9th St, cutting onto High St to reach Lakeshore Blvd	Bicycle Improvements	-	
Map - Lake Co. Fair	Motor Vehicles	1	Make 1-way due east	Motor Vehicle - Circulation	11th St	
Map - Natl' Night Out	Bicycles	1	Sharrows	Bicycle Improvements	11th St	
Survey Card - Lake Co. Fair	Bicycles	1	Bicycle lanes	Bicycle Improvements	11th St	
Wikimaps	Bicycles	12	There is enough right of way on most of 11th Street to restripe roadway to add bikelanes on both sides of 11th street and narrow the lanes	Bicycle Improvements	11th St	
Wikimaps; Business Interviews (7th St & Main St)(1); Map - Natl' Night Out (1)	Bicycles	10	street too narrow as striped currently to fit bikes and cars	Motor Vehicle - AT Interface	11th St	
Wikimaps; Business Interviews (9th St & Main St)(1); Map - Natl' Night Out (1)	Bicycles	10	widen sidewalks and stripe bike lanes	Bicycle Improvements & Ped Improvements	11th St	
Business Interviews (7th St & Main St)	Bicycles	1	Connect bicycles to SR 29	Bicycle Improvements	11th St.	
Property Owner Surveying; Business Interviews (11th St & Pool St)(1)	Motor Vehicle	3	Install stop-controls	Motor Vehicle - Circulation	11th St	
Property Owner Surveying	Bicycles	2	Lots of bikes	Bicycle Improvements	11th St	
Business Interviews (W. of Safeway on 11th St); Property Owner Surveying(1); Business Interviews (11th St & Pool St) (1); Map - Natl' Night Out (1)	Pedestrians	4	More crosswalks	Ped Improvements	11th St	
Business Interviews (W. of Safeway on 11th St)	General	1	Don't take private property	General	11th St	

Outreach Type	Category	Count	Comment	Theme	Location	Synopsis
Property Owner Surveying	Motor Vehicle	1	Roundabout	Motor Vehicle - Circulation	11th St	
Property Owner Surveying	Motor Vehicle	1	Bulbouts	Ped Improvements	11th St	
Property Owner Surveying	Pedestrians	1	pedestrian median islands	Ped Improvements	11th St	
Business Interviews (11th St & Pool St)	Bicycles	2	Not many bikes	General	11th St	
Business Interviews (11th St & Pool St); Business Interviews (10th St & Main St)(1); Map - Lake Co. Fair(1)	General	3	Business district, form based codes, beautification	General	11th St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Add crosswalks where there are bus stops	Integrate Ped & Transit Improvements	11th St	
Property Owner Surveying(2); Business Interviews (11th St & Pool St)(1); Map - Natl' Night Out (2)	Pedestrians	5	Widen sidewalks	Ped Improvements	11th St	
Property Owner Surveying	Pedestrians	2	Unsafe walking on 11th due to poor sidewalk conditions	Ped Improvements	11th St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Improve lighting at night for pedestrians	Ped Improvements	11th St	
Business Interviews (11th St & Pool St)	General	1	Make 1-way street	Motor Vehicle - Circulation	11th St	
Wikimaps	Pedestrians	9	Sidewalks	Ped Improvements	11th St & Tunis St	Generally add sidewalks to 11th St
Wikimaps	Pedestrians	4	No crosswalks	Ped Improvements	11th St & Tunis St	
Wikimaps; Property Owner Surveying (2); Business Interviews (Renee's)(1)	Pedestrians	7	Due to the slope, cars & peds on the south side are difficult to view - house with bamboo that is tall makes it difficult for westbound vehicles to see.	Ped Improvements & Motor Vehicle Visual Obstructions	11th St & Tunis St	
Wikimaps	Bicycles	4	too much traffic	Motor Vehicle - General	11th St & Forbes St	Generally calm traffic on 11th St
Wikimaps	Bicycles	4	Traffic collisions common. Dangerous for motorists, pedestrians and bikes.	Motor Vehicle - AT Interface	11th St & Forbes St	
Map - Lake Co. Fair	Motor Vehicles	2	Stop-control signal or stop signs	Motor Vehicle - Circulation	11th St & Forbes St	
Map - Natl' Night Out	Motor Vehicles	1	Utility poll obstructs view when turning onto 11th	Motor Vehicle Visual Obstructions	11th St & Forbes St	
Map - Lake Co. Fair	Motor Vehicles	1	High traffic volumes	Motor Vehicle Speed	11th St & Forbes St	
Wikimaps; Business Interviews (Renee's)(1)	Pedestrians	3	No crosswalks	Ped Improvements	11th St & Forbes St	
Business Interviews (9th St & Main St); Property Owner Surveying(1)	General	2	When City added new asphalt slurry, they do not grind old pavement down, making the street level with sidewalk and property. Unsafe for pedestrians and homeowners if vehicles plow into them	Ped Improvements	11th St & Forbes	
Wikimaps	Bicycles	2	Visual obstructions (plants) block vehicle's view of bikes when pulling out onto 11th St	Bicycle Improvements & Motor Vehicle Visual Obstructions	11th & Brush St	
Wikimaps; Business Interviews (11th St & Pool St)(1)	Pedestrians	11	High speed traffic/drivers do not yield to peds	Motor Vehicle Speed w/Ped Improvements	11th & Brush St	Generally add sidewalks to 11th St
Wikimaps	Pedestrians	10	Add crosswalks	Ped Improvements	11th & Brush St	
Business Interviews (11th St & Pool St)	Pedestrians	1	More crosswalks for school kids commuting to bus	Integrate Ped & Transit Improvements	11th & Brush St	
Business Interviews (11th St & Pool St)	Motor Vehicle	1	Right turn lane onto Brush from 11th	Motor Vehicle - General	11th & Brush St	
Wikimaps	Pedestrians	3	Poor visibility at intersection, high vehicle speeds, vehicles not yielding make crossing at this location difficult	Motor Vehicle Speed w/Ped Improvements & Motor Vehicle - Visual Obstruction	11th St & High St	
Wikimaps	Pedestrians	5	No sidewalks	Ped Improvements	11th St & High St	Generally add sidewalks to 11th St
Map - Lake Co. Fair	Motor Vehicles	1	High traffic volumes	Motor Vehicle Speed	11th St & High St	
Wikimaps; Business Interviews (11th St & Pool St)(1)	Bicycles	3	Visual obstructions (plants) block vehicle's view of bikes & other vehicles when pulling out onto 11th St. Suggest maintaining plants and adding sidewalks to alleviate visual obtruction.	Motor Vehicle Visual Obstructions & Bicycle Improvements & Ped Improvements	11th St & High St	
Business Interviews (11th St & Pool St)	Pedestrians	1	Lots of traffic congestion at peak traffic hour. Pedestrians dart through traffic as they try to cross the street & lots of speeding and 11th and High	Motor Vehicle Speed w/Ped Improvements	11th & High St	
Wikimaps	Pedestrians	6	Add sidewalks	Ped Improvements	11th St & North St	Generally add sidewalks to 11th St

Outreach Type	Category	Count	Comment	Theme	Location	Synopsis
Wikimaps; Map - Lake Co. Fair (1)	Pedestrians	15	High speed traffic makes it challenging to cross roadway/drivers do not yield to peds	Motor Vehicle Speed w/Ped Improvements	11th St & Main St.	Help make intersection more logical - A comment from business interviews "Turning right onto Main street hard to see traffic coming south on Main St. Have to stick nose out into intersection. Lots of businesses at 11th and Main make navigating traffic when busy difficult - no clear indication of how goes
Wikimaps	Pedestrians	14	Place a roundabout in this location, offset it so it uses space/impacts empty lot on southwest corner	Motor Vehicle - Circulation Improvements	11th St & Main St.	
Wikimaps	Pedestrians	2	High speed traffic makes it challenging to cross roadway	Motor Vehicle Speed w/Ped Improvements	Main St near 9th St & 10th St	
Wikimaps	Pedestrians	2	drivers don't yield to pedestrians	Ped Improvements	Main St near 9th St & 10th St	
Map - Natl' Night Out	Pedestrians	1	Croswalk is faded	Ped Improvements	11th St & Main	
Map - Natl' Night Out	Pedestrians	1	Crosswalk not ADA accessible	Ped Improvements	11th St & Main	
Business Interviews (Renee's); Business Interviews (9th St & Main St)(1)	Pedestrians	2	Crosswalks	Ped Improvements	Main St & 10th St	
Business Interviews (Renee's)	Pedestrians	1	Widen sidewalk	Ped Improvements	11th St & Main	
Business Interviews (Renee's)	Pedestrians	1	Add sidewalks where missing	Ped Improvements	11th St & Main	
Business Interviews (9th St & Main St)	Pedestrians	1	More frequent crosswalks	Ped Improvements	Main St	
Map - Natl' Night Out	Pedestrians	1	ADA accessible crosswalks	Ped Improvements	Main St between 11th & 6th Sts	
Business Interviews (11th St & Pool St)	Pedestrians	1	Add crosswalks where there are bus stops	Ped Improvements & Transit Improvements	Main St	
Business Interviews (11th St & Pool St)	Pedestrians	1	RRFBs	Ped Improvements	Near Courthouse	
Business Interviews (8th St & Main St)	Pedestrians	1	Add crosswalk near Natural High where there is a bus station	Integrate Ped & Transit Improvements	Natural High Bus Station	
Map - Lake Co. Fair	Motor Vehicles	1	Safer to travel on Mellor Dr and bypass 11th St when traveling North through Lakeport	Motor Vehicle - General	-	
Map - Lake Co. Fair	Bicycles	1	Make designated bicycle boulevard	Bicycle Improvements	Clearlake Ave	There is no clear consensus on what improvements are desired on Mellor Rd and Clearlake Ave, but it looks like there is some indication from the comments that improvements are desired here
Wikimaps	Pedestrians	3	High speed traffic makes it challenging to cross roadway	Motor Vehicle Speed w/Ped Improvements	on Mellor Rd north of 11th St	
Wikimaps	Pedestrians	3	drivers don't yield to pedestrians	Ped Improvements	on Mellor Rd north of 11th St	
Wikimaps	Pedestrians	3	no sidewalks	Ped Improvements	on Mellor Rd north of 11th St	
Wikimaps	Pedestrians	3	No crosswalks	Ped Improvements	on Mellor Rd north of 11th St	
Wikimaps	Pedestrians	2	High speed traffic makes it challenging to cross roadway	Motor Vehicle Speed w/Ped Improvements	Clearlake Ave & High St	
Wikimaps	Pedestrians	2	drivers don't yield to pedestrians	Ped Improvements	Clearlake Ave & High St	
Wikimaps	Pedestrians	2	No crosswalks	Ped Improvements	Clearlake Ave & High St	
Wikimaps	Pedestrians	2	Intersection configuration (dead end sign, other) is dangerous. Observed accidents and near misses with pedestrians and vehicles.	Motor Vehicle - Circulation & Ped Improvements	Clearlake Ave & High St	
Wikimaps	Pedestrians	3	High speed traffic makes it challenging to cross roadway	Motor Vehicle Speed w/Ped Improvements	Clearlake Ave & Hartley St	
Wikimaps	Pedestrians	3	drivers don't yield to pedestrians	Ped Improvements	Clearlake Ave & Hartley St	
Wikimaps	Pedestrians	3	No crosswalks	Ped Improvements	Clearlake Ave & Hartley St	
Wikimaps	Pedestrians	3	No sidewalks	Ped Improvements	Clearlake Ave & Hartley St	
Wikimaps	Pedestrians	1	Vehicle speeding occurs	Motor Vehicle Speed	Hartley St	

Grand Total*	430	***Theme Totals*** *(includes Nov 11 Com. Workshop)*

* does not include Com. Works.

Mechanisms to Conduct Outreach for 11th Street/Lakeport Project

Post flyer to City's Webpage & social media page(s)
Lakeport Fire Department, Police Department, other Departments as deemed necessary
TAC members: -Lake County Public Works Department -Lake County Community Development Department -Other Lake County Departments as deemed necessary
City locations -City Hall -Senior Center -Other relevant locations on City property
City Traffic Safety Advisory Committee
Lake Walks (request to post flyer on website or via email)
Main Street Bicycles and other areas of interest for cyclists, if any
Social Services Transportation Advisory Council (SSTAC) members
Lake APC website
Record Bee
Library
Safeway
CVS
Post office
Community First Credit Union
North Bay Merchant Services
People Services
Umpqua Bank
DaVita Lakeport Dialysis Center
First American Title Company
Renee's Café
Sanducci's Cottage
St. John's Episcopal Church
Chamber of Commerce - Lakeport
Lakeport Main Street Association

Lakeport Unified School District to distribute electronically or on a public bulletin as deemed necessary -Clear Lake High School -Terrace Middle School -Lakeport Elementary School
LTA Buses
Big Valley Rancheria
Scotts Valley Band of Pomo Indians

TAG Meeting Agendas

11th Street Corridor Multimodal Engineered Feasibility Study

2nd Technical Advisory Group (TAG) Meeting

March 27, 2019 - 3:00 p.m. - 4:00 p.m.

