

San Leandro Local Roadway Safety Plan (LRSP)

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Glossary

(A)ADT (annual) average daily traffic	CVC California Vehicle Code
ABAG Association of Bay Area Governments	DOT Department of Transportation
ADA Americans with Disabilities Act	DUI Driving Under the Influence
AHSC Affordable Housing and Sustainable Communities	EMS Emergency Medical Services
ATP Active Transportation Program	FHWA Federal Highway Administration
AV Autonomous Vehicle	GIS Geographic Information System
B/C Benefit/Cost	HSIP Highway Safety Improvement Program
BTA Bicycle Transportation Account	ITE Institute of Transportation Engineers
BUILD Better Utilizing Investments to Leverage Development	KSI Killed or Severely Injured
CDBG Community Development Block Grant	LED Light-emitting Diode
CIP Capital Improvement Plan	LPI Leading Pedestrian Interval
CRF Crash Reduction Factor	LPP Local Partnership Program
CSSA Complete Streets Safety Assessment	LRSM Local Roadway Safety Manual
CCTA Contra Costa Transportation Authority	LRSP Local Road Safety Plan
	LSRP Local Streets and Roads Program

LTF Local Transportation Fund
MTC Metropolitan Transportation Commission
MUT Median U-Turn
MUTCD Manual on Uniform Traffic Control Devices
OTS Office of Traffic Safety
PCF Primary Collision Factor
PHB Pedestrian Hybrid Beacon
RCUT Restricted Crossing U-Turn
RRFB Rectangular Rapid Flashing Beacon
SCCP Solution for Congested Corridors Program
SGC Strategic Growth Council

SR2S/SRTS Safe Routes to School
STIP State Transportation Improvement Program
SWITRS Statewide Integrated Traffic Records System
TCC Transportation Climate Communities
TDA Transit Development Act
TIGER Transportation Investment Generating Economic Recovery
TIMS Transportation Injury Mapping System
TNC Transportation Network Company
VMT Vehicle Miles Traveled

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1. Introduction

Local Road Safety Plan Background

A Local Road Safety Plan (LRSP) is a guide to understanding transportation safety issues citywide in San Leandro using an approach informed by collision data. The LRSP identifies San Leandro's unique roadway safety needs and a corresponding suite of related safety enhancements. As those safety enhancements are implemented, they will move the City toward achieving its goal of zero traffic fatalities and severe injury collisions on San Leandro's streets. These goals and policies are also consistent with the statewide California Strategic Highway Safety Plan and the United States Department of Transportation's (US DOT's) National Roadway Safety Strategy. The process of preparing an LRSP facilitates the development of local agency partnerships and collaboration, providing a road map of strategies to be implemented by a variety of departments and agencies. The LRSP offers a proactive approach to addressing safety needs and demonstrates San Leandro's responsiveness to safety challenges.

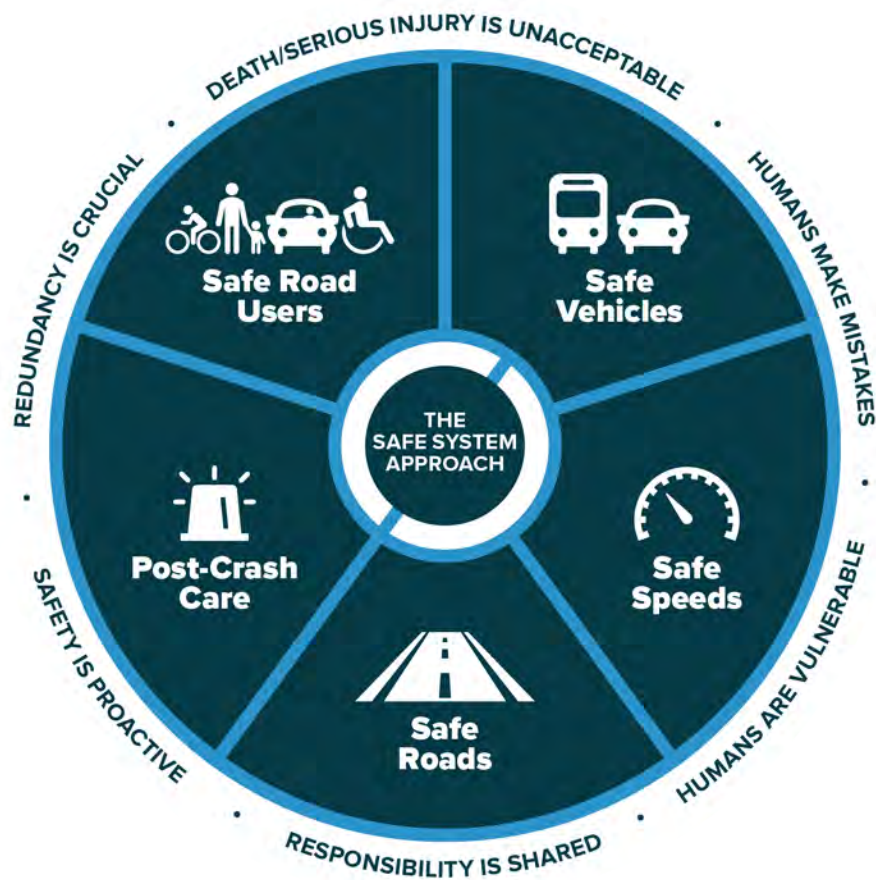
This LRSP will assist the City when it applies for safety infrastructure funding sources. For example, the statewide Cycle 11 Highway Safety Improvement Program (HSIP) requires applicants to have an LRSP, and the US DOT's Safe Streets for All (SS4A) funding cycle requires a comprehensive safety action plan, such as an LRSP, for an agency to be eligible to apply for funds.

The Safe System Approach

California is in the process of adopting the Safe System approach with a focus on equity as part of its Strategic Highway Safety Plan. This LRSP's focus on the Safe System approach helps to provide alignment with current LRSP guidelines, but also sets the City of San Leandro up for success in recognition of emerging safety best practices and helping achieve the City's Vision Zero goals. Through collective action on the part of all roadway system stakeholders – from system operators and vehicle manufacturers, to law enforcement and everyday users – we can use elements of the Safe System approach to holistically and effectively address the most pressing roadway safety issues in the City of San Leandro.

A Safe System acknowledges the vulnerability of the human body – in terms of the amount of kinetic energy transfer a body can withstand – when designing and operating a transportation network to minimize serious consequences of crashes. According to the World Health Organization, the goal of a Safe System is to ensure that if crashes occur, they “do not result in serious human injury.”¹

¹ World Health Organization (2011). Decade of Action for Road Safety 2011-2020. Retrieved from https://www.who.int/roadsafety/decade_of_action/plan/plan_en.pdf, p. 9



The Institute of Transportation Engineers (ITE) and the Road to Zero Coalition’s Safe Systems Explanation and Framework articulate that to anticipate human mistakes, a Safe System seeks to:

- Separate users in a physical space (e.g., sidewalks, dedicated bicycle facilities),
- Separate users in time (e.g., pedestrian scramble, dedicated turn phases),
- Alert users to potential hazards,
- Accommodate human injury tolerance through interventions that reduce speed or impact force

Creating a Safe System means shifting a major share of the responsibility from road users to road designers. “Individual road users have the responsibility to abide by laws and regulations” and do so by exhibiting due care and proper behavior on the transportation system. While road users are responsible for their own behavior, this is a shared responsibility with those who design, operate, and maintain the transportation network: including the automotive industry, law enforcement, elected officials, and government bodies. In a Safe System, roadway system designers and operators take on the highest level of ethical responsibility. This LRSP reflects the Safe System approach through a data driven process that considers the following when analyzing citywide collisions and safety-focused solutions:

- **Collision Trends:** Review of collision statistics to evaluate when, where, and why collisions occur and who is involved.
- **Collision Profiles:** Combination of collision factors to identify 8 prevalent collision types.

- **Countermeasure Toolbox:** Identification of effective, nationally proven countermeasures applicable to different collision profiles
- **Priority Project Locations:** Identification of priority project locations based on collision density and community verification

About San Leandro

The City of San Leandro is located in Alameda County and is home to approximately 90,489 people (U.S. Census, ACS 5-Year, 2020). San Leandro residents identify as 33% White alone, 34% Asian alone, 10% Black or African American alone, 2% Native Hawaiian and other Pacific Islander alone, 1% American Indian or Alaska Native alone, 10% some other race alone, and 9% two or more races. Additionally, approximately 27% of San Leandro population identifies as being of Hispanic or Latino origin.

ITE Safe System Framework: Focus on Safe Speeds

The ITE Safe System framework provides important context for the focus on safe speeds within a Safe System approach. For vulnerable users' speed is a determining factor in survivability – a human's chance of surviving being struck by a vehicle increases from 20% at 40 miles per hour to 60% at 30 miles per hour to 90% at 20 miles per hour. Reducing speed in the presence of vulnerable users is a key Safe System strategy. Approaches include:

- Physical roadway designs (width, horizontal alignment) to limit free flow speeds,
- Traffic calming treatments that induce slower speeds,
- Traffic signal timing that minimizes high speed flow,
- Traditional or automated enforcement that discourages speeding.

2. Vision & Goals

The City of San Leandro's Local Roadway Safety vision statement highlights the central importance of improving health, safety, and equitable access to multimodal transportation facilities for all roadway users. Complementary goals for the LRSP, developed through stakeholder outreach and data analysis, represent a mix of discrete, measurable goals for specific facets of the transportation system set alongside higher-level holistic objectives for communitywide health and safety improvements. Together, the vision statement and goals establish a concise yet comprehensive focus for investments in infrastructure and education.

Vision Statement

Eliminate fatalities and serious injuries on San Leandro's streets by making travel safer for all modes of transportation and people of all ages and abilities.



3. Safety Partners

Many different agencies and departments affect safety outcomes in San Leandro. Potential partners for collaboration with City of San Leandro Engineering and Transportation staff include:

- **San Leandro Police Department (SLPD)** – Law enforcement is the core partner representing the E of enforcement. Sworn officers provide valuable input into current behavior that they observe on the roads and are important partners in safety conversations so that jurisdictions can focus enforcement time on behaviors that are most closely associated with injuries and fatalities.
- **Alameda County Transportation Commission (Alameda CTC)** – The Alameda County Safe Routes to School (SR2S) Program is funded by Alameda CTC. It prioritizes student safety, by supporting safe walking and biking to schools. Alameda CTC also takes a safe system approach countywide, and is a major funder of infrastructural projects through the Alameda CTC Commission Sales Tax, Measure BB.
- **Alameda-Contra Costa Transit District (AC Transit)** – Transit agencies expand mobility options for residents. According to the American Public Transportation Association, transit is 10 times safer per mile than traveling by car². Transit agencies also bring a perspective to safety conversations based on their vehicles driving many miles on local streets. AC Transit provides local bus service in San Leandro, with routes connecting the city to nearby cities.
- **Bay Area Rapid Transit (BART)** - BART provides transit service in San Leandro, connecting the city to other Bay Area cities
- **San Leandro Fire Department (SLFD)** – It is crucial for emergency first responders to arrive timely to the scene of a crash, to locate and to give the appropriate and immediate care for those affected. The ideal role of the SFLD is to arrive quickly and locate the injured. The SFLD is usually the first to arrive at the scene.
- **Bike East Bay** – The nonprofit organization focuses on promoting bicycling as an alternative mode of transportation. It supports improving the safety of everyone who chooses to use an alternative to driving.
- **Bike/Walk San Leandro** – The group was an outgrowth of the San Leandro Master Plan and advocates to make San Leandro a safer place for those walking and biking. It supports improvements to make the streets of San Leandro safer and easier to walk and to bike.
- **San Leandro 2050** – This community-based organization envisions a city that eliminates its greenhouse gas emissions by 2050 to reverse the negative effects of climate change everywhere, including San Leandro. They connect with the local community to listen for solutions, ideas, and opportunities within the City, build partnerships, source funding opportunities for projects, and advocate for policies that advance their goal.
- **San Leandro Unified School District (SLUSD) and San Lorenzo Unified School District (SLZUSD)** – Transportation habits are informed by our experiences as children, and schools are important partners in cultivating positive and safe transportation experiences for young people and families. Schools are also areas of concentrated activity during arrival and dismissal time, so including schools

² American Public Transportation Association (2018). Public Transit Is Key Strategy in Advancing Vision Zero, Eliminating Fatalities. <https://www.apta.com/wp-content/uploads/Resources/resources/hottopics/Documents/APTA%20VZN%20Transit%20Safety%20Brief%208.2018.pdf>

in safety conversations can lead to recommendations for improvements near schools. SLUSD employs an ongoing Alameda County Safe Routes to School program, implemented by Alameda CTC.

The LRSP was developed through a stakeholder group that include representatives of many of the departments and agencies listed above. The group met twice during the plan development: First, to review the makings of a Local Roadway Safety Plan, the Safe Systems Approach, and to review initial findings from the collision analysis, and next to review the collision profiles and associated countermeasures, as well as priority locations and potential projects to be funded through mechanisms such as HSIP and SS4A. The invaluable information and input received from the stakeholders through the course of the development of this Plan have been incorporated into this draft. In these meetings, an emphasis was placed on ensuring safe routes for active transportation, which includes increasing safety and protection for all road users on the streets of San Leandro.

4. Existing Efforts

In recent years, City and regional efforts to improve safety have been most visible through a range of plans, programs, and infrastructure projects. Planning efforts include countywide and citywide plans and policies that utilize the Safe System approach, commit to zero fatalities on San Leandro streets, and create vision for multimodal safety enhancements in San Leandro. They are further supported by safety related programs, such as the Alameda County Safe Routes to School program; installation of safety related infrastructure, as described in the Countermeasure Toolbox in Appendix A. The goals and policies in these plans summarized below helped guide the emphasis areas and strategies included in this LRSP.



Countywide and Regional Plans and Projects

Metropolitan Transportation Commission (MTC) Regional Safety/Vision Zero Policy

This policy establishes a strategy for the MTC working with partner agencies to support equitable, data-driven action towards eliminating traffic deaths and serious vehicular injuries in the Bay Area by 2030. The Regional Safety Policy establishes a framework of principles and actions to guide MTC staff in working towards the policy goals:

- Provide regional leadership to promote safety; engaging and incentivizing leadership across jurisdictions; working toward aligning funding policy with safety goals.
- Apply a data driven approach to inform safety policy and strategic use of available funds and resources. Regional safety data will be housed at MTC so local jurisdictions can benefit from consistent and reliable data.
- Promote equity in regional safety policies by considering and analyzing impacts on communities of concern and protecting vulnerable roadway users, such as pedestrians and bicyclists.
- Support beneficial safety policies and legislation targeting evidence-based solutions to safety problems.
- Engage key regional stakeholders in safety policy development, implementation and collaboration on safety best practices. Provide education and technical assistance within budgetary constraints.

