DRAFT

LOCAL ROAD SAFETY PLAN

(a Safety Action Plan)

April 2026

Prepared by:

GCW
ENGINEERS \ SURVEYORS

LAKE COUNTY LOCAL ROAD SAFETY PLAN

Upper Lake
Lake County, CA

APRIL 2026

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ACKNOWLEDGEMENTS

The Lake Area Planning Council, Lake County Public Works 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

Lake County Fire Protection District

Lake County Office of Education

Lake County Office of Emergency Services

Lake County 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.


SR 20 / Ninth Avenue
Lucerne, CA

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.

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Clearlake Oaks, CA

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EXECUTIVE SUMMARY

The Lake County 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 Lake County 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.

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

This LRSP was developed in close coordination with the Lake Area Planning Council, Lake County Public Works 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.

Soda Bay
Lake County, CA

INTRODUCTION

Lake County 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 the unincorporated communities of Lake County.

INTRODUCTION

This Local Roadway Safety Plan (LRSP) serves as a comprehensive safety action plan for the unincorporated communities of Lake County to improve roadway safety and reduce roadway fatalities and serious injuries. The study area for this LRSP is the unincorporated boundaries of Lake Couty, California, excluding the cities of Clearlake and Lakeport. LRSPs for the cities of Clearlake and Lakeport 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

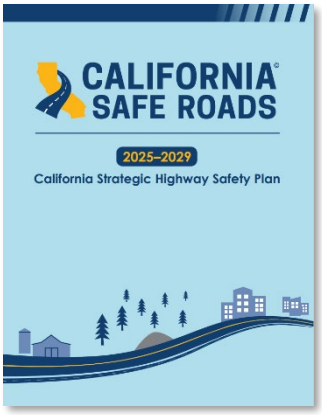
Exhibit 2. The Safe System Approach has five key objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care.
Source: U.S. Department of Transportation

[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.

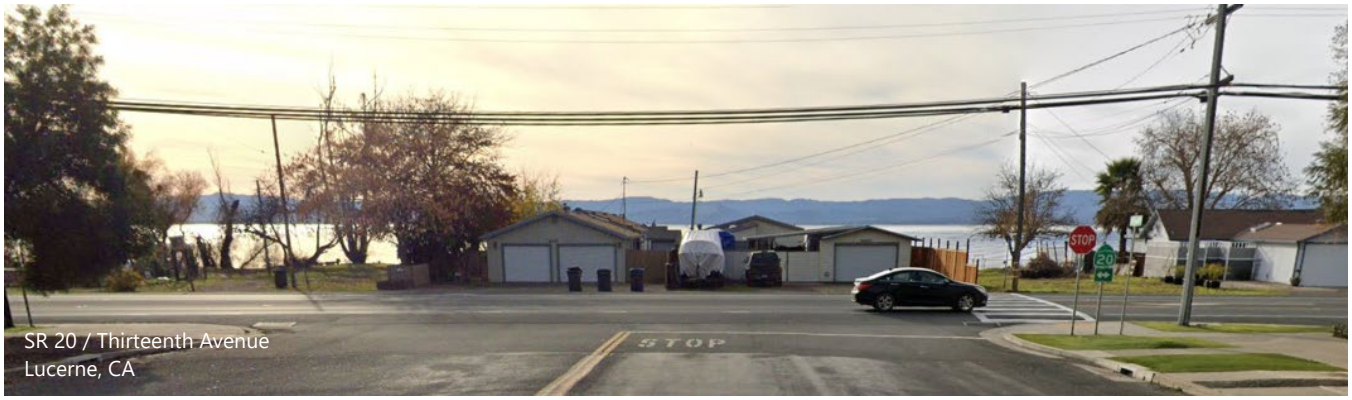
Connection with the SHSP



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 Lake County 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 unincorporated communities of Lake County.

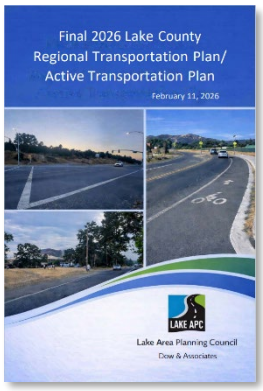


SR 20 / Thirteenth Avenue
Lucerne, CA

[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 Lake County. Several roadway improvements projects have been identified throughout the County, and 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 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
South Main Street at Lakeport City Limit to Route 175 Extension Improvements	Short-Term Programmed
Soda Bay Road at Route 175 Extension to Manning Creek Improvements	Short-Term Programmed
Roadway Widening and Reconstruction	Short-Term/Long-Term Programmed
Roadway Rehabilitation	Short-Term/Long-Term Programmed
Roadway Overlay	Short-Term Programmed
Bridge Replacement/Rehabilitation	Short-Term Programmed
Bridge Maintenance and Repair	Short-Term Programmed

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

Financially Unconstrained Projects	Timeframe
Roadway Reconstruction/Rehabilitation	Long-Term Programmed
Roadway Overlay	Long-Term Programmed
Bridge Replacement/Rehabilitation	Long-Term Programmed
Bridge Maintenance and Repair	Long-Term Programmed
Nice Lucerne Cutoff Pavement Rehabilitation – SR 20 to SR 29	Long-Term Programmed
Bottle Rock Road Pavement Rehabilitation – SR 20 to SR 29	Long-Term Programmed

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

Redhill Road Pavement Rehabilitation – SR 29 to SR 175	Long-Term Programmed
Lucerne Roads Complete Streets and Safety Improvements – SR 20 and 1st Avenue through 17th Avenue	Long-Term Programmed

In addition to the identified projects summarized above, the County in coordination with the Lake APC has conducted the following relevant planning studies which were also considered during the LRSP development process.

2024 Konocti Corridor Vehicle Miles Traveled (VMT) Study – This study examined the overall impact and VMT change associated with several interrelated planned projects on the Konocti Corridor, specifically rerouting regional and interregional trips to SR 53 and SR 29 which would benefit Northshore communities.

2022 County of Lake Local Road Safety Plan – The previous LRSP identified several potential engineering projects, including the following:

Potential Engineering Projects
Point Lakeview Road – Address substandard lane widths and missing or narrow shoulders. (Wheeler Drive to SR 29 and Wheeler Drive to Anderson Road)
Systemic Roadway Project – Widen Roadway shoulders and create clear zones to reduce roadway departures resulting in a crash and to reduce the severity of crashes that still occur. (Soda Bay Rd, Butts Canyon Rd, Nice Lucerne Cutoff Rd, Lakeshore Blvd, Morgan Valley Rd, Sulphur Bank Dr, Stone Dr, Bottle Rock Rd, Scotts Valley Rd, Point Lake View Rd, Big Valley Rd, New Long Valley Rd, Siegler Canyon Rd, Spruce Grove Rd)
Systemic Pedestrian Crossings – Improve pedestrian safety by providing enhanced crosswalks at key locations. (Acorn St, Key Blvd, Lake St, Main St)
Systemic Dynamic/Variable Speed Warning Signs – Install dynamic/variable speed warning signs throughout the unincorporated Lake County (Soda Bay Rd, Butts Canyon Rd, Nice Lucerne Cutoff Rd, Lakeshore Blvd, Morgan Valley Rd, Sulphur Bank Dr, Stone Dr, Bottle Rock Rd, Scotts Valley Rd, Point Lake View Rd, Big Valley Rd, New Long Valley Rd, Siegler Canyon Rd, Spruce Grove Rd., and Kelseyville Riviera Subdivision Fairway Drive and Chippewa Trails Drive)

Highway 20 Northshore Communities Traffic Calming Plan and Engineering Feasibility Study – This study presented concepts to redesign Highway 20 within Nice, Lucerne, Glenhaven, and Clear Oaks to improve access and multimodal safety. Recommended improvements focused on enhanced pedestrian crossings, improved multimodal facilities, and implementing traffic calming measures.

In addition to the adoption of these planning documents, Lake County 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 Lake County Public Works Department and Lake APC are continually working to enhance transportation safety for all users. The County currently has multiple projects underway in either planning,

design, or construction phases. Provided below is a list of upcoming construction projects[7] which will have a substantial safety benefit to the focus areas, which are identified later in this plan. This LRSP considers these projects and strives to identify potential projects that will supplement these existing efforts.

UPCOMING CONSTRUCTION PROJECTS

- South Main Street/Soda Bay Road Rehabilitation Projects
- East Lake Elementary Safe Routes to School Project
- Konocti Road Sidewalks and Crosswalks
- Upper Lake Pedestrian Improvements

Lake County Policies and Standards

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

- The *Active Transportation Plan* (ATP) 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 2050), 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 Lake County.

Soda Bay Road / Highway 175
Lake County, CA

[7] Construction Projects – Lake Area Planning Council

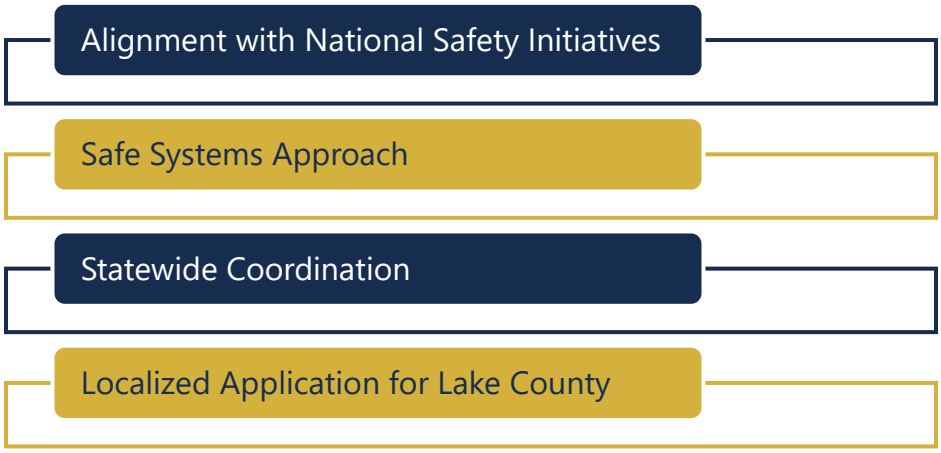
Kelseyville, CA
Source: www.lakecounty.com

VISION & MISSION

This LRSP aligns with state and national goals of improving roadway safety, particularly by reducing fatal and serious injury crashes. Lake County 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

Lake County 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 Agency Statement

Vision Statement

"TO HELP ALL TRANSPORTATION USERS IN THE UNINCORPORATED COMMUNITIES OF LAKE COUNTY REACH THEIR DESTINATION SAFELY."

Mission Statement

"TO REDUCE THE NUMBER OF FATALITIES AND SERIOUS INJURIES OCCURRING ON THE ROADWAY SYSTEM FOR ALL USERS IN THE UNINCORPORATED COMMUNITIES OF LAKE COUNTY."

The mission and vision statements were developed by the stakeholder group. 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.

Clear Lake
Lake County, CA

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	• Lake County Office of Education
• CalFire	• Lake County Office of Emergency Services
• California Highway Patrol	• Lake County Public Works
• Caltrans	• Lake County Social Services
• Lake Area Planning Council	• Lake Transit Authority
• Lake County Fire Protection District	• 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.

Lake County, CA
Source: www.lakecountyca.gov

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 unincorporated communities of Lake County 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 Lake County, 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.

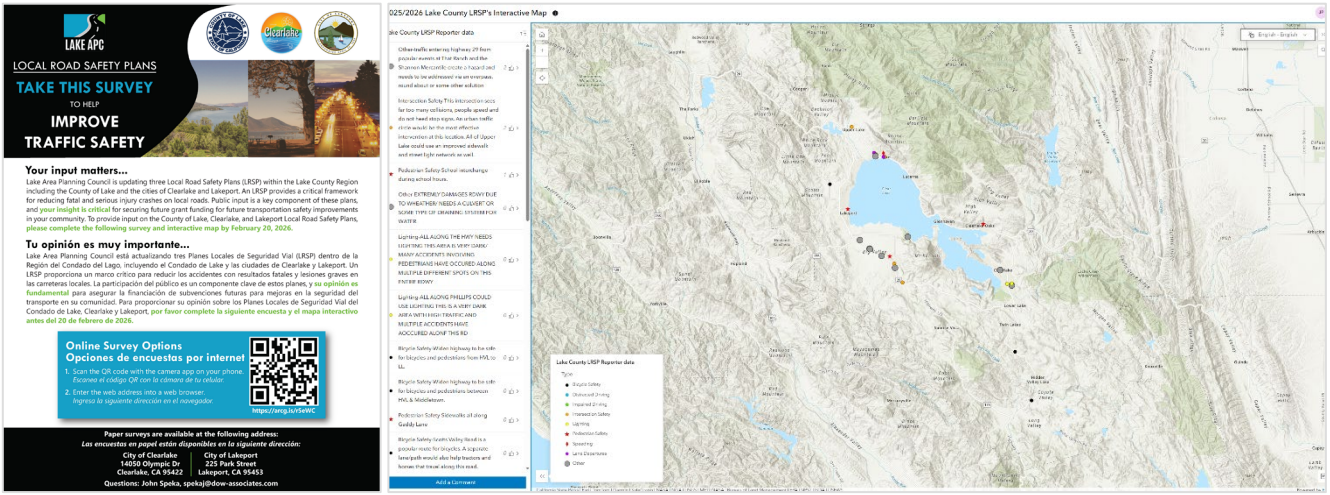


Exhibit 3. The public outreach survey was advertised through a mix of methods, including an informational flyer (shown left). Survey respondents were directed to an interactive map to identify georeferenced transportation safety concerns (shown right).

For the unincorporated Lake County area, the public outreach effort produced a total of 223 completed survey responses, 33 individual georeferenced safety concerns/comments submitted through the interactive map, and 21 votes or endorsements of interactive map comments submitted by other users.

223 SURVEY RESPONSES

33 INTERACTIVE MAP PINS

21 MAP COMMENT VOTES

Public Meeting

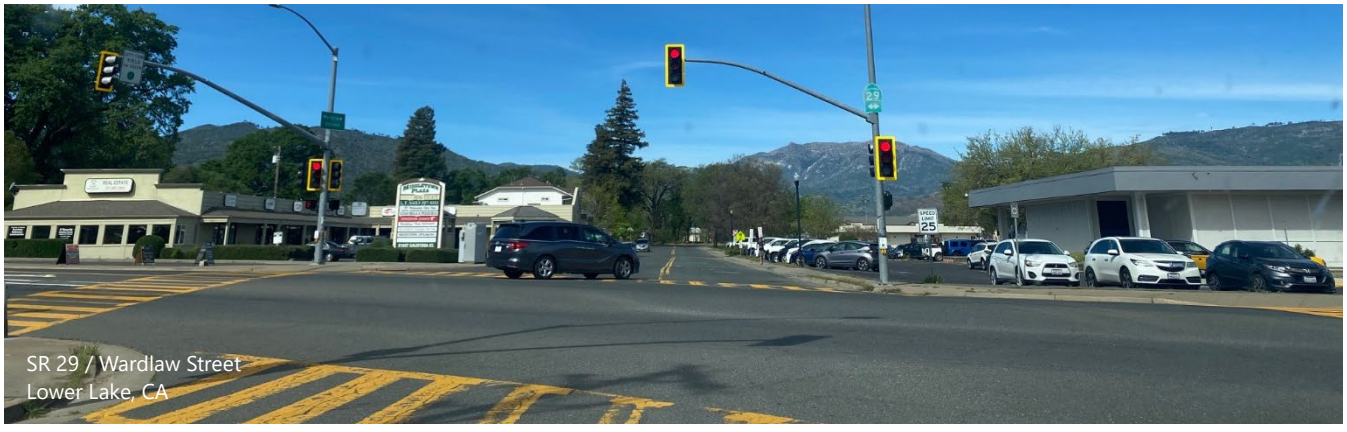
Additionally, an in-person meeting (with an online option) was held on March 23, 2026 at the Lakeport City Council Chambers. This meeting was held from 5:00 pm to 7:00 pm to allow members of the public to come as convenient for them. The meeting included a presentation covering the LRSP process and findings 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.

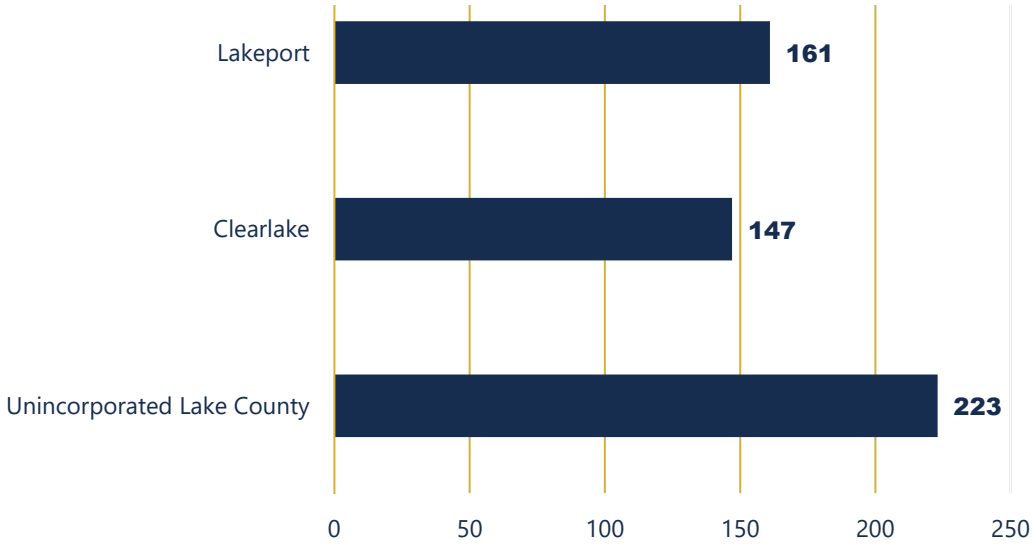
The survey results are summarized below. **Appendix B** includes a more detailed analysis of survey responses and the interactive map results that include public comments, focus area type, and number of user votes per comment.

