DRAFT

LOCAL ROAD SAFETY PLAN

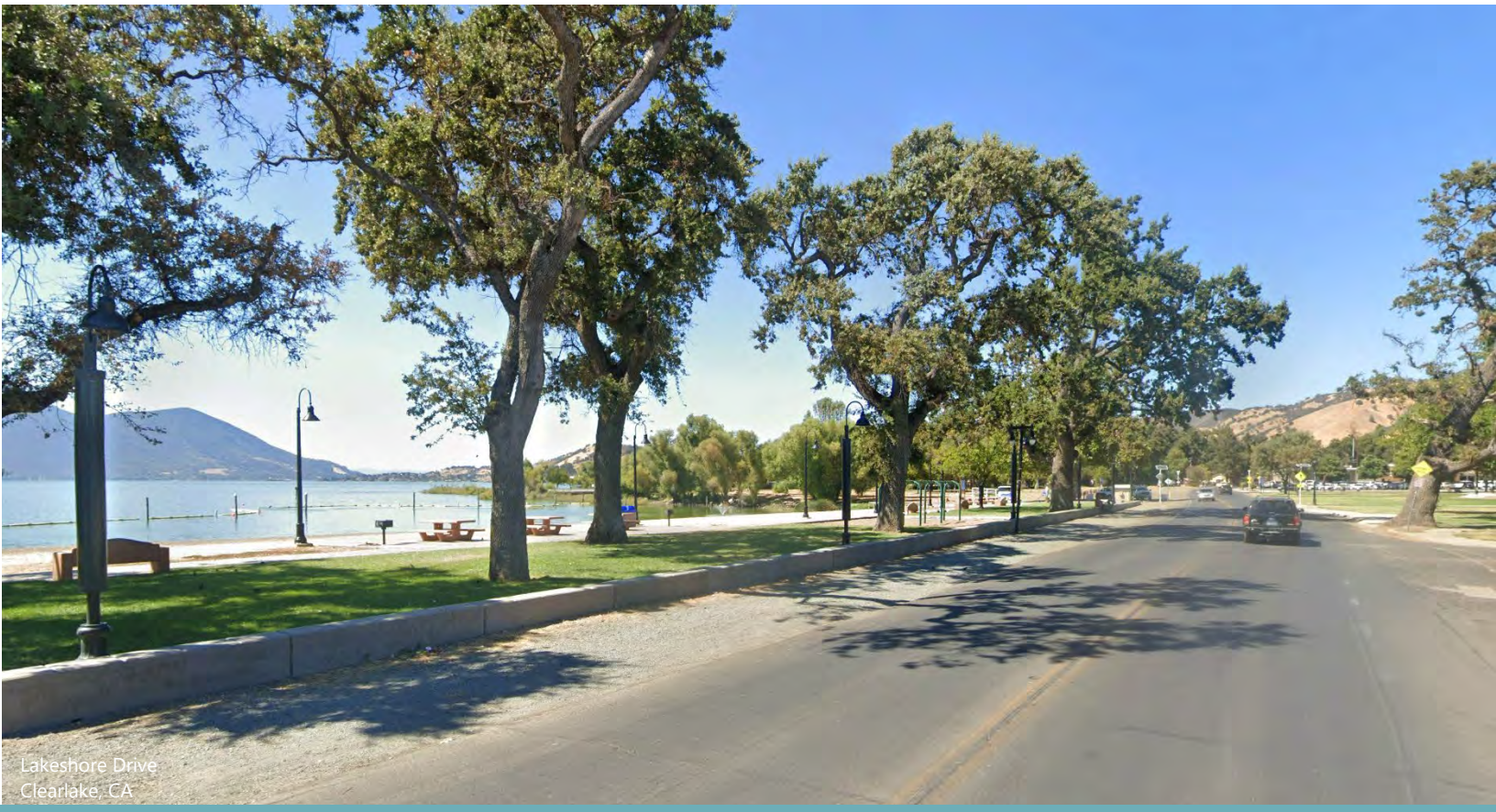
(a Safety Action Plan)

April 2026

Prepared by:

GCW
ENGINEERS \ SURVEYORS

LOCAL ROAD SAFETY PLAN



Lakeshore Drive
Clearlake, CA

APRIL 2026

The Local Road Safety Plan (LRSP) Update is a final work product of the FY 2025/26 Overall Work Program and was completed under Work Element 619.

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ACKNOWLEDGEMENTS

The Lake Area Planning Council, City of Clearlake staff, and other project stakeholders were instrumental in the creation of this Local Road Safety Plan. The local knowledge and collaborative attitude of all stakeholders involved helped create a holistic LRSP. GCW would like to express appreciation to the staff and project stakeholders who contributed to this plan.

Stakeholders

Advocacy Groups

CalFire

California Highway Patrol

Caltrans

City of Clearlake Engineering

City of Clearlake Police Department

City of Clearlake Public Works

Lake County Social Services

Lake Transit Authority

Tribal Governments

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STATUTORY NOTICE

23 U.S.C. 409: US Code – Section 406:
Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway- highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

California Government Code – GOV § 7550

This section is included per California Government Code - GOV § 7550 which states that:

"(a) Any document or written report prepared for or under the direction of a state or local agency, that is prepared in whole or in part by nonemployees of the agency, shall contain the numbers and dollar amounts of all contracts and subcontracts relating to the preparation of the document or written report; if the total cost for the work performed by nonemployees of the agency exceeds five thousand dollars ($5,000). The contract and subcontract numbers and dollar amounts shall be contained in a separate section of the document or written report.

(b) When multiple documents or written reports are the subject or product of the contract, the disclosure section may also contain a statement indicating that the total contract amount represents compensation for multiple documents or written reports."

The contract amount is $109,912 for three Local Road Safety Plans, which includes this Lake County LRSP.

18th Avenue / Phillips Avenue
Clearlake, CA

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18th Avenue
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EXECUTIVE SUMMARY

The City of Clearlake Local Roadway Safety Plan (LRSP) is a comprehensive, data-driven safety action plan that establishes a framework for identifying, evaluating, and prioritizing transportation safety improvements for all roadway users on local streets. Consistent with Vision Zero principles, the LRSP recognizes that traffic-related deaths and serious injuries are preventable and sets a foundation for coordinated actions to move toward a safer transportation system for everyone.

The development of this LRSP was guided by the Safe System Approach and aligns with the *California State Highway Safety Plan*. The plan incorporates public input, analyzes five years of available crash data (2019–2023), identifies priority safety focus areas, and recommends countermeasures and strategies across the four E's of traffic safety: *Engineering*, *Enforcement*, *Education*, and *Emergency Services*. Together, these elements support a proactive and systemic approach to reducing fatal and serious injury crashes.

Identified focus areas represent the greatest opportunities to improve safety and reduce fatal and serious injury crashes in Clearlake based on the Public Outreach results and Crash Data Analysis.

Each emphasis area and its rationale for inclusion in the LRSP are detailed in the Focus Area section of this plan. Recommended countermeasures and strategies may be implemented systemically or at targeted locations.

An implementation plan for the LRSP recommendations is detailed in the Focus Area Strategy Tables and the Implementation Plan sections of this report. The implementation plan outlines initial steps for applying engineering and non-engineering countermeasures and identifies potential funding sources.

LRSP FOCUS AREAS

Pedestrian Safety
Distracted Driving
Intersection Safety
Bicycle Safety
Impaired Driving
Roadway & Intersection Lighting
Speeding
Lane Departures (Roadway Segments)
Motorcycle Safety

The plan also includes Potential Projects that identify high-priority systemic safety improvements for roadway segments, roadway lighting, unsignalized intersections, and pedestrian and bicycle facilities as well as site specific safety improvements (**Appendix E**).

This LRSP was developed in close coordination with the Lake Area Planning Council, City of Clearlake staff, local stakeholders, and the community in compliance with applicable State and Federal requirements for Highway Safety Improvement (HSIP) and Safe Routes for All (SS4A) funding eligibility. The plan provides the necessary data, analysis, and documentation to support future grant applications. Potential HSIP projects are identified in **Appendix E**, and an SS4A Self-Certification Checklist is included in **Appendix F**. The LRSP is intended to be a living document and will be updated every five years using the most up-to-date crash data to assess the effectiveness of implemented countermeasures, monitor progress toward Vision Zero goals, and refine safety focus areas over time.

Clear Lake
Source: clearlake.ca.us

INTRODUCTION

The City of Clearlake has undertaken this Local Road Safety Plan with the goal of improving roadway safety on local roads. This LRSP serves as a comprehensive safety action plan that establishes the framework and processes for developing transportation safety improvements aimed at reducing fatal and serious injury crashes in Clearlake.

INTRODUCTION

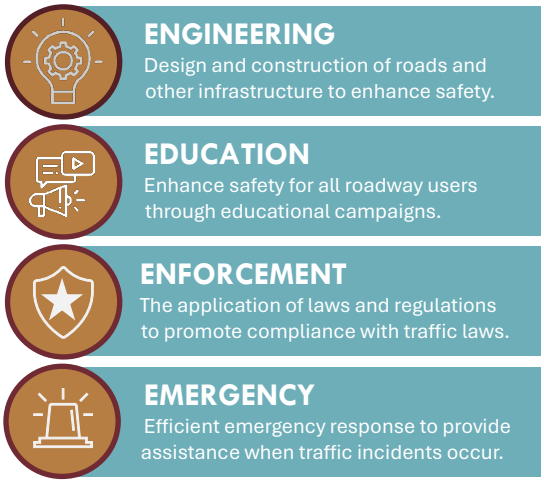
This Local Roadway Safety Plan (LRSP) serves as a comprehensive safety action plan for the City of Clearlake to improve roadway safety and reduce roadway fatalities and serious injuries. The study area for this LRSP is within the city limits of Clearlake, California, which is the largest city in the Lake County region. LRSPs for the city of Lakeport and the unincorporated areas of Lake County are prepared under separate but parallel efforts. This action plan identifies key roadway safety challenges through data-driven analysis and outlines implementable strategies and programmatic initiatives to address the community's most significant transportation-related safety risks.

The LRSP process provides a standardized approach for local agencies to evaluate crash data, identify priority safety focus areas, and select appropriate countermeasures. The plan establishes a framework for identifying and addressing systemic safety issues on local roads based on historical crash trends.

Exhibit 1. The LRSP Process – Identify Stakeholders, Use Safety Data, Choose Proven Solutions, and Implement Solutions.
Source: FHWA

Focus Areas

In 2023, crashes on United States (US) roadways accounted for 40,901 fatalities and represent one of the leading causes of death across the US.[1] By evaluating crash data systemically, the LRSP identifies specific focus areas which represent the largest opportunities to improve safety such as distracted driving or pedestrian safety. The LRSP process also identifies hot spot locations with a high number of crashes historically as well as locations which have similar roadway characteristics but may lack a history of crashes.



Countermeasures are identified based on the types, frequency, and contributing elements of crashes. Identified countermeasures fall under one of the four "E's" of traffic safety which include Engineering, Enforcement, Education, and Emergency Services. The four "E's" are the main thrust of accident prevention and control across the world. Countermeasures and strategies in all four categories are included in the applicable Focus Area and are divided based on the "E" which they address.

Engineering safety projects may be systemic or location specific, and Education and Enforcement strategies are often best

[1] FARS Encyclopedia

implemented following buy-in from community partners and stakeholders. Developing countermeasures across these four areas of traffic safety ensures a plan that improves traffic safety through a variety of approaches.

Grant Funding

Implementation of identified countermeasures typically requires additional grant funding for many agencies. In 2020, the LRSP was established as a required document for any agencies applying for Highway Safety Improvement Program (HSIP) funding. The HSIP is a federal aid program which requires states to develop comprehensive Statewide Highway Safety Plans (SHSPs) focused on reducing fatal and serious injury crashes. The HSIP Grant Program is one of the primary funding mechanisms for roadway safety enhancements across the United States. Each state department of transportation is able to allocate HSIP funding to local entities for traffic safety projects focused on reducing fatal and serious injury crashes. The California Department of Transportation (Caltrans) has required any agency applying for HSIP funding to first complete an LRSP (or equivalent) for funding Cycle 11 and beyond.

Additionally, the U.S. Department of Transportation's (U.S. DOT) National Roadway Safety Strategy is supported by the Safe Streets and Roads for All (SS4A) program, which is a "competitive grant program that funds regional, local, and Tribal initiatives through grants to prevent roadway fatalities and serious injuries." [2] An SS4A compliant "Action Plan" includes key components, which are addressed in this plan.

The Safe System Approach

The U.S. DOT utilizes a Safe System Approach as its guiding methodology for significantly reducing serious injuries and deaths on the nation's roads. This approach is a key step in working toward a "Vision Zero" goal or reaching zero deaths for all roadway users in the future. The National Roadway Safety Strategy (NRSS) states: "The Safe System Approach works by building and reinforcing multiple layers of protection to prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur."[3]

This approach acknowledges that humans make mistakes and that the design and management of transportation infrastructure can help reduce safety risks and minimize crash severity by anticipating these human vulnerabilities. In a safe system, it is acknowledged that responsibility is shared among roadway users

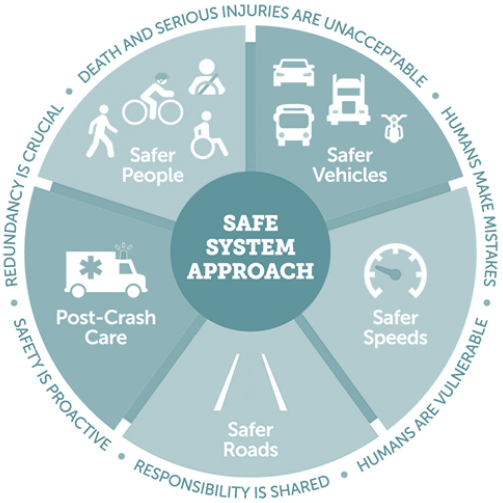


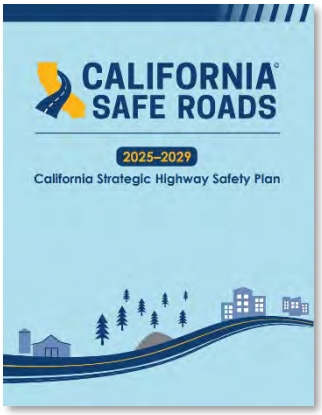
Exhibit 2. The Safe System Approach has five key objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care.
Source: U.S. Department of Transportation

[2] Safe Streets and Roads for All (SS4A) Grant Program | US Department of Transportation
[3] What Is a Safe System Approach? | US Department of Transportation

and those who design, operate, and manage the transportation system.[4] Safety is proactive and redundancy is crucial.

This LRSP incorporates principles of the Safe System Approach through Focus Areas which incorporate both the roadway network and human behavior, and through the 4 E's, which incorporate solutions involving engineering, education, enforcement and emergency services.

Connection with the SHSP



This LRSP aligns with the *2025-2029 "California Safe Roads" Strategic Highway Safety Plan (SHSP)* developed by Caltrans to provide technical assistance in prioritization and deployment of safety countermeasures across the state. The statewide SHSP provides the overall framework, while the LRSP is a specific plan tailored to the unique safety challenges of a local jurisdiction. The SHSP identifies countermeasures and strategies to address specific safety issues which allows local agencies to leverage road safety planning processes to identify and address local needs based on the SHSP countermeasures. The 2025-2029 *SHSP* identifies the following "High Priority Challenge Areas" which represent the greatest opportunity for reducing fatal and serious injury crashes across the state:[5]

- Active Transportation: Bicyclists
- Active Transportation: Pedestrians
- Impaired Driving
- Intersections
- Lane Departures
- Speed Management/Aggressive Driving

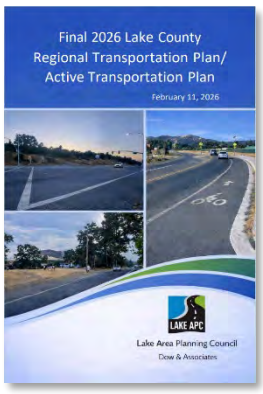
The City of Clearlake LRSP identifies all these high-priority challenge areas as focus areas based on the crash data analysis. These focus areas represent the greatest opportunity for improving safety in the city.


Lakeshore Drive
Clearlake, CA

[4] Safe System—An Approach Toward Zero Traffic Deaths | FHWA
[5] 2025-2029 California Strategic Highway Safety Plan

Existing Efforts

The purpose of this LRSP is to enhance and expand upon other planned projects and safety initiatives in the City of Clearlake. Several roadway improvement projects have been identified in Clearlake through various planning studies conducted within the last five years. These studies and projects were considered in the LRSP process and countermeasure selection.



2026 Regional Transportation Plan/Active Transportation Plan – "The Regional Transportation Plan (RTP) is a long-range planning document developed by the Lake Area Planning Council (Lake APC) in coordination with local, regional, state, and federal partner agencies with the goal of promoting the safe and efficient management, operation and development of a multimodal transportation system, that when linked with appropriate land-use planning, will serve the mobility and needs of people and goods movement throughout the region."[6]

The RTP/ATP provides a list of *financially constrained projects* for state highways, local streets, and roads. Short-term projects are expected to be completed within a one- to 10-year period and long-term projects within an 11- to 20-year period. This list includes projects on State Highways and local roads.

FINANCIALLY CONSTRAINED PROJECTS	TIMEFRAME
Lakeshore Drive Improvements – Roadway Widening, Installation of Turn Lanes, Construction of Sidewalks – Olympic Drive to Highway 53	Short-Term Programmed
Roadway Reconstruction/Rehabilitation – Includes Roadway Widening Projects	Short-Term Programmed
Roundabout at Dam Road	Short-Term Programmed
Roadway Overlay	Short-Term Programmed
Crack Sealing/Micro-Sealing on Lakeshore Drive – SR 53 to Olympic Drive, and Olympic Drive – Lakeshore Drive to SR 53	Short-Term Programmed

The list of *financially unconstrained projects* includes the following:

FINANCIALLY UNCONSTRAINED PROJECTS	TIMEFRAME
Roundabout – Lakeshore Drive/Olympic Drive, Rumsey Road & Old Highway 53	Short-Term Programmed
Rumsey Road & Old Highway 53	Short-Term Programmed
Various Roads Reconstruction – Turner Avenue, Washington Street, Clarkson Street, Emerson Street, Jackson Street, Harrison Street, Green Avenue	Short-Term Programmed

[6] Final-2026-RTP-ATP.pdf

FINANCIALLY UNCONSTRAINED PROJECTS	TIMEFRAME
Various Roads Reconstruction – Highlands Way, Vista Robles Way, Saroni Parkway	Short-Term Programmed
Ridge Road Reconstruction	Short-Term Programmed
Robinson Avenue Reconstruction	Short-Term Programmed
Lansing Avenue Reconstruction and Drainage	Short-Term Programmed
Uhl Avenue Reconstruction – Old Highway 53 to Buckeye Street	Short-Term Programmed
40th Avenue – Old Highway 53 to Alvita Avenue	Short-Term Programmed
Various Roads Reconstruction/Overlay – Ridge View Drive, Lakeside Drive, Pineview Drive, Pineview Court, Lakeview Way	Short-Term Programmed
Various Roads Reconstruction – Morgan Avenue, Manakee Avenue, Huntington Avenue, Scenic Road, Taawina Street, Pomo Road, Mountain View Street, Halika Street, Vista Street, Ciwa Street, Kahul Street, Ukiah Street, Covelo Street, Arcata Street	Short-Term Programmed
Olympic Drive Grind Overlay – Lakeshore to Highway 53	Short-Term Programmed
Roadway Reconstruction/Rehabilitation	Long-Term Programmed
Roadway Overlay	Long-Term Programmed

2025 State Route 53 Corridor Priority Projects Outreach Study – This study summarized key findings and insights garnered through public outreach to help develop and inform a prioritized list of transportation safety project on SR 53 within the city limits of Clearlake. The following projects were prioritized based on a combination of public outreach feedback and a preliminary assessment of feasibility.

PRIORITY PROJECTS
SR 20 to Lakeshore Drive/40th Avenue – Add highway lighting along the corridor, with a focus on intersection lighting.
South of Lakeshore Drive – Add highway lighting along the corridor, with a focus on intersection lighting.
Speeding/Aggressive Driving Campaign – A low-cost and quick-to-implement means to improve safety and enhance other long-term projects through initiatives such as targeted speeding enforcement, speed cameras, and information campaigns.
SR 53/Lakeshore Drive/40th Avenue – Intersection improvements such as enhanced striping and pavement markings, pedestrian countdown timers, evaluation of signal timing parameters, marked crosswalks, construction of sidewalks, upgrade intersection lighting, or potential conversion to roundabout.
SR 53/Dam Road – Intersection improvements such as additional signage, flashing beacons, upgraded pavement markings, and upgraded pedestrian crossings. Sidewalks on side streets, and sidewalks to connect each bus stop. Upgrade intersection lighting.

PRIORITY PROJECTS
SR 53/18th Avenue – Intersection improvements such as additional signage, flashing beacons, and upgraded pavement markings. Sidewalks on side streets, and sidewalks connecting each bus stop. Upgrade intersection lighting. Potential conversion to a roundabout in the long-term.
SR 53 – Construction of bicycle lanes where safe and feasible along SR 53 or adjacent corridors and cross streets.
SR 53/Old Highway 53 – Improve intersection visibility with additional signage, flashing beacons, and upgraded pavement markings.
SR 53/40th Avenue – Operational improvements such as added turn lanes on SR 53 and potential long-term plans for conversion to a roundabout or interchange.
SR 53/18th Avenue – Operational improvements such as added turn lanes on SR 53 and potential long-term plans for conversion to a roundabout or interchange.
SR 53/Dam Road – Added northbound right-turn lane on SR 53.
SR 53 Additional Transit Access – Evaluate expanding transit access around SR 53 to reduce unsafe walking behaviors. Explore additional transit stops and providing enhanced crosswalks and sidewalks at all transit stops to connect to overall sidewalk network in Clearlake.
SR 53 Control-of-Access (C-of-A) Fencing and Lighting – Restrict entry to SR 53 to improve pedestrian safety.
SR 53 Footbridge or Overhead Crossing – An overhead pedestrian crossing/footbridge on SR 53, with location and feasibility to be determined. Potential location between Dam Road and 18th Avenue.

2022 State Route 53 Corridor Local Circulation Study – This study recommends numerous improvements along SR 53 including pedestrian crossings, sidewalks/trails, lighting, bicycle accommodations, transit improvements, and short-term, near-term, and long-term intersection improvements.

2021 City of Clearlake Local Road Safety Plan – The previous LRSP included two selected projects from a list of thirteen potential engineering projects with further detail.

PRIORITY PROJECTS
Intersection Safety – Systemic Unsignalized Intersections – Unsignalized intersections had a significant portion of overall and serious injury crashes. This is a systemic project that proposes improvements at intersections with additional signage, traversable rumble strips, and upgraded pavement markings.
Pedestrian and Bicycle Safety – Systemic Pedestrian Crosswalks Near School – Most pedestrian crashes occurred near schools, with the intersections of Arrowhead Road/Ciwa Street and Halika Street, and Old Highway 53/Airport Road identified to install or upgrade pedestrian accommodations.

In addition to the adoption of these planning documents, the City works closely with local partners and agencies to improve safety on the roadways every single day. Through a variety of day-to-day and project specific activities, the City of Clearlake and Lake APC are continually working to enhance transportation safety for all users.

According to the RTP, the City of Clearlake has focused on transportation improvements in the following two areas: Lakeshore Drive (Park Upgrades and Bicycle/Pedestrian Facilities) and Dam Road/Dam Road Extension (Roundabout with Bicycle/Pedestrian Improvements). Additionally, in last 10 years, the City has made significant improvements to its roadway network, and with funding received from a one-cent sales tax used for roadway maintenance, the Average Pavement Condition Index (PCI) throughout the City is expected to improve and stabilize.[7] This LRSP considers these improvements and strives to identify potential projects that will supplement these existing efforts.

Policies and Standards

The City of Clearlake/Lake County has established several transportation safety-related policies that are documented across several planning documents, including the following:

- The *Active Transportation Plan* or RTP as described in the existing efforts, includes policies for multiagency committees for transportation-related matters (Policy Advisory Committee), Complete Streets (aimed at benefiting all transportation modes and users), Vision Zero (a policy calling for zero fatal and serious injury crashes by 2025), planning policies for multimodal uses including bicycle parking, pedestrian facilities, street lighting and transit. This plan also includes standards for Americans with Disabilities Act (ADA) compliance.
- The *General Plan* also provides policies and best practices for multimodal uses, speed zones, traffic control devices, and more – all of which promote safety on the roadway network.

These policies and standards collectively support the goal of creating a safer roadway network in Clearlake.

Dam Road / Dam Road Extension
Clearlake, CA

[7] Final-2026-RTP-ATP.pdf – Pages 53 and 78


Clearlake, CA

VISION & MISSION

This LRSP aligns with state and national goals of improving roadway safety, particularly by reducing fatal and serious injury crashes. The City of Clearlake shares the vision of federal and national safety initiatives such as Vision Zero and embraces a Safe Systems approach to improve roadway safety.

VISION AND MISSION STATEMENTS

The City of Clearlake is committed to creating a roadway system free of fatal and serious-injury crashes. This LRSP aligns with state and national safety initiatives that promote a Safe System approach and prioritize strategies like speed management, traffic calming, improved visibility, etc. The plan also supports California's focus on advancing safety through innovation, technology, education, and enforcement.

Commitment to Zero

Placeholder for City of Clearlake Commitment to Zero Statement

Vision Statement

"TO HELP ALL TRANSPORTATION USERS IN THE CITY OF CLEARLAKE REACH THEIR DESTINATION SAFELY."

Mission Statement

"TO REDUCE THE NUMBER OF FATALITIES AND SERIOUS INJURIES OCCURRING ON THE ROADWAY SYSTEM IN CLEARLAKE FOR ALL USERS."

The mission and vision statements were developed by the stakeholder group to guide the LRSP and ensure the final recommendations improve safety while furthering the vision and existing efforts of the City. These statements aim to reduce fatalities and serious injuries occurring on the roadway system for all users by applying data-driven strategies, engaging community partners, and implementing proven infrastructure, education, enforcement, and emergency-response measures.

Austin Park
Source: clearlake.ca.us

STAKEHOLDER ENGAGEMENT

Representatives from regional planning agencies, County and City departments, and local public agencies and organizations participated in a Stakeholder Working Group that provided guidance and valuable input throughout the development of the LRSP.

STAKEHOLDER ENGAGEMENT

The Stakeholder Working Group was developed to provide important input and guidance throughout the project, which included assisting with the development of the project vision and mission statements, identifying focus areas, and considering safety strategies and countermeasures.

The Stakeholder Working Group included over 25 representatives from city departments, local and state agencies, and tribal communities including (but not limited to) the following:

Stakeholder Group Members	
• Advocacy Groups	• City of Clearlake Police
• CalFire	• City of Clearlake Public Works
• California Highway Patrol	• Lake Area Planning Council
• Caltrans	• Lake County Social Services
• City of Clearlake Administrative Services	• Lake Transit Authority
• City of Clearlake Engineering	• Tribal Governments

Advocacy groups and other local interest groups included Lake Links, various Fire Protection District representatives, school district representatives, and local media outlets. These stakeholders were invited to participate by attending meetings, sharing the public outreach, and voicing concerns and potential solutions. All participation was optional.

The stakeholders group convened twice throughout the LRSP process to collaborate and provide feedback on the crash data analysis, public outreach, identified countermeasures, and implementation strategies and timeframes. Stakeholder agencies and meeting data is included in **Appendix A.** The stakeholder group will also be key in implementing countermeasures, measuring outcomes, and updating the plan in the future.

Stakeholder Meeting #1: December 2025

The first Stakeholder Working Group meeting was held on December 11, 2025 (online meeting) to introduce the project, discuss the process, outline the public outreach methods, and to identify initial issues and areas of concern.

Stakeholder Meeting #2: March 2026

The second Stakeholder Working Group meeting was held on March 30, 2026 (online meeting) to review the findings of the public outreach survey and to provide feedback on potential projects and countermeasures.

Lakeshore Drive (Austin Park)
Clearlake, CA

PUBLIC OUTREACH

The LRSP process was supported by robust public outreach to ensure community members had opportunities to share their transportation safety concerns. A public outreach survey was conducted in two languages and featured an interactive map that enabled residents to submit georeferenced locations of concern and provide contextual comments.

PUBLIC OUTREACH

Public Outreach Methods

Public outreach was conducted through an online survey via ArcGIS Survey123 and an interactive public comment map through ArcGIS Online. The survey was open for public response from January 20 to March 23, 2026, and was available in English and Spanish. Seven survey questions were developed in consultation with Lake APC and the stakeholder group with an objective to identify demographics, travel habits, transportation-related safety concerns, and focus area prioritization.

OUTREACH METHODS

- ✓ Survey available in English and Spanish
- ✓ In-person and online public outreach
- ✓ Non-electronic (paper copies) available

In addition to the survey questions, respondents were directed to an interactive map which provided an opportunity to identify transportation safety concerns at specific locations in the City of Clearlake using a georeferenced dot. Respondents could categorize their comments on the map as one of the identified emphasis areas or select 'Other' if their comment did not fall under one of the focus areas. In addition, respondents were able to vote in support of or endorse other user comments.

The published survey was distributed via QR code and direct web address through a mix of in-person and digital outreach methods, including the Stakeholders working group, local websites, social media accounts, a bilingual informational flyer, and email distribution lists. The informational flyer was shared electronically and posted at physical locations throughout the City, and is provided in **Appendix B**. The flyer included a QR code for immediate access to the survey using a smartphone and provided accessibility instructions for submitting paper copies at the City of Clearlake and City of Lakeport offices.

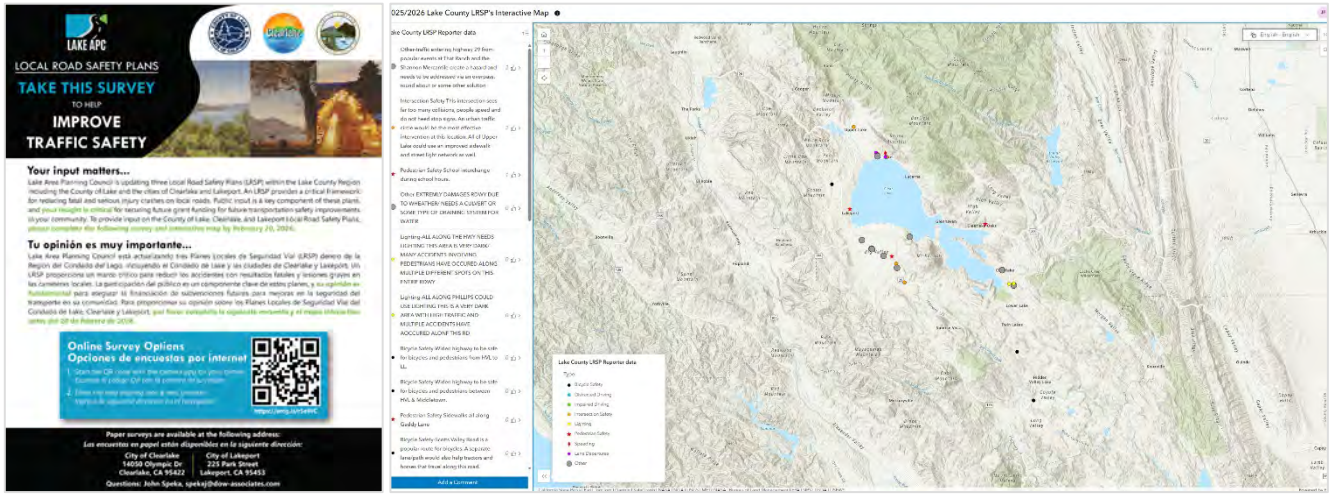


Exhibit 3. The public outreach survey was advertised through a mix of methods, including an informational flyer (shown left). Survey respondents were directed to an interactive map to identify georeferenced transportation safety concerns (shown right).

The City of Clearlake public outreach effort produced a total of 147 completed survey responses and four individual georeferenced safety concerns/comments submitted through the interactive map.

147
SURVEY
RESPONSES

Public Meeting

Additionally, an in-person meeting (with an online option) was held on March 23, 2026 at the Lakeport City Council Chambers. This meeting was held from 5:00 pm to 7:00 pm to allow members of the public to come as convenient for them. The meeting included a presentation covering the LRSP process and findings to date. Members could attend this presentation in person or online via Zoom. After the presentation, members of the project team were on hand with large maps to answer questions, take comments and recommendations, and assist in taking the survey either online or via paper.

Public Outreach Results

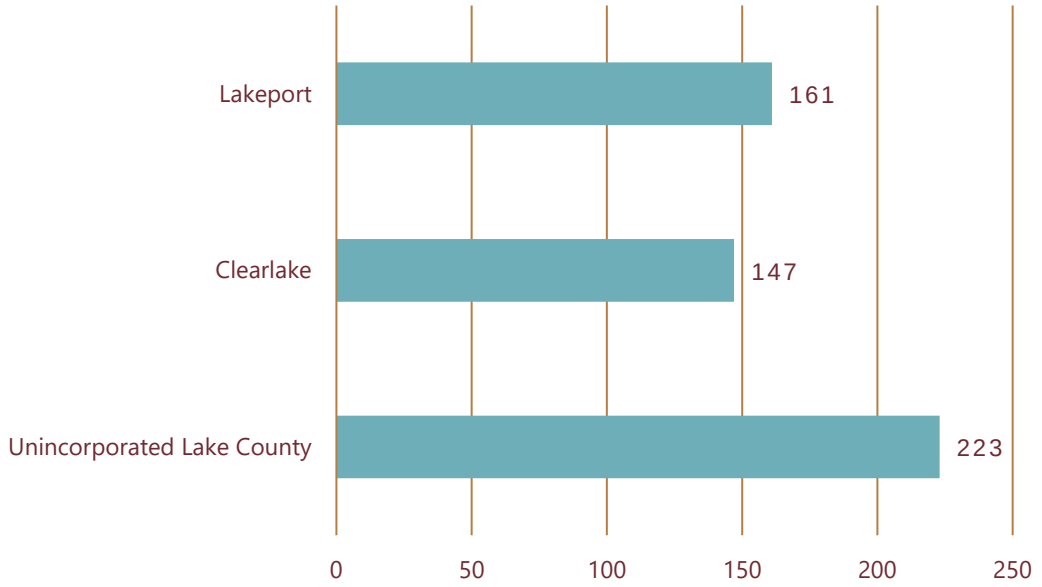
The public outreach survey was structured to gain insight into basic travel habits and age demographics, and to uncover respondents' areas of concern in relation to the LRSP focus areas and their priorities related to potential transportation safety improvements. The input received was critical in the development of the LRSP goals and verification of project focus areas, helping to pinpoint specific safety issues and prioritize the community's safety concerns.

The survey results are summarized below, with greater detail in **Appendix B**.

Note: This outreach effort was conducted for the three LRSPs being developed concurrently – Clearlake, Lake County Unincorporated, and Lakeport. The first question asked respondents which areas they frequently traverse, allowing for multiple selections. This was used to separate the responses by LRSP.

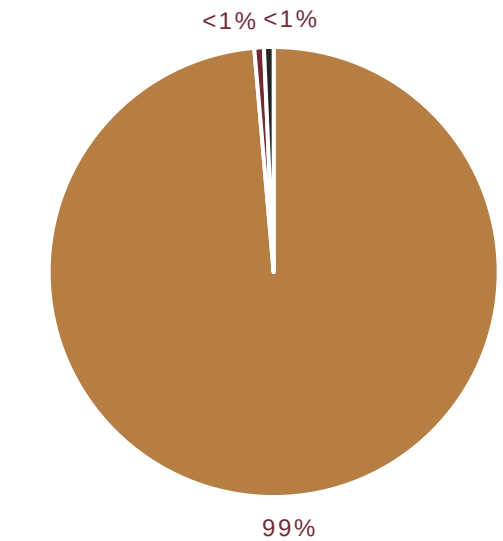

Pine Street
Clearlake, CA

Question 1: What areas do you traverse frequently?

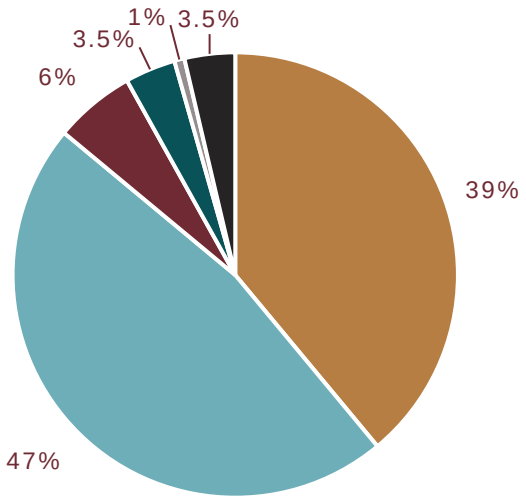


Question 1 Summary: This question was utilized to filter respondent answers to the appropriate Local Road Safety Plan, with a total of 147 survey respondents indicating they regularly travel within the City of Clearlake. Responses from these users were then applied for the subsequent six survey questions.

Question 2: What is your primary mode of transportation?

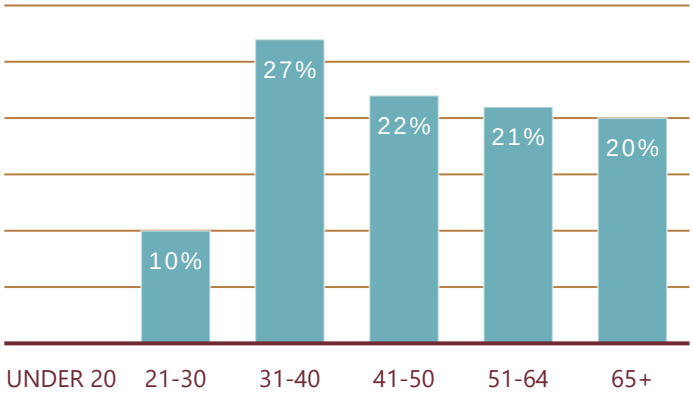


Question 3: What is your secondary mode of transportation?



Question 2 and 3 Summaries: An overwhelming majority of respondents use a personal vehicle as their primary mode of transportation (99%). For the secondary mode of transportation, respondents indicated walking the most with 47 percent, followed by personal vehicle (39%) and bicycle (6%).

Question 4: What is your age?



City of Clearlake Population Estimates	
Persons Under 5 Years	4.1%
Persons Under 18 Years	25.5%
Persons aged 18 Years to 65 Years	53.3%
Persons 65 Years and Over	17.1%

Question 4 Summary: The City of Clearlake is the largest city in Lake County, with an overall 2024 population estimate of 16,636.[8] The majority of responses came from those aged between 31 and 64-years-old. In addition, the survey results generally aligned with the percentage of residents aged 65 years or older statewide.

Question 5: Please rank the following categories based on your personal level of concern.

Focus Areas	Rank/Priority
Pedestrian Safety	1
Distracted Driving	2
Intersection Safety	3
Bicycle Safety	4
Impaired Driving	5
Lighting	6
Speeding	7
Lane Departures	8
Other (Fill In)	9

Question 5 Summary: 'Pedestrian Safety' was ranked as the highest priority, followed by 'Distracted Driving'. Since the development of the *2021 City of Clearlake Local Road Safety Plan*, the top ranked emphasis areas have changed, with pedestrian and intersection safety both increasing in public priority. In addition, bicycle safety moved up in priority, impaired driving dropped, and lighting, speeding, and lane departures generally remained the same. 'Other' results varied and included topics such as roadway maintenance (potholes), aggressive driving, and pedestrian accommodations.

[8] U.S. Census Bureau QuickFacts: California; Lake County, California

Question 6: Which types of transportation safety improvements would be the most beneficial? Rank your top priorities in order.

Focus Areas	Rank/Priority
Better Street Lighting	1
Enforcement (ex: speeding, distracted driving, etc.)	2
Expanded Sidewalk Network	3
More or Improved Pedestrian Crosswalks	4
Intersection Improvements	5
Education Campaigns for Drivers or Pedestrians	6
Traffic Calming	7
Protected Bike Lanes	8
Other (Fill In)	9

Question 6 Summary: 'Better Street Lighting', 'Enforcement', and 'Expanded Sidewalk Network' were indicated as the top three priorities among survey respondents. 'Other' results varied and included topics such as roadway maintenance repairs, striping/reflectors, school zones, and pedestrian crosswalks.