Alameda County Countywide Transportation Plan (2020)

This plan prioritizes projects within Alameda County based on four goals in the transportation vision:

- Accessible, Affordable, and Equitable
- Safe, Healthy, and Sustainable

- High Quality and Modern Infrastructure
- Economic Vitality

The second goal of making transportation **Safe, Healthy, and Sustainable**, aims to create safe multimodal facilities to walk, bike, and access public transportation. The strategies in this plan are grouped into six strategy categories, including the Safe Systems Approach. This group includes the following strategies:

- Improve Safety on the High-Injury Network, with an Eye towards Community Disparities
- Support Context-Appropriate Speed Limit Setting and Automated Speed Enforcement Policies
- Modernize Interchanges for Multimodal Travel, Including Addressing Pedestrian Experience at Underpasses
- Enhance Safety at At-Grade Crossings

Focus areas to ensure these strategies are successful include focusing on High Injury Streets, Reducing Speeds, and Addressing Key Barrier (such as freeway interchanges and rail crossings).

The City of San Leandro is located in Alameda County’s Central Planning Area. Projects in San Leandro included on the 10-Year Priority Project List are:

- **San Leandro Creek Trail:** Connecting the Bay Trail and the Ridge Trail, including lighting, barrier railing, and intersection improvements to expand safer walking and biking options in San Leandro
- **Downtown San Leandro Streetscapes**
- **San Leandro BART Station Area Safety Improvements**

One of the focuses for San Leandro in this plan is to improve transit, walking, and biking through multimodal projects and increase mobility options for all users through transit capacity and access projects. The plan identifies the East 14th Street/Mission Boulevard and Fremont Boulevard Corridor project, which implements multimodal upgrades along the corridor from San Leandro BART station to the Warm Springs area in Fremont. It also includes transit capacity and access improvements such as the modernization of the San Leandro BART station and improved bus corridors located in the City. The San Leandro Creek Trail is also included as a project that expands safer walking and biking in San Leandro, providing lighting, barrier railing, and intersection improvements.

Alameda County Active Transportation Plan (2019)

This plan identifies goals and priorities throughout Alameda County to improve walking and biking in all 15 of its jurisdictions. The plan envisions a transportation system that should inspire people of all ages and abilities to walk and bicycle for everyday transportation, recreation, and health by providing a safe, comfortable, and interconnected network. The priorities of the plan are driven by the concept of impactful investment, which aims to resolve issues or barriers related to walking and biking that are of countywide significance.

The plan’s profile on the City of San Leandro states the following:

- Approximately 4% of the City’s local roadway network constitute the local bicycle High Injury Network (HIN), and 7 miles or 3% of the City’s local roadway network make up the local pedestrian HIN

- Jurisdictional boundaries around water barriers in San Leandro have made roadway development difficult, and therefore connectivity for walking and biking is heavily impacted (with the exception of connecting into Oakland across San Lorenzo Creek and into western San Leandro across the San Lorenzo Creek)
- Many streets that intersect with rail lines (BART and freight) present high-stress bicycling environments

Alameda County Community-Based Transportation Plan (2020)

Chapter 4: The Central Planning Area Transportation Needs of the Alameda County Community-Based Transportation Plan (CBTP) lays out the transportation needs of San Leandro constituents based on a review of baseline conditions, analysis of past planning efforts, and community engagement. This plan focuses on ways to improve access and mobility for low-income and minority communities. The City of San Leandro is included in the Central County CBTP Study Area, in which 6 pop-up events were held and 228 surveys were collected. This outreach provided the following findings and focus areas regarding the local roadway network in the City from the community:

- Better access to frequent and affordable transit,
- Better personal safety for pedestrians and cyclists,
- Better driving reliability and travel times.

These findings were then translated into priority projects in the CTP:

- Improve safety and transit quality through multimodal corridors that are within or provide access to San Leandro's CBTP study areas:
 - E 14th Street/Mission Boulevard Corridor Projects
 - Downtown San Leandro Streetscapes
 - East Bay Greenway
- Improve safety and multimodal access within and to San Leandro's CBTP study areas:
 - San Leandro Creek Trail
 - Rail Safety Enhancement Program
 - San Leandro BART Station Area Safety Improvements

These findings and focus areas were taken into consideration in the creation of the LRSP.

Alameda County Safe Routes to Schools (SR2S) Program

Safe Routes to School is a countywide programmatic commitment, improving infrastructure and organizing and supporting activities that teach and encourage families to safely walk, bike, carpool, or take transit to schools.

As part of the Safe Routes to School program, the County is taking a Safe Systems Approach which includes the following strategies:

- Improve Safety on the High-Injury Network, with an eye towards community disparities
- Support context-appropriate speed limit setting and automated speed enforcement policies

- Modernize interchanges for safer multimodal travel, including addressing pedestrian experience at underpasses
- Enhance safety at at-grade rail crossings

The program includes the 6 Es Framework:

- **Education:** Education programs improve traffic safety and awareness. Classroom activities in the K-5 Walk and Roll Educator Guide teach students how to navigate busy streets and make the connection between active transportation, health, and the environment.
- **Encouragement:** Encouragement programs provide incentives and support to help students and families try walking or bicycling instead of driving. Walk and Roll to School Days and other events show that walking and bicycling can be fun.
- **Engineering:** Engineering, in the form of walk audits, bring engineering experts to assist the community in evaluating streets and identifying improvements for walking and biking to school.
- **Evaluation:** Evaluation programs help schools measure walking and bicycling. Regular parent surveys and student hand-raising tallies indicate how students get to school and what barriers parents feel should be addressed.
- **Engagement:** Engagement means working alongside students, families, teachers, school leaders, and existing community organizations to build long-term capacity and sustainable programming. Intentional and active engagement is a core principle of the SR2S Program.
- **Equity:** Equity ensures support for safe, active and healthy opportunities for ALL students in Alameda County.

Alameda CTC Rail Safety Enhancement Program

Individual rail crossings throughout Alameda County were examined to identify crossings and corridors most impacted by rail traffic, and where rail crossings can be improved. The crossings analysis considered several factors including safety, delay, noise, and air quality. The program identifies near-term upgrades with significant and immediate positive safety impacts for local communities. Safety benefits of the projects identified through the program include:

- Improvement of pedestrian safety with an emphasis on schools
- Improvement of rail and roadway safety

BART Walk and Bicycle Network Gap Study (2020)

This study identifies conceptual access improvements to make walking and biking to and from 17 BART stations safer and easier, including the San Leandro BART station. It includes a set of “Global Recommendations” and a toolkit for station-specific recommendation strategies. There are several recommendations for increasing safety and active transportation connections to the station. The following recommendations apply to the local roadway outside of the station that are significant to the development of this LRSP:

- Install high-visibility crosswalks with RRFB at several locations:
 - Parrott Street under BART tracks
 - At Williams Street/UPRR
 - At San Leandro Boulevard/Thornton Street
 - At W Estudillo/Hays Street

- Install high-visibility crosswalk with PHB at several locations:
 - At Davis Street (SR 112)/Clarke Street
 - At Davis Street (SR 112)/Carpentier Street – currently installed as a collaboration between Caltrans and the City of San Leandro
 - At W Estudillo Avenue/San Leandro Boulevard
- Installing Class IV separated bike lanes along several corridors, including Davis Street (SR 112) between Alvarado Street and E. 14th Street (SR 185)

East Bay Greenway

The East Bay Greenway is a proposed regional trail which would link BART stations throughout the inner East Bay. Alameda CTC is the project sponsor for the East Bay Greenway: Lake Merritt BART to South Hayward BART Project (Project). The Project proposes to construct a bicycle and pedestrian facility that will generally follow the BART alignment for a distance of 16 miles and several cities, including San Leandro. The Project will connect seven BART stations as well as downtown areas, schools, and other major destinations.

Benefits of the project include:

- Improve cyclist and pedestrian network connectivity in communities along the BART line
- Improve access to regional transit, schools, downtown area and other destinations
- Create a facility that is accessible and comfortable for bicyclists and pedestrians of all ages and abilities
- Improve safety for bicyclists and pedestrians
- Support promotion of a multimodal transportation system and reduction of greenhouse gas emissions

Citywide Plans, Policies, and Projects

San Leandro Vision Zero Policy

The City of San Leandro has joined the national commitment to eliminating traffic deaths and severe injuries. Several projects have been prioritized in the City to meet this comment, including increasing protection for bicyclists and pedestrians citywide, improving lighting conditions, and overall safety enhancements at both controlled and uncontrolled intersections. Several of the projects and plans below describe the different ways the City has committed to Vision Zero.

San Leandro 2035 General Plan (2017)

This plan presents a vision and strategy for the City's future. It provides a comprehensive framework for the City's physical, economic, social, and environmental development. The transportation element specifically addresses the movement of people and goods around and in the City of San Leandro. It presents a series of goals and policies to guide transportation decisions in the near future, including important issues like neighborhood traffic management, parking, traffic safety, and intergovernmental coordination. The following goals particularly focus on safety, and were taken in consideration in this LRSP:

- Goal T-2: Design and operate streets to be safe, attractive, and accessible for all transportation users whether they are pedestrians, bicyclists, transit riders, or motorists, regardless of age or ability
- Goal T-3: Promote and accommodate alternative, environmentally-friendly methods of transportation, such as walking and bicycling
- Goal T-7: Improve traffic safety and reduce the potential for collisions on San Leandro streets

The following policies are also relevant to this LRSP:

- Policy T-2.1: Complete Streets Serving All Users and Modes: Create and maintain “complete” streets that provide safe, comfortable, and convenient travel through a comprehensive, integrated transportation network that serves all users
- Policy T-2.4: Connectivity: Ensure that the design of streets and other transportation features helps to better connect the city’s circulation and facilitate safer and more convenient travel between San Leandro and surrounding communities
- Policy T-3.3: Designing for Multiple User Groups: Recognize the dual needs of experienced cyclists relying on bicycles for commute trips and daily travel and less experienced cyclists using bicycles principally for recreation. Where needed, develop facilities designed to serve each user group, with recreational routes primarily using low volume streets and off street bike path
- Policy T-3.7: Removing Barriers to Active Transportation: Reduce barriers to walking and other forms of active transportation such as incomplete or uneven sidewalks, lack of wheelchair ramps and curb cuts, sidewalk obstructions including cars parked on sidewalks, trail gaps, wide intersections, and poor sidewalk connections to transit stops
- Policy T-7.1: Law Enforcement: Aggressively enforce traffic safety laws on San Leandro streets, including speed limits, red light violations, and pedestrian and bicycle lane right-of way violations
- Policy T-7.2: Capital Improvements: Identify capital improvements and other measures which improve the safety of bicyclists, pedestrians, and motor vehicles on San Leandro streets



San Leandro Pedestrian & Bicycle Master Plan (2017)



The City of San Leandro Pedestrian & Bicycle Master Plan is the official policy document guiding the development of policies and facilities to enhance bicycling and walking as proficient, efficient, and safe transportation choices for San Leandro residents, workers, and visitors.

Goal 6, Improve bicycle and pedestrian safety for all users of the road, includes several policies supporting safety improvements in the City:

- Policy 3-1: Improve Pedestrian and Bicycle Safety (actual and perceived through safety measures, with special attention to safety of children walking/bicycling to school)
- Policy 3-2: Collision Reduction
- Policy 3-4: Railroad Crossings (ensure grade separated railroad crossings include sidewalks and designated lanes for bicycles)
- Policy 4-2: Safety: Improve actual and perceived safety of children en route to school
- Policy 4-3: Safety Awareness and Health Benefits (encourage bicycle and pedestrian safety in schools and through City recreation programs)

San Leandro Crosstown Corridors Study (draft 2022)

The Bancroft Avenue and Williams Street projects were identified through the 2018 San Leandro Bicycle and Pedestrian Master Plan process, which involved extensive community engagement. Bancroft was identified as a high priority corridor for walking and biking improvements to support children walking and biking to school as well as people of all ages and abilities.

The Plan's goals include creating a comprehensive walking and biking system, funding and implementing projects that will maximize the amount of biking and walking trips, developing safe and well-connected bicycle and pedestrian systems, maximizing bicycle and pedestrian access to transit, and improving bicycle and pedestrian safety. The Bancroft/Dutton intersection, Woodrow Wilson Elementary School, John Muir Middle School, McKinley Elementary School, Bancroft Middle School, San Leandro High School, Jefferson Elementary School, the Bancroft Avenue/ E 14th Street intersection, and the Bancroft/Oakes intersection were all identified as key pedestrian locations. The Plan includes separated bike lanes recommendation for

Williams Street and Bancroft Avenue was called out for further study as separated bike lanes. The project goals are:

- **Safety:** Develop street designs that provide separated bikeways and improvements for walking that help people feel safer and more comfortable on Bancroft and Williams.
- **School Access:** Improve access for students and families walking and biking to school on Bancroft and Williams
- **Multi-Modal Connections:** Bancroft and Williams will support access to BART, businesses, parks, and other community destinations for all modes, prioritizing sustainable and active transportation.

Recent and Underway Infrastructure Safety Projects (Ongoing)

Several infrastructure safety projects have recently been completed in San Leandro. Additionally, the City has projects underway to progress towards their goals to increase safety and comfort for all users on the road. These projects overlap with the City's collision hot spots, or locations of concentrated collisions, as seen in **Figure 1**.

1. San Leandro Boulevard Road Diet, Crosswalk Enhancements and Bike Lanes
2. Joaquin/E 14th Street (SR 185) Pedestrian Scramble
3. Wick Boulevard/Manor Boulevard Signal Modifications
4. Hesperian Boulevard Separated Bike Lanes
5. East Bay Greenway (Planning Phase)
6. San Leandro Crosstown Corridors (Planning Phase)

Figure 1: Recent or Active Safety Projects



5. Safety Analysis

This chapter summarizes the safety needs in San Leandro based on the last five years of reported collision data across the city. Crash data and contextual data were collected and analyzed. This analysis considers injury collisions from 2014 through 2018³ included in the Transportation Injury Mapping Systems (TIMS), a statewide database that reports injury collisions from the Statewide Integrated Traffic Records System (SWITRS). **Note that all references to “collisions” in this chapter as reference to injury collisions, and do not include property damage-only collisions.**

Collisions by Year by Mode

From 2014 to 2018, there were 976 total injury collisions, and 80 collisions where victims were killed or severely injured⁴ (KSI). On average, three people are killed each year in San Leandro by traffic violence. The number of collisions for each year by mode in **Figure 2**.