Conference Line: (916) 900-6610 (no pin#)

AGENDA

John Speka (Lake APC)
Cayla McDonell (LGC)
Josh Meyer (LGC)
Todd Mansell (County of Lake Public Works)
Dalene Whitlock (W-Trans)
Barry Bergman (W-Trans)
Wanda Gray (Lake Transit)
Vicki Cole (Traffic Safety Advisory Committee)
Doug Grider (City of Lakeport Public Works)
Phil Dow (Lake APC)
Alexis Kelso (Caltrans)
Lisa Davey-Bates (Lake PAC)
Dan Chance (City of Lakeport Community Development)

Action items:

Decide Event Date: May 14 or 15 – LGC/W-trans, depends on Hwy 20 meeting

Location: Lake APC will see about bank, if not, will be at City Hall

Flyers: LGC to do, as soon as date and location finalized

Flyer distribution: City/Lake APC – study area door to door and other locations, water utility bill, need by April 14th or 15th to be in time to include

TAG schedule: LGC and w-Trans

3:00 p.m. **Welcome & Introductions (W-Trans)**

3:10 p.m. **Community Engagement (LGC)**

- **Proposed timeline of activities for discussion:**

- Combine – Community Workshop & Stakeholder Open House Meetings
    - Event #1: May 14 or 15. HWY 20 would be the 15th, so the 14th is preferred for 11th street.
        - 6-8pm
        - City Hall
    - Event #2: October/Early November

- **Proposed Stakeholder List**
    - Property owners and businesses affronting 11th Street
        - Possibly expand to:
            - 9th and 10th Streets
            - Entire project area
    - Jeff Kramer, Owner Main Street Bicycles
    - Schools & school bus route
        - Terrace Middle School
        - Clear Lake High School
        - Konocti Christian Academy
    - Lake Transit
        - Give them flyers for buses
    - Recreation Committee – walking
    - Find out, consult/coordinate with Eisen Letunic overlap
    - Dial a Ride outreach
    - Medical offices, banks and Safeway owner
    - Library on High Street
    - Lakeport social media
        - City will distribute via social media
    - Water utility bills

3:30 p.m. **Outreach (LGC)**

- Outreach methods
    - Door hangers
        - City and Lake APC assist
        - City send door hanger template after LGC send electronic version of the flyer
    - Flyers
    - Posters
    - Flyers to schools
- Online outreach:
    - Wiki mapping tool
    - Surveys?
    - Social media

- Website
- **Possible Activities for Advertisement**
  - First Friday Fling – April 5
  - Children's Advocacy Walk & Festival – April 13
  - Student Art Show at Main Street Gallery – Weekdays, April 2 – 27
  - June, July and August concerts in the park, every Friday
  - Farmers market 10 – 2
  - More events listed on City of Lakeport Website, here:
    - https://lakecounty.com/event/2019-04/

3:45 p.m. **Data Collection & Alternatives Development (W-Trans)**

- want whole solutions, not band aids
- undergrounding utilities?

3:55 p.m. **Schedule Future TAG Meetings (All)**

- 2nd Wednesdays, 2-3pm
- 3 additional TAG meetings in-person
  - May (Concurrent with Stakeholder open house and workshop #1 of 2)
  - August
  - November (Concurrent with Stakeholder open house and workshop #2 of 2)
- 6 additional TAG meetings via conference call
  - April
  - June
  - July
  - September
  - October
  - December/January

3rd TAG Meeting Agenda

11th Street Corridor Multimodal Engineered Feasibility Study

Tuesday, May 14, 2019 2:45 – 3:30 pm

Lakeport City Hall - Front Conference Room
255 Park Street, Lakeport

2:45 – 3:00pm Existing Conditions (W-Trans)

- Status update

3:00 – 3:25pm Community Engagement (LGC)

- Stakeholder List: Are we missing anyone?
- Resident & Business Stakeholder Engagement
    - How should key stakeholder that will be most affected be engaged?
    - How should outreach be conducted?
        - Define roles & responsibilities

3:25 – 3:30pm Schedule Monthly TAG Meetings for 2019 (All)

- Tuesdays between 2-4pm
- Wednesdays between 3-4pm
- Thursdays between 2-4pm

4th TAG Meeting Agenda – *Conference Call*

11th Street Corridor Multimodal Engineered Feasibility Study

Thursday, June 20, 2019 3 – 4 pm

(916) 900-6610 (no pin)

3:00 – 3:30pm Community Engagement (LGC)

- Resident & Business Stakeholder Engagement
  - Phone Survey
- General Public Outreach & Engagement
  - Wikimap flyer handed out at events, email, social media
    - Who would staff events?
    - Which events should we target? (list attached)

3:30 – 3:55pm Discussion of Potential Alternatives (W-Trans)

3:55 – 4:00pm Schedule Next TAG Meeting (All)

- Thursday July 11, 18, or 25th at 3pm?

Meeting Minutes:

- Present:
  - Dave Brown
  - Todd - Retiring
  - Barry
  - John
  - Dan Chance, sitting in for Kevin
  - Doug

- Business/Property Owners:
  - If in-person, bring a local so that they see a familiar face
  - Broader outreach to community via survey monkey
    - LGC Action Item: Property owners – utility bill – target
      - Doug get number of property
  - Events:
    - 4th of July
    - Rhythm and blues
    - National Night Out – 1st Tuesday in August @ library park – best event/hits target audience **
    - Concerts in the park **

        - Fair – need to have a staffperson to – we should coordinate on this more, seems like a good option to move forward with – Thurs - Sunday
            - Might be good to get out the word out about the next community workshop
- Discussion of Potential Alternatives:
    - Doug asks Barry to add the City's preferred alternative as Alternative – Dalene says that their preference has a sidewalk on one side only (Pool & Main)
    - Alternative 1 (Baseline)
        - Impact/take many parts of parcels
    - Suggestions for other Alternatives:
        - City trying to establish undergrounding district. In case they cannot do this, suggest a revision to alternative 3a w/o undergrounding
        - Like 1-way couplet alternative
        - Divert truck traffic from 11th Street to Lakeport
        - Suggest alternative with sharrow
        - Like 10th street bike boulevard concept. Improve/pave pathway near Pool.
            - Alexis suggests enhancing crossing options at major conflict intersections.

5th TAG Meeting Agenda – *Conference Call*

11th Street Corridor Multimodal Engineered Feasibility Study

Thursday, July 25, 2019 3 – 4 pm

(916) 900-6610 (no pin)

In attendance:

3:00 – 3:15pm Community Engagement Update (LGC & W-Trans)

- Wikimaps, Business and Property Owner Stakeholder Engagement
  - Kevin post wikimaps on city's website
  - Reservation at Lake County Fair
  - Scott says he can post link on County's website – Kevin will send flyer to him
  - Helen Borker – advertising on buses
    - (209) 304-7917

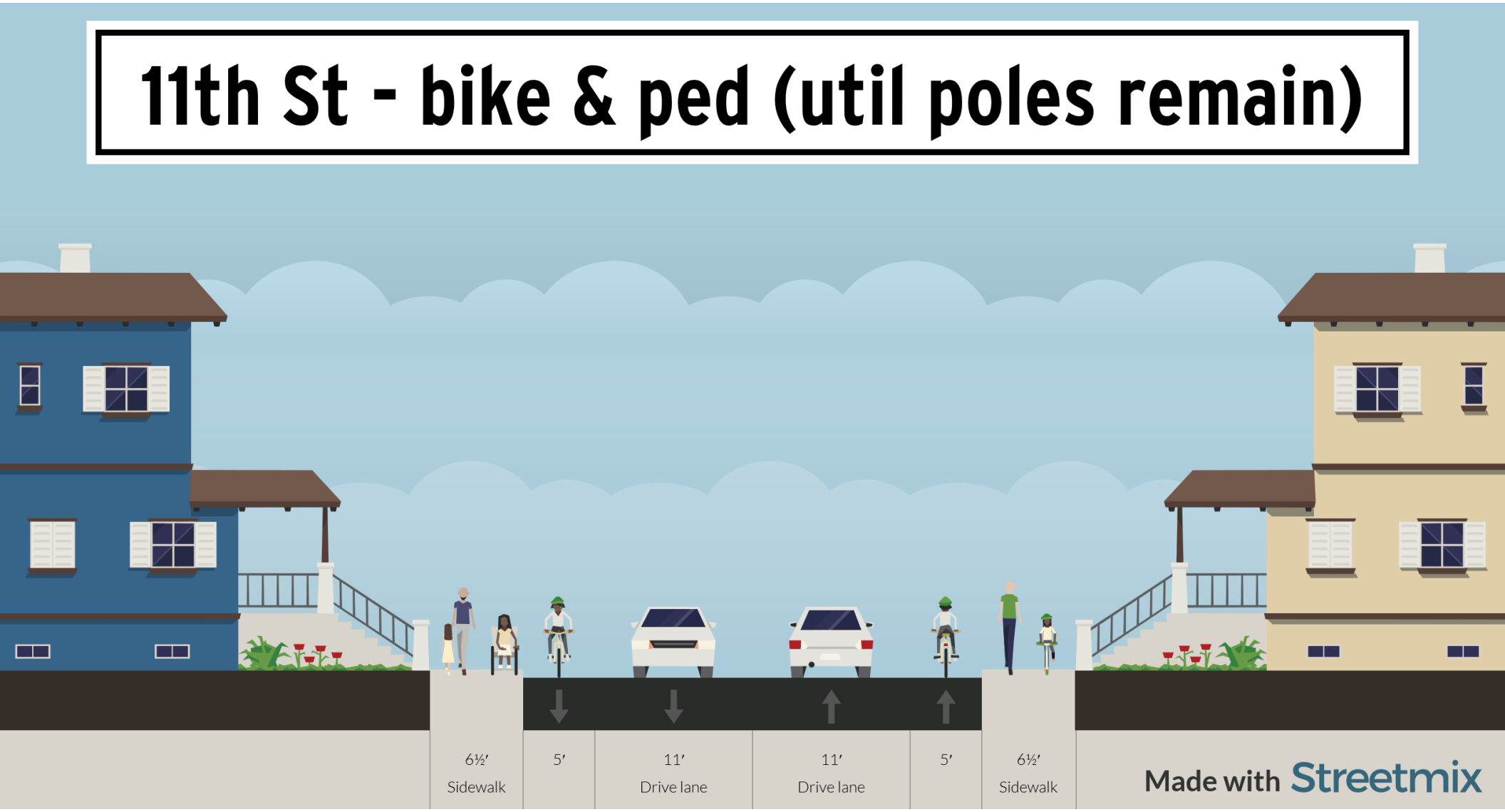
3:15 – 3:50pm Existing Conditions Report, Potential Alternatives & Design Elements (W-Trans)

- Alternative 4 – Accommodate bikes and peds on 11th in existing ROW w/o undergrounding utility poles
- Bike boulevard on 10th? Barry suggests it since it is low-traffic
  - (County?) confirmed that the stop signs can be turned at Brush to accommodate bike boulevard
  - Doug really likes art in the intersection & designating street as 'different' than the rest of town. A slow street.
    - Recommend on 10th & Forbes
- County and City like all bike concepts except for speed cushins

3:50 – 4:00pm Schedule Next In-Person TAG Meeting (All)

- 11th St.:
  - August 22nd, 27-29
- Hwy 20 – 22, 28, 29
  - Concepts to present on at Sept. 19 meeting
  - 22nd preference for City, Scott, Lisa
  - 29th 2nd option, 28 not preferred
- Discuss timing for Community Workshop
  - Agree to hold event again at Council chambers, which should be able to hold enough people
  - Cayla coordinate w/Kevin to look at available dates for Council Chambers and then send dates to TAG for input.

11th St - bike & ped (util poles remain)



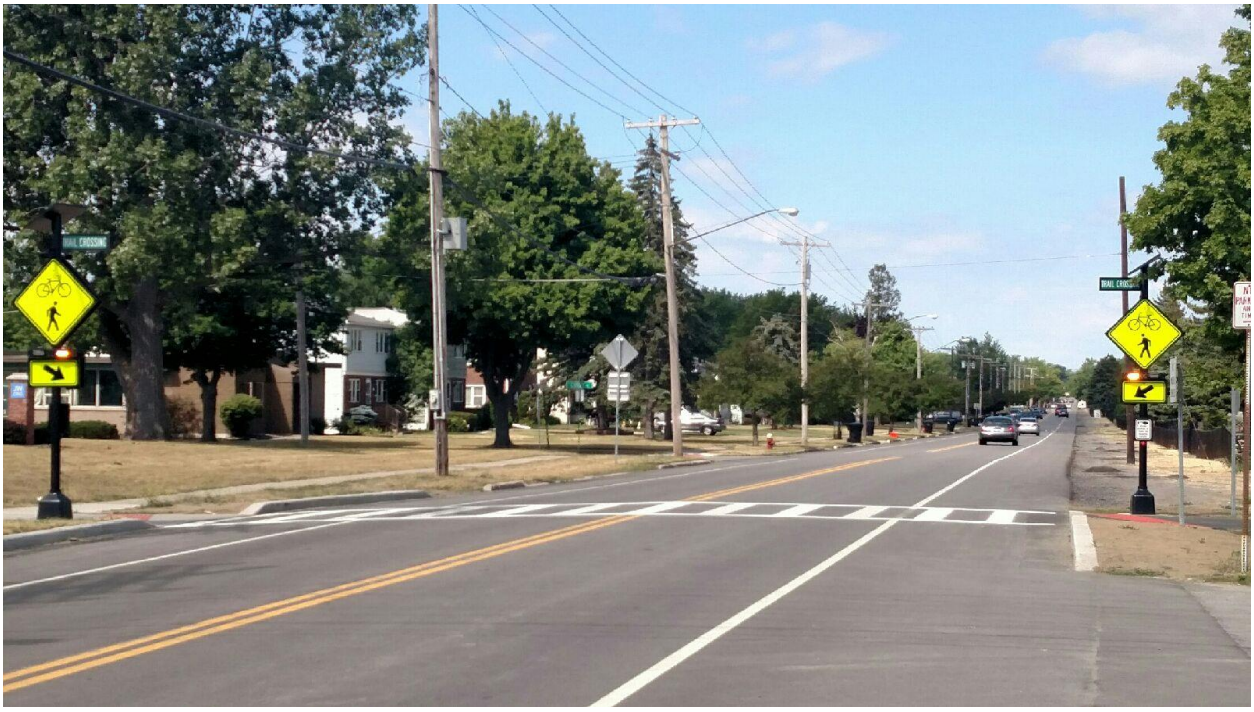
Bicycle Boulevard Wayfinding and Directional Signage