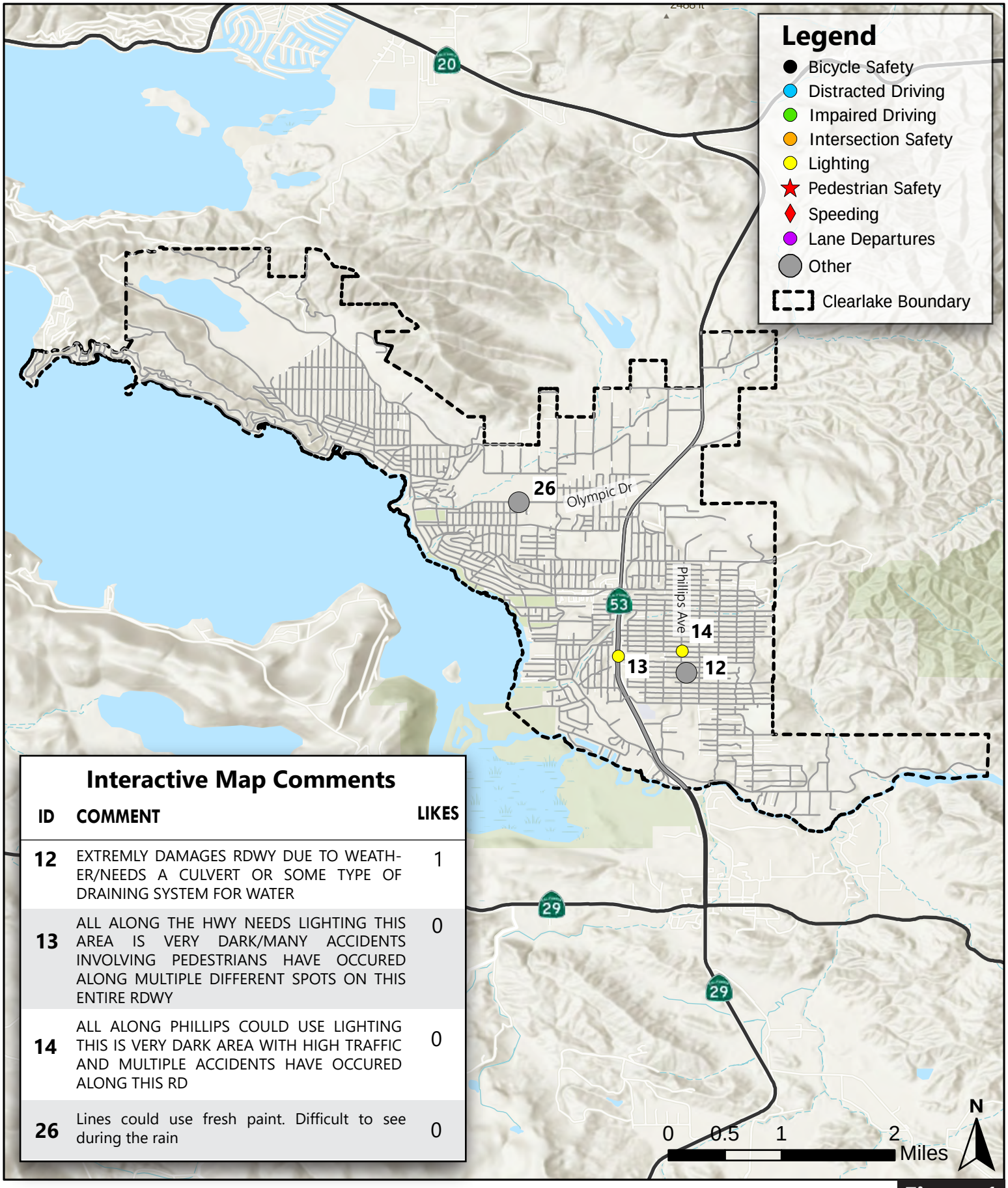
Question 7: Please provide any comments relating to transportation safety in Lake County below.

Open-ended comments from this question of the public outreach survey are provided in **Appendix B**. Lighting conditions and speeding concerns near crosswalks was a primary concern indicated throughout the public outreach, specifically pedestrian safety at crosswalks located near schools. Additionally, pavement and striping conditions, roadway and intersection lighting, and enforcement were noted as specific points of concern.

Summary of Key Areas

Furthermore, the results of the interactive map helped to pinpoint specific locations with safety concerns while assessing their relative priority through the ranked focus areas indicated through the public survey. Within the City of Clearlake, there were two comments relating to lighting – one on SR 53 and the other on Phillips Avenue – and two other comments pertaining to roadway conditions. These georeferenced comments are provided on **Figure 1**.

For more detailed information regarding public concerns, refer to **Appendix B** which includes open-response comments to Question 7 of the public outreach survey.



Interactive Map Comments

ID	COMMENT	LIKES
12	EXTREMLY DAMAGES RDWY DUE TO WEATHER/NEEDS A CULVERT OR SOME TYPE OF DRAINING SYSTEM FOR WATER	1
13	ALL ALONG THE HWY NEEDS LIGHTING THIS AREA IS VERY DARK/MANY ACCIDENTS INVOLVING PEDESTRIANS HAVE OCCURED ALONG MULTIPLE DIFFERENT SPOTS ON THIS ENTIRE RDWY	0
14	ALL ALONG PHILLIPS COULD USE LIGHTING THIS IS VERY DARK AREA WITH HIGH TRAFFIC AND MULTIPLE ACCIDENTS HAVE OCCURED ALONG THIS RD	0
26	Lines could use fresh paint. Difficult to see during the rain	0

Figure 1

Lake County
Local Road Safety Plan

Interactive Public Outreach Map with Comments by Focus Area

GCW ENGINEERS \ SURVEYORS


SR 53
Clearlake, CA

CRASH DATA ANALYSIS

An in-depth analysis of the most recent five years of crash data was conducted to identify crash trends and high frequency crash intersections and roadway segments within the City of Clearlake. The crash data was analyzed to identify overall trends and to uncover key information relating to focus areas on local roads.

CRASH DATA ANALYSIS

Crash data records provide detailed information for each collision, including crash type, time of day, lighting conditions, alcohol involvement, and other contributing factors. Reviewing multiple years of crash data allows for the identification of recurring patterns and locations that may present safety concerns. Given the volume of available crash data, analysis typically begins at a high level (i.e., annual crash totals) and progresses to a more detailed review of crash characteristics and contributing factors, and ultimately to an evaluation of specific locations.

Methodology

Crash data for the most recent five years (2019-2023) for the City of Clearlake was obtained from CHP database and utilized to identify crash trends and high frequency crash intersections and roadway segments.

Crash data records were initially evaluated for the location (intersection/road segment), facility ownership (State/Local), and crash type (Head-on, Vehicle-Pedestrian, Overturned, etc.). Further analysis evaluated the contributing factors including the lighting conditions, pedestrian actions, primary collision factors, and alcohol involvement. Analyzing crash data based on these multiple contributing factors helps to gain a more thorough understanding of specific safety issues and crash trends citywide.

Note Regarding Property Damage Only Crashes

- The CHP database contains PDO crashes, but it is understood that not all PDO crashes are reported to this site and the actual number of PDO crashes is potentially higher.
- The focus of the LRSP is on reducing serious injury and fatal crashes, however all crashes in the database are evaluated for a thorough investigation. Most categories are report for both overall crashes and only serious injury and fatal crashes.

Overall

Reviewing the total number of crashes year by year helps to identify overarching crash trends and evaluate whether crashes are becoming more frequent. **Figure 2** shows the total number of crashes by year and the crash severity (fatal, serious injury, etc.) across the City of Clearlake between 2019 and 2023.

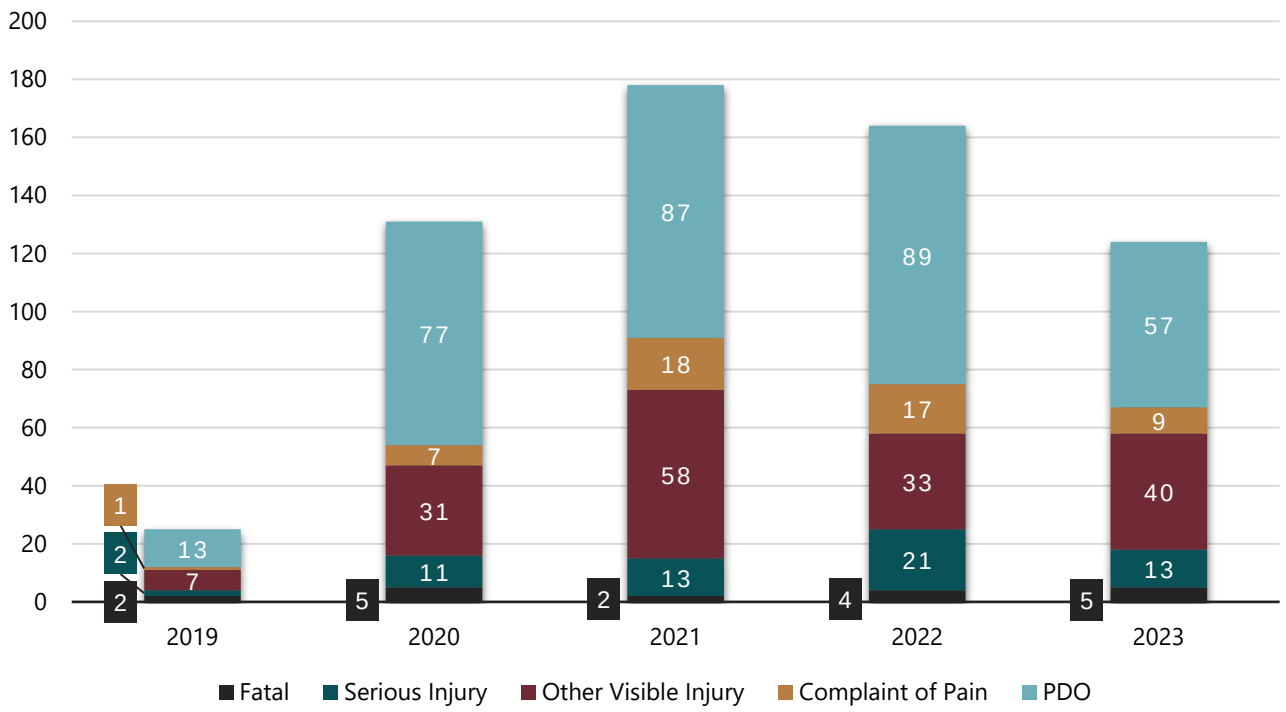


Figure 2. Clearlake Crashes by Severity (2019-2023)

A total of 622 crashes occurred in the City of Clearlake between 2019 and 2023. Over this five-year period, a total of 323 crashes were 'Property Damage Only', 281 resulted in an injury (Complaint of Pain, Other Visible Injury, or Serious Injury), and 18 resulted in a fatality. Approximately 13 percent (78 crashes) resulted in severe injury and fatality. *It is noted that the number of crashes is significantly higher than the previous LRSP (years 2015-2019), which indicated approximately 122 total crashes over five years. This is thought to be attributed to changes in crash reporting trends and not indicative that crash frequencies have significantly increased in recent years.*

Figures 3-5 show the crash data graphically by location of the total crashes by severity, a heatmap, and severe injury and fatal crashes.

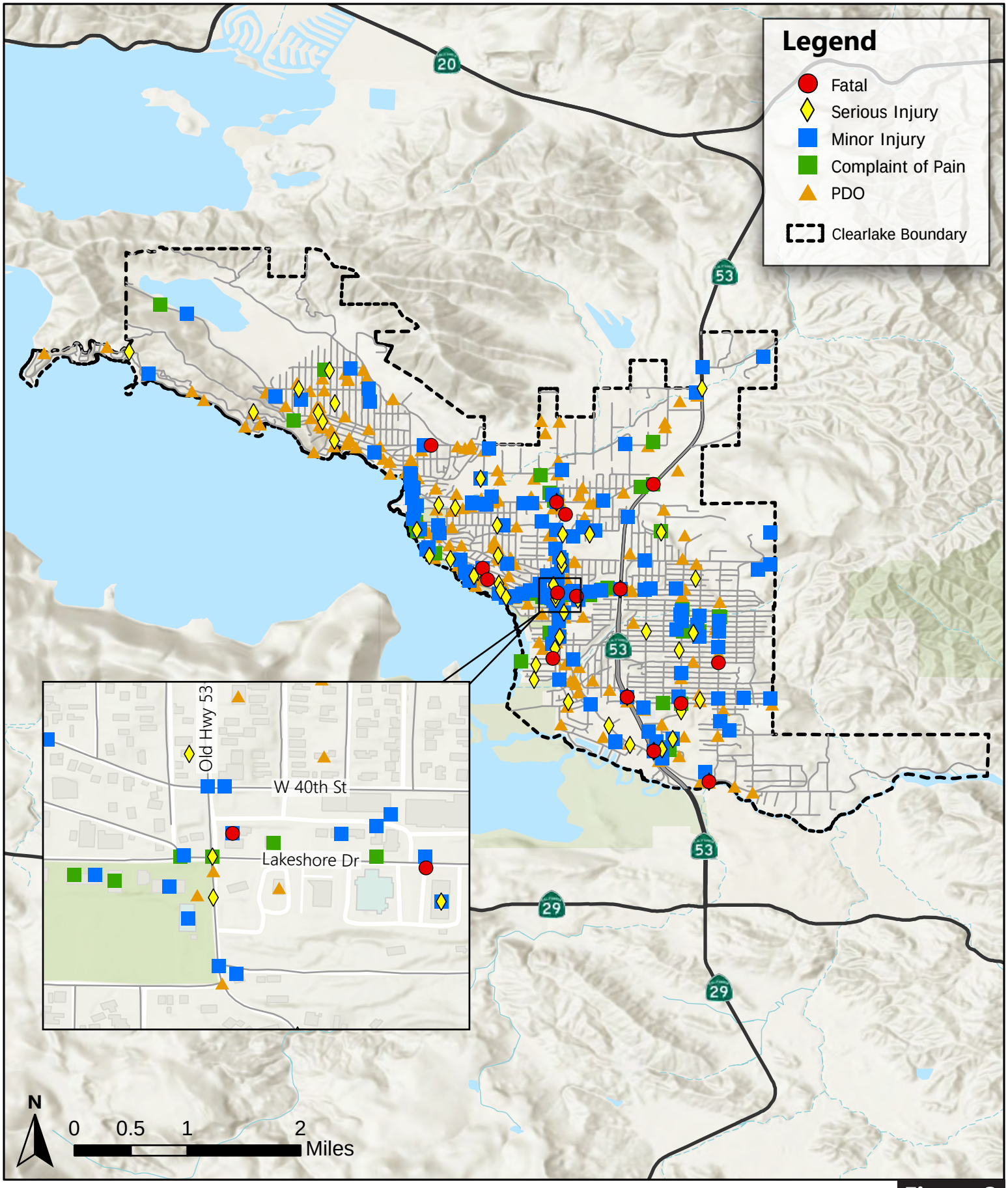


Figure 3

Clearlake
Local Road Safety Plan
Crash Locations by Severity

GCW ENGINEERS \ SURVEYORS

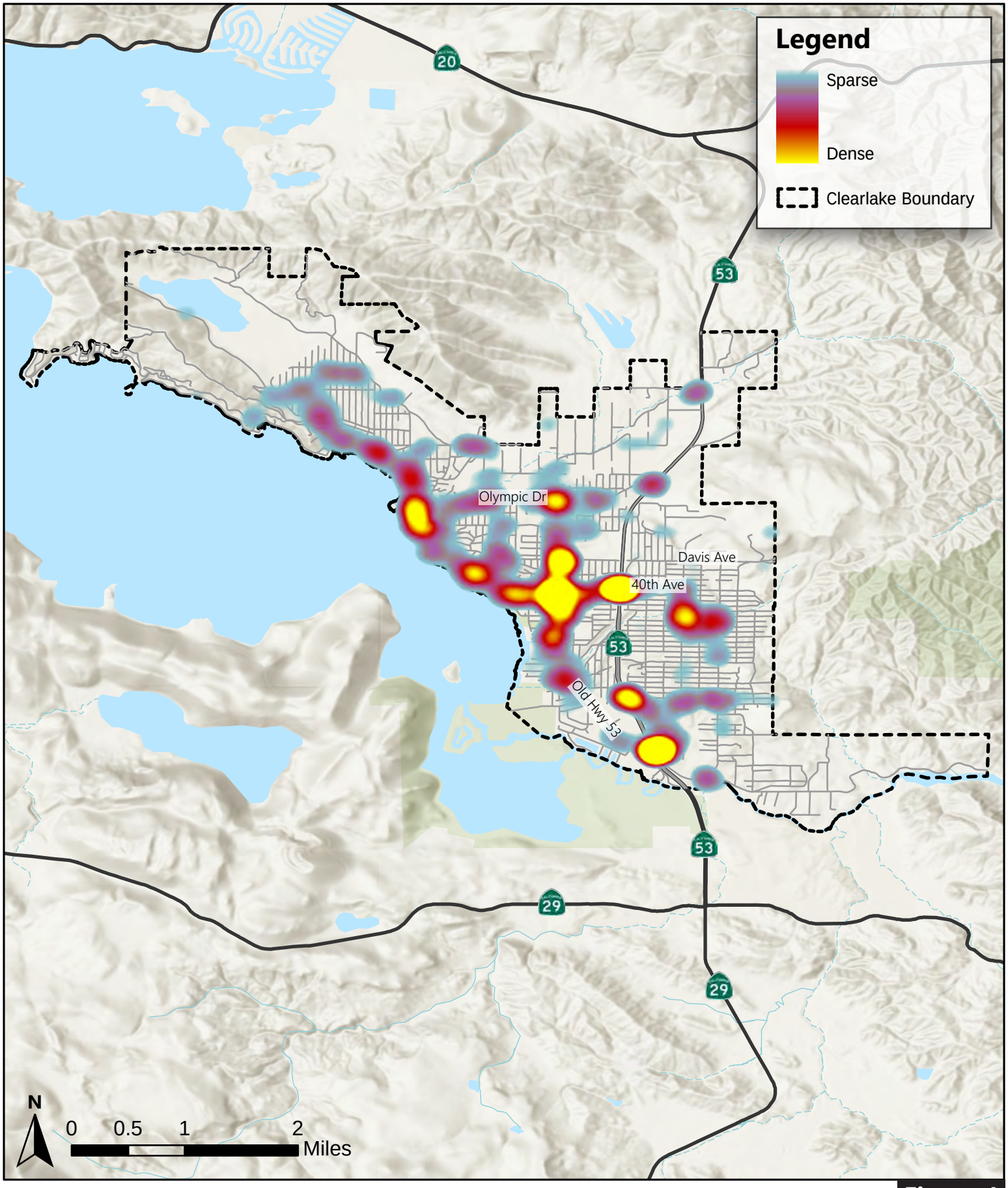


Figure 4

Clearlake
Local Road Safety Plan
Crash Heatmap

GCW ENGINEERS \ SURVEYORS

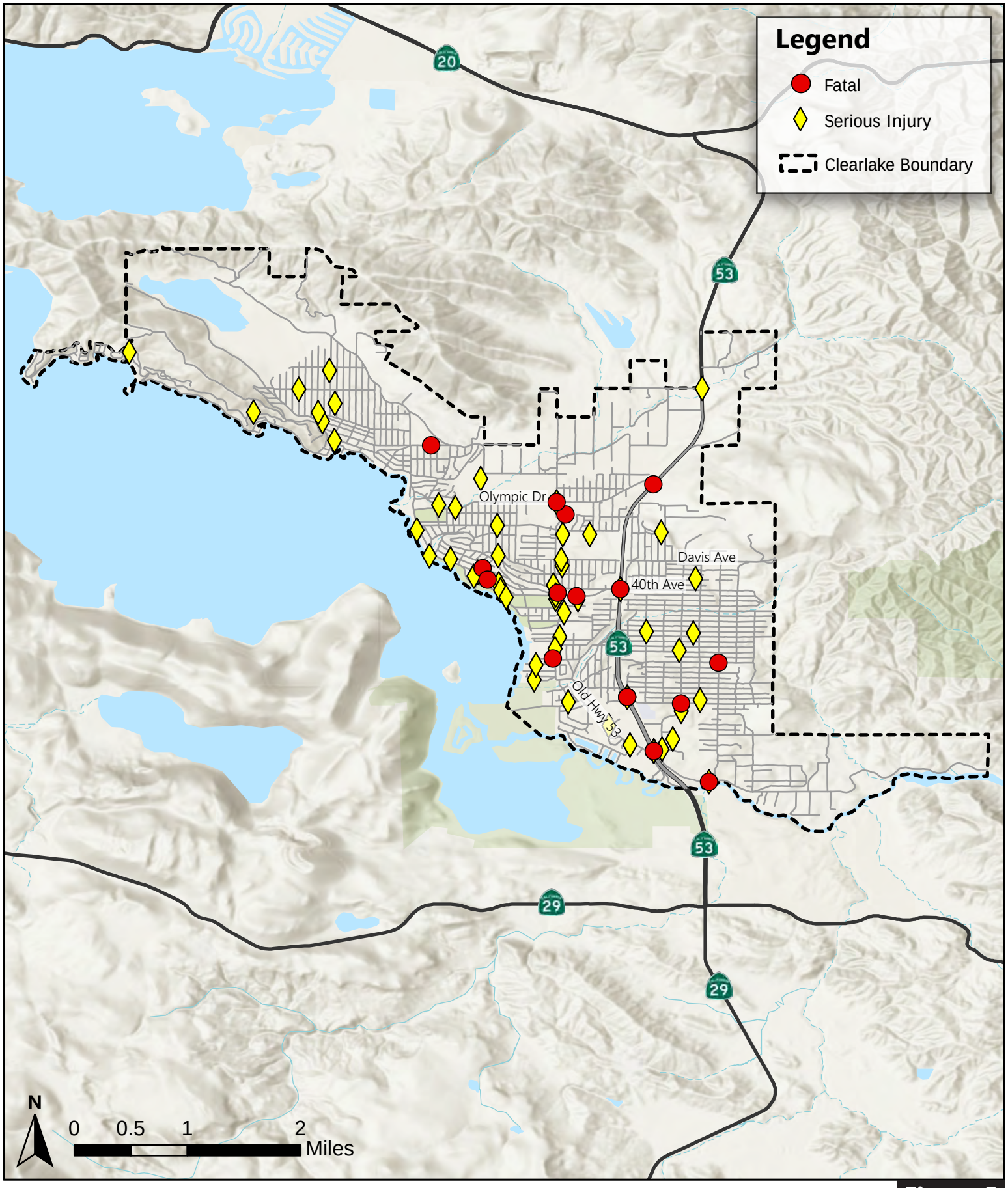


Figure 5

Clearlake
Local Road Safety Plan
Fatal and Serious Injury Crashes

GCV ENGINEERS \ SURVEYORS

Collision Factors

Crash records typically include a 'Primary Collision Factor' (PCF) which can help to identify systemic and location specific crash trends. A PCF represents the leading factor that contributed to the crash but can often provide little detail into the cause of the crash. The top six PCFs which may indicate a crash trend are shown in **Figure 6**, and the top six PCFs resulting in a fatal and serious injury are shown in **Figure 7**.

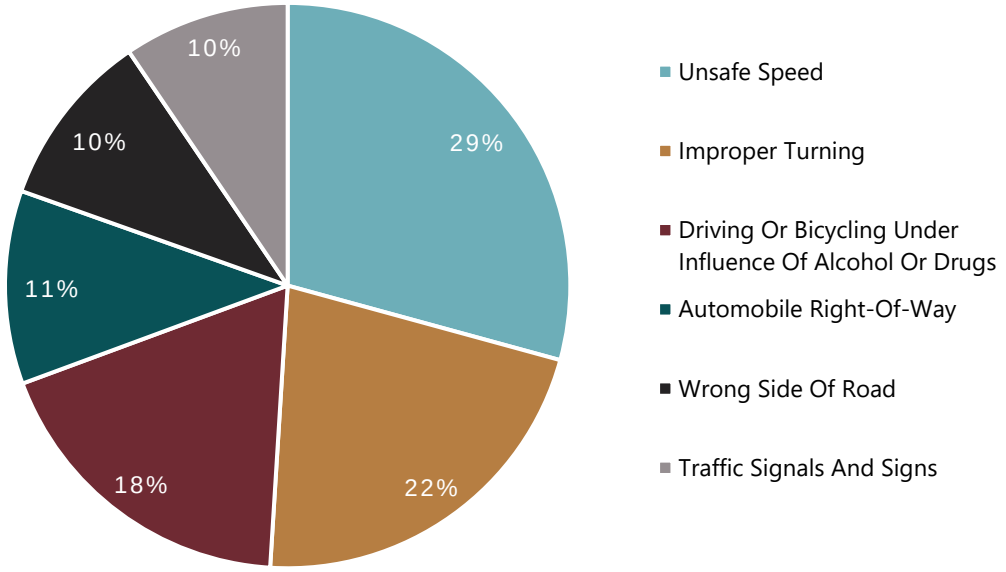


Figure 6. Clearlake Primary Collision Factor (2019-2023)

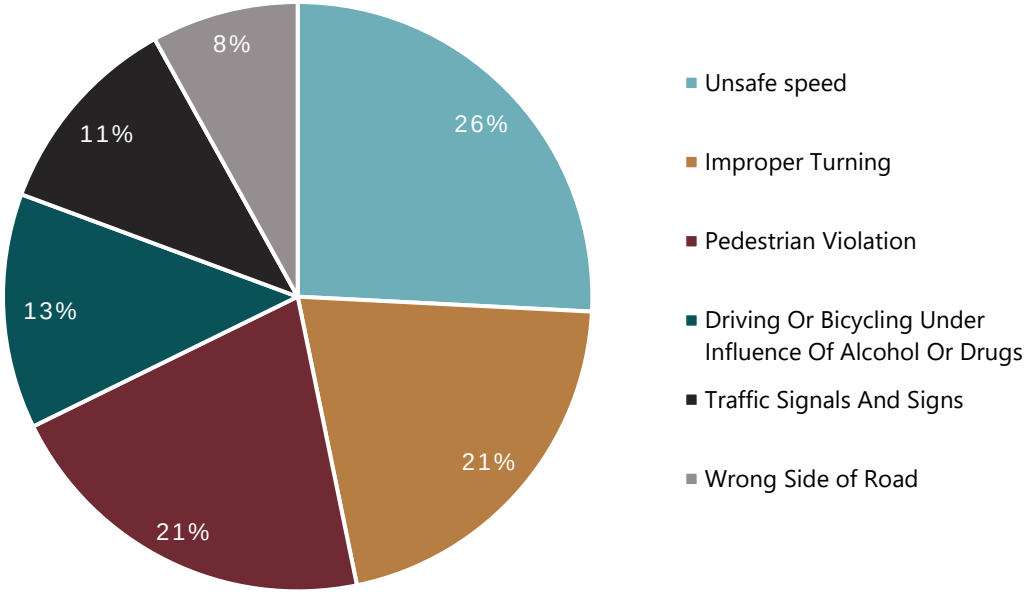


Figure 7. Clearlake Primary Collision Factor - Fatal & Serious Injury Only (2019-2023)

For the City of Clearlake, the top PCFs are: Unsafe Speed, Improper Turning, and Driving/Bicycling Under Influence of Alcohol or Drugs. The top PCFs changed when looking at only fatal and serious injury crashes. Pedestrian Violation became the third most common PCF and Automobile Right-Of-Way was no longer in the top five.

Top Primary Collision Factors (2019-2023), Serious Injury and Fatal Crashes

- Unsafe Speed
- Improper Turning
- Pedestrian Violation
- Driving or Bicycling Under the Influence of Alcohol or Drugs
- Traffic Signals and Signs
- Wrong Side of the Road

In comparison to the *2021 City of Clearlake Local Road Safety Plan*, the top PCFs remained the same for all crashes and the top PCF for serious injury and fatal crashes remained unsafe speed.

Figures 8-11 provide mapped locations of crashes where driving under the influence, speeding, and distracted driving were indicated as collision factors.

Table 1 provides the total crashes with *Unsafe Speed* indicated as the PCF, while **Table 2** identifies the locations of fatal and severe injury crashes with *Unsafe Speed* indicated as the PCF. **Figures 8-9** show unsafe speed crashes locations by severity and on a heatmap.

Table 1. Unsafe Speed Crashes

Crash Severity						
Crash Type	**Fatal**	**Injury (Severe)**	**Injury (Other Visible)**	**Complaint of Pain**	**PDO**	**Total**
Intersection	3	3	17	3	24	50
Roadway Segments	1	9	22	11	55	98

The data analysis indicates that 29 percent of the crashes had *Unsafe Speed* listed as the PCF. This was the most common PCF for all crashes, and it was also listed as the PCF for 26 percent of the fatal and serious injury crashes.

Table 2. Unsafe Speed Locations

Primary Road	Secondary Road	Severity	Location	Map Votes
Dam Rd	18th Ave	Fatal	Intersection	0
3600 Old Highway 53	Park Rd	Fatal	Roadway	0
Arrowhead	Vista St	Fatal	Intersection	0
Boyles Ave	27th Ave	Fatal	Intersection	0
Old Hwy 53	Airport Rd	Injury (Severe)	Intersection	0
Lakeshore Dr	Howard Ave	Injury (Severe)	Roadway	0
State Route 53	40th Ave	Injury (Severe)	Roadway	0
Olympic Dr	Garfield Ave	Injury (Severe)	Roadway	0
Dam Rd Exit	Dam Rd	Injury (Severe)	Intersection	0
Dam Rd Exit	18th Ave	Injury (Severe)	Roadway	0
Old Hwy 53	Pole 120387599 120009575	Injury (Severe)	Roadway	0
State Route 53	Putnam Ln	Injury (Severe)	Roadway	0
Lakeshore Dr	Manakee Ave	Injury (Severe)	Roadway	0
State Route 53	Dam Rd	Injury (Severe)	Roadway	0
W 40th St	Mullen Ave	Injury (Severe)	Intersection	0
14677 Lakeshore Dr	Redbud Park	Injury (Severe)	Roadway	0

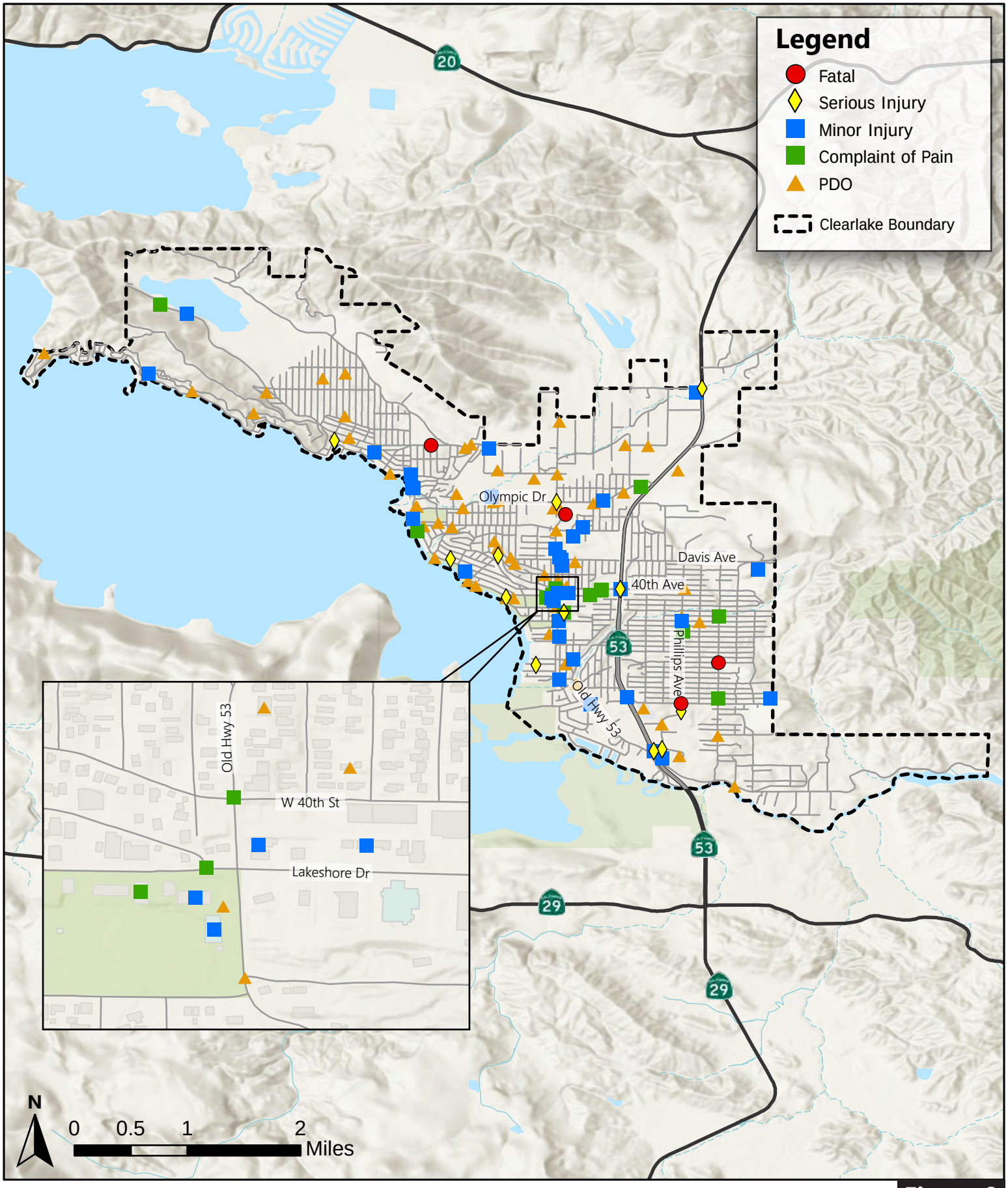


Figure 8

Clearlake
Local Road Safety Plan
Unsafe Speed Crashes by Severity

GCW ENGINEERS \ SURVEYORS

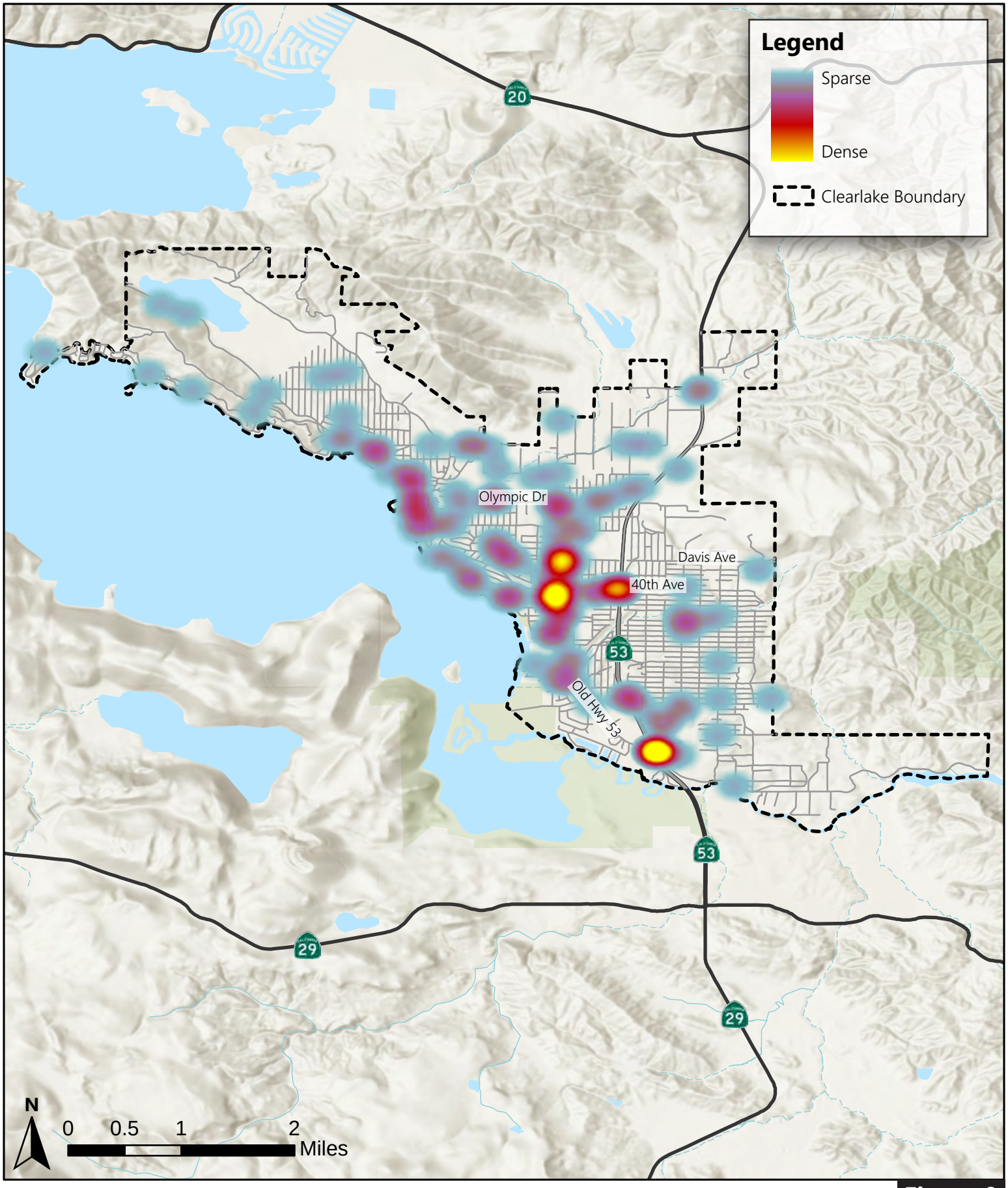


Figure 9

Clearlake

Local Road Safety Plan

Unsafe Speed Crash Heatmap

GCW ENGINEERS \ SURVEYORS

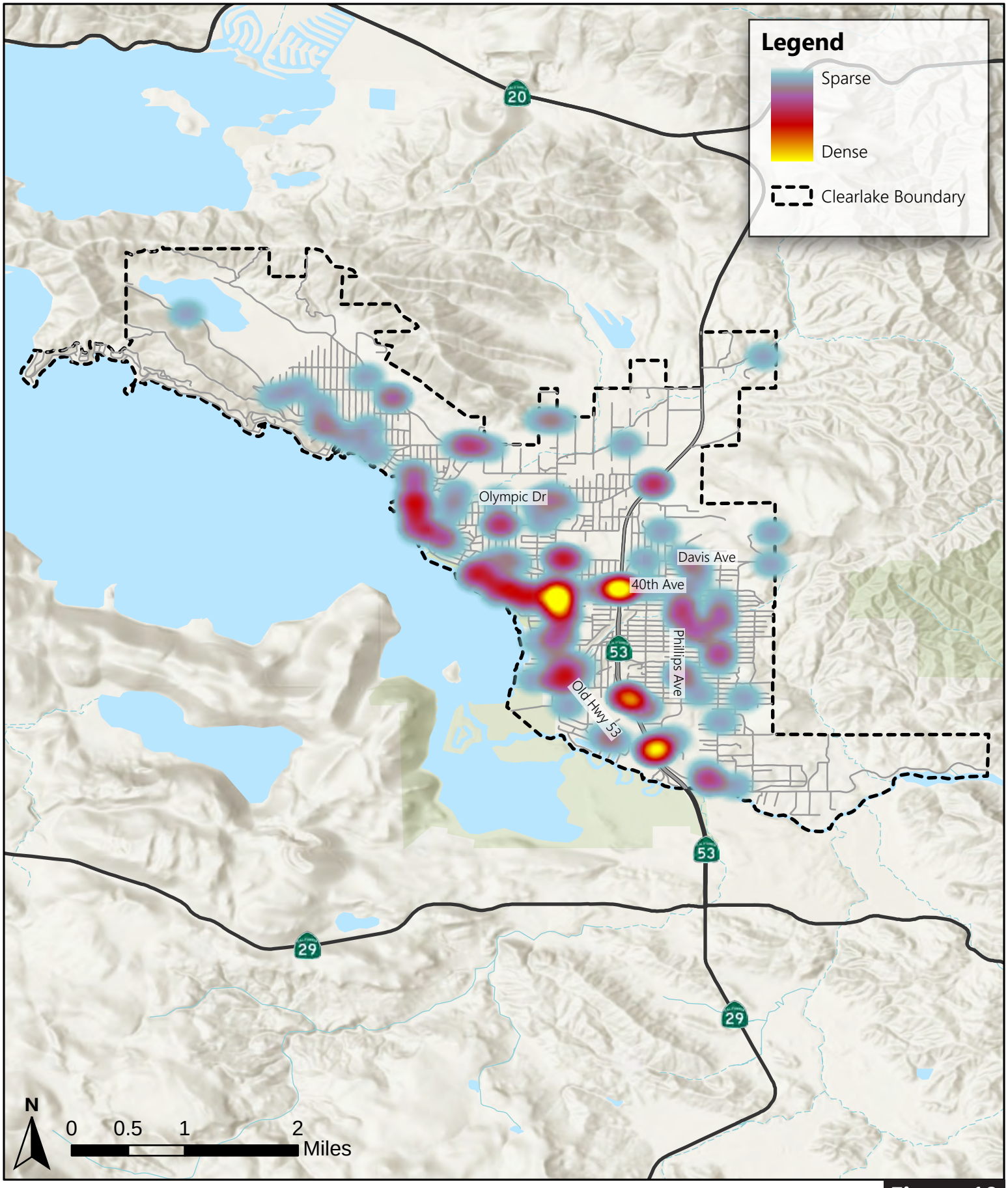


Figure 10

Clearlake
Local Road Safety Plan
Impaired Crashes Heatmap

GCW ENGINEERS \ SURVEYORS

As shown in **Figures 8-9**, concentrated areas of speeding-related crashes are noted at the Lakeshore Drive/Old State Highway 53 intersection. Most fatalities occurred on minor local roads, and three fatal crashes that listed unsafe speed as the PCF involved a motorcycle (2) or a bicycle (1). The heatmap on **Figure 9** shows four distinct hot spots where crashes occurred with unsafe speed listed as the PCF.