Collision databases have been found to have certain reporting biases including:

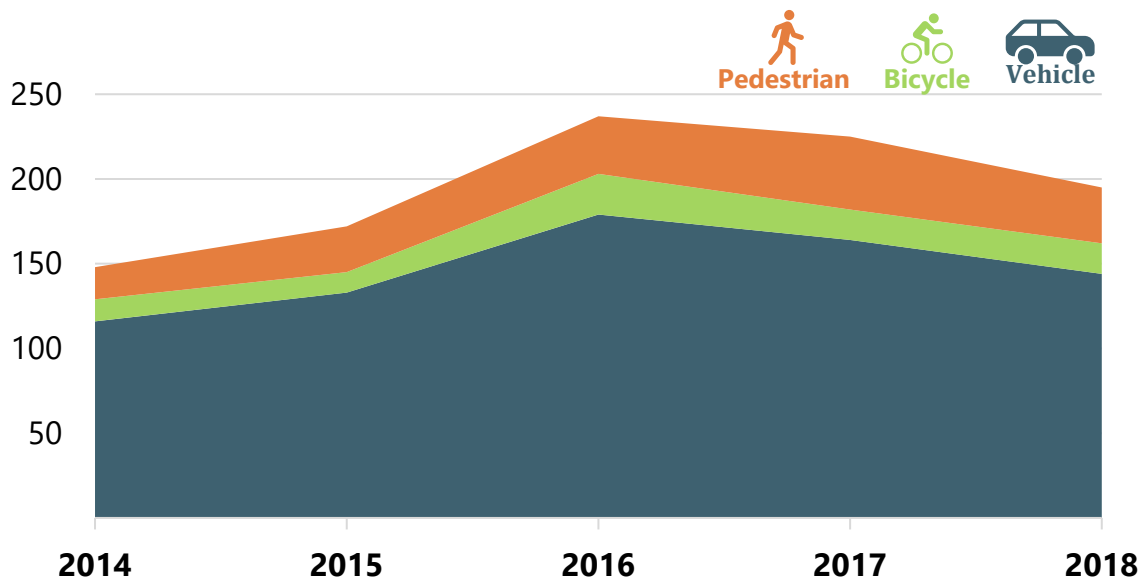
- Collisions involving people walking, on bicycles, or on motorcycles are less likely to be reported than collisions involving people driving
- Younger victims are less likely to report collisions
- Alcohol-involved collisions may be under reported
- Race, income, immigration status, and English proficiency may also impact reporting, but there is limited research on those factors.

³ The date ranges reflects the last five years of complete data available as of May 2022.

⁴ US DOT defines serious injury using the Model Minimum Uniform Crash Criteria (MMUCC) 4th Edition “Suspected Serious Injury (A)” as:

- Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
- Broken or distorted extremity
- Crash injuries
- Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
- significant burns

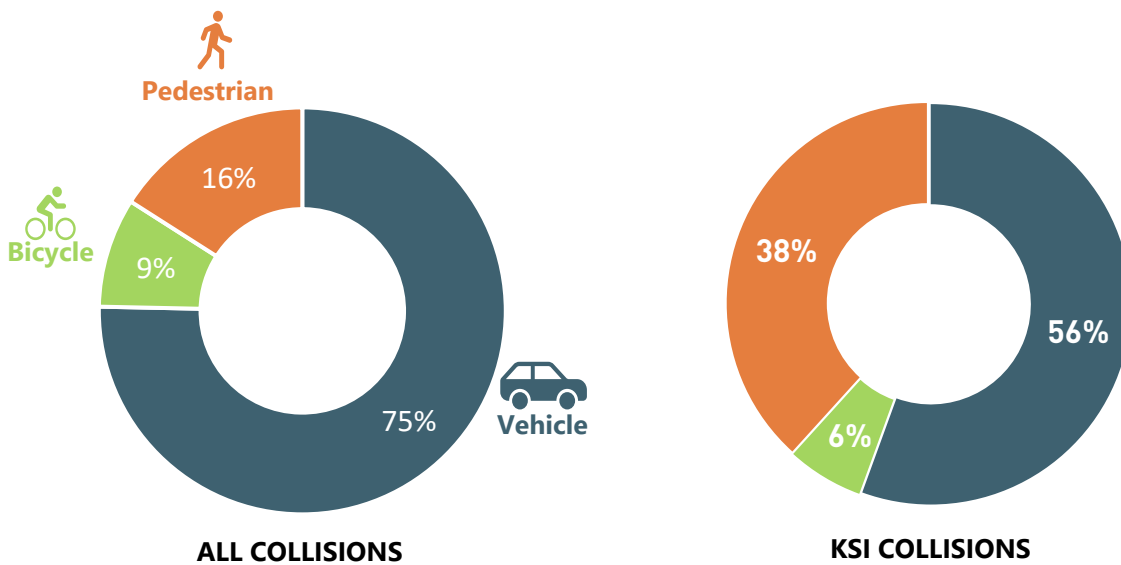
Figure 2: Collisions by Year and Mode (2014-2018)



Collisions by Mode

People walking and biking are involved in 25 percent of all collisions but 44 percent of KSI collisions, as shown in the figure below. People walking are particularly overrepresented in KSI collisions, as they are involved in only 16 percent of all collisions but 38 percent of KSI collisions.

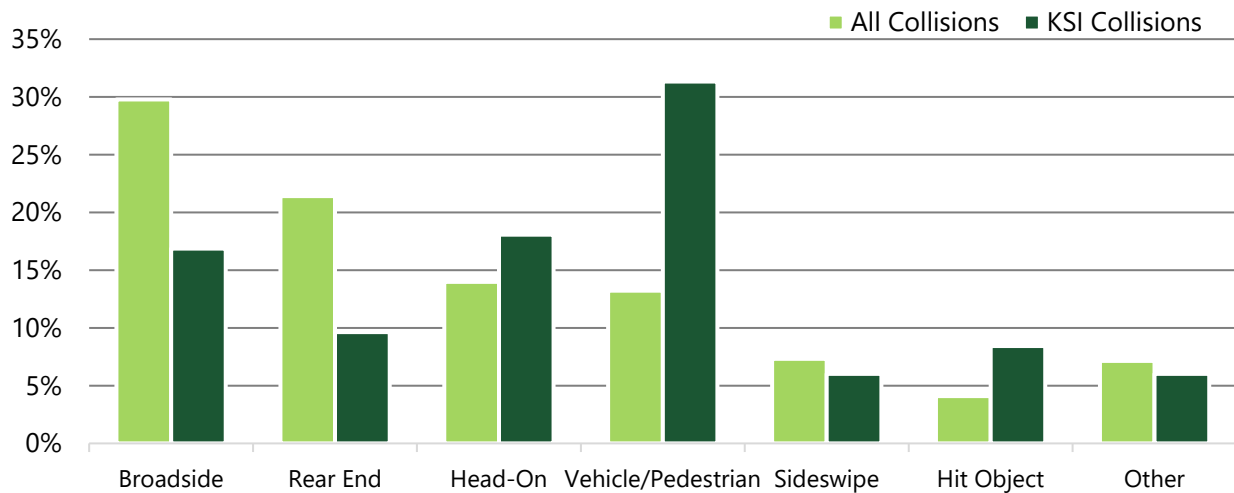
Figure 3: Collisions by Mode (2014-2018)



Collision Type

The three most common collision types in San Leandro are broadside (30%), rear end (21%), and head-on (14%), shown in the figure below. For KSI collisions, vehicle/pedestrian collisions are the most common (31%), followed by head-on collisions (18%), and broadside collisions (16%). This further illustrates the disproportionate impact of KSI collisions on people walking in San Leandro. It also shows that vehicle/pedestrian and head-on collisions are more likely, compared to other collision types to result in a KSI.

Figure 4: Collisions by Type (2014-2018)



Driving Under the Influence

Drugs or alcohol increase the likelihood that a collision will be more severe in San Leandro. While 6 percent of all collisions involve drugs or alcohol, 14 percent of KSI collisions involve drugs or alcohol.

Figure 5: Driving Under the Influence (2014-2018)

Drivers in
All Collisions
6%
were under
the influence

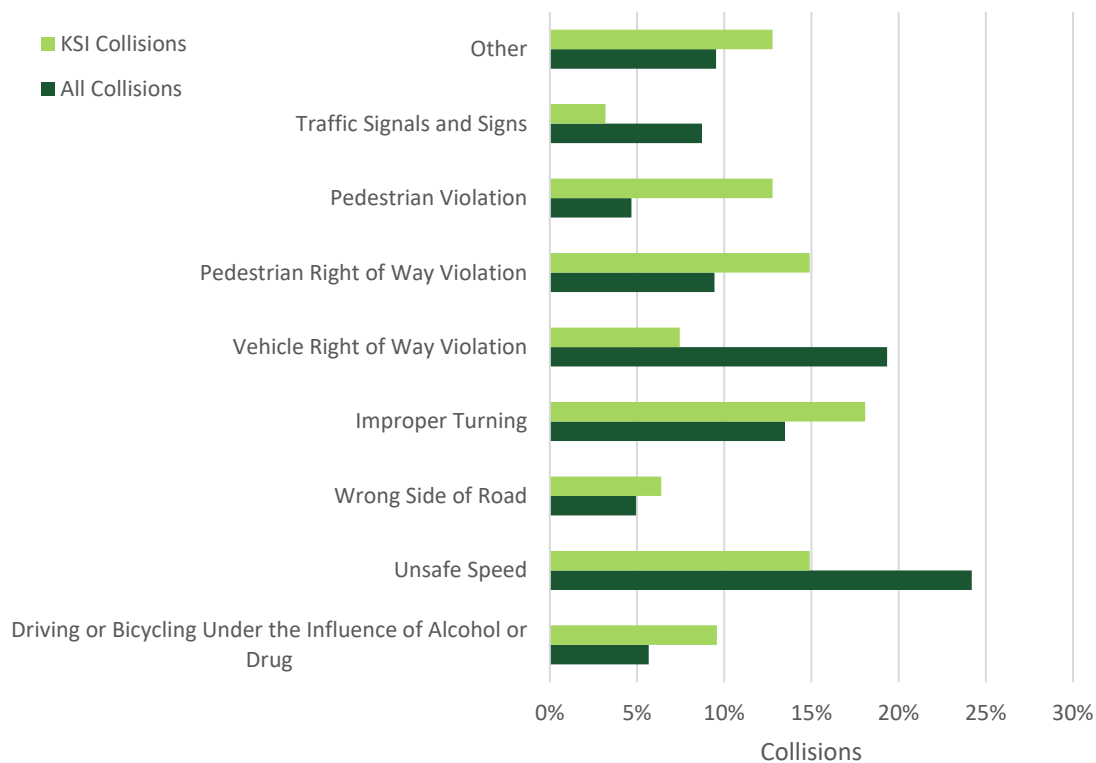


Drivers in
KSI Collisions
14%
were under
the influence

Primary Collision Factor

In San Leandro, the most common primary collision factors (PCFs) are unsafe speed (24%), vehicle right of way violation (19%), improper turning (13%), and pedestrian right of way violation (9%), as shown in the figure. For KSI collisions, the most common PCFs are improper turning (18%), pedestrian right of way violation (22%), unsafe speed (15%), and pedestrian violation (13%). The pedestrian violation PCF indicates that the pedestrian violated a rule of the road, such as crossing outside of a crosswalk, as opposed to the pedestrian right of way violation PCF (15%), where the vehicle violated the pedestrian’s right of way. The pedestrian violation category overrepresentation in the data may be reflective of lack of clear information related to collision circumstances. The other category includes PCFs that represent less than 1% of all PCFs of collisions in San Leandro, including other hazardous violations, other improper driving, unknown PCFs, and not stated PCFs.

Figure 6: Collisions by Primary Collision Factor (2014-2018)

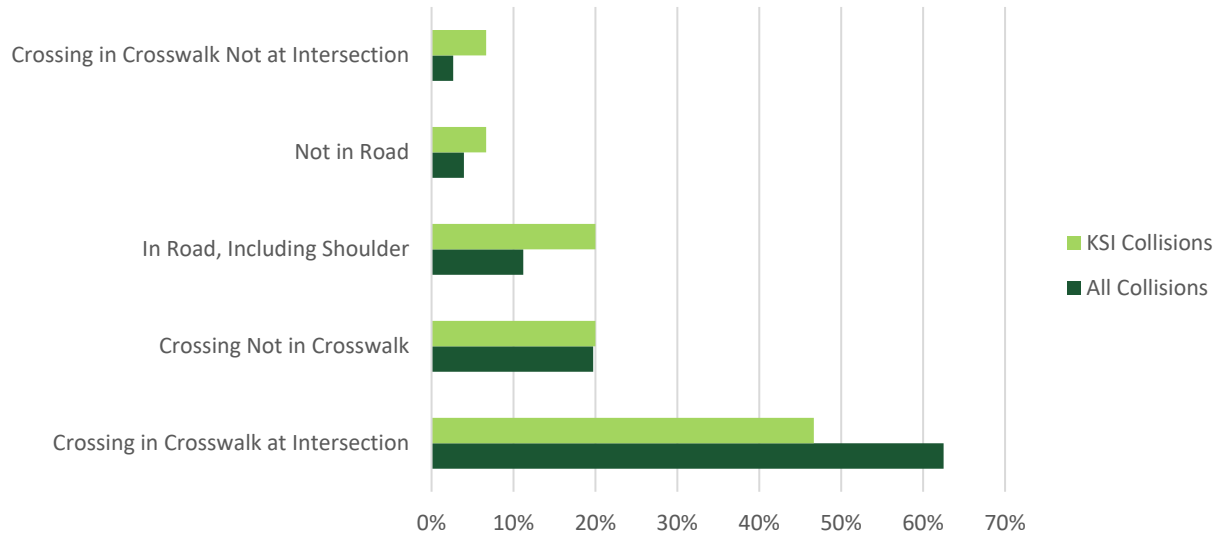


Pedestrian Location

Most pedestrian collisions occurred when people were crossing in the crosswalk at an intersection (61%), indicating that additional safety enhancements may be needed at existing marked crosswalks in the city. This group made up just under half of all KSIs (45%), indicating that pedestrians are especially vulnerable to serious injuries. For KSI collisions, pedestrians crossing in crosswalk were a slightly lower percentage (45%), followed by crossing not in crosswalk (19%) and not in road (19%). Not in road collisions include pedestrians being struck while on the sidewalk, or any location adjacent to a road outside of the shoulder. People crossing

the street inside and outside the crosswalks may indicate other contextual factors impacting pedestrian safety such as lighting, high vehicle speeds and volumes, or adequate signage and signal timings.