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



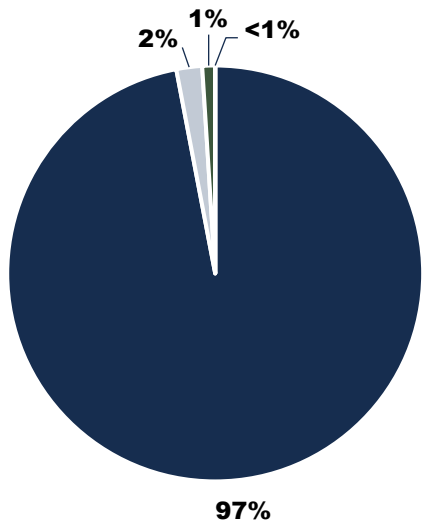
SR 29 / Wardlaw Street
Lower Lake, CA

Question 1: What areas do you traverse frequently?

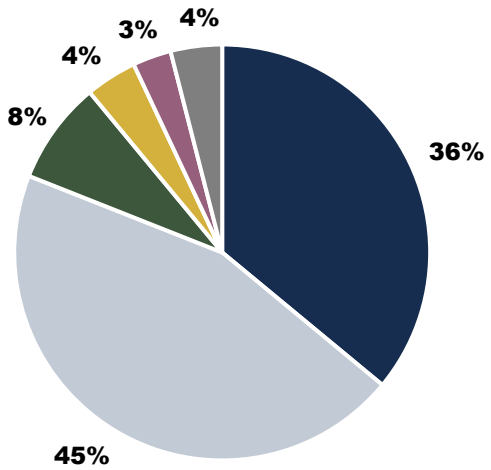


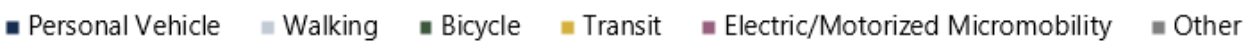
Question 1 Summary: This question was utilized to filter respondent answers to the appropriate Local Road Safety Plan, with a total of 223 survey respondents indicating they regularly travel within the unincorporated communities of Lake County. Responses from these users were then applied for the subsequent six survey questions.

Question 2: What is your primary mode of transportation?



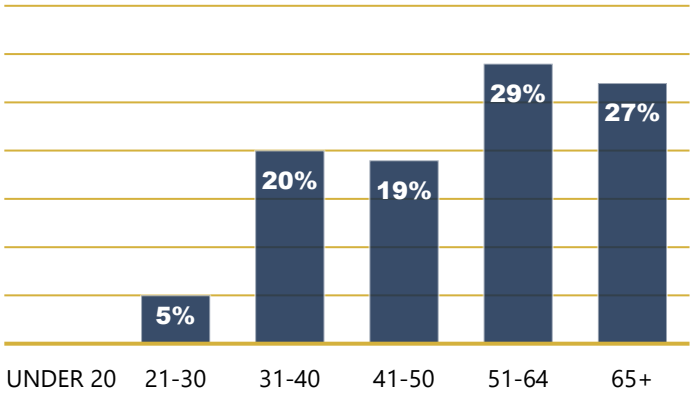
Question 3: What is your secondary mode of transportation?





Question 2 and 3 Summaries: An overwhelming majority of respondents use a personal vehicle as their primary mode of transportation (97%). For the secondary mode of transportation, respondents indicated walking the most with 45%, followed by personal vehicle (36%) and bicycle (8%).

Question 4: What is your age?



Lake County Population Estimates	
Persons Under 5 Years	5.3%
Persons Under 18 Years	21.9%
Persons aged 18 Years to 65 Years	48.0%
Persons 65 Years and Over	24.8%

Question 4 Summary: According to the U.S. Census, the survey results generally align with the percentage of residents aged 65 years or older. Lake County has a notably larger percentage of aging population compared to the rest of the state – 24.8 percent versus 16.5 percent statewide.[8]

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

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

Question 5 Summary: 'Distracted Driving' was ranked as the highest priority, followed by 'Pedestrian Safety'. Since the development of the *2022 Lake County Local Road Safety Plan*, the top ranked emphasis area remained the same, but there were shifts seen in the other categories with pedestrian safety moving up in priority and speeding dropping priority. 'Other' results varied and included topics such as roadway maintenance pertaining to pavement and striping conditions, aggressive driving including illegal passing, and lighting conditions.

[8] U.S. Census Bureau QuickFacts: 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
Intersection Improvements	4
More or Improved Pedestrian Crosswalks	5
Education Campaigns for Drivers or Pedestrians	6
Protected Bike Lanes	7
Traffic Calming	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 to improve pavement conditions, striping, and reflective signage, enforcement for illegal passing, and roadway capacity (added lanes).

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**. Pavement conditions – specifically potholes – was noted as a primary concern throughout the public comments. In addition, respondents indicated roadway capacity (added lanes), driver behavior including passing and speeding, and enforcement at specific locations 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 unincorporated communities of Lake County, there were two hot spot areas identified through the interactive map as indicated in **Figure 1**. The associated focus areas identified through the interactive map are as follows:

- Hot Spot 1: SR 20 – Roadway segment in Nice between Sayre Avenue and Hammond Avenue – *Intersection Safety*, *Lane Departures*, and *Speeding*
- Hot Spot 2: SR 29 – Roadway segment between the southern city limit boundary of Lakeport and SR 175 – *Intersection Safety*, *Pedestrian Safety*, and *Other* comments pertaining to event traffic concerns at the SR 29/Thomas Drive intersection, merging challenges at the SR 29/Merritt Road intersection, and roadway maintenance.

For a more detailed analysis of each hot spot along with the associated comments by focus area, refer to **Appendix B** which includes the following:

- Interactive Public Outreach Map with Comments by Focus Area (**Figures B-1** and **B-2**)
- Public Survey Question 7 – Open Response Comments

SR 20 / Sayre Avenue
Nice, CA

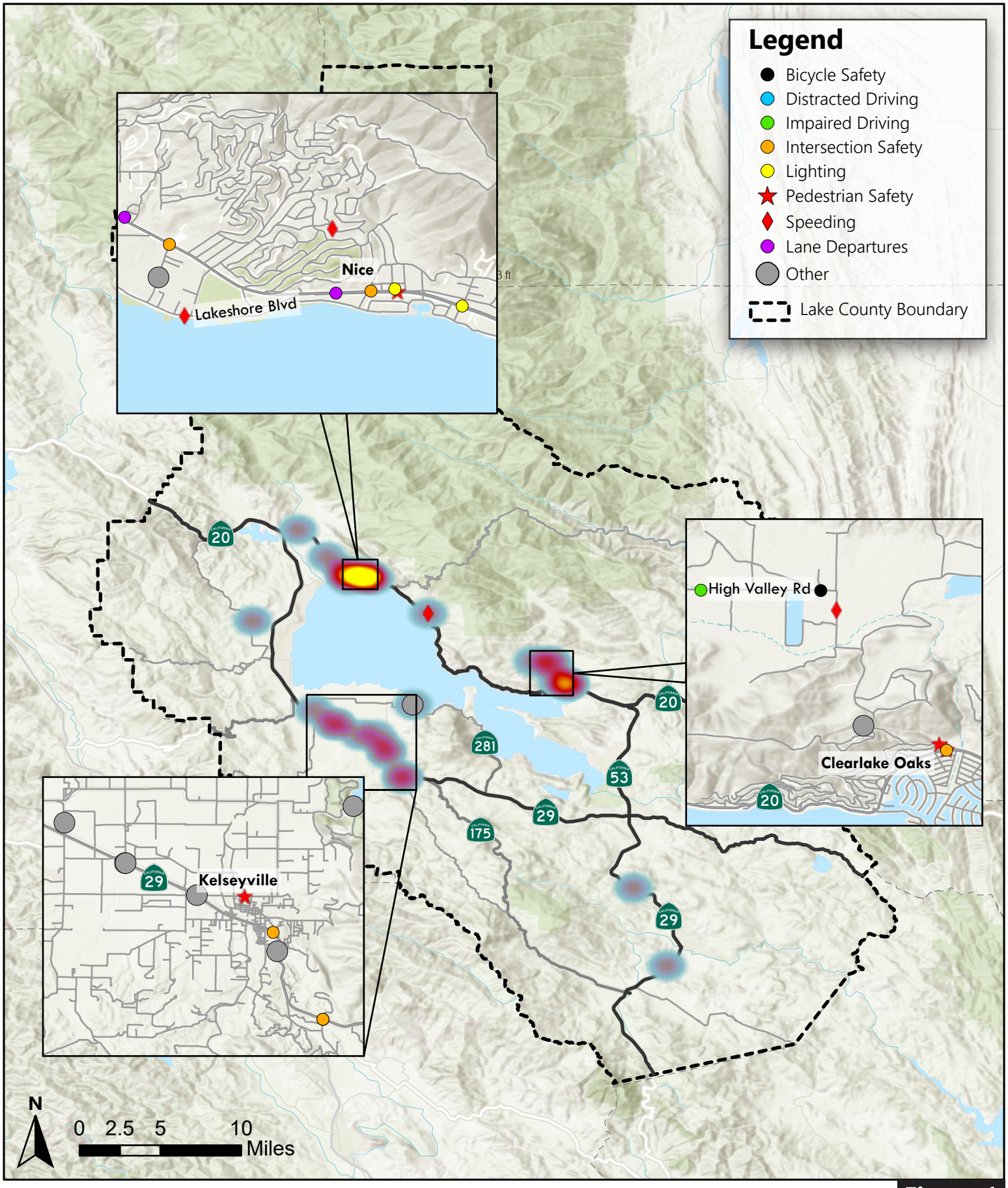


Figure 1

Lake County
Local Road Safety Plan
Interactive Public Outreach Heatmap

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SR 29 / Soda Bay Road
Lake County, 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 unincorporated communities of Lake County. 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.

County, District, and Statewide Trends

Table 1 shows how crash trends for Lake County compare to district and statewide averages from the most recent Caltrans *2023 Crash Data on California State Highways (road miles, travel, crashes, crash rates)*.

Table 1. Caltrans Annual Report Trends

Category	2023 Crash Data on California State Highways (Statewide)	Lake County Unincorporated LRSP Data
Most Frequent Crash Type	Rear-End	Hit Object
Most Frequent Crash Primary Collision Factor	Speeding	Improper Turning
Most Frequent Fatal Crash Type	Hit Object	Hit Object & Head-On (tie)
Most Frequent Fatal Primary Collision Factor	Influence of Alcohol	Improper Turning

The data for Lake County is aligned with the statewide data for the most frequent type of crash resulting in a fatality.

Methodology

Crash data for the most recent five years (2019-2023) for the unincorporated areas of Lake County (not including Lakeport and Clearlake) was obtained from California 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 countywide.

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 unincorporated Lake County between 2019 and 2023.

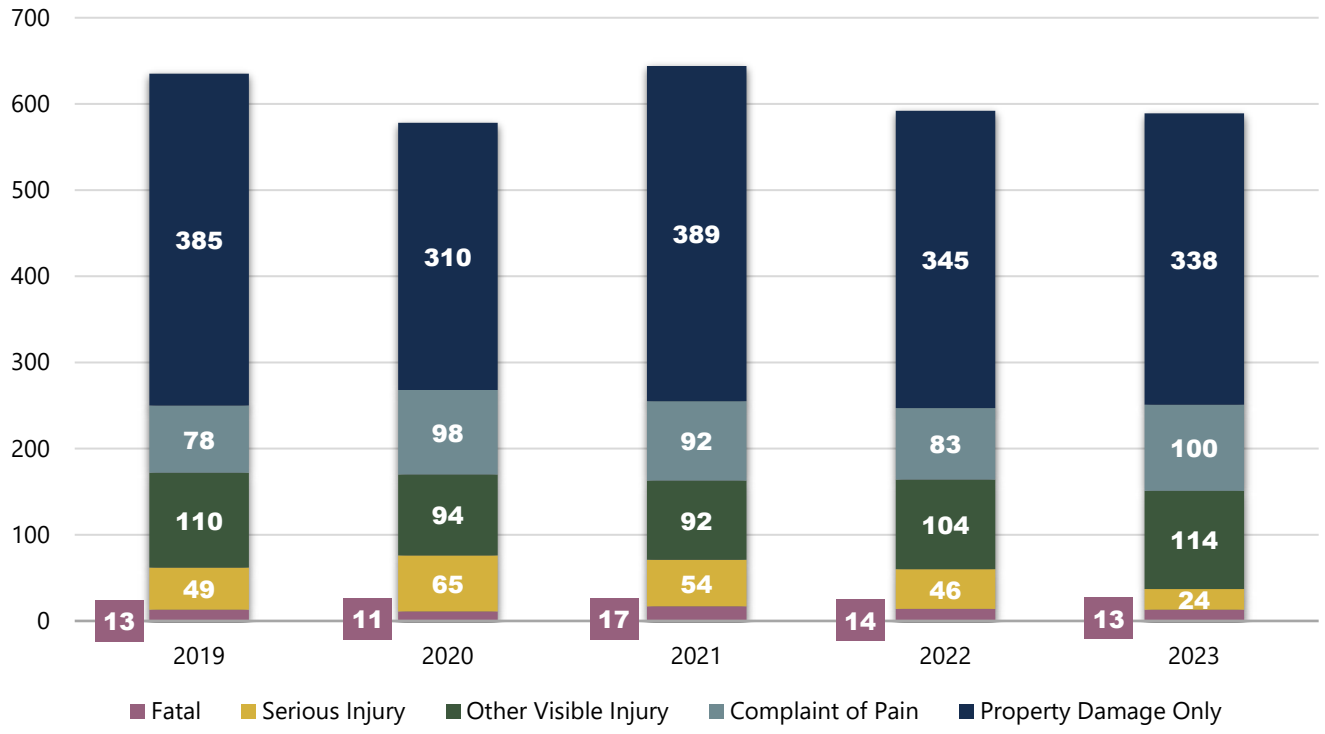
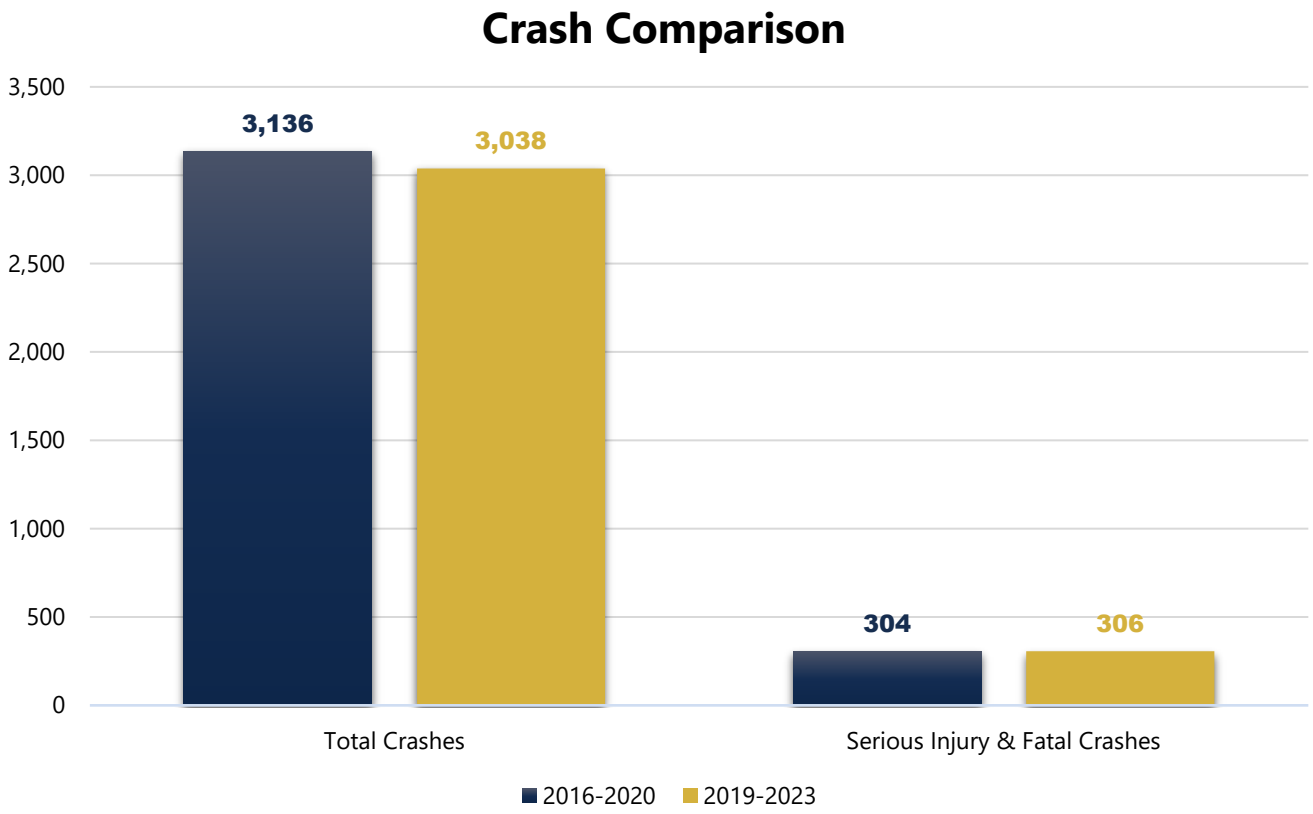


Figure 2. Lake County Crashes by Severity (2019-2023)

A total of 3,038 crashes occurred in the unincorporated areas of Lake County between 2019 and 2023. Over this five-year period, a total of 1,767 crashes were 'Property Damage Only', 1,203 resulted in an injury (Complaint of Pain, Other Visible Injury, or Serious Injury), and 68 resulted in a fatality. Approximately 10 percent (306 crashes) resulted in severe injury and fatality, which is the same percentage documented between the previous five years of data (2016-2020).