- Hot Spot 1: SR 53 through Dam Road
- Hot Spot 2: SR 53 through Lakeshore Drive/40th Avenue
- Hot Spot 3: Lakeshore Drive/Old State Highway 53
- Hot Spot 4: Old State Highway/Davis Avenue

As shown on **Figure 10**, concentrated areas of impaired crashes are highest at State Highway 53 and various intersections. The intersection of Lakeshore Dr and Old State Highway 53 had the highest concentration of crashes where the PCF was *Driving or Bicycling Under the Influence of Drugs or Alcohol*.

Additionally, crash data typically does not show distracted driving as a PCF; however, many crashes are at least partially a result of distracted driving which was indicated as a primary concern among the Clearlake community in the public outreach.

As presented in **Table 3** and **Figure 11**, distracted driving was a factor in 35 crashes[9], including one fatal and seven severe injury crashes in the City of Clearlake.

Table 3. Distracted Driving by Severity and Location

Crash Severity						
Crash Type	**Fatal**	**Injury (Severe)**	**Injury (Other Visible)**	**Complaint of Pain**	**PDO**	**Total**
Intersection	0	2	0	1	7	10
Roadway Segments	1	5	5	3	11	25

[9] As noted in crash data by inattention and cell phone usage

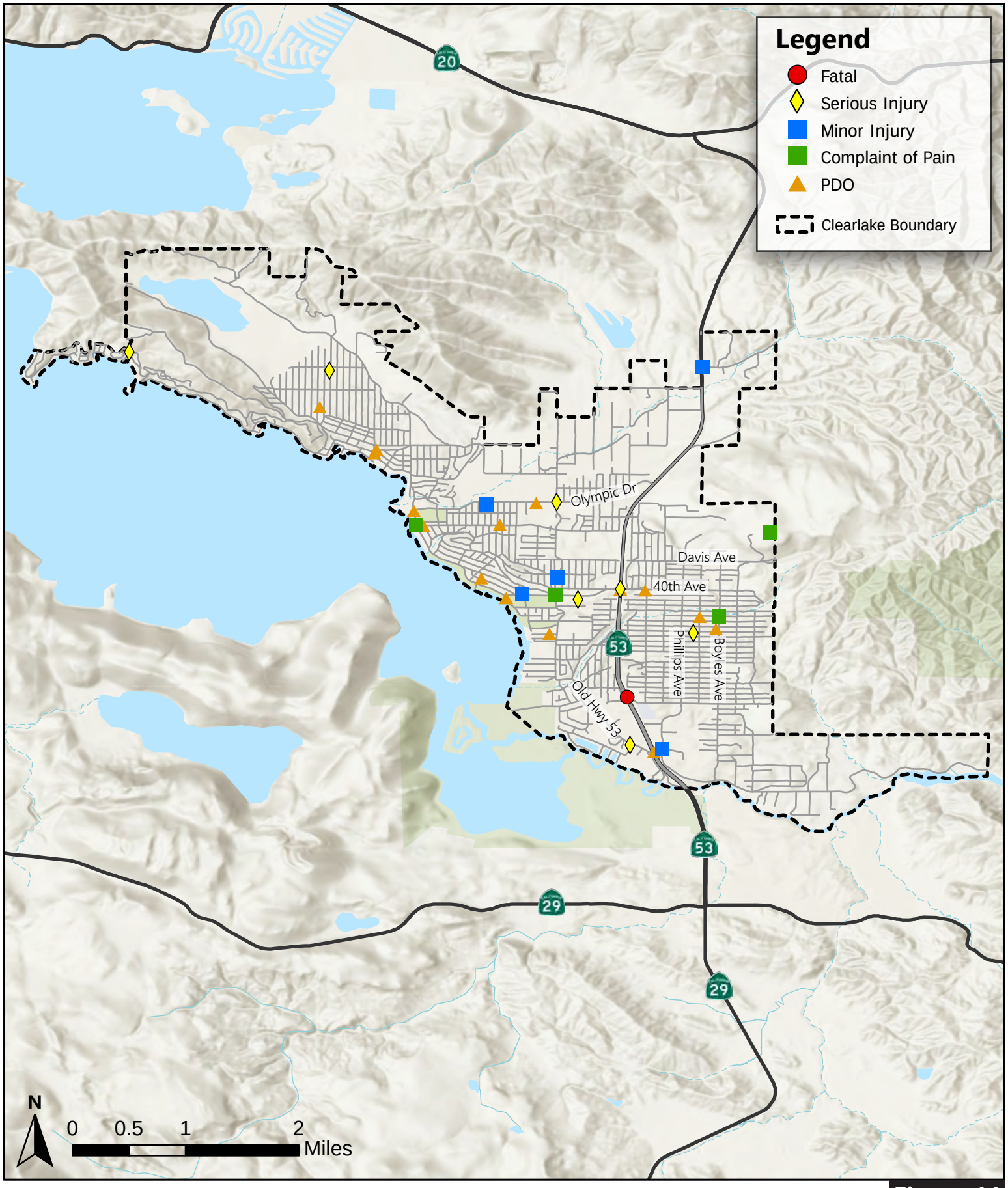


Figure 11

Clearlake
Local Road Safety Plan
Distracted Driving Crashes by Severity

GCW ENGINEERS \ SURVEYORS

Crash Types

The crash types are shown in **Figure 12** for all crashes, and **Figure 13** for severe and fatal crashes.

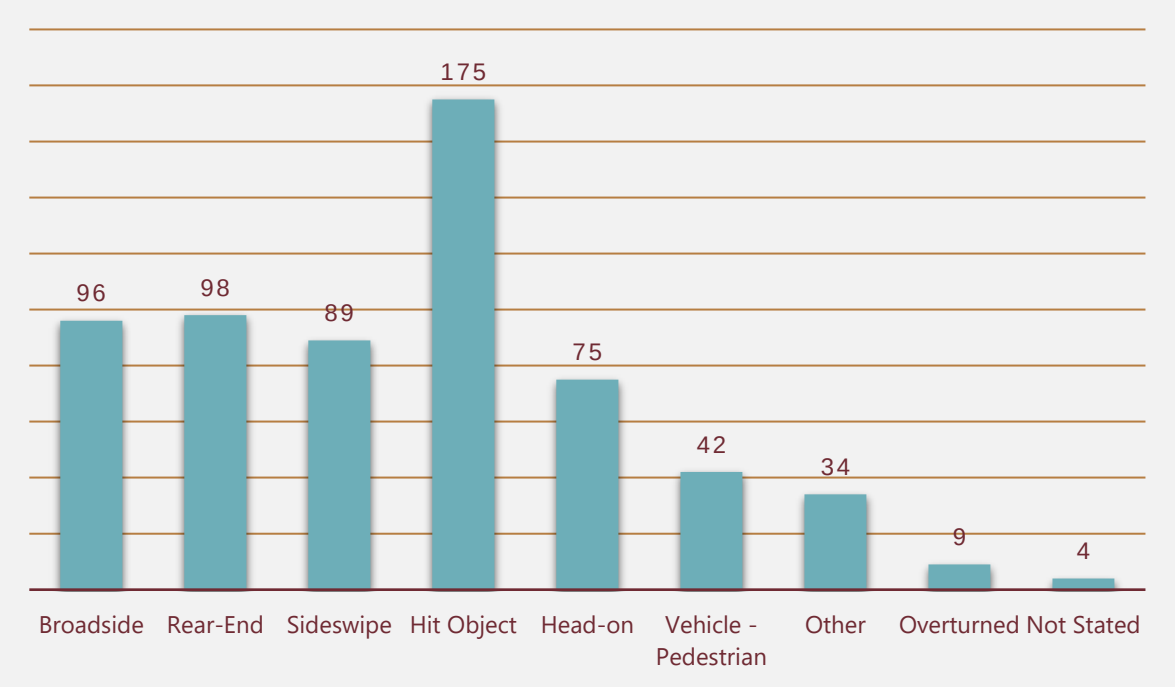


Figure 12. Clearlake Crash Types (2019-2023)

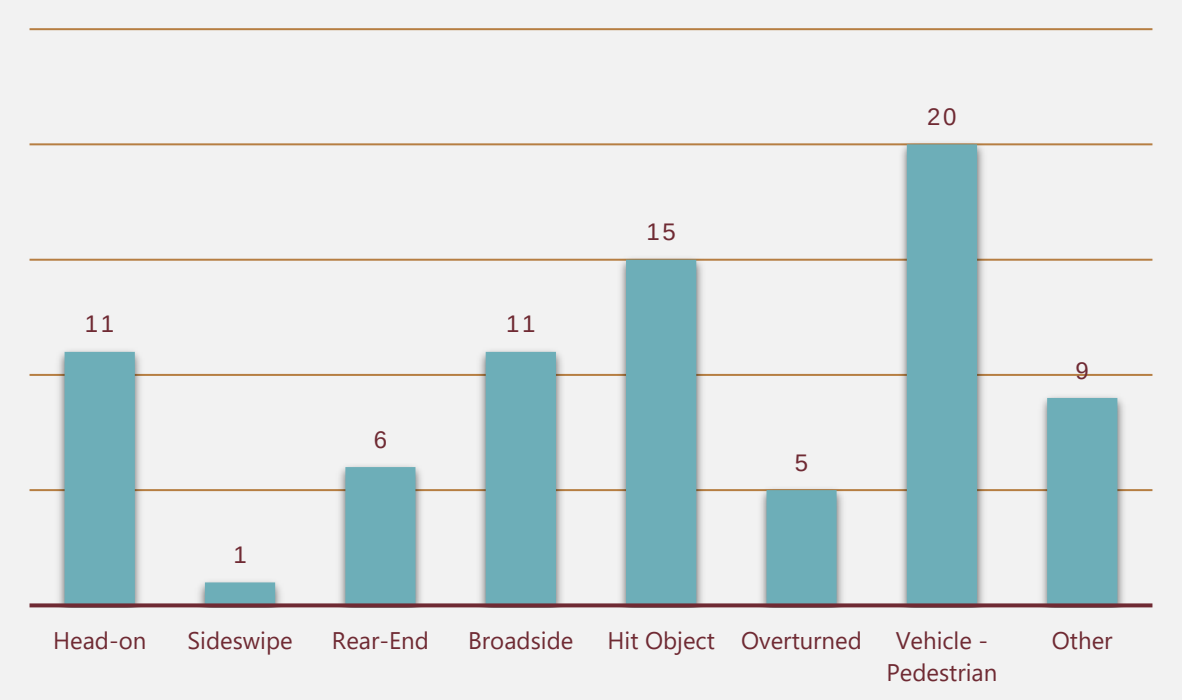


Figure 13. Clearlake Crash Types - Fatal & Serious Injury Only (2019-2023)

As shown in **Figures 12**, Hit Object was the most common crash type, which represents 28 percent of all crashes and 19 percent of all fatal and serious injury crashes. Rear-End was the second most common crash type at 16 percent and it represented 8 percent of all fatal and serious injury crashes. Vehicle-Pedestrian crashes were the sixth most common PCF, but it was the most common PCF to result in a fatal or serious injury crash. Vehicle-Pedestrian, Hit Object, Head-on, and Broadside had the most occurrences of severe injury or fatal crashes.

Facility

Crashes by severity were analyzed based on location (intersections verses roadways) as well as roadway ownership. **Table 4** presents the total crashes and the severe injury and fatal crashes at intersections and on roadways, as indicated in the database as intersections 'yes/no'.

Table 4. Intersection and Roadway Crashes (2019-2023)

	Intersections	Roadways	Total
Total Crashes	237	384	622
Percent of Total Crashes	38.1%	61.7%	100%
Total Severe Injury and Fatal Crashes	21	57	78
Percent of Severe Injury and Fatal Crashes	26.9%	73.1%	100%

As indicated in **Table 4**, most crashes were identified as roadway (not intersection) related, accounting for 73 percent of the total severe injury and fatal crashes. However, it is important to note this may still include crashes that happened near an intersection.

Intersections

The crash types and collision factors contributing to crashes were further analyzed by intersections to determine trends, as shown in **Figures 14-16**.

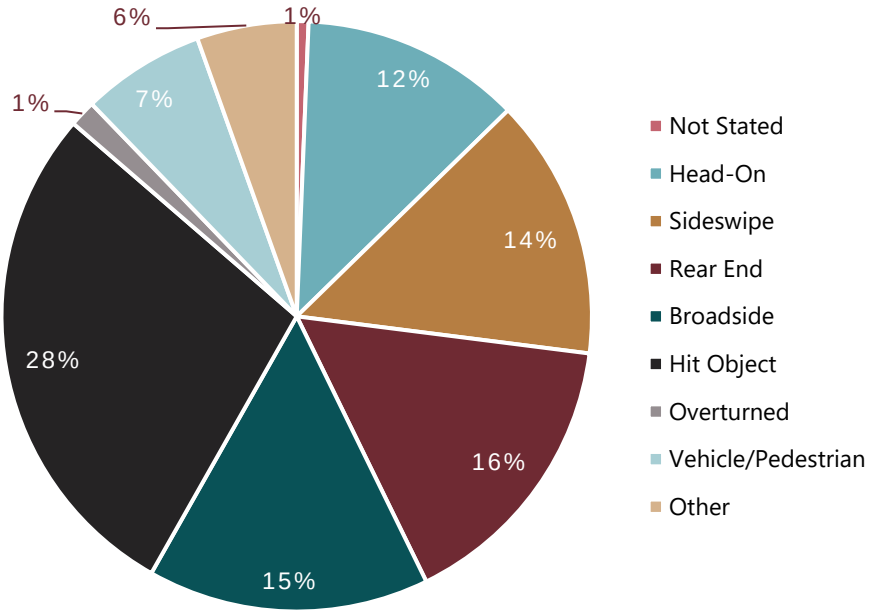


Figure 14. Intersection Crashes by Type

As shown in **Figure 14**, the most common crash type at intersections is *Hit Object*, accounting for 28 percent of crashes at intersections. The location of intersection crashes by severity are presented on **Figure 15,** followed by **Figure 16** which shows the following intersection hot spots**:**

- Hot Spot 1: SR 53 and 40th Avenue/Lakeshore Drive
- Hot Spot 2: SR 53 and Old Highway 53/Dam Road


SR 53 / Lakeshore Drive / 40th Avenue
Clearlake, CA

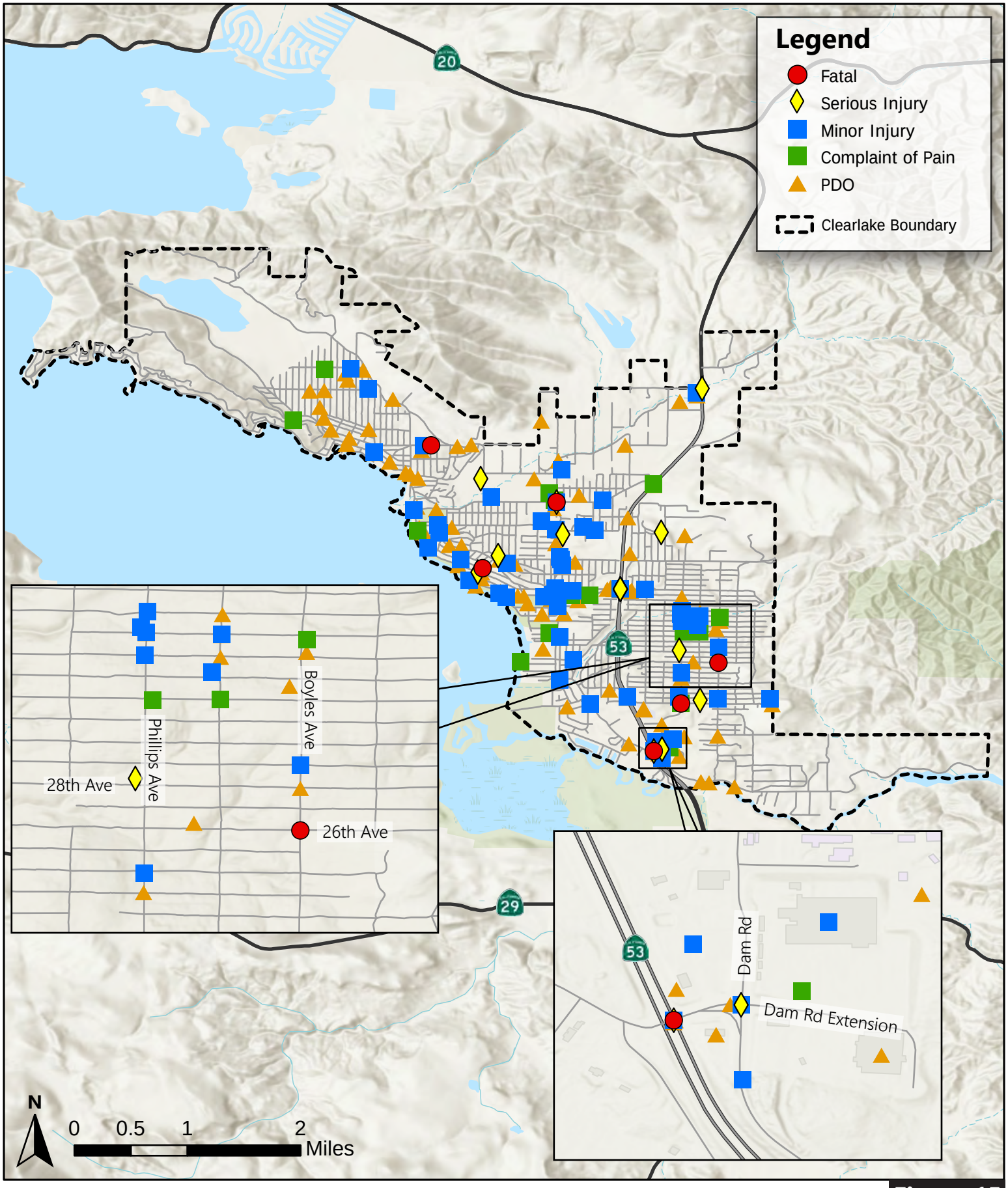


Figure 15

Clearlake

Local Road Safety Plan

Intersection Crashes by Severity

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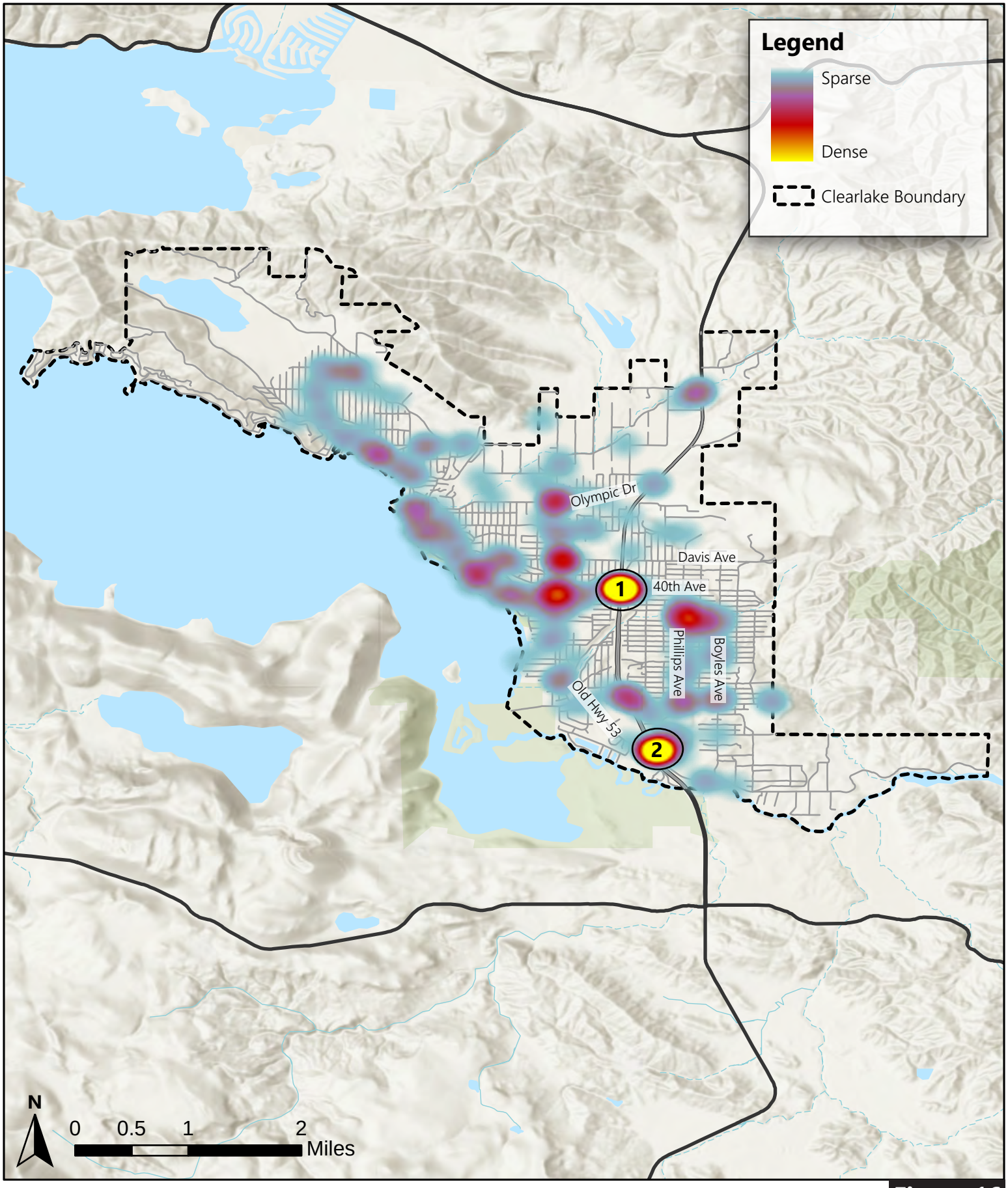

Figure 16

Clearlake
Local Road Safety Plan
Intersection Crash Heatmap

GCW ENGINEERS \ SURVEYORS

The intersections with at least one local roadway with the highest crash impacts considering crash severity and number of crashes are listed in **Table 5**. It is noted that the intersections including the major state highways had higher instances of crashes as expected, given the higher vehicular use.

Table 5. Top Crash Intersections

Intersection	Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	PDO	Total	Intersection Control	Map Votes
SR-53/Dam Rd	1	1	4	1	6	13	Signalized	0
SR-53/Lakeshore Dr	0	4	11	1	6	22	Signalized	0
SR-53/18th Ave	0	0	2	1	2	5	Signalized	0
Olympic Dr/Old Highway 53	1	1	1	0	1	4	Signalized	0
Mullen Ave/Pearl Ave	1	0	0	0	0	1	Unsignalized	0
Arrowhead Rd/Vista St	1	0	0	0	0	1	Unsignalized	0
Boyles Ave/26th Ave	1	0	0	0	0	1	Unsignalized	0
18th Ave/Phillips Ave	1	0	0	1	1	3	Unsignalized	0
Dam Rd/Dam Road Ext	0	1	2	0	1	4	Unsignalized	0
Palmer Ave/Mullen Ave	0	1	0	0	2	3	Unsignalized	0
Old Highway 53/Davis Ave	0	0	1	0	4	5	Unsignalized	0
35th Ave/Phillips Ave	0	0	2	0	2	4	Unsignalized	0
Old Highway 53/W 40th St	0	0	1	1	1	3	Unsignalized	0
Note: Highlighted locations indicate that a pedestrian-related crash occurred at this location.								

As shown in **Table 5**, most of the fatalities occurred at unsignalized intersections. This table represents the intersections that may benefit the most from safety improvements. Potential countermeasures are evaluated in subsequent sections.

Roadways

The crash types and collision factors contributing to all roadway crashes are presented in **Figure 17** and were further analyzed to determine crash severity trends by roadway ownership (i.e., state verses local roads) in **Table 6**.

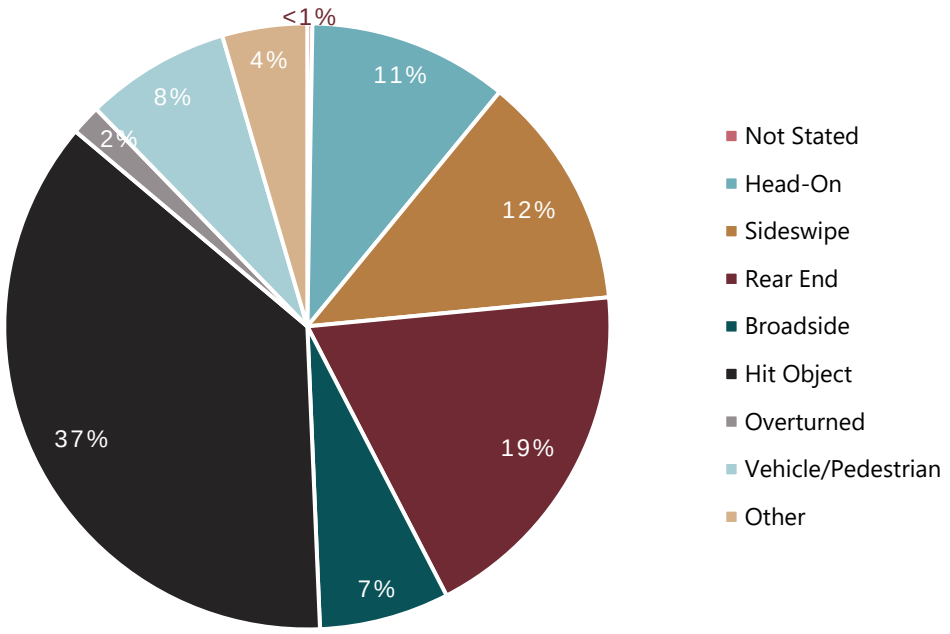

Figure 17. Roadway Crashes by Type

The leading types of roadway crashes are *Hit Object* followed by *Rear End*. Lane departure related crashes (head-on, hit object, sideswipe, and overturned) account for approximately 62 percent of crashes on roadways and 46 percent of the severe injury and fatal crashes. In addition,

Table 6 indicates that the majority of fatal and severe injury crashes in the City occurred on local roads.

Table 6. Crash Severity by Roadway Ownership (2019-2023)

Ownership	Fatal		Serious Injury		Other Visible Injury		Complaint of Pain		Property Damage Only	
	Crashes	%	Crashes	%	Crashes	%	Crashes	%	Crashes	%
State Roads	7	38.9%	9	15.0%	25	14.8%	6	11.5%	38	11.8%
Local Roads	11	61.1%	51	85.0%	144	85.2%	46	88.5%	285	88.2%
Total	18	100%	60	100%	169	100%	52	100%	323	100%

Figures 18-19 show the difference in crash types and collision factors based on roadway ownership – State Highways and Non-State Highways. This data is followed by **Figure 20** which presents the locations of roadway crashes and roadway segments with the highest crashes per mile. **Figures 21-22** which show heatmaps of crashes occurring on State Highways and Non-State Highways respectively.

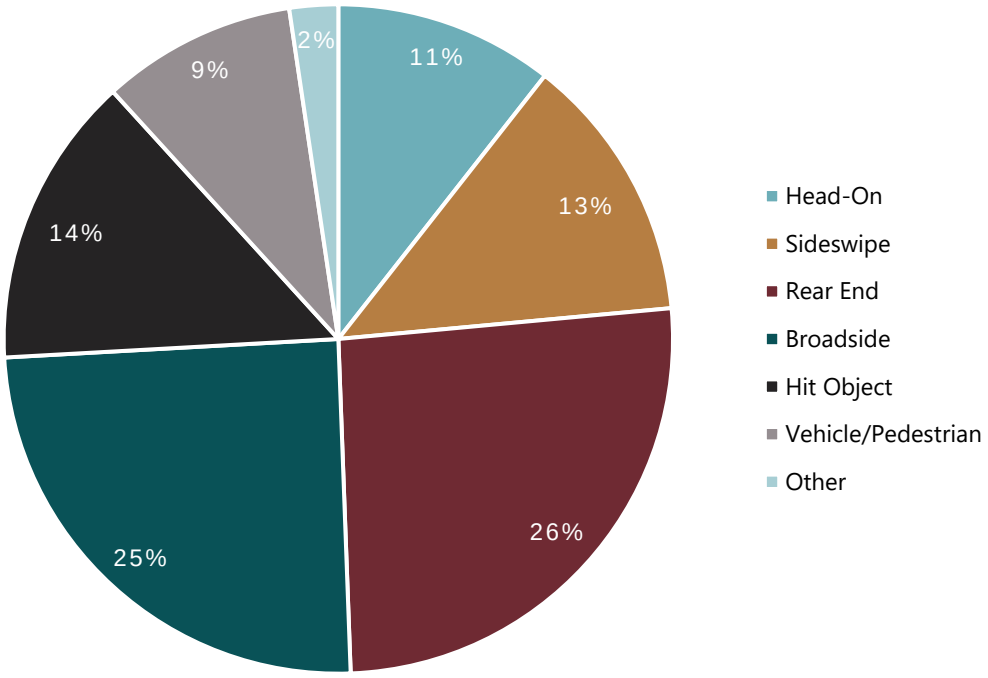

Figure 18. State Highway Crash Types

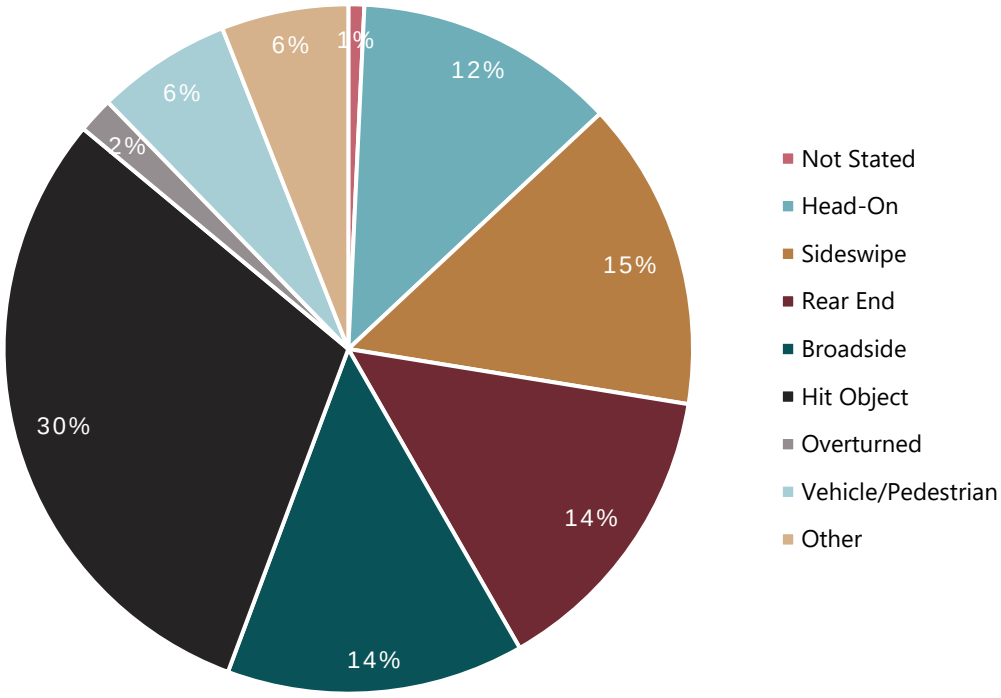

Figure 19. Non-State Highway Crash Types

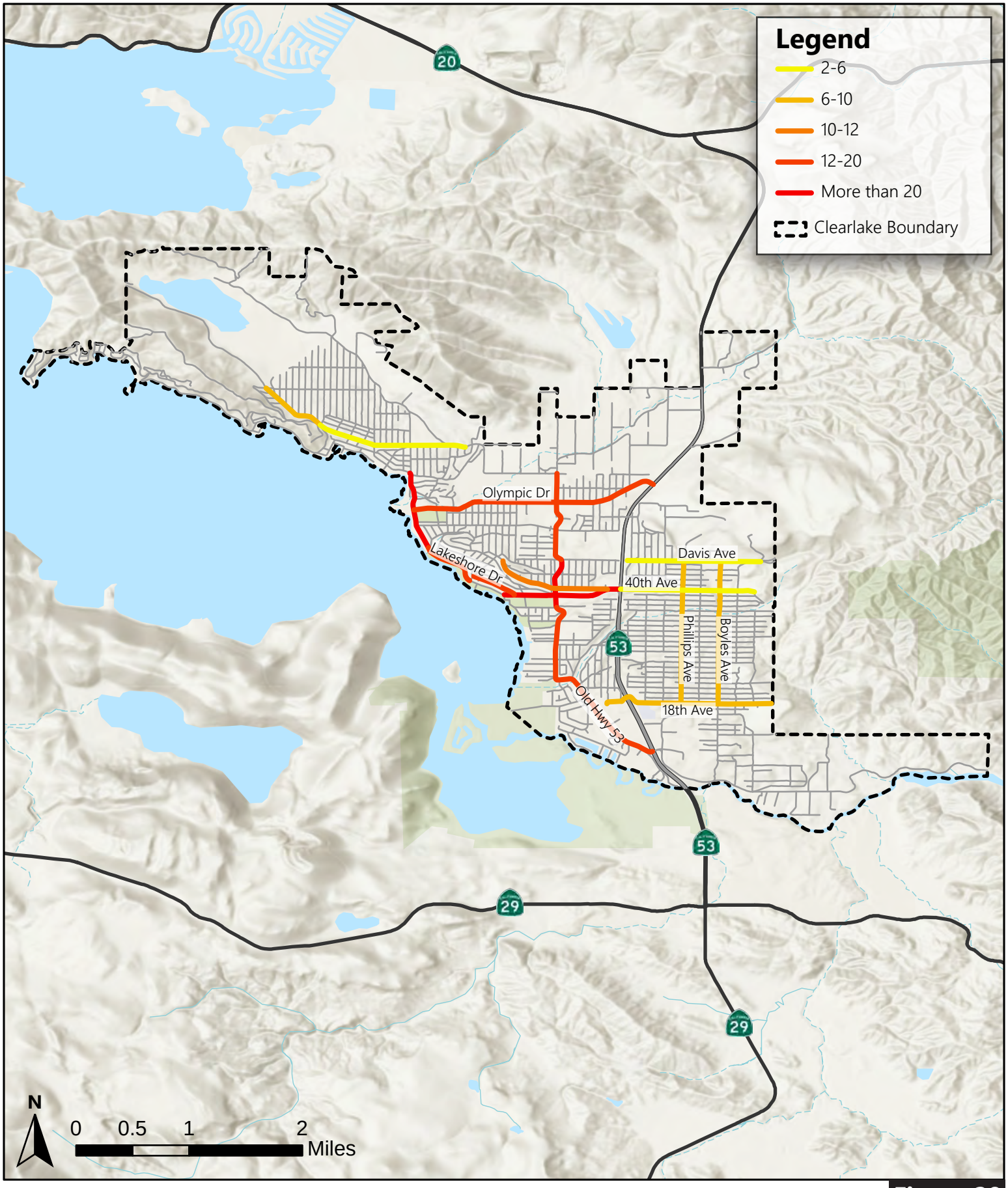

Figure 20

Clearlake
Local Road Safety Plan
Roadway Crashes Per Mile

GCW ENGINEERS \ SURVEYORS

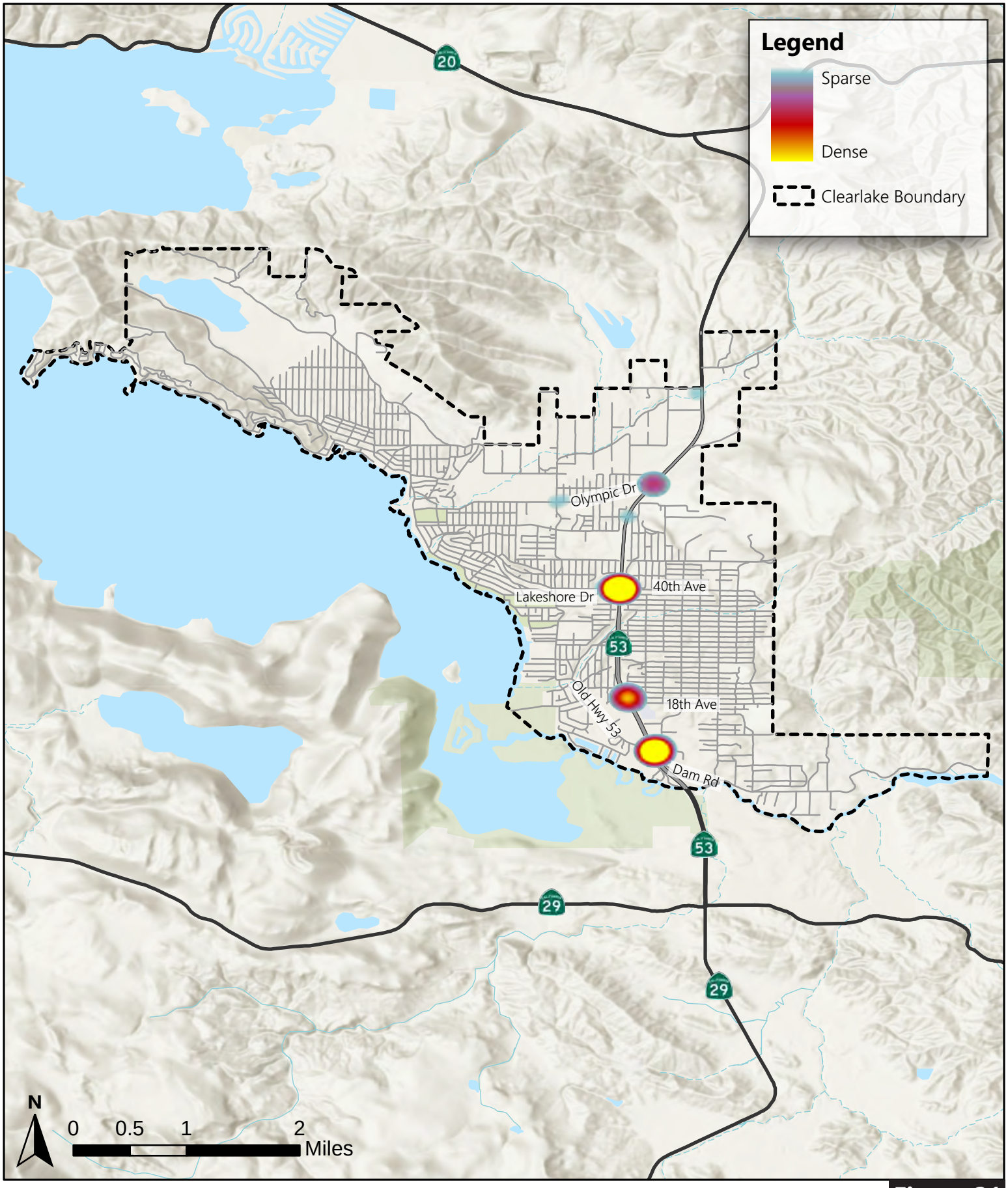

Figure 21

Clearlake

Local Road Safety Plan

State Highway Crash Heatmap

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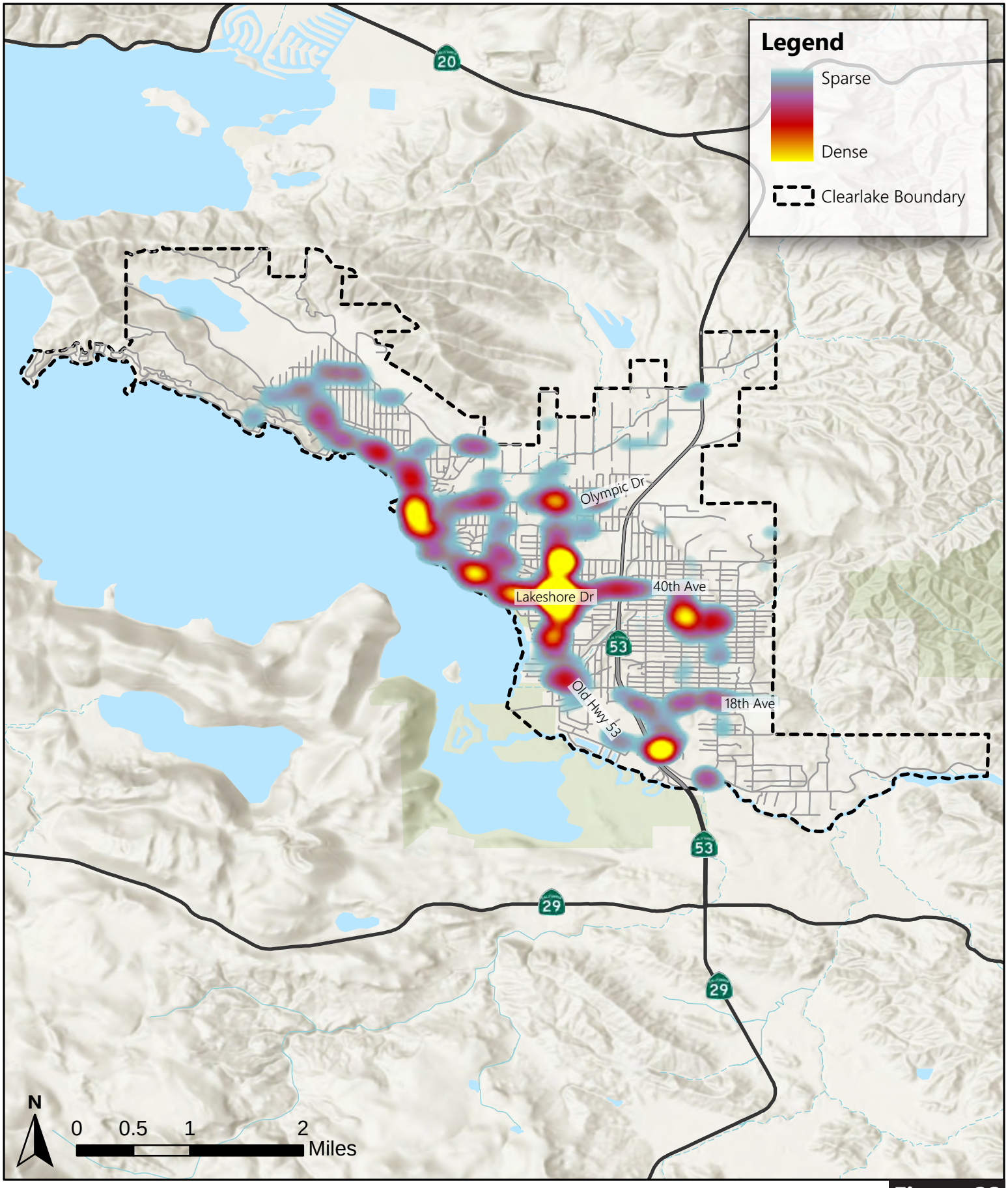


Figure 22

Clearlake
Local Road Safety Plan
Non-State Highway Crash Heatmap

GCW ENGINEERS \ SURVEYORS

Pedestrian and Bicycle

As identified through the public outreach, pedestrian safety is the highest priority safety concern among Clearlake residents. **Table 7** and **Figure 23** present the bicycle- and pedestrian-involved crashes by crash severity. A total of 67 pedestrian and bicycle-involved crashes occurred in Clearlake between 2019 and 2023, 11 of which were fatal and 17 resulted in serious injuries.