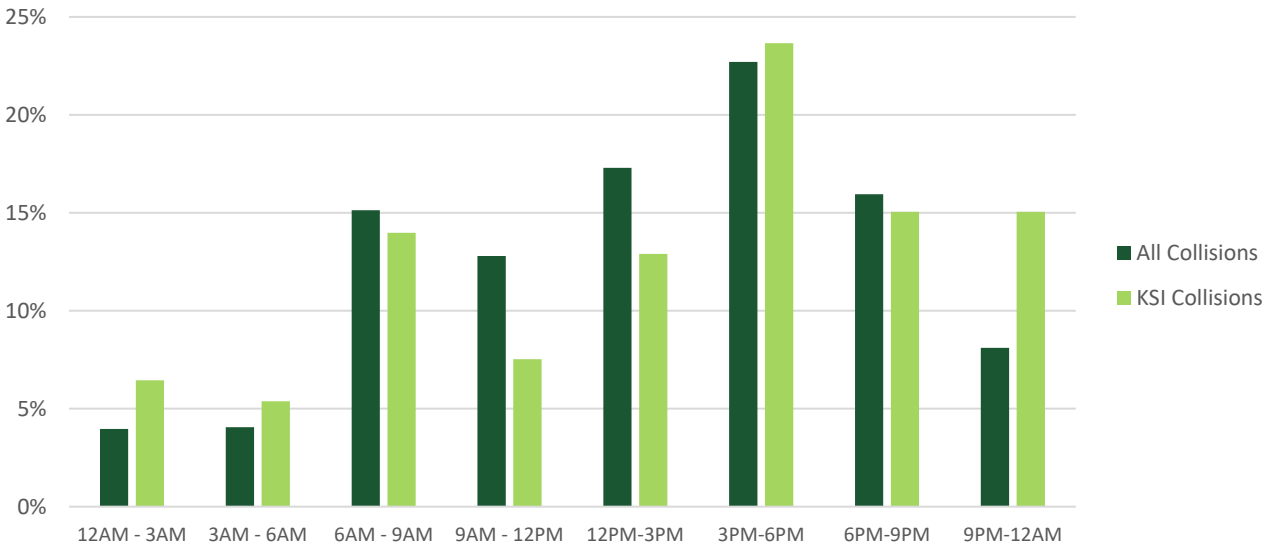
Figure 7: Collisions by Pedestrian Location (2014-2018)



Time of Day

Most collisions occur during the day. However, a larger share of KSI collisions occur at night when it is dark outside: Collisions between 7 PM and 6 AM are 27% of all collisions but 40% of KSI collisions, as shown in the figure.

Figure 8: Time of Day (2014-2018)



6. Emphasis Areas & Strategies

Systemic Analysis Findings

This LRSP takes a systemic safety approach including a proactive safety analysis to identify safety patterns across the entire roadway network. It examines collision history on an aggregate basis to identify high-risk roadway characteristics in addition to looking at high collision locations. By merging adjacent land use and roadway features with collision data, relationships can be uncovered between contextual factors and the risk of frequent and severe collisions. This approach guided the selection of nine collision profiles and three priority locations for the City of San Leandro described below.

To understand the relationship between collision characteristics and the contextual characteristics of the collision location, a systemic matrix was developed that identified the number of collisions for a given collision characteristic (e.g. location of pedestrian) and a contextual characteristic (e.g. posted speed limit of the roadway, roadway classification, nearby transit stops, and bicycle infrastructure). This process evaluates risk across the entire roadway system, rather than only managing risk at certain locations where collisions have occurred. For the City of San Leandro, the data available for contextual assessment included land use data, such as the location of schools and parks, and roadway characteristics, including posted speed limits and signalized versus unsignalized intersections.

These Collision Profiles represent:
83% of all Injury Collisions
88% of all KSIs

Deeper analysis of TIMS data and contextual information regarding roadway type, observed speeds, and proximity to community locations enabled the identification of collision profiles and collision hot spots that capture the majority of collisions and KSI collisions in San Leandro. These collisions profiles are described below.

San Leandro Collision Profiles (2014-2018)

The following nine collision profiles and eight priority locations were identified based on KSI collision analysis and stakeholder input. These profiles represent 83% of all injury collisions and 88% of KSI collisions. All fatal collisions and KSI collisions involving pedestrians are captured within the profiles. Each collision profile is presented with key statistics (total collisions, KSIs, bicycle and pedestrian injuries, etc.) and the applicable countermeasures categorized by cost, accompanied by a map with all profile collisions in San Leandro. The collision profiles include:

1. **Nighttime Collisions with No Street Lighting:** Bicycle collisions, pedestrian collisions, and vehicle collisions occurring at night with no streetlights. This profile represents 25% of all KSI collisions, 11% of all pedestrian collisions, 12% of all bicycle collisions, 11% of all vehicle collisions, and 11% of all injury collisions.

2. **Unsignalized Intersections on Streets with 30 MPH speed limits or over:** Pedestrian, bicycle, and vehicle collisions involving 30+MPH speeds at unsignalized



intersections. This profile represents 20% of all KSI collisions, 17% of all pedestrian collisions, 26% of all bicycle collisions, 22% of all vehicle collisions, and 22% of all injury collisions.

3. **Pedestrians Crossing at Signalized Intersections:** Pedestrian collisions involving right of way violations at signalized intersections. This profile represents 15% of all KSI collisions, 50% of all pedestrian collisions, and 8% of all injury collisions.

4. **Pedestrians Crossing Mid-Block:** Pedestrian collisions that took place when the pedestrian crossed the street between intersections. This profile represents 3% of all KSI collisions, 13% of all pedestrian collisions, and 2% of all injury collisions.

5. **Driving Under the Influence:** Vehicle collisions and pedestrian collisions involving driving under the influence. This profile represents 10% of all KSI collisions, 1% of all pedestrian collisions, 6% of all vehicle collisions, and 5% of all injury collisions.

6. **Driver Making a Left Turn at an Intersection:** Bicycle collisions, pedestrian collisions, and vehicle collisions that occurred when the driver made a left turn at an intersection. This profile represents 10% of all KSI collisions, 31% of all pedestrian collisions, 7% of all bicycle collisions, 17% of all vehicle collisions, and 18% of all injury collisions.

7. **Bicyclists at Intersections:** Bicycle collisions that occur in the intersection at the intersection approach. This profile represents 6% of all KSI collisions, 86% of all bicycle collisions, and 7% of all injury collisions.

8. **Pedestrian Crossing at Unsignalized Intersections:** Pedestrian collisions involving right of way violations at unsignalized intersections. This profile represents 4% of all KSI collisions, 24% of all pedestrian collisions, and 4% of all injury collisions.

9. **Rear-End Collisions on Arterials:** Collisions that occur when a vehicle hits another from behind on an arterial street. This profile represents 4% of all KSI collisions, 1% of all pedestrian collisions, 1% of all bicycle collisions, and 18% of all vehicle collisions, and 14% of all injury collisions.

Each of the priority locations is presented on a cutsheet that includes a collision summary, location summary, safety goals, strategies to help the City achieve the identified goals, and relevant grant opportunities. The location summary for each priority location includes the violations and collision types that account for the most severe or highest number of collisions. The strategies, which were selected to address the collision types

and violations and contribute to achieving the safety-related goals are identified as primary countermeasures which correspond to the factors identified in the location summary and are best suited for competitive HSIP grant applications.

Nighttime Collisions with No Street Lighting

25% of killed and severe injury (KSI) collisions occurring at night, at intersections and segments without a street light. There is no data for streetlights on the Caltrans main streets.

COLLISION SUMMARY

 110 TOTAL COLLISIONS

 20 KSI COLLISIONS

 27 BICYCLE AND PEDESTRIAN COLLISIONS

 7 BICYCLE AND PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 22 collisions occurred due to Unsafe Speed
- 20 occurred due to Vehicle Right of Way Violation
- 19 Driving Under the Influence of Alcohol or Drug
- 17 Improper Turning

COLLISION TYPES

- 25 Broadside
- 24 Head-on
- 19 Rear End
- 15 Vehicle/pedestrian
- 12 Hit Object
- 10 Sideswipe

ROADWAY AND CONTEXTUAL FACTORS

- 42% of collisions occurred on unsignalized intersections
- 15% of collisions occurred on signalized intersections
- Most crashes - 59% of crashes - occurred on streets with one travel lane in each direction primarily collector streets
- Over 1/3 of collisions (34.5%) occurred on 25 MPH streets

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Segment Lighting	Nighttime	Medium
Radar Speed Feedback Signs	Unsafe Speed	Short
Road Diet	Unsafe Speed	Medium-Long
High Visibility Crosswalks	Pedestrians Crossing Outside Crosswalk, Pedestrian Right of Way Violation	Medium
Rectangular Rapid Flashing Beacon	Pedestrians Crossing Outside Crosswalk, Pedestrian Right of Way Violation	Medium
Pedestrian Hybrid Beacon	Pedestrians Crossing Outside Crosswalk, Pedestrian Right of Way Violation	Long
Retroreflective Tape on Signals	Traffic Signals and Signs, Signalized Intersections, Nighttime	Short
Flashing Beacon as Advance Warning	Signalized Intersection	Short

GOALS

- Increase visibility for people who drive, walk, and bike at night with intersection, roadway, and pedestrian lighting
- Improve visibility of bicycles and pedestrians at intersections
- Improve traffic control at unsignalized intersections
- Reduce the number of collisions involving pedestrians and bicyclists
- Improve pedestrian and bicyclist visibility at night

Unsignalized Intersection on Streets 30 MPH or Over

20% of killed and severe injury (KSI) collisions occurred on streets with 30 MPH or higher at intersections without a traffic signal (i.e. crosswalk may be stop- or uncontrolled).

COLLISION SUMMARY

 211 TOTAL COLLISIONS

 16 KSI COLLISIONS

 49 BICYCLE AND PEDESTRIAN COLLISIONS

 2 BICYCLE AND PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 51 Vehicle Right of Way Violation
- 45 Improper Turning
- 40 Unsafe Speed
- 17 Wrong Side of Road

COLLISION TYPES

- 69 Broadside
- 40 Rear end
- 39 Head-on
- 26 Vehicle/pedestrian
- 15 Hit object
- 15 Sideswipe

ROADWAY AND CONTEXTUAL FACTORS

- Most crashes - 61% of crashes – occurred on multilane roads
- The speed breakdowns: 30 mph (5 KSIs, 70 total injuries), 35 mph (4 KSIs, 71 total injuries), 40 mph (7 KSIs, 69 total injuries)
- While most collisions occurred during daylight, about 1/3 of collisions occurred at nighttime

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Road Diet	Unsafe Speeds	
Upgrade to Larger or Install Additional Warning Signs	Broadside, Major Unsignalized Intersections	Short
Directional Median Opening	Broadside, Improper Turning, Unsignalized Intersections	Medium
Upgrade Intersection Pavement Markings	Pedestrians Crossing at Unsignalized Intersections	Short
Install Roundabout	Major Unsignalized Intersections, Broadside	Long
Improve Sight Distance	Pedestrians Crossing at Unsignalized Intersections	Short
High-Visibility Crosswalk Markings	Pedestrians Crossing Outside Crosswalk	Short
Pedestrian Hybrid Beacon	Pedestrian Right of Way Violation	Medium
Pedestrian Refuge Island	Pedestrians Crossing Outside Crosswalk, 4-5 Lane Roads with 40+ MPH Speeds	Medium

GOALS

- Improve visibility of pedestrians crossing at unsignalized intersections
- Decrease the number of fatalities of drivers
- Improve traffic control at unsignalized intersections
- Encourage lower vehicle speeds with roadway design and signage
- Increase visibility for people who drive and walk at night with intersection, roadway, and pedestrian lighting

Pedestrians Crossing at Signalized Intersection

15% of killed and severe injury (KSI) collisions occurred when a pedestrian crossed the street at an intersection with a traffic signal.

COLLISION SUMMARY

 78 TOTAL COLLISIONS

 12 KSI COLLISIONS

 78 PEDESTRIAN COLLISIONS

 12 PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 87% of all crashes occurred when the pedestrian was crossing in crosswalk at an intersection (68)
- Almost ¾ of all crashes occurred when a driver violated the pedestrian's right of way (57)
- 42% of crashes occurred when the driver was making a left turn (33)
- Just less than ¼ of all crashes occurred when the pedestrian committed a violation (18)

COLLISION TYPES

- 67 Vehicle/Pedestrian
- 6 Broadside
- 4 Head-On

ROADWAY AND CONTEXTUAL FACTORS

- Most crashes - 60% of crashes - occurred on multilane roads (47)
- About 1/3 of collisions occurred on 25 MPH streets (31), and most - 44% - occurred on streets with a 35 MPH or higher posted speed limit collisions occurred on streets (35 MPH - 22, 40 MPH - 13)
- Gaps in Lighting or Missing Lighting (18 at nighttime, 9 at dusk-dawn, 51 at daylight)

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Advanced Stop Bars	Lack of Adequate Gap	Short
High Visibility Crosswalks	Pedestrians Crossing Outside Crosswalk	Short
Protected Left -Turns	Improper Turning, Pedestrian ROW Violation, Broadside	Short
Leading Pedestrian Interval and Pedestrian Recall	Crossing Pedestrians, Pedestrian ROW Violation	Short
Improve Signal Timing (Includes: lengthen clearance intervals; shorten cycle lengths to incentivize crossing with the lights)	Pedestrian Crossing, Signalized Intersection	Short
Pedestrian Scramble	Pedestrian Right of Way Violation	Medium

GOALS

- Improve signal timing and phasing for pedestrians
- Increase visibility for people who drive and walk at night with intersection, roadway, and pedestrian lighting (remove maybe after checking)
- Improve visibility of pedestrians at intersections

Pedestrians Crossing Mid-Block

13% of all killed or severely injury (KSI) collisions occurred when a pedestrian crossed the street in the middle of the street (i.e. away from an intersection).

COLLISION SUMMARY

 20 TOTAL COLLISIONS

 10 KSI COLLISIONS

 20 PEDESTRIAN COLLISIONS

 10 PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 50% of collisions that occurred were Pedestrian Violation
- 20% of collisions that occurred were due to Pedestrian Right of Way Violation
- 80% occurred while Crossing in Crosswalk

COLLISION TYPES

- 15 Vehicle/Pedestrian
- 10 Broadside

ROADWAY AND CONTEXTUAL FACTORS

- Most occurred on collector and local streets with one lane in each direction (8 KSIs, 14 total injuries)
- 20% occurred on high speed (35 MPH) multilane streets (4 lane)
- Most occurred on streets speed limits of 30+ mph or more (9 for 30 mph, 4 for 40 mph)
- Almost half occurred at nighttime (9) – not close to a streetlight

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Rectangular Rapid Flashing Beacon or Pedestrian Hybrid Beacon	Pedestrian Crossing Outside of Crosswalk, Midblock	Short
Uncontrolled Pedestrian Crossings with Enhanced Safety Features	Pedestrians Crossing Outside Crosswalk	
Lane Narrowing	Pedestrian Crossing, Unsafe Speed	Medium
Road Diet	Unsafe Speed	Medium
Speed humps and other traffic calming devices	Pedestrian Crossing on Local Street	Short

GOALS

- Increase visibility for people walking at night with roadway and pedestrian lighting
- Improve visibility of pedestrians crossing local and collector streets
- Reduce vehicle speeds on collector and local streets
- Provide safe crossing opportunities on multilane streets

Driving Under the Influence

10% of all killed and severe injury (KSI) collisions occurred when someone drove under the influence of drugs or alcohol.