Decorative Intersections

Pavement Markings

Speed Cushion

Crossing Enhancements



6th TAG Meeting Agenda

11th Street Corridor Multimodal Engineered Feasibility Study

Thursday, August 22nd, 2019 1:30pm – 2:30pm

Lakeport City Hall - Front Conference Room
255 Park Street, Lakeport

Attendees:

- Barry Bergman & Dalene Whitman, W-Trans
- Doug Grider, City of Lakeport
- Kevin Ingram, City of Lakeport
- Phil Dow, MCOG
- Wanda Gray, Lake Transit
- Alexis Kelso, Caltrans D1
- John Speka, Lake APC
- Josh and Cayla, LGC
- Lisa Davey-Bates, Lake APC

1:30 – 1:45pm Community Outreach (W-Trans & LGC)

- What we've heard so far
  - Business Phone Surveys – 12 out of 23 businesses
    - Improve roadway for businesses:
      - Improve walking conditions on 11th st connecting shopping center to the west with Main/Lake area to the east
      - Gateway signage, wayfinding, beatification, trees, form-based codes/designated business district.
    - Not enough time for vehicles to slow turning right into post office/locksmith coming from the west from the highway. Rear-ending is a problem here.
    - Seniors, disabled people and kids cross 11th near the shopping center. Lots of foot traffic from dialysis and people services to safeway/CVS. Motor vehicles don't slow/yield.
  - National Night Out – Map comments & online wikimaps survey- 23 comments & 10 sticky dots
  - Wikimaps Results – 25 responses
    - Western extent of 11th Street near shopping center:

        - High speeds, drivers do not yield or slow for peds or bikes
        - Bike/ped path connecting 9th st. with shopping center
        - Driving, bike and ped path connecting 10th w/shopping center
    - Between Pool & Main on 11th Street:
        - Sidewalks narrow, obstructed (utility poles), level with asphalt or non-existent.
        - Lack designated crosswalks.
        - Visual obstructions such as overgrown plants, utility poles, and homes make it difficult for motorvehicles to see pedestrians crossing 11th or event other vehicles on 11th.
            - Mellor, Tunis, North, Forbes.
        - Solutions:
            - Sidewalk/bikelane on 1 side of roadway to accommodate bikes and peds or 1 side for bikes 1 side for peds.
            - Crosswalks with flashing lights indicating pedestrian using crosswalk.
    - Clearlake Avenue:
        - Motor vehicles do not yield to pedestrians. Site vehicle speeds, but also may be an issue of lack of stops.
    - Main Street:
        - Motor vehicles do not yield to pedestrians. Site vehicle speeds, but also may be an issue of lack of stops.
        - Desire more frequent crosswalks, in particular where there is a bus stop on the east side of Main street where Natural High was.
- Property Owner Surveying
    - Mark & Cynthia Clark, 1020 11th st, Own Home
        - Walk (1x week), bike (<1x mo.), drive (daily)
        - Speeding near safeway and unsafe to cross
        - Slightly wider sidewalk on at least one side of 11th to accommodate peds and bikes on 11th from Main to highway

- Outreach moving forward
    - Property owners

        - Cayla should see if there are phone numbers on the water bill list
        - Neighborhood watch group – kevin and doug check w/Brad and PD to see if they have this information
        - Cayla survery property owners before Lake County Fair
        - Make nametag. City notify PD ahead of time.
    - Lake County Fair
        - 6-10: Thurs & Fri
        - All Day: Sat & Sun
        - Doug – Friday
        - John do doodle poll and ask City and LakeAPC staff to come. Cayla fill in.
            - Weekends and Saturday morning
            - Create short survey
            - Have survey available for people to fill out during fair
    - Community workshop in October – followup with this after meeting via email
        - Date, outreach strategy, format & materials
            - Dates council chambers available in October and November
                - Council mtgs 1st & 3rd Tuesday
                - Plg Com 2nd Wed monthly
                - Available until 9/10
    - High & 11th and Forbes & 11th – Dalene suggests modeling roundabouts at both of these places.
        - Phil prefers roundabout alternatives here rather than left turn pockets on High Street.
        - Lisa suggests putting more signage or vertical element to teach people how to use roundabouts. This should be temporary so not an ugly eyesore.

1:45 – 2:25pm Draft Concepts (W-Trans)

- Other Comments/Notes:
    - City's stance on bikes:
        - NO BIKES ON 11th
        - Put bikes on 10th street. Connect 10th to Safeway formally via dirt road.
        - Biking community supports these suggestions.
        - Doug will check to see if informal dirt roadway connecting 10th from shopping center on public ROW.
- High, Main and Forbes highest use crossing areas across 11th st.

- Widen sidewalks into 11th in front of poles using current wide road space.
    - City having public hearing about undergrounding utilities on 11th st. Probably won't have enough $$ to implement this.
- Mini Roundabouts
    - High Street:
        - Why City wants center turn lane onto high street: So that traffic doesn't backup on Forbes 11th street bifurcates N/S connectivity across Lakeport. Assists traffic flow. Lots of busses turn on high street to get to school.
            - W-Trans going to see how long this turn pocket needs to be to accommodate traffic.
                - Look at mini roundabout concept for this location as well
        - Doug says it is quicker to use High than Forbes since drivers coming south on High onto 11th Street can see 11th street more clearly.
            - Buses can't turn on High near clearlake without going into the other lane
    - Forbes:
        - City says the mini roundabouts are feasible here. Design accommodates trucks.
        - Alexis concerned about how far back the crossings are from intersection. Thinks that pedestrians will just cross through the roundabout
            - Look at this for high street as well.
        - Barry suggests direct bus drivers here instead of High.
    - W-Trans Suggestion: Take out all right-turn pockets and make bike lanes only at Safeway shopping center.
        - Cars don't use those pockets, they just drive until the driveway and turn into the shopping center
        - Wanda says bus stop at Safeway is the worst place for buses to turn. Wants bus stop pullout here.
        - Doug agrees with this concept.
- Aldmen Ave at 11th St. Narrowing & N. Sidwalk treatment & shift centerline over –
    - Doug okay with this since there is the issue of perceived speeding here from vehicles coming off the highway onto 11th st. However concerned that it will make the street jog/zig/zag as leaving town/westbound. W-Trans needs to make sure to address this in the design concept.

2:25 – 2:30pm Schedule Next TAG Meeting for September

- September, W-Trans will present refined design concepts to further refine for October/Nov community workshop.
- Planning for next community workshop
    - Alexis asks that we present bicycle circulation map
- City Engineer should be on these calls moving forward, however Thursdays do not work for him.

7th TAG Meeting Agenda

11th Street Corridor Multimodal Engineered Feasibility Study

Tuesday, October 8, 2019 1-2 pm

Conference Call Only – Not In-Person
(916) 900-6610 (no pin)

1 pm Community Outreach (W-Trans & LGC)

- **November 6th,** Workshop – Time? 6-8pm? Already booked council chambers at Lakeport City Hall – Does this work for Kevin?
    - Outreach/notification strategy/stakeholder engagement
        - Cayla will email Kevin/Doug:
            - addresses from the water bill distribution list
        - Cayla will email Brad and PD:
            - Emails of any neighborhood watch group for 11th Street residents
        - Barry ask Doug/Kevin if there are any Local Groups such as church groups or other groups where we could contact to outreach
        - Order of priority of outreach methods:
            - Community groups to assist w/outreach
            - Phone numbers (remote surveying) and email (eblast)
            - Door-to-door (Cayla need assistance)
            - LakeAPC, City (including PD) put flyers:
                - On website
                - Facebook/other social media
                - Email listservs
            - Cayla reach out Record Bee & Lake County News
            - Cayla door-to-door flyering – Anyone from City or Lake APC help?
                - 11th Street
                - 10th Street
                - Entire Project Area
    - Format/content
        - Presentation/review of alternatives
        - Solicit input from attendees

1:50 pm Next Steps (W-Trans)

- Development of draft plan
- Upcoming milestones

- Timing/Schedule Next TAG Meeting

Local Government Commission
Leaders for Livable Communities

Cayla McDonell <cmcdonell@lgc.org>

notes from today's TAG meeting

1 message

Barry Bergman <bbergman@w-trans.com> Tue, Oct 8, 2019 at 4:11 PM
To: Cayla McDonell <cmcdonell@lgc.org>

Hi Cayla,

Hope you're doing better than you sounded earlier. Just wanted to follow up with you about what was discussed at today's TAG meeting. I'm in the middle of a crunch but am writing up a few highlights while they are still fresh in my mind. Unfortunately Doug was unable to make it, he was at a meeting dealing with the PGE power shutdowns (which may very well affect our office tomorrow).

Notifications for workshop

- Water bill distribution list: Kevin said he was pretty sure that there are no emails attached to that, but he will verify.
- Kevin offered to get the police dept to use their volunteers to do door to door flyering, which would be great. Main priority is to get 11th St, 10th St., and people on side streets that are close by. Can you put together an address list? I don't know if you are missing any addresses, but I see that there is a Lake County GIS parcel viewer and you can pull addresses off there by parcel: https://gispublic.co.lake.ca.us/portal/apps/webappviewer/index.html?id=87dfc0c535b2478bb67df69d6d319eca
- Sounds like we have pretty good options for getting the word out: sign-in sheets from 1st workshop and tabling events and the property owner/tenant list John gave us
- Suggestions for posting flyers: chamber of commerce, post office, library, city hall, and if there are any businesses you spoke with last time that would do that. And there is Lake Transit, Wanda was not at the meeting today.

Additional feedback

- One suggestion for doing additional outreach was to do presentations at 1 or more local groups, such as at the senior center or for civic groups like the Lions, Kiwanis or Rotary club. My question is how many of those people might live anywhere near the study area, but worth a call.
- No one came out in support of the door-to-door interview idea. Just thinking about the time it would take to even describe the project I can easily imagine it taking 30 min per house, so that is really time consuming. And phone calls would be really difficult, you really need the graphics in front of you. Kevin suggested Surveymonkey and also distributing hard copies of the survey, and that could include images of the alternatives.
- Paul Curran (? Not sure about the last name), the City's contract engineer, was on the phone. He suggested following up with attendees at the workshop

That's about it. Let me know if you have any questions. Now get some rest and feel better!

Barry Bergman

AICP Senior Planner

W-Trans

Office 707.542.9500
490 Mendocino Avenue, Suite 201 Santa Rosa, CA 95401

8th TAG Meeting Agenda

11th Street Corridor Multimodal Engineered Feasibility Study

Monday, November 18, 2019 2:30 – 3:30 pm

Conference Call Only – Not In-Person
(916) 900-6610 (no pin)

2:30 pm Community Outreach (W-Trans & LGC)

- Results of Nov. 6 Workshop
- Additional community outreach needed?
    - No. Kevin happy w/robust outreach to different types/cross-sections of community members.

2:40 pm Refine Project Alternatives (W-Trans)

- Notes:
    - Concern w/Alt. 3. Prefer extra roadway width of alternatives 2 and 4.
        - Paul says only emergency access (also utility maintenance and any maintenance for roadways, etc… when having to do maintenance, have to close one lane, creates issues and forces whole road closure) from area to Hwy 29. Worried about only having 2 narrow lanes (alt 3). Prefer 2 (still keeps lanes wide for emergency vehicles) or 4 (center turn lanes keeps lanes wides for emergency vehicles).
        - Paul says no public ROW for alternative 2 to push back into properties w/o significant ROW impacts
    - Costs:
        - Paul says Alts 2 and 4 same cost. Believes all alternative have similar cost.
        - Paul says need to consider curb, gutter, and sidewalk replacement for each alternative. This is significant cost to make sure to take into consideration in the alternative cost estimates.
    - Paul says:
        - Would take 3-5 years for PG&E to approve plan to move utilities.
        - Would also take City 5 years before have sufficient funds to implement one of these alternatives.
        - City could implement roundabout sooner than 5 years
    - Wanda says:
        - Looking at larger electric buses in fleet. Worries about alternatives that narrow the roadway (alt. 3).

        - Suggest Alternative of 1 way couplet, 1 way on 11th st and one-way on 10th Street.