Table 7. Percent of Bicycle- and Pedestrian-Involved Crashes

Crash Severity	Pedestrian Involved Crashes	Bicycle Involved Crashes	All Crashes	Pedestrian Involved Percent of all Crashes	Bicycle Involved Percent of all Crashes
Fatal	9	3	18	50.0%	16.7%
Serious Injury	11	6	60	18.3%	10.0%
Other Visible Injury	25	7	169	14.8%	4.1%
Complaint of Pain	2	2	52	3.8%	3.8%
Property Damage Only	2	0	323	0.6%	0%
Total	49	18	622	7.9%	2.9%

Crashes involving a bicyclist or pedestrian account for nearly 11 percent of the overall crashes, and 37 percent of the severe injury and fatal crashes. Bicycle- and pedestrian-involved crashes are three and a half times more likely to result in serious injury or fatality as compared to overall crash trends. As shown in **Figure 23**, 43 percent of pedestrian and bicycle crashes resulted in severe injury or fatality.

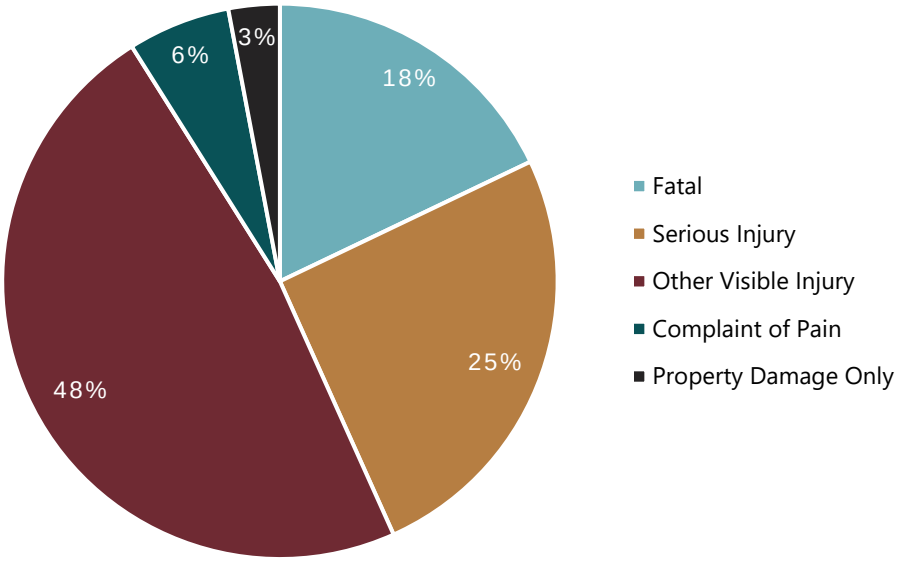


Figure 23. Bicycle and Pedestrian Crashes by Severity

Figure 24 provides an overview of the bicyclist and pedestrian crashes by action. Thirty-six (36) percent of the bicycle- and pedestrian-involved crashes occurred with 'Crossing Not in Crosswalk' indicated as the action, while 32 percent occurred in the 'Road, Including Shoulder'.

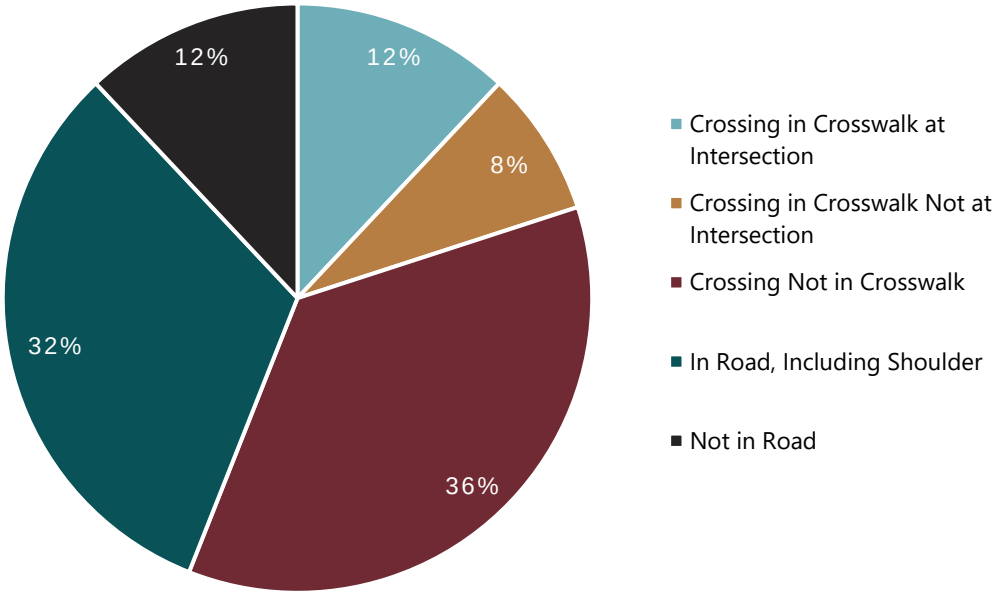


Figure 24. Bicycle and Pedestrian Crashes by Action

Tables 8-11 provide further details regarding pedestrian and bicycle-involved crashes, with **Table 8** providing an overview of pedestrian injury crashes on roadways including the severity, pedestrian action, and surrounding pedestrian/bicycle facilities.

Table 8. Pedestrian Crashes on Roadways

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
SR 53	Lakeshore Dr	Fatal	Crossing Not In Crosswalk	None	0
Dam Rd	Power Pole Station Line	Fatal	In Road, Including Shoulder	Crosswalk, Sidewalk: Both Sides	0
SR 53	18th Ave	Fatal	Crossing Not In Crosswalk	Crosswalk	0
Lakeshore Dr	Old Hwy 53	Fatal	Crossing Not In Crosswalk	Bike Lane, Sidewalk: One Side	0
NB SR-53	18th Ave	Fatal	Crossing Not In Crosswalk	Crosswalk	0
Lakeshore Dr	Old Hwy 53	Fatal	Crossing In Crosswalk Not At Intersection	None	0

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
SR 53	Lakeshore Dr	Fatal	Crossing Not In Crosswalk	Crosswalk	0
Old Hwy 53	Lakeview Ave	Fatal	Crossing Not In Crosswalk	None	0
Old Hwy 53	Highlands Harbor Rd	Injury (Severe)	Crossing Not In Crosswalk	None	0
Lakeshore Dr	Division Ave	Injury (Severe)	Not In Road	Crosswalk, Sidewalk: One Side	0
SR 53	Dam Rd	Injury (Severe)	Crossing In Crosswalk At Intersection	Crosswalks, Sidewalk: Both Sides	0
42nd Ave	Irving Ave	Injury (Severe)	In Road, Including Shoulder	None	0
Old Hwy 53	Clement Dr	Injury (Severe)	Crossing Not In Crosswalk	None	0
Lakeshore Dr	Old Hwy 53	Injury (Severe)	Crossing In Crosswalk Not At Intersection	None	0
14677 Lakeshore Dr	Redbud Park	Injury (Severe)	In Road, Including Shoulder	Crosswalk, Sidewalk: One Side	0
Dam Rd	Dam Rd 16080	Injury (Other Visible)	Crossing Not In Crosswalk	Sidewalk	0
Old Hwy 53	Putnum Ln	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Burns Valley Rd	Turner Ave	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Madrone	Olympic Dr	Injury (Other Visible)	In Road, Including Shoulder	Sidewalk: One Side	0
Davis Ave	Davis Ave 16200	Injury (Other Visible)	In Road, Including Shoulder	None	0
Lakeshore Dr	Pg & E 120371470	Injury (Other Visible)	In Road, Including Shoulder	Bike Lane, Sidewalk: One Side	0
Lakeshore Dr	Lakeshore Dr 15100	Injury (Other Visible)	Crossing In Crosswalk Not At Intersection	Crosswalk, Sidewalk: Both Sides	0
Dam Rd	Dam Rd 15960	Injury (Other Visible)	Not In Road	Crosswalk, Sidewalk: One Side	0
Sunset Ave	Davis Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Davis Ave	Oak Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
15th Ave	Boyles Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Hillcrest Ave	Frye Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
Old Hwy 53	Airport Rd	Injury (Other Visible)	In Road, Including Shoulder	Crosswalk, Sidewalk: Both Sides	0
32nd Ave	Oak St	Injury (Other Visible)	Not In Road	None	0
Pearl Ave	Mullen Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Old Hwy 53	Cass Ave	Injury (Other Visible)	Not In Road	None	0
Lakeshore Dr	Old Hwy 53	Injury (Other Visible)	Crossing In Crosswalk Not At Intersection	None	0
Pomo Rd	Lakeshore Dr	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Olympic Dr	Cottonwood St	Injury (Other Visible)	In Road, Including Shoulder	Bike Lane, Crosswalk, Sidewalk: One Side	0
19th Ave	Konocti Ave	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Lakeshore Dr	Lakeshore Dr 15060	Injury (Complaint Of Pain)	Not In Road	Sidewalk: Both Sides	0
Division St	Lakeshore Dr	Injury (Complaint Of Pain)	Crossing In Crosswalk At Intersection	Crosswalk, Sidewalk: One Side	0

Pedestrian crashes at intersections are shown in **Table 9**. Three of these crashes occurred when the pedestrian crossed in the crosswalk at the intersection, while four others occurred when the pedestrian action was noted as 'Crossing Not In Crosswalk'. The remaining crashes occurred when the pedestrian was in the 'Road, Including Shoulder'.

Table 9. Pedestrian Crashes at Intersections

Primary Road	Secondary Road	Severity	Pedestrian/Bicycle Facilities	Pedestrian/Bicycle Action	Map Votes
SR 53	Dam Rd	Fatal	Crosswalks	Crossing In Crosswalk At Intersection	0
Old Hwy 53	Airport Rd	Injury (Severe)	Sidewalks: South Of Airport	In Road, Including Shoulder	0
40th Ave	SR 53	Injury (Severe)	Crosswalk	Crossing In Crosswalk At Intersection	0
Olympic Dr	Jackson St	Injury (Severe)	None	In Road, Including Shoulder	0
Lakeshore Dr	SR 53	Injury (Severe)	Crosswalk	Crossing Not In Crosswalk	0
Arrowhead Rd	Halika St	Injury (Other Visible)	None	Crossing Not In Crosswalk	0

Primary Road	Secondary Road	Severity	Pedestrian/Bicycle Facilities	Pedestrian/Bicycle Action	Map Votes
Old Hwy 53	Highlands Harbor Rd	Injury (Other Visible)	None	Crossing Not In Crosswalk	0
Austin Rd	Old Hwy 53	Injury (Other Visible)	Bike Lane	In Road, Including Shoulder	0
Dam Rd	Dam Rd Ext	Injury (Other Visible)	Crosswalks	Crossing In Crosswalk At Intersection	0
Lakeshore Dr	Old Hwy 53	Injury (Other Visible)	Crosswalks	Crossing Not In Crosswalk	0

Table 10 shows bicycle-involved crashes on roadways. One crash resulted in a fatality at SR 53/Old Highway 53, while five crashes resulted in severe injury.

Table 10. Bicycle Crashes on Roadways

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
SR 53	Old Hwy 53	Fatal	No Pedestrian Involved	Crosswalks, Sidewalk: Both Sides	0
SR 53	Old Hwy 53	Injury (Severe)	No Pedestrian Involved	None	0
Lakeshore Dr	Manakee Ave	Injury (Severe)	No Pedestrian Involved	None	0
Lakeshore Dr	W 40th Ave	Injury (Severe)	No Pedestrian Involved	Crosswalks	0
Villa Wy	Olympic Dr	Injury (Severe)	No Pedestrian Involved	None	0
Old Hwy 53	Cass Ave	Injury (Severe)	No Pedestrian Involved	Bike Lane	0
13th St	Bush St	Injury (Other Visible)	No Pedestrian Involved	None	0
Old Hwy 53	Hillcrest Ave	Injury (Other Visible)	No Pedestrian Involved	None	0
Olympic Dr	Madrone St	Injury (Other Visible)	No Pedestrian Involved	Sidewalk: One Side	0
Phillips Ave	36th Ave	Injury (Other Visible)	No Pedestrian Involved	Bike Lane	0
Lakeshore Dr	Lakeshore Dr 15060	Injury (Complaint Of Pain)	Not In Road	Sidewalk: Both Sides	0
35th Ave	Boyles Ave	Injury (Complaint Of Pain)	No Pedestrian Involved	None	0

Table 11 shows bicycle-involved crashes at intersections, with two of these crashes resulting in fatality at Mullen Avenue/Pearl Avenue and Boyles Avenue/27th Avenue respectively.

Table 11. Bicycle Crashes at Intersections

Primary Road	Secondary Road	Severity	Pedestrian/Bicycle Facilities	Pedestrian/Bicycle Action	Map Votes
Mullen Ave	Pearl Ave	Fatal	None	No Pedestrian Involved	0
Boyles Ave	27th Ave	Fatal	None	No Pedestrian Involved	0
W 40th St	Mullen Ave	Injury (Severe)	None	No Pedestrian Involved	0
Lakeshore	Baylis Ave	Injury (Other Visible)	Bike Lane, Crosswalk	No Pedestrian Involved	0
Howard Ave	Pearl Ave	Injury (Other Visible)	Sidewalk: One Side	No Pedestrian Involved	0
Uhl Ave	Division Ave	Injury (Other Visible)	None	No Pedestrian Involved	0

As shown in **Tables 8-11**, the majority of bicycle- and pedestrian-involved crashes occurred on local roads.

Figures 25-26 show the pedestrian and bicycle crashes by action and severity. As shown on **Figure 25**, two pedestrian fatalities occurred on Lakeshore Drive/Old Highway 53 and one pedestrian fatality occurred at SR 53/Lakeshore Drive. The pedestrian action associated with these fatalities were: crossing not in a crosswalk and crossing in a crosswalk not at an intersection. In addition, there were two other pedestrian fatalities on SR 53 where the pedestrian action attributed to the crash was indicated as crossing not in a crosswalk.

Mullen Avenue / Pearl Avenue
Clearlake, CA

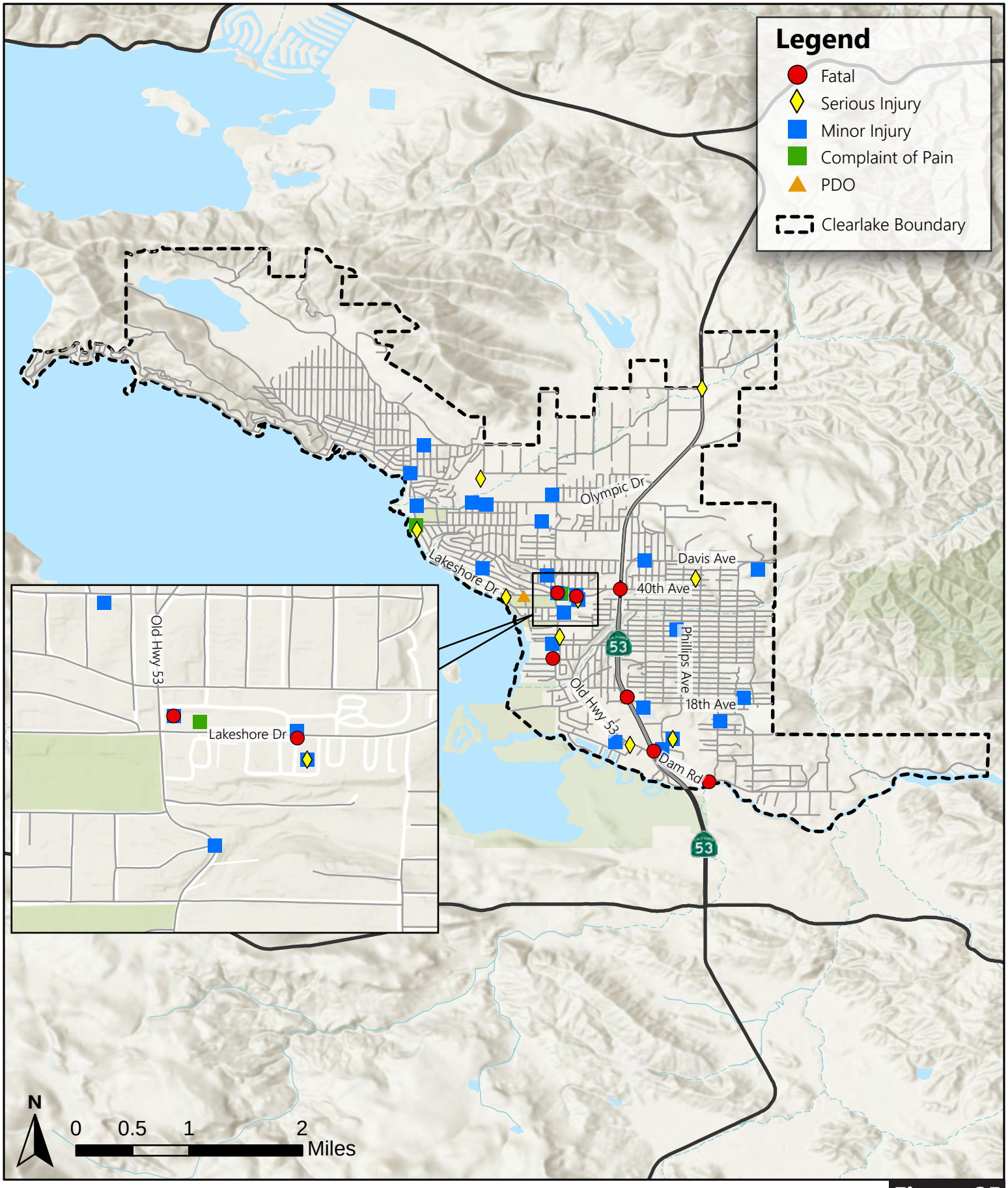


Figure 25

Clearlake

Local Road Safety Plan

Pedestrian Crashes by Severity

GCW ENGINEERS \ SURVEYORS

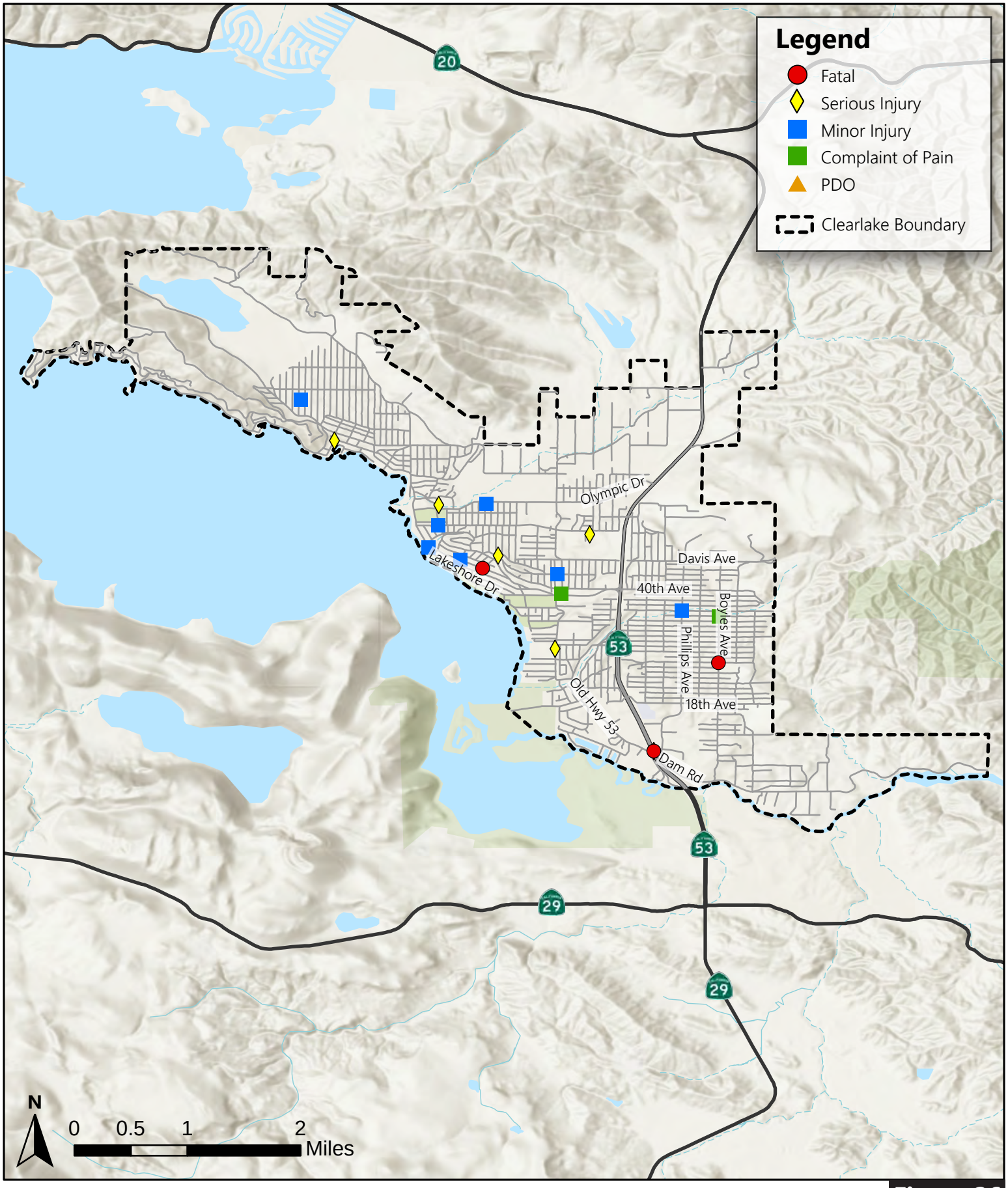


Figure 26

Clearlake
Local Road Safety Plan
Bicycle Crashes by Severity

GCW ENGINEERS \ SURVEYORS

Lighting

Additional factors contributing to crashes such as roadway and intersection lighting were analyzed. High levels of street lighting, especially at intersections, help to illuminate objects and hazards in the roadway thus reducing crashes. However, it is important to note that accident data alone does not indicate the need for a lighting project. An analysis should be conducted in the City to determine areas of insufficient lighting. Notation of 'Dark Conditions' on the crash report does not confirm that lighting conditions contributed to the crash.

Table 12 shows the associated lighting condition with the severity of crashes that occurred.

Table 12. Lighting Condition and Crash Severity

Crash Severity						
Lighting Condition	**Fatal**	**Injury (Severe)**	**Injury (Other Visible)**	**Complaint of Pain**	**PDO**	**Total**
Daylight	3	40	113	29	180	365
Dusk - Dawn	2	2	4	5	18	31
Dark - Street Lights	2	7	24	10	45	88
Dark - No Street Lights	11	11	27	8	79	136
Dark - Street Lights Not Functioning	0	0	0	0	0	0

Crashes that occurred under 'Dark – No Street Lights' conditions accounted for 28 percent of the severe injury and fatal crashes, which is a slight reduction from the data indicated in the *2021 City of Clearlake Local Road Safety Plan*. The most common crash type associated with dark conditions was 'hit object' (32 percent), and the majority were on roadways as opposed to intersections (71 percent).

Figure 27 highlights via heatmap the crashes where the lighting condition was listed as 'Dark – No Street Lights'.

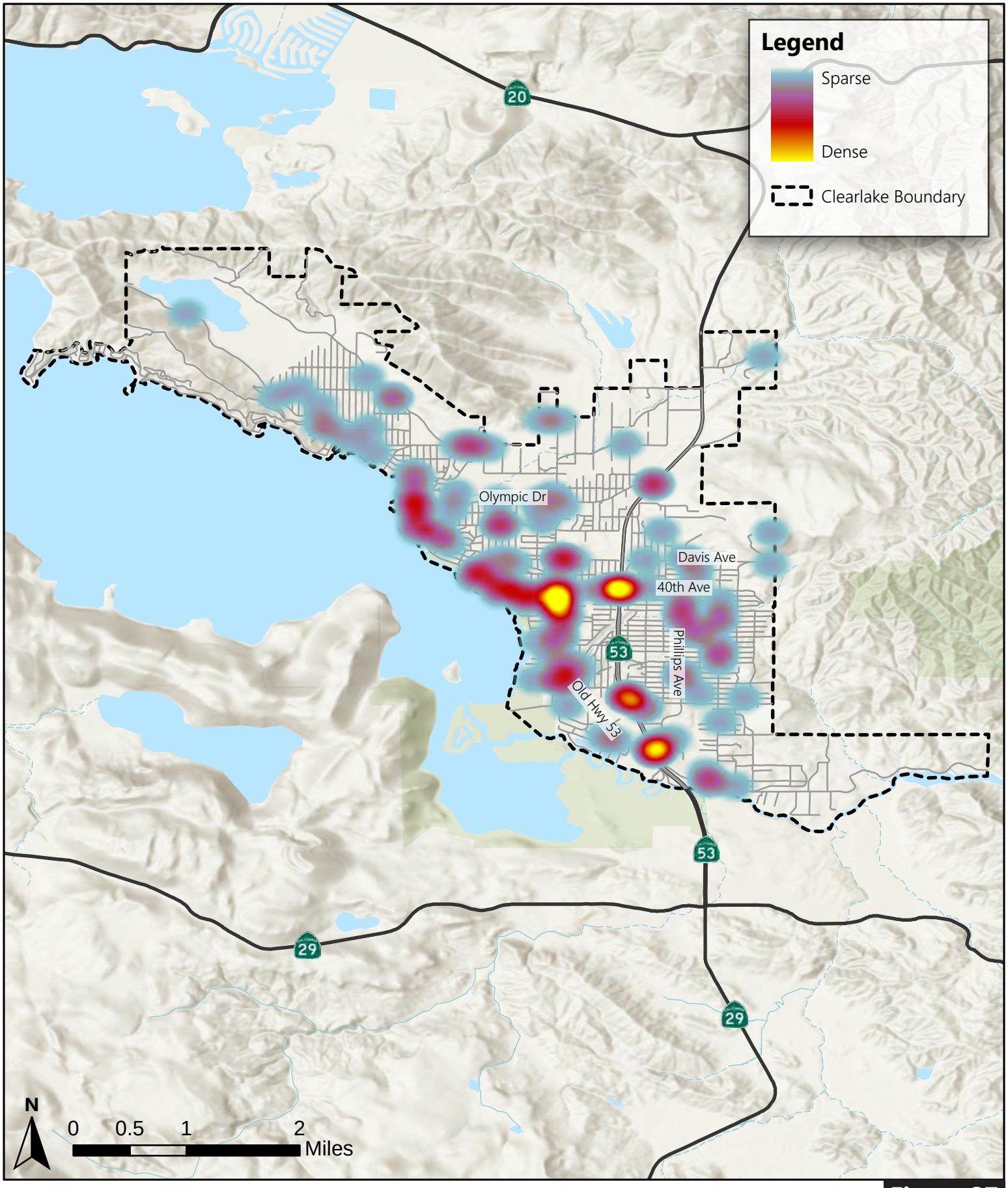


Figure 27

Clearlake
Local Road Safety Plan
Dark - No Street Lights Crashes Heatmap

GCW ENGINEERS \ SURVEYORS

Lakeshore Drive / Old Highway 53
Clearlake, CA

Equity Analysis

Figure 28 shows the disadvantaged communities in the Lake County boundary.[10] No disadvantaged areas occur within the city boundaries of Clearlake.

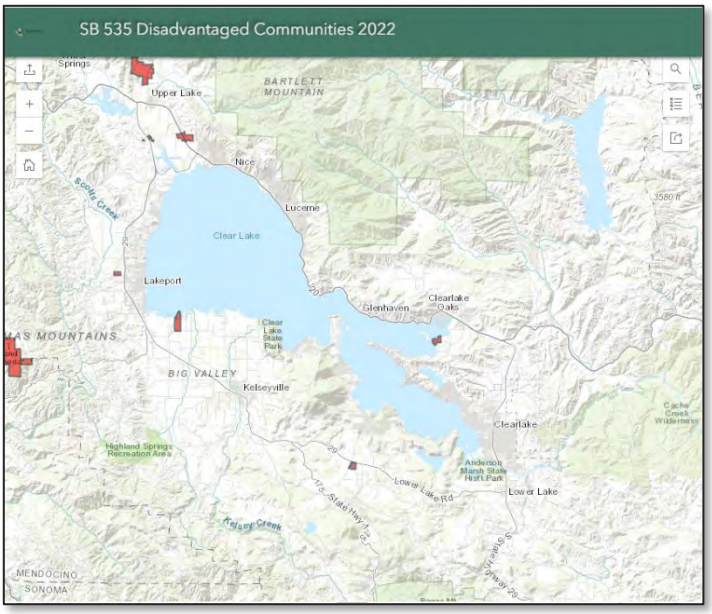


Figure 28. Lake County Disadvantaged Areas

[10] Source: State of CA OEHHA https://oehha.ca.gov/calenviroscreen/sb535

Crash Data Summary

The main takeaways from the analysis of available crash data between 2019 and 2023 in the City of Clearlake are:

- A total of 622 crashes occurred in the City of Clearlake, with approximately 13 percent of these crashes resulting in severe injury or fatality.
- The most common Primary Collision Factors in order of magnitude in the City of Clearlake are:
  - Unsafe Speed
  - Improper Turning
  - Pedestrian Violation
  - Driving or Bicycling Under the Influence of Alcohol or Drugs
- The most common crash type is *Hit Object*, which represents 28 percent of all crashes and 19 percent of fatal and serious injury crashes in Clearlake.
- The crash type most likely to result in fatal or serious injury is *Vehicle-Pedestrian*. This crash type accounted for 26 percent of fatal or serious injury crashes, followed by *Hit Object, Head-on,* and *Broadside* crashes.
- Crashes occurred more frequently on roadway segments rather than intersections.
- Crashes involving a bicyclist or pedestrian account for nearly 11 percent of the overall crashes, and 37 percent of the severe injury and fatal crashes.
- Thirty-six (36) percent of the bicycle- and pedestrian- involved crashes occurred when crossing not in a crosswalk was indicated as the action, followed by 32 percent where the action was in the roadway (including shoulder).
- The majority of fatal crashes (61 percent) and 18 percent of serious injury crashes occurred in 'Dark – No Street Lights' conditions.

Crash Data Considerations

The Local Road Safety Plan process largely relies on the accuracy and completeness of existing crash data. The data available in Clearlake is sufficient to identify overall crash trends and prioritize areas of greatest need. However, data fields for variables such as lighting, weather, alcohol influence, pedestrian/bicycle information, often have a higher percentage of 'Not Stated', 'Unknown', or blank records. This limitation is common in crash datasets nationwide and is not unique to Clearlake. As crash records improve over time, more direct insights into crash patterns may be identified.

Lakeshore Drive
Clearlake, CA

FOCUS AREAS

Safety strategies and countermeasures are proven to mitigate specific crash types. This section details emphasis areas that were identified through the crash data analysis, stakeholder and public input, and aligned with challenge areas that represent the greatest opportunities to improve roadway safety countywide.

FOCUS AREAS

Focus areas or emphasis areas guide the priorities of a roadway safety action plan and typically relate to specific crash types that have the highest potential for reducing fatal and serious injury crashes. Each focus area was identified through the crash data analysis, stakeholder engagement, and public input. Each focus area was analyzed to determine patterns, identify needs, and pinpoint hot spots.

The focus areas are aligned with the "High Priority Challenge Areas" identified in the *2025-2029 SHSP* (highlighted in **bold**). These focus areas represent a significant opportunity to reduce fatal and serious injury crashes across California and in the City of Clearlake.

FOCUS AREAS

1. **Pedestrian Safety**
2. Distracted Driving
3. **Intersection Safety**
4. **Bicycle Safety**
5. **Impaired Driving**
6. Lighting
7. **Speeding**
8. **Lane Departures**
9. Motorcycle Safety

The following section provides an overview of the public input and crash data analysis which supports the inclusion of each emphasis area in this plan and the application of Focus Area countermeasures (i.e. systemic, spot specific, programmatic). Potential countermeasures which address each focus area across the 4 E's of Traffic Safety (Engineering, Education, Enforcement, or Emergency Services) are included in the following section: Countermeasures Development.

For each Focus Area, a Countermeasure Toolbox is provided in **Appendix C**, and Strategy Tables are provided in **Appendix D**. Potential Engineering Projects for select focus areas are provided in **Appendix E**.

1. PEDESTRIAN SAFETY

This focus area was identified as the highest priority safety concern among public survey respondents, with 50 percent of all fatal crashes involving a pedestrian.

According to the public outreach, there has been a shift in public priority since 2021 with pedestrian safety now identified as the highest safety priority among the City of Clearlake community (previously identified as the third highest priority). Between 2019 and 2023, pedestrian- and bicycle-involved crashes represented 37 percent of all serious injury and fatal crashes, while comprising 11 percent of all crashes. In addition, 50 percent of the pedestrian-involved crashes resulted in a fatality and 18 percent resulted in serious injury.

Pedestrian crash locations by severity are referenced on **Figure 25**, with hotspots shown on Lakeshore Drive, Old Highway 53, and SR 53. Through the interactive map and open-response survey comments, concern for pedestrian safety was indicated throughout with street lighting, crosswalks, access to schools, and sidewalks identified as areas for potential improvements. In addition, public survey respondents indicated expanded sidewalk networks and more/improved pedestrian crosswalks as the third and fourth priorities for transportation safety improvements.

Strategies and countermeasures under this focus area are targeted toward locations where a pedestrian fatality or serious injury has occurred with potential projects identified in **Appendix E**.


Burn Valley Road / Olympic Drive
Clearlake, CA

In addition to HSIP engineering countermeasures provided in **Appendix C**, some examples of education and enforcement strategies are included below that focus on making pedestrians more aware of the rules of the road, providing targeted enforcement, and pedestrian safety for some of the most vulnerable roadway users.

- **Education** –
  - *Bike/Ped Physical Education Program*: Incorporate pedestrian and bicycle training into the physical education curriculum at local elementary schools through collaboration with the city, school district, parents, teachers, and students.
  - *Safe Routes to School*: Create a plan for local elementary and middle schools that includes potential projects and recommended improvements to enhance pedestrian safety.
  - *Share the Road & Pedestrian Safety Awareness Messaging*: Increase driver awareness of pedestrian and bicyclist rights and needs on the roadway.
- **Enforcement**
  - *Passive Alcohol Sensors*: Equip law enforcement officers with Passive Alcohol Sensors to increase efficiency of Alcohol Checkpoints and normal traffic stops.

2. DISTRACTED DRIVING

This focus area was ranked as the second safety priority in the public outreach. The number of potential distractions for drivers has increased dramatically in recent years.

This focus area incorporates distracted driving behaviors such as inattention, cell phone usage, and situations such as eating, reading, and interacting with pets and children as the distracting factors.[11] Distracted driving was ranked as the second highest safety priority among the Clearlake community through the public outreach survey. It was a factor in 10 percent of fatal and serious injury crashes.

Crash data typically does not show distracted driving as a PCF; however, many crashes are at least partially a result of distracted driving. Over the past decade, the number of potential distractions for drivers has increased dramatically from cellphone usage to on-board touch screen displays within vehicles. This is the most common type of distraction and has resulted in an increase in distracted driving across the nation. The newest crash records include an attribute for cellphone usage and inattentive driving, and this data was utilized for **Table 3** and **Figure 11**.

[11] Distracted Driving crashes were identified by inattention and cell phone usage within the SWITRS dataset.

Strategies in this emphasis area are intended to address this unwanted driver behavior primarily through non-engineering strategies including increased enforcement and educational campaigns such as the following:

- **Education** – *Distracted Driving Public Outreach Campaign*: Messaging campaign using a variety of local media outlets.
- **Enforcement** – *High-Visibility Cell Phone Usage Enforcement Campaign*: Conduct a high visibility enforcement program, contingent on staff resources, and issue citations as appropriate. High visibility programs incorporate several strategies designed to increase enforcement and create public awareness.

These strategies are generally applicable towards speeding, aggressive driving and other driver behavior-based safety concerns.


Source: California Highway Patrol Distracted Driving Program

Additionally, Emerging technologies aimed at addressing distracted driving are being incorporated into vehicles (lane assist, hands-free communication, lane departure assist) and into phones (app-based solutions) which may help to address distracted driving from the consumer product side. Other focus area projects aimed at increasing visibility of an intersection, roadway, or pedestrian/bicycle accommodations may help to improve distracted driving.

Finally, potential Engineering countermeasures that increase visibility and generally reduce crashes overall will have a positive benefit for distracted driving. These countermeasures are detailed in subsequent focus areas.

3. INTERSECTION SAFETY

Identified as the third priority safety concern and the fifth priority for transportation safety improvements in the public outreach.

Intersection safety is among the high-priority challenge areas identified in the *California SHSP,* and it was ranked as the third priority safety concern in the public outreach. Additionally, survey respondents indicated intersection safety as the fifth priority for transportation safety improvements.

Intersection crashes account for 38 percent of the total crashes, and 27 percent of the severe injury and fatal crashes in the City of Clearlake. The most common crash type at intersections is hit object (28 percent) followed by rear-end (16 percent) and broadside (15 percent). Broadside crashes may indicate a potential safety issue with red-light running, improper yielding at a stop sign,


Old Highway 53 / Olympic Drive
Clearlake, CA

pedestrian visibility and compliance, or unsafe speeds through an intersection.

Engineering countermeasures under this focus area can be applied systemically and at spot locations, and are expanded upon in **Appendix C** (HSIP countermeasures) and **Appendix E** (Potential Project Packages).

4. BICYCLE SAFETY

Bicycle safety was identified as the fourth priority safety concern through the public outreach survey, with 17 percent of fatal crashes involving a bicyclist.

The crash data analysis indicated that a total of 18 crashes involved a bicycle, with three resulting in fatality and six resulting in serious injury. Bicycle-involved crashes accounted for nearly 17 percent of the fatal crashes and 10 percent of the serious injury crashes in Clearlake.