COLLISION SUMMARY

 47 TOTAL COLLISIONS

 8 KSI COLLISIONS

 1 BICYCLE AND PEDESTRIAN COLLISIONS

 1 BICYCLE AND PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- Driving Under the Influence of Alcohol or Drug

COLLISION TYPES

- 14 Rear-End
- 7 Broadside
- 6 Hit Object
- 5 Sideswipe
- 3 Head-On
- 10 Broadside

ROADWAY AND CONTEXTUAL FACTORS

- Crashes were distributed between midblock (1 KSIs, 17 total injuries) locations, unsignalized intersections (3 KSIs, 16 total injuries), and signalized intersections (4 KSIs, 14 total injuries)
- About 2/3 occurred on collector and local streets with one lane of traffic in each direction (5 KSIs, 31 total injuries)
- Half occurred on streets with 25 MPH posted speed limit (4 KSIs, 24 total injuries) and a third with speeds 35 MPH or more (35 MPH – 2 KSIs and 8 total injuries, 40 MPH – 2 KSIs and 9 total injuries)
- Almost 3/4 occurred in areas at nighttime

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Roadway and Intersection Lighting	Nighttime	Medium
Extend Yellow and All Red Time	Broadside	Short
Median Barrier	Under the Influence	Medium
Install Edge lines & Centerlines	Hit Object, DUI, Inattentive Drivers	Medium

SECONDARY COUNTERMEASURES

- DUI Related Programs
- More info in Programs section (Chapter X, page Y)

GOALS

- Reduce severity of collisions caused by driving under the influence through roadway design
- Reduce driving under the influence with enforcement and partnerships
- Increase visibility for people who drive, bike, and walk at night with intersection, roadway, and pedestrian lighting

Driver Making a Left Turn at an Intersection

10% of killed and severe injury (KSI) collisions occurred when a driver was making a left turn at an intersection.

COLLISION SUMMARY

 177 TOTAL COLLISIONS

 8 KSI COLLISIONS

 27 BICYCLE AND PEDESTRIAN COLLISIONS

 7 BICYCLE AND PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 29 Improper Turning
- 41 Pedestrian Right of Way Violation
- 84 Vehicle Right of Way Violation, 80 Vehicle only, 4 bike involved
- 38 Crossing in Crosswalk at Intersection (Ped)

COLLISION TYPES

- 68 Broadside
- 58 Head-on
- 46 Vehicle/Pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- Crashes were distributed between signalized Intersections (6 KSIs, 104 total injuries), and unsignalized intersections (2 KSIs, 73 total injuries)
- More than ½ (58%) occurred on collector and local streets with one lane of traffic in each direction (5 KSIs, 103 total injuries) and 42% on multilane streets (3 KSIs, 74 total injuries)

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Install protected turn phase	Improper Turning	Medium
Provide left-turn pocket	Improper Turning	Medium
Improve sight distance	Improper Turning	Short
Raised Median	Left-Turn Collisions	Medium-Long
Advanced Stop Bar	Pedestrian Crossing in Crosswalk, Signalized Intersection	Short
Leading Pedestrian Interval and Pedestrian Recall	Pedestrian Crossing in Crosswalk, Pedestrian Crossing Outside Crosswalk	Short
Turn Restrictions	Improper Turning	Medium
Centerline Hardening	Improper Turning	Short

GOALS

- Increase visibility for people who drive, walk, and bike at night with intersection, roadway, and pedestrian lighting
- Improve visibility of bicycles and pedestrians at intersections
- Improve on current signal design to decrease vehicle-only collisions

Bicyclists at Intersections

7% of killed and severe injury (KSI) collisions that involved bicyclists at intersections, with 1% occurred when the bicyclist was struck by a right-turning vehicle.

COLLISION SUMMARY

 53 TOTAL COLLISIONS

 4 KSI COLLISIONS

 54 BICYCLE AND PEDESTRIAN COLLISIONS

 4 BICYCLE AND PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 22 Wrong Side of Road
- 16 Vehicle Right of Way Violation
- 11 Improper Turning

COLLISION TYPES

- 35 Broadside
- 7 Head-On
- 10 Sideswipe
- 7 Vehicle/Pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- Crashes were distributed between unsignalized intersections (2 KSIs, 31 total injuries), and signalized intersections (2 KSIs, 22 total injuries)
- More than ½ (59%) occurred on collector and local streets with one lane of traffic in each direction
- Primarily 25 mph speed limit (2 KSIs, 26 total injuries), 30 mph (1 KSIs, 14 total injuries), 35 mph (0 KSIs, 21 total injuries), 40 mph (2 KSIs, 12 total injuries)
- Gaps in Lighting or Missing Lighting (14 in nighttime – 2 KSIs)

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Green Conflict Striping	Broadside (Bicycle)	Short
Bike Box	Bike Visibility	
No Right Turn on Red	Vehicle/Bike and Vehicle/Pedestrian Collisions	
Protected Right-Turn Phase	Vehicle/Bike and Vehicle/Pedestrian Collisions	
Green Conflict Zone Markings	Improves Bicyclist Visibility	
Separated Bike Lanes	Wrong Side of the Road (Bicycle)	Medium
Protected Intersections	Pedestrians Crossing in Crosswalk, Pedestrians Crossing Outside Crosswalk	
Leading Pedestrian Interval and Pedestrian Recall	Pedestrian Crossing in Crosswalk, Pedestrian Crossing Outside Crosswalk	Short

GOALS

- Provide separate and protected facilities for people who bike
- Increase visibility for people who walk and bike at night with intersection, roadway, and pedestrian lighting
- Improve visibility of bicycles and pedestrians at intersections
- Improve traffic control at unsignalized intersections
- Improve bicycle visibility at intersections

Pedestrian Crossing at Unsignalized Intersection

COLLISION PROFILE #8

24% of pedestrian injury collisions occurred when a pedestrian was crossing the street at an intersection without a traffic signal (i.e. crosswalk may be stop- or uncontrolled).

COLLISION SUMMARY

 38 TOTAL COLLISIONS

 3 KSI COLLISIONS

 38 PEDESTRIAN COLLISIONS

 3 PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- Almost 2/3 (63%) of occurred when drivers violated the pedestrian's right of way (24)
- Almost 2/3 (63%) of occurred when pedestrians were crossing in a crosswalk at an intersection (24)
- About 1/3 (32%) of collisions occurred when the driver was making a left turn (12)

COLLISION TYPES

- 37 Vehicle/Pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- More than 2/3 (71%) occurred on collector and local streets with one lane of traffic in each direction (3 KSIs, 27 total injuries) and almost 1/3 (29%) on multilane streets (0 KSIs, 11 total injuries)
- Primarily 25 mph speed limit (3 KSIs, 17 total injuries), 30 mph (0 KSIs, 12 total injuries), 35 mph (0 KSIs, 3 total injuries), 40 mph (0 KSIs, 6 total injuries)
- Gaps in Lighting or Missing Lighting (13 at nighttime - 1 KSI)

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Intersection Lighting	Nighttime	Medium
Rectangular Rapid Flashing Beacons or Pedestrian Hybrid Beacons	Pedestrian Right-of-Way	Medium
Advanced Yield Markings	Lack of Adequate Gaps	
High Visibility Crosswalks	Crossing Pedestrians	Medium
Advanced Warning Signs	Uncontrolled Pedestrian Crossing with Enhanced Safety Features	
Median Refuge	Crossing Pedestrians	Medium-Long
Daylighting	Broadside	
Curb Extensions	Pedestrians Crossing Outside Crosswalk	
Advanced Stop Bar	Pedestrian Crossing in Crosswalk	Short

GOALS

- Improve visibility of pedestrians at stop-controlled and uncontrolled intersections
- Increase visibility for people who drive and walk at night with intersection, roadway, and pedestrian lighting (remove maybe after checking)

Rear-End Collisions on Arterials

COLLISION PROFILE #9

19% of vehicle injury collisions occurred when a driver rear-ended a car on an arterial street.

COLLISION SUMMARY

 141 TOTAL COLLISIONS

 3 KSI COLLISIONS

 2 PEDESTRIAN COLLISIONS

 1 PEDESTRIAN KSI COLLISIONS

LOCATION SUMMARY

VIOLATIONS

- 115 Unsafe Speed
- 11 Following Too Closely
- 5 Driving or Biking Under the Influence of Alcohol or Drug
- 6 Improper Turning
- 3 Unsafe Starting or Backing

COLLISION TYPES

- Rear end

ROADWAY AND CONTEXTUAL FACTORS

- About 60% of collisions occurred near signalized intersections (1 KSI), and about 25% occurred near unsignalized intersections (1 KSI, 36 total injuries)
- All collisions occurred on multilane roadways
- Most collisions occurred in the daylight
- 71% of collisions occurred on streets with 35 MPH speed limit or greater (35 MPH – 3 KSIs, 53 total injuries) (40 MPH – 0 KSIs, 47 total injuries) (45 MPH – 0 KSIs, 1 total injury)

PRIMARY COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME
Extend yellow and all-red clearance	Inadequate Signal Timing	Short
Road Diet	Unsafe Speed	Medium
Retroreflective Tape on Signals	Traffic Signals and Signs	Short
Advanced Dilemma-Zone Detection	Unsafe Speed	Short
Supplemental Signal Heads	Traffic Signals and Signs	Long
Speed Feedback Sign	Unsafe Speed	Short
Flashing Beacon as Advance Warning	Signalized Intersections	
Signal Coordination	Unsafe Speed, Signalized Intersection	

GOALS

- Reduce vehicle speeds
- Improve signal visibility and signal timings
- Manage large number of turning vehicles

Priority Locations

Eight hot spot locations in the City of San Leandro were identified through data analysis as priorities for safety enhancements. These locations include:

1. Davis Street (SR 112) between Westgate Parkway and E. 14th Street (SR 185)
2. E. 14th Street (SR 185) between the City limit and Castro Street
3. San Leandro Marina
4. Doolittle Drive in the Marina Neighborhood
5. Manor Boulevard
6. Washington Avenue
7. Hesperian Boulevard
8. Lewelling Boulevard

Figure 9: Collision Hot Spots



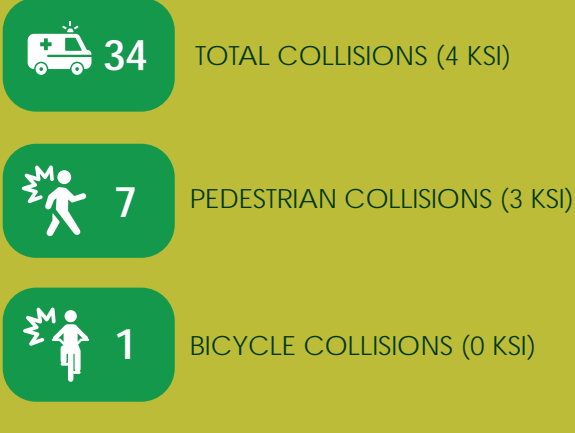
Davis Street | Doolittle Drive to E. 14th Street

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #1

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Pedestrian right of way violation

COLLISION TYPES

- Vehicle/pedestrian
- Broadside
- Rear end

ROADWAY AND CONTEXTUAL FACTORS

- 5-lane roadway with median in some segments
- 25-35 mph speed limit
- On the state highway system with an interchange

GOALS

- Increase pedestrian visibility and safety crossing at major intersections
- Allow adequate time for pedestrian crossing

NEAR SCHOOL

✓ NEAR RETAIL

✓ NEAR PARK

✓ IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
Protected left turn phasing	To Address Pedestrian crossing at signalized intersections	Short	Medium
Leading pedestrian interval	To Address Pedestrian crossing at signalized intersections	Short	Low
High-visibility crosswalks	To Address Pedestrian crossing at signalized intersections	Short	Low
Pedestrian scramble	To Address Pedestrian crossing at signalized intersections	Short	Low

Davis Street | Doolittle Dr to E. 14th St



General Recommendations

- Install Class IV separated bike lanes per Caltrans D4 Bike Plan.
- Restripe all existing standard crosswalk as high-visibility ladder crossing.
- Install advanced stop bars at all controlled crosswalks.
- Install ADA-accessible curb ramps at all crosswalk locations where they are missing.



- Install a protected intersection to shorten pedestrian crossing distances, slow right-turn vehicle speeds, improve sightlines, and facilitate bicycle two-stage crossings.
- Convert Davis Street buffered bike lanes into separated bike lanes west of Doolittle Drive.
- Road diet Doolittle Dr (6 to 4 lanes) and install separated bike lanes.
- Install north crosswalk.
- Straighten all skewed crosswalks.



- Paint bulbs and install speed humps to slow turning vehicle speeds.



- Install raised crosswalk at existing Gilmore Drive/Davis Street crosswalk.

- Add curb extensions to the north side of Phillips Lane and the west side of Davis Street to shorten the distance for crossing pedestrians.
- Close the double right-turns in the southbound direction on Phillips Lane.



- Add curb extensions to the south side of Timothy Drive and the west side of Davis Street to shorten the distance for crossing pedestrians.
- Close double right-turn lanes from the westbound direction on Davis Street.
- Add a curb ramp on the south corner, aligning with the existing crosswalk.



- Straighten all bent crosswalks.



- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.
- Close bikeway gaps on Alvarado Street through repurposing the right-turn pocket.
- Install bus bulbs on Davis Street.



- Straighten bent north crosswalk.



- Straighten bent crosswalk.



- Install separated bike lanes as part of East Bay Greenway project.
- Install protected intersection.
- Add protected southbound right-turn phase with separated bike lanes and consider removing double left-turns.
- Implement leading pedestrian intervals.



- Enhance existing crosswalks with Pedestrian Hybrid Beacons.



- Implement leading pedestrian intervals.

Davis St (SR 112, 61)

Doolittle Dr (SR 61)

Warden Ave

Phillips Ln

Timothy Dr

Nimitz Fwy

Gilmore Dr

Pierce Ave

Wayne Ave

Orchard Ave

Alvarado St

San Leandro Blvd

Carpenter St

Clarke St

Hayes St

Dan Nimer Wy

E 14th St

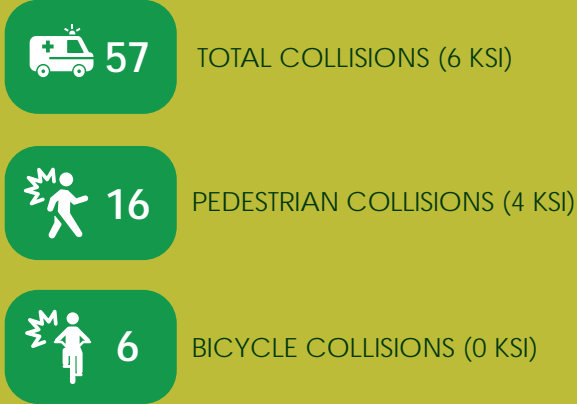
E. 14th Street (SR 185) | Durant Avenue to Castro Street

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #2

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Pedestrian right of way violation

COLLISION TYPES

- Vehicle/pedestrian
- Broadside
- Rear end

ROADWAY AND CONTEXTUAL FACTORS

- 3-lane and 4-lane roadway
- 25-30 mph speed limit
- On the state highway system
- Priority bus route and high pedestrian demand

GOALS

- Increase pedestrian visibility and safety crossing at major intersections
- Allow adequate time for pedestrian crossing



NEAR SCHOOL



NEAR RETAIL



NEAR PARK



IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP ATP Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
Protected left turn phasing	To Address Pedestrian crossing at signalized intersections	Short	Medium
Leading pedestrian interval	To Address Pedestrian crossing at signalized intersections	Short	Low
High-visibility crosswalks	To Address Pedestrian crossing at signalized intersections	Short	Low
Pedestrian scramble	To Address Pedestrian crossing at signalized intersections	Short	Low



• Implement leading pedestrian intervals.