3:20 pm Next Steps (W-Trans & LGC)

- Draft Plan
    - Current schedule to review draft plan – End of December
        - W-Trans wants to push this into January
- Timing/Schedule Next TAG Meeting – concurrent 11th St/Hwy 20 in-person TAG
    - Wednesday 12/4 until 3pm
        - Paul unavailable
    - Week of 12/9 - Available anytime Monday through Thursday
        - Paul available 9, 10 if have to be, 11, 16, 17, 18
        - Kevin. Tuesdays not good. Mon, wed, thurs best.
    - Week of 12/16 - Available anytime Monday through Wednesday and after 1pm on Thursday

Eleventh Street Corridor TAG Meeting, 11/18/19

Strategies to Address Project Objectives and Identified Concerns	
Issues/concerns	**Approach or Design Element**
1. Pedestrian access/bus stop access	Construct asphalt walkways (SR 29 to Central Park Ave) Eliminate sidewalk gaps (Central Park Ave to Main St) Remove shopping center turn pockets Add crosswalks parallel to 11th frontage Construct path to connect 10th from Manzanita St to Pool St Add ADA ramps and detectable warnings
2. Bicycle access/safety	*Extend bike lanes on 11th St Add buffers to existing bike lanes (SR 29 to Post Office) Establish bike boulevard/path (10th St to Pool St) Add dashed bike lane striping at shopping center driveways
3. Collision reduction at 11th/Forbes	Construct mini-roundabout
4. Vehicular traffic flow	*Redesign 11th St to include 2-way left turn lane Construct mini-roundabout
5. Speed reduction	*Narrow travel lanes Install radar speed sign Construct mini-roundabout
6. Pedestrian crossing	Install RRFB (Mellor Dr, Pool St) Add signage and pavement markings
7. Implementation within 5 years	*Implement interim approach (avoid utility relocation)

* Only applicable for select alternatives.

11th Street Corridor Study – Alternatives Comparison			
Criterion	**Alternative 2 (bike lanes on 11th)**	**Alternative 3 (sidewalks toward centerline)**	**Alternative 4 (2-way left turn lane)**
1. Pedestrian access/safety	▲	▲▲	▲
2. Bicycle access/safety (on 11th St)	▲	◯	◯
3. Bicycle access/safety (includes 10th St)	▲▲	▲	▲
4. Speed reduction	▲	▲▲	▼
5. Vehicular traffic flow	◯	◯	▲
6. Impact on adjacent property owners	▼	▲	▼
7. Cost/ease of implementation	$$	$	$$$

▲▲ = strongly positive impact; ▲ =positive impact; ◯ = no impact/neutral; ▼ = negative impact

In-Person 9th TAG Meeting Agenda

11th Street Corridor Multimodal Engineered Feasibility Study

Wednesday, December 18th, 2019 2:00pm – 3:00pm

Lakeport City Hall - Front Conference Room
255 Park Street, Lakeport

**For those unable to attend in person, please use conference # (916) 900-6610*

Dalene
Saskia
Nephelie (APC)
Paul
John Speka
Kevin
Doug
Dan Chance, Associate Planner

2:00 pm Review summary of public comments from workshops, surveys and interviews

2:15 pm Identification of preferred alternative and refinement of design concepts

- Project purpose
- Projects identified in city/county plans
  - A number of plans, county, city
- Data analysis
  - Speed survey – higher on 11th by Hwy 29 and west of Pool
  - Vehicle Counts & turning movement counts, intersection LOS, collision history (~12-14 collisions in 5 year period)
    - 8 at Forbes intersection
- Stakeholder input
- Preferred Alternative Discussion
  - Doug
    - Doesn't support bicycles on 11th East of Pool st
  - Sidewalks 1-side
    - Kevin says if one side only, then suggest S side pool to Hwy 29
      - Doug says need additional treatments if put sidewalk here
        - Barry says addressing this, narrow travel lanes to build sidewalk. Also minimizes crossing distance.
  - Sidewalks 2-sides

        - Kevin prefers, priority being pool to main
            - Paul says scope project for 5 ft both sides
        - Barry says sidewalks on both sides from Main to Central Park Blvd
        - KEVIN, DOUG, PAUL, DAN all concerned if add sidewalks and shortening crossing distance, then incentivizing more people to cross where no crosswalks (none proposed west of Mellor)
        - KEVIN, DOUG, PAUL, DAN all agreed that to make a complete project the sidewalk on the both sides should extend all the way Central Park
            - Consider adding crosswalks when Aldin roundabout constructed
- Pedestrian Crossing Signs & RRFBs
    - City likes RRFBs at Mellor, also suggest High Street
- Pedestrian-Scale Lighting
    - Lakeport has a dark skies policy in general plan. Some Councilmembers adamant about maintaining this.
    - Kevin says okay improving this at crosswalks, not everywhere
    - Lighting in 10th st extension to Pool
- Bicycle Amenities
    - Standard Bike Lanes
    - Bike Lanes w/Buffer
        - Barry says only feasible near Hwy 29
            - Kevin and Dan agree
    - Bike lanes w/WHITE dashed lines crossing major driveways
        - Easier to maintain
    - Bike lanes w/GREEN dashed lines crossing major driveways
        - Doug – says did this in Willits and paint isn't durable and fades quickly. Doesn't like this idea.
        - Kevin – City very restrictive on materials/lining can be used due to issue w/runoff in the lake. Might not be able to find anything cost-effective or eco safe that is green.
            - Paul – green paint is expensive to maintain and needs to maintain just 5 years after its been installed. Hesitant due to cost.
    - 10th St Bicycle Blvd
        - Doug Kevin Paul and Dan likes this
            - Wants to make it clear w/signage or something to make people use it

        - Barry suggests flipping stop signs onto perpendicular streets so that there aren't stop signs on 10th
        - City likes this & painted intersection, but depends on what neighborhood thinks. Can work w/arts commission
    - Mini Roundabout at Forbes
        - Everyone likes this
        - Lots of community support, after education
        - Dan says talked w/property owner here and they were on board after learning it was a mini roundabout and wouldn't require taking (?)
            - Mountable design to meet concerns w/emergency services (fire and PD okay with this)
    - Bus Stop Improvements w/lighting, waiting areas, and ped access
        - Barry says look at bus stop near safeway shopping center. Issue turning onto 11th after stop. Wanda suggested moving stop onto 11th
- Alternatives
    - 2 –
        - Doug & Paul - Think that bike lanes will be underutilized if we install bike lanes on 11th
    - 3A – most popular, but fatal flaws in terms of emergency services issue and public works station – Barry suggest eliminate from consideration
    - PREFERRED ALTERNATIVE
        - 4 – Assumes 5 ft easement behind sidewalks on both sides, requires moving overhead utility poles
            - 1 shed impacted
            - Same ROW requirements for alts 2 and 4
        - Any alternative
            - Paul says have to redo curb and gutter under any alternative since all substandard at present from pool to main
                - Paul says PGE has to relocate overhead poles if do any curb and gutter – under encroachment ordinance
        - WANT MINI ROUNDABOUT IN ALT 4
- Funding
    - ATP

        - LakeAPC can possibly provide a funding match

2:45 pm Plan Completion

- Preparation of draft plan document, including 30% concept plans for preferred alternative
- City needs 2-3 weeks to get item on City Council Agenda
- TAG review
- Approval

2:55 pm Schedule Next TAG Meeting

- Have next TAG either in person or conference call to discuss finalized designs end of January

Summary of Community Engagement & Outcomes To-Date

This summary includes a list of community engagement activities, the number of comments received during each community engagement activity, and major themes as a result of feedback received throughout the community engagement process.

Community Engagement Events, *450 Total Comments*

Community Workshops
- May 14 – 15 participants
- November 11 – 15 comment cards filled out

Wikimaps (July – October, 2019)
- 254 comments

National Night Out (August 6, 2019)
- 22 comments

Lake County Fair (August 29 – September 1, 2019)
- 56 comments

Property Owner & Business Interviews (August 30 & 31, 2019)
- 12 Businesses Interviewed - 63 comments
- 15 Property Owners Interviewed - 40 comments

Major Themes & Location-Specific Recommendations

The following includes major themes and location-specific recommendations based on the cumulative community input received throughout the project.

General Comments Along 11th St.

Active Transportation Improvements
- Improve Conditions for Pedestrian Crossing – 57 comments
- Add bike lanes– 30 comments
- Insufficient room/do not add bicycle lanes – 13 comments

11th St. From Central Park Ave to East of Safeway Shopping Center

- Active Transportation Improvements
    - Improve Conditions for Pedestrian Crossing – 39 comments
    - Ped Improvements along Corridor/Sidewalks – 10 comments
    - Suggest road too narrow to fit bicycles and motor vehicles – 6 comments

11th St. at Mellor Dr.

- Improve Conditions for Pedestrian Crossing – 19 comments
- Ped Improvements along Corridor/Sidewalks – 4 comments

11th St. at Pool St.

Active Transportation Improvements

- Ped Improvements along Corridor/Sidewalks – 10 comments
- Improve path for pedestrian access that connects 10th st to Safeway shopping center – 10 comments

11th St. East of Pool St.

Active Transportation Improvements

- Ped Improvements along Corridor/Sidewalks – 9 comments

11th St. at Tunis St.

Active Transportation Improvements

- Improve Conditions for Pedestrian Crossing – 8 comments
- Ped Improvements along Corridor/Sidewalks – 16 comments

11th St. at Forbes St.

Active Transportation Improvements

- Improve Conditions for Pedestrian Crossing – 15 comments

11th St. at Brush St.

Active Transportation Improvements

- Improve Conditions for Pedestrian Crossing – 24 comments

11th St. at High St.

Active Transportation Improvements

- Improve Conditions for Pedestrian Crossing – 8 comments
- Ped Improvements along Corridor/Sidewalks – 5 comments

11th St. at North St.

Active Transportation Improvements

- Ped Improvements along Corridor/Sidewalks – 6 comments

11th St. at Main St.

Active Transportation Improvements

- Improve Conditions for Pedestrian Crossing – 19 comments
- Roundabout or other circulation improvements – 14 comments
- Ped Improvements along Corridor/Sidewalks – 5 comments

Clearlake Ave. From Mellor Rd. to Hartley St.

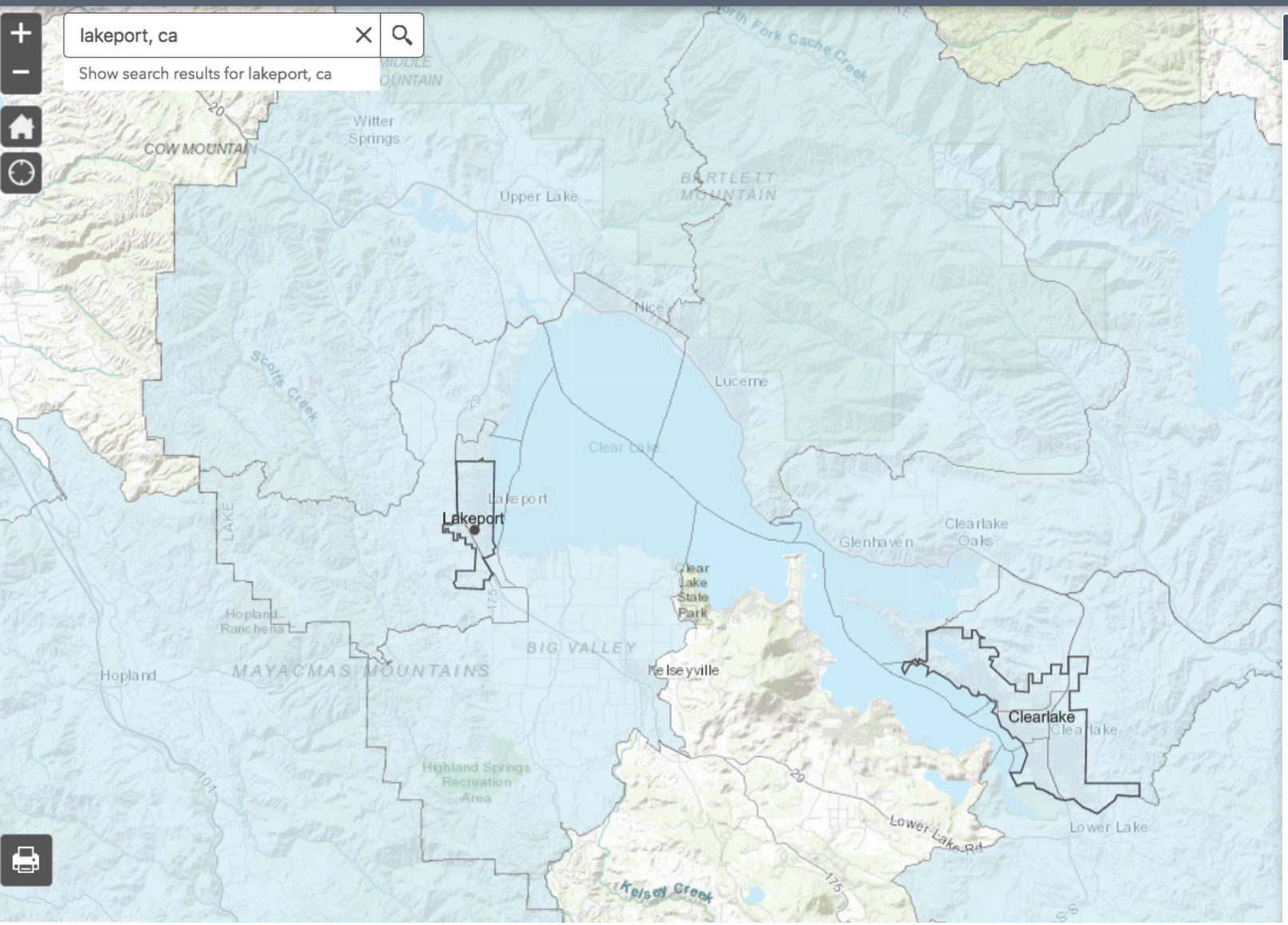
There is no clear consensus on the type of improvements desired, however, there were 34 comments on this area total with the following breakdown in type of improvement specified:

- Improve Conditions for Pedestrian Crossing – 11 comments
- Ped Improvements along Corridor/Sidewalks – 6 comments

Disadvantaged Community Criteria

arcgis.com/apps/webappviewer/index.html?id=ba698dc09c824da1b1ab3d0dd7f5bd54

CalEnviroScreen 3.0 and AB 1550 Mapping Tool for TCC



Legend

Incorporated Places

CalEnviroScreen 3.0 Top 5%

CalEnviroScreen 3.0 Top 25%

AB1550 Low Income Communities

low_income_only

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF HOUSING POLICY DEVELOPMENT
2020 W. El Camino Avenue, Suite 500
Sacramento, CA 95833
(916) 263-2911 / FAX (916) 263-7453
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June 9, 2017

MEMORANDUM FOR: Interested Parties

FROM: Jennifer Seeger, Assistant Deputy Director
Division of Housing Policy Development

SUBJECT: **State Income Limits for 2017**

Attached are briefing materials and State Income Limits for 2017 that are now in effect and replace State 2016 Income Limits. Income limits reflect updated median income and household income levels for extremely low-, very low-, low-, and moderate-income households for California's 58 counties. The State's Official 2017 Income Limits can be downloaded on the Department of Housing and Community Development's (Department) website at http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml.