Compared to the previous LRSP, the data shows a similar but downward trend:

- Less overall crashes (3,038 current LRSP, 3,136 previous LRSP)
- Similar number of serious injury and fatal crashes (306 current LRSP, 304 previous LRSP)



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

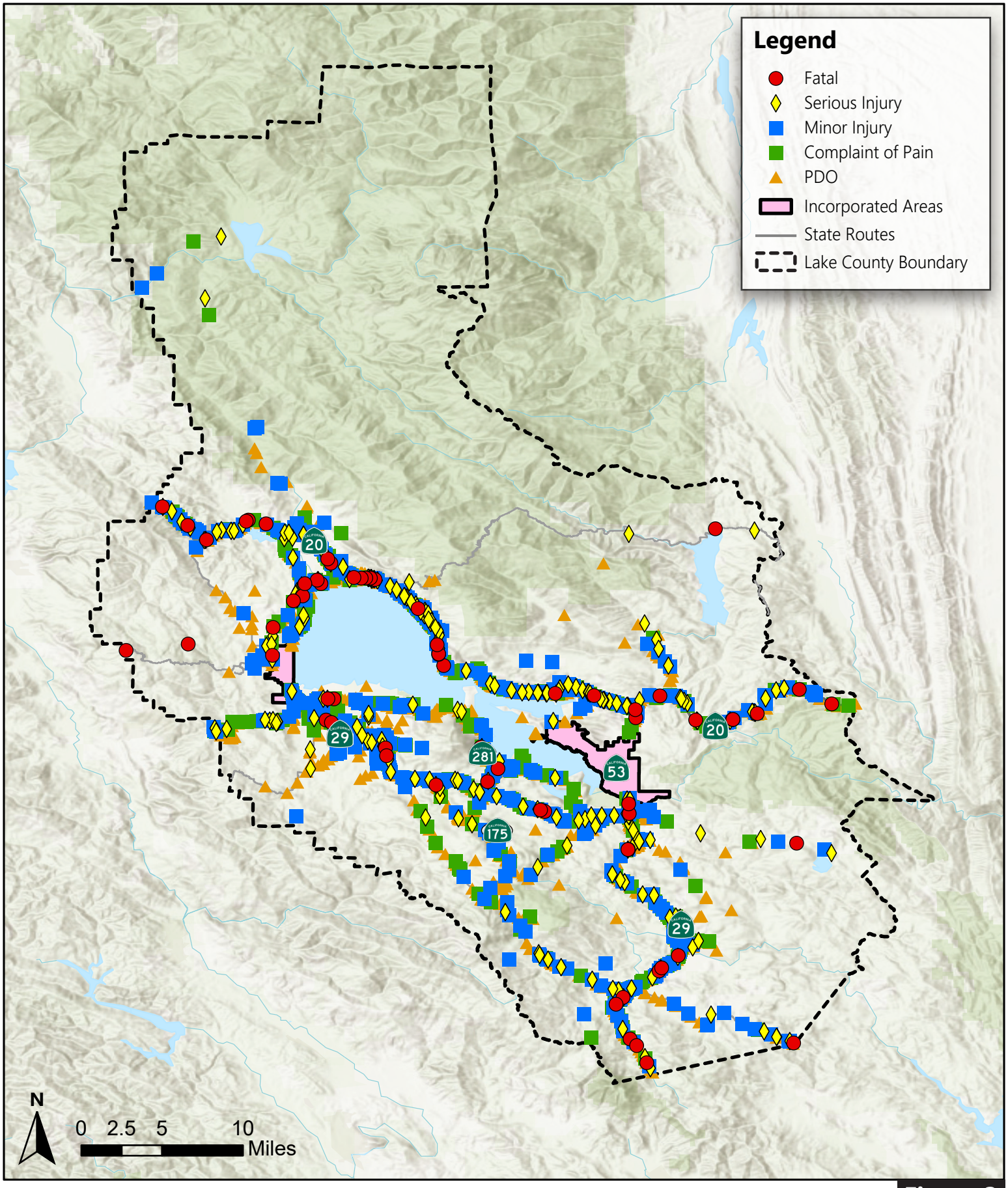


Figure 3

Lake County
Local Road Safety Plan
Crash Locations by Severity

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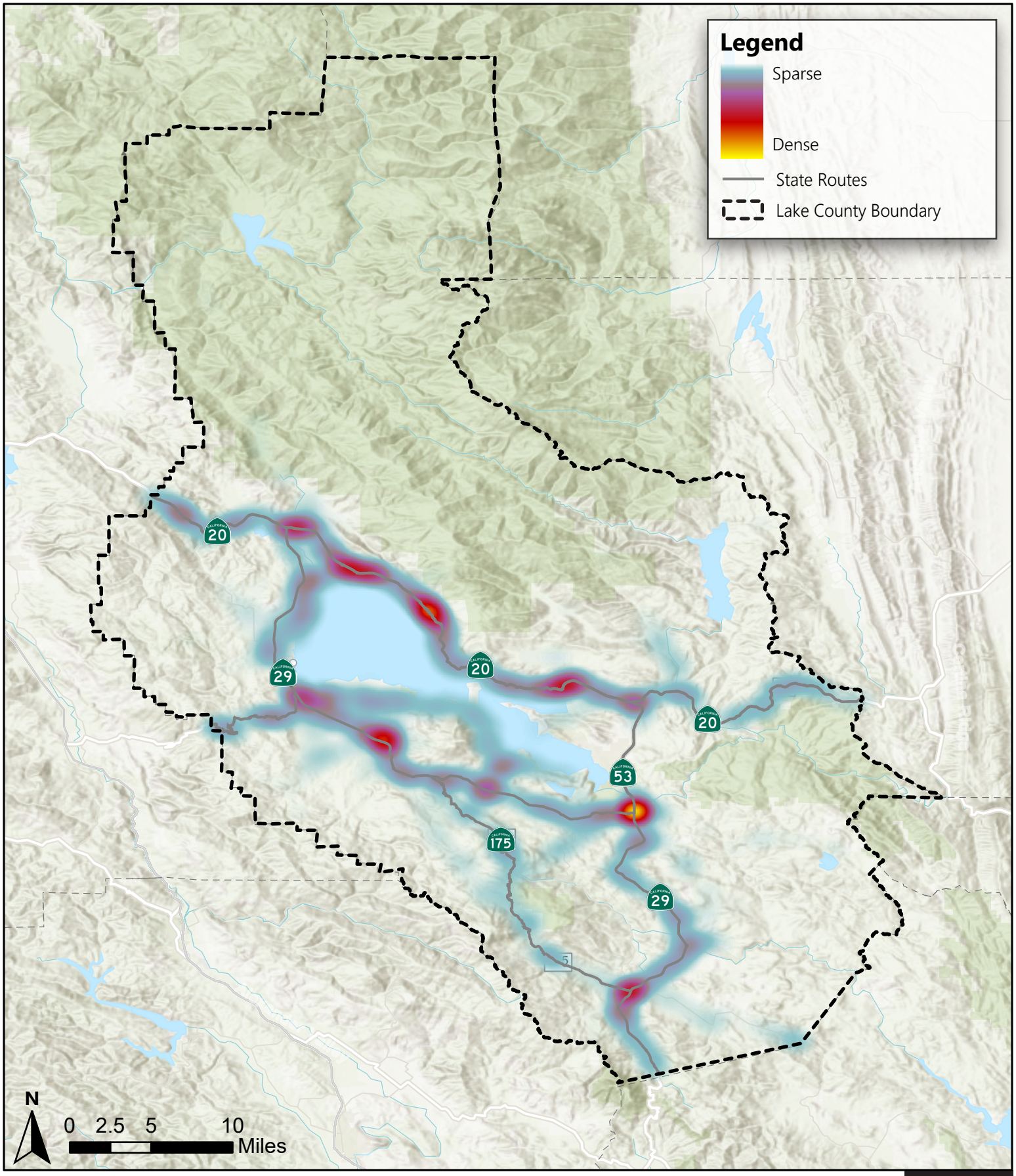

Figure 4

Lake County
Local Road Safety Plan
Crash Heatmap

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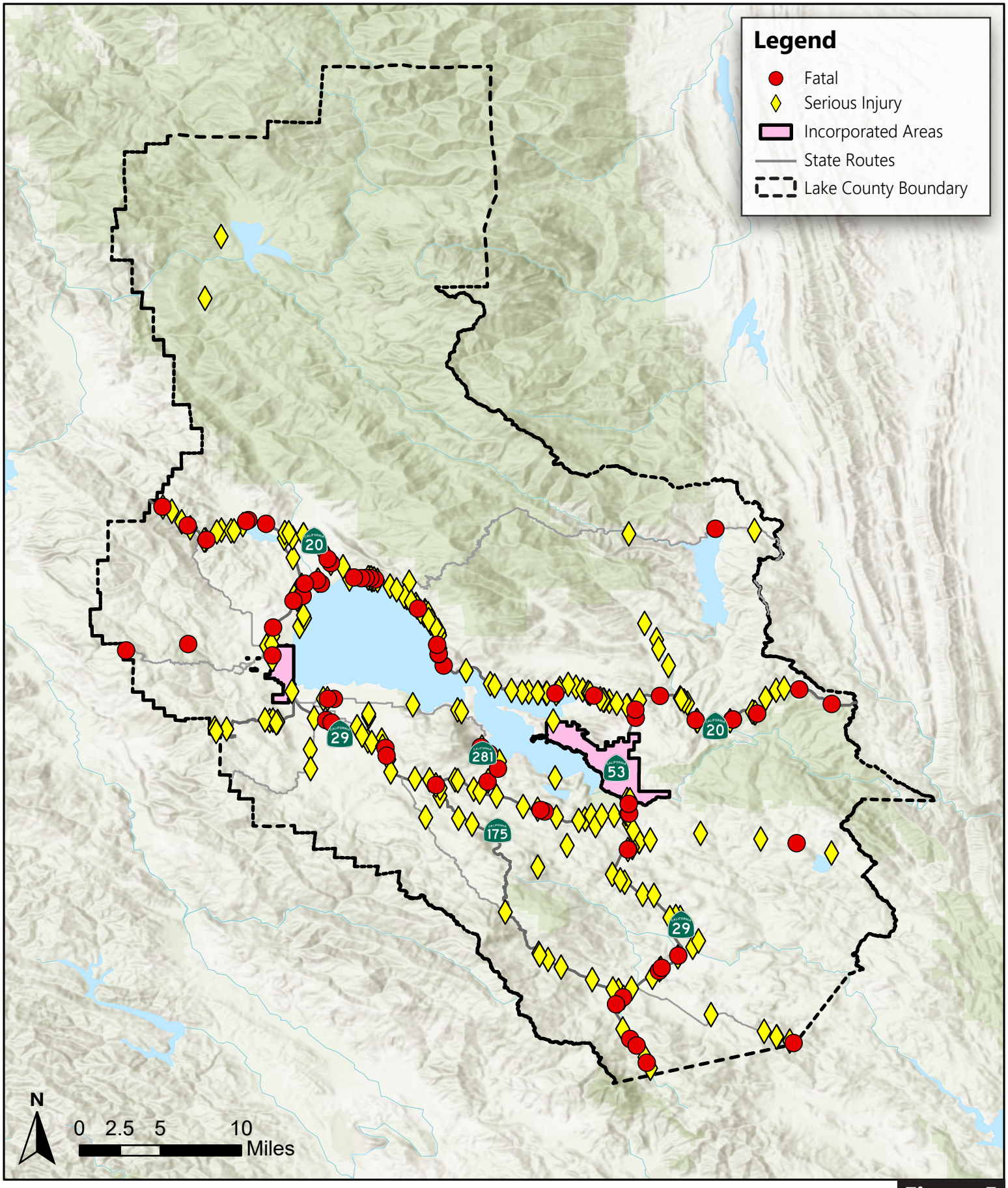

Figure 5

Lake County
Local Road Safety Plan
Fatal and Serious Injury Crashes

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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 five PCFs which may indicate a crash trend are shown in **Figure 6**, and the top five PCFs resulting in a fatal and serious injury are shown in **Figure 7**.

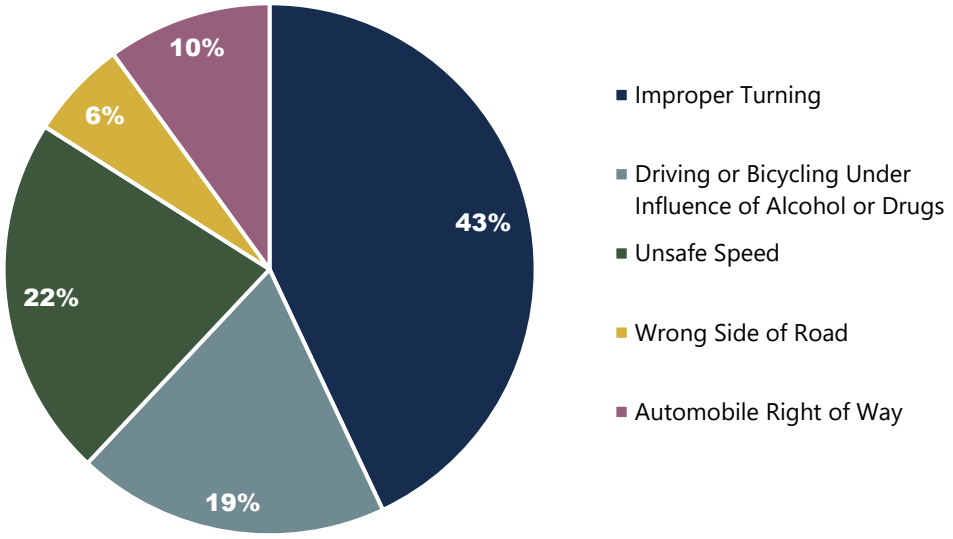

Figure 6. Lake County Primary Collison Factor (2019-2023)

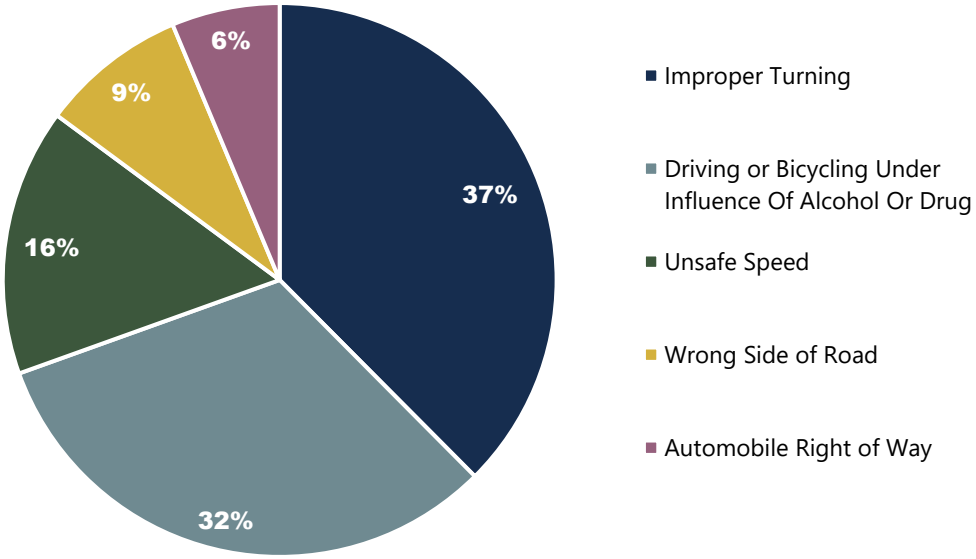

Figure 7. Lake County Primary Collison Factor – Fatal & Serious Injury Only (2019-2023)

In the unincorporated areas of Lake County, the top PCFs are: *Improper Turning*, *Driving or Bicycling Under Influence of Alcohol or Drug* and *Unsafe Speed*. The PCFs are listed here in order of magnitude starting with the most common.

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

- Improper Turning
- Driving or Bicycling Under the Influence of Alcohol or Drug
- Unsafe Speed
- Wrong Side of the Road
- Automobile Right of Way

In addition, these top PCFs generally align with the data in the *2022 Lake County Local Road Safety Plan*, with improper turning remaining the most common PCF for all crash types.

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

Table 2 provides the total crashes with *Unsafe Speed* indicated as the PCF, and **Figure 8-9** show unsafe speed crashes locations by severity and on a heatmap. The data analysis indicates that 20 percent of the crashes had *Unsafe Speed* listed as the PCF.