• Enhance existing crosswalks by adding RRFBs.
 • Modify signal phasing to provide southbound queue jump and remove second southbound receiving lane to extend northbound and southbound bike lanes to Broadmoor Blvd.



• Implement leading pedestrian intervals.
 • Install missing north crosswalk.
 • Install bike boxes on eastbound and westbound approaches to connect Broadmoor Boulevard bike route.



• Enhance existing crosswalk with RRFBs to increase visibility of pedestrians crossing.



• Add a high-visibility crosswalk to minor street.



• Implement leading pedestrian intervals.
 • Install two-stage turn boxes at Dutton Avenue bike route.



• Enhance existing crosswalk with RRFBs to increase visibility of pedestrians crossing.



• Remove 3 parking spaces on west side and tighten lane widths to 11' to extend bikeway to Dan Niemi Way/Chumalia St.



• Enhance existing crosswalks with RRFBs to increase visibility of pedestrians crossing.



General Recommendations

- Upgrade bike lanes and close bikeway gaps with Class IV separated bike lanes (assumes min. 67' cross-section).
- Install bike lanes with buffer where cross-section is narrower. Requires detailed design at existing bus bulbs. Assumes second northbound travel lane is repurposed.
- Restripe all existing standard crosswalk as high-visibility ladder crossing.
- Stripe green skip-striping through intersections.
- Install advance stop bars at controlled approaches.
- Install ADA-accessible curb ramps at all crosswalk locations where they are missing.

E 14th St (SR 185)
Dan Niemi Way

Chumalia St

Callan Ave

Davis St (SR 112)

Estudillo Ave

Joaquin Ave

Juana Ave

W Juana Ave

Dolores Ave

Parrott St

Maud Ave

Thornton Ave

Elsie Ave

Williams Ave

Castro St

Sybil Ave

- Restripe east crosswalk as a high-visibility crosswalk.
- Install Class IV separated bike lanes to connect with future bikeway on Davis Street (SR 112)/Callan Avenue corridor.



- Install a bus boarding island.
- Straighten the north crosswalk and stripe west crosswalk as high-visibility.
- Close westbound bike lane gap on Estudillo Avenue.
- Mark bike lanes to the west to connect to the Paseo and West Estudillo Avenue.
- Add pedestrian scramble.
- Install protected left turn phase.



- Install protected left turn phase.



- Install protected left turn phase.



- Install bulbout on northeast corner to straighten north crosswalk and reduce crossing distances. Install directional curb ramps and remove westbound right-turn pocket.
- Move south crosswalk further north to reduce size of intersection, which requires moving a drain inlet.



- Add east crosswalk.

- Move the southbound nearside bus stop to the farside.

General Recommendations

- Road Diet E 14th Street and install bus only lane or Class IV separated bike lanes.
- Restripe all existing standard crosswalk as high-visibility ladder crossing.
- Install advanced stop bars at all controlled crosswalks.
- Implement leading pedestrian intervals at all signalized intersections.
- Install pedestrian recall at signalized intersections Downtown.
- Install ADA-accessible curb ramps at all crosswalk locations where they are missing.



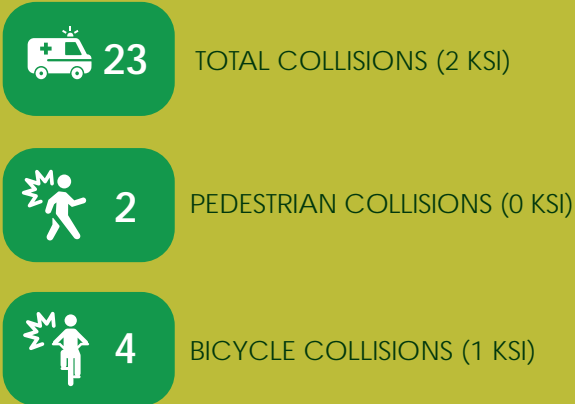
Doolittle Drive | Marina Boulevard to Fairway Drive

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #3

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Improper turning

COLLISION TYPES

- Broadside
- Rear end

ROADWAY AND CONTEXTUAL FACTORS

- 4-lane roadway with no median
- 40 mph speed limit
- Gap in the bikeway network
- Gaps in lighting

GOALS

- Reduce vehicle speeds
- Reduce vehicle-pedestrian conflicts at signalized intersections

NEAR SCHOOL

✓ NEAR RETAIL

NEAR PARK

✓ IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
New crosswalks with enhancements	To Address Pedestrian crossings at unmarked intersections	Medium	Low
Protected left turns	To Address Drivers making left turns at signalized intersections	Short	Medium
Supplemental signal heads	To Address Drivers making left turns at signalized intersections	Medium	Medium
Extending yellow and red time	To Address Drivers making left turns at signalized intersections	Short	Low
Road dieting	To Address Unsafe speeds	Long	Medium
Add lighting	To Address Gaps in lighting	Medium	Medium

Doolittle Drive Marina Blvd to Fairway Dr

Doolittle Dr
(SR 61)

Marina Blvd

W Ave 133rd

W Ave 134th

W Ave 135th

Fairway Drive



- Remove second eastbound through lane on Marina and eastbound receiving lane.
- Straighten south crosswalk.



- Install at least one pedestrian crossing.



- General Recommendations**
- Install separated bike lanes through road diet.
 - Restripe all existing standard crosswalks as high-visibility ladder crossings.
 - Install advanced stop bars at all controlled crosswalks.
 - Install ADA-compliant curb ramps at all crosswalks where they are missing.



- Install leading pedestrian intervals.
- Install protected intersection and confirm if additional phasing separation is needed.

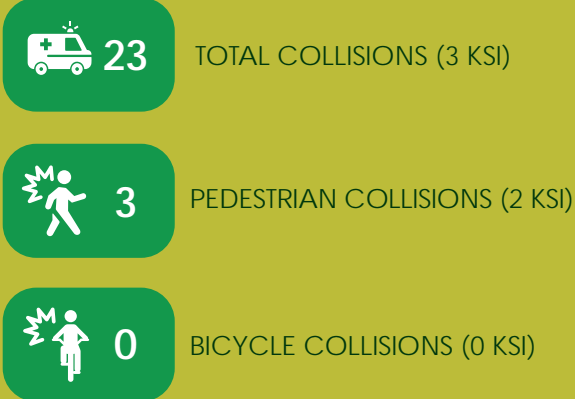
Manor Boulevard | Wicks Boulevard to Kesterson Street

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #4

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Pedestrian violation

COLLISION TYPES

- Broadside
- Head-on
- Rear end
- Vehicle/pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- 2-lane roadway
- 30 mph speed limit
- Narrow sidewalks
- Limited marked crossing opportunities

GOALS

- Increase pedestrian visibility and comfort when crossing at signalized intersections
- Increase safety at mid-block crossings
- Decrease vehicle speeds

NEAR SCHOOL

NEAR RETAIL

NEAR PARK

IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
High-visibility crosswalks	To Address Pedestrian collisions at uncontrolled crossings and mid-block locations	Short	Low
Rectangular Rapid Flashing Beacons	To Address Pedestrian collisions at uncontrolled crossings and mid-block locations	Medium	Medium
Lane narrowing	To Address Unsafe speed	Long	Low
Neighborhood traffic calming	To Address Unsafe speed	Short	Medium

Manor Boulevard | Wicks Blvd to Kesterson St



- Bulb onto northeast and southeast corners to narrow intersection and straighten south curbline.
- Install missing north crosswalk.
- Install leading pedestrian intervals.

- Enhance existing crosswalks with RRFBs to increase visibility of pedestrians crossing.



- Enhance existing crosswalks with RRFBs to increase visibility of pedestrians crossing.



- Install high-visibility crosswalks with RRFBs.



- Install separated bike lane between Wicks Boulevard and Wengate Street.



General Recommendations

- Install bike lanes through prohibiting parking on one side of the street.
- Restripe all existing standard crosswalk as high-visibility ladder crossings.
- Install advanced stop bars at all controlled crosswalks.
- Manor Blvd repaving project will upgrade curb ramps where needed.

Manor Blvd

Wicks Blvd

Wengate St

Juniper St

Photts St

Costela St

Wiley St

Inverness St

Farnsworth St

Edgemoor St

Dewey St

Churchill St

Zelma St

Beatty St

Andlover St

Fleming St

Norton St

Endicott St

Crosby St

Swenson St

Alexandria St

Grenda St

Kesterson St

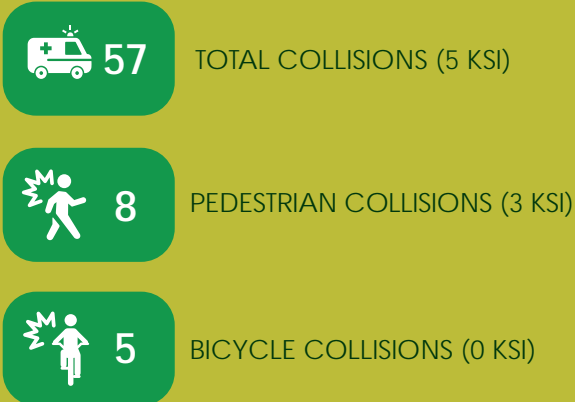
Washington Avenue | Halcyon Boulevard to Lewelling Boulevard

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #5

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Vehicle right of way violation
- Unsafe speed

COLLISION TYPES

- Broadside
- Rear end
- Sideswipe
- Head-on
- Vehicle/pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- 4-lane and 5-lane roadway with no median
- 35 mph speed limit
- Freeway interchange
- Gaps in the bikeway network
- Gaps in lighting

GOALS

- Increase pedestrian visibility and comfort when crossing at signalized intersections and mid-block crossings
- Increase visibility at nighttime, or in locations with poor lighting conditions
- Increase safety for bicyclists

NEAR SCHOOL

✓ NEAR RETAIL

NEAR PARK

✓ IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
High visibility crosswalks	To Address Drivers not stopping/yielding at crosswalks	Short	Low
Pedestrian Hybrid Beacon	To Address Drivers not stopping/yielding at crosswalks	Medium	High
Median refuge with RRFB	To Address Drivers not stopping/yielding at crosswalks	Medium	Medium
Road dieting	To Address Unsafe speeds	Long	Medium
Separated bike lanes	To Address Unsafe speeds	Long	High
Add lighting	To Address Gaps in lighting	Medium	Medium

Washington Avenue | Halcyon Blvd to Lewelling Blvd

- Highlight bike lane going through the intersection with green conflict striping.
- Install leading pedestrian intervals.
- Install protected right turn phases or raise the crosswalk at the slip lane.
- Remove the eastbound right-turn pocket and install a bulb out.
- Close bike lane gap between Floresta Blvd/Halcyon Blvd and Caliente Dr.



- Bring side street to roadway grade and mark crosswalk or rebuild driveway to prioritize pedestrian access.



- Relocate crosswalk to north leg of Lloyd Avenue intersection.
- Install median refuge and RRFBs or PHB.



- Install a protected intersection to shorten pedestrian crossing distances, lower right-turn vehicle speeds, improve sightlines, and facilitate bicycle two-stage crossings.
- Refresh markings on existing bike lane and add solid green paint.
- Upgrade Springlake Dr bike lanes to separated bike lanes.



- Refresh markings on existing bike lane.
- Install leading pedestrian intervals.
- Tighten turn radii on northwest and southwest corners if feasible and straighten the crosswalks.



General Recommendations

- Consider road diet and repurpose excess space to provide separated bike lanes.
- Refresh existing bike lane markings.
- Highlight bike lane through intersection and driveway with green conflict striping.
- Restripe all existing standard crosswalk as high-visibility ladder crossings.
- Install advanced stop bars at all controlled crosswalks.
- Install ADA-compliant curb ramps at all crosswalks where they are missing.

Washington Avenue Halcyon Blvd to Lewelling Blvd

Washington Ave

Springlake Dr

Beatrice St

Fargo Ave

Lewelling Blvd



- Add sidewalk to east side through future redevelopment. If/when that is installed, install crosswalks at Beatrice Street.
- Close both slip lanes and install protected right-turn phase for pedestrian and bicyclist safety.



- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.
- Tighten turn radii for all corners.
- Close double left turns on Fargo Avenue and Washington Avenue.



- Install protected intersection through removal of RT pockets and remove slip lanes.
- Install protected turn phasing based on conflicting vehicle volumes and safety considerations.
- Straighten crosswalks.



General Recommendations

- Install separated bike lanes.
- Highlight bike lane through intersection and driveway with green conflict striping.
- Restripe all existing standard crosswalk as high-visibility ladder crossings.
- Install advanced stop bars at all controlled crosswalks.
- Install ADA-compliant curb ramps at all crosswalks where they are missing.

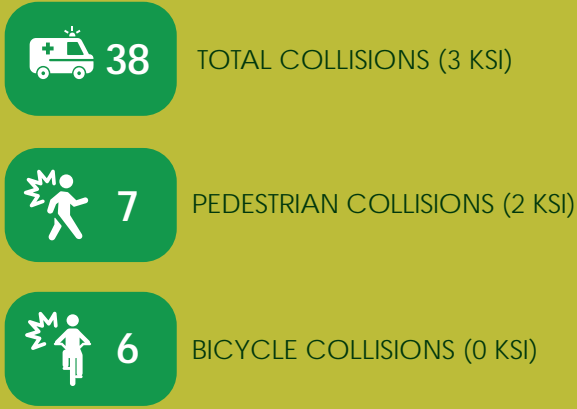
Hesperian Boulevard | E. 14th Street to Springlake Drive

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #6

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Pedestrian right of way violation

COLLISION TYPES

- Rear end
- Broadside
- Vehicle/pedestrian

ROADWAY AND CONTEXTUAL FACTORS

- 5-lane to 7-lane roadway with median
- 40 mph speed limit
- Gaps in the bikeway network
- Gaps in lighting

GOALS

- Reduce vehicle speeds
- Increase pedestrian visibility and comfort when crossing on major arterials

NEAR SCHOOL



NEAR RETAIL

NEAR PARK

IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
Traffic calming measures (road diet, narrowing lanes)	To Address Rear-end collisions	Long	Medium
Extend yellow and all red time	To Address Rear-end collisions	Short	Low
High-visibility crosswalks	To Address Pedestrian collisions at signalized, unsignalized, and midblock crossings	Short	Low
RRFBs or PHBs where appropriate	To Address Pedestrian collisions	Medium	High
Add lighting	To Address Gaps in lighting	Medium	Medium
Road dieting	To Address Unsafe speed	Long	Medium
Separated bikeways	To Address Unsafe speed	Long	High

Hesperian Boulevard E. 14th St to Springlake Dr



- Prohibit northbound left onto East 14th Street.
- Coordinate protected intersection design with related projects: East Bay Greenway and Crosstown Corridors.