State Income Limits apply to designated programs and are used to determine applicant eligibility (based on level of household income) and calculate affordable housing cost for applicable housing assistance programs. Note that use of State Income Limits is subject to a particular program's definition of income, family, family size, effective dates, and other factors. In addition, definitions applicable to income categories, criteria, and geographic areas sometimes differ depending on funding source and program resulting in some programs using other income limits.

The Briefing Materials (next page) explain California's 2017 Income Limits and were updated based on: (1) changes to income limits the U.S. Department of Housing and Urban Development (HUD) released on April 14, 2017 for its Public Housing and Section 8 Housing Choice Voucher Program and, (2) adjustments the Department made based on State statutory provisions and its 2013 Hold Harmless (HH) Policy.

Since 2013, the Department's HH Policy has held State Income Limits harmless from any decreases in household income category and median income levels that HUD, since 2010, began applying to its Section 8 Income Limits after eliminating its longstanding HH Policy. HUD determined its HH Policy was no longer necessary due to federal law changes in 2008 (Public Law 110-98) prohibiting rent decreases in federal or private activity bond funded projects. For questions concerning State Income Limits, please contact Department staff at (916) 263-2911.

Overview

Department of Housing and Community Development (HCD), pursuant to Health & Safety Code Section 50093(c), must file updates to its State Income Limits with the Office of Administrative Law. HCD annually updates these income limits based on Federal Department of Housing and Urban Development (HUD) revisions to its Public Housing and Section 8 Housing Choice Voucher Program that HUD released on April 14, 2017.

HUD annually updates its Section 8 Income Limits to reflect changes in area and family median income levels and income levels for different size households and income categories for extremely low, very low, and low-income households. HCD, pursuant to statutory provisions, makes the following additional revisions: (1) If necessary, increase a county's area median income to equal California's non-metropolitan median income, (2) adjusts area median income and household income category levels to not result in any decrease for any year after 2009 pursuant to HCD's February 2013 HH Policy. HCD's HH Policy was implemented to replace HUD's HH Policy, discontinued in 2009, to not decrease income category and area median income levels below a prior year's highest level and, (3) determines income limits for California's moderate-income category.

Following are brief summaries of different technical methodologies used by HUD and HCD in updating income limits for different household income categories.

HUD Methodology

HUD uses 40th percentile rents in 50th percentile fair market rent (FMR) areas, to calculate high housing cost areas. The purpose is to prevent fluctuations in "Low-Income Housing Tax Credit Difficult Development Area" determinations that result solely from high housing cost income limit fluctuations as areas go in and out of the 50th percentile FMR program.

Extremely Low-Income

The Extremely Low-Income limits is calculated as 60 percent of the very low-income limits and compared to the most recent update to the Federal Poverty Guidelines. If the poverty guidelines are higher, those values are chosen. The value is capped at the Very Low-Income level.

Very Low-Income

The maximum Very Low-Income limit typically reflects 50 percent of median family income (MFI). HUD's MFI figure generally equals two times HUD's 4-person very low-income limit, except when HUD applies adjustments. HUD may adjust income limits for an area or county to account for conditions that warrant special considerations, referred to as exceptions.

Low-Income

In general, maximum income for low-income households reflects 80 percent of the MFI level. Most low-income limits represent the higher level of: (1) 80 percent of MFI or, (2) 80 percent of State non-metropolitan median family income. However, due to adjustments that HUD sometimes makes, strictly calculating low-income limits as

80 percent of MFI could produce unintended anomalies inconsistent with statutory intent. HUD's briefing materials specify that, with some exceptions, the low-income limit reflect 160 percent of the very low-income limit. HUD may apply exceptions to areas with unusually high or low housing-costs-to-income relationships. An example of the result from HUD applying an exception to an area could be an increase to the low-income limit without an increase to the very low-income limit. In sum, an 80 percent limit cannot be assumed to equal 80 percent of the AMI or 4-person median income limit nor 160 percent of the very low-income limit due to adjustments HUD may make.

Median Family Income/Area Median Income

HUD references and estimates the MFI in calculating its income limits. California law and income limits reference Area Median Income (AMI) that, pursuant to Health & Safety Code 50093(c), means the median family income of a geographic area estimated by HUD for its Section 8 Program.

HUD's calculations of Section 8 Income Limits begin with the production of MFI estimates. FY 2017 MFI estimates use 5-year survey data (American Community Survey (ACS) 2010-2014 augmented by 2014, 1-year ACS. HUD then adjusts the survey data to account for anticipated income growth by applying the Consumer Price Index (CPI) inflation forecast (from federal FY mid-2014 through mid-2017) that the United States Congressional Budget Office published in January 2017. HUD's determination of MFI is used to calculate very low-income limits that are then used as the basis to calculate income limits for other income categories.

Adjustment Increases

HUD may apply exceptions to areas with unusually high or low family income, uneven housing-cost-to-income relationships or historical exceptions. Very low-income limits are used as the base to calculate extremely low and low-income limits. The following reflects HUD's explanations of adjustment increases contained in HUD's FY 2017 Income Limits Briefing Material:

HUD applies an increase, if the four-person very low-income limit would otherwise be less than the amount at which 35 percent of it equals 85 percent of the annualized two-bedroom Section 8 FMR (or 40th percentile rent in 50th percentile FMR areas). The purpose is to increase the income limit for areas where rental-housing costs are unusually high in relation to the median income.

HUD applies an increase to the four-person income limit to equal the State non-metropolitan median family income level. In addition, HUD restricts adjustments so income limits do not increase more than five percent of the previous year's very low-income figure OR twice the increase in the national MFI, whichever is greater. This adjustment does not apply to the extremely low-income limits.

Income Limit Calculations for Household Sizes Other Than 4-Persons

Income limits for all income categories are adjusted for household size so that larger households have higher income limits than smaller households. For all income categories, income limits for household sizes other than 4-persons are calculated

using the 4-person income limit as the base. HUD's adjustments use the following percentages, with results rounded to the nearest $50 increment:

Number of Persons in Household:	1	2	3	4	5	6	7	8
Adjustments:	70%	80%	90%	Base	108%	116%	124%	132%

Income Limit Calculations for Household Sizes Greater Than 8-Persons

For households of more than eight persons, refer to the formula at the end of the table for 2017 Income Limits. Due to the adjustments HUD can make to income limits in a given county, table data should be the only method used to determine program eligibility. Arithmetic calculations are applicable only when a household has more than eight members.

Reference: FY 2017 HUD Income Limits Transmittal Notice PDR-2017-02 issued April 14, 2017 and HUD Income Limits Briefing Material dated March 21, 2017, both of which can be found at https://www.huduser.gov/portal/datasets/il.html.

HCD Methodology

State law (Health & Safety Code Section 50093, et. seq.) prescribes the methodology HCD uses to update its Official State Income Limits. HCD utilizes HUD's Section 8 Housing Choice Voucher Program Income Limits. HCD's methodology involves: (1) increasing counties' smaller median incomes established by HUD to equal California's non-metropolitan median income determined by HUD, (2) applying HCD's HH Policy, in effect since 2013, to not allow decreases in area median income levels and household income category levels, and (3) determining income limit levels applicable to California's moderate-income households defined by State law as household income not exceeding 120 percent of county area median income.

Area Median Income and Income Category Levels

HCD, pursuant to federal and State law and its HH Policy, adjusts median income levels determined by HUD for a metropolitan county (county included in a metropolitan statistical area) and for a non-metropolitan county (county not included in a metropolitan statistical area). HUD, pursuant to Federal law (Section 567 of the 1987 Housing and Community Development Act) and policy, requires adjusting any county's smaller median income to equal HUD's higher determined State non-metropolitan median income ($59,900). Next, HCD, for all counties, applies its HH policy to ensure area median income and income limits for all household income categories do not fall below any level achieved in the prior year.

Moderate-Income Levels

HCD is responsible for establishing California's moderate-income limit levels. After calculating the 4-person area median income (AMI) level as previously described, HCD sets the maximum moderate-income limit to equal 120 percent of the county's AMI.

Applicability of California's Official State Income Limits

Applicability of these State Income Limits is subject to particular programs as program definitions of such factors as income, family, and household size, etc. vary. Some programs,

such as Multifamily Tax Subsidy Projects (MTSPs), use different income limits. For MTSPs, separate income limits apply per provisions of the Housing and Economic Recovery Act (HERA) of 2008 (Public Law 110-289). Income limits for MTSPs are used to determine qualification levels as well as set maximum rental rates for projects funded with tax credits authorized under Section 42 of the Internal Revenue Code (Code). In addition, MTSP income limits apply to projects financed with tax-exempt housing bonds issued to provide qualified residential rental development under Section 142 of the Code. These income limits are available at http://www.huduser.org/datasets/mtsp.html.