Table 2. Unsafe Speed Crashes

Crash Severity						
Crash Type	**Fatal**	**Injury (Severe)**	**Injury (Other Visible)**	**Complaint of Pain**	**PDO**	**Total**
Intersection	0	2	10	14	33	59
Roadway Segments	7	33	87	111	286	524

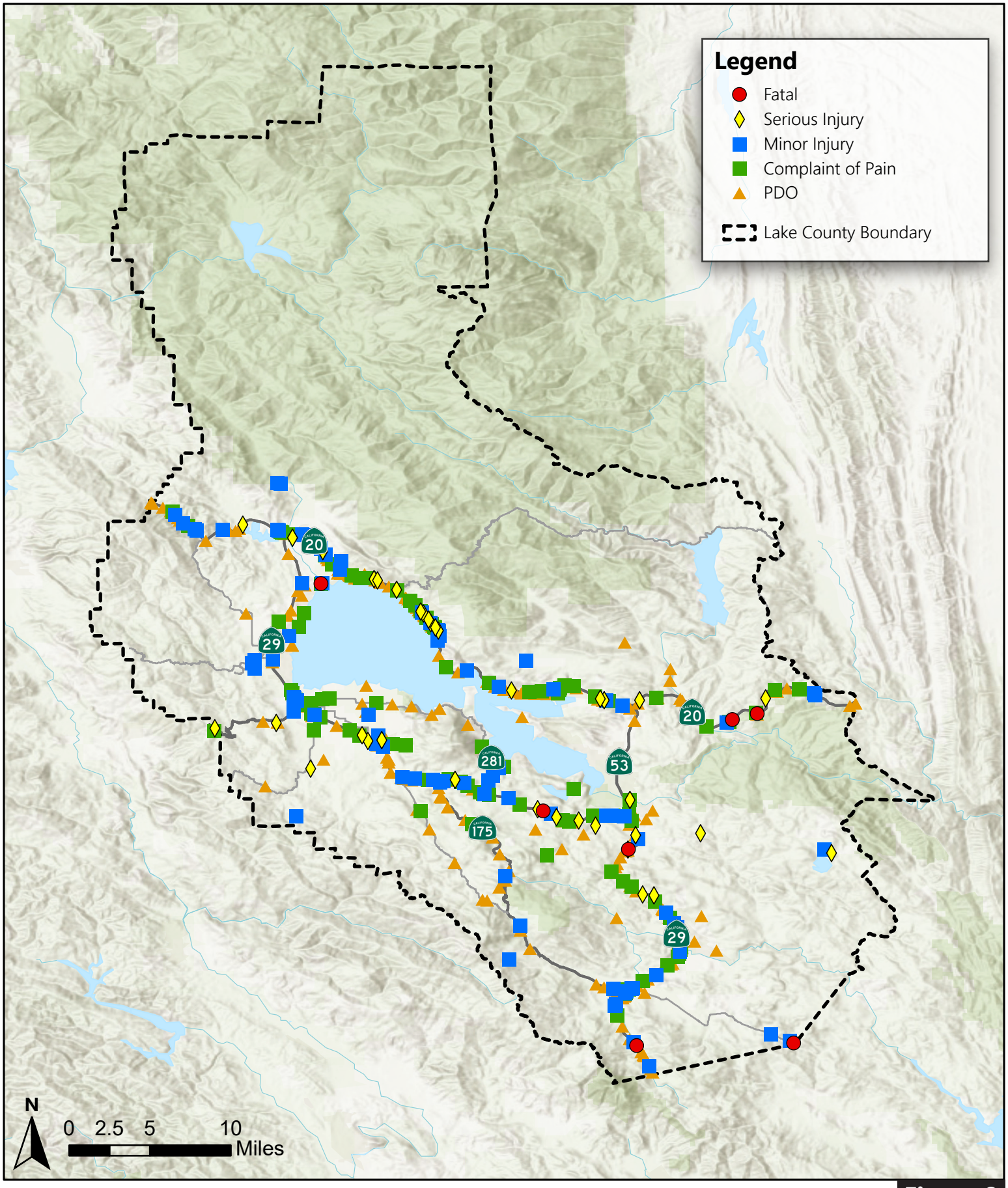

Figure 8

Lake County
Local Road Safety Plan
Unsafe Speed Crashes by Severity

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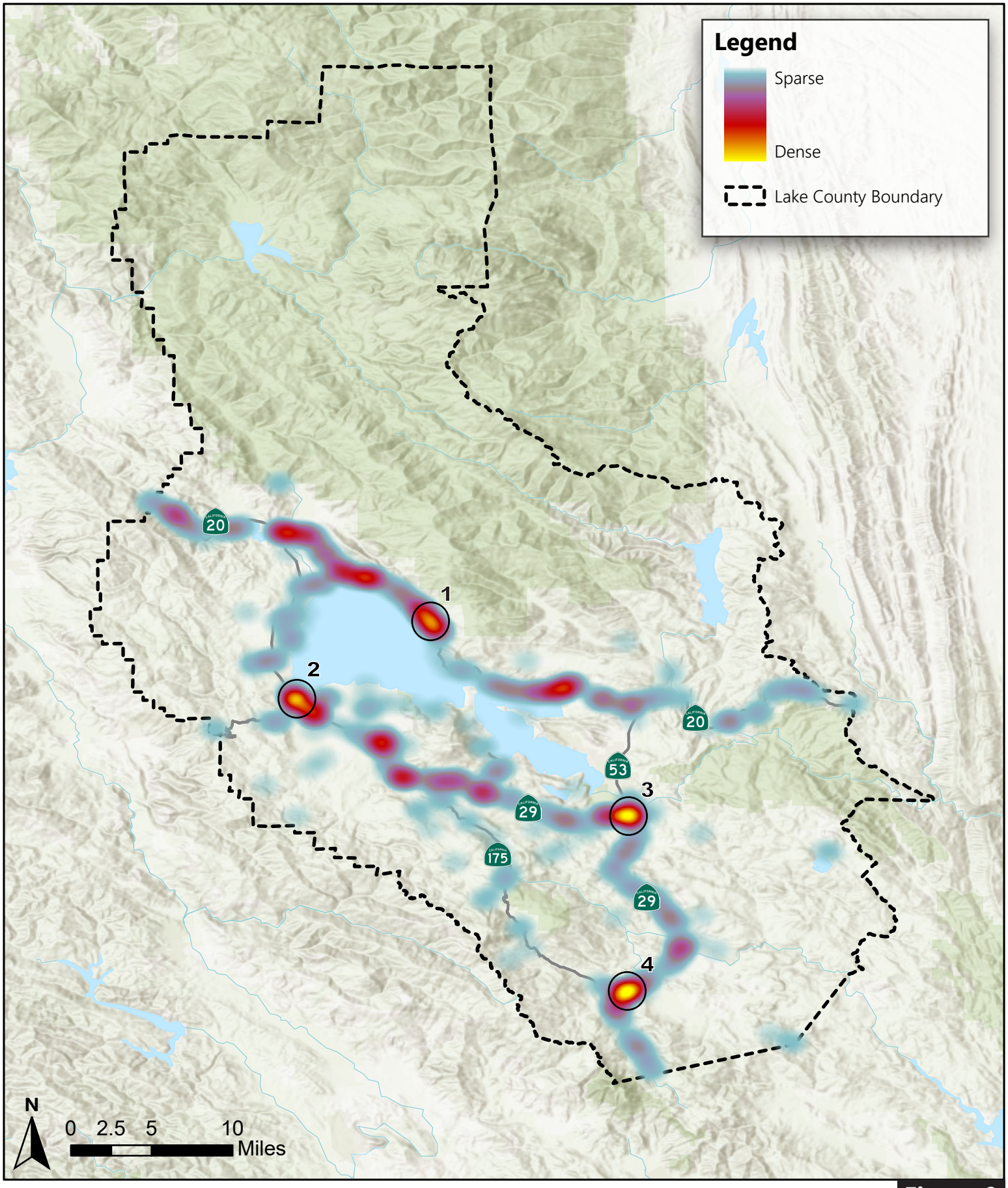

Figure 9

Lake County
Local Road Safety Plan
Unsafe Speed Crash Heatmap

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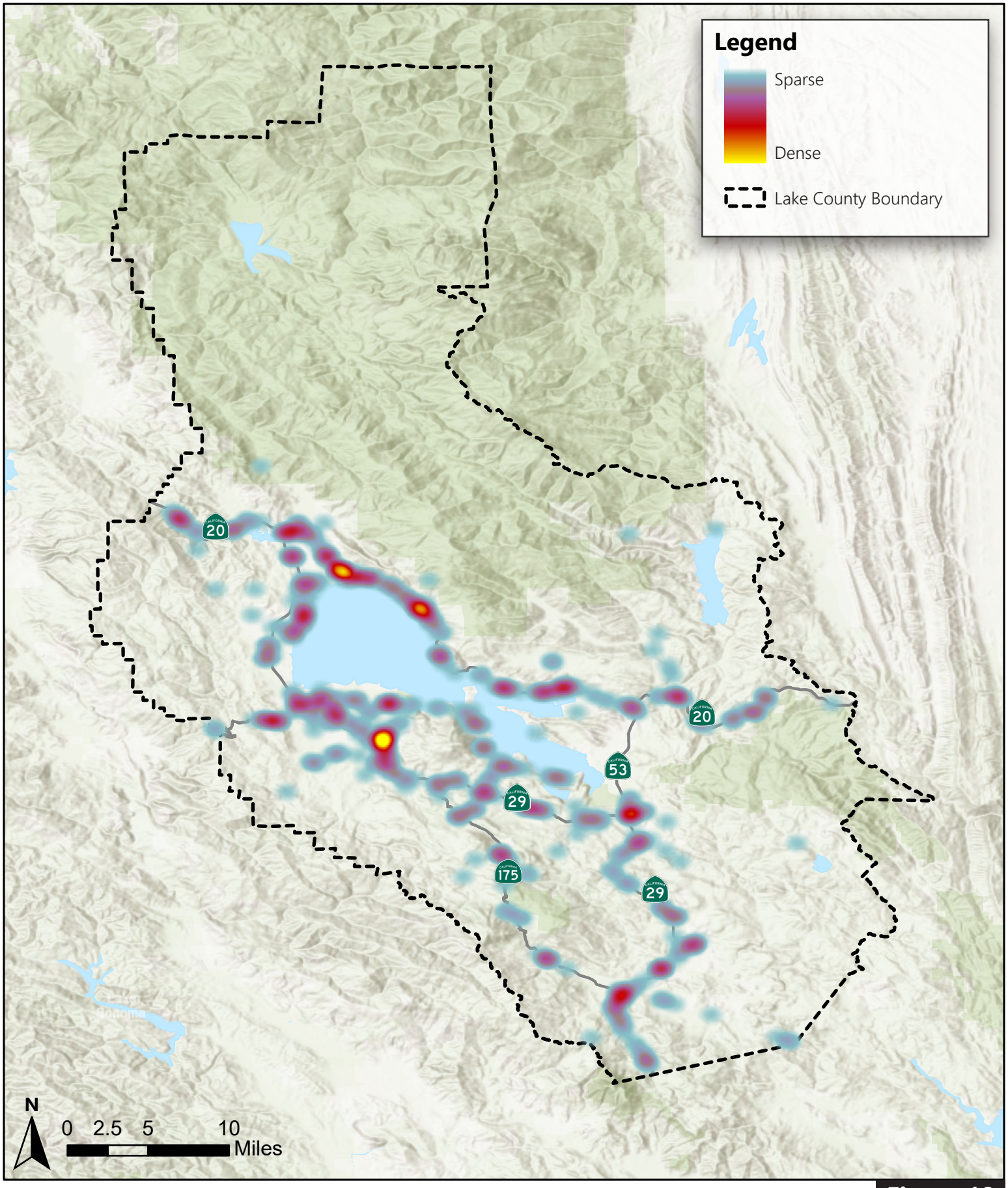

Figure 10

Lake County
Local Road Safety Plan
Impaired Crash Heatmap

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As shown in **Figures 8-9**, concentrated areas of speeding-related crashes are noted along all state highways and Soda Bay Road. Most fatalities occurred on state highways, but one occurred on Nice-Lucerne Cutoff Road and another fatality occurred on Butts Canyon Road. The heatmap on **Figure 9** shows four distinct hot spots where crashes occurred with unsafe speed listed as the PCF.

- Hot Spot 1: SR 20 through Lucerne
- Hot Spot 2: SR 29 and Soda Bay Rd
- Hot Spot 3: SR 29 and SR 53 at Lower Lake
- Hot Spot 4: Highway 175 and SR 29 intersection at Middletown

As shown on **Figure 10**, concentrated areas of impaired crashes are the highest along State Highways 29, 20, and 175. County maintained roads with concentrated areas of impaired crashes include Soda Bay Road, the Nice-Lucerne Cutoff, Lakeshore Boulevard in North Lakeport, and Butts Canyon Road near Middletown.

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 Lake County community in the public outreach.

As presented in **Table 3** and **Figure 11**, distracted driving was a factor in 211 crashes, including three fatal and 15 severe injury crashes on roadways in the unincorporated communities of Lake County.

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	0	4	3	13	20
Roadway Segments	3	15	43	35	95	191

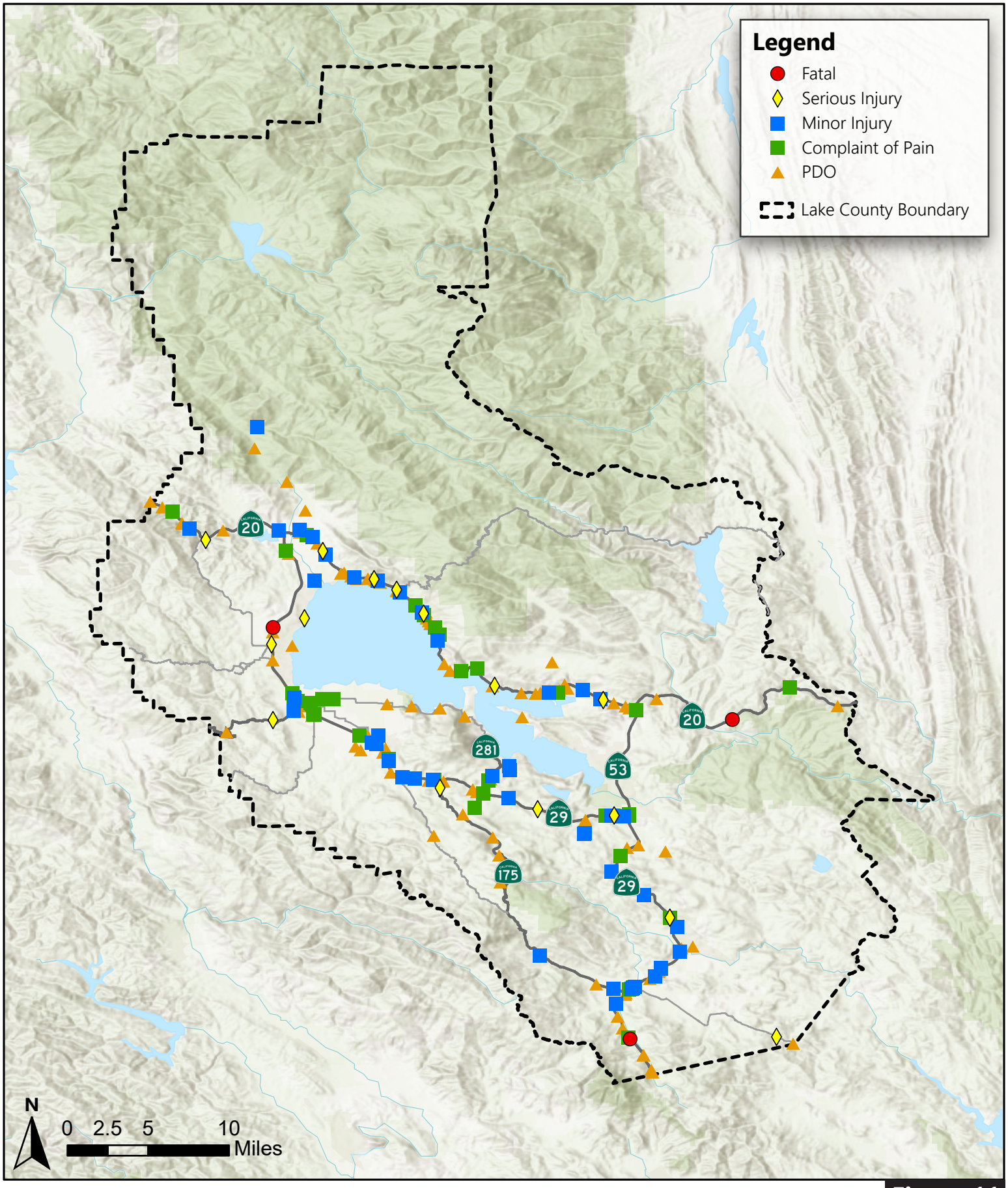

Figure 11

Lake County
Local Road Safety Plan

Distracted Driving Crashes by Severity

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Crash Types

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

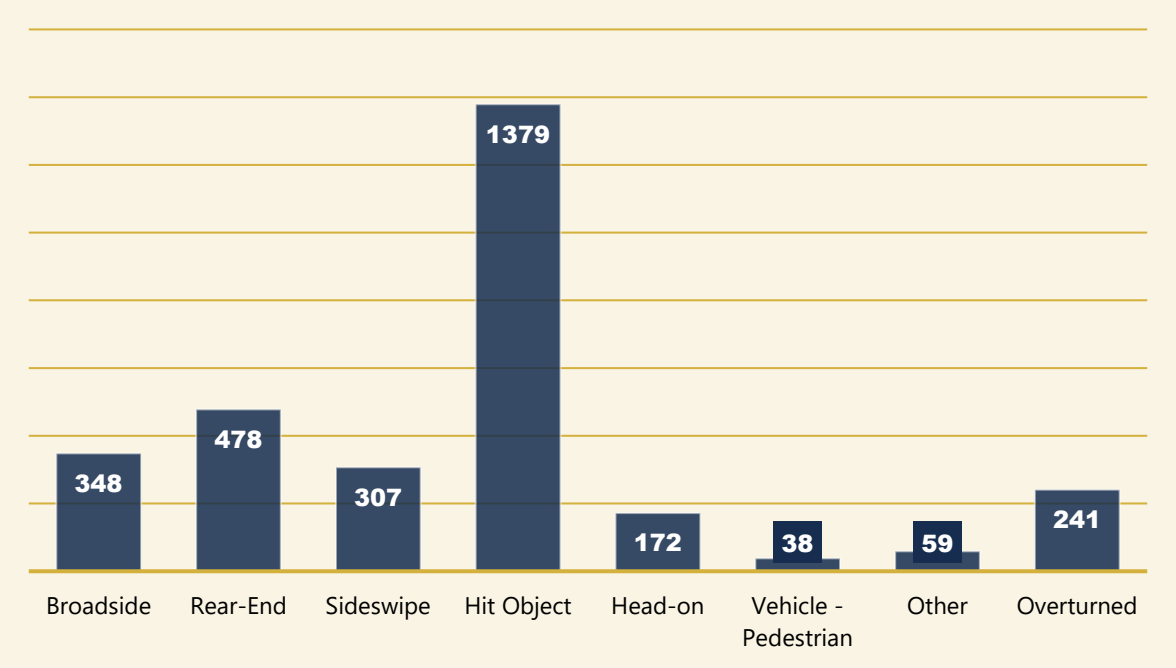

Figure 12. Lake County Crash Types (2019-2013)