Bicycle safety countermeasures are intended to provide additional space on the roadway for these vulnerable road users, make bicyclists more visible at night, and improve bicyclist and driver behaviors through safety training. In addition to the non-engineering countermeasures described under the Pedestrian Safety focus area some other examples of education strategies geared toward bicycle safety are included below.

- **Education** –
  - *Bicycle Safety Courses*: Collaborate with existing bicycle safety courses by providing course materials and/or sponsoring American League of Bicyclist Certified Instructors. The city can work with organizations to identify the greatest need.
  - *Active Lighting/Conspicuity Enhancement*: Make pedestrians and bicyclists more visible at night to avoid collisions by providing free lighting equipment and retroreflective clothing.
  - *Driver Training Materials*: Collaborate with the Department of Motor Vehicles and other driver instruction providers to include information about bicyclist safety and bicyclists' rights into driving training materials. Changing existing driver training materials is anticipated to be an extensive process, which may require convening driver instruction providers to address the issue holistically at a local level.

5. IMPAIRED DRIVING

Ranked as the fifth highest priority safety concern in the public outreach. Impairment is the fourth most common PCF in fatal and serious injury crashes.

Impaired driving was ranked as the fifth safety priority in the public outreach. The data analysis indicated that *Driving Under the Influence* was the third most common Primary Crash Factor. Eighteen (18) percent of all crashes and 13 percent of fatal and serious injury crashes involved impairment.

Crashes involving impairment were three times more likely than non-impaired crashes to result in severe injury and fatality. Most impaired crashes happen on Saturday and Sunday, with approximately 16 percent occurring on Saturday and 20 percent occurring on Sunday.

Strategies in this focus area are largely focused on improving behaviors through education and increased enforcement, while providing alternatives to driving for intoxicated individuals. These countermeasures are

further expanded upon in the non-engineering implementation portion of this plan. Some examples include the following:

- **Education** – *Drunk & Impaired Driving Awareness Campaign*: Messaging campaign using a variety of local media outlets.
- **Enforcement**
  - » *Passive Alcohol Sensors*: Equip law enforcement officers with Passive Alcohol Sensors to increase efficiency of Alcohol Checkpoints and normal traffic stops.
  - » *Publicized Sobriety Checkpoints*: Highly publicized sobriety checkpoints conducted regularly to increase perceived risk of arrest for impaired driving.
  - » *High-Visibility Saturation Patrols*: Focused patrols around specific areas where impaired-driving crashes are common as part of an on-going saturation program.

These enforcement efforts should be focused on weekends.

6. LIGHTING

Crashes occurring during 'Dark – No Street Lights' conditions accounted for 28 percent of the severe injury and fatal crashes in the City of Clearlake.

Roadway and intersection lighting is identified as a potential factor in many of the focus areas in the *California SHSP* and is a factor in approximately 45 percent of serious injury and fatal crashes statewide occurring outside of normal daylight conditions (i.e., dusk-dawn and all dark conditions with or without streetlights). In Clearlake, crashes occurring during 'Dark – No Street Lights' conditions accounted for 28 percent of the severe injury and fatal crashes. It is noted that public responses on the interactive map indicated two lighting concerns – one identifying a segment of SR 53 and the other identifying a segment of Phillips Avenue as very dark. In addition, better street lighting was ranked as the highest priority for transportation safety improvements and many open-response comments mentioned roadway and intersection lighting as a primary concern.

Countermeasures for this emphasis area are intended to improve nighttime visibility on roadways or intersections as identified as having insufficient lighting. Potential HSIP countermeasures related to dark condition crashes are provided in **Appendix E**.


SR 53 / Old Highway 53
Clearlake, CA

7. SPEEDING

Twenty-nine (29) percent of all crashes indicated 'Unsafe Speed' as the Primary Collision Factor.

Speeding was ranked seventh in priority in the public outreach, and 29 percent of the crashes identified 'Unsafe Speed' as the PCF. Four distinct hot spots for crashes where speeding was a factor were noted in the crash data analysis on **Figure 9**. Most fatalities occurred on local roads, and three fatal crashes listed unsafe speed as the PCF. Stakeholders have identified speeding as a major concern across Clearlake, especially on neighborhood streets, near schools, and in areas with heavy pedestrian traffic.

Strategies in this focus area are intended to address this unwanted driver behavior, primarily through engineering countermeasures such as traffic calming improvements to reduce speeds and increased enforcement and educational campaigns. In fact, respondents to the public outreach survey ranked enforcement as the second highest priority for transportation safety improvements.

These countermeasures are further expanded upon in **Appendix C** (HSIP countermeasures) and **Appendix D** (Strategy Tables). Some examples include the following:

- **Engineering**
  - » *Speed Evaluations*: Conducted to determine areas affected by speeding and where speed limits should be posted.
  - » *Traffic Calming Measures*: Examples include portable speed trailers, radar/dynamic speed feedback signs, later shifts, chicanes, speed humps, speed tables, median islands, and curb extensions. The FHWA provides thorough documentation of traffic calming measures, applications, effects and other useful information through the traffic calming ePrimer.[12] Speed humps and speed tables are recommended on residential and local roadways as identified through traffic calming evaluations. Per County policy, speed humps and tables are limited to roadways posted at 25 mph.
- **Enforcement** – *Speed Enforcement*: Reduce speeding issues along select corridors through regular and targeted and/or automated enforcement methods.
- **Education** – *Speed Kills Campaign:* A public outreach campaign about the importance of driving the speed limit and the impact just 5 mph can have on the severity of a crash.

8. LANE DEPARTURES

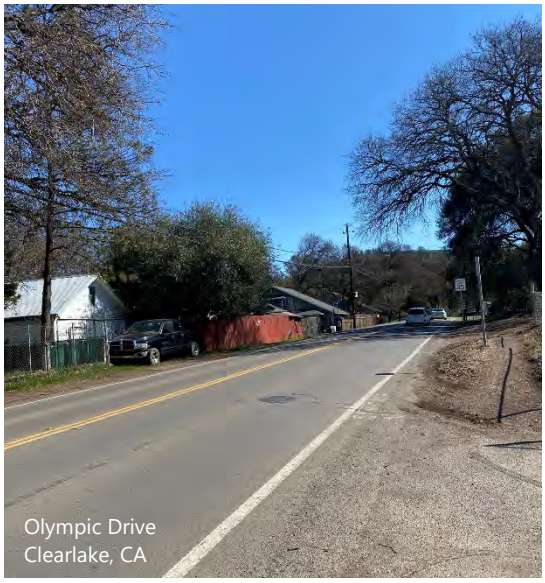
Collision types associated with lane departures accounted for 62 percent of the total roadway crashes and 46 percent of the fatal and serious injury crashes in Clearlake.

This emphasis area focuses on crash types associated with vehicles veering out of the lane, which typically occurs on roadway segments. Lane departure crashes include head-on, sideswipe, hit object, and overturned type crashes such as when a vehicle runs off the road or crosses into the opposing lane prior to the crash.

[12] Traffic Calming ePrimer | FHWA

Collision types often associated with lane departures (head-on, sideswipe, hit object, and overturned) accounted for 62 percent of the total crashes, and 46 percent of the severe injury and fatal crashes. As shown in **Figure 12**, the most common crash type among all crashes was hit object.

Engineering countermeasures within this focus area are geared toward systemic safety improvements to reduce lane confusion and the number of total lane departure crashes, with examples including removing or shielding fixed objects, upgrading or installing advanced warning signage, installing edge-lines and centerlines, upgrading pavement markings, etc. Potential HSIP Countermeasures related to this focus area are provided in **Appendix C**.


Olympic Drive
Clearlake, CA

9. MOTORCYCLE SAFETY

Identified in the California SHSP as a Challenge Area, with motorcyclists overrepresented in traffic-related fatalities in the state.

This focus area is identified as a challenge area in the *California SHSP*. In Clearlake, motorcycle-involved collisions account for 23 percent of the fatal and serious injury crashes. In order to increase driver awareness of motorcyclists and reduce motorcycle-involved crashes, countermeasures in this focus area are primarily tailored to educational campaigns, while Engineering strategies may include projects related to intersection safety and lane departures to improve motorcycle visibility.

- **Education**
  - » *Motorcycle Safety Awareness Campaign*: Motorcycle safety awareness messaging campaigns may be conducted through advertisements, social media, etc.
  - » *California Motorcyclists Safety Program (CMSP)*: In partnership with the California Highway Patrol, the CMSP aims to reduce motorcycle-involved crashes and fatalities through comprehensive educational and behavior modification modalities."[13]

[13] CMSP - California Motorcyclists Safety Program

Pine Street / Olympic Drive
Clearlake, CA

COUNTERMEASURE DEVELOPMENT

To address each Focus Area, potential countermeasures across the four categories of safety planning – Engineering, Enforcement, Education, and Emergency Services, were identified for site-specific locations or systemically across Lake County. Potential actions addressing each Focus Area were compiled into Strategy Tables to provide overarching strategies and identify responsible parties to ensure local road safety is addressed in a holistic manner.

COUNTERMEASURE DEVELOPMENT

Countermeasures are actions or treatments implemented to reduce or offset crash risk. Establishing a comprehensive set of countermeasures and strategies across the four E's of safety planning—*Engineering*, *Education*, *Enforcement*, and *Emergency Services*—is critical to ensure the multifaceted nature of local road safety is addressed in a coordinated, holistic manner.

The Four "E's" of Traffic Safety

Countermeasures and strategies in all four "E's" are included in the applicable Focus Area and are divided based on the traffic safety area in which they address. *Education* and *Enforcement* strategies are often best implemented following buy-in from community partners and stakeholders, therefore it will be critical to collaborate with these groups in order to ensure that resources and efforts are shared whenever possible.

Countermeasures

Potential countermeasures across the four E's of safety planning and based on the SMART model were compiled into a Countermeasure Toolbox. The toolbox is provided in **Appendix C** and summarizes measures found in the California Local Roadway Safety Manual (CA-LRSM), which is intended to provide roadway safety information in a single document. The CA-LRSM represents industry best practices and pulls information from the Crash Modification Factor (CMF) Clearinghouse and three other FHWA-published safety manuals (Roadway Departure Safety, Intersection Safety, and Roadways Safety Information Analysis.)

SMART Method

- ✓ **Specific**
- ✓ **Measurable**
- ✓ **Attainable**
- ✓ **Relevant**
- ✓ **Time Based**

The toolbox includes both HSIP countermeasures and non-HSIP countermeasures. Included along with HSIP eligible countermeasures are the applicable crash type(s), crash reduction factors (CRFs), federal funding eligibility, and opportunity for systemic implementation, with recommendations divided into three groups related to the countermeasure type (Signalized Intersection, Unsignalized Intersection, Roadway Segment). The HSIP number is represented by "S" for signalized intersections, "NS" for unsignalized intersections, or "R" for roadway followed by corresponding number and description.

Information included for HSIP-eligible countermeasures include:

1. Crash Type – "All", "P&B" (Pedestrian & Bicycle), "Night", "Emergency Vehicle", or "Animal"
2. CRF – Crash Reduction Factor used for HSIP calls-for-projects and HSIP Benefit/Cost Ratio calculation
3. Expected Life – 10 years or 20 years
4. Federal Funding Eligibility – The maximum federal reimbursement ratio
5. Systemic Approach Opportunity – Highlights the opportunity to implement the selected countermeasure with a systemic approach: "Very High", "High", "Medium", or "Low"

The Countermeasure Toolbox is intended to help inform ongoing safety efforts citywide and presents a list of select strategies to address the primary safety issues in the City of Clearlake. This data was used as a guide to develop improvements that will provide potential for funding opportunity.

The countermeasures provided in **Appendix C** are not an exhaustive list of safety improvements. Other non-HSIP eligible improvements are also considered and recommended as applicable. Potential countermeasures and strategies to address each focus area are included in the Focus Area Strategy Tables in the subsequent section.

Systemic Applications

A systemic approach to roadway safety groups countermeasures across multiple locations with and without high levels of historical crash data. This enables agencies to move beyond relying solely on high-crash hot spots, by proactively identifying other locations with similar risk factors – even if they have not yet experienced a significant crash history. This system supports more equitable and preventive safety investments, reducing the likelihood of severe crashes before they occur. Additionally, the HSIP program provides a list of countermeasures (included in **Appendix C**) and identifies the opportunity for systemic implementation for each.

Site Specific Applications

Potential projects can be developed for high crash frequency site-specific locations if the risk factors and recommended improvements do not fit into a systemic application.

The identified top crash segments and intersections (**Figures 16 and 20**) represent the highest priority applications of the safety countermeasures based on crash data and public outreach.

Policies and Standards Countermeasures

Clearlake/ Lake County has established several transportation safety-related policies that are documented across several planning documents and are discussed in the Existing Efforts section. These policies and standards collectively support the goal of creating a safer roadway network in Clearlake. Future iterations should consider updates to or expanding upon these policies to account for evolving technologies and lifestyles among roadway users. Potential policy updates for consideration include:

1. **Review of ADA Standards** to ensure they are up-to-date and are aligned with best practices.
2. **Micromobility Usage** – This may include modes such as e-scooters, e-bikes, etc. Provide a formal definition and identify permissible operating areas (streets, sidewalks, and/or shared-use paths), speed limits, helmet requirements, and parking requirements.
3. **Distracted Driving and In-Vehicle Technology** – Define policy and laws addressing distracted driving that go beyond texting and utilize crash reports to accurately capture and document distracted driving related incidents.

4. **Rideshare and Delivery Trends** – As delivery services and ride-sharing become more prevalent, implement policies and design standards that designate pickup, drop-off, or loading zones; restrict parking on designated corridors or intersections and/or explore time-of-day curb use policies; regulate designated rideshare areas for major event venues.
5. **Speed Management Policies** – Include specific traffic calming and speed management policies, including targeted speed frameworks by context (urban core, neighborhood, rural); authority to set speed limits below the traditional 85th percentile; and the use of traffic calming as standard practice.


Clearlake, CA

Lakeshore Drive (Austin Park)
Clearlake, CA

STRATEGY TABLES

Addressing Focus Areas may involve the concurrent implementation of multiple strategies by a range of stakeholders, including County departments and community partners. This section provides planning-level strategies, identifies responsible parties, and defines completion goals and performance measures for all recommendations.

STRATEGY TABLES

Addressing focus areas often requires the coordinated implementation of multiple strategies involving various stakeholders, including regional planning agencies, county and city departments, and community partners. The following Focus Area Strategy Tables were developed to clearly identify planning-level strategies, responsible parties, anticipated completion targets, and performance measures for each strategy supporting a focus area.

Each Focus Area Strategy Table includes potential *Engineering* countermeasures which are intended to be applied systemically or at spot locations, prioritizing intersections and roadway segments with high crash frequency or where a fatal crash occurred. In addition, each table includes *Education* programs designed to address driver behaviors, *Enforcement* efforts to increase visibility and curb unwanted driver behavior, and *Emergency Services* projects intended to increase response times and/or enhance safety for emergency response. Not all categories had recommendations for each focus area.

The Strategy Tables are created to foster collaboration and generate buy-in from stakeholders. A summary of the Strategy Tables is presented in **Tables 13-21**, following the order of priority identified in the public outreach. The full tables are provided in **Appendix D**.

The Strategy Tables include:

STRATEGY TABLES

- Strategic Linkage
- Objectives and Success Indicators
- Actions and Target Outputs
- Responsible Parties
- Date of Completion (Short-, Medium-, or Long-Term)
- Monitoring and Evaluation Parameters
- Potential Funding Sources

Table 13. Pedestrian Safety Focus Area Strategy Table

PEDESTRIAN SAFETY				
	Actions	**Target Output**		**Funding Opportunities**
Education	Elementary-Age Child Pedestrian Training	Established program to equip school aged children with knowledge of how to be a safe pedestrian. Similar to the *NHTSA Child Pedestrian Safety Curriculum*.		NHTSA 402 NHTSA 405(h), SS4A
	Conspicuity Enhancement	Increased visibility of pedestrians at night through greater use of retroreflective, bright colored, and fluorescent clothing while walking.		NHTSA 402 NHTSA 405(h), SS4A
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.		NHTSA 402
Engineering	Safe Routes to School Planning	Comprehensive plan to improve walking and biking safety for students to / from school		ATP, SS4A
	ADA Compliance	Design standards are reviewed and updated as needed for ADA compliance. Constructed projects are ADA compliant.		ATP, SS4A
	Short-term: Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Pedestrian Safety Countermeasures	Install sidewalk / pathway (to avoid walking along roadway)	HSIP, ATP, CMAQ, SS4A
			Convert standard crosswalks to continental crosswalk style	
			Install pedestrian crossing (S.I.)	
			Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	
			Install pedestrian crossing at uncontrolled locations (new signs and marking only)	
			Install/upgrade pedestrian crossings at uncontrolled locations (with enhanced safety features)	
			Install Rectangular Rapid Flashing Beacon (RRFB)	

Table 14. Distracted Driving Focus Area Strategy Table

DISTRACTED DRIVING			
	Actions	**Target Output**	**Funding Opportunities**
Education	Distracted Driving Public Outreach Campaign	Local distracted driving messaging campaign, targeted at Young Drivers using a variety of media outlets	NHTSA 402, NHTSA 405(e), SS4A
	Social Media Outreach Campaign	This highly targeted outreach effort includes providing educational materials to target populations regarding the dangers and penalties associated with distracted driving exclusively through social media platforms.	NHTSA 402, NHTSA 405(e), SS4A
Enforcement	High Visibility Enforcement	Conduct high visibility enforcement program, contingent on staff resources, to increase awareness of enforcement efforts and to provide citations as needed. May be combined with *High Visibility Enforcement* programs from other Focus Areas.	CTFGP, NHTSA 402, NHTSA 405(e), SS4A
	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within Clearlake.	NHTSA 402

Table 15. Intersection Safety Focus Area Strategy Table

INTERSECTION SAFETY				
	Actions	**Target Output**		**Funding Opportunities**
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.		NHTSA 402, SS4A
Engineering	**Short-term:** Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential ***Unsignalized*** Intersection Safety Countermeasures	Add intersection lighting	HSIP, ATP, CMAQ, SS4A
			Upgrade intersection pavement markings (NS.I.)	
			Install pedestrian crossing at uncontrolled locations (new signs and marking only)	
			Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	
			Install Rectangular Rapid Flashing Beacon (RRFB)	
EMS	Evaluate emergency vehicle detection along priority emergency routes	Increase emergency vehicle detection and response times along priority routes		HSIP, SS4A, Other

Table 16. Bicycle Safety Focus Area Strategy Table

BICYCLE SAFETY				
	Actions	**Target Output**		**Funding Opportunities**
Education	Bike Safety Education for Children	Bike safety instruction for children through school or city program		ATP, NHTSA 402, SS4A
	Bike Safety Education for Adults	Bike safety instruction for adults through a city program		NHTSA 402, SS4A
	Active Lighting / Rider Conspicuity	Make bicyclists more visible at night to avoid collisions		NHTSA 402, NHTSA 405(h), SS4A
	Driver Training	Incorporate bicycle safety and sharing the road information into local driver training (Drivers Education) courses		Existing Budget
	Share the Road Awareness Program	Increase driver awareness of bicyclist rights and needs on the roadway		NHTSA 402, SS4A
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake		NHTSA 402
Engineering	Safe Routes to School Planning	Comprehensive plan to improve walking and biking safety for students to / from school		ATP, SS4A
	Short-Term: Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Bicycle Safety Countermeasures	Install bike lanes	HSIP, ATP, CMAQ, NHTSA 405(h), SS4A
			Install protected bike lanes	
			Install Advance stop bar before crosswalk (Bicycle Box)	
			Install pedestrian crossings at uncontrolled locations (new signs and marking only)	
			Install/upgrade pedestrian crossings at uncontrolled locations (with enhanced safety features)	
			Install Rectangular Rapid Flashing Beacon (RRFB)	

Table 17. Impaired Driving Focus Area Strategy Table

IMPAIRED DRIVING			
	Actions	**Target Output**	**Funding Opportunities**
Education	Responsible Beverage Service	Local server training programs for serving alcohol are intensive, high quality, and face-to-face programs	Existing Budget
	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for Sober Ride Home program	Increased number of ride-hailing services and vehicles available	Existing Budget
	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for Sober Ride Home program	Established program to provide Sober Rides Home to residents	NHTSA 402
Enforcement	High Visibility Enforcement Program	Conduct high visibility enforcement program, contingent on staff resources, to increase awareness of enforcement efforts and to provide citations as needed. May be combined with *High Visibility Enforcement* programs from other Focus Areas.	CTFGP, NHTSA 402, NHTSA 405(d), SS4A
	Publicized DUI Checkpoints	Publicly noticed DUI checkpoints conducted during high alcohol-involved periods, contingent on staff resources	CTFGP, NHTSA 402, NHTSA 405(d)
	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within Clearlake	NHTSA 402

Table 18. Roadway & Intersection Lighting

ROADWAY & INTERSECTION LIGHTING			
	Actions	**Target Output**	**Funding Opportunities**
Enforcement	Pedestrian & Bicycle Conspicuity Enhancement	Provide lighting elements and retroreflective materials to local pedestrians and bicyclists in order to improve nighttime visibility of vulnerable roadway users.	NHTSA 402, NHTSA 405(h), SS4A
	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.	NHTSA 402
Engineering	**Short-term:** Conduct Lighting Analysis at high nighttime crash intersections and Intersections with Pedestrian Fatality **Long-term**: Conduct systemic lighting analysis at signalized and unsignalized intersections	Comply with lighting standards	Existing Budget, HSIP, SS4A

Table 19. Speeding/Aggressive Driving Focus Area Strategy Table

SPEEDING / AGGRESSIVE DRIVING			
	Actions	**Target Output**	**Funding Opportunities**
Education	Speed Kills Campaign	Conduct public outreach campaign about the importance of driving the speed limit and the impact just 5 mph can have on the severity of a crash	NHTSA 402 NHTSA 405(e), SS4A
Enforcement	Targeted Speed Enforcement Campaign	Reduce speeding issues along select corridors through regular and targeted enforcement patrols	NHTSA 402, NHTSA 405(e), SS4A
Engineering	Systemic Speeding Management Project	Dynamic Speed Signs and/or portable trailers to inform motorists of speeding.	HSIP, NHTSA 402, SS4A

Table 20. Lane Departures Focus Area Strategy Table

LANE DEPARTURES				
	Actions	**Target Output**		**Funding Opportunities**
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.		NHTSA 402
Engineering	**Short-term:** Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Systemic Lane Departure HSIP Countermeasures	Implement a SafetyEdge for rural roads	HSIP, CMAQ, SS4A
			Widen Lanes	
			Add Lighting	
			Install Guardrail	
			Install centerline rumble strips/stripes	
			Install edgeline rumble strips/stripes	
			Remove or relocate fixed objects outside of Clear Recovery Zone	
			Install chevron signs on horizontal curves	
			Install curve advance warning signs	
			Install delineators, reflectors, and/or object markers	
			Install edge-lines and centerlines	
EMS	Protect Emergency Responders	Clear vegetation; Provide protection ("bumper") trucks to block/buffer emergency response vehicles; Implement emergency vehicle notifications - notifications sent to Waze/ Google maps, smart vehicles		HSIP, SS4A

Table 21. Motorcycle Safety Focus Area Strategy Table

MOTORCYCLE SAFETY			
	Actions	**Target Output**	**Funding Opportunities**
Education	Motorcycle Safety awareness messaging	Increased driver awareness of motorcyclists and reduction in motorcyclist-involved crashes	NHTSA 402, NHTSA 405(e)
Engineering	Engineering projects for Intersection Safety and Lane Departures will contribute to motorcycle visibility.		

Olympic Drive
Clearlake, CA

POTENTIAL PROJECTS

A systemic approach to risk mitigation can address past crash trends while reducing the likelihood of future incidents. In partnership with the City and key stakeholders, four systemic projects and four site specific projects were developed for application within the City of Clearlake.

POTENTIAL PROJECTS

The top intersections and roadway segments identified in previous sections of this LRSP represent the locations with the highest crash frequency, number of serious or fatal crashes, or public comments.

FHWA Risk Factors

Site evaluations identify appropriate engineering countermeasures by examining risk factors, such as roadway elements that are missing or could be improved to enhance safety. These risk factors reflect common roadway or intersection characteristics that may have contributed to previous crashes or could increase the likelihood of future incidents. The *Federal Highway Administration (FHWA) Systemic Safety Project Selection Tool*[14] provides a reference list of typical risk factors for intersections and roadway segments to be used during systemic safety review and project identification. Preliminary site evaluations were initiated to identify specific risk factors within the roadway and intersection network that may be influencing the crash trends observed in the data analysis.

The nature of crashes in the City of Clearlake indicates that the following partial subset of risk factors should be considered when identifying locations for systemic safety projects.

RISK FACTORS

- Pavement condition and friction
- Presence of shoulder or centerline rumble strips
- Presence of pavement striping and markings
- Presence of lighting
- Presence of advanced warning signs
- Presence of pedestrian crosswalks and crosswalk enhancements
- Presence of sidewalks and bicycle lanes
- Clear zones on roadways
- Site distance obstructions at intersections

Locations and roadway segments with similar characteristics but no history of crashes may still be eligible for systemic safety projects that address these risk factors because of the increased potential for future crashes. Addressing risk factors in the City of Clearlake on a systemic basis will help address historical crashes as well as potential future crashes.

Potential Projects

In consultation with the Stakeholders Working Group, potential projects were developed. Potential engineering projects were identified based on crash trends and locations with high crash frequencies. These

[14] Source: https://safety.fhwa.dot.gov/systemic/fhwasa13019/element1.cfm#el12

potential projects may be used to pursue HSIP or other funding. Systemic safety projects enable the deployment of proven countermeasures across multiple intersections with similar risk characteristics, rather than focusing on isolated locations. These potential projects are presented on **Figure 29** and are further summarized in **Appendix E**.

For systemic applications, locations throughout the network with characteristics similar to the top crash intersections and segments (control type, equipment, striping, etc.) should be identified using available roadway condition/equipment datasets, field visit, or local knowledge. Each potential project describes:

- Project Description
- Project Need (crash data and other criteria for project selection)
- Public Outreach Endorsement
- Potential locations, reasons for inclusion, and associated risk factors
- Potential Countermeasures
- Anticipated potential Benefit/Cost Ratio Potential

Projects were developed for:

1. *Systemic Roadway Improvements*
2. *Systemic Lighting Project*
3. *Systemic Unsignalized Intersection Improvements*
4. *Systemic Pedestrian and Bicycle Improvements – Potential HSIP Project*
5. *Site Specific: Lakeshore Drive – HSIP Application Project*
6. *Site Specific: Olympic Drive*
7. *Site Specific: Old Highway 53*
8. *Site Specific: The Avenues*

All potential locations should be verified by a field review, using the Countermeasure Toolbox and FHWA Risk Factors as a checklist.

Systemic Roadways

In the past five years, most of the crashes in Clearlake have occurred on roadways. Roadway crashes by mile are identified in **Figure 20,** and the potential locations for roadway improvements on local (non-state) roadways with severe or fatal crashes are provided in **Appendix E**. These locations were selected based on crash history, public outreach results, and locations identified by stakeholders as having similar risk factors.

Roadway improvements are best addressed through systemic applications due to the high systemic opportunity for roadway segment countermeasures. Countermeasures identified for the project segments may be applied to these segments, following a field review, in addition to those included in the Countermeasure Toolbox.

Systemic Lighting

In the City of Clearlake, 'Dark – No Street Lights' is a factor in 28 percent of fatal and severe injury crashes and 22 percent of all crashes. A heatmap of these crashes is presented on **Figure 27**, and a preliminary list of locations to enhance lighting along roadways and intersections is provided in **Appendix E**. Systemic lighting improvements should be grouped by intersections with similar characteristics, and field/lighting evaluations to be conducted to determine if lighting levels are sufficient.

Austin Road / Old Highway 53
Clearlake, CA

Unsignalized Intersections

A list of preliminary locations for systemic safety projects at unsignalized intersections was developed and is provided in **Appendix E**. The majority of locations are local side streets. Among the potential locations, four fatal crashes occurred at the following locations: Mullen Avenue/Pearl Avenue, Arrowhead Road/Vista Street, Boyles Avenue/26th Avenue, and 18th Avenue/Phillips Avenue. Upon initial virtual field review, it was noted that potential improvements may include enhanced visibility due to potential site distance issues caused by vegetation. Additionally, potential improvements at these intersections include the installation of sidewalks, crosswalks, striping, and signage.


Old Highway 53 / W 40th Street
Clearlake, CA

The full list of countermeasures to be considered are provided in the Countermeasure Toolbox. All intersection conditions should be verified by a field review, using the toolbox, and FHWA Risk Factors as a checklist.

Systemic Pedestrian and Bicycle Improvements

As indicated in the public outreach, pedestrian safety is the highest priority safety concern among the Clearlake community. Fifty (50) percent of fatal crashes involved a pedestrian. Potential projects for systemic pedestrian and bicycle improvements may consist of constructing crosswalks, sidewalks or multi-use paths, bicycle lanes, and/or enhancements. Potential locations for systemic improvements on local roads are provided in **Appendix E**. Countermeasures should be applied at or near the locations corresponding to the crash data.

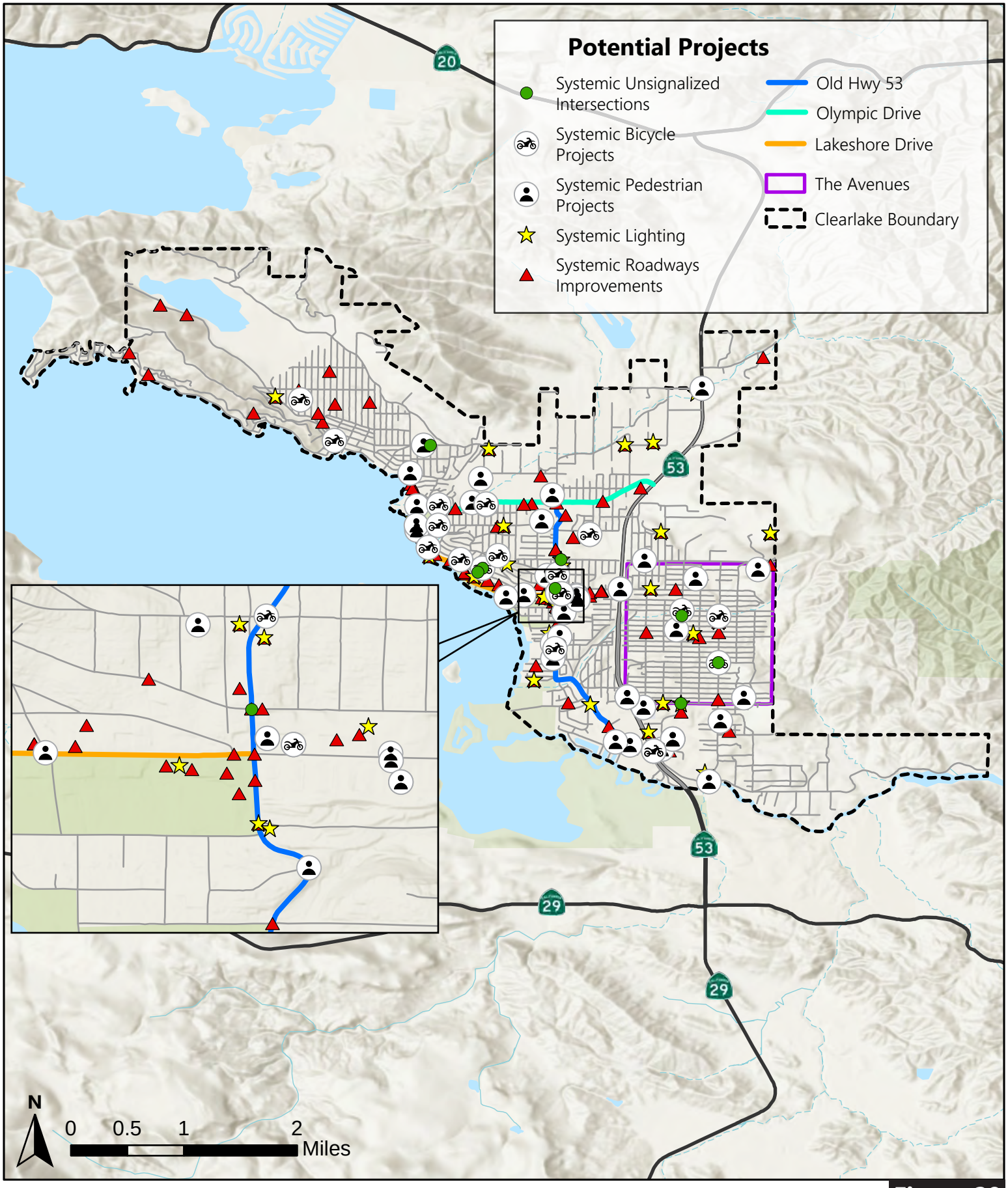


Figure 29

Clearlake
Local Road Safety Plan
Potential Projects

GCW ENGINEERS \ SURVEYORS

18th Avenue
Clearlake, CA

IMPLEMENTATION PLAN

This section summarizes the plan for successful LRSP implementation, highlights key considerations, and identifies next steps. The plan focuses on addressing high priority safety issues first and also identifies systemic safety improvements to be incorporated into safety programs and future grant applications.

IMPLEMENTATION PLAN

The implementation plan serves as a guide for carrying out the countermeasures and strategies identified within each focus area. Emphasis is placed on addressing high-priority or "low-hanging fruit" safety issues early in the process. The plan also emphasizes identifying systemic safety improvements that can be integrated into ongoing maintenance and safety programs, as well as future grant applications. The following sections provide an overview of the plan, outline key considerations, and identify next steps. Additional details for each countermeasure**,** including anticipated completion dates, performance measures, and responsible parties**,** are included in the Focus Area Strategy Tables.

Key Steps for Successful LRSP Implementation

In July 2020, the Federal Highway Administration (FHWA) released guidance (Implementing a Local Road Safety Plan) based on best practices and lessons learned by agencies around the country for implementing LRSPs.15 This guidance identified six key steps:

1. **Maintain Buy-In and Support:** Maintaining and expanding the stakeholder and public support fostered during the development of this LRSP will require ongoing communication and coordination through educational materials, news releases, and meetings. Implementation of many non-engineering countermeasures will require partnerships with stakeholders to achieve a successful outcome. The City should identify the specific outreach methods and level of detail that is achievable for continued communications with stakeholders, the general public, and decision makers. Education and Enforcement strategies are often best implemented following buy-in from community partners and stakeholders, and it will be important to collaborate closely with these groups to ensure shared resources.

2. **Identify Funding Mechanisms:** LRSPs are required for future HSIP funding, however, other funding mechanisms can also be used to improve local safety. Potential funding mechanisms for all countermeasures and strategies are included in the Focus Area Strategy Tables.

3. **Identify and Prioritize Projects:** Projects, programs, and initiatives should be prioritized based on potential safety improvement and ease of obtaining funding and implementation. Potential systemic project packages were developed for signalized and unsignalized intersections, roadway segments, pedestrian improvements at locations with and without crosswalks, and bicycle improvements. These project packages are provided in **Appendix E**. Applying these countermeasures to other

[15] Implementing a Local Road Safety Plan | FHWA

intersections with similar characteristics will help the City of Clearlake proactively address potential safety issues.

4. **Determine project delivery methods:** Projects identified through this LRSP will be primarily delivered through grant funded projects and initiatives due to existing funding constraints. When possible, countermeasures should be included in ongoing maintenance programs and incorporated into other projects.

5. **Evaluate effectiveness:** Performance measures and evaluation metrics are included in the Focus Area Strategy Tables (**Appendix D**) for each countermeasure to assist the City in monitoring progress towards implementation and impacts on specific crash types and factors. This living document is intended to be updated every four years. However, the City of Clearlake would benefit from tracking safety metrics annually to gauge implementation outcomes on a more frequent basis.

6. **Continue communication and coordination:** It is important to maintain close communication with stakeholders in order to coordinate efforts whenever possible and provide the public with updates regarding implementation progress and outcomes.

Clear Lake
Source: clearlake.ca.us

Key Components of Non-Engineering Implementation

The successful implementation of non-engineering LRSP countermeasures relies on several critical actions, including the development of effective public outreach messaging, enhanced collaboration with stakeholders and local agencies, and the pursuit of grant funding to support expanded outreach efforts. While each countermeasure in the plan plays a role in improving transportation safety in Clearlake, the countermeasures and general strategies described below are best suited for early implementation and provide the greatest potential safety benefit among non-engineering strategies.

Social Media Campaign and Continued Outreach

Providing the public with important safety information and messaging through a variety of platforms including social media, online advertisements, TV, and radio is an important strategy for increasing awareness around safety and reducing crashes. The specific type of media used for each campaign depends on the audience, the message, and available resources. Some outreach campaigns may focus exclusively on social media, and some may require more holistic approaches including more traditional media like TV, newspaper, and radio. However, these larger outreach campaigns may require long timeframes for implementation and higher budget considerations. A targeted social media campaign can be implemented quickly with very little budget by utilizing existing messaging, such as those provided by the Caltrans Office of Traffic Safety through the *Go Safely, California* program.[16]

GO SAFELY CALIFORNIA

CALIFORNIA OFFICE OF TRAFFIC SAFETY IN PARTNERSHIP WITH CALTRANS

Go Safely, California is a resource for public outreach and education materials covering a variety of safety topics, including focus areas included in this LRSP, such as impaired driving, distracted driving, and bicycle and pedestrian safety. This program provides free and compelling outreach materials to local agencies for educational campaigns as well as pre-made toolkits available to supplement existing outreach efforts.

Targeted social media messaging campaigns can focus outreach efforts to a particular demographic, such as young drivers between 15 and 23 years of age regarding the potential risks of distracted driving and impaired driving. Targeted messaging campaigns through social media can broaden awareness with minimal budget impacts. Additionally, the reach of social media messages and campaigns may be amplified many times if stakeholders share the safety campaign messages through their own social media accounts.

Partnerships & Collaborations

Roadway safety and the implementation of roadway safety plans is a shared responsibility that requires coordinated action. Successful execution of many of the identified strategies will require collaborative

[16] Go Safely CA – Traffic Safety

engagement among key stakeholders to establish strong interdepartmental and interagency partnerships. The following strategies will depend on direct partnerships and close collaboration to be successful:

Safe Routes to School

Pedestrian safety was identified as a high-priority safety concern through the interactive map and the public outreach survey, with some respondents noting safety issues near schools. Safe Routes to School plans make walking and biking safer for students and the greater community.

Source: Konocti Unified School District

Sober Ride Home

Transportation Network Companies such as Uber and Lyft as well as traditional taxi companies may work with the City to provide discounted or free rides home to intoxicated individuals within the city to avoid driving while under the influence of drugs or alcohol. This program may first be focused on specific time periods such as Saint Patrick's Day, New Year's Eve, or Halloween and expanded, based on funding and need later on.

Responsible Beverage Service (RBS)

Responsible Beverage Service (RBS) is an intervention program designed to teach servers to responsibly serve alcoholic beverages. With the passage of Assembly Bill 1221 and Assembly Bill 82, every alcohol server and their manager is required to have a valid Responsible RBS certification from an ABC accredited RBS training provider and pass an online ABC administered RBS exam within 60 calendar days from the first date of employment as of July 1, 2022.[17] The City may work with the local chamber of commerce and local alcohol server training providers to promote face-to-face training programs as the standard for local businesses as these programs have been shown to be more effective.

Crash Data Update Process

To ensure that local data represents the most accurate information, the Clearlake Public Works department should convene regularly with all associated agencies – Caltrans, CHP, and Police Department - to conduct a data reconciliation process among various sources, and to re-evaluate how data is collected and reported to best support future safety analysis.

[17] California's Mandatory Alcohol Server Training Deadline Draws Near | Alcoholic Beverage Control

Engineering Countermeasures

Many of the countermeasures identified through this LRSP are Engineering countermeasures. These countermeasures were identified to address the specific crash trends identified throughout Clearlake and are included in the Countermeasure Toolbox in **Appendix C**.

Engineering countermeasures can be applied at specific locations or systemically across a network. This plan includes potential projects to be implemented at specific high crash locations as well as systemically across Clearlake. Incorporating safety elements into planned projects will achieve project efficiencies and reduce the overall cost for improving roadway safety.

Lakeshore Drive / Olympic Drive
Clearlake, CA

Clear Lake
Source: clearlake.ca.us

FUNDING & TIMEFRAMES

To implement many of the identified countermeasures and strategies detailed in this LRSP, the City will likely pursue grant opportunities. The following section outlines key considerations for pursuing funding and provides details regarding each potential grant funding source.

IMPLEMENTATION FUNDING & TIMEFRAMES

Grant Funding

The City of Clearlake and local stakeholders will likely pursue grant opportunities to implement many of the identified countermeasures and strategies. Additionally, the timeframes for implementation will be contingent on obtaining grant funding as well as maintaining existing maintenance and construction funding levels. The following section highlights key considerations for each potential grant funding opportunity.