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Alameda County	Extremely Low	21950	25050	28200	31300	33850	36350	38850	41350
4-Person	Very Low Income	36550	41750	46950	52150	56350	60500	64700	68850
Area Median Income:	Low Income	56300	64350	72400	80400	86850	93300	99700	106150
$97,400	**Median Income**	68200	77900	87650	**97400**	105200	113000	120800	128550
	Moderate Income	81850	93500	105200	116900	126250	135600	144950	154300
Alpine County	Extremely Low	18150	20750	23350	25900	28780	32960	37140	41320
4-Person	Very Low Income	30250	34600	38900	43200	46700	50150	53600	57050
Area Median Income:	Low Income	46100	52650	59250	65800	71100	76350	81600	86900
$94,900	**Median Income**	66450	75900	85400	**94900**	102500	110100	117700	125250
	Moderate Income	79750	91100	102500	113900	123000	132100	141250	150350
Amador County	Extremely Low	15200	17400	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	25350	28950	32550	36150	39050	41950	44850	47750
Area Median Income:	Low Income	40500	46300	52100	57850	62500	67150	71750	76400
$72,300	**Median Income**	50600	57850	65050	**72300**	78100	83850	89650	95450
	Moderate Income	60700	69400	78100	86750	93700	100650	107550	114500
Butte County	Extremely Low	13200	16240	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	21950	25050	28200	31300	33850	36350	38850	41350
Area Median Income:	Low Income	35100	40100	45100	50100	54150	58150	62150	66150
$62,600	**Median Income**	43800	50100	56350	**62600**	67600	72600	77600	82650
	Moderate Income	52550	60100	67600	75100	81100	87100	93100	99150
Calaveras County	Extremely Low	14750	16850	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	24600	28100	31600	35100	37950	40750	43550	46350
Area Median Income:	Low Income	39350	44950	50550	56150	60650	65150	69650	74150
$70,200	**Median Income**	49150	56150	63200	**70200**	75800	81450	87050	92650
	Moderate Income	58950	67400	75850	84250	91000	97750	104450	111200
Colusa County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Contra Costa County	Extremely Low	21950	25050	28200	31300	33850	36350	38850	41350
4-Person	Very Low Income	36550	41750	46950	52150	56350	60500	64700	68850
Area Median Income:	Low Income	56300	64350	72400	80400	86850	93300	99700	106150
$97,400	**Median Income**	68200	77900	87650	**97400**	105200	113000	120800	128550
	Moderate Income	81850	93500	105200	116900	126250	135600	144950	154300
Del Norte County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
El Dorado County	Extremely Low	16000	18300	20600	24600	28780	32960	37140	41320
4-Person	Very Low Income	26650	30450	34250	38050	41100	44150	47200	50250
Area Median Income:	Low Income	42650	48750	54850	60900	65800	70650	75550	80400
$76,100	**Median Income**	53250	60900	68500	**76100**	82200	88300	94350	100450
	Moderate Income	63900	73050	82150	91300	98600	105900	113200	120500
Fresno County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Glenn County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Humboldt County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Imperial County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Inyo County	Extremely Low	15150	17300	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	25200	28800	32400	36000	38900	41800	44650	47550
Area Median Income:	Low Income	40350	46100	51850	57600	62250	66850	71450	76050
$72,000	**Median Income**	50400	57600	64800	**72000**	77750	83500	89300	95050
	Moderate Income	60500	69100	77750	86400	93300	100200	107150	114050
Kern County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Kings County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Lake County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Lassen County	Extremely Low	14600	16650	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	24300	27800	31250	34700	37500	40300	43050	45850
Area Median Income:	Low Income	38850	44400	49950	55500	59950	64400	68850	73300
$69,400	**Median Income**	48600	55500	62450	**69400**	74950	80500	86050	91600
	Moderate Income	58300	66650	74950	83300	89950	96650	103300	109950
Los Angeles County	Extremely Low	18950	21650	24350	27050	29250	32960	37140	41320
4-Person	Very Low Income	31550	36050	40550	45050	48700	52300	55900	59500
Area Median Income:	Low Income *	50500	57700	64900	72100	77900	83650	89450	95200
$64,800	**Median Income**	45350	51850	58300	**64800**	70000	75150	80350	85550
	Moderate Income	54450	62200	70000	77750	83950	90200	96400	102650
*Low income exceeding median income is due to HUD adjustments to the Very Low-Income income limit to account for high housing costs.									
Madera County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Marin County	Extremely Low	27650	31600	35550	39500	42700	45850	49000	52150
4-Person	Very Low Income	46100	52650	59250	65800	71100	76350	81600	86900
Area Median Income:	Low Income	73750	84300	94850	105350	113800	122250	130650	139100
$115,300	**Median Income**	80700	92250	103750	**115300**	124500	133750	142950	152200
	Moderate Income	96850	110700	124500	138350	149400	160500	171550	182600
Mariposa County	Extremely Low	13800	16240	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	22950	26200	29500	32750	35400	38000	40650	43250
Area Median Income:	Low Income	36700	41950	47200	52400	56600	60800	65000	69200
$65,500	**Median Income**	45850	52400	58950	**65500**	70750	76000	81200	86450
	Moderate Income	55000	62900	70750	78600	84900	91200	97450	103750
Mendocino County	Extremely Low	12800	16240	20420	24600	28780	32960	37140	40200
4-Person	Very Low Income	21350	24400	27450	30450	32900	35350	37800	40200
Area Median Income:	Low Income	34100	39000	43850	48700	52600	56500	60400	64300
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Merced County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Modoc County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Mono County	Extremely Low	17050	19500	21950	24600	28780	32960	37140	41320
4-Person	Very Low Income	28450	32500	36550	40600	43850	47100	50350	53600
Area Median Income:	Low Income	44750	51150	57550	63900	69050	74150	79250	84350
$81,200	**Median Income**	56850	64950	73100	**81200**	87700	94200	100700	107200
	Moderate Income	68200	77950	87700	97450	105250	113050	120850	128650
Monterey County	Extremely Low	17100	19550	22000	24600	28780	32960	37140	41320
4-Person	Very Low Income	28500	32600	36650	40700	44000	47250	50500	53750
Area Median Income:	Low Income	45600	52100	58600	65100	70350	75550	80750	85950
$68,700	**Median Income**	48100	54950	61850	**68700**	74200	79700	85200	90700
	Moderate Income	57700	65950	74200	82450	89050	95650	102250	108850
Napa County	Extremely Low	19600	22400	25200	27950	30200	32960	37140	41320
4-Person	Very Low Income	32600	37250	41900	46550	50300	54000	57750	61450
Area Median Income:	Low Income	52150	59600	67050	74500	80500	86450	92400	98350
$91,000	**Median Income**	63700	72800	81900	**91000**	98300	105550	112850	120100
	Moderate Income	76450	87350	98300	109200	117950	126650	135400	144150
Nevada County	Extremely Low	16100	18400	20700	24600	28780	32960	37140	41320
4-Person	Very Low Income	26850	30700	34550	38350	41450	44500	47600	50650
Area Median Income:	Low Income	42950	49050	55200	61300	66250	71150	76050	80950
$73,500	**Median Income**	51450	58800	66150	**73500**	79400	85250	91150	97000
	Moderate Income	61750	70550	79400	88200	95250	102300	109350	116400
Orange County	Extremely Low	21950	25050	28200	31300	33850	36350	38850	41350
4-Person	Very Low Income	36550	41750	46950	52150	56350	60500	64700	68850
Area Median Income:	Low Income	58450	66800	75150	83450	90150	96850	103500	110200
$88,000	**Median Income**	61600	70400	79200	**88000**	95050	102100	109100	116150
	Moderate Income	73900	84500	95050	105600	114050	122500	130950	139400
Placer County	Extremely Low	16000	18300	20600	24600	28780	32960	37140	41320
4-Person	Very Low Income	26650	30450	34250	38050	41100	44150	47200	50250
Area Median Income:	Low Income	42650	48750	54850	60900	65800	70650	75550	80400
$76,100	**Median Income**	53250	60900	68500	**76100**	82200	88300	94350	100450
	Moderate Income	63900	73050	82150	91300	98600	105900	113200	120500
Plumas County	Extremely Low	13200	16240	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	21950	25050	28200	31300	33850	36350	38850	41350
Area Median Income:	Low Income	35100	40100	45100	50100	54150	58150	62150	66150
$62,600	**Median Income**	43800	50100	56350	**62600**	67600	72600	77600	82650
	Moderate Income	52550	60100	67600	75100	81100	87100	93100	99150

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Riverside County	Extremely Low	14100	16240	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	23450	26800	30150	33500	36200	38900	41550	44250
Area Median Income:	Low Income	37550	42900	48250	53600	57900	62200	66500	70800
$65,000	**Median Income**	45500	52000	58500	**65000**	70200	75400	80600	85800
	Moderate Income	54600	62400	70200	78000	84250	90500	96700	102950
Sacramento County	Extremely Low	16000	18300	20600	24600	28780	32960	37140	41320
4-Person	Very Low Income	26650	30450	34250	38050	41100	44150	47200	50250
Area Median Income:	Low Income	42650	48750	54850	60900	65800	70650	75550	80400
$76,100	**Median Income**	53250	60900	68500	**76100**	82200	88300	94350	100450
	Moderate Income	63900	73050	82150	91300	98600	105900	113200	120500
San Benito County	Extremely Low	17600	20100	22600	25100	28780	32960	37140	41320
4-Person	Very Low Income	29300	33450	37650	41800	45150	48500	51850	55200
Area Median Income:	Low Income	46850	53550	60250	66900	72300	77650	83000	88350
$81,100	**Median Income**	56750	64900	73000	**81100**	87600	94100	100550	107050
	Moderate Income	68100	77850	87550	97300	105100	112850	120650	128450
San Bernardino County	Extremely Low	14100	16240	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	23450	26800	30150	33500	36200	38900	41550	44250
Area Median Income:	Low Income	37550	42900	48250	53600	57900	62200	66500	70800
$65,000	**Median Income**	45500	52000	58500	**65000**	70200	75400	80600	85800
	Moderate Income	54600	62400	70200	78000	84250	90500	96700	102950
San Diego County	Extremely Low	19100	21800	24550	27250	29450	32960	37140	41320
4-Person	Very Low Income	31850	36400	40950	45450	49100	52750	56400	60000
Area Median Income:	Low Income	50950	58200	65500	72750	78600	84400	90250	96050
$79,300	**Median Income**	55500	63450	71350	**79300**	85650	92000	98350	104700
	Moderate Income	66600	76100	85650	95150	102750	110350	118000	125600
San Francisco County	Extremely Low	27650	31600	35550	39500	42700	45850	49000	52150
4-Person	Very Low Income	46100	52650	59250	65800	71100	76350	81600	86900
Area Median Income:	Low Income	73750	84300	94850	105350	113800	122250	130650	139100
$115,300	**Median Income**	80700	92250	103750	**115300**	124500	133750	142950	152200
	Moderate Income	96850	110700	124500	138350	149400	160500	171550	182600
San Joaquin County	Extremely Low	13950	16240	20420	24600	28780	32960	37140	40350
4-Person	Very Low Income	23250	26550	29850	33150	35850	38500	41150	43800
Area Median Income:	Low Income	37150	42450	47750	53050	57300	61550	65800	70050
$66,300	**Median Income**	46400	53050	59650	**66300**	71600	76900	82200	87500
	Moderate Income	55700	63650	71600	79550	85900	92300	98650	105000
San Luis Obispo County	Extremely Low	17150	19600	22050	24600	28780	32960	37140	41320
4-Person	Very Low Income	28600	32700	36800	40850	44150	47400	50700	53950
Area Median Income:	Low Income	45750	52300	58850	65350	70600	75850	81050	86300
$83,200	**Median Income**	58250	66550	74900	**83200**	89850	96500	103150	109800
	Moderate Income	69900	79900	89850	99850	107850	115850	123800	131800

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
San Mateo County	Extremely Low	27650	31600	35550	39500	42700	45850	49000	52150
4-Person	Very Low Income	46100	52650	59250	65800	71100	76350	81600	86900
Area Median Income:	Low Income	73750	84300	94850	105350	113800	122250	130650	139100
$115,300	**Median Income**	80700	92250	103750	**115300**	124500	133750	142950	152200
	Moderate Income	96850	110700	124500	138350	149400	160500	171550	182600
Santa Barbara County	Extremely Low	18900	21600	24300	27000	29200	32960	37140	41320
4-Person	Very Low Income	31500	36000	40500	45000	48600	52200	55800	59400
Area Median Income:	Low Income	50450	57650	64850	72050	77850	83600	89350	95150
$77,100	**Median Income**	53950	61700	69400	**77100**	83250	89450	95600	101750
	Moderate Income	64750	74000	83250	92500	99900	107300	114700	122100
Santa Clara County	Extremely Low	25100	28650	32250	35800	38700	41550	44400	47300
4-Person	Very Low Income	41800	47800	53750	59700	64500	69300	74050	78850
Area Median Income:	Low Income	59400	67900	76400	84900	91650	98450	105250	112050
$113,300	**Median Income**	79300	90650	101950	**113300**	122350	131450	140500	149550
	Moderate Income	95150	108750	122350	135950	146850	157700	168600	179450
Santa Cruz County	Extremely Low	21200	24200	27250	30250	32700	35100	37550	41320
4-Person	Very Low Income	35300	40350	45400	50400	54450	58500	62500	66550
Area Median Income:	Low Income	56500	64550	72600	80650	87150	93600	100050	106500
$87,000	**Median Income**	60900	69600	78300	**87000**	93950	100900	107900	114850
	Moderate Income	73100	83500	93950	104400	112750	121100	129450	137800
Shasta County	Extremely Low	13000	16240	20420	24600	28780	32960	37140	40800
4-Person	Very Low Income	21650	24750	27850	30900	33400	35850	38350	40800
Area Median Income:	Low Income	34650	39600	44550	49450	53450	57400	61350	65300
$61,800	**Median Income**	43250	49450	55600	**61800**	66750	71700	76650	81600
	Moderate Income	51900	59300	66750	74150	80100	86000	91950	97900
Sierra County	Extremely Low	14800	16900	20420	24600	28780	32960	37140	41320
4-Person	Very Low Income	24650	28150	31650	35150	38000	40800	43600	46400
Area Median Income:	Low Income	39400	45000	50650	56250	60750	65250	69750	74250
$71,800	**Median Income**	50250	57450	64600	**71800**	77550	83300	89050	94800
	Moderate Income	60300	68900	77550	86150	93050	99950	106850	113700
Siskiyou County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Solano County	Extremely Low	17400	19850	22350	24800	28780	32960	37140	41320
4-Person	Very Low Income	28950	33050	37200	41300	44650	47950	51250	54550
Area Median Income:	Low Income	45500	52000	58500	65000	70200	75400	80600	85800
$82,600	**Median Income**	57800	66100	74350	**82600**	89200	95800	102400	109050
	Moderate Income	69350	79300	89200	99100	107050	114950	122900	130800

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Sonoma County	Extremely Low	18550	21200	23850	26450	28780	32960	37140	41320
4-Person	Very Low Income	30850	35250	39650	44050	47600	51100	54650	58150
Area Median Income:	Low Income	49350	56400	63450	70500	76150	81800	87450	93100
$83,900	**Median Income**	58750	67100	75500	**83900**	90600	97300	104050	110750
	Moderate Income	70500	80550	90650	100700	108750	116800	124850	132900
Stanislaus County	Extremely Low	13050	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21700	24800	27900	31000	33500	36000	38450	40950
Area Median Income:	Low Income	34750	39700	44650	49600	53600	57550	61550	65500
$62,000	**Median Income**	43400	49600	55800	**62000**	66950	71900	76900	81850
	Moderate Income	52100	59500	66950	74400	80350	86300	92250	98200
Sutter County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Tehama County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Trinity County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Tulare County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900
Tuolumne County	Extremely Low	13950	16240	20420	24600	28780	32960	37140	40890
4-Person	Very Low Income	23250	26600	29900	33200	35900	38550	41200	43850
Area Median Income:	Low Income	37200	42500	47800	53100	57350	61600	65850	70100
$66,700	**Median Income**	46700	53350	60050	**66700**	72050	77350	82700	88050
	Moderate Income	56050	64050	72050	80050	86450	92850	99250	105650
Ventura County	Extremely Low	21000	24000	27000	29950	32350	34750	37150	41320
4-Person	Very Low Income	35000	40000	45000	49950	53950	57950	61950	65950
Area Median Income:	Low Income	55950	63950	71950	79900	86300	92700	99100	105500
$89,300	**Median Income**	62500	71450	80350	**89300**	96450	103600	110750	117900
	Moderate Income	75000	85700	96450	107150	115700	124300	132850	141450

County	Income Category	Number of Persons in Household							
		1	2	3	4	5	6	7	8
Last page instructs how to use income limits to determine applicant eligibility and calculate affordable housing cost and rent									
Yolo County	Extremely Low	16150	18450	20750	24600	28780	32960	37140	41320
4-Person	Very Low Income	26950	30800	34650	38450	41550	44650	47700	50800
Area Median Income:	Low Income	43050	49200	55350	61500	66450	71350	76300	81200
$76,900	**Median Income**	53850	61500	69200	**76900**	83050	89200	95350	101500
	Moderate Income	64600	73850	83050	92300	99700	107050	114450	121850
Yuba County	Extremely Low	12600	16240	20420	24600	28780	32960	37140	39550
4-Person	Very Low Income	21000	24000	27000	29950	32350	34750	37150	39550
Area Median Income:	Low Income	33550	38350	43150	47900	51750	55600	59400	63250
$59,900	**Median Income**	41950	47900	53900	**59900**	64700	69500	74300	79050
	Moderate Income	50350	57500	64700	71900	77650	83400	89150	94900

Instructions:

Eligibility Determination:

Use household size income category figures in this chart. Determine eligibililty based on actual number of persons in household and total of gross income for all persons.