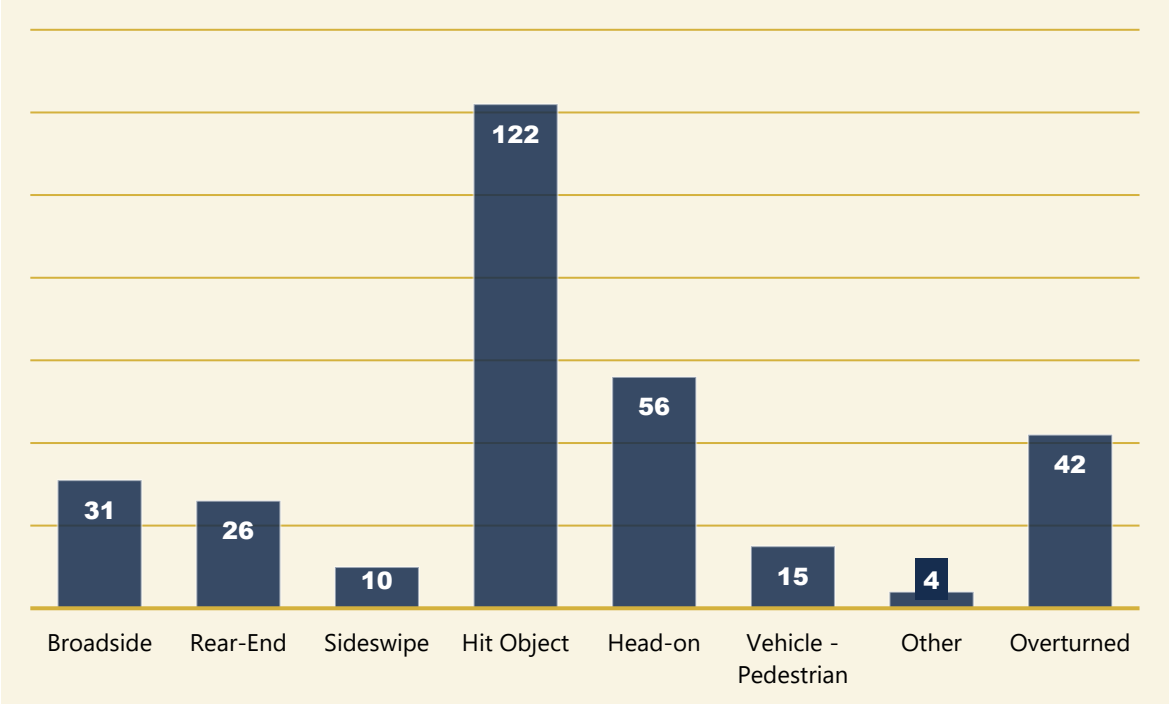

Figure 13. Lake County Crash Types - Fatal & Serious Injury Only (2019-2023)

As shown in **Figures 12-13**, *Hit Object* was the most common crash type. *Hit Object*, *Head-on*, and *Overturned* had the most occurrences of severe injury or fatal crashes. The most common crash type for all crashes between 2019 and 2023 was *Hit Object*, which represents 46 percent of all crashes and 40 percent of all fatal and serious injury crashes. *Rear-End* was the second most common crash type at 16 percent and it represented 9 percent of all fatal and serious injury crashes. *Head-on* crashes were the fifth most common PCF but was the second most common PCF to result in a fatal or serious injury crash.

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	382	2640	3022
Percent of Total Crashes	12.6%	87.4%	100%
Total Severe Injury and Fatal Crashes	16	290	306
Percent of Severe Injury and Fatal Crashes	5.2%	94.8%	100%

As indicated in **Table 4**, most crashes were identified as roadway (not intersection) related, accounting for nearly 95 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. This data aligns with the *2022 Lake County Local Road Safety Plan*.

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

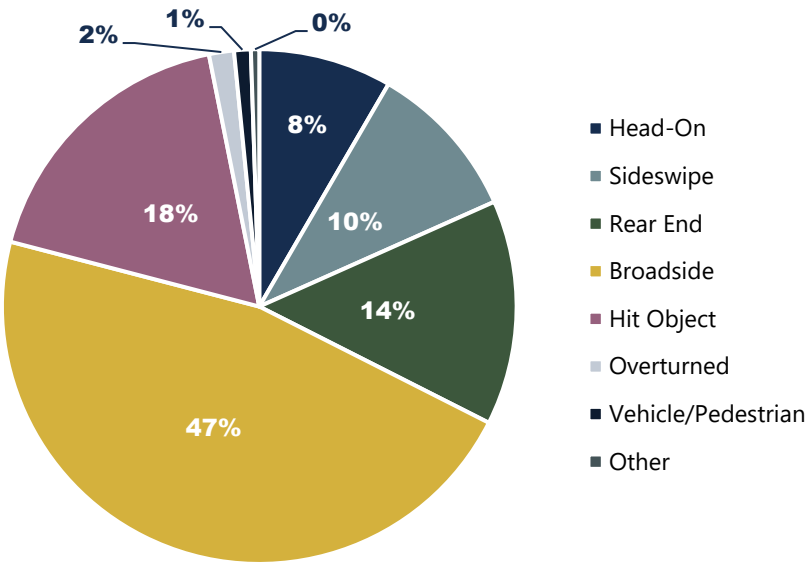

Figure 14. Intersection Crashes by Type

As shown in **Figure 14**, the most common crash type at intersections is *Broadside*, accounting for 47 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 20/Hammond Avenue and SR 20/Lakeview Drive
- Hot Spot 2: SR 20/16th Avenue
- Hot Spot 3: SR 29 and Live Oak (2 Serious Injury) and SR 29 and Main Street (1 Fatality)

SR 29 / Main Street
Kelseyville, CA

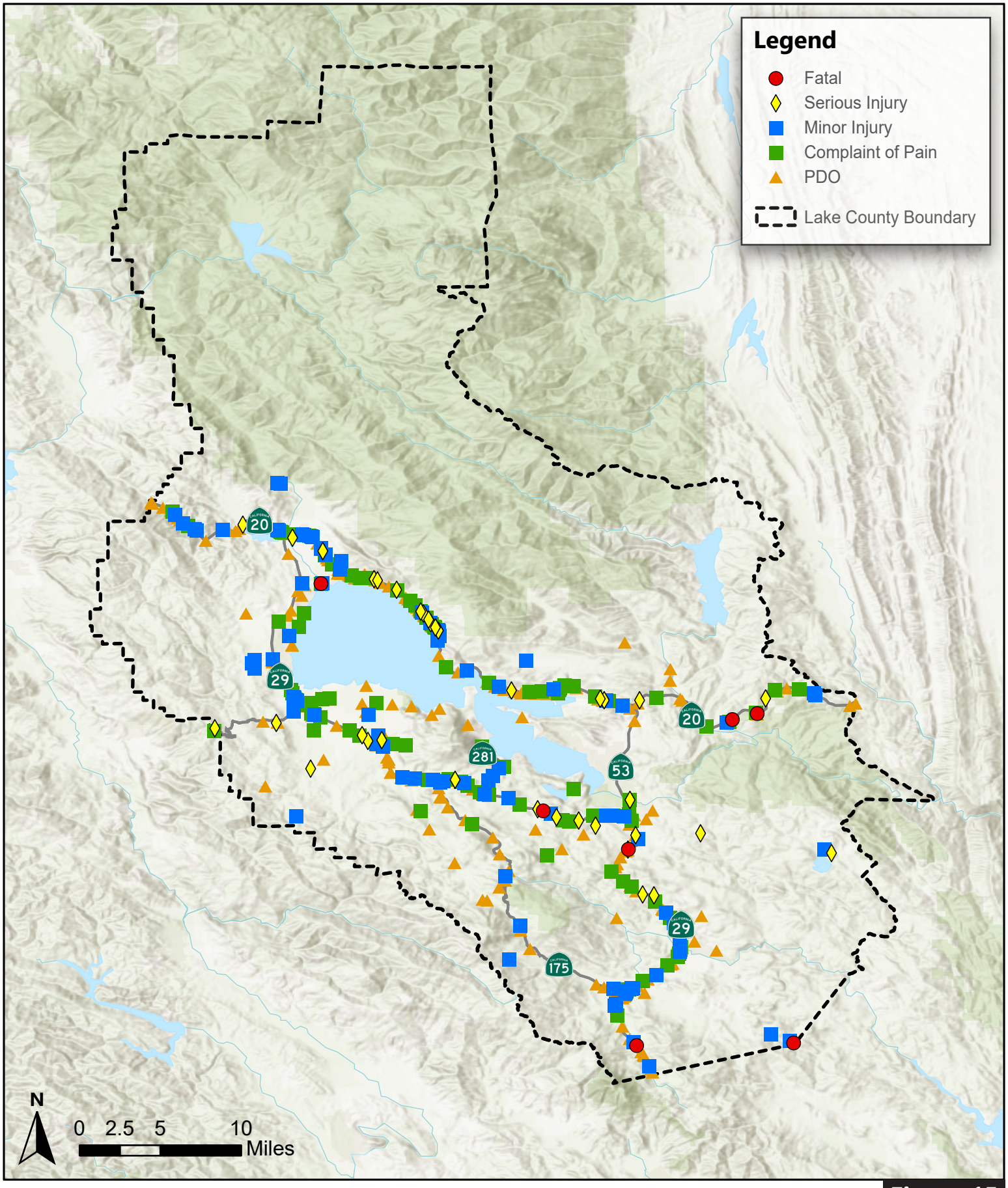

Figure 15

Lake County
Local Road Safety Plan
Intersection Crashes by Severity

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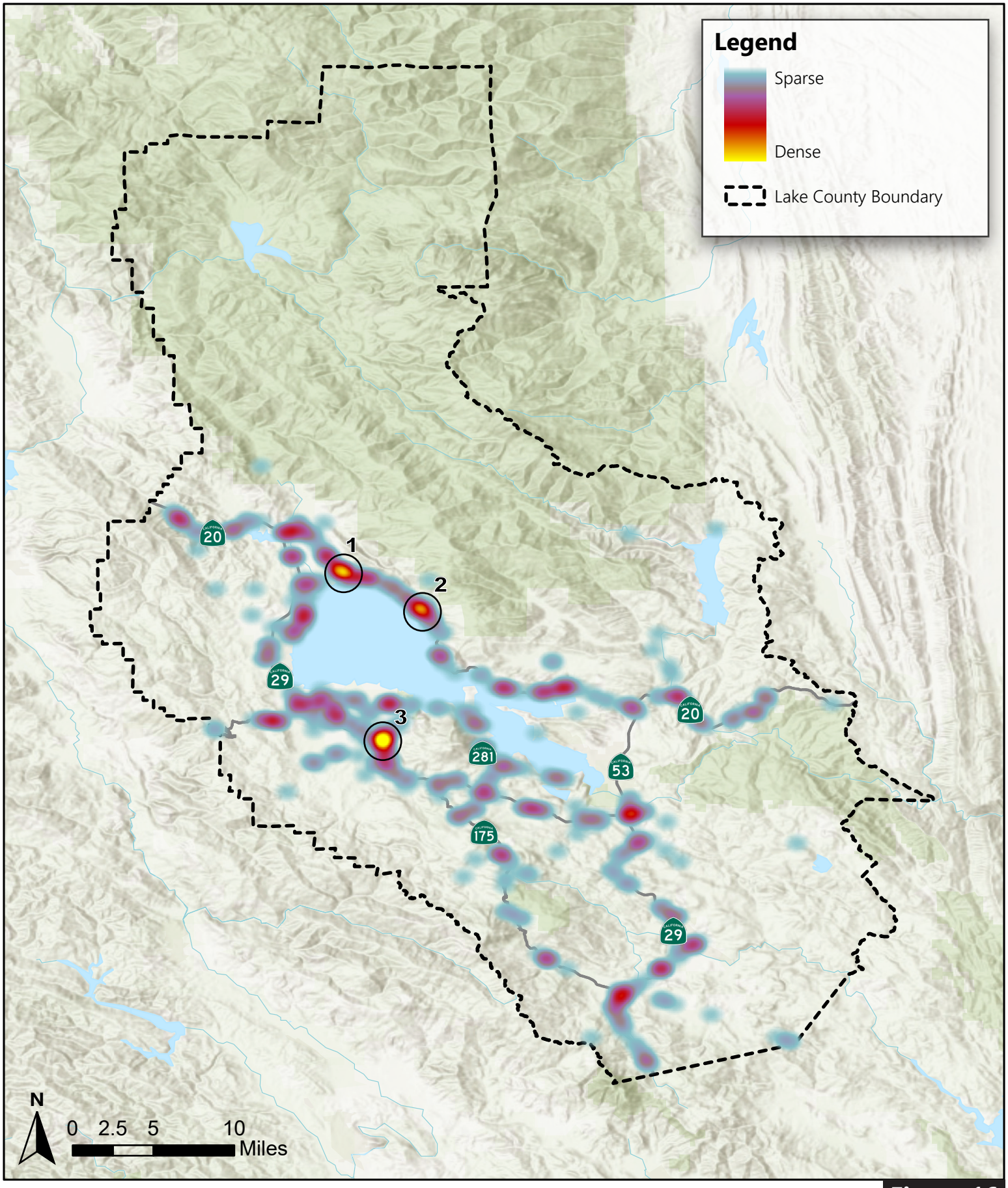

Figure 16

Lake County
Local Road Safety Plan
Intersection Crash Heatmap

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The intersections with at least one local roadway with the highest crash impacts considering crash severity and number of crashes as well as intersections that received public comments through the interactive map 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-29/SR-281	0	0	2	4	7	13	Signalized	0
SR-29/Live Oak Drive	0	2	1	1	3	7	Signalized	0
SR-29/Wardlaw Street	0	0	2	1	0	3	Signalized	0
SR-20/Pyle Road	0	0	4	0	7	11	Roundabout	0
SR-20/SR-53	0	1	1	0	4	6	Roundabout	0
SR-29/Main Street	1	0	2	2	5	10	Unsignalized	1
SR-29/Rancheria Road	0	0	1	5	9	15	Unsignalized	0
SR-29/Bell Hill Road	0	1	3	4	5	13	Unsignalized	0
Merritt Rd/Big Valley Rd	0	0	3	1	7	11	Unsignalized	0
SR-20/Lakeview Drive	0	0	1	2	5	8	Unsignalized	0
Lake Street/ Jessie Street	0	0	1	2	3	6	Unsignalized	0
SR-29/Bottle Rock Rd	0	0	4	1	1	6	Unsignalized	2
SR-29/Thomas Drive	0	0	0	1	3	4	Unsignalized	4
SR-281/Fairway Drive	0	0	0	2	2	4	Unsignalized	0
SR-29/Point Lakeview Road	0	1	1	0	0	2	Unsignalized	0
SR-29/Seigler Canyon Road	0	1	0	0	1	2	Unsignalized	0
SR-20/Howard Avenue	0	1	0	0	1	2	Unsignalized	0
SR-29/Merritt Rd	0	0	1	1	0	2	Unsignalized	1
SR-53/Anderson Ranch Parkway	0	1	0	0	0	1	Unsignalized	0
SR-20/Catholic Church Road	0	1	0	0	0	1	Unsignalized	0
SR-20/Foothill Boulevard	0	1	0	0	0	1	Unsignalized	0
SR-20/Lakeshore Boulevard	0	1	0	0	0	1	Unsignalized	0
SR-29/Grange Road	0	1	0	0	0	1	Unsignalized	0
Lakeshore Boulevard/Collier Ave	0	1	0	0	0	1	Unsignalized	0
SR-20/Saratoga Springs Road	0	1	0	0	0	1	Unsignalized	0
SR-20/Sixth Avenue	0	0	1	0	0	1	Unsignalized	0
SR-20/Hoover Street	0	0	1	0	0	1	Unsignalized	0

Intersection	Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	PDO	Total	Intersection Control	Map Votes
Government St/First Street	0	0	0	1	0	1	Unsignalized	0
Note: Yellow highlighted locations indicate that a pedestrian-related crash occurred at this location.								

Table 5 represents the intersections that may benefit the most from safety improvements. Potential countermeasures are evaluated in subsequent sections.

The crash types and collision factors contributing to all crashes is 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**.

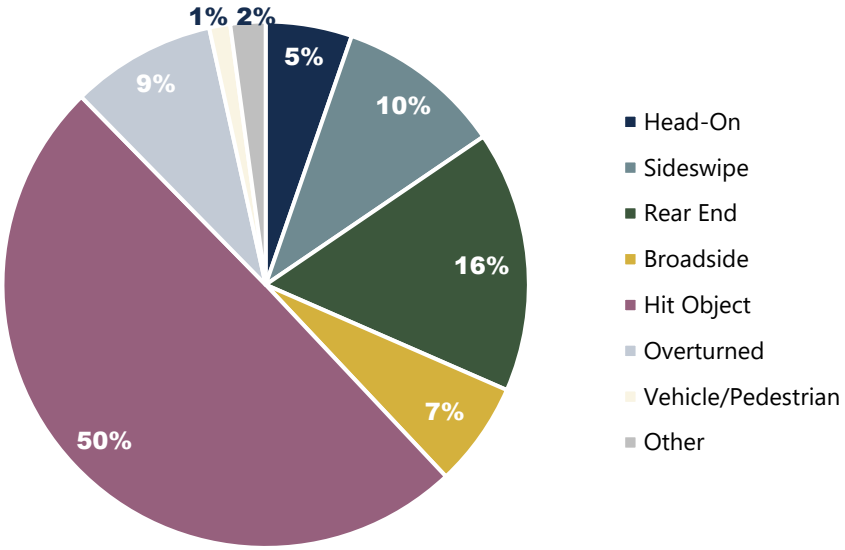

Figure 17. Roadway Crashes by Type

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	56	82.4%	175	73.5%	355	69.5%	323	72.7%	1066	60.5%
Local Roads	12	17.6%	63	26.5%	156	30.5%	121	27.3%	695	39.5%
Total	68	100%	238	100%	511	100%	444	100%	1761	100%

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 74 percent of crashes on roadways. In addition, **Table 6** indicates that the majority of fatal and severe injury crashes occur on state highways.