Highway Safety Improvement Program (HSIP)

This federal program is managed by Caltrans and focuses on infrastructure projects with nationally recognized crash reduction factors. This is one of the major funding mechanisms for safety projects across California and is closely tied to the Local Road Safety Plan. To be eligible for HSIP grant funding, agencies must have a completed LRSP or equivalent plan. Calls for projects under this funding program are typically announced every other year, with the last round of HSIP funding closing in September 2024. The next round has not been announced. Based on the available data and identified countermeasures, potential HSIP projects for high crash intersections and segments were developed and included in **Appendix E**.

Safe Streets and Roads for All (SS4A)

The U.S. Department of Transportation's (U.S. DOT) National Roadway Safety Strategy is supported by the Safe Streets and Roads for All (SS4A) program, which is a "competitive grant program that funds regional, local, and Tribal initiatives through grants to prevent roadway fatalities and serious injuries." [18] An SS4A compliant "Action Plan" includes the following seven key components, which are addressed in this plan as noted.

1. Leadership commitment and goal setting: This LRSP was developed in close coordination with a Stakeholders Working Group, which helped to establish the Vision and Mission Statements and a Commitment to Zero with the primary aim of preventing fatalities and serious injuries on the local roadway system.
2. Planning structure: The Lake Area Planning Council engineering/traffic staff oversaw the development of this plan in close collaboration with the consultant staff and project stakeholders.
3. Safety analysis: An in-depth Crash Data Analysis of the past five years of crash data for local roads in the City of Clearlake was conducted to identify overall crash trends and help to identify the highest priority safety needs.
4. Engagement and collaboration: The LRSP process was supported by stakeholder meetings, review of existing efforts, and robust Public Outreach. A public feedback survey and interactive map was distributed in two languages to gain transportation safety related insight from the Clearlake community.
5. Policy and process changes: This LRSP draws upon current "Vision Zero" methodology through the implementation of the Safe Systems Approach, and provides a review

[18] Safe Streets and Roads for All (SS4A) Grant Program | US Department of Transportation

and/or assessment of ongoing programs, policy frameworks in Clearlake/ Lake County, and other existing efforts in the City. In addition, the Implementation plan provides a framework for prioritizing countermeasures and strategies.

6. Strategy and project selections: A comprehensive set of Engineering Countermeasures and Potential Projects were developed through a layered approach, drawing upon crash data results and input from key stakeholders and the Clearlake community. The potential projects package is provided in **Appendix E**.
7. Progress and transparency: This LRSP is an update to the *2021 City of Clearlake LRSP*. The LRSP should continue to be a living, and publicly accessible document, updated every four to five years to assess current crash trends, the performance of implemented countermeasures, and the focus areas. This study documents progress since the 2021 LRSP as well as methods to track future progress.

An SS4A self-certification checklist is provided in **Appendix F**.

Active Transportation Program (ATP)

This competitive statewide program consolidates federal and state funding from several sources including the State Senate Bill 1 (SB1), Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SRTS). This program is focused on increasing the use of walking and biking by increasing safety and mobility for non-motorized users, advancing regional active transportation efforts, and providing a broad spectrum of projects to benefit many types of active transportation users. Eligible grant applicants include public schools and school districts and local, regional, or state agencies. For a project to qualify as a Safe Routes to School project, it must be within two miles of a public school or within the vicinity of a public-school bus stop with the students intended as the primary beneficiaries of the project. This program typically releases calls for projects every other year, with the 2027 ATP (Cycle 8) in progress.

Congestion Mitigation and Air-Quality Improvement Program (CMAQ)

This flexible federal funding program managed by Caltrans may be used for a variety of projects which further the goals of the Clean Air Act and its amendments on a reimbursable basis. Projects must be included in the Transportation Improvement Program (TIP) in order to be eligible for this funding stream. This funding may be used for bicycle and pedestrian outreach programs, constructing bicycle and pedestrian facilities which are not exclusively recreational and reduce vehicle trips, and public education and outreach activities.

National Highway and Traffic Safety Administration (NHTSA)

The NHTSA provides traffic safety grants through the California Office of Traffic Safety. Based on the most recent guidance, OTS accepts applications for this funding program on an annual basis with a grant application deadline of January 31. The following grant opportunities were identified as the most applicable to Clearlake's needs.

Section 402: State & Community Highway Safety Grant Program – This versatile funding program can be used for a variety of initiatives focused on reducing deaths and serious injuries on our roadways including enhancing pedestrian and bicycle safety, increasing enforcement of traffic

safety laws, improving traffic records, or reducing speeding.

Section 405: National Priority Safety Program – This program authorizes funding to address high priority safety issues across the nation including impaired driving, distracted driving, and non-motorized safety. Funding for each issue is authorized as a separate tier under the Section 405 program.

- Section 405(d): Impaired Driving Countermeasures – This tier represents 52.5 percent of the total annual funding for the full Section 405 program. These funds are intended for programs which reduce the risk of driving under the influence of alcohol or drugs. A matching share of 20 percent must be provided by the local agency.
- Section 405(e): Distracted Driving – A total of 8.5 percent of Section 405 funds are allocated for distracted driving incentive grants. Funds are intended for programs which reduce the risk of distracted driving.
- Section 405(h): Non-motorized Safety – Five percent of Section 405 is available under this tier for states where the combined bicycle and pedestrian fatalities represent more than 15 percent of all roadway fatalities in that state based on the most recent FARS data from NHTSA. Funding under this tier requires a 20 percent match and is only eligible for training law enforcement on state laws applicable to pedestrian and bicycle safety, enforcement mobilizations and campaigns designed to enforce those state laws, or public education and awareness programs designed to inform motorists, pedestrians, and bicyclists.

FHWA Local and Tribal Road Safety MATCH Program

The Federal Highway Administration's (FHWA) Mentoring, Assistance, Training, and Communication Help (MATCH) Program provides free assistance to local and tribal agencies to address roadway safety in their community. The program connects agencies requesting assistance with volunteers that have specific expertise to help successfully address the identified challenges. The program connects agencies requesting assistance with volunteers that have specific expertise to help successfully address the identified challenges.

California Highway Patrol (CHP) Cannabis Tax Fund Grant Program (CTFGP)

Funding for this program comes from the passage of Proposition 64, The Control, Regulate, and Tax Adult Use Marijuana Act (AUMA) in 2016. The intent of this program is to reduce the number of crashes by impaired drivers, increase public awareness related to the dangers of impaired driving, and improve highway safety. The purpose of the funds is to supplement and not supplant funding for current activities and programs. The grant application period for FY 2026/2027 is about to be concluded.

Implementation Timeframes

The approximate timeframe for completion of each countermeasure is identified in each Focus Area Strategy Table, provided in **Appendix D**. The approximate timeframe for completion was broken into three possible timeframes:

TIMEFRAMES

- Short-Term: 1-2 years
- Medium-Term: 3-5 years
- Long-Term: 6-10 years

Countermeasures and strategies with Medium- and Long-Term implementation timeframes may be revisited during future LRSP update cycles.

Key Findings and Next Steps

This LRSP used a methodical process and input from stakeholders and the public to identify focus areas, analyze crash trends, and develop countermeasures across the four E's of safety planning (*Engineering*, *Education*, *Enforcement*, and *Emergency Services*). The plan includes strategy tables identifying responsible parties, completion goals, and performance measures.

The implementation plan and key considerations identified in this plan will help the City of Clearlake successfully implement the LRSP. The most critical next steps include:

1. Identifying projects and countermeasures, and complete applications for the next cycle of HSIP.
2. Coordinate with the School District to pursue ATP grant funding for a comprehensive Safe Routes to School Plan.
3. Establish working teams for the short-term actions. This primarily includes grant applications, and education and enforcement activities.

In summary, the key findings and recommendations included in this LRSP include the following:

- The plan draws from previous studies and existing efforts within the City of Clearlake, with several transportation safety improvements currently planned or underway.
- The top priority safety concerns indicated through the public outreach survey and interactive map were Pedestrian Safety, Distracted Driving, Intersection Safety, and Bicycle Safety.
- A total of 622 crashes occurred in the City of Clearlake between 2019 and 2023. Approximately 13 percent (78 crashes) resulted in severe injury and fatality.
- For the City of Clearlake, the top PCFs are: Unsafe Speed, Improper Turning, Driving or Bicycling Under Influence of Alcohol or Drugs, Automobile Right-Of-Way, Wrong Side of Road, and Traffic Signals and Signs.

- The majority of crashes were identified as roadway (not intersection) related, accounting for 73 percent of the total severe injury and fatal crashes.
- The most common crash type for all crashes between 2019 and 2023 was *Hit Object*, which represents 28 percent of all crashes and 19 percent of all fatal and serious injury crashes. *Rear-End* was the second most common crash type and represented 8 percent of all fatal and serious injury crashes.
- *Vehicle-Pedestrian* crashes were the sixth most common PCF, but it was the most common PCF to result in a fatal or serious injury crash.
- The most common crash type at intersections is *Hit Object*, accounting for 28 percent of crashes at intersections.
- The leading types of roadway crashes are *Hit Object* followed by *Rear End*, with lane departure (head-on, hit object, sideswipe, and overturned) type crashes accounting for approximately 62 percent of crashes on roadways and 46 percent of the severe injury and fatal crashes.
- Pedestrian crashes accounted for 50 percent of all fatal crashes between 2019 and 2023. Crashes involving a bicyclist or pedestrian account for nearly 11 percent of the overall crashes, and 37 percent of the severe injury and fatal crashes.
- The crash data was reviewed in combination with the public outreach to determine specific locations that may warrant safety improvements.
- The top priorities for developing systemic countermeasure applications projects included roadway improvements, roadway and intersection lighting projects, unsignalized intersection improvements, and pedestrian and bicycle safety improvements.

The LRSP is a living document and should be updated every four to five years using the most up-to-date crash data to evaluate the performance of implemented countermeasures and re-evaluate focus areas. Future iterations of this LRSP should consider updates to or expanding upon existing transportation policies to account for evolving technologies and lifestyles among roadway users.

SR 53 / Dam Road
Clearlake, CA

Clear Lake
Clearlake, CA

APPENDICES

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SS4A Self-Certification Checklist

APPENDIX A

Stakeholder Collaboration

Lake County LRSP Update - Lakeport, Clearlake, Unincorporated Areas Stakeholder Working Groups

Agencies *	
Beyond Lucid (SR2S Grant)	Lake County Office of Emergency Services
Big Valley Advisory Council	Lake County Public Outreach
Big Valley Band of Pomo Indians	Lake County Record Bee
Blue Zones	Lake County Sheriff
Board, Lake APC, Council City of Clearlake	Lake County Social Services
CalFire	Lake Links
California Highway Patrol	Lake Transit Authority
Caltrans - Regional Planning D1	lake Tribal Admin
Caltrans District 1	Lake Tribal Council
Caltrans District 1, Safe Systems	Lakeport Fire
Central Region Town Hall	Lakeport Public Works
City of Clearlake	Lakeport Unified School District
City of Clearlake Public Works	Lower Lake Community Action Group
Clearlake Admin Services - events / social media	Lucerne Elementary School District
Clearlake Engineering	Middletown Area Town Hall
Cobb Advisory Council	Middletown Rancheria
Crandle Tribal Group	Middletown Unified School District
Eastern Region Town Hall	Northshore Fire Protection District
Elem Indian Colony	Other Tribal agency contact
Habematolel Rancheria in Upper Lake	PegTV
Kelseyville Fire Protection District	Redwood Region Rise
Kelseyville Unified School District	Robinson Rancheria
Kno'Qoti Native Wellness	Scotts Valley Band of Pomo Indians
Koi Nation / Habematolel Pomo of Upper Lake	Scotts Valley Community Advisory Council
Konocti Unified School District	Scotts Valley Rancheria
Lake Area Planning Council	Technical Advisory Board (Lake APC)
Lake Co News	Tribal Advisory Councils
Lake County Fire Protection District	Upper Lake Unified School District
Lake County Office of Education	Western Region Town Hall
Lake County Office of Education	

**Summary list of agencies contacted to participate in meetings, share public survey, and provide feedback. Participation varied.*

APPENDIX B

Public Outreach Results & Analysis

LAKE APC

LOCAL ROAD SAFETY PLANS

TAKE THIS SURVEY

TO HELP

IMPROVE TRAFFIC SAFETY

Your input matters...

Lake Area Planning Council is updating three Local Road Safety Plans (LRSP) within the Lake County Region including the County of Lake and the cities of Clearlake and Lakeport. An LRSP provides a critical framework for reducing fatal and serious injury crashes on local roads. Public input is a key component of these plans, and **your insight is critical** for securing future grant funding for future transportation safety improvements in your community. To provide input on the County of Lake, Clearlake, and Lakeport Local Road Safety Plans, **please complete the following survey and interactive map by February 20, 2026.**

Tu opinión es muy importante...

Lake Area Planning Council está actualizando tres Planes Locales de Seguridad Vial (LRSP) dentro de la Región del Condado del Lago, incluyendo el Condado de Lake y las ciudades de Clearlake y Lakeport. Un LRSP proporciona un marco crítico para reducir los accidentes con resultados fatales y lesiones graves en las carreteras locales. La participación del público es un componente clave de estos planes, y **su opinión es fundamental** para asegurar la financiación de subvenciones futuras para mejoras en la seguridad del transporte en su comunidad. Para proporcionar su opinión sobre los Planes Locales de Seguridad Vial del Condado de Lake, Clearlake y Lakeport, **por favor complete la siguiente encuesta y el mapa interactivo antes del 20 de febrero de 2026.**

Online Survey Options
Opciones de encuestas por internet

1. Scan the QR code with the camera app on your phone.
   Escanea el código QR con la cámara de tu celular.
2. Enter the web address into a web browser.
   Ingresa la siguiente dirección en el navegador.

https://arcg.is/r5eWC

Paper surveys are available at the following address:

Las encuestas en papel están disponibles en la siguiente dirección:

City of Clearlake
14050 Olympic Dr
Clearlake, CA 95422

City of Lakeport
225 Park Street
Lakeport, CA 95453

Questions: John Speka, spekaj@dow-associates.com

This space can be used to explain "Other" - Q5 Please rank the following categories based on your personal level of concern. Rank your selections from highest to lowest concern.
Animals in the roads! Lots of strays!
Cars crossing double yellow lines to pass.
Clean road shoulders for bicycles.
Commuters using East Hwy 29
Dirt roads within city limits
Drive like on race track..
Drivers cutting corners on winding roads
East lake elementary School has no lights flashing for kids Crossing the street. They need help!
High concern for the cross walk at East Lake School in Clearlake Oaks
Increased pot holes on the roads causing damage to our cars
Many center and side lines could use fresh painting. It is a danger during the rain.
Many of the roads are seriously potholed and hard on my car.
My other pertains to lighting in and around crosswalks. Middletown specifically is very dangerous and there have been injuries that could have been otherwise prevented.
PAINTED LANES / REFLECTORS/ DAMAGED RDS/ POT HOLES/ STREET SIGNS
Passing in the middle turning lane
Pavement Conditions
Pedestrian
pedestrians wearing dark clothing at night
Please upgrade the crosswalk at East Lake Elementary School in Clearlake Oaks! ❤ Help keep our students safe!
Pot holes
Pot holes whole driving
Potholes and deterioration of county roads off the main highways. Dry Creek Cutoff is badly damaged now.
Ppl pass on dbl yellow all the time and tailgate
Road are bad with pot holes or more like lakes in them now. “Alvita,Oakland, and Howard”
Road condition.
Road conditions, repairs needed
Road rage
road repair long awaited
Some roads are not wide enough and do not have white lines, shoulders, sidewalks which make these roads very unsafe for, walking, riding a bike, riding horses ect.
Speeding second lots of speeding I. lake County all over. Never enough police or sheriff officers around.
Speeding through Lucerne and Nice
The city of Clearlake needs more stop signs. Financial resources will be saved by installing more stop signs. One is needed at lakeshore drive/park/manakee instead of the yield right sign. Also Lucerne badly needs a light on 29. This will save lives.
To many uneven/pot holes.
Too many potholes, hard to drive through them without damaging my car
Traffic congestion
Traffic, roadways around schools
Últimamente muchas personas an cido atropellados, muchas calles y avenidas no tienen iluminación.
Yellow lights turn red too fast
Yield on green stop lights that have heavy traffic pedestrian and cars.
Yo quiero que reabran la avenida 26

This space can be used to explain "Other" Q6 Which types of transportation safety improvements would be the most beneficial? Rank your top priorities in order.
A LOT of drivers are speeding in the East Lake school zone in the Oaks. More police presence is needed.
All of the above are a top priority to me and my family
Better roads. Even just a grading on them.
Billboards
Can you pull together a crew of law enforcement to review signage and common places for accidents? Reviewing common places for accidents will save resources to make improvements to the intersections.
Consider interchanges at major intersections for less traffic impacts and safest crossing opportunities.
Consistent enforcement of traffic laws in school zones
Do not allow businesses to pop up in areas where roads are not wide enough, have no white lines, shoulders or crosswalks as this is dangerous for the community and travelers.
Fixing the roads not just adding gravel
I bought my home on west 40 th street and there is a blind man who walks daily and he fell a couple weeks ago would love it to be re paved
keeping rural, rural not becoming a city with light polution
Muchos menores de edad que no van en sus sillas de seguridad. Falta mucha educación en eso para los Padres.
need light on crosswalks
PAINTED LANES / REFLECTORS/ DAMAGED RDS/ POT HOLES/ STREET SIGNS
Please give Eastlake elementary a clear and stable crosswalk for kids to get safely to school
Protected bike lanes would be great, but there are many areas that lake bike lanes in any real form, and frequently existing bike lanes are not maintained. the same is true for sidewalks.
Repaint center and fog lines.
repair and maintain roads within city/town limits.
Road upgrading and rehabilitation
Tengo 6 anos haciendo reporte y nada

7. Please provide any comments relating to transportation safety in Lake County below.
The road conditions - even Hwy 20 - are pretty poor.
PAINTED LANES / REFLECTORS/ DAMAGED RDS/ POT HOLES/ STREET SIGNS
East of Hwy 29 from Clearlake Oaks have so many deadly accidents due to high speed! Something must be done! People are driving at least 60 to 70+MPH through out the year.
The roads need basic maintenance and repaving more than anything.
scraping the underneath of your car. I have been pushed in to the ditch when walking just so a car could get around a big hump from the lake in the middle of the road.
been hit while running multiple times due to poor lighting, distracted drivers, people speeding, and terrible intersections.
I am in favor of the use of roundabouts all around the county where intersections and traffic flow can benefit.
The roads are awful, not maintained regularly especially "county roads."
when its raining lights need to be on and this needs to be enforced
needs major surface repair
residents rely on daily driving, but there are also many families, workers, seniors, and residents without access to a personal vehicle who depend on walking, bicycles, or public transportation—especially in higher-density areas. More sidewalks and significantly improved street lighting are crucial for pedestrian safety. Poor lighting and missing sidewalks discourage walking and increase risk for people who have no alternative but to travel on foot. Similarly, the lack of safe and connected bicycle infrastructure makes biking unsafe and impractical, even though many residents rely on bicycles due to affordability.
we really need light on the streets
Speeding on highway 20 is always an issue. Enforcement of speed limits needs to be reinforced. Also the roads within many of the city/town limits are very poor and potholed.
Lighting on roads and expanded area for bike riders
People drive so crazy here especially from clearlake oaks to nice round about
yellow 'no passing' areas, in addition to the 'stay in your lane through the corner' issue. Folks frequently 'cut' corners on our twisty residential roads, which leads to headlight-to-headlight collisions.
have personally been acrossing guard at this location and have almost been hit numerous times, I couldn't even tell you how many. People do not stop for children and we need help!!
Improve crosswalk at Eastlake School in Clearlake Oaks.
The Oaks needs safer crosswalks at the school. Very dangerous
Eastlake school needs a crosswalk
for the kids!
lights for cross walk.
walk because it's so close or they can't afford other transportation. It should be a high priority to keep our kids safe to and from school.
moving traffic on hwy 20 and kids and family are trying to cross the road. Even the crosswalk woman is fearful due to speeding traffic, distracted drivers, and drivers just not paying attention. Many elementary kids cross
lighted crosswalks helps a lot
Eastlake school in Clearlake oaks is in need of lighting and safe crosswalks for students. Its amazing no one has been injured or killed there due to speeding and distracted drivers

I would like to see the school zones addressed.
safe taking our children to school
child getting seriously injured for this area to be safer.
Adding street light signals (stop lights) in Clearlake Oaks at the school should be a must! More sidewalks everywhere! And streets lights in most of Clearlake where there is none.
Please add a light up crosswalk in front of East Lake Elementary school in Clearlake Oaks. This will help protect the students, their parents, and the staff. It is a dangerous cross area especially when people speed.
and from school.
Clearlake Oaks! ♥ Help keep our students safe!
Street lights or solar lights are needed. Pedestrian safety needs improvement
children are present at the crosswalk and it makes it unsafe for them and the adult trying to help. If there was a light it would help to get the children safe to school.
children are present at the crosswalk and it makes it unsafe for them and the adult trying to help. If there was a light it would help get the children safe to school.
I would love to see a crosswalk with a sign that lights up and flashes out by East Lake School! It is dangerous enough, so maybe this will help the drivers be more alert in this area!
Interchanges should be an intersection improvement option in this poll.
Need turn pockets on Hwy 29 x C st !!!!!!!!!!
The drivers here are terrible. We need much more enforcement. Way too many people drive like they just binge watched the Fast and Furious movies. No one even stops at stop signs.
Please address pedestrian safety, and consider additional roundabouts in areas of need.
problem.
would love to see that change in the future, but at this time I believe funding would be much better spent on other lacking arears of our roads.
Educating the community what the street signals mean for example "yield"
endangering children
The timing on some of the lights in the c County do not provide adequate time to safely come to a stop when traveling the posted speed limits. Could also use more streetlights especially in more rural areas.
More stops/ck points to remove impaired drivers and ppl driving on suspended, no license etc
The cross walk in front of the East Lake School across highway 20 should have more safety measures.
Mhs and mms have a stop light that is yield on green and has student pedestrians crossing while the light is green because it's yielding on green. It needs to be changed so no one is driving into children while they are crossing. No more yield on green. Better street lights everywhere in the country. Highway 29 and Hwy 53 specifically near Anderson marsh where many people have been tragically killed needs lights and safety
noticeable decline in driving skills and understanding of the laws. Failing right of ways, intersection protocol, turn lanes etc.
Drivers speed on our rural roads. In a 25 mph drivers speed 50+
deserve a safe crosswalk.
-Require the city of clearlake to prioritize a roundabout at the Walmart intersection. -Make the crosswalk infront of Eastlake elementary school safer for students. -Safer crossing for lower lake elementary and high school.

PUBLIC COMMENTS – SURVEY QUESTION 7

We need to improve traffic safety conditions and reduce vehicle speeds
better way of temporarily fixing so when the first rains comes it doesn't get washed away. Sidewalks are badly needed in Clearlake
Hwy 53 and 29. Should be addressed.
School pedestrian access is paramount
People get hit all the time as there is no clear path
to oncoming traffic in high risk areas
Desperately in need of more stop signs an stop lights.
dangerously solid yellow line or not. I rarely see a hwy patrol or sherriff around. Consistently would be a deterrent but crime isn't I understand but you asked
paint lanes and pave roads.
safety and traffic, pedestrian lights with very clear signs and signals that light up to show pedestrians crossing, re-striping of the roads,
areas of the county.
who want to walk around and want to ride their bicycles at night? I think it would only be fair. Besides, with gas prices these days. Don't you think it's time to dust off the ol 10 speed and get out there and enjoy the most beautiful place in the whole world? C.
que van ah la escuela
el paso del camino, jente con malos avitos, pasa uno en el carro y no se quitan, iluminación para mantenernos seguros
Such a beautiful town but yet no investment within. Disappointment
Too many fatal head on collisions and too many pedestrian getting killed
also very important. While driving at night it's hard to see people walking on the roads and it's also hard to see the ditches
?
not wide enough, there are no white lines, shoulders ect. The roads are not 4290. We who live in these areas deserve to be able to continue to safely walk, ride bikes or horses on our roads In which we have been doing for 40 plus years. If you cant make the roads safe and in compliance then please stop allowing new projects.
We need more sidewalks and lighting
Not enough streetlamps, especially on 29/175. More stop signs downtown. More stop sign signal flashers.

APPENDIX C

Countermeasures & Toolbox

	No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity	Potential Applications
Non-Signalized Intersections	NS01	Lighting	Add/Upgrade intersection lighting (NS.I)	Night	40%	20	100%	Medium	Apply as needed to areas with insufficient lighting as identified through crash analysis and/or intersection audits.
	NS02	Control	Convert to all-way STOP control (from 2-way or yield control)	All	50%	10	100%	High	As need is identified and confirmed through engineering study.
	NS03	Control	Install Signals	All	30%	20	100%	Low	
	NS06	Operation / Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	100%	Very High	As need is identified.
	NS07	Operation / Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	100%	Very High	Perform an audit, starting with the top ten crash corridors to identify system-wide need and implement as resources available.
	NS11	Operation / Warning	Improve sight distance to intersection (Clear sight triangles)	All	20%	10	90%	High	As need is identified and confirmed through engineering study.
	NS16	Geometric Modification	Reduced Left-Turn Conflict Intersection (NS.I)	All	50%	20	90%	Medium	As need is identified and confirmed through engineering study.
	NS19PB	Ped and Bike	Install raised medians / refuge islands (NS.I)	P & B	45%	20	90%	Medium	Apply as needed to crosswalks, starting with intersections identified as having a vehicle-pedestrian crash.
	NS20PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and marking only)	P & B	25%	10	100%	High	Apply as need identified through crash analysis and intersection audit, starting with intersections identified as having a vehicle-pedestrian crash.
	NS21PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	100%	Medium	
	NS22PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	100%	Medium	
	NS23PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon "HAWK")	P & B	55%	20	100%	Low	
	Systemic Application of Low-Cost Countermeasures at Stop controlled intersections (FHWA - Proven Safety Countermeasures)	Operation / Warning	Double-up (left & right) oversized advance intersection warning signs (on major approach)	Fatal & Night	10% (Fatal) 15% (Night)	New Countermeasure from FHWA not included in current Caltrans HSIP guidance. Anticipate these will be included in future HSIP guidance documents for Cycle 11 based on on-going Caltrans SHSP update			As need is identified
		Operation / Warning	Enhanced Pavement markings that delineate through lane edge lines (on major approach)						
		Operation / Warning	Double-up (left & right) oversized advanced "Stop Ahead" intersection warning signs						
		Operation / Warning	Double-up on oversized stop signs						
		Operation / Warning	Retroreflective sheeting on sign posts						
		Operation / Warning	Review & update stop bar crossing conditions and locations						
		Operation / Warning	Remove vegetation, parking, and other obstructions that limit sight triangles at the intersection.						
		Operation / Warning	Double arrow warning sign at stem of T-intersections						

	No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity	Potential Applications
Signalized Intersections	-	Ped and Bike	Convert standard crosswalks to continental crosswalk style	P & B	-	-	-	-	Apply this strategy to upgrade existing crosswalks from the traditional to the continental crosswalk style according the CA-MUTCD.
	S01	Lighting	Add intersection lighting	Night	40%	20	100%	Medium	Apply as needed to areas with insufficient lighting as identified through crash analysis and/or intersection audits.
	S02	Signal Modification	Improve signal hardware: lenses, back plates with retroreflective borders, mounting, size, and number	All	15%	10	100%	Very High	Apply as needed through inventory audit, starting with the top twenty highest crash intersections
	S03	Signal Modification	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High	Review signal timing parameters to determine if modifications are needed.
	S04	Signal Modification	Provide Advanced Dilemma Zone Detection for High Speed Approaches	All	40%	10	100%	High	Review signalized intersections with high broadside crashes to determine applicability
	S05	Signal Modification	Install Emergency Pre-emption systems	Emergency Vehicle	70%	10	100%	High	Apply as needed to signalized intersections on major arterials and primary emergency response routes.
	S06	Signal Modification	Install Left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low	As need is identified.
	S07	Signal Modification	Provide protected left-turn phase (left turn lane already exists)	All	30%	20	100%	High	
	S08	Signal Modification	Convert signal to mast-arm (from pedestal-mounted)	All	30%	20	100%	Medium	
	-	-	Install Flashing Yellow Arrow	-	-	-	-	-	
	S10	Operation / Warning	Install flashing beacons as advance warning (S.I)	All	30%	10	100%	Medium	As need is identified.
	S11	Operation / Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	100%	Medium	
	S18PB	Ped and Bike	Install pedestrian crossing (S.I)	P & B	25%	20	100%	High	As need is identified.
	S19PB	Ped and Bike	Pedestrian Scramble	P & B	40%	20	100%	High	As need is identified.
	S20PB	Ped and Bike	Install Advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	100%	Very High	As need is identified.
	S21PB	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	100%	Very High	

	HSIP No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity	Potential Applications
Roadways	R01	Lighting	Add Segment Lighting	Night	35%	20	100%	Medium	Apply as needed to areas with insufficient lighting as identified through crash analysis and/or roadway audits.
	R22	Operation / Warning	Install / Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	100%	Very High	As need is identified.
	R23	Operation / Warning	Install chevron signs on horizontal curves	All	40%	10	100%	Very High	Apply as needed to roadway curves with identified safety concerns.
	R24	Operation / Warning	Install curve advance warning signs	All	25%	10	100%	Very High	
	R26	Operation / Warning	Install dynamic/variable speed warning signs	All	30%	10	100%	High	Apply as needed to areas identified to have speed issues.
	R27	Operation / Warning	Install delineators, reflectors, and/or object markers	All	15%	10	100%	Very High	Perform an audit, starting with the top ten crash corridors to identify system-wide need and implement as resources available.
	R28	Operation / Warning	Install edge-lines and centerlines	All	25%	10	100%	Very High	Perform an audit, starting with the top ten crash corridors, to identify system-wide need and implement as resources available.
	R32PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High	Apply this strategy along local roadways which are identified in the ATP as candidates for bicycle facilities, in order to construct new bike lanes in
	R33PB	Ped and Bike	Install protected bike lanes	P & B	45%	20	90%	High	
	R34PB	Ped and Bike	Install sidewalk / pathway (to avoid walking along roadway)	All	80%	20	90%	Medium	
	R31	Operation / Warning	Install edgeline rumble strips / stripes	All	15%	10	100%	High	As need is identified.
		Geometric Modification	Implement a SafetyEdge for rural roads	Fatal & Injury	11%**	-	-	-	As need is identified.

***https://safety.fhwa.dot.gov/provencountermeasures/safety_edge/*

Non-HSIP Eligible Countermeasures (Policy / Program related)

Safety E Category	Focus Area	Countermeasure Name	Description
Education	Speeding	Increased Public Outreach & Communication	Leverage available state-wide messaging campaigns to target drivers to reduce speeding. Messaging campaigns should provide information about the program, including expected safety benefits and to persuade motorists that detection and punishment for violations is likely.
Education	Distracted Driving	Increased Public Outreach & Communication	Developing distracted driving messaging campaigns and outreach to the general public in order to reduce the frequency of distracted driving. Messaging may be targeted to a specific group or for all motorists.
Education	Pedestrian Safety	Elementary-Age Child Pedestrian Training	Program designed to equip school-age children with knowledge and practice to enable them to walk safely in environments with traffic and other safety hazards. Similar to WalkSafe in Miami-Dade County or NHTSA Child Pedestrian Safety Curriculum. Work with School Districts to incorporate into Physical Education curriculum.
Education	Pedestrian Safety	Conspicuity Enhancement	Provide retroreflective, bright colored, and fluorescent clothing to residents and students in order to increase the visibility of pedestrians in the City.
Education	Bike Safety	Bike Safety Education For Children	Teach children the basics of using a bicycling including handing skills, traffic signs and signals, how to ride on streets with traffic present, proper helmet use, bicycle safety checks, and bicycle maintenance. Regular school curriculum can reach all students but opportunities outside of school (community centers, City parks and recreation departments, etc.) may be more feasible and more flexible. Work with School District to incorporate into Physical Education curriculum.
Education	Bike Safety	Bike Safety Education for Adults	The goal of bicycle safety education for adult bicyclists is to improve knowledge of laws, risks, and cycling best practices, and to lead to safer cycling behaviors, including riding predictably and the use of safety materials such as reflective clothing and helmets. May include educational materials, tip sheets, and a pledge program for local agencies to adopt and disseminate. *Contingent upon available staff and funding for classroom / handout materials.*
Education	Bike Safety	Active Lighting / Rider Conspicuity	The goal of this strategy is to make bicyclists more visible to motorists and to allow motorists more opportunity to see and avoid collisions with bicyclists. This strategy focuses on providing materials to bicyclists including active lighting, retroreflective clothing/materials, bright clothing, etc.
Education	Bike Safety	Driver Training	Consideration should be given to working with local driver education programs to enhance existing driver training and incorporate new driver training about sharing the road with bicyclists. The purpose of addressing bicycle safety as part of driver education is to increase the sensitivity of drivers to the presence and characteristics of bicyclists and how to safety share the road with them. The direct effectiveness of this countermeasure is unknown at this time.
Education	Bike Safety	Share the Road Awareness Program	Increase driver awareness of bicyclists' rights and the need for mutual respect of bicyclists on the roadway. Campaign education efforts are intended to improve the safety of all road users, including bicyclists and enhance the understanding and compliance with relevant traffic laws.
Education	Impaired Driving	Responsible Beverage Service	Consider reviewing existing Server Training programs which are required to serve alcohol and ensure that they are intensive, high quality, face-to-face programs.
Engineering, Education, Enforcement	Pedestrian & Bicycle Safety	Safe Routes to School Planning	The goal of Safe Routes to School Planning is to increase the amount of walking and bicycle trips to and from school while simultaneously improving safety for children walking or bicycling to school. Agencies may partner to pursue grant funding to conduct a comprehensive Safe Routes to School Program for all schools .
Engineering, Enforcement	Pedestrian Safety	Pedestrian Safety Zones	Focus resources on select areas where a significant number of pedestrian crashes have occurred in order to apply a targeted approach and create a greater overall reduction in crashes.

(Source: NHTSA Countermeasures That Work 9th Edition)

Enforcement Contingent Upon Adequate Police Staffing Levels			
Safety E Category	**Focus Area**	**Countermeasure Name**	**Description**
Enforcement	Distracted Driving	High Visibility Cellphone Enforcement	High visibility patrols for distracted driving / cellphone use by drivers involve law enforcement concentrating a large amount of resources in a particular geographic area in order to look for drivers who are potentially distracted or using a cellphone. *This recommendation is contingent on adequate staffing and budget.*
Enforcement	Impaired Driving	High-Visibility Saturation Patrols	A saturation patrol (also called a blanket patrol) consists of a large number of law enforcement officers patrolling a specific area looking for impaired drivers. These patrols usually take place at times and locations where impaired-driving crashes commonly occur. *This recommendation is contingent on adequate staffing and budget* .
Enforcement	Pedestrian Safety	High Visibility Pedestrian Enforcement Program	Highly visible crosswalk sting programs draw attention to the importance of drivers yielding to pedestrians, especially in critical locations for pedestrian crashes. *This recommendation is contingent on adequate staffing and budget.*

Table 1. Countermeasures for Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
SI01NT	Lighting	Add intersection lighting (S.I.)	Night	40%	20	90%	Medium
SI02	Signal Mod.	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	All	15%	10	90%	Very High
SI03	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High
SI04EV	Signal Mod.	Install emergency vehicle pre-emption systems	Emergency Vehicle	70%	10	90%	High
SI05	Signal Mod.	Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low
SI06	Signal Mod.	Provide protected left turn phase (left turn lane already exists)	All	30%	20	90%	High
SI07	Signal Mod.	Convert signal to mast arm (from pedestal-mounted)	All	30%	20	90%	Medium
SI08	Operation/ Warning	Install raised pavement markers and striping (Through Intersection)	All	10%	10	90%	Very High
SI09	Operation/ Warning	Install flashing beacons as advance warning (S.I.)	All	30%	10	90%	Medium
SI10	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	Medium
SI11	Geometric Mod.	Install raised median on approaches (S.I.)	All	25%	20	90%	Medium
SI12PB	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low
SI13	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (S.I.)	All	50%	20	90%	Medium
SI14	Geometric Mod.	Install right - turn lane (S.I.)	All	15%	20	90%	Medium
SI15	Geometric Mod.	Reduced Left-Turn Conflict Intersections (S.I.)	All	50%	20	90%	Medium
SI16RA	Geometric Mod.	Convert intersection to roundabout (from signal)	All	Varies	20	90%	Low
SI17RA	Geometric Mod.	Convert intersection to compact roundabout (from signal)	All	Varies	20	90%	Low
SI18PB	Ped and Bike	Install pedestrian countdown signal heads	P & B	25%	20	90%	Very High
SI19PB	Ped and Bike	Install pedestrian crossing (S.I.)	P & B	25%	20	90%	High
SI20PB	Ped and Bike	Pedestrian Scramble	P & B	40%	20	90%	High
SI21PB	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	90%	Very High
SI22PB	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	90%	Very High

Table 2. Countermeasures for Non-Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
NS02	Control	Convert to all-way STOP control (from 2-way or Yield control)	All	50%	10	90%	High
NS03	Control	Install signals	All	30%	20	90%	Low
NS04RA	Control	Convert intersection to roundabout (from all way stop)	All	Varies	20	90%	Low
NS05RA	Control	Convert intersection to roundabout (from stop or yield control on minor road)	All	Varies	20	90%	Low
NS06RA	Control	Convert intersection to compact roundabout (from all way stop)	All	Varies	20	90%	Medium
NS07RA	Control	Convert intersection to compact roundabout (from stop or yield control on minor road)	All	Varies	20	90%	Medium
NS08	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS10	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	90%	High
NS11	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	90%	High
NS12	Operation/ Warning	Install transverse rumble strips on approaches	All	20%	10	90%	High
NS13	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS14	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	Medium
NS15	Geometric Mod.	Install splitter-islands on the minor road approaches	All	40%	20	90%	Medium
NS16	Geometric Mod.	Install raised median on approaches (NS.I.)	All	25%	20	90%	Medium
NS17	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (NS.I.)	All	50%	20	90%	Medium
NS18	Geometric Mod.	Reduced Left-Turn Conflict Intersections (NS.I.)	All	50%	20	90%	Medium
NS19	Geometric Mod.	Install right-turn lane (NS.I.)	All	20%	20	90%	Low
NS20	Geometric Mod.	Install left-turn lane (where no left-turn lane exists)	All	35%	20	90%	Low
NS21PB	Ped and Bike	Install raised medians / refuge islands (NS.I.)	P & B	45%	20	90%	Medium
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NS25PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	P & B	55%	20	90%	Low

Table 3. Countermeasures for Roadways

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
R01NT	Lighting	Add segment lighting	Night	35%	20	90%	Medium
R02	Remove/ Shield Obstacles	Remove or relocate fixed objects outside of Clear Recovery Zone	All	35%	20	90%	High
R03	Remove/ Shield Obstacles	Install Median Barrier	All	25%	20	90%	Medium
R04	Remove/ Shield Obstacles	Install Guardrail	All	25%	20	90%	High
R05	Remove/ Shield Obstacles	Install impact attenuators	All	25%	10	90%	High
R06	Remove/ Shield Obstacles	Flatten side slopes	All	30%	20	90%	Medium
R07	Remove/ Shield Obstacles	Flatten side slopes and remove guardrail	All	40%	20	90%	Medium
R08	Geometric Mod.	Install raised median	All	25%	20	90%	Medium
R09	Geometric Mod.	Install median (flush)	All	15%	20	90%	Medium
R10PB	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low
R11	Geometric Mod.	Install acceleration/ deceleration lanes	All	25%	20	90%	Low
R12	Geometric Mod.	Widen lane (initially less than 10 ft)	All	25%	20	90%	Medium
R13	Geometric Mod.	Add two-way left-turn lane	All	30%	20	90%	Medium
R14	Geometric Mod.	Road Diet (Reduce travel lanes and add a two way left-turn and bike lanes)	All	35%	20	90%	Medium
R15	Geometric Mod.	Widen shoulder	All	30%	20	90%	Medium
R16	Geometric Mod.	Curve Shoulder widening (Outside Only)	All	45%	20	90%	Medium
R17	Geometric Mod.	Improve horizontal alignment (flatten curves)	All	50%	20	90%	Low
R18	Geometric Mod.	Flatten crest vertical curve	All	25%	20	90%	Low
R19	Geometric Mod.	Improve curve superelevation	All	45%	20	90%	Medium
R20	Geometric Mod.	Convert from two-way to one-way traffic	All	35%	20	90%	Medium
R21	Geometric Mod.	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	High

Table 3. Countermeasures for Roadways (Continued)

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
R22	Operation/ Warning	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	90%	Very High
R23	Operation/ Warning	Install chevron signs on horizontal curves	All	40%	10	90%	Very High
R24	Operation/ Warning	Install curve advance warning signs	All	25%	10	90%	Very High
R25	Operation/ Warning	Install curve advance warning signs (flashing beacon)	All	30%	10	90%	High
R26	Operation/ Warning	Install dynamic/variable speed warning signs	All	30%	10	90%	High
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High
R29	Operation/ Warning	Install no-passing line	All	45%	10	90%	Very High
R30	Operation/ Warning	Install centerline rumble strips/stripes	All	20%	10	90%	High
R31	Operation/ Warning	Install edgeline rumble strips/stripes	All	15%	10	90%	High
R32	Operation/ Warning	Speed Safety Cameras	All	20%	10	90%	High
R33PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R34PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium
R37PB	Ped and Bike	Install raised pedestrian crossing	P & B	35%	20	90%	Medium
R38PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
R39AL	Animal	Install animal fencing	Animal	80%	20	90%	Medium

APPENDIX D

Focus Area Strategy Tables

Clearlake Local Road Safety Plan
Distracted Driving - Focus Area Strategy Table

Strategic Linkage

Identified as one of 16 Challenge Areas an Focus Area in the California Strategic Highway Safety Plan (SHSP).
Ranked as the 2nd highest area of concern in public outreach survey
Accounts for 10% of Fatal and Serious Injury Crashes

Objectives	Success Indicators
Increased awareness of safety impacts of distracted driving. Implement successful public outreach and driver engagement efforts to increase awareness.	Reduction in annual citations for cellphone usage or other distracted driving Reduction in crashes attributed to distracted driving

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Education	Distracted Driving Public Outreach Campaign	Local distracted driving messaging campaign, targeted at Young Drivers using a variety of media outlets	Clearlake - Public Works & Law Enforcement, and Other Local Partners	Medium-term	1. Grant funding obtained for specific Distracted Driving outreach campaign 2. Implemented outreach campaign for full quarter (3 months)	Total fatal & serious injury crashes Total fatal & serious injury crashes involving distracted driving (cellphone usage, or other distraction) Number of distracted driving or distracted driving related violations issued annually	NHTSA 402, NHTSA 405(e), SS4A
Education	Social Media Outreach Campaign	This highly targeted outreach effort includes providing educational materials to target populations regarding the dangers and penalties associated with distracted driving exclusively through social media platforms.	Clearlake - Public Works & Law Enforcement, and Other Local Partners	Short-term / Medium-term	Monthly social media blast providing educational materials from Clearlake - Public Works (Secondary parties may be used to amplify and extend the reach of the campaign through coordination with the Clearlake Public Works)		NHTSA 402, NHTSA 405(e), SS4A
Enforcement	High Visibility Enforcement	Conduct high visibility enforcement program, contingent on staff resources, to increase awareness of enforcement efforts and to provide citations as needed. *May be combined with High Visibility Enforcement programs from other Focus Areas.*	Clearlake Law Enforcement Local law enforcement partners	Medium - Term	**Short-term:** Grant funding obtained for increased High Visibility Enforcement Program **Medium-term:** High Visibility Enforcement Program established & implemented quarterly		CTFGP, NHTSA 402, NHTSA 405(e), SS4A
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within Clearlake.	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data attributes, as needed	Data record completion rates	NHTSA 402

Clearlake Local Road Safety Plan
Impaired Driving - Focus Area Strategy Table

Strategic Linkage

Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area.
Ranked as the 5th highest priority in the public outreach survey
18% of severe injury and fatal crashes involved impairment, 13% of all crashes

Objectives	**Success Indicators**
Alcohol/drug involved crashes, injuries, and fatalities are reduced.	Reduction in frequency of crashes, injuries, and fatalities involving alcohol and drugs.