Determination of Income Limit for Households Larger than Eight Persons:

Per person (PP) adjustment above 8: (1) multiply 4-person income limit by eight percent (8%), (2) multiply result by number of persons in excess of eight, (3) add the amount to the 8-person income limit, and (4) round to the nearest $50.

Yuba County

E X A M P L E	4 persons	8% PP Adj	+ 8 persons	=9 persons	8 person +	8% Adj x 2	=10 persons
Extremely Low	24,600	1968	39,550	41,500	39,550	3936	43,500
Very Low Income	29,950	2396	39,550	41,950	39,550	4792	44,350
Lower Income	47,900	3832	63,250	67,100	63,250	7664	70,900
Moderate Income	71,900	5752	94,900	100,650	94,900	11504	106,400

Calculation of Housing Cost and Rent:

Refer to Heath & Safety Code Sections 50052.5 and 50053. Use benchmark household size and multiply against applicable percentages defined in H&SC using Area Median Income identified in this chart.

Determination of Household Size:

For projects with no federal assistance, household size is set at number of bedrooms in unit plus one.

For projects with federal assistance, household size may be set by multiplying 1.5 against the number of bedrooms in unit.

HUD Income Limits release: 4/17/2017

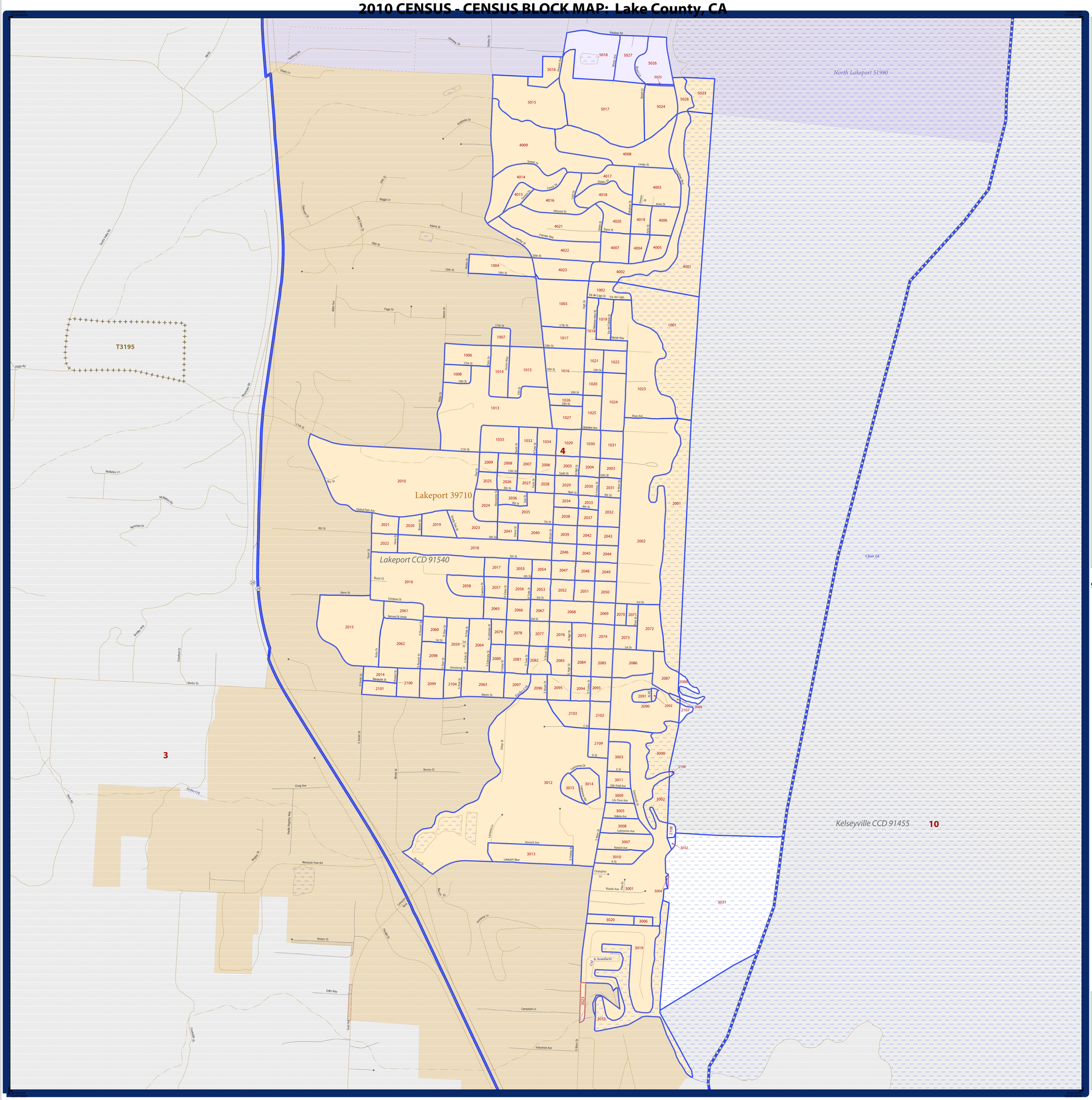
HUD FY 2017 California median incomes:

State median income: $73,300

Metropolitan county median income: $73,600

Non-metropolitan county median income: $59,900

Note: Authority cited: Section 50093, Health and Safety Code. Reference: Sections 50079.5, 50093, 50105 and 50106, Health and Safety Code



2010 CENSUS - CENSUS BLOCK MAP: Lake County, CA

LEGEND

SYMBOL DESCRIPTION	SYMBOL	LABEL STYLE
International	☆ ☆ ☆ ☆ ☆ ☆	CANADA
Federal American Indian Reservation	★ ★ ★ ★ ★ ★	L'ANSE RESVN 1880
Off-Reservation Trust Land, Hawaiian Home Land	✦ ✦ ✦ ✦ ✦ ✦	T1880
Oklahoma Tribal Statistical Area, Alaska Native Village Statistical Area, Tribal Designated Statistical Area	◆ ◆ ◆ ◆ ◆ ◆	*KAW OTSA 5690*
American Indian Tribal Subdivision	⬟ ⬟ ⬟ ⬟ ⬟ ⬟ ⬟	EAGLE NEST DIST 200
State American Indian Reservation	▰ ▰ ▰ ▰ ▰ ▰	Tama Resvn 9400
State Designated Tribal Statistical Area	◆ ◆ ◆ ◆ ◆ ◆	*Lumbee SDTSA 9815*
Alaska Native Regional Corporation	▼ ▲ ▼ ▲ ▼ ▲ ▼	***NANA ANRC 52120***
State (or statistically equivalent entity)	▱ ▱ ▱ ▱ ▱ ▱	NEW YORK 36
County (or statistically equivalent entity)	▢ ▢ ▢ ▢ ▢ ▢	MONTGOMERY 031
Minor Civil Division (MCD) 1	⬠ ⬠ ⬠ ⬠ ⬠ ⬠	Bristol town 07485
Census County Division (CCD), Census Subarea (CSA), Unorganized Territory (UT)	⬠ ⬠ ⬠ ⬠ ⬠ ⬠	*Hanna CCD 91650*
Consolidated City	○ ○ ○ ○ ○ ○	MILFORD 47500
Incorporated Place 1,2	▨	Davis 18100
Census Designated Place (CDP) 2	▨	*Incline Village 35100*
Census Tract	▬	**33.07**
Census Block 3	▬	3012

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate	3	Geographic Offset or Corridor	▨
U.S. Highway	2	Water Body	*Pleasant Lake*
State Highway	4	Swamp, Marsh, or Gravel Pit/Quarry	*Okefenokee Swamp*
Other Road	Russell St	Glacier	*Bering Glacier*
Cul-de-sac	—●	Military	Fort Belvoir
Circle	—○	National or State Park, Forest, or Recreation Area	Yosemite NP
4WD Trail, Stairway, Alley, Walkway, or Ferry	— — — —	Airport	✈ Oxnard Arprt
Railroad	Southern RR	Selected Mountain Peaks	▲ *Mt Shasta*
Pipeline or Power Line	-▪-▪-▪-	Island Name	*DEER IS*
Ridge or Fence	— · — · —	Inset Area	A
Property Line	- - - - - -	Outside Subject Area	▨
Perennial Stream	*Tumbling Cr*		
Intermittent Stream	*Piney Cr*		
Nonvisible Boundary or Feature Not Elsewhere Classified	··········		

Where state, county, and/or MCD/CCD boundaries coincide, the map shows the boundary symbol for only the highest-ranking of these boundaries. Where American Indian reservation and American Indian tribal subdivision boundaries coincide, the map shows only the American Indian reservation boundaries. Where Oklahoma tribal statistical area boundaries and American Indian tribal subdivision boundaries coincide, the map shows only the Oklahoma tribal statistical area boundaries.

1 A ' ° ' following an MCD name denotes a false MCD. A ' ° ' following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

2 Place label color correlates to the place fill color.

3 A ' * ' following a block number indicates that the block number is repeated elsewhere in the block.

OFF-RESERVATION TRUST LAND NAMES

T3195 Robinson

Location of County within State

Sheet Location within Entity

All legal boundaries and names are as of January 1, 2010. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census (reference date: January 1, 2010)
Data Source: U.S. Census Bureau's MAF/TIGER database (TAB10ST06)
Map Created by Geography Division: April 02, 2011

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic
Datum: NAD 83
Spheroid: GRS 80
1st Standard Parallel: 34 06 27
2nd Standard Parallel: 40 25 20
Central Meridian: -119 18 20
Latitude of Projection's Origin: 32 31 43
False Easting: 0
False Northing: 0

The plotted map scale is 1:5728

USCENSUSBUREAU

INSET SHEET C1

Total Sheets: 44
- Index Sheets: 1
- Parent Sheets: 31
- Inset Sheets: 12

NAME: Lake County (033)
ENTITY TYPE: County or statistically equivalent entity
ST: California (06)

Geographic Unit (GU) Block Map Series
2010 CENSUS BLOCK MAP (INSET) - County
210006033C01

B25010

AVERAGE HOUSEHOLD SIZE OF OCCUPIED HOUSING UNITS BY TENURE
Universe: Occupied housing units
2013-2017 American Community Survey 5-Year Estimates

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Versions of this table are available for the following years:

2017
2016
2015
2014
2013
2012
2011
2010
2009

1 - 3 of 3

	Census Tract 4, Lake County, California	
	Estimate	Margin of Error
Total:	2.15	+/-0.19
Owner occupied	2.19	+/-0.25
Renter occupied	2.09	+/-0.29

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:
An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
An '******' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
An '(X)' means that the estimate is not applicable or not available.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing

B19013

MEDIAN HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)
Universe: Households
2013-2017 American Community Survey 5-Year Estimates

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Versions of this table are available for the following years:

2017
2016
2015
2014
2013
2012
2011
2010
2009

1 - 1 of 1

	Census Tract 4, Lake County, California	
	Estimate	Margin of Error
Median household income in the past 12 months (in 2017 inflation-adjusted dollars)	40,558	+/-13,983

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:
An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
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An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
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An '(X)' means that the estimate is not applicable or not available.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