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 **Figures 20** which presents the locations of roadway crashes and roadway segments with the highest crashes per mile and **Figures 21-22** which show heatmaps of crashes occurring on State Highways and Non-State Highways respectively.

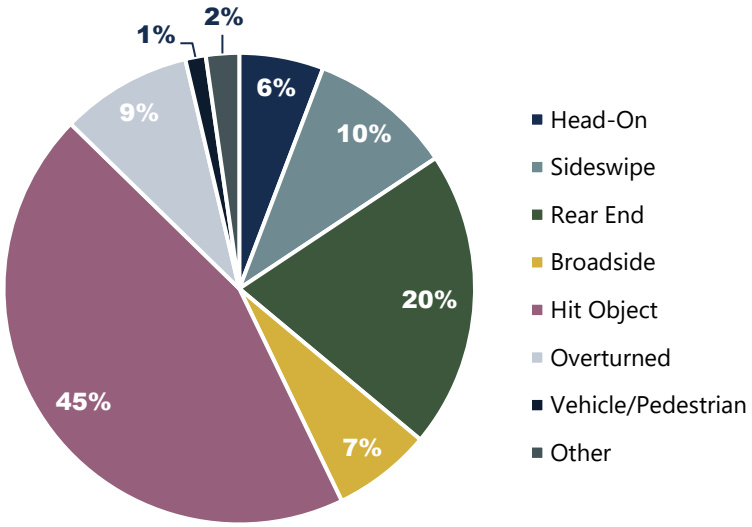

Figure 18. State Highway Crash Types

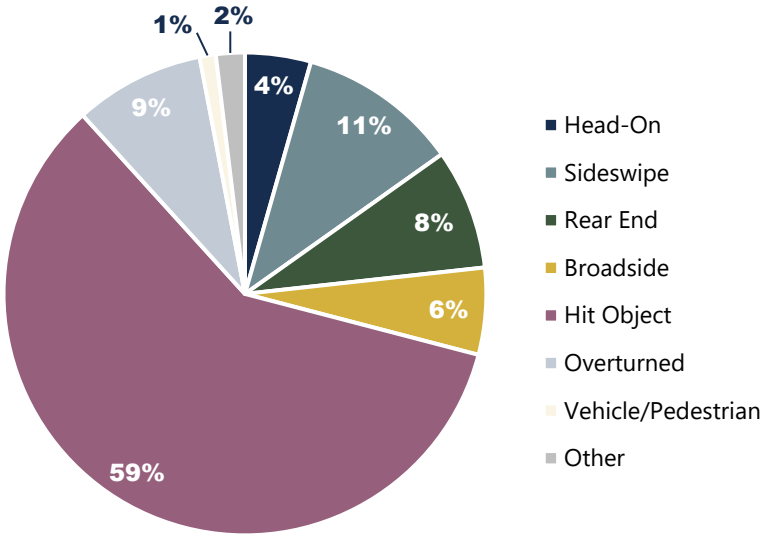

Figure 19. Non-State Highway Crash Types

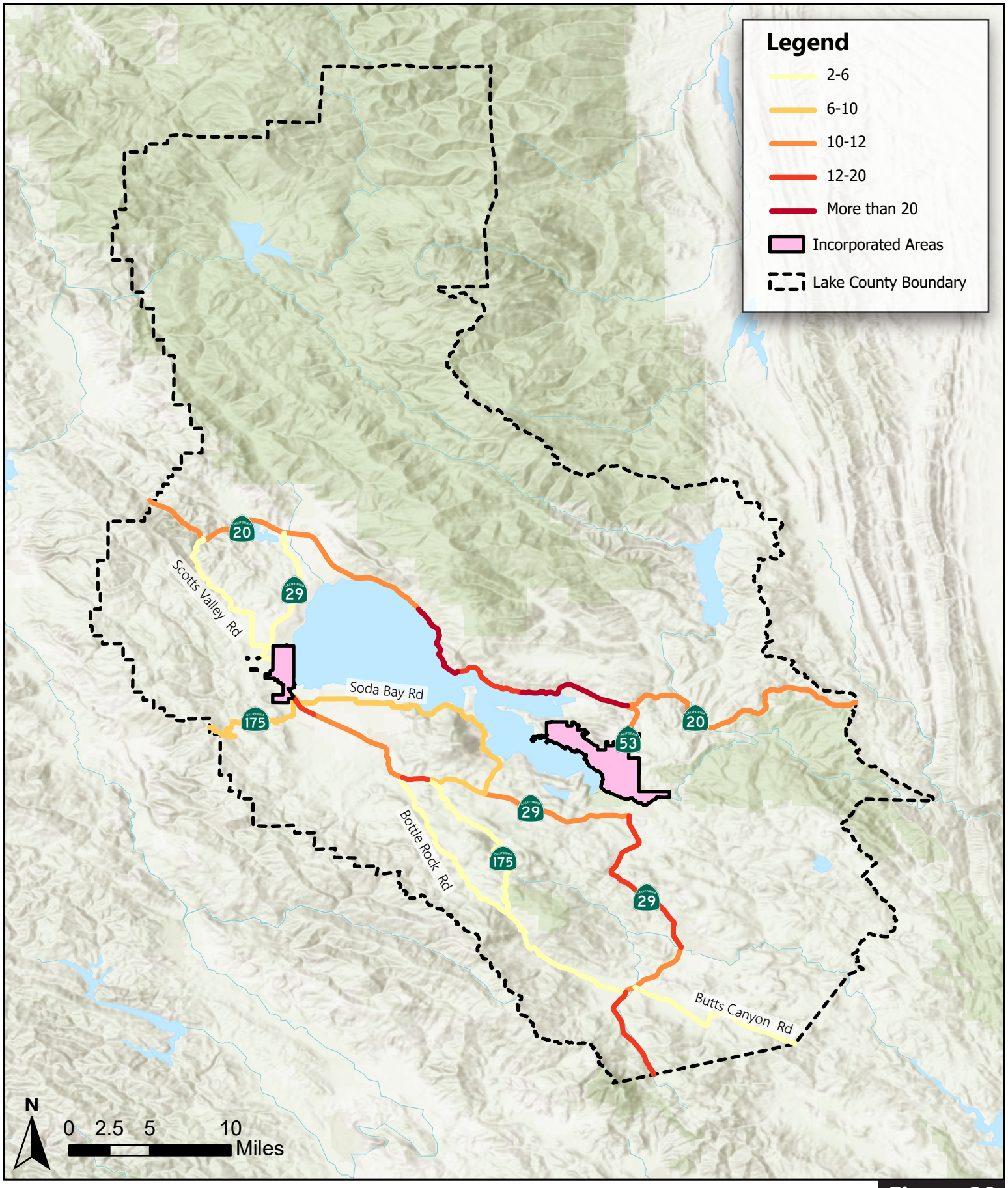

Figure 20

Lake County
Local Road Safety Plan
Roadway Crashes Per Mile

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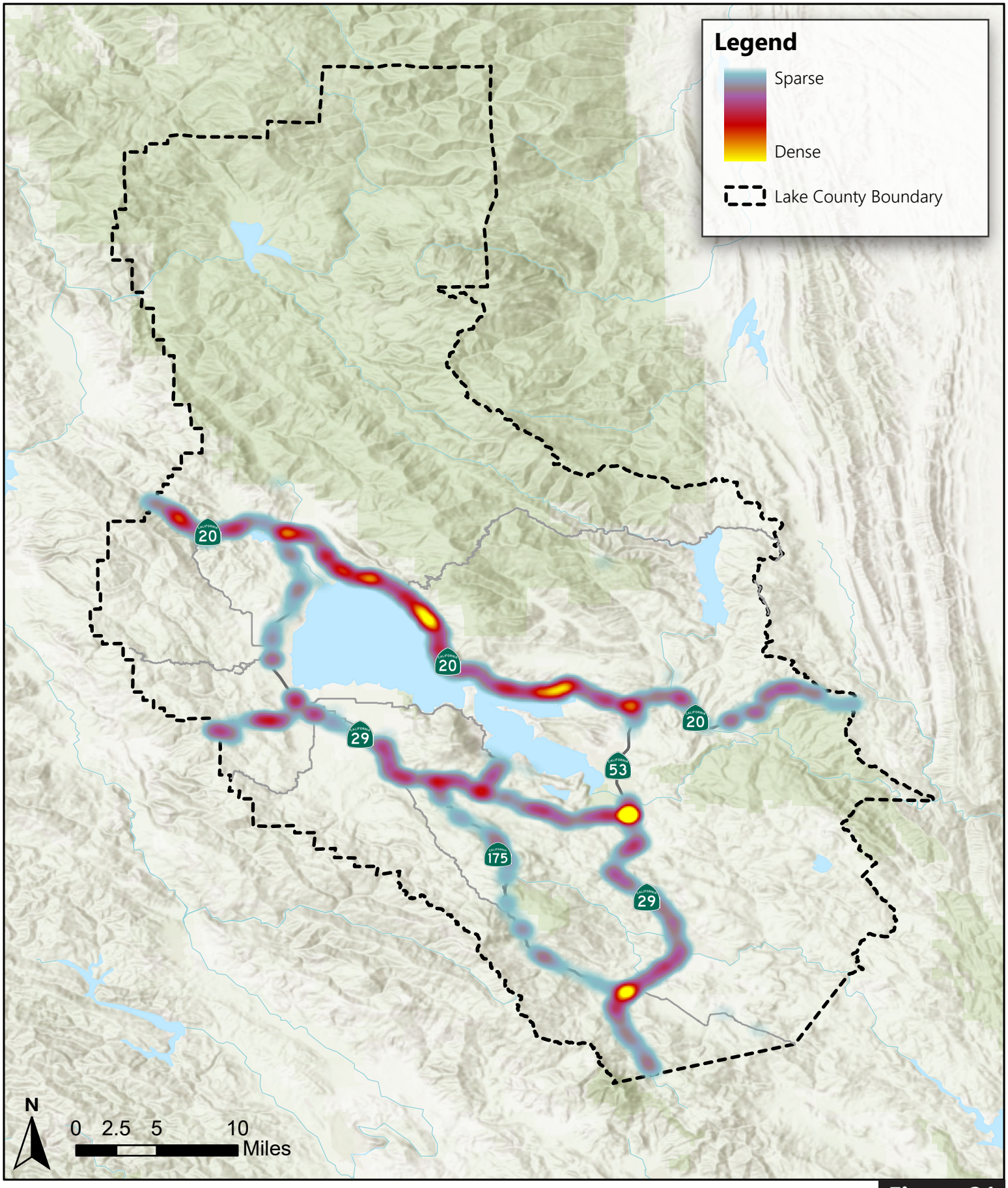

Figure 21

Lake County
Local Road Safety Plan
State Highway Crash Heatmap

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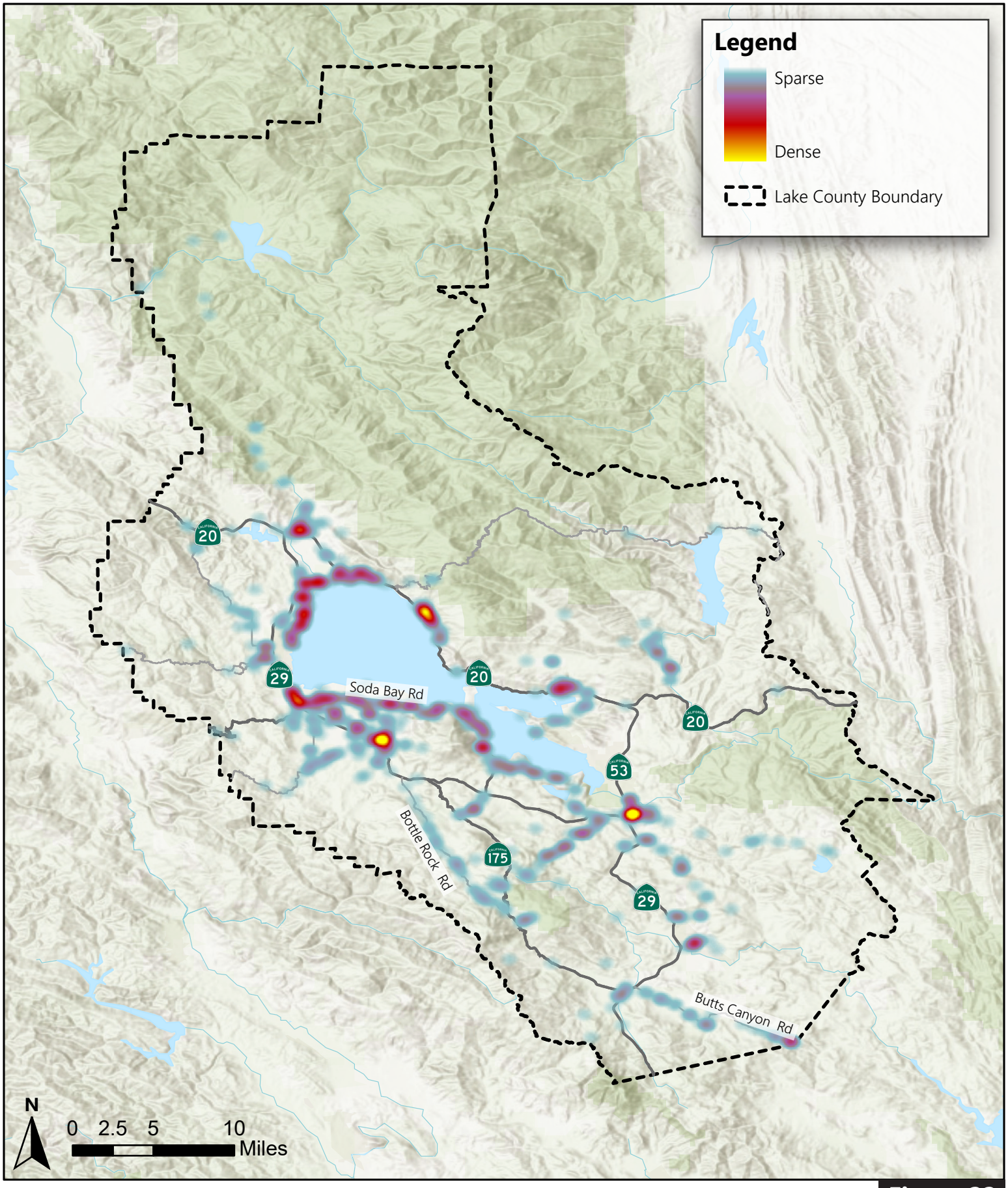

Figure 22

Lake County
Local Road Safety Plan
Non-State Highway Crash Heatmap

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Pedestrian and Bicycle

As identified through the public outreach, pedestrian safety is an increasing safety concern among Lake County residents. **Table 7** and **Figure 23** present the bicycle- and pedestrian-involved crashes by crash severity.

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	7	1	68	10.3%	1.5%
Serious Injury	9	5	238	3.8%	2.1%
Other Visible Injury	16	6	511	3.1%	1.2%
Complaint of Pain	6	2	444	1.4%	0.5%
Property Damage Only	6	0	1761	0.3%	0.0%
Total	44	14	3022	1.4%	0.5%

As shown in the table, crashes involving a bicyclist or pedestrian account for two percent of the overall crashes, and nearly 18 percent of the severe injury and fatal crashes. As shown in **Figure 23**, 38 percent of pedestrian and bicycle crashes resulted in severe injury or fatality.

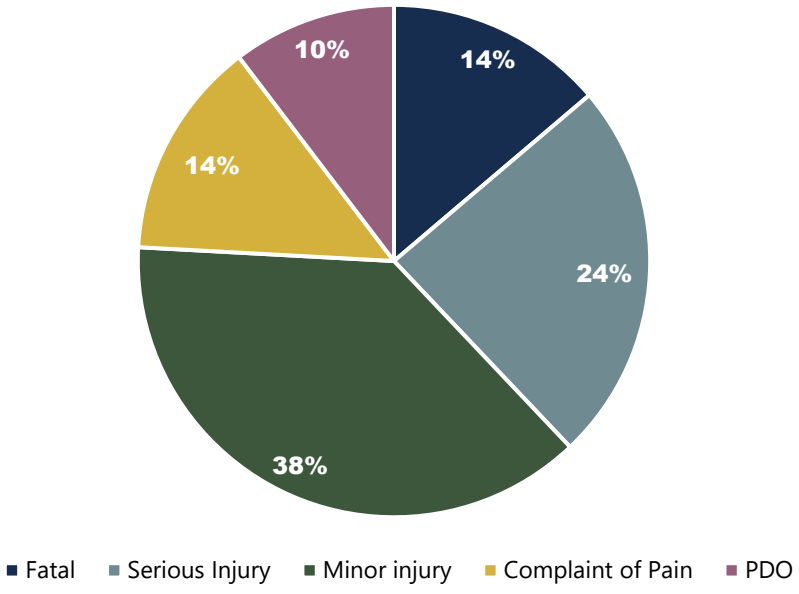


Figure 23. Bicycle and Pedestrian Crashes by Severity

Figure 24 provides an overview of the bicyclist and pedestrian crashes by action. Over half of the bicycle- and pedestrian-involved crashes occurred in the 'Road – Including Shoulder', while 30 percent occurred with 'Crossing Not in Crosswalk' indicated as the action.