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Education	Responsible Beverage Service	Local server training programs for serving alcohol are intensive, high quality, and face-to-face programs	Clearlake Public Works, Local Chamber of Commerce	Long - Term	Local server training programs include in person instruction	Annual number of alcohol-involved crashes Annual alcohol-involved fatal & serious injury crashes	Existing Budget
Education	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for increased presence	Increased number of ride-hailing services and vehicles available	Clearlake Public Works, Ride-hail companies (Uber, Lyft, etc.), Local Chamber of Commerce, other local partners	Medium - Term	Number of active, licensed ride-hail drivers/vehicles (Uber, Lyft)	Number of active, licensed ride-hail drivers/vehicles (Uber, Lyft)	Existing Budget
Education	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for a Sober Ride Home program	Established program to provide Sober Rides Home to residents	Clearlake Public Works, Ride-hail companies (Uber, Lyft, etc.), Local Chamber of Commerce, other local partners	Medium - Term	1. Pilot program with Uber / Lyft established to provide discounted sober rides home 2. Long-term Sober Rides home program / partnership established with TNC company	Annual rides through the Sober Rides Home program Annual alcohol/drug involved crashes	NHTSA 402
Enforcement	High Visibility Enforcement Program	Conduct high visibility enforcement program, contingent on staff resources, to increase awareness of enforcement efforts and to provide citations as needed. *May be combined with High Visibility Enforcement programs from other Focus Areas.*	Clearlake Law Enforcement Local law enforcement partners	Medium - Term	1. Grant funding obtained for increased High Visibility Enforcement Program 2. High Visibility Enforcement Program established & implemented quarterly	Annual number of alcohol-involved crashes Annual DUI Arrests Annual alcohol-involved fatal & serious injury crashes	CTFGP, NHTSA 402, NHTSA 405(d) , SS4A
Enforcement	Publicized DUI Checkpoints	Publicly noticed DUI checkpoints conducted during high alcohol-involved periods, contingent on staff resources	Clearlake Law Enforcement Local law enforcement partners	Long-Term	1. Grant funding obtained for increased DUI checkpoints 2. DUI Checkpoints publicized and conducted	Annual number of alcohol-involved crashes Annual DUI Arrests Annual alcohol-involved fatal & serious injury crashes	CTFGP, NHTSA 402, NHTSA 405(d)
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within Clearlake	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data attributes, as needed	Data record completion rates	NHTSA 402

Clearlake Local Road Safety Plan
Speeding/ Aggressive Driving - Focus Area Strategy Table

Strategic Linkage							
Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area. 'Enforcement (ex. Speeding)' was ranked as the 2nd highest priority for improvements Accounted for 29 percent of all crashes and 26 percent of fatal and serious injury crashes							
Objectives			**Success Indicators**				
Reducing speeding and other aggressive driving behaviors			Serious injury & fatal crashes involving 'Unsafe Speed' are reduced.				
	Actions	**Target Output**	**Responsible Parties**	**Implementation Timeframe**	**Performance Measures**	**Monitoring and Evaluation**	**Funding Opportunities**
Education	Speed Kills Campaign	Conduct public outreach campaign about the importance of driving the speed limit and the impact just 5 mph can have on the severity of a crash	Clearlake Public Works and Clearlake Law Enforcement	Short-term	1. Grant funding obtained for specific Speeding focused outreach campaign 2. Implemented outreach campaign for full quarter (3 months)	Total, fatal & serious injury crashes involving 'Unsafe Speed' Primary Collision Factor	NHTSA 402, NHTSA 405 (e) , SS4A
Enforcement	Targeted Speed Enforcement Program	Reduced speeding issues along select corridors through regular and targeted enforcement patrols	Clearlake Public Works and Clearlake Law Enforcement	Medium-term	1. Grant funding obtained for Targeted Speed Enforcement Program 2. Targeted Speed Enforcement implemented quarterly along at least three corridors for a full calendar year.		NHTSA 402, NHTSA 405 (e) , SS4A
Engineering	Systemic Speeding Management Project	Dynamic Speed Signs and/or portable trailers to inform motorist of speeding.	Clearlake Public Works and Clearlake Law Enforcement	Short-term / Long-term	Short-term: Grant Application(s) completed Long-term: Constructed safety countermeasures		HSIP, NHTSA 402, SS4A

Clearlake Local Road Safety Plan
Intersection Safety - Focus Area Strategy Table

Strategic Linkage

Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area.
'Intersection Safety' was ranked as the 3rd highest concern in the public outreach survey, and 'Intersection Improvements' ranked as the 5th highest preferred safety improvement
Intersection crashes account for 38% percent of the total crashes, and 27% percent of the severe injury and fatal crashes

Objectives	Success Indicators
Crashes, injuries, and fatalities at signalized and non-signalized intersections are reduced.	Reduction in frequency of crashes, injuries, and fatalities at signalized and non-signalized intersections.

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data attributes, as needed	Data record completion rates	NHTSA 402 , SS4A
Engineering	**Short-term:** Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Unsignalized Intersection Safety Countermeasures: Add intersection lighting Upgrade intersection pavement markings (N.S.I.) Install pedestrian crossing at uncontrolled locations (new signs and marking only) Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features) Install Rectangular Rapid Flashing Beacon (RRFB)	Clearlake Public Works Caltrans	Short-term / Long-term	**Short-term:** HSIP Grant Application(s) Completed ATP Grant Application(s) Completed (City or CUSD) **Long-Term:** Constructed safety countermeasures through successful HSIP or other grant(s)	Number of serious injury & fatal crashes which occur at signalized & non-signalized intersections Number of serious injury & fatal crashes at signalized & non-signalized intersections by crash type Number of crashes at signalized & non-signalized intersections	HSIP, ATP, CMAQ, SS4A HSIP, ATP, CMAQ, SS4A
EMS	Evaluate emergency vehicle detection along priority emergency routes	Increase emergency vehicle detection and response times along priority routes.	Clearlake Public Works/ Caltrans	Medium-term	Emergency vehicle detection system installed along highest priority emergency routes	Corridors with emergency vehicle detection systems operational	HSIP*, SS4A Other

**If Emergency Vehicle involved crashes have occurred at the project location. If not, other funding necessary.*

Clearlake Local Road Safety Plan
Pedestrian Safety - Focus Area Strategy Table

Strategic Linkage

Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area.
Pedestrian Safety was ranked as the highest concern in the public outreach survey, and expanded sidewalk network and more/improved pedestrian crosswalks was ranked as the 3rd and 4th priorities for improvements
50% of fatal crashes involved a pedestrian, and 18% of serious injury crashes.

Objectives	Success Indicators
Pedestrian crashes, injuries, and fatalities are reduced. Pedestrian crashes, injuries, and fatalities in marked crosswalks are eliminated.	Reduction in frequency of crashes, injuries, and fatalities of pedestrians in the Clearlake Reduction in frequency of crashes, injuries, and fatalities of pedestrians in marked crosswalks.

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Education	Elementary-Age Child Pedestrian Training	Established program to equip school aged children with knowledge of how to be a safe pedestrian. *Similar to NHTSA Child Pedestrian Safety Curriculum.*	Clearlake School District & Clearlake Public Works	Long-term	Short-term: Pilot pedestrian safety program initiated at least one Clearlake School District affiliated school Long-term: Pedestrian safety program incorporated into Physical Education curriculum across all elementary schools	Number of programs implemented	NHTSA 402 NHTSA 405(h), SS4A
	Conspicuity Enhancement	Increased visibility of pedestrians at night through greater use of retroreflective, bright colored, and fluorescent clothing while walking.	Clearlake School District & Clearlake Public Works	Medium-term	Obtain high visibility / retroreflective materials for pedestrians through grant funding or standard procurement Provide high visibility / retroreflective materials for pedestrians at in-person events on a regular and on-going basis (at least semi-annually)	Percent of pedestrian crashes which occur outside of 'Daylight' lighting conditions	NHTSA 402 NHTSA 405(h), SS4A
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data attributes, as needed	Data record completion rates	NHTSA 402
	Safe Routes to School Planning	Comprehensive plan to improve walking and biking safety for students to / from school	Clearlake School District & Clearlake Public Works	Short-term / Medium-term	**Short-term:** ATP Application submitted for Safe Routes to School Plan **Medium-term:** Safe Routes to School Plan completed for all county schools	Percentage of students walking to school (gathered during safe routes to school plan and through annual evaluation / monitoring) Total Vehicle / Pedestrian crashes Total Vehicle / Pedestrian fatal & serious injury crashes	ATP , SS4A
Engineering	ADA Compliance	Design standards are reviewed and updated as needed for ADA compliance. Constructed projects are ADA compliant.	Clearlake Public Works	Short-term / Long-term	**Short-term:** Standards reviewed and updated **Long-term:** Projects meet ADA compliance	Completed ADA compliant projects	ATP , SS4A
	Short-term: Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety	Potential Pedestrian Safety Countermeasures: Install sidewalk / pathway (to avoid walking along roadway) Convert standard crosswalks to continental crosswalk style Install pedestrian crossing (S.I.) Modify signal phasing to implement a Leading Pedestrian Interval (LPI) Install pedestrian crossing at uncontrolled locations (new signs and marking only) Install/upgrade pedestrian crossings at uncontrolled locations (with enhanced safety features) Install Rectangular Rapid Flashing Beacon (RRFB)	Clearlake Public Works/ Caltrans	Short-term / Long-term	**Short-term:** HSIP Grant Application(s) Completed ATP Grant Application(s) Completed **Long-Term:** Constructed safety countermeasures through successful HSIP or other grant(s)	**Short-term:** Number of safety focuses grant applications submitted **Long-term:** Pedestrian / Vehicle percent of all fatal crashes Pedestrian / Vehicle percent of all serious injury crashes	HSIP, ATP, CMAQ, SS4A

Clearlake Local Road Safety Plan
Bicycle Safety - Focus Area Strategy Table

Strategic Linkage

Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area.
Bicycle Safety was ranked as the 4th highest priority in the public outreach survey
17% of fatal crashes and 10% of serious injury crashes involved a bicyclist, 3% of overall crashes

Objectives	Success Indicators
Bicyclist involved crashes, injuries, and fatalities are reduced. Bicyclist involved crashes result in fewer injuries due to reduced vehicle-bicycle conflicts	Reduction in frequency of crashes, injuries, and fatalities of bicyclists. Achieve Bicycle Friendly City designation from League of American Bicyclists

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Education	Bike Safety Education for Children	Bike safety instruction for children through school or county program	Clearlake School District & Clearlake Public Works Local Bike Advocacy Groups	Long-term	Short-term: Pilot bicycle safety program initiated at least one Clearlake School District affiliated school Long-term: Bicycle safety program incorporated into Physical Education curriculum across all Clearlake elementary schools	Percentage of students biking to school (gathered during safe routes to school plan and through annual evaluation / monitoring)	ATP, NHTSA 402, SS4A
	Bike Safety Education for Adults	Bike safety instruction for adults through a county program	Clearlake Law Enforcement & Clearlake Public Works Local Bike Advocacy Groups	Long-term	Bicycle Safety & Basics course for Clearlake residents taught by League of American Bicyclists certified Instructor through local bicycle organizations	Bicyclist percent of all fatal & serious injury crashes Bicyclist percent of all crashes	NHTSA 402, SS4A
	Active Lighting / Rider Conspicuity	Make bicyclists more visible at night to avoid collisions	Clearlake Police/ Sheriff & Clearlake Public Works Local Bike Advocacy Groups	Medium-term	**Short-term:** Obtain high visibility / retroreflective materials for bicyclists through grant funding or standard procurement **Medium-term:** Provide high visibility / retroreflective materials for bicyclists at in-person events on a regular and on-going basis (at least semi-annually)	Annual bicyclist-involved nighttime fatal & serious injury crashes Annual bicyclist-involved nighttime crashes	NHTSA 402, NHTSA 405(h) , SS4A
	Driver Training	Incorporate bicycle safety and sharing the road information into local driver training (Drivers Education) courses	Clearlake Public Works & Department of Motor Vehicles	Long-term	Driver safety training provided in the Clearlake includes specific bicycle safety information regarding bicyclist rights and rules of the road	Bicyclist percent of all fatal & serious injury crashes Bicyclist percent of all crashes	Existing Budget
	Share the Road Awareness Program	Increase driver awareness of bicyclist rights and needs on the roadway	Clearlake Public Works & Public Information	Short-term	Grant funding obtained for specific Share the Road Awareness outreach campaign Implemented outreach campaign for full quarter (3 months)	Bicyclist-involved crashes percent of all fatal & serious injury crashes Bicyclist-involved crashes percent of all crashes	NHTSA 402 , SS4A
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the Clearlake	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data	Data record completion rates	NHTSA 402

Clearlake Local Road Safety Plan
Bicycle Safety - Focus Area Strategy Table (Continued)

	Actions	Target Output		Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Engineering	Safe Routes to School Planning	Comprehensive plan to improve walking and biking safety for students to / from school		Clearlake School District & Clearlake Public Works	Short-term / Medium-term	**Short-term:** ATP Application submitted for Safe Routes to School Plan **Medium-term:** Safe Routes to School Plan completed for all county schools	Percentage of students walking to school (gathered during safe routes to school plan and through annual evaluation / monitoring) Total Vehicle / Pedestrian crashes Total Vehicle /	ATP, SS4A
	Short-term: Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Bicycle Safety Countermeasures	Install bike lanes Install protected bike lanes Install Advance stop bar before crosswalk (Bicycle Box) Install pedestrian crossings at uncontrolled locations (new signs and marking only) Install pedestrian crossings at uncontrolled locations (new signs and markings only) Install/upgrade pedestrian crossings at uncontrolled locations (with enhanced safety features) Install Rectangular Rapid Flashing Beacon (RRFB)	Clearlake Public Works/ Caltrans	Long-term	**Short-term:** HSIP Grant Application(s) Completed ATP Grant Application(s) Completed (City or CUSD) **Long-Term:** Constructed safety countermeasures through successful HSIP or other grant(s)	Bicyclist-Involved crashes percent of all fatal crashes Bicyclist-Involved crashes percent of all serious injury crashes Bicyclist-Involved crashes percent of all crashes	HSIP, ATP, CMAQ, NHTSA 405(h), SS4A

Clearlake Local Road Safety Plan

Roadway & Intersection Lighting - Focus Area Strategy Table

Strategic Linkage

Roadway and Intersection Lighting is a key countermeasure for several of the Challenge Areas in the California Strategic Highway Safety Plan (SHSP).
'Better Street Lighting' was the highest ranked preferred safety improvement in the public outreach survey.
'Dark Conditions – No Streetlight' crashes account for 22% percent of the total crashes, and 28 percent of the severe injury and fatal crashes.

Objectiv es	Success Indicators
Crashes, injuries, and fatalities listed under Dark – No Street Lights' and Dark 'Street Lights not Functioning' lighting conditions are reduced. Higher roadway and intersection illumination	Reduction in frequency of crashes, injuries, and fatalities during 'Dark' or 'Dusk' conditions. Achieve higher level of illumination at high crash frequency intersections

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Enforcement	Pedestrian & Bicycle Conspicuity Enhancement	Provide lighting elements and retroreflective materials to local pedestrians and bicyclists in order to improve nighttime visibility of vulnerable roadway users.	Clearlake School District & Clearlake Public Works Local Bike Advocacy Groups	Medium-term	**Short-term:** Obtain high visibility / retroreflective materials for pedestrians & bicyclists through grant funding or standard procurement **Medium-term:** Provide high visibility / retroreflective materials for pedestrians & bicyclists at in-person events on a regular and on-going basis (at least semi-annually)	Pedestrian & Bicyclist percent of all annual fatal & serious nighttime injury crashes Annual pedestrian & bicyclists fatal & serious injury crashes Total amount of materials distributed annually	NHTSA 402, NHTSA 405(h), SS4A
	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data attributes, as needed	Data record completion rates	NHTSA 402
Engineering	**Short-term:** Conduct Lighting Analysis at high nighttime crash intersections and Intersections with Pedestrian Fatality **Long-term:** Conduct systemic lighting analysis at signalized and unsignalized intersections	Comply with lighting standards	Clearlake Public Works	Short-term / Long-term	**Short-term:** Lighting analysis conducted and lighting up to standard at all high crash frequency and pedestrian fatality intersections. Lighting deficiencies to be included with HSIP location specific and systemic grant applications, as applicable **Long-term:** Systemic lighting analysis conducted	Annual nighttime fatal and serious injury crashes	Existing Budget, HSIP, SS4A

Clearlake Local Road Safety Plan
Lane Departures - Focus Area Strategy Table

Strategic Linkage

Identified in the California Strategic Highway Safety Plan (SHSP) as a High Priority Challenge Area
Collision types often associated with lane departures (head-on, sideswipe, hit object, and overturned type crashes) account for 62 percent of the total crashes, and 46 percent of the severe injury and fatal crashes.

Objectives	Success Indicators
Lane Departure type crashes (Head-on, sideswipe, hit object, and overturned) resulting in injuries, and fatalities are reduced.	Reduction in frequency of lane departure type crashes resulting in injuries, and fatalities.

	Actions	Target Output	Responsible Parties	Implementation Timeframe	Performance Measures	Monitoring and Evaluation	Funding Opportunities
Enforcement	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within the City of Clearlake.	Clearlake Law Enforcement California Highway Patrol	Long-term	Crash Data Working Group: 1. Establishes annual data reconciliation process between Law Enforcement and Public Works 2. Tracks data record completion rates annually 3. Identifies beneficial data	Data record completion rates	NHTSA 402
Engineering	**Short-term:** Develop HSIP location specific and systemic grant application(s) Develop grant application(s) for other funding sources **Long-Term:** Obtain grant funding Construct safety countermeasures	Potential Systemic Lane Departure HSIP Countermeasures: Implement a SafetyEdge for rural roads Widen lanes Add lighting Install Guardrail Install centerline rumble strips/stripes Install edgeline rumble strips/stripes Remove or relocate fixed objects outside of Clear Recovery Zone Install chevron signs on horizontal curves Install curve advance warning signs Install delineators, reflectors, and/or object markers Install edge-lines and centerlines	Clearlake Public Works/ Caltrans	Short-Term / Long-term	**Short-term:** HSIP Grant Application(s) Completed ATP Grant Application(s) Completed (City or other) **Long-Term:** Constructed safety countermeasures through successful HSIP or other grant(s)	Lane departure crashes (head-on, sideswipe, hit object, and overturned) percent of all fatal & serious injury crashes Total lane departure type fatal & serious injury crashes	HSIP, CMAQ, SS4A
EMS	Protect Emergency Responders	Clear vegetation Provide protection ("bumper") trucks to block/buffer emergency response vehicles Implement emergency vehicle notifications - notifications sent to Waze/ Google maps, smart vehicles	Clearlake Public Works, Caltrans, Law Enforcement, Fire, EMS	Short-Term / Long-term	Short-term: HSIP Grant Application(s) Completed Long-Term: Constructed safety countermeasures through successful HSIP or other grant(s), secure protection vehicles, establish	Lane departure crashes (head-on, sideswipe, hit object, and overturned) percent of all fatal & serious injury crashes Total lane	HSIP, SS4A

Clearlake Local Road Safety Plan

Motorcycle Safety - Focus Area Strategy Table

Strategic Linkage							
Identified in the California Strategic Highway Safety Plan (SHSP) as a Challenge Area. 23% of fatal and serious injury crashes involve a motorcycle							
Objectives			**Success Indicators**				
Motorcycle involved crashes, injuries, and fatalities are reduced.			Reduction in frequency of crashes, injuries, and fatalities of bicyclists.				
	Actions	**Target Output**	**Responsible Parties**	**Implementation Timeframe**	**Performance Measures**	**Monitoring and Evaluation**	**Funding Opportunities**
Education	Motorcycle Safety awareness messaging	Increased driver awareness of motorcyclists & Reduction in motorcyclist-involved crashes	Clearlake Law Enforcement & Clearlake Public Works Local Advocacy Groups	Medium-term	1. Grant funding obtained for specific Motorcycle Safety outreach campaign 2. Implemented outreach campaign for full quarter (3 months)	Total Motorcycle-Involved fatal & serious injury crashes	NHTSA 402, NHTSA 405 (e), SS4A
Engineering	Engineering projects for Intersection Safety and Lane Departures will contribute to motorcycle visibility.						

APPENDIX E

Potential Project Packages

Background

Past HSIP Awards

None were found specifically for Clearlake, below found in Lake County may include some locations in Clearlake.

Cycle	Project	Description
8	Lake County – Upgrade warning signs, centerlines, edge-lines, and install delineators.	Big Valley Road, Hartmann Road, other local road
11	Lake County – Pedestrian Crosswalk Enhancement Project	Twelve mid-block pedestrian crossing locations throughout the county: including 2 locations in North Lakeport, plus others in Upper Lake, Lucerne, Lower Lake, Hidden Valley, Middletown, Kelseyville. Work includes solar-powered RRFB or LED enhanced crosswalk signs; speed tables at some locations; lighting, pavement markings.
11	Lake County – Systemic Dynamic Variable Speed Warning Signs Project	Install solar powered dynamic variable speed warning sign assemblies at 22 locations around Lake County — roads include Soda Bay Road, Lakeshore Boulevard, and several rural roads.

Previous LRSP Recommendations

- Intersection Safety – Systemic Unsignalized Intersections – 4 locations
- Pedestrian and Bicycle Safety - Systemic Pedestrian Crosswalks Near School – 3 locations
- Intersection Safety – Site Specific - Lakeshore Drive/ 40th / Hwy 53 – Signalized Intersection
- Intersection Safety – Systemic Signalized Intersections – 3 locations
- Intersection Safety and Lane Departures – Systemic Unsignalized Intersections and Roadways – The "Avenues"
- Pedestrian and Bicycle Safety - Systemic Sidewalk – 3 locations
- Lane Departures - Systemic Roadway – 4 locations
- Lighting – Systemic Lighting Project
- Speeding – Systemic Speed Project
- Community-Wide Roadway, Bicycle and Pedestrian Improvements

Potential Projects from Previous Studies

- Majority on SR 53 from various studies (SR 53 Corridor Priority Projects, 53 Corridor Local Circulation Study, 2026 Lake County Regional Transportation Plan/Active Transportation Plan)
- Overlay and reconstruction projects (ATP)
- Bicycle Recommendations (State Route 53 Corridor Local Circulation Study)
- Sidewalk/ Transit Projects (State Route 53 Corridor Local Circulation Study)

CLEARLAKE
POTENTIAL PROJECTS

1. **Systemic Roadway Improvements**
2. **Systemic Lighting**
3. **Systemic Unsignalized Intersections**
4. **Systemic Pedestrian and Bicycle Projects**
5. **Site Specific: Lakeshore Drive**
6. **Site Specific: Olympic Drive**
7. **Site Specific Old Highway 53**
8. **Site Specific: The Avenues**

1. Systemic Roadway Improvements

Project Description

The project is to improve roadway segments with features primarily to reduce lane departure crashes – this is often attributed to run-off-the road or sideswipe crash types.

Project Need

In Clearlake:

- Most crashes are roadway not intersections
- Hit object most common crash type
- Local roadway crashes account for 61% of the fatal crashes
- Collision types often associated with lane departures (head-on, sideswipe, hit object, and overturned type crashes) account for 62 percent of the total crashes, and 46 percent of the severe injury and fatal crashes.
- Distracted driving accounts for 1 Fatal crash (6%), 7 Severe Injury crashes (12 %)

From the Survey:

"Many center and side lines could use fresh painting."

"We have drivers, and some are actual neighbors, flying up our residential road at approximately 40-50 mph"

"[We need] Lines painted clearly with reflectors on both sides of the road (middle and shoulder) along with physical barriers to oncoming."

"Some roads are not wide enough and do not have white lines, shoulders, sidewalks which make these roads very unsafe for, walking, riding a bike, riding horses ect."

Systemic safety projects enable the deployment of proven countermeasures across multiple intersections with similar risk characteristics, rather than focusing on isolated locations. By applying treatments known to improve safety at scale, these projects can achieve meaningful reductions in overall crashes and serious injury crashes across the network. This approach maximizes the safety benefit of available resources while addressing systemic risk factors.

Public Endorsement

In the public survey, distracted driving was the second highest concern. Better street lighting was also a preferred improvement. One map comment referred roadways need improved striping.

Potential Locations and Risk Factors

Preliminary locations were selected based on several factors such as:

- Crash history (number and severity of crashes)
- Public outreach survey results
- Other locations as identified by stakeholders as having similar risk factors.

Table 1 shows the potential locations for roadway improvements on local (non-state) highway crashes. It is noted that the majority of crashes are pedestrian related.

Table 1. Clearlake Systemic Roadways Project Potential Locations

Primary Roadway	Secondary Roadway	Severity	Crash Type
Dam Rd	Power Pole Station Line	Fatal	Head-On
Lakeshore Dr	Old Hwy 53	Fatal	Vehicle/ Pedestrian
Lakeshore Dr	Old Hwy 53	Fatal	Vehicle/ Pedestrian
Old Hwy 53	Lakeview Av	Fatal	Vehicle/ Pedestrian
14677 Lakeshore Dr	Redbud Park	Severe Injury	Vehicle/ Pedestrian
42nd Av	Irving Av	Severe Injury	Vehicle/ Pedestrian
Lakeshore Dr	Division Av	Severe Injury	Vehicle/ Pedestrian
Lakeshore Dr	Old Hwy 53	Severe Injury	Vehicle/ Pedestrian
Old Hwy 53	Highlands Harbor Rd	Severe Injury	Vehicle/ Pedestrian
Old Hwy 53	Clement Dr	Severe Injury	Vehicle/ Pedestrian
15th Av	Boyles Av	Other Visible Injury	Vehicle/ Pedestrian
19th Av	Konocti Av	Other Visible Injury	Vehicle/ Pedestrian
32nd Av	Oak	Other Visible Injury	Vehicle/ Pedestrian
Burns Valley Rd	Turner Av	Other Visible Injury	Vehicle/ Pedestrian
Dam Rd	Dam Rd 16080	Other Visible Injury	Vehicle/ Pedestrian
Dam Rd	Dam Rd 15960	Other Visible Injury	Vehicle/ Pedestrian
Davis Av	Davis Av 16200	Other Visible Injury	Vehicle/ Pedestrian
Davis Av	Oak Av	Other Visible Injury	Hit Object
Hillcrest Av	Frye Av	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Pg & E 120371470	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Lakeshore Dr 15100	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Vehicle/ Pedestrian
Madrone	Olympic Dr	Other Visible Injury	Vehicle/ Pedestrian
Old Hwy 53	Putnum Ln	Other Visible Injury	Vehicle/ Pedestrian
Old Hwy 53	Airport Rd	Other Visible Injury	Vehicle/ Pedestrian
Old Hwy 53	Cass Av	Other Visible Injury	Rear End
Olympic Dr	Cottonwood St	Other Visible Injury	Vehicle/ Pedestrian
Pearl Av	Muller Ave	Other Visible Injury	Hit Object
Pomo Rd	Lakeshore Dr	Other Visible Injury	Vehicle/ Pedestrian
Sunset Av	Davis Ave	Other Visible Injury	Head-On
Division St	Lakeshore Dr	Possible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Lakeshore Dr 15060	Possible Injury	Rear End

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. Other locations should be added for a systemic application.

Potential Countermeasures

Potential countermeasures are provided in **Table 2,** along with corresponding HSIP data as applicable. Systemic improvements should be grouped by locations with similar characteristics, although with justification it is possible to have countermeasures apply to some but not all locations.

Table 2. Countermeasures for Roadways in Clearlake

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
R02	Remove/ Shield Obstacles	Remove or relocate fixed objects outside of Clear Recovery Zone	All	35%	20	90%	High
R22	Operation/ Warning	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	90%	Very High
R26	Operation/ Warning	Install dynamic/variable speed warning signs	All	30%	10	90%	High
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High
R30	Operation/ Warning	Install centerline rumble strips/stripes	All	20%	10	90%	High
R31	Operation/ Warning	Install edgeline rumble strips/stripes	All	15%	10	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be medium/high for this project.

Considerations

- Locations should be grouped by similar characteristics and needed countermeasures.
- Systemic locations should be added as needed while maintaining a competitive BCR.

2. Systemic Lighting Project

Project Description

The potential project is to enhance lighting along roadways and intersections.

Project Need

In Clearlake, 'Dark No Street Lights' Crashes account:

- 22% of total crashes (136)
- 61% of Fatal crashes (11)

Systemic safety projects enable the deployment of proven countermeasures across multiple intersections with similar risk characteristics, rather than focusing on isolated locations. By applying treatments known to improve safety at scale, these projects can achieve meaningful reductions in overall crashes and serious injury crashes across the network. This approach maximizes the safety benefit of available resources while addressing systemic risk factors.

From the Survey:

"In my opinion the biggest issues are lack of sidewalks/lighting, and the fact that there a ton of unsafe drivers in lake county."

"Better lighting is needed."

"All of Lake county needs to have the roads re-paved, lighting for better visibility…"

"[We] need light on crosswalks"

Public Endorsement

Better Street lighting was the highest ranked priority for improvements. Two map comments referred to the need for more street lighting.

Potential Locations

Lighting conditions for all potential locations should be verified in a field/lighting evaluation to determine if levels are sufficient. These locations had an injury crash that occurred in "Dark No Streetlights" conditions on a local (non-state highway) location. Other locations should be added for systemic application.

Table 3. Clearlake Systemic Lighting Project Potential Locations

Primary Road	Secondary Road	Intersection?	Severity
Boyles Av	27th Av	Y	Fatal
Dam Rd	Power Pole Station Line	N	Fatal
Dam Rd	18th Av	Y	Fatal
Lakeshore Dr	Old Hwy 53	N	Fatal
Mullen Av	Pearl Av	Y	Fatal
Old Hwy 53	Lakeview Av	N	Fatal
32nd Av	Irving	N	Severe Injury

Primary Road	Secondary Road	Intersection?	Severity
42nd Av	Irving Av	N	Severe Injury
Emory Av	Mullen Av	N	Severe Injury
Lakeshore Dr	Alvita Av	N	Severe Injury
Lakeshore Dr	Old Hwy 53	N	Severe Injury
Old Hwy 53	Airport Rd	Y	Severe Injury
Old Hwy 53	Park St	N	Severe Injury
Old Hwy 53	Davis Av	N	Severe Injury
SR 53	Hwy 53	N	Severe Injury
32nd Av	Phillips Av	Y	Other Visible Injury
34th Av	Boyles Av	N	Other Visible Injury
40th Av	Phillips Av	N	Other Visible Injury
40th Av	Rt 53	N	Other Visible Injury
Austin Dr	Austin Rd	N	Other Visible Injury
Austin Rd	Old Hwy 53	Y	Other Visible Injury
Austin Rd	Cypress	N	Other Visible Injury
Burns Valley Rd	Moose Trail	N	Other Visible Injury
Country Club Dr	Bush St	N	Other Visible Injury
Dam Road Ext	South Center Dr	N	Other Visible Injury
Hillcrest Av	West 40th Av	Y	Other Visible Injury
Lake St	Dam Rd	N	Other Visible Injury
Lakeshore Bl	Aylis Av	Y	Other Visible Injury
Lakeshore Dr	Pg & E 120371470	N	Other Visible Injury
Lakeshore Dr	Old Hwy 53	Y	Other Visible Injury
Lakeshore Dr	Old Hwy 53	Y	Other Visible Injury
Lakeshore Dr	Austin Rd	N	Other Visible Injury
Old Highway 53	Old Highway 4775	Y	Other Visible Injury
Old Hwy 53	Lake View Wy	Y	Other Visible Injury
Old Hwy 53	Putnam Ln	N	Other Visible Injury
Old Hwy 53	Brannan St	N	Other Visible Injury
Phillips Av	36th Av	Y	Other Visible Injury
Rt 53	Hillcrest Av	N	Other Visible Injury
Rumsey Rd	Old Hwy 53	Y	Other Visible Injury
Rumsey Rd	Old Hwy 53	N	Other Visible Injury
Sunset Av	Davis Ave	N	Other Visible Injury
18th Av	Boyles Av	N	Possible Injury
35th Av	Boyles Av	Y	Possible Injury
Austin Dr	Cottonwood St	N	Possible Injury
Austin Rd	Lakeshore Dr	N	Possible Injury
Old Highway 53	Cass Av	Y	Possible Injury

Primary Road	Secondary Road	Intersection?	Severity
Old Hwy 53	Hillcrest Av	N	Possible Injury
Old Hwy 53	Pole 120403277	N	Possible Injury
Phillips Av	18th Av	N	Possible Injury

Potential Countermeasures

Potential countermeasures are provided in **Table 4,** along with corresponding HSIP data as applicable. Systemic improvements should be grouped by intersections with similar characteristics, although with justification it is possible to have countermeasures apply to some but not all locations.

Table 4. Countermeasures for Lighting

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
SI01NT	Lighting	Add intersection lighting (S.I.)	Night	40%	20	90%	Medium
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
RI01NT	Lighting	Add segment lighting	Night	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be medium/high for this project.

Considerations

- Field evaluations should be conducted to confirm lighting needs.
- Systemic locations should be added as needed while maintaining a competitive BCR.

3. Systemic Unsignalized Intersection Improvements

Project Description

The potential project is to enhance and upgrade unsignalized intersections.

Project Need

In Clearlake:

- Improper turning is the 2nd most common primary collision factor
- Rear-end and broadside are the 2nd and 3rd most common crash types
- 33% of fatalities occur at local intersections

From the Survey:

"Excessive speeds on residential roads in the county areas."

"Require the city of Clearlake to prioritize a roundabout at the Walmart intersection"

Systemic safety projects enable the deployment of proven countermeasures across multiple intersections with similar risk characteristics, rather than focusing on isolated locations. By applying treatments known to improve safety at scale, these projects can achieve meaningful reductions in overall crashes and serious injury crashes across the network. This approach maximizes the safety benefit of available resources while addressing systemic risk factors.

Public Endorsement

'Intersection Safety' was ranked as the 3rd highest concern in the public outreach survey, and *'Intersection Improvements'* was ranked as the 5th highest concern in the public outreach survey.

Potential Locations and Risk Factors

Preliminary locations were selected based on several factors such as:

- Crash history (number and severity of crashes)
- Public outreach survey results

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. **Table 5** shows the top unsignalized crash locations.

Table 5. Clearlake Systemic Unsignalized Intersection Improvements Potential Locations (Top Intersections)

Intersection	Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	PDO	Total	Intersection Control	Map Votes
Mullen Ave/Pearl Ave	1	0	0	0	0	1	Unsignalized	0
Arrowhead Rd/Vista St	1	0	0	0	0	1	Unsignalized	0
Boyles Ave/26th Ave	1	0	0	0	0	1	Unsignalized	0
18th Ave/Phillips Ave	1	0	0	1	1	3	Unsignalized	0
Palmer Ave/Mullen Ave	0	1	0	0	2	3	Unsignalized	0
Old Highway 53/Davis Ave	0	0	1	0	4	5	Unsignalized	0
35th Ave/Phillips Ave	0	0	2	0	2	4	Unsignalized	0
Old Highway 53/W 40th St	0	0	1	1	1	3	Unsignalized	0
Note: Highlighted locations indicate that a pedestrian-related crash occurred at this location.								

Potential Countermeasures

Potential countermeasures are provided in **Table 6,** along with corresponding HSIP data as applicable. Other locations added for systemic improvements should be grouped by intersections with similar characteristics.

Table 6. Countermeasures for Unsignalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS08	Operation/Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS10	Operation/Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	90%	High
NS11	Operation/Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	90%	High
NS13	Operation/Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS21PB	Ped and Bike	Install raised medians / refuge islands (NS.I.)	P & B	45%	20	90%	Medium
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NS25PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	P & B	55%	20	90%	Low

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be high for this project.

Considerations

- Locations should be selected that have not recently been improved or are planned to be improved.
- Locations should be grouped by similar characteristics and needed countermeasures. Systemic locations should be added as needed while maintaining a competitive BCR.

4. Systemic Pedestrian and Bicycle Improvements

Project Description

The project is to construct new pedestrian crosswalks, add sidewalk or multiuse paths, bicycle lanes, and enhancements locations with these features.

Project Need

In Clearlake:

- 50% of fatal crashes (9) involved a pedestrian
- Most pedestrian-related crashes occurred crossing not in a crosswalk (36%) or crossing in the roadway (32%)
- 17% of fatal crashes and 10% of serious injury crashes involved a bicyclist

Public Endorsement

In the public survey, *'Pedestrian Safety'* was the highest ranked safety concern. '*Expanded Sidewalk Network*' and '*More or Improved Pedestrian Crosswalks*' was ranked 3rd and 4th priority for preferred improvements in the survey.

Potential Locations and Risk Factors

Locations with a pedestrian or bicycle crash are shown in **Table 7-10**. Other locations, particularly at or near schools, should be added for a systemic application.

From the Survey:

"People drive way too fast, pass in turning lanes, and don't stop for pedestrians."

"Potholes are the worst especially for cyclists, motorized wheelchairs and pedestrians. "

"More sidewalks and significantly improved street lighting are crucial for pedestrian safety"

"Protected bike lanes would be great, but there are many areas that lake bike lanes in any real form, and frequently existing bike lanes are not maintained. The same is true for sidewalks."

"Too many fatal head on collisions and too many pedestrians getting killed."