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Appendix H

Concept Plan

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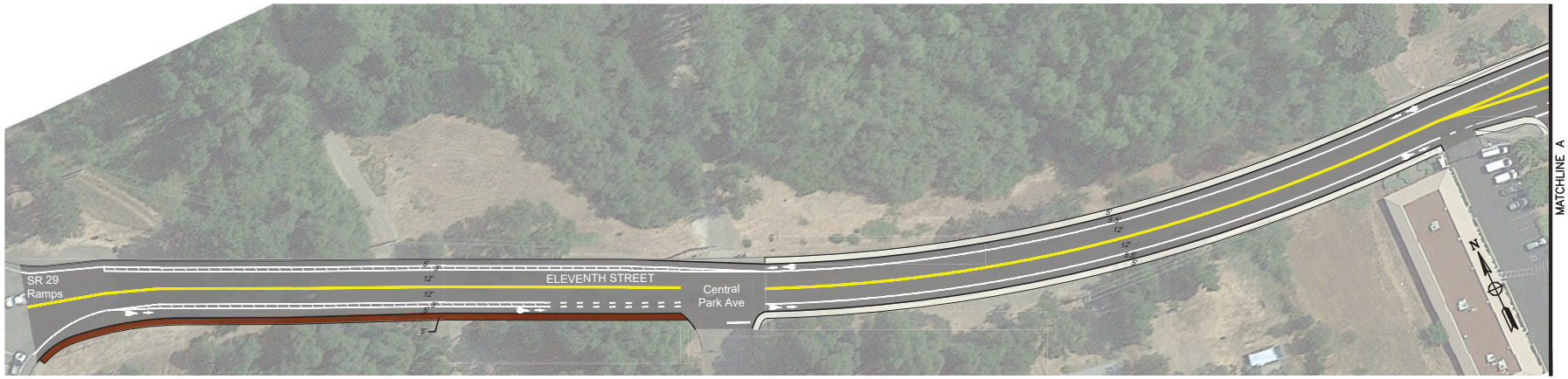
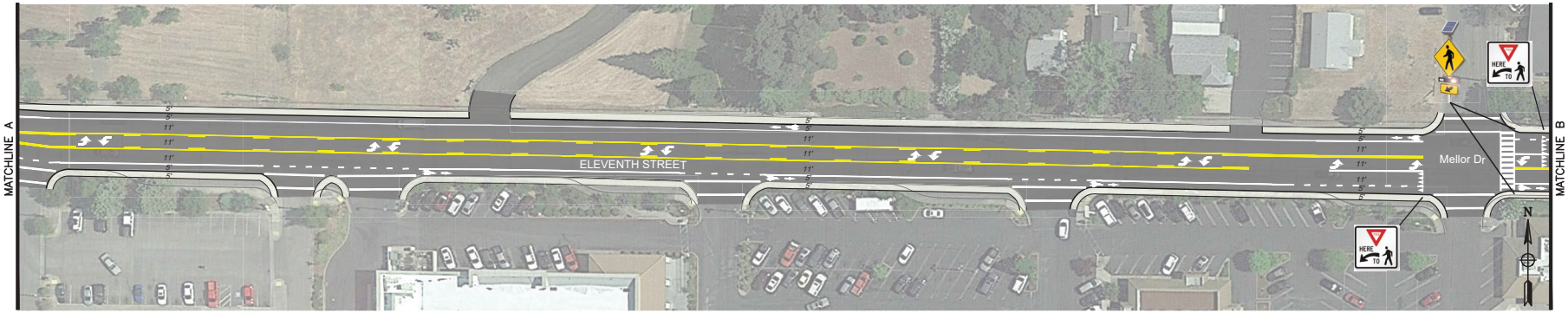
RECOMMENDED PLAN





LEGEND

- Existing FC/EP
- Proposed FC/EP
- Back of SW/Path
- Install RRFB Assembly
- 5' UTILITY EASEMENT
- Install R1-5
- Install W11-2 & W16-7P
- Install D11-1
- Install Sharrow Marking

0 40' 80'
SCALE: 1"=40'

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Revision	By

W-Trans
490 Mendocino Avenue, Suite 201
Santa Rosa, CA 95401
(707) 542-9500 Fax (707) 542-9590

DRAWN BY: CN
DESIGNED BY: DW
REVIEWED BY: SW
6/24/2020 DATE

PROFESSIONAL ENGINEER DALENE J. WHITLOCK CIVIL No. 039842 STATE OF CALIFORNIA

DALENE J. WHITLOCK P.E. NO. 39842

ELEVENTH STREET CORRIDOR MULTIMODAL FEASIBILITY STUDY
30% Concept Plans
City of Lakeport

SCALE: 1" = 40'
DATE: JUNE 2020
JOB NUMBER: LAK013
DRAWING NUMBER: 1 OF 3

Jun 24, 2020 - 8:59am

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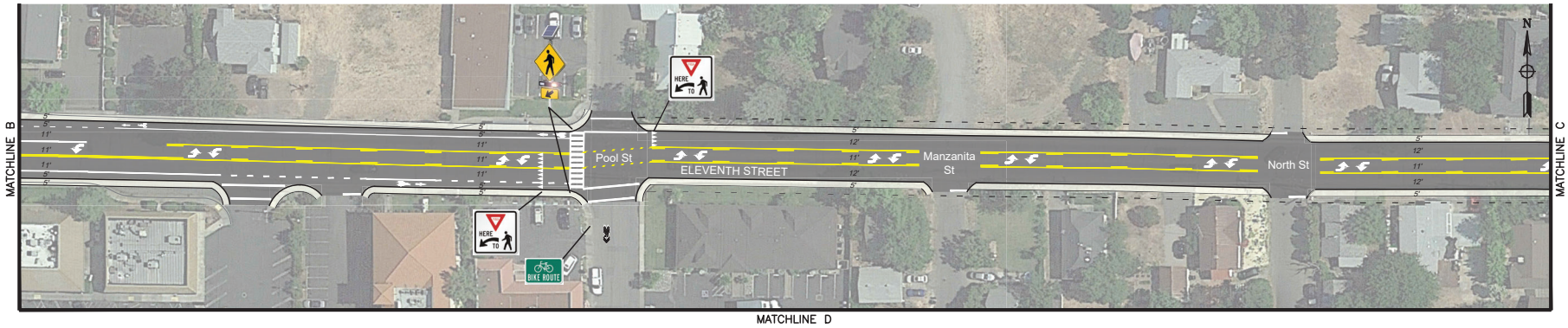
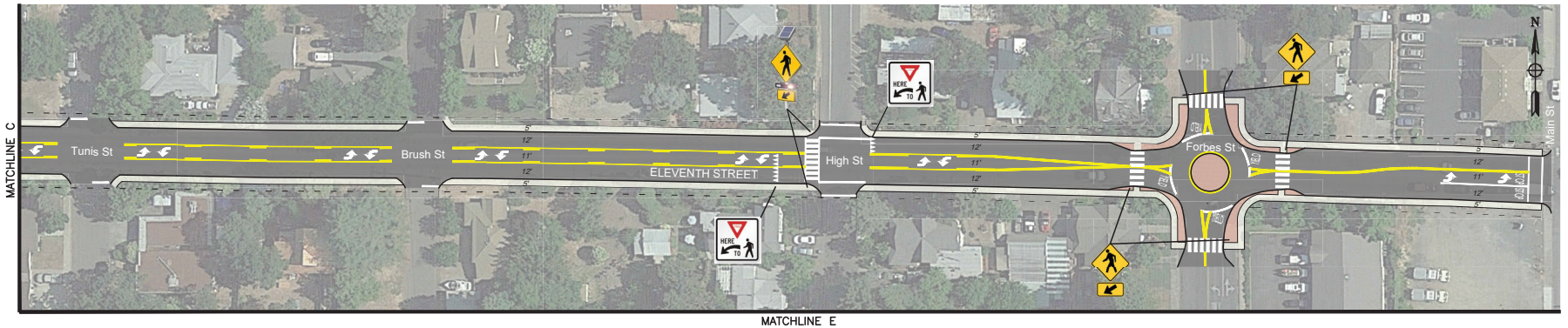
FOR REDUCED PLANS, THE ORIGINAL SCALE IS IN INCHES 0 1 2 3

RECOMMENDED PLAN





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- Existing FC/EP
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0 40' 80'
SCALE: 1"=40'

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Revision	By

W-Trans
490 Mendocino Avenue, Suite 201
Santa Rosa, CA 95401
(707) 542-9500 Fax (707) 542-9590

DRAWN BY: CN
DATE: 6/24/2020
DESIGNED BY: DW
REVIEWED BY: SW
DALENE J. WHITLOCK, P.C.E. NO. 38942

ELEVENTH STREET CORRIDOR MULTIMODAL FEASIBILITY STUDY
30% Concept Plans
City of Lakeport

SCALE: 1" = 40'
DATE: JUNE 2020
JOB NUMBER: LAK013
DRAWING NUMBER: 2 OF 3

Jun 24, 2020 - 8:59am

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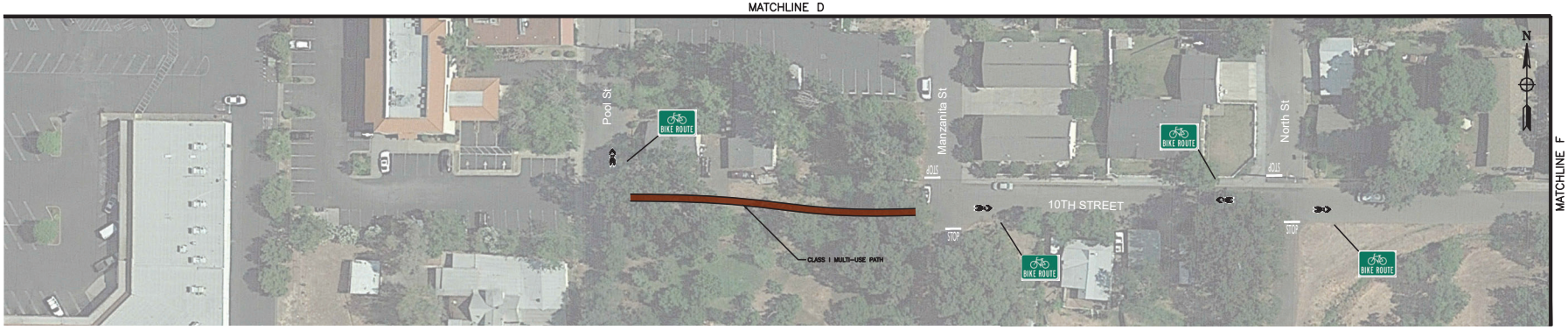
FOR REDUCED PLANS, THE ORIGINAL SCALE IS IN INCHES 0 1 2 3

RECOMMENDED PLAN

MATCHLINE D



MATCHLINE F

MATCHLINE E

LEGEND

- Existing FC/EP
- Proposed FC/EP
- Back of SW/Path
- Install RRFB Assembly
- 5' UTILITY EASEMENT
- Install R1-5
- Install W11-2 & W16-7P
- Install D11-1
- Install Sharrow Marking

0 40' 80'
SCALE: 1"=40'

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Revision	By

W-Trans
490 Mendocino Avenue, Suite 201
Santa Rosa, CA 95401
(707) 542-9500 Fax (707) 542-9590

DRAWN BY: CN
DESIGNED BY: DW
REVIEWED BY: SW
DATE: 6/24/2020

PROFESSIONAL ENGINEER DALENE J. WHITLOCK No. 039842 CIVIL STATE OF CALIFORNIA

DALENE J. WHITLOCK, P.E. NO. 39842

ELEVENTH STREET CORRIDOR MULTIMODAL FEASIBILITY STUDY

30% Concept Plans

City of Lakeport

SCALE: 1" = 40'
DATE: JUNE 2020
JOB NUMBER: LAK013
DRAWING NUMBER: 3 OF 3

Jun 24, 2020 - 8:59am

C:\Users\cnye\appdata\local\temp\AcPublish_12888\LAK013 - ALT 4 (June 2020).dwg

FOR REDUCED PLANS, THE ORIGINAL SCALE IS IN INCHES 0 1 2 3

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Appendix I

Cost Estimate

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LAKEPORT ELEVENTH STREET MULTIMODAL FEASIBILITY STUDY
Recommended Alternative - TWLTL with Mini-Roundabout
Planning Level Cost Estimate

DATE: 6/24/2020

ITEM		Segment 1 - West of Shopping Center	Segment 2 - Adjacent to Shopping Center	Segment 3 - East of Pool St	10th St Bike Boulevard			
	Units	Quantity	Quantity	Quantity	Quantity	**Totals**	**Unit Cost**	**Total Cost**
Multi-Use Path	LF	500			300	800	$ 100.00	$ 80,000.00
Curb, Gutter, & Sidewalk	LF	1,060	1,970	3,200		6,230	$ 120.00	$ 747,600.00
Demo and Reconstruct Right-Turn Lane Curb	EA		5			5	$ 50,000.00	$ 250,000.00
ADA Compliant Curb Ramp	EA	3	23	50		76	$ 4,000.00	$ 304,000.00
Roadway Widening	SF			5,550		5,550	$ 100.00	$ 555,000.00
Striping	LF	5,280	9,000	6,400	400	21,080	$ 3.00	$ 63,240.00
Pavement Markings	EA	4	27	33	36	100	$ 125.00	$ 12,500.00
Signage	LS	1	3	2	4	10	$ 3,000.00	$ 30,000.00
Streetlights	EA		2	3		5	$ 25,000.00	$ 125,000.00
RRFB	EA		2	1		3	$ 30,000.00	$ 90,000.00
Mini Roundabout	LS			1		1	$ 450,000.00	$ 450,000.00
Crosswalk Art	LS				1	1	$ 20,000.00	$ 20,000.00
								$ -
								$ -
								$ -
								$ -
								$ -
								$ -
Cost per Segment		*$ 208,540.00*	*$ 727,775.00*	*$ 1,723,325.00*	*$ 67,700.00*			

Sub-Total: $ 2,727,340.00

Contingency (30%): $ 818,202.00

TOTAL: $ 3,545,542.00

Rounded: $ 3,600,000.00

Notes: Estimate does not include costs associated with utility relocations