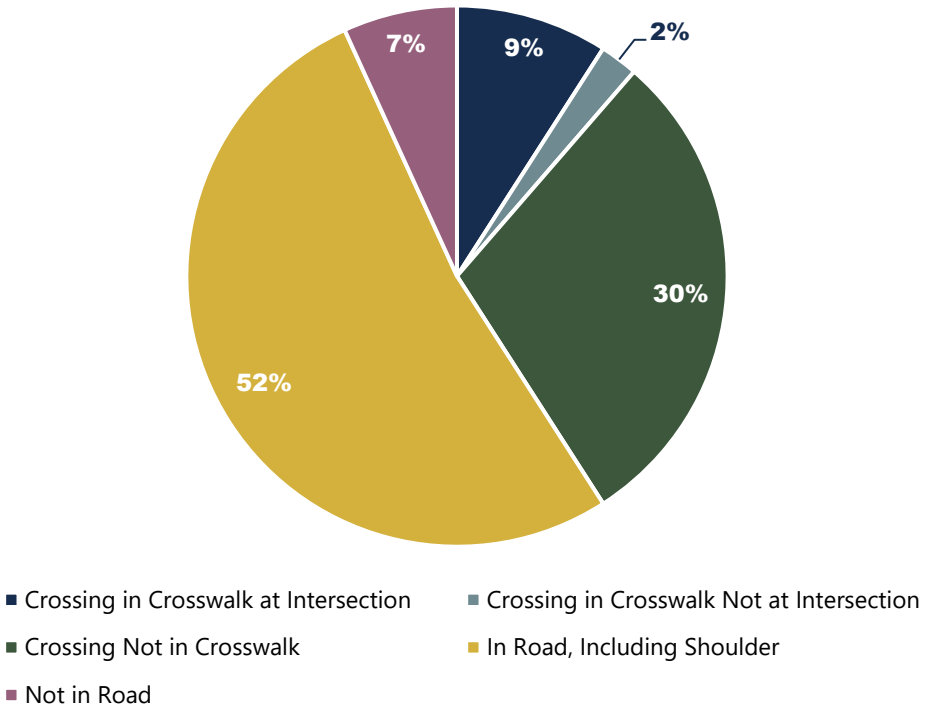


Figure 24. Bicycle and Pedestrian Crashes by Action

Tables 8-10 provide further details regarding pedestrian and bicycle-involved crashes, with **Table 8** providing an overview of pedestrian injury crashes on roadways with the severity, pedestrian action, and surrounding pedestrian/bicycle facilities.

Table 8. Pedestrian Injury Crashes on Roadways

Primary Road	Secondary Road	Severity	Pedestrian Action	Ped/Bike Facilities	Map Votes
SR-20	7th Ave	Injury (Other Visible)	In Road, Including Shoulder	Sidewalk on one side	0
SR-29	A St	Injury (Other Visible)	In Road, Including Shoulder	None	0
SR-20	Hudson Ave	Fatal	Crossing Not in Crosswalk	None	0
SR-20	Mendenhall Ave	Injury (Other Visible)	Crossing Not in Crosswalk	None	0
Alterra Dr	Lakeshore Blvd	Injury (Other Visible)	Not in Road	Sidewalks on both sides	0

Primary Road	Secondary Road	Severity	Pedestrian Action	Ped/Bike Facilities	Map Votes
SR-53	Orchard St	Fatal	Crossing Not in Crosswalk	None	0
SR-20	Reclamation Rd	Injury (Other Visible)	Not in Road	None	0
High Valley Rd	Cerrito Dr	Injury (Other Visible)	Crossing Not in Crosswalk	None	0
SR-20	Foothill Blvd	Injury (Severe)	In Road, Including Shoulder	None	0
SR-53	Anderson Ranch Pkwy	Injury (Severe)	In Road, Including Shoulder	None	0
SR-20	Keeling Ave	Injury (Severe)	Crossing in Crosswalk at Intersection	Marked Crosswalk	0
SR-20	New Long Valley Rd	Injury (Other Visible)	Crossing Not in Crosswalk	None	0
SR-20	Pomo Way	Injury (Severe)	In Road, Including Shoulder	None	0
SR-29	Lake St	Injury (Other Visible)	In Road, Including Shoulder	None	0
Country Club Drive	Tenth Ave	Injury (Severe)	Crossing Not in Crosswalk	Sidewalk on one side	0
SR-20	Hillside Ln	Injury (Severe)	In Road, Including Shoulder	None	0
SR-175	Lake/Mendocino County Line	Injury (Other Visible)	In Road, Including Shoulder	None	0
SR-20	Sayre Ave	Fatal	Crossing in Crosswalk Not at Intersection	Marked Crosswalk	1
SR-20	Manzanita Rd	Fatal	In Road, Including Shoulder	None	0
Konocti Road	Single Spring Dr	Injury (Other Visible)	In Road, Including Shoulder	Bike lane	0
SR-20	Keeling Ave	Injury (Severe)	Crossing Not in Crosswalk	Marked Crosswalk	0
SR-20	Grove St	Injury (Other Visible)	Crossing Not in Crosswalk	Sidewalk on one side	0
Renfro Drive	Big Valley Rd	Injury (Other Visible)	In Road, Including Shoulder	None	0
Country Club Dr	SR-20	Injury (Other Visible)	In Road, Including Shoulder	None	0
SR-20	Hudson Ave	Injury (Severe)	Crossing Not in Crosswalk	Marked Crosswalk	0
SR-53	Anderson Ranch Pkwy	Fatal	Crossing Not in Crosswalk	None	0
SR-29 N/B to Nice-Lucerne Cutoff	Nice-Lucerne Cutoff	Injury (Severe)	In Road, Including Shoulder	None	0

Primary Road	Secondary Road	Severity	Pedestrian Action	Ped/Bike Facilities	Map Votes
Soda Bay Road	Mission Rancheria Rd	Fatal	In Road, Including Shoulder	None	0
SR-29	Central Park Rd	Fatal	In Road, Including Shoulder	Adjacent paved trail	0

Pedestrian crashes at intersections are shown in **Table 9**. Two of these crashes occurred when the pedestrian crossed in the crosswalk at the intersection, while two others occurred when the pedestrian action was noted as 'Crossing in Crosswalk Not at Intersection'.

Table 9. Pedestrian Crashes at Intersections

Intersection	Control	Severity	Ped/Bike Facilities	Pedestrian Action	Map Votes
SR-20/Hoover St	Unsignalized	Injury (Other Visible)	Crosswalks	Crossing in Crosswalk at Intersection	0
SR-20/Sixth Ave	Unsignalized	Injury (Other Visible)	None	Crossing in Crosswalk Not at Intersection	0
Government Street/First St	Unsignalized	Complaint of Pain	Sidewalk on one side	Crossing in Crosswalk Not at Intersection	0
SR-29/Wardlaw St	Signalized	Injury (Other Visible)	Crosswalks: Sidewalk on both sides	Crossing in Crosswalk at Intersection	0

Table 10 shows bicycle-involved crashes at intersections, with four of these crashes occurring at an unsignalized intersection.

Table 10. Bicycle Crashes at Intersections

Intersection	Control	Severity	Ped/Bike Facilities	Pedestrian Action	Map Votes
SR-29/Live Oak Dr	Signalized	Injury (Severe)	Crosswalks	No Pedestrian Involved	0
Lakeshore Blvd/Park Way	Unsignalized	Injury (Other Visible)	Bike lane one side	No Pedestrian Involved	0
SR-20/Nice Lucerne Cutoff	Roundabout	Injury (Other Visible)	Crosswalk	No Pedestrian Involved	0
SR-20/Foothill Blvd	Unsignalized	Injury (Severe)	Near crosswalk	No Pedestrian Involved	0
SR-20/1st St	Unsignalized	Complaint of Pain	Crosswalk: Sidewalks both sides	No Pedestrian Involved	0
Schindler St/First St	Unsignalized	Complaint of Pain	None	No Pedestrian Involved	0

As shown in **Tables 8-10**, the majority of pedestrian-involved crashes occurred on roadways, specifically state highways, which included a total of seven fatalities.

Figures 25-26 show the pedestrian and bicycle crashes by action and severity. Three (3) pedestrian fatalities occurred on SR 20 through Nice, two pedestrian fatalities occurred on SR 53 near Lower Lake, one occurred on Soda Bay Road, and one occurred on SR 29 near Middletown. The three pedestrian fatalities in Nice were associated with the following actions: crossing not in a crosswalk, crossing in a crosswalk not at an intersection, and in the road/including the shoulder.

SR 20 / Keeling Avenue
Nice, CA

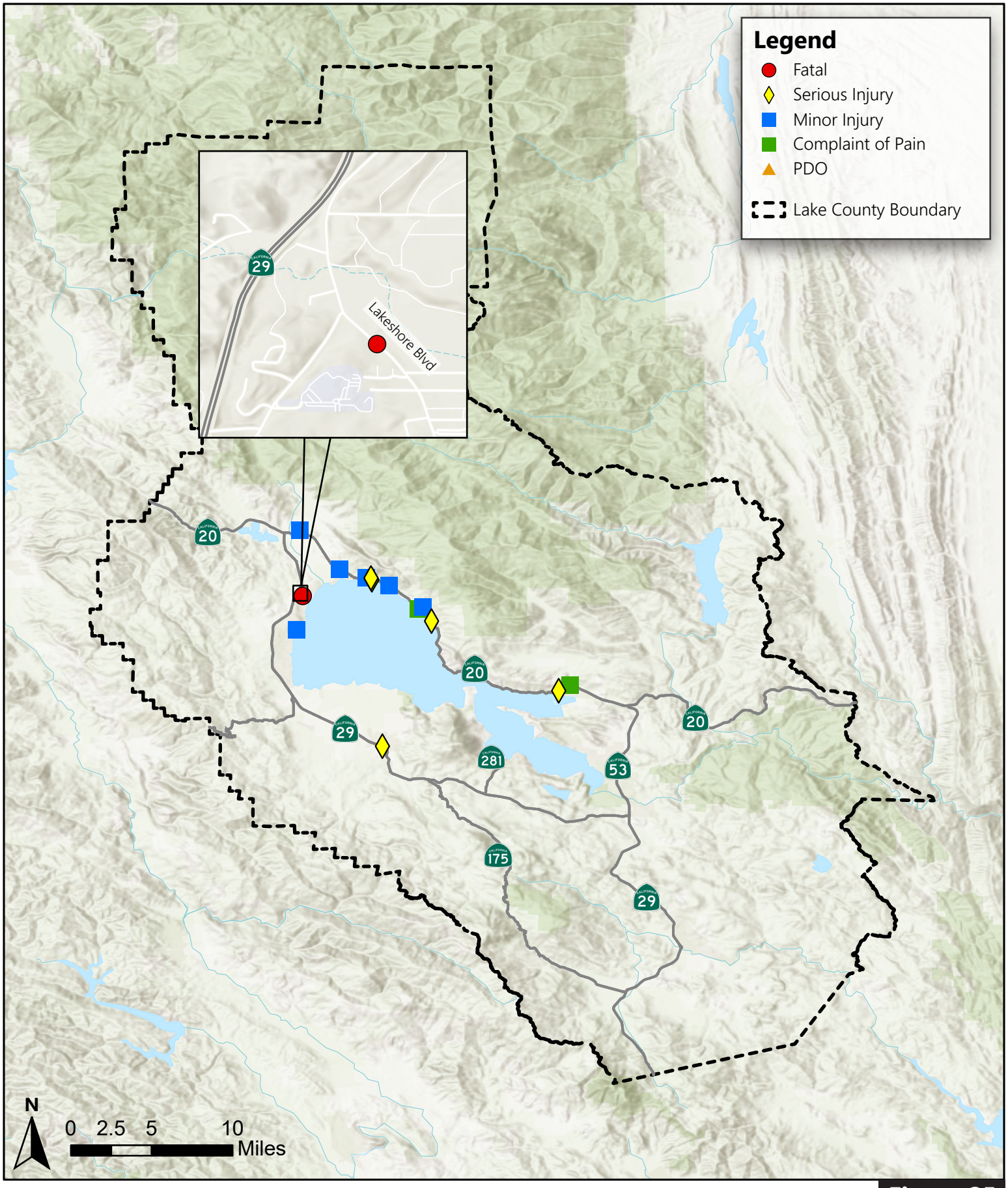


Figure 25

Lake County
Local Road Safety Plan
Bicycle Crash Locations by Severity

GCV ENGINEERS \ SURVEYORS

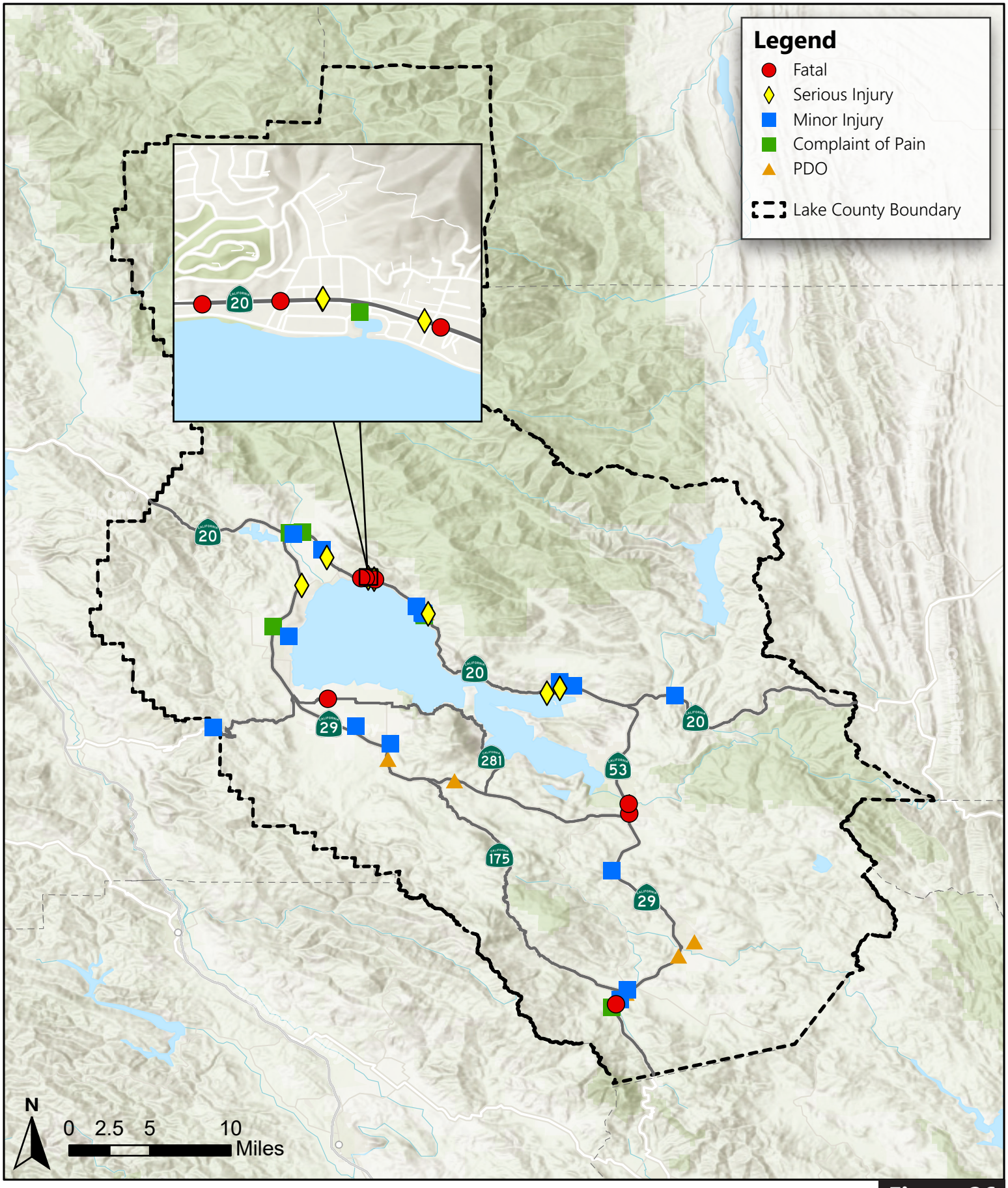


Figure 26

Lake County
Local Road Safety Plan
Pedestrian Crash Locations by Severity

GCV ENGINEERS \ SURVEYORS

Other Factors

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 countywide 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 11 shows the associated lighting condition with the severity of crashes that occurred.

Table 11. Lighting Condition and Crash Severity

Crash Severity						
Lighting Condition	**Fatal**	**Injury (Severe)**	**Injury (Other Visible)**	**Complaint of Pain**	**PDO**	**Total**
Daylight	35	150	322	308	1052	1867
Dusk - Dawn	4	12	31	18	94	159
Dark – Street Lights	4	15	22	31	120	192
Dark – No Street Lights	25	60	134	86	491	796
Dark – Street Lights Not Functioning	0	1	2	1	4	8

Crashes that occurred under 'Dark – No Street Lights' conditions accounted for nearly 28 percent of the severe injury and fatal crashes, which is the same percentage as indicated in the previous dataset from the *2022 Lake County Local Road Safety Plan*. The most common crash type associated with dark conditions was 'hit object' (65 percent), and the majority were on roadways as opposed to intersections (94 percent).