- Enhance the existing crosswalk with Pedestrian Hybrid Beacons (will be included in the Hesperian paving project in 2023).



- Install leading pedestrian intervals.
- Install a south crosswalk.
- Reconstruct intersection to provide crossings on all legs. Remove Bayfair Drive median and eastbound right turn pocket to better align Ruth Court and Bayfair Drive.



- Enhance the existing crosswalk with Pedestrian Hybrid Beacons.
- Add a pedestrian refuge island at the southbound separated bike lane and the median (will be included in the Hesperian paving project in 2023).
- Straighten the skewed crosswalk on Colby Street.



General Recommendations

- Install separated bike lanes with concrete protection. Bike lanes will be installed between Springlake Drive and Fairmont Drive during 2023 repaving.
- Highlight bike lane through intersection and driveway with green conflict striping.
- Restripe all existing standard crosswalk as high-visibility ladder crossings.
- Install advanced stop bars at all controlled crosswalks.
- Crosswalk enhancements including curb extensions and signal modifications will be included in the Hesperian paving project (2023).

Louise St

Grace St

Halycon Dr

Adason Dr

Fairmont Dr

Bayfair Dr

Olive St

Thornally Dr

Colby St

Drew St

Springlake Dr

- Install leading pedestrian intervals and protected left turn phases to reduce vehicle/pedestrian and left turn conflicts.
- Realign 150th Avenue to better align with Louise Street and reduce the size of the intersection.
- Mark the north crosswalk, close the slip lane across 150th Avenue, prohibit southbound left, and consider removing the northbound right turn lane onto 150th Avenue.



- Install leading pedestrian intervals.
- Reconstruct intersection to straighten crosswalks and to provide a protected intersection for access to BART. Coordinate long-term design with BART transit-oriented development and station access improvements.
- Straighten the north crosswalk by extending the curb on the northeast corner.
- Maintain nearside northbound bus stop to align with pedestrian infrastructure on the south side of Thornally Drive.



- Reconstruct intersection to install protected intersection, tighten turn radii, and provide direct crosswalks on all legs. Coordinate project with reconstruction of 238 off-ramp at Springlake Drive.
- On the north leg of the intersection, close westbound slip lane and remove pork chop island. Provide high-visibility crosswalk with median refuge on north leg. Coordinate with rail crossing improvements.
- Close double right turn lanes on 238 off-ramp and on Springlake Drive eastbound.
- At the 238 off-ramp, enhance crosswalk and construct accessible curb ramps.
- Close bike lane gaps and provide separated bike lanes on both Springlake and Hesperian with a protected intersection.

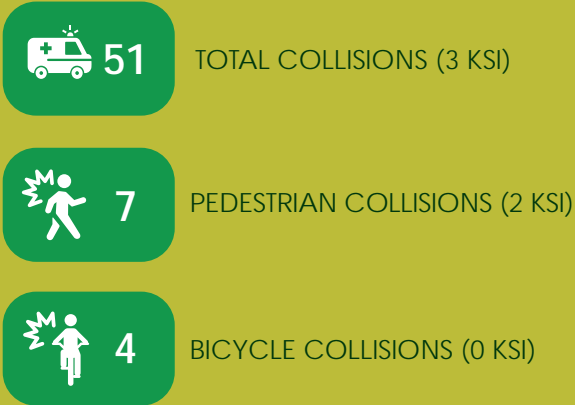
Lewelling Boulevard | Hesperian Boulevard to Wicks Boulevard

TYPE OF EMPHASIS AREA

PRIORITY LOCATION #7

CORRIDOR HOT SPOT

COLLISION SUMMARY



LOCATION SUMMARY

VIOLATIONS

- Unsafe speed
- Vehicle right of way violation
- Pedestrian right of way violation
- Following too closely

COLLISION TYPES

- Head on
- Rear end
- Vehicle/pedestrian
- Broadside

ROADWAY AND CONTEXTUAL FACTORS

- 5-lane roadway with and without median
- 35-40 mph speed limit
- Gaps in the bikeway network
- Gaps in lighting

GOALS

- Increase pedestrian comfort by reducing crossing distances
- Reduce pedestrian/vehicle conflicts at signalized intersections
- Reduce vehicle speeds

NEAR SCHOOL

NEAR RETAIL

NEAR PARK

IN DISADVANTAGED COMMUNITY

RELEVANT GRANT OPPORTUNITIES

HSIP

ATP

Alameda CTC CIP

COUNTERMEASURES

COUNTERMEASURE	ISSUE AREA	TIME FRAME	COST
Conflict striping/bike boxes	To Address Bicycle collisions at intersections	Medium	Low
Protected left turn phasing	To Address Bicycle collisions at intersections	Short	Medium
Road dieting	To Address Unsafe speeds	Long	Medium
Curb extensions	To Address Unsafe speeds	Long	Medium
Separated bikeways	To Address Unsafe speeds	Long	High

Lewelling Boulevard Hesperian Blvd to Wicks Blvd



- Install a protected intersection to shorten pedestrian crossing distances, lower right-turn vehicle speeds, improve sightlines, and facilitate bicycle two-stage crossings.
- Close the double right-turns on the southbound direction on Wicks Boulevard.
- On the north leg of the intersection, close northbound slip lane and remove pork chop island.

- Enhance the existing crosswalk with Pedestrian Hybrid Beacons.



- Add protected left turn phasing.
- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.



- Enhance the existing crosswalk with Pedestrian Hybrid Beacons.



- Address side-street left-turn conflicts by adding directional median openings.



- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.
- Reconstruct corners to straighten sidewalk.
- Tighten turn radii for all corners.
- Close double rights turns on both sides of Lewelling Boulevard and Washington Avenue.
- On the south leg of the intersection, close southbound slip lane and remove pork chop island.



- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.
- Refresh markings on existing bike lane and add solid green paint.
- Straighten skewed sidewalk on the east leg to align with curb ramp.



- Coordinate with Alameda County Public Works to install a protected intersection to shorten pedestrian crossing distances, lower right-turn vehicle speeds, improve sightlines, and facilitate bicycle two-stage crossings.
- Install leading pedestrian intervals to the intersection to give pedestrians a head start crossing the street.
- On the north leg of the intersection, close westbound slip lane and remove pork chop island.
- Close the double right-turns on the eastbound and westbound directions on Lewelling Boulevard and on the northbound direction on Hesperian Boulevard.



General Recommendations

- Install separated bike lanes.
- Highlight bike lane through intersection and driveway with green conflict striping.
- Restripe all existing standard crosswalk as high-visibility ladder crossings.
- Install advanced stop bars at all controlled crosswalks.
- Install ADA-compliant curb ramps at all crosswalks where they are missing.

7. Evaluation and Implementation

This chapter describes the process that can be used by the City to evaluate the success of the plan, ensure implementation, and identify funding sources for projects.

Funding Opportunities

Safety projects can be funded through a wide range of sources at the regional, state, and federal levels. Highway Safety Improvement Program (HSIP) funds are largely awarded based on a benefit/cost analysis using a set of Caltrans-approved countermeasures with documented collision reduction factors and historic collision data. While many safety projects will perform well in the HSIP process, others may be successfully funded through other sources that consider additional factors, such as the Active Transportation Program (ATP). The sources below may be used to fund a broad scope of projects targeting air quality and sustainability, affordable housing, and transportation. Successful projects often entail creative solutions that address impact areas beyond transportation safety alone.

Local and Regional Sources

Funding Source	Description	Frequency/Funding Cycle
MTC One Bay Area Grand (OBAG)	The OBAG program funds \$375 million over 4 years. Funds will be targeted to address critical climate and focused growth goals of Plan Bay Area 2050, and used to coordinate and deploy strategies that are best suited for regional implementation, such as: Climate Initiatives, Transformational Transit Action Plan near-term investments, Near-term multimodal operational improvements, such as Bay Bridge Forward Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and other new growth geographies planning and implementation Complete Streets Policy and Regional Active Transportation Plan Regional Safety/Vision Zero Policy, Pavement Management Program.	Not Applicable
Alameda County Transportation Commission (CTC) Comprehensive Investment Plan (CIP)	The Comprehensive Investment Plan (CIP) is Alameda CTC's near-term strategic planning and programming document through which fund sources administered by Alameda CTC are programmed through a consolidated process to maximize investments towards critical transportation infrastructure and program operations needs that are essential for developing and maintaining the county's transportation system. Eligible projects include: 1) Bicycle and/or pedestrian capital projects and programs, 2) Complete street and road improvements, 3) Transit-related capital projects, 4) Shuttle and other program operations	Biennial funding cycle (next in 2024)

Funding Source	Description	Frequency/Funding Cycle
Developer Fees	California law allows local governments to establish and charge a fee on residential and non-residential developments to fund public facilities and to service population growth. Public facility fees can be charged to new development based on density and traffic impacts, and can go to a variety of public facilities, one being local roadways.	Not Applicable
Lifeline Transportation Program	The Metropolitan Transportation Commission (MTC) has created the Lifeline Transportation Program to evaluate state and federal funds to provide grants for mobility and accessibility needs in low-income communities across the Bay Area. New guidelines are established for each cycle and the projects must address transportation gaps or barriers identified in community-based transportation plans or other local planning efforts in low-income neighborhoods.	Biennial funding cycle
Program for Arterial System Synchronization (PASS)	Administered through MTC PASS delivers financial and technical assistance to cities and counties to enhance signal coordination across jurisdictions. This includes engineering help for local governments seeking to re-time signals, adjustments to existing traffic-responsive timing systems, “flush” plans for managing traffic incident, and more.	Annual funding cycle
Transportation Development Act Article 3 (TDA3) Funding	Administered through the MTC. TDA3 provides funding annually for bicycle and pedestrian projects. Each county coordinates a consolidated annual request for projects to be funded in the county. Some counties competitively select projects, while other counties distribute the funds to jurisdictions based on population.	Annual funding cycle

State Sources

Funding Source	Description	Funding Timelines
Caltrans Active Transportation Program (ATP)	ATP is a statewide competitive grant application process with the goal of encouraging increased use of active modes of transportation. The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SRTS), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of State Programs.	Frequency: Biennial funding cycle
California Natural Resources Agency Environmental Enhancement and Mitigation (EEM) Program	This program supports projects that “contribute to mitigation of the environmental effects of transportation facilities.” According to the program guidelines, projects that fall under the following category can apply: “Mitigation Projects Beyond the Scope of the Lead Agency responsible for assessing the environmental impact of the proposed transportation improvement.”	Frequency: Annual funding cycle
California Natural Resources Agency Urban Greening Program	This program supports projects that “use natural systems or systems that mimic natural systems to achieve multiple benefits.” Eligible projects include “Non-motorized urban trails that provide safe routes for travel between residences, workplaces, commercial centers, and schools.”	Frequency: Biennial funding cycle

Funding Source	Description	Funding Timelines
California Office of Traffic Safety (OTS) Grant Program	OTS administers traffic safety grants in the following areas: Alcohol Impaired Driving, Distracted Driving, Drug-Impaired Driving, Emergency Medical Services, Motorcycle Safety, Occupant Protection, Pedestrian and Bicycle Safety, Police Traffic Services, Public Relations, Advertising, and Roadway Safety and Traffic Records. This funding is primarily geared to enforcement and outreach efforts.	Frequency: Annual funding cycle Next funding opportunity: FY 2024 application materials and workshops will be announced December 2022; grant applications are due January 31, 2023.
California Strategic Growth Council (SGC) Transformative Climate Communities (TCC) Program	The Transformative Climate Communities (TCC) Program empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to reduce greenhouse gas emissions and local air pollution.	Frequency: Annual funding cycle
Caltrans Strategic Partnerships Grants	These grants, a subset of Caltrans' Sustainable Transportation Planning Grant Program, fund multi-modal planning studies, with a focus on transit, of regional, interregional, and statewide significance. Studies are conducted in partnership with Caltrans and must assist in achieving the Caltrans Mission and Grant Program Objectives.	Frequency: Annual funding cycle Next funding opportunity: FY 2023/2024 application period yet to be announced.
Clean California	The Clean California Local Grant Program (CCLGP), operated by Caltrans, was created by AB 149 in 2021 to beautify and clean up local streets and roads, tribal lands, parks, pathways, transit centers, and other public spaces. The program will allocate \$296 million in state funds, in grants not to exceed \$5 million, to local and regional public agencies that install beautification measures and art in public spaces and remove litter and debris to enhance communities and improve spaces for walking and recreation. The goals of the CCLGP are to: reduce the amount of waste and debris within public rights-of-way, pathways, parks, transit centers, and other public spaces; enhance, rehabilitate, restore, or install measures to beautify and improve public spaces and mitigate the urban heat island effect; enhance public health, cultural connection, and community placemaking by improving public spaces for walking and recreation; and advance equity for underserved communities.	Frequency: Three-year cycle Next funding opportunity: Cycle 2 timeline yet to be announced, likely winter 2024
Highway Safety Improvement Program (HSIP)	California's Local HSIP focuses on infrastructure projects with nationally recognized crash reduction factors (CRFs). Local HSIP projects must be identified based on collision experience, collision potential, collision rate, or other data-supported means. There are opportunities to include systemic safety projects as well.	Frequency: Annual funding cycle Next funding opportunity: HSIP Cycle 11 application due September 12, 2022
SB 1 Local Partnership Program (LPP)	The purpose of this program is to provide local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees with a continuous appropriation of \$200 million annually from the Road Maintenance and Rehabilitation Account to fund road maintenance and rehabilitation, sound walls, and active transportation projects. There is also a competitive grant portion of this project.	Frequency: Biennial funding cycle Next funding opportunity: 2022 program guidelines available summer 2022; applications due winter 2022.