Table 7. Pedestrian Injury Crashes on Roadway

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
Dam Rd	Power Pole Station Line	Fatal	In Road, Including Shoulder	Crosswalk, Sidewalk: Both Sides	0
Lakeshore Dr	Old Hwy 53	Fatal	Crossing In Crosswalk Not At Intersection	None	0
Lakeshore Dr	Old Hwy 53	Fatal	Crossing Not In Crosswalk	Bike Lane, Sidewalk: One Side	0
Nb Rt-53	18th Ave	Fatal	Crossing Not In Crosswalk	Crosswalk	0
Old Hwy 53	Lakeview Ave	Fatal	Crossing Not In Crosswalk	None	0
Rt 53	Lakeshore Dr	Fatal	Crossing Not In Crosswalk	None	0
Rt 53	18th Ave	Fatal	Crossing Not In Crosswalk	Crosswalk	0
Rt 53	Lakeshore Dr	Fatal	Crossing Not In Crosswalk	Crosswalk	0
14677 Lakeshore Dr	Redbud Park	Injury (Severe)	In Road, Including Shoulder	Crosswalk, Sidewalk: One Side	0
42nd Ave	Irving Ave	Injury (Severe)	In Road, Including Shoulder	None	0
Lakeshore Dr	Division Ave	Injury (Severe)	Not In Road	Crosswalk, Sidewalk: One Side	0
Lakeshore Dr	Old Hwy 53	Injury (Severe)	Crossing In Crosswalk Not At Intersection	None	0
Old Hwy 53	Highlands Harbor Rd	Injury (Severe)	Crossing Not In Crosswalk	None	0
Old Hwy 53	Clement Dr	Injury (Severe)	Crossing Not In Crosswalk	None	0
Rt 53	Dam Rd	Injury (Severe)	Crossing In Crosswalk At Intersection	Crosswalks, Sidewalk: Both Sides	0
15th Ave	Boyles Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
19th Ave	Konocti Ave	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
32nd Ave	Oak St	Injury (Other Visible)	Not In Road	None	0
Burns Valley Rd	Turner Ave	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Dam Rd	Dam Rd 16080	Injury (Other Visible)	Crossing Not In Crosswalk	Sidewalk	0

Primary Road	Secondary Road	Severity	Pedestrian Action	Pedestrian/Bicycle Facilities	Map Votes
Dam Rd	Dam Rd 15960	Injury (Other Visible)	Not In Road	Crosswalk, Sidewalk: One Side	0
Davis Ave	Davis Ave 16200	Injury (Other Visible)	In Road, Including Shoulder	None	0
Davis Ave	Oak Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Hillcrest Ave	Frye Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Lakeshore Dr	Pg & E 120371470	Injury (Other Visible)	In Road, Including Shoulder	Bike Lane, Sidewalk: One Side	0
Lakeshore Dr	Lakeshore Dr 15100	Injury (Other Visible)	Crossing In Crosswalk Not At Intersection	Crosswalk, Sidewalk: Both Sides	0
Lakeshore Dr	Old Hwy 53	Injury (Other Visible)	Crossing In Crosswalk Not At Intersection	None	0
Madrone	Olympic Dr	Injury (Other Visible)	In Road, Including Shoulder	Sidewalk: One Side	0
Old Hwy 53	Putnum Ln	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Old Hwy 53	Airport Rd	Injury (Other Visible)	In Road, Including Shoulder	Crosswalk, Sidewalk: Both Sides	0
Old Hwy 53	Cass Ave	Injury (Other Visible)	Not In Road	None	0
Olympic Dr	Cottonwood St	Injury (Other Visible)	In Road, Including Shoulder	Bike Lane, Crosswalk, Sidewalk: One Side	0
Pearl Ave	Mullen Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Pomo Rd	Lakeshore Dr	Injury (Other Visible)	Crossing Not In Crosswalk	None	0
Sunset Ave	Davis Ave	Injury (Other Visible)	In Road, Including Shoulder	None	0
Division St	Lakeshore Dr	Injury (Complaint Of Pain)	Crossing In Crosswalk At Intersection	Crosswalk, Sidewalk: One Side	0
Lakeshore Dr	Lakeshore Dr 15060	Injury (Complaint Of Pain)	Not In Road	Sidewalk: Both Sides	0

Table 8. Bicycle Injury Crashes on Roadways

Primary Road	Secondary Road	Severity	Pedestrian/Bicycle Facilities	Map Votes
SR 53	Old Hwy 53	Fatal	Crosswalks, Sidewalk: Both Sides	0
Villa Way	Olympic Dr	Injury (Severe)	None	0
Lakeshore Dr	Manakee Ave	Injury (Severe)	None	0
Lakeshore Dr	W 40th Ave	Injury (Severe)	Crosswalks	0
Old Hwy 53	Cass Ave	Injury (Severe)	Bike Lane	0
SR 53	Old Hwyy 53	Injury (Severe)	None	0
13th St	Bush St	Injury (Other Visible)	None	0
Old Hwy 53	Hillcrest Ave	Injury (Other Visible)	None	0
Olympic Dr	Madrone St	Injury (Other Visible)	Sidewalk: One Side	0
Phillips Ave	36th Ave	Injury (Other Visible)	Bike Lane	0
35th Ave	Boyles Ave	Injury (Complaint Of Pain)	None	0
Lakeshore Dr	Lakeshore Dr 15060	Injury (Complaint Of Pain)	Sidewalk: Both Sides	0

Pedestrian crashes at intersections are shown in **Table 9**.

Table 9. Pedestrian Crashes at Intersections

Primary Road	Secondary Road	Severity	Pedestrian/Bicycle Facilities	Pedestrian/ Bicycle Action	Map Votes
Rt 53	Dam Rd	Fatal	Crosswalks	Crossing In Crosswalk At Intersection	0
40th Ave	Rt 53	Injury (Severe)	Crosswalk	Crossing In Crosswalk At Intersection	0
Lakeshore Dr	Rt 53	Injury (Severe)	Crosswalk	Crossing Not In Crosswalk	0
Old Hwy 53	Airport Rd	Injury (Severe)	Sidewalks: South Of Airport	In Road, Including Shoulder	0
Olympic Dr	Jackson St	Injury (Severe)	None	In Road, Including Shoulder	0
Arrowhead Rd	Halika St	Injury (Other Visible)	None	Crossing Not In Crosswalk	0
Austin Rd	Old Hwy 53	Injury (Other Visible)	Bike Lane	In Road, Including Shoulder	0
Dam Rd	Dam Rd Ext	Injury (Other Visible)	Crosswalks	Crossing In Crosswalk At Intersection	0
Lakeshore Dr	Old Hwy 53	Injury (Other Visible)	Crosswalks	Crossing Not In Crosswalk	0
Old Hwy 53	Highlands Harbor Rd	Injury (Other Visible)	None	Crossing Not In Crosswalk	0

Table 10. Bicycle Crashes at Intersections

Primary Road	Secondary Road	Severity	Pedestrian/ Bicycle Facilities	Map Votes
Mullen Ave	Pearl Ave	Fatal	None	0
Boyles Ave	27th Ave	Fatal	None	0
W 40th St	Mullen Ave	Injury (Severe)	None	0
Lakeshore Bl	Baylis Ave	Injury (Other Visible)	Bike Lane, Crosswalk	0
Howard Ave	Pearl Ave	Injury (Other Visible)	Sidewalk: One Side	0
Uhl Ave	Division Ave	Injury (Other Visible)	None	0

Other Identified Potential Locations

- Locations in the Active Transportation Plan
- At and adjacent to schools in effort to provide safe routes to schools.

Potential Countermeasures

Potential countermeasures are provided in **Table 11,** along with corresponding HSIP data as applicable.

Table 11. Countermeasures for Pedestrians and Bicycle Improvements

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS13	Operation/Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NS25PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	P & B	55%	20	90%	Low
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NS25PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	P & B	55%	20	90%	Low
R33PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R34PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be high for this project.

Considerations

- Projects should be constructed where they would provide the greatest benefit considering pedestrian/bicyclist generators, existing/planned sidewalks, multiuse paths and bicycle lanes.
- Countermeasures should be applied at or near the locations corresponding to the crash data; however, with justification the countermeasures can be applied to nearby locations that are more practical.
- Systemic locations should be added as needed while maintaining a competitive BCR.

5. Lakeshore Drive Corridor Improvements

Project Description

The project would provide improvements to the roadway, intersections and pedestrian accommodations (sidewalks) to promote lower speeds and increased visibility for pedestrians.

Project Need

Identified as a high crash corridor with over 20 crashes per mile in some segments. This project would support a planned project to provide sidewalks from Olympic Drive to SR 53.

Public Endorsement

From the Survey:

"The speed limit on Lakeshore Blvd is 35 and people routinely go 40-50 with so many pedestrians. I have almost been hit"

Public outreach and survey results demonstrate strong community support for safety improvements. In the public survey, pedestrian safety was the highest-ranked safety concern, reflecting widespread concern about speeding, visibility, and conflicts between vehicles and pedestrians along this high-crash corridor. Improvements such as an expanded sidewalk network and more or improved pedestrian crosswalks were ranked among the top preferred safety enhancements. In addition, survey comments identified Lakeshore Drive as a location where residents experience unsafe vehicle speeds and limited pedestrian visibility, underscoring the community's support for roadway, intersection, and pedestrian improvements that promote lower speeds and enhance pedestrian safety.

Crash History

Approximately 117 crashes occurred along the corridor. The crash summary for injury crashes along Lakeshore Drive is shown in **Table 12**.

Table 12. Lakeshore Drive Crash Data Summary

Primary Road	Secondary Road	Severity	Crash Type
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Rear End
Lakeshore Dr	Redbud Park	Other Visible Injury	Hit Object
Lakeshore Dr	Howard Av	Severe Injury	Rear End
Lakeshore Dr	Olympic Dr	Other Visible Injury	Head-On
Lakeshore Dr	Golf Av	Other Visible Injury	Head-On
Lakeshore Dr	Pg & E 120371470	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Rear End
Lakeshore Dr	Lakeshore Dr 15100	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Lakeshore Dr 15200	Possible Injury	Rear End
Lakeshore Dr	Villa Wy	Other Visible Injury	Hit Object
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Rear End

Primary Road	Secondary Road	Severity	Crash Type
Lakeshore Bl	Baylis Av	Other Visible Injury	Other
Lakeshore Dr	Alvita Av	Severe Injury	Head-On
Lakeshore Dr	Old Hwy 53	Fatal	Vehicle/ Pedestrian
Lakeshore Dr	Konocti St	Other Visible Injury	Hit Object
Lakeshore Dr	Lakeshore Dr 15060	Possible Injury	Rear End
Lakeshore Dr	Old Hwy 53	Possible Injury	Rear End
Lakeshore Dr	Palmer Av	Other Visible Injury	Hit Object
Lakeshore Dr	San Joaquin Ext	Other Visible Injury	Hit Object
Lakeshore Dr	Rosewood Ln	Other Visible Injury	Hit Object
Lakeshore Dr	Rt 53	Possible Injury	Rear End
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Rear End
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Rear End
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Broadside
Lakeshore Dr	Old Hwy 53	Possible Injury	Rear End
Lakeshore Dr	Old Hwy 53	Possible Injury	Rear End
Lakeshore Dr	Rt 53	Severe Injury	Vehicle/ Pedestrian
Lakeshore Dr	Park St	Other Visible Injury	Sideswipe
Lakeshore Dr	Old Hwy 53	Possible Injury	Sideswipe
Lakeshore Dr	Woodland Dr	Other Visible Injury	Sideswipe
Lakeshore Dr	Woodland Dr	Other Visible Injury	Sideswipe
Lakeshore Dr	Old Hwy 53	Severe Injury	Hit Object
Lakeshore Dr	Golf Av	Other Visible Injury	Head-On
Lakeshore Dr	Rt 53	Other Visible Injury	Broadside
Lakeshore Dr	Division Av	Severe Injury	Vehicle/ Pedestrian
Lakeshore Dr	Manakee Av	Severe Injury	Other
Lakeshore Dr	Monterey Dr	Severe Injury	Overturned
Lakeshore Dr	Golf Av	Possible Injury	Rear End
Lakeshore Dr	Golf Av	Other Visible Injury	Broadside
Lakeshore Dr	Park St	Other Visible Injury	Sideswipe
Lakeshore Dr	Old Highway 53	Other Visible Injury	Rear End
Lakeshore Dr	Lakeshore Dr 14655	Other Visible Injury	Hit Object
Lakeshore Dr	Bayliss Av	Other Visible Injury	Head-On
Lakeshore Dr	Alvita	Possible Injury	Rear End
Lakeshore Dr	W 40th Av	Severe Injury	Other
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Austin Rd	Other Visible Injury	Hit Object
Lakeshore Dr	W 40th Av	Possible Injury	#N/A
Lakeshore Dr	Rt 53	Other Visible Injury	Sideswipe
Lakeshore Dr	Emory Av	Severe Injury	Overturned

Primary Road	Secondary Road	Severity	Crash Type
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Head-On
Lakeshore Dr	Palmer Av	Other Visible Injury	Overturned
Lakeshore Dr	Old Hwy 53	Fatal	Vehicle/ Pedestrian
Lakeshore Dr	Old Hwy 53	Severe Injury	Vehicle/ Pedestrian
Lakeshore Dr	Division St	Possible Injury	Sideswipe
Lakeshore Dr	Mullen Av	Other Visible Injury	Broadside
Lakeshore Dr	Lupoyoma St	Other Visible Injury	Hit Object
Lakeshore Dr	W 40th Av	Other Visible Injury	Rear End
Lakeshore Dr	Division St	Other Visible Injury	Broadside
Lakeshore Dr	Old Hwy 53	Other Visible Injury	Vehicle/ Pedestrian
Lakeshore Dr	Golf Av	Other Visible Injury	Broadside
Lakeshore Dr	Old Hwy 53	Possible Injury	Rear End
Lakeshore Ln	W 40th Av	Possible Injury	Rear End

Potential Countermeasures

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. Potential countermeasures are provided in **Table 13,** along with corresponding HSIP data as applicable.

Table 13. Countermeasures for Lakeshore Drive

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
NS01	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
NS08	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS13	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be medium/high for this project.

Considerations

- Countermeasures and locations should be considered with past studies/plans.

6. Olympic Drive Corridor Improvements

Project Description

The project would provide improvements to the roadway and pedestrian accommodations to promote lower speeds and increased visibility for pedestrians.

Project Need

Identified as a high crash corridor with over 20 crashes per mile in some segments.

Public Endorsement

One map comment indicated the need for new striping on Olympic Drive. Public outreach results indicate strong community support for improvements that enhance pedestrian safety and roadway visibility. Pedestrian safety was identified as a top concern in the public survey, with residents emphasizing the need for safer conditions along high-speed and high-crash corridors. In addition, a georeferenced web map comment noted that existing pavement markings are difficult to see during rain, creating safety concerns for both pedestrians and drivers. Upgrading pavement markings with higher-visibility materials would directly address this concern by improving lane definition, crosswalk visibility, and driver awareness, particularly during nighttime and wet-weather conditions, thereby supporting community-identified safety priorities.

Crash History

The crash summary of injury crashes along Olympic Drive is shown in **Table 14**.

Table 14. Olympic Drive Crash Data Summary

Primary Road	Secondary Road	Severity	Crash Type
Olympic Dr	Madrone St	Other Visible Injury	Broadside
Olympic Dr	Burns Valley Rd	Possible Injury	Head-On
Olympic Dr	Old Hwy 53	Severe Injury	Broadside
Olympic Dr	Jackson St	Severe Injury	Vehicle/ Pedestrian
Olympic Dr	Rt 53	Other Visible Injury	Broadside
Olympic Dr	Grey Av	Other Visible Injury	Rear End
Olympic Dr	Garfield Av	Severe Injury	Rear End
Olympic Dr	Sycamore St	Severe Injury	Sideswipe
Olympic Dr	Lilac Av	Possible Injury	Rear End
Olympic Dr	Madrone	Other Visible Injury	Head-On
Olympic Dr	Cottonwood	Other Visible Injury	Broadside
Olympic Dr	Brown St	Possible Injury	Sideswipe
Olympic Dr	Matioda Crt	Other Visible Injury	Broadside
Olympic Dr	Mattioda Ct	Other Visible Injury	Hit Object
Olympic Dr	Old Hwy 53	Severe Injury	Broadside

Primary Road	Secondary Road	Severity	Crash Type
Olympic Dr	Cottonwood St	Other Visible Injury	Vehicle/ Pedestrian
Olympic Dr	Lakeshore Dr	Other Visible Injury	Sideswipe
Olympic Dr	Pine St	Severe Injury	Hit Object

Potential Countermeasures

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. Potential countermeasures are provided in **Table 15,** along with corresponding HSIP data as applicable.

Table 15. Countermeasures for Olympic Drive

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
NS08	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS10	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	90%	High
NS11	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	90%	High
NS13	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High
R33PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R34PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be medium/high for this project.

Considerations

- Countermeasures and locations should be considered with past studies/plans.

7. Old Hwy 53 Corridor Improvements

Project Description

The project would provide improvements to the roadway and pedestrian accommodations to promote lower speeds and increased visibility for pedestrians.

Project Need

Identified as a high crash corridor with over 20 crashes per mile in some segments.

Public Endorsement

Public outreach results indicate strong community support for improvements that enhance pedestrian safety and roadway visibility. Pedestrian safety was identified as a top concern in the public survey, with residents emphasizing the need for safer conditions along high-speed and high-crash corridors. In addition, a georeferenced web map comment noted that existing pavement markings are difficult to see during rain, creating safety concerns for both pedestrians and drivers. Upgrading pavement markings with higher-visibility materials would directly address this concern by improving lane definition, crosswalk visibility, and driver awareness, particularly during nighttime and wet-weather conditions, thereby supporting community-identified safety priorities.

Crash History

The crash summary of injury crashes along Old Hwy 53 is shown in **Table 16**.

Table 16. Old Hwy 53 Crash Data Summary

Primary Road	Secondary Road	Severity	Crash Type
Old Hwy 53	Putnum Ln	Other Visible Injury	Vehicle/ Pedestrian
Old Hwy 53	Austin Rd	Other Visible Injury	Hit Object
Old Hwy 53	Konocti View Rd	Other Visible Injury	Rear End
Old Hwy 53	Cache Creek Wy	Other Visible Injury	Hit Object
Old Hwy 53	Putnam Ln	Other Visible Injury	Hit Object
Old Hwy 53	Highlands Harbor Rd	Severe Injury	Vehicle/ Pedestrian
Old Hwy 53	Airport Rd	Severe Injury	Vehicle/ Pedestrian
Old Hwy 53	Park St	Severe Injury	Head-On
Old Hwy 53	Putnam Ln	Possible Injury	Broadside
Old Hwy 53	Austin Rd	Other Visible Injury	Broadside
Old Hwy 53	Highland Wy	Possible Injury	Hit Object
Old Hwy 53	West 40th Av	Possible Injury	Rear End
Old Hwy 53	Hillcrest Av	Possible Injury	Rear End
Old Hwy 53	Ridgeview Dr	Other Visible Injury	Broadside
Old Hwy 53	Saroni Pkwy	Other Visible Injury	Rear End

Primary Road	Secondary Road	Severity	Crash Type
Old Hwy 53	Davis Av	Severe Injury	Hit Object
Old Hwy 53	Clement Dr	Other Visible Injury	Head-On
Old Hwy 53	Lake View Wy	Other Visible Injury	Rear End
Old Hwy 53	Highlands Harbor Rd	Other Visible Injury	#N/A
Old Hwy 53	40th Av	Severe Injury	Head-On
Old Hwy 53	Putnam Ln	Other Visible Injury	Head-On
Old Hwy 53	Cass Av	Possible Injury	Rear End
Old Hwy 53	Olympic Dr	Other Visible Injury	Sideswipe
Old Hwy 53	Davis Av	Other Visible Injury	Head-On
Old Hwy 53	Clement Dr	Other Visible Injury	#N/A
Old Hwy 53	Brannan St	Other Visible Injury	Hit Object
Old Hwy 53	Pole 120387599 120009575	Severe Injury	Rear End
Old Hwy 53	Hillcrest Av	Possible Injury	Head-On
Old Hwy 53	Old Hwy 53 5775	Possible Injury	Hit Object
Old Hwy 53	Lakeshore Dr	Severe Injury	Hit Object
Old Hwy 53	Old Highway 4775	Other Visible Injury	Head-On
Old Hwy 53	Davis Av	Other Visible Injury	Hit Object
Old Hwy 53	Pole 120403277	Possible Injury	Hit Object
Old Hwy 53	Airport Rd	Other Visible Injury	Vehicle/ Pedestrian
Old Hwy 53	Cass Av	Other Visible Injury	Rear End
Old Hwy 53	W 40th Av	Other Visible Injury	Sideswipe
Old Hwy 53	Clement Dr	Severe Injury	Vehicle/ Pedestrian
Old Hwy 53	40th Av	Possible Injury	Broadside
Old Hwy 53	Airport Rd	Severe Injury	Broadside
Old Hwy 53	West 40th Av	Other Visible Injury	Rear End
Old Hwy 53	Lakeview Av	Fatal	Vehicle/ Pedestrian
Old Hwy 53	Cass Av	Severe Injury	Other

Potential Countermeasures

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. Potential countermeasures are provided in **Table 17,** along with corresponding HSIP data as applicable.

Table 17. Countermeasures for Old Hwy 53

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
NS08	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS10	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	90%	High
NS11	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	90%	High
NS13	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High
R33PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R34PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be medium for this project.

Considerations

- Countermeasures and locations should be considered with past studies/plans.

8. The "Avenues" Roadway/Intersection Improvements

Project Description

The project would provide improvements to the roadway, unsignalized intersections and pedestrian accommodations in the roadway network referred to as "The Avenues". This area is generally bordered by Pine Avenue to the west, Parker Avenue to the east, 45th Avenue to the north, and 18th Avenue to the south.

Project Need

Over 80 crashes have occurred in the area over the past five years. The area generally has poor pavement conditions, and lacks striping, signage and pedestrian accommodations.

Public Endorsement

Two map comments were georeferenced in the "Avenues" area – one pertaining to roadway lighting and one on drainage. Public outreach results indicate strong community support for improvements that enhance pedestrian safety and roadway visibility. Pedestrian safety was identified as a top concern in the public survey, with residents emphasizing the need for safer conditions along high-speed and high-crash corridors. In addition, a georeferenced web map comment noted that existing pavement markings are difficult to see during rain, creating safety concerns for both pedestrians and drivers. Upgrading pavement markings with higher-visibility materials would directly address this concern by improving lane definition, crosswalk visibility, and driver awareness, particularly during nighttime and wet-weather conditions, thereby supporting community-identified safety priorities.

Crash History

The crash summary of crashes is shown in **Exhibits 1-2** and **Table 18**.

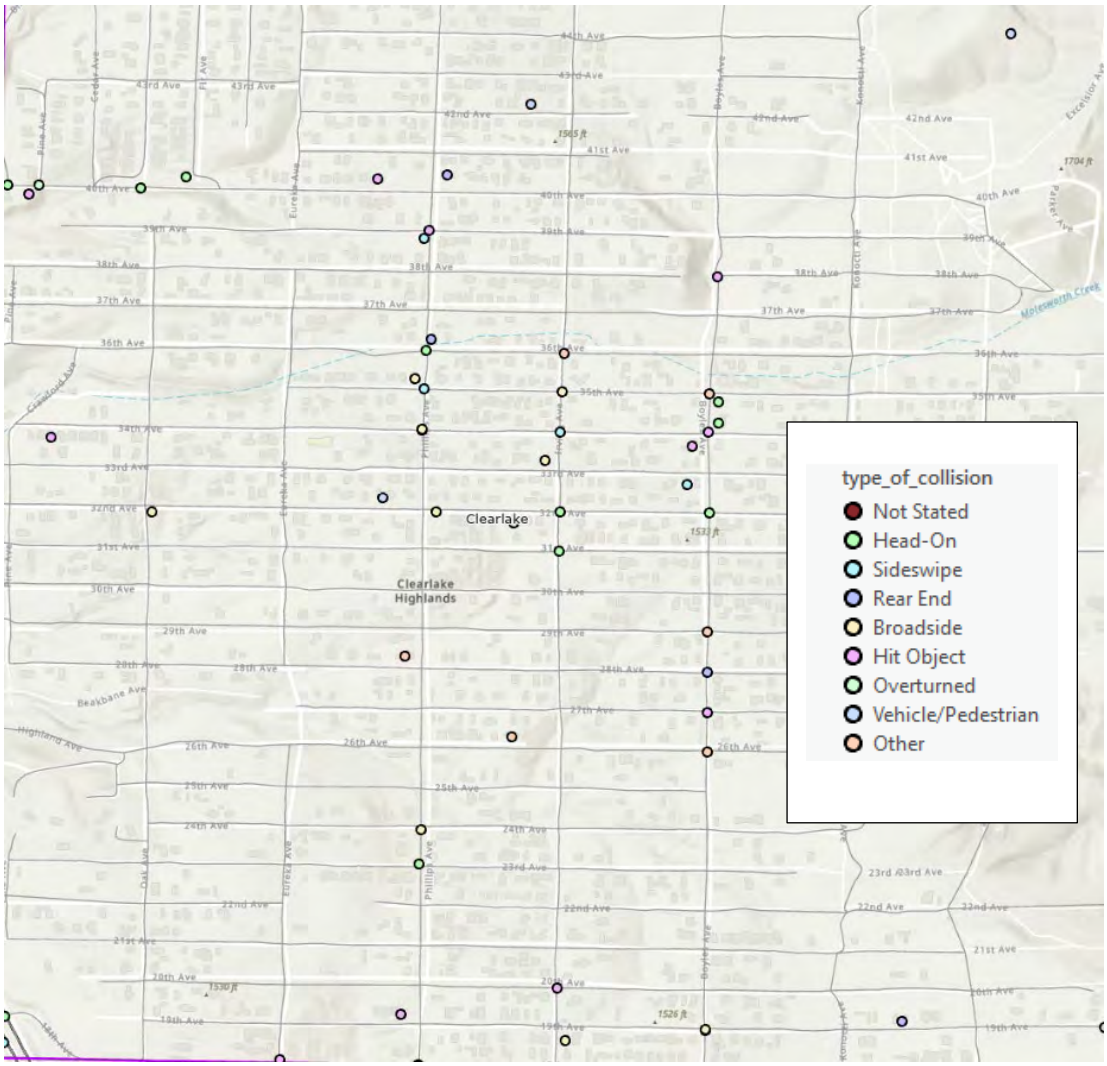

Exhibit 1: Crashes in the "Avenues" by Type

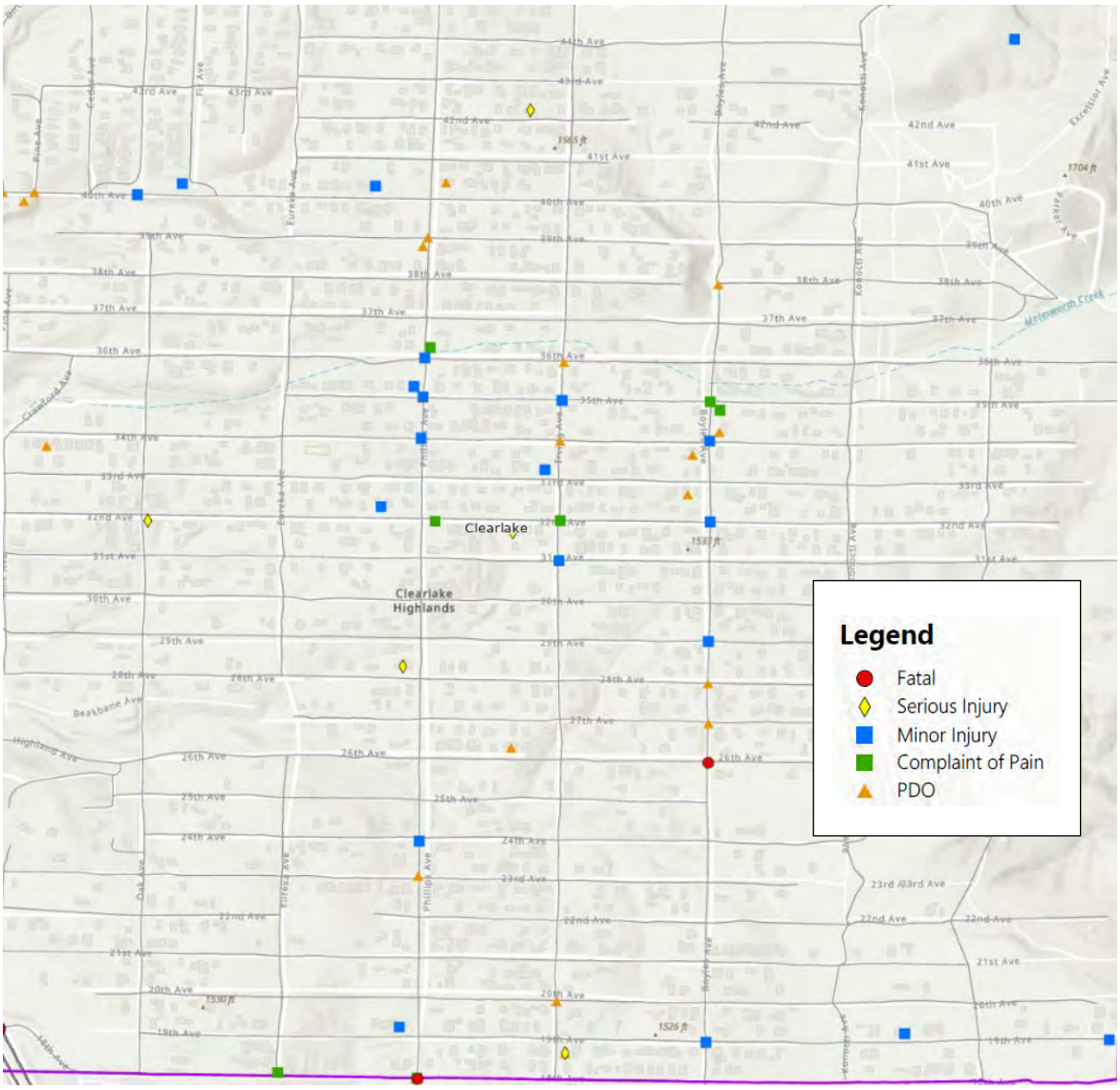

Exhibit 2: Crashes in the "Avenues" by Severity

Table 18. The Avenues Injury Crash Data Summary

Primary Road	Secondary Road	Severity	Crash Type	Pedestrian/ Bicycle/ Motorcycle Involved
RT 53	LAKESHORE DR	Fatal	Vehicle/Pedestrian	Pedestrian
DAM RD	18TH AV	Fatal	Overturned	
RT 53	18TH AV	Fatal	Vehicle/Pedestrian	Pedestrian
NB RT-53	18TH AV	Fatal	Vehicle/Pedestrian	Pedestrian
BOYLES AV	27TH AV	Fatal	Other	Bicycle
32ND AV	IRVING	Severe Injury	Head-On	

Primary Road	Secondary Road	Severity	Crash Type	Pedestrian/ Bicycle/ Motorcycle Involved
19TH AV	IRVING AV	Severe Injury	Broadside	Motorcycle
RT 53	HWY 53	Severe Injury	Broadside	Motorcycle
28TH AV	GARNER AV	Severe Injury	Other	Motorcycle
32ND AV	OAK AV	Severe Injury	Broadside	Motorcycle
42ND AV	IRVING AV	Severe Injury	Vehicle/Pedestrian	Pedestrian
35TH AV	PHILLIPS AV	Other Visible Injury	Broadside	
PHILLIPS AV	34TH AV	Other Visible Injury	Broadside	Motorcycle
DAVIS AV	DAVIS AV 16200	Other Visible Injury	Vehicle/Pedestrian	Pedestrian
RT 53	18TH AV	Other Visible Injury	Broadside	
35TH AV	IRVING AV	Other Visible Injury	Broadside	
PHILLIPS AV	36TH AV	Other Visible Injury	Head-On	
PHILLIPS AV	19TH AV	Other Visible Injury	Hit Object	
ACACIA ST	EASTLAKE DR	Other Visible Injury	Sideswipe	Motorcycle
IRVING AV	33RD AV	Other Visible Injury	Broadside	
32ND AV	32ND AV 16272	Other Visible Injury	Head-On	
IRVINE AV	31ST AV	Other Visible Injury	Head-On	
PHILLIPS AV	31ST AV	Other Visible Injury	Other	Motorcycle
RT 53	18TH AV	Other Visible Injury	Rear End	
40TH AV	PHILLIPS AV	Other Visible Injury	Hit Object	Motorcycle
RT 53	18TH AV	Other Visible Injury	Rear End	
32ND AV	OAK	Other Visible Injury	Vehicle/Pedestrian	Pedestrian
PHILLIPS AV	36TH AV	Other Visible Injury	Other	Bicycle
19TH AV	BOYLES AV	Other Visible Injury	Broadside	
BOYLES AV	29TH AV	Other Visible Injury	Other	
PHILLIPS AV	24TH AV	Other Visible Injury	Broadside	
40TH AV	OAK AV	Other Visible Injury	Sideswipe	Motorcycle
34TH AV	BOYLES AV	Other Visible Injury	Hit Object	
40TH AV	RT 53	Other Visible Injury	Head-On	
32ND AV	PHILLIPS AV	Other Visible Injury	Broadside	
PHILLIPS AV	35TH AV	Other Visible Injury	Broadside	
19TH AV	KONOCTI AV	Other Visible Injury	Vehicle/Pedestrian	Pedestrian
18TH AVE	PHILLIPS AVE.	Possible Injury	Broadside	
29TH AV	PHILLIPS AV	Possible Injury	Rear End	
35TH AV	BOYLES AV	Possible Injury	Head-On	
35TH AV	BOYLES AV	Possible Injury	Other	Bicycle
32ND AV	IRVING AV	Possible Injury	Head-On	
31ST AV	PHILLIPS AV	Possible Injury	Broadside	

Primary Road	Secondary Road	Severity	Crash Type	Pedestrian/ Bicycle/ Motorcycle Involved
19TH AV	BOYLES AV	Possible Injury	Broadside	
PHILLIPS AV	18TH AV	Possible Injury	Hit Object	
HWY 53	18TH AV	Possible Injury	Other	

Potential Countermeasures

This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. Potential countermeasures are provided in **Table 19,** along with corresponding HSIP data as applicable.

Table 19. Countermeasures for The Avenues

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
NS08	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	90%	Very High
NS09	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	90%	Very High
NS10	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	90%	High
NS11	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	90%	High
NS13	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS22PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	90%	High
NS23PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	90%	Medium
NS24PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	90%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	90%	Very High
R33PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High

R34PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R35PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) will be determined by specific locations, limits and countermeasures applied. The BCR potential is anticipated to be low/medium for this project.

Considerations

- Systemic applications should be added at identified locations.

APPENDIX F

SS4A Self-Certification Checklist

Safe Streets and Roads for All
Self-Certification Eligibility Worksheet

All applicants should follow the instructions in the NOFO to correctly apply for a grant. See the SS4A website for more information.

Table 1 of the SS4A NOFO describes seven components of an Action Plan, which correspond to the questions in this worksheet. Applicants should use this worksheet to determine whether their existing plan(s) contains the required components to be considered an eligible Action Plan for SS4A.

This worksheet is required for all SS4A **Implementation Grant** applications and any **Planning and Demonstration Grant applications to conduct Supplemental Planning/Demonstration Activities only**. Please complete the form in its entirety, do not adjust the formatting or headings of the worksheet, and upload the completed PDF with your application.

Eligibility

An Action Plan is considered eligible for an SS4A application for an Implementation Grant or a Planning and Demonstration Grant to conduct Supplemental Planning/Demonstration Activities if the following two conditions are met:

- You can answer "YES" to Questions **3, 6,** and **8** in this worksheet; *and*
- You can answer "YES" to **at least three of the five remaining** Questions, **1, 2, 4, 5,** and **7.**

If both conditions are not met, an applicant is still eligible to apply for a Planning and Demonstration Grant to fund the creation of a new Action Plan or updates to an existing Action Plan to meet SS4A requirements.

Applicant Information

Lead Applicant: Lake Area Planning Council **UEI:** _____

Action Plan Documents

In the table below, list the relevant Action Plan and any additional plans or documents that you reference in this form. **Up to three plans or documents may be included**. Please provide a hyperlink to any documents available online or indicate that the Action Plan or other documents will be uploaded in Valid Eval as part of your application. Note that, to be considered an eligible Action Plan for SS4A, the plan(s) coverage must be broader than just a corridor, neighborhood, or specific location.

Document Title	Link	Date of Most Recent Update
Clearlake Local Road Safety Plan		May 2026

Action Plan Components

For each question below, answer "YES" or "NO." If "YES," list the relevant plan(s) or supporting documentation that address the condition and the specific page number(s) in each document that corroborates your response. This form provides space to reference multiple plans, but please list only the most relevant document(s).

1. Leadership Commitment and Goal Setting

Are **BOTH** of the following true?

- A high-ranking official and/or governing body in the jurisdiction publicly committed to an eventual goal of zero roadway fatalities and serious injuries; and
- The commitment includes either setting a target date to reach zero OR setting one or more targets to achieve a reduction in roadway fatalities and serious injuries by a specific date.

☑ **YES**
☐ **NO**

Note: This may include a resolution, policy, ordinance, executive order, or other official announcement from a high-ranking official and the official adoption of a plan that includes the commitment by a legislative body.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Vision and Mission Statements, Commitment to Zero	9

2. Planning Structure

To develop the Action Plan, was a committee, task force, implementation group, or similar body established and charged with the plan's development, implementation, and monitoring?

☑ **YES**
☐ **NO**

Note: This should include a description of the membership of the group and what role they play in the development, implementation, and monitoring of the Action Plan.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Stakeholder Engagement	12

3. Safety Analysis

Does the Action Plan include **ALL** of the following?

- Analysis of existing conditions and historical trends to provide a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region;
- Analysis of the location(s) of crashes, the severity, contributing factors, and crash types;
- Analysis of systemic and specific safety needs, as needed (e.g., high-risk road features, specific safety needs of relevant road users, or post-crash care and emergency response); and,
- A geospatial identification (geographic or locational data using maps) of higher risk locations.

☑ **YES**
☐ **NO**

Note: Availability and level of detail of safety data may vary greatly by location. The Fatality and Injury Reporting System Tool (FIRST) provides county- and city-level data. When available, local data should be used to supplement nationally available data sets.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Crash Data Analysis	21-56

4. Engagement and Collaboration

Did development of the Action Plan include **ALL** of the following activities?

- Engagement with the public and relevant stakeholders, including the private sector and community groups;
- Incorporation of information received from the engagement and collaboration into the plan; and
- Coordination that included inter- and intra-governmental cooperation and collaboration, as appropriate.

☑ **YES**
☐ **NO**

Note: This should include a description of public meetings, participation in public and private events, and proactive meetings with stakeholders.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Stakeholder Engagement (Appendix A for detail)	12
Public Outreach (Appendix B for detail)	14-19

5. Policy and Process Changes

Are **BOTH** of the following true?

- The plan development included an assessment of current policies, plans, guidelines, and/or standards to identify opportunities to improve how processes prioritize safety; and
- The plan discusses implementation through the adoption of revised or new policies, guidelines, and/or standards.

☑ **YES**

☐ **NO**

Note: This may include existing and/or recommended Complete Streets policy, guidelines for community engagement and collaboration, policy for prioritizing areas of greatest need, local laws (e.g., speed limit), design guidelines, and other policies and processes that prioritize safety.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Policies and Standards	8
Policies and Standards Countermeasures	67

6. Strategy and Project Selections

Does the plan identify a comprehensive set of projects and strategies to address the safety problems in the Action Plan, with information about time ranges when projects and strategies will be deployed, and an explanation of project prioritization criteria?

☑ **YES**

☐ **NO**

Note: This should include one or more lists of community-wide multi-modal and multi-disciplinary projects that respond to safety problems and reflect community input, indication of expected time ranges to complete each project, and a description of how your community will prioritize projects in the future.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Focus Areas	58-64
Strategy Tables (Appendix D for detail)	70
Potential Projects (Appendix E for detail)	81-84

7. Progress and Transparency

Does the plan include **BOTH** of the following?

- A description of how progress will be measured over time that includes, at a minimum, outcome data.
- The plan is posted publicly online.

☑ **YES**

☐ **NO**

Note: This should include a progress reporting structure and list of proposed metrics.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)
Implementation Plan (Appendix D for detail)	86-90
Implementation Funding and Time Frames (Appendix D for detail)	92-96

8. Action Plan Date

Was at least one of your plans finalized and/or last updated between 2021 and May 26, 2026?

☑ **YES**

☐ **NO**

Note: Updates may include major revisions, updates to the data used for analysis, status updates, or the addition of supplemental planning documents, including but not limited to an ADA Transition Plan, one or more Road Safety Audits conducted in high-crash locations, or a Vulnerable Road User Plan.

If "YES," please list your most recent document, date of finalization, and page number(s) that corroborate your response.

Document Title	Date of Most Recent Update	Page Number(s)
Clearlake Local Road Safety Plan	May xx, 2026	Cover Page


NO PARKING
BIKE LANE
SPEED LIMIT
30