Funding Source	Description	Funding Timelines
SB 1 Local Streets and Roads Program (LSRP)	SB 1 dedicated approximately \$1.5 billion per year in new formula revenues apportioned by the State Controller to cities and counties for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system.	Frequency: Annual funding cycle Next Funding Opportunity: Eligible project lists due Summer-Fall 2022.
SB 1 Solutions for Congested Corridors Program (SCCP)	The Solutions for Congested Corridors Program funds projects designed to reduce congestion in highly traveled and highly congested corridors. This statewide, competitive program makes \$250 million available annually for projects that implement specific transportation performance improvements and are part of a comprehensive corridor plan by providing more transportation choices while preserving the character of local communities and creating opportunities for neighborhood enhancement.	Frequency: Annual funding cycle Next funding opportunity: Cycle 3 (FY 2023/2024) program guidelines available summer/fall 2022; applications due winter 2022.
SB 1 State Transportation Improvement Program (STIP)	The State Transportation Improvement Program (STIP) is the biennial five-year plan for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements.	Frequency: Biennial funding cycle Next funding opportunity: 2024 cycle funding estimate and program details likely to be released Summer 2023.
SGC Affordable Housing and Sustainable Communities (AHSC) Program	The Affordable Housing and Sustainable Communities (AHSC) Program makes it easier for Californians to drive less by making sure housing, jobs, and key destinations are accessible by walking, biking, and transit.	Frequency: Annual funding cycle Next funding opportunity: Round 7 applications due February 2023.

Federal Sources

Funding Source	Description	Frequency/Funding Cycle
Community Development Block Grant (CDBG) Program	The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Communities often use CDBG funds to construct and repair streets and sidewalks.	Frequency: Annual funding cycle Next funding opportunity: Housing and Community Development program application cycle yet to be announced; likely January-February 2023.
Congestion Mitigation and Air Quality (CMAQ) Improvement Program	The FAST Act continued the CMAQ program to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).	Frequency: Annual funding cycle Next funding opportunity: Funding apportioned via metropolitan planning organizations (MPOs) based on a formula.

Funding Source	Description	Frequency/Funding Cycle
Safe Streets For All (SS4A)	The purpose of SS4A grant program is to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through safety action plan development and implementation focused on all users, including pedestrians, bicyclists, public transportation users, motorists, personal conveyance and micromobility users, and commercial vehicle operators. The program provides funding to develop the tools to strengthen a community’s approach to safety and save lives. The Bipartisan Infrastructure Law established the SS4A program and approved \$6 billion in funding, with \$5 billion in advanced appropriations. For fiscal year 2022, \$1 billion has been made available for grants under the SS4A program.	Frequency: Annual funding cycle
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Discretionary Grant Program	This program supports projects that are “road or bridge projects eligible under title 23, United States Code;” and “intermodal projects.” Previously the BUILD grant, this program replaces the TIGER program.	Frequency: Annual funding cycle

Implementation Strategies

Implementation of the LRSP is a vital step in the process in which the identified strategies and projects are executed. To successfully implement programs and projects, partnerships, trust, funding, and coordination need to be proactively managed. Successful implementation requires sustained and coordinated support from key stakeholders, elected officials, and City staff. Some strategies are outlined below:

Oversight & Accountability

To ensure effective delivery of safety projects and programs, establishing a committee or Task Force with key officials and stakeholders within and outside of the City that meets bi-annually or quarterly is recommended. Having appointed leadership will be a crucial part of maintaining buy-in and support for the LRSP from not only officials, but the community as well. Some duties could include conducting briefings and presentations at board and agency meetings, collecting and sharing information on a regular basis, and communicating progress on LRSP goals with the public (i.e. the number of projects funded or implemented and the change in number of collisions over time).

Having continued communication and transparency with stakeholders and community members can allow for greater trust and support of the LRSP’s goals. Some other potential strategies include communication across diverse channels beyond the web (e.g. local news, mailers, and social media), actively soliciting and addressing community concerns, regularly publishing or updating more extensive factsheets on plan progress, and regular public meetings using effective community engagement techniques.

Coordination & Partnership

Much like the stakeholder input received throughout the creation of this Plan, coordination and partnership amongst diverse stakeholders will be essential for effective delivery of the LRSP throughout its lifetime. Some strategies that the City should implement include regularly informing leaders and community groups and stakeholders on progress and key milestones, consulting partner agencies early on in the implementation

process to gather suggestions and feedback, and ongoing monitoring and coordination of opportunities for partnership via project bundling (e.g. integrating LRSP projects with pavement resurfacing and maintenance).

Evaluation Strategies

Evaluation identifies possible opportunities to inform future decision-making and will allow the City to understand how it is doing with regards to meeting its safety goals. It provides the basis for the selection of priority areas, countermeasures, and locations to reduce crashes (and the harm resulting from them).

Recommendations include:

Update the Plan Regularly

For example, scheduling an update every two years could assist with organizing and directing evaluation efforts. As conditions within the City change, it will be necessary to update the LRSP in the future.

Identify Target Metrics and Measure Goal Performance in Priority Areas

To understand progress and safety conditions, several metrics should be used in LRSP evaluation. Examples of measuring goal performance include:

- Monitoring collisions, specific to the goals outlined in this plan
- Monitoring the number of safety infrastructure improvements installed

Additional regular measurement of goal progress in priority areas can be performed every year (e.g. tracking collision trends over time). Tracking and sharing the impacts of both engineering and non-engineering countermeasures, project and program implementation, and any other LRSP-related strategies can be a powerful tool for measuring effectiveness, highlighting areas that need further attention and resources, and identifying tasks and deadlines for responsible stakeholder parties.

Continue Engagement of Stakeholders

Efforts around evaluation should include expanding partnership from diverse sources (e.g. officials, agencies, community advocacy groups). Input from identified partners and future partners, along with collected target metrics, could be used to adapt the plan based on community feedback and expert insight as projects and programs are rolled out.

Conduct pre- and post- surveys with community members to measure how their actions and views have shifted after engagement around traffic safety. Local partners can be tasked with disseminating the pre- and post-surveys to residents. Surveys should evaluate whether respondents express a shift in behavior after having participated in traffic safety programming. The metrics for evaluation can also be developed with local partners to ensure accessibility for the public.

Appendix A: Countermeasure Toolbox

This section contains the full details of all the engineering countermeasures applicable to the City of San Leandro. This countermeasure toolbox details descriptions of each engineering countermeasure along with relevant cost and implementation characteristics. Note, approximate countermeasure costs are categorized as low (up to \$10,000), medium (\$10,000-\$100,000), and high (greater than \$100,000).

The toolbox also includes a table of engineering countermeasures that are applicable to San Leandro but not included in the LRSM, and are therefore not approved for HSIP funding. The final table includes countermeasures that might not address a specific collisions profile but could improve safety more generally throughout the City. These countermeasures should be applied in locations that have disproportionate level of fatalities and severe injury collisions.

To address the safety concerns presented within San Leandro, this Plan pairs data-driven crash analysis with proven countermeasures. Countermeasures can be engineering-based physical improvements, as well as non-engineering strategies in areas such as education, enforcement, and outreach. The full set of countermeasures recommended for implementation in San Leandro are listed on the following pages categorized by focus area. The Engineering Countermeasures Toolbox (Appendix A) include a Crash Reduction Factor (CRF), if applicable, to indicate their relative effectiveness. In contrast to the infrastructure-focused engineering countermeasures, non-engineering countermeasures do not have an associated CRF.

Summary of Engineering Countermeasures

Engineering countermeasures have been studied and proven to reduce collisions based on a set of contextual characteristics, such as the type of collisions and collision locations. Several safety countermeasures have been identified to address the collisions represented by the identified collision profiles in San Leandro. The following summary identifies countermeasures that are found in the Local Road Safety Manual (LRSM). The LRSM reports a CRF that represents the expected effectiveness of a countermeasure in terms of the percentage decrease in crashes of the type affected by the countermeasure. These countermeasures are approved for Highway Safety Improvement Program (HSIP) funding.

Appendix A contains the full details of all the engineering countermeasures applicable to the City of San Leandro. This countermeasure toolbox details descriptions of each engineering countermeasure along with relevant cost and implementation characteristics. The toolbox also includes a table of engineering countermeasures that are applicable to San Leandro but not included in the LRSM, and are therefore not

approved for HSIP funding, as well as a table of countermeasures that might not address a specific collisions profile but could improve safety more generally throughout the City. These countermeasures would be applied in locations that have disproportionate level of fatalities and severe injury collisions.

Countermeasure	In LRSM?
Bikeways	
Bicycle Crossing (Solid Green Paint)	
Bicycle Ramp	
Bicycle Signal/Exclusive Bike Phase	
Bike Box	✓
Bike Detection	
Class II Bike Lane	✓
Extend Bike Lane to Intersection	
Floating Transit Island	
Green Conflict Striping	
Class IV Separated Bikeway	✓
Mixing Zone	
Parking Buffer	
Two-Stage Turn Queue Bike Box	
Extend Green Time For Bikes	✓
Bicycles May Use Full Lane Sign	
Intersections & Roadways	
Rumble Strips	✓
All-Way Stop Control	✓
Centerline Hardening	
Close Slip Lane	
Directional Median Openings to Restrict Left Turns	✓
Improved Pavement Friction	✓
Safety Edge	
Guardrail	✓
Median Barrier	✓
Roundabout	✓
Signal	
Superelevation at Horizontal Curve Locations	
Intersection Reconstruction and Tightening	
Lane Narrowing	
Left Turn Enhanced Daylighting/Slow Turn Wedge	
Paint and Plastic Median	
Paint and Plastic Mini Circle	

Countermeasure	In LRSM?
Partial Closure/Diverter	
Protected Intersection	
Raised Crosswalk	✓
Raised Intersection	
Raised Median	✓
Refuge Island	✓
Reduced Left-Turn Conflict Intersection	✓
Right Turn Slip Lane	
Road Diet	✓
Speed Hump or Speed Table	
Splitter Island	✓
Straighten Crosswalk	
Widen/Pave Shoulder	✓
Other	
Back-In Angled Parking	
Access Management/Close Driveway	
Intersection Lighting	✓
Segment Lighting	✓
Create or Increase Clear Zone	
Curbside Management	
Far-Side Bus Stop	
Delineators, Reflectors, and/or Object Markers	✓
Impact Attenuators	✓
Median Guardrail	
Speed Limit Reduction	
Relocate Select Hazardous Utility Poles	
Remove Obstructions For Sightlines	✓
Upgrade Lighting to LED	
Red Light Camera	
Pedestrian Facilities	
Audible Push Button Upgrade	
Add Sidewalk	✓
Install/Upgrade Pedestrian Crossing at Uncontrolled Locations (Signs and Markings Only)	✓
Co-Locate Bus Stops and Pedestrian Crossings	
Curb Extensions	✓
Extended Time Pushbutton	

Countermeasure	In LRSM?
High-Visibility Crosswalk	✓
Pedestrian Countdown Timer	✓
Pedestrian Hybrid Beacon	✓
Landscape Buffer	
Leading Pedestrian Interval and Pedestrian Recall	✓
Pedestrian Detection	
Remove Crossing Prohibition	
Restripe Crosswalk	
Upgrade Curb Ramp	
Widen Sidewalk	
Rectangular Rapid Flashing Beacon	✓
Signals	
Retroreflective Tape on Signals	✓
Supplemental Signal Heads	✓
Advanced Dilemma Zone Detection	✓
Extend Pedestrian Crossing Time	✓
Extend Yellow and All Red Time	✓
Flashing Yellow Turn Phase	
Pedestrian Scramble	✓
Prohibit Left Turn	✓
Prohibit Turns During Pedestrian Phase	
Protected Left Turns	✓
Prohibit Right-Turn-on-Red	
Separate Right-Turn Phasing	
Shorten Cycle Length	
Signal Interconnectivity and Coordination / Green Wave	✓
Speed Sensitive Rest in Red Signal	✓
Upgrade Signal Head	✓
Signing & Striping	
Advance Stop Bar	✓
Advance Yield Markings	
Curve Advance Warning Sign	✓
Flashing Beacon as Advance Warning	✓
Chevron Signs on Horizontal Curves	✓
LED-Enhanced Sign	✓
Painted Centerline and Raised Pavement Markers at Curves on Residential Streets	
Speed Feedback Sign	

Countermeasure	In LRSM?
Speed Legends on Pavement at Neighborhood Entries	
Striping Through Intersection	✓
Time-Based Turn Restriction	
Upgrade Intersection Pavement Markings	✓
Upgrade Signs with Fluorescent Sheeting	✓
Upgrade Striping	
Upgrade to Larger Warning Signs	✓
Wayfinding	
Yield To Pedestrians Sign	✓

Summary of Non-Engineering Countermeasures

Several non-engineering countermeasures were identified as systematic solutions to the ongoing safety issues in the City of San Leandro.

Youth Education

Launch a countywide transportation safety education campaign targeting youth that covers a wide range of topics, such as alcohol and drug impairment, speeding, and potentially distracted driving. Local schools can also be partners in promoting safe driver behavior during school pick-up and drop offs. Educational campaigns that involve both students and parents can be more impactful as they involve parents, who are actually driving, and students, who may not only remind their parents but also retain safe driving behavior if they eventually drive.

Education Campaigns for Vulnerable Groups

Launch targeted public education campaigns for seniors, non-English speaking populations, or other vulnerable groups.

Pilot Demonstration Safety Projects

Implement pilot demonstration safety projects. Projects can either be implemented on a temporary basis (tactical urbanism) or permanent basis with room for modification (quick builds).

Public Information Campaigns

Launch public safety education campaigns. Example campaign topics include safe speeds, yielding to pedestrians, distracted driving, drinking, and driving, awareness of bicyclists and pedestrians, appropriate crosswalk behavior, rail safety, moving over for EMS vehicles, etc. Campaigns may include yard signs, wall boards/posters in prime injury-corridor neighborhoods, ads on bus exteriors, radio ads, etc. Public education may also involve making safety and crash data publicly available on project websites, the local agency's data portal, social media, and other avenues as appropriate.

Safe Routes to School

Expand the Safe Routes to School (SRTS) program in partnership with the San Leandro Unified School District and Alameda County.

Update City Policies and Standards

Update policies, standards, and guidelines on topics such as signal timing, street design, street lighting, complete streets, and pedestrian crossings to incorporate current best practices and improve safety for all modes.

Targeted Enforcement and Deterrence

When developing a program of targeted enforcement and deterrence, use collision history and corridors on the High Injury Network as one criterion for where to concentrate enforcement efforts. Add extra patrols to look for distracted drivers as part of a statewide distracted driving campaign, with focus on where data indicates that the most traffic safety benefit can be realized. Implement deterrence policies that are highly visible, such as publicized sobriety checkpoints, saturation patrol, and other forms of high visibility enforcement that are effective for safety outcomes.

Neighborhood Slow Zones

Develop a neighborhood slow zone program to allow neighborhoods to request treatments to slow motor vehicles to 15 to 20 mph using traffic calming features, signs, and markings. Selected locations are typically in areas serving children, seniors, public transit users, commercial activity, and pedestrian/bicycle activity.