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

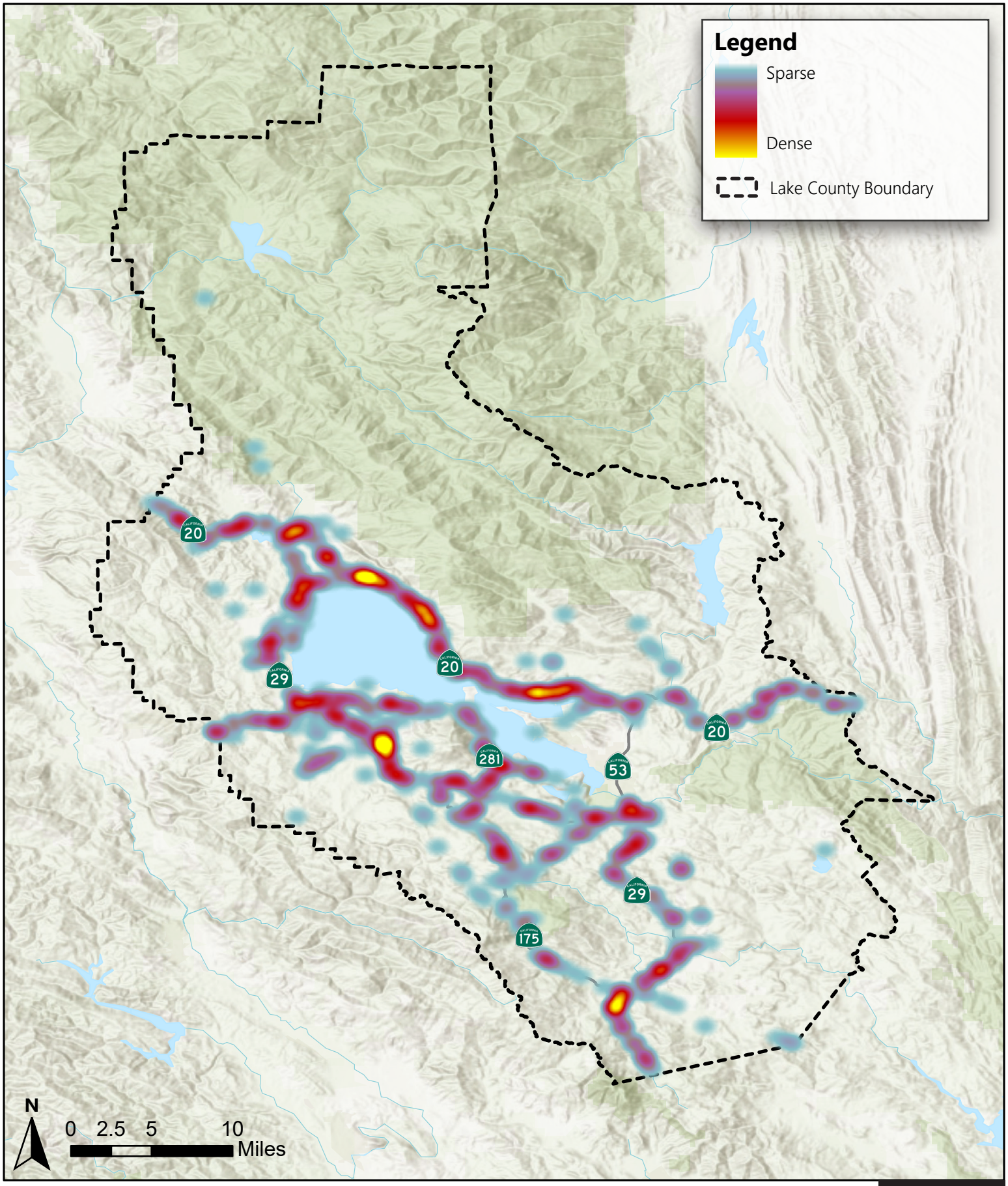


Figure 27

Lake County
Local Road Safety Plan

Dark - No Street Lights Crashes Heatmap

GCW
ENGINEERS \ SURVEYORS

Soda Bay Road / Stone Drive
Lake County, CA

Equity Analysis

Figure 28 shows the disadvantaged communities in the Lake County unincorporated[9] boundary, with the serious and fatal injury crashes overlay. Based on this evaluation, four severe injury crashes and one fatal crash occurred within the disadvantaged boundaries of Lake County between 2019 and 2023. This represents less than 2 percent of the severe injury and fatal crashes within the county.

[9] SB 535 Disadvantaged Communities - OEHHA

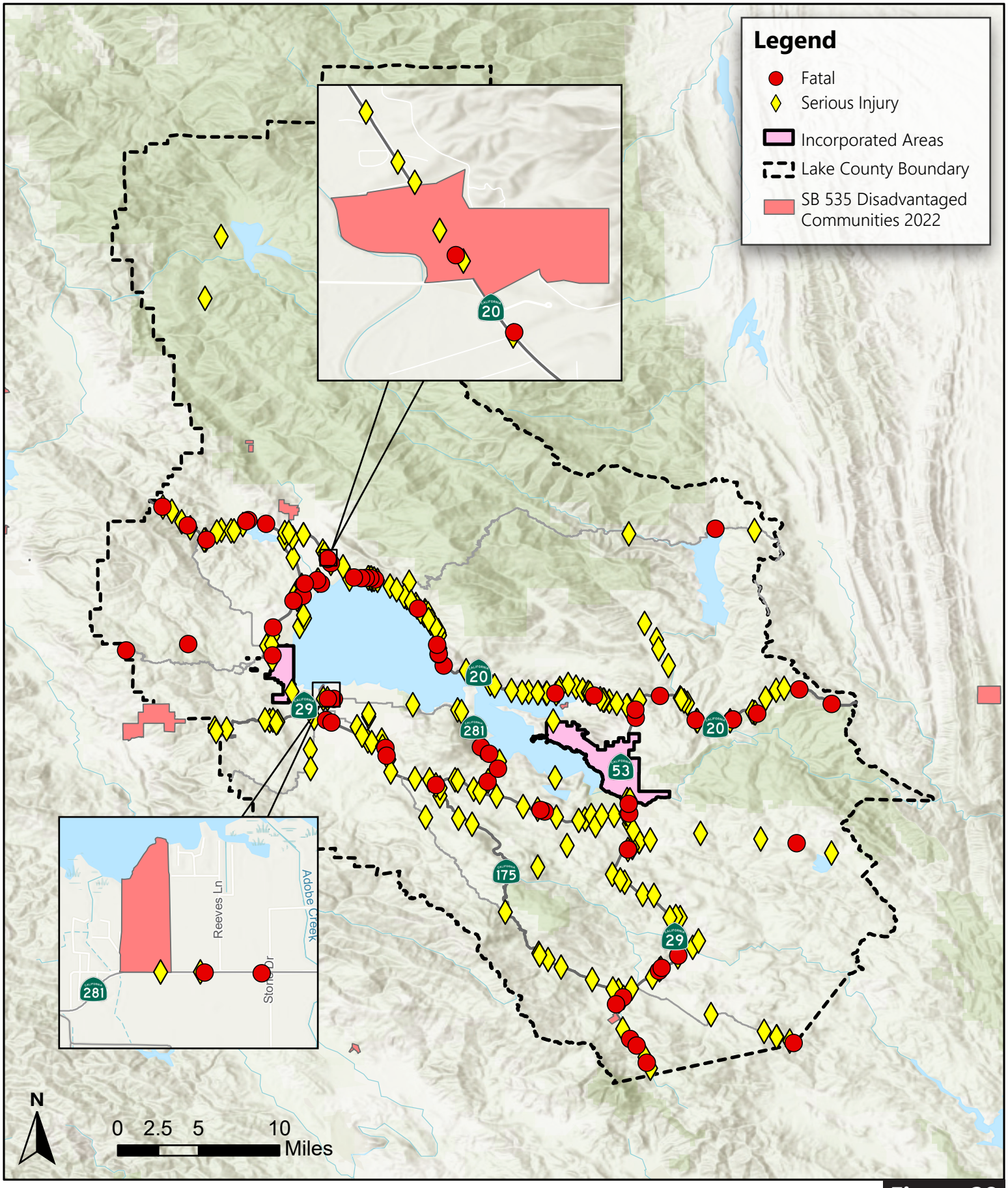


Figure 28

Lake County
Local Road Safety Plan

Lake County Disadvantaged Areas

GCW ENGINEERS \ SURVEYORS

Crash Data Summary

The main takeaways from the analysis of available crash data between 2019 and 2023 for local roads in the unincorporated communities of Lake County are:

- The most common crash type is *Hit Object*, which represents 46 percent of all crashes in unincorporated Lake County.
- The crash type most likely to result in fatal or serious injury is *Hit Object*. This crash type accounted for 40 percent of fatal or serious injury crashes, followed by *Head-On* crashes which accounted for 9 percent.
- Crashes involving a bicyclist or pedestrian account for two percent of the overall crashes, but account for nearly 18 percent of the severe injury and fatal crashes.
- The most common Primary Collision Factors in order of magnitude across the unincorporated areas of Lake County are:
  - Improper Turning
  - Driving or Bicycling Under the Influence of Alcohol or Drug
  - Unsafe Speed
  - Wrong Side of the Road
  - Automobile Right of Way
- Crashes occurred more frequently on roadway segments than intersections.
- The majority (52 percent) of pedestrian crashes occurred in the roadway (including shoulder).
- Thirty-six (36) percent of fatal crashes and 25 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 Lake County 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 Lake County. As crash records improve over time, more direct insights into crash patterns may be identified.

SR 20 / Lakeview Drive
Lake County, 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

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

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 within Lake County.

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. DISTRACTED DRIVING

This focus area was ranked as the highest 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.[10] Distracted driving was ranked as the highest safety priority among Lake County residents through the public outreach survey.

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 this data attribute should be utilized to evaluate distracted driving in future versions of this LRSP.

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:

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

- **Education** – *Distracted Driving Public Outreach Campaign*: Messaging campaign using a variety of local media outlets.
- **Enforcement** – *High-Visibility Cell Phone Usage Enforcement Campaign*: Conduct 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.

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.


Source: California Highway Patrol Distracted Driving Program

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.

2. PEDESTRIAN SAFETY

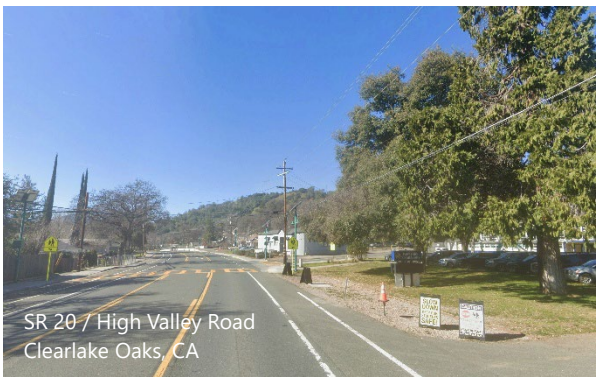
This focus area was identified as the second highest priority safety concern among public survey respondents, with 10 percent of all fatal crashes involving a pedestrian.

According to the public outreach, there has been a shift in public priority since 2022 with pedestrian safety identified as the second highest safety priority among Lake County survey respondents (previously identified as the sixth highest priority). Between 2019 and 2023, pedestrian- and bicycle-involved crashes represented approximately 28 percent of all serious injury and fatal crashes, while comprising only one percent of all crashes. In addition, 10 percent of the pedestrian-involved crashes resulted in a fatality. Pedestrian crash locations by severity are referenced on **Figure 26**, with the majority of crashes occurring on state highways.

Through the interactive map, public concern for pedestrian safety was indicated at the SR 20/High Valley Road intersection which has school-related traffic from East Lake Elementary School, as well as Gaddy Lane/Park Avenue which is located near the Kelseyville High School baseball fields, and at the SR 20/Keeling Avenue intersection.

In addition, public survey respondents indicated expanded sidewalk networks as the third highest priority 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 are provided in **Appendix E**.


SR 20 / High Valley Road
Clearlake Oaks, 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 county, 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.

It is noted that complete street efforts are underway in Lake County. Complete streets are designed to support safe mobility for all roadway users and often include accommodations for bicyclists and pedestrians. Complete streets projects are being considered on Rainbow Road, Howard Avenue, and Lakeshore Drive.

3. IMPAIRED DRIVING

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

Impaired driving was ranked as the third highest priority in the public outreach. The data analysis indicated that *Driving Under the Influence* was the second most common Primary Crash Factor for crashes accounting for 32 percent of all crashes and 32 percent of fatal and serious injury crashes.

Twenty percent of all crashes and 32 percent of severe injury and fatal 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 Friday and Saturday (approximately 20 percent each day) compared to 13 percent (on average) for other days.

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.

4. BICYCLE SAFETY

Bicycle safety was identified as the fourth priority safety concern among the public, with interactive map respondents indicating a need for additional space on roadways.

The crash data analysis indicated that a total of 14 crashes involved a bicycle, with one resulting in fatality and five resulting in serious injury. Bicycle-involved crashes accounted for nearly four percent of the fatal and serious injury crashes, and less than one percent of all crashes in the unincorporated areas of Lake County. Through the interactive map, bicycle safety concerns were noted in more rural areas such as Scotts Valley Road and High Valley Road, with comments indicating these routes are often traversed by bicyclists, tractors, or utilized for other leisure activities such as horseback riding. Other comments indicated a need for bicycle facilities on SR 29 between Lower Lake and Middletown.

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 county 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. INTERSECTION SAFETY

Identified as the fifth priority safety concern and the fourth 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 fourth priority safety concern in the public outreach. Additionally, survey respondents indicated intersection safety as the fourth priority for transportation safety improvements.

Intersection crashes account for nearly 13 percent of the total crashes, and 5 percent of the severe injury and fatal crashes in the unincorporated areas of Lake County. The most common crash type at intersections is broadside (47 percent) followed by hit object (18 percent) and rear-end (14 percent). Broadside crashes may indicate a potential safety issue with red-light running, improper yielding at a stop sign, pedestrian visibility and compliance, or unsafe speeds through an intersection.


SR 29 / Bottle Rock Road
Lake County, CA

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).

6. SPEEDING

Twenty percent of all crashes indicated 'Unsafe Speed' as the Primary Collison Factor. Most of these crashes occurred on state highways.

Speeding was ranked sixth in priority in the public outreach, with 20 percent of the crashes identifying '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**, and most of the speeding-related crashes occurred on state highways. Stakeholders have identified speeding as a major concern across the county, 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.[11] 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.

7. LIGHTING

Crashes occurring during 'Dark – No Street Lights' conditions accounted for nearly 28 percent of the severe injury and fatal crashes in unincorporated Lake County.

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 40 percent of serious injury and fatal crashes occurring outside of normal daylight conditions (i.e., dusk-dawn and all dark conditions with or without streetlights). Crashes occurring during 'Dark – No Street Lights' conditions accounted for nearly 28 percent of the severe injury and fatal crashes. It is noted that public responses on the interactive map indicated lighting concerns located near the following intersections: SR 20/Keeling Avenue and SR 20/Hudson Avenue in Nice. In addition, better street lighting was ranked as the highest priority for transportation safety improvements.

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 20 / Hudson Avenue
Nice, CA

[11] Traffic Calming ePrimer | FHWA

8. LANE DEPARTURES

Collison types associated with lane departures accounted for 74 percent of the total roadway crashes in the unincorporated area of Lake County.

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. Through the public outreach interactive map, two lane departure concerns were noted on SR 20 through Nice with respondents indicating vehicle passing occurring within turn lanes.

Collison types often associated with lane departures (head-on, sideswipe, hit object, and overturned) accounted for 74 percent of the total roadway crashes. The most common crash type among all crashes and those resulting in severe injury or fatality was hit object as shown in **Figure 12**.

Lake County, CA
Source: lakeapc.org

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**.

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 Lake County unincorporated, motorcycle-involved collisions account for 16 percent of fatal crashes and 21 percent of 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."[12]

[12] CMSP - California Motorcyclists Safety Program

Glenhaven
Lake County, 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

SMART Method

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

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.)

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 countywide and presents a list of select strategies to address the primary safety issues in Lake County. 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.

Lake County Policies and Standards Countermeasures

The 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 Lake County. 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 in alignment 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.

Pedestrian Crossing
Lucerne, CA

Upper Lake, 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 12-20**, 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 12. 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 Lake County Unincorporated	NHTSA 402

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 Lake County Unincorporated		NHTSA 402
	Reduction in unsafe pedestrian crossings	Work with agencies addressing transient, homeless and impaired persons to keep these populations safe from unsafe pedestrian crossing behaviors.		TBD
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. 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 Lake County Unincorporated	NHTSA 402

Table 15. 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 county program		ATP, NHTSA 402, SS4A
	Bike Safety Education for Adults	Bike safety instruction for adults through a county 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 Lake County Unincorporated		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 16. 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 Lake County Unincorporated		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 ***Signalized*** Intersection Safety Countermeasures	Add intersection lighting	HSIP, ATP, CMAQ, SS4A
			Improve signal timing (coordination, phases, red, yellow, or operation)	
			Install Emergency pre-emption systems	
			Install raised pavement markers and striping (through intersection)	
			Install flashing beacons as advance warning (S.I.)	
			Improve pavement friction (High Friction Surface Treatments)	
			Install pedestrian countdown signal heads	
			Install pedestrian crossing (S.I.)	
			Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	
		Potential ***Unsignalized*** Intersection Safety	Upgrade intersection pavement markings (NS.I.)	HSIP, ATP, CMAQ, SS4A
			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)	
EMS	Evaluate emergency vehicle detection along priority emergency routes	Increase emergency vehicle detection and response times along priority routes		HSIP*, SS4A, Other

Table 17. 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 18. Lighting Focus Area Strategy Table

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 Lake County Unincorporated	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. 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 Lake County Unincorporated		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 20. 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.		

SR 20 / Lakeshore Boulevard
Nice, 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 county and key stakeholders, seven systemic projects were developed for application within the unincorporated areas of Lake County.

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*[13] 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 Lake County 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 unincorporated areas of Lake County 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

[13] 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 Improvements*
5. *Systemic Bicycle Improvements*
6. *Site Specific Local Roads: Scotts Valley Road, Soda Bay Road, Bottle Rock Road, Butts Canyon, Main Street (Kelseyville)*
7. *Site Specific: SR 20*

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 Lake County 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.


Nice-Lucerne Cutoff / Rodman Slough Bridge
Lake County, CA

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 unincorporated areas of Lake County, 'Dark – No Street Lights' or 'Dark – Street Lights Not Functioning' is a factor in 36 percent of fatal crashes and 26 percent of severe injury 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.

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 intersecting with a state highway. Among the potential locations, one fatal crash occurred at SR 29 and Main Street while three other unsignalized intersections included pedestrian-related crashes. Upon initial virtual field review, it was noted that potential improvements may


SR 29 / Main Street
Kelseyville, CA

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.

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 a high priority concern among the Lake County community. Ten percent of fatal crashes involved a pedestrian. Potential projects for systemic pedestrian and bicycle improvements may consist of constructing crosswalks, bicycle lanes, multi-use paths, sidewalks, 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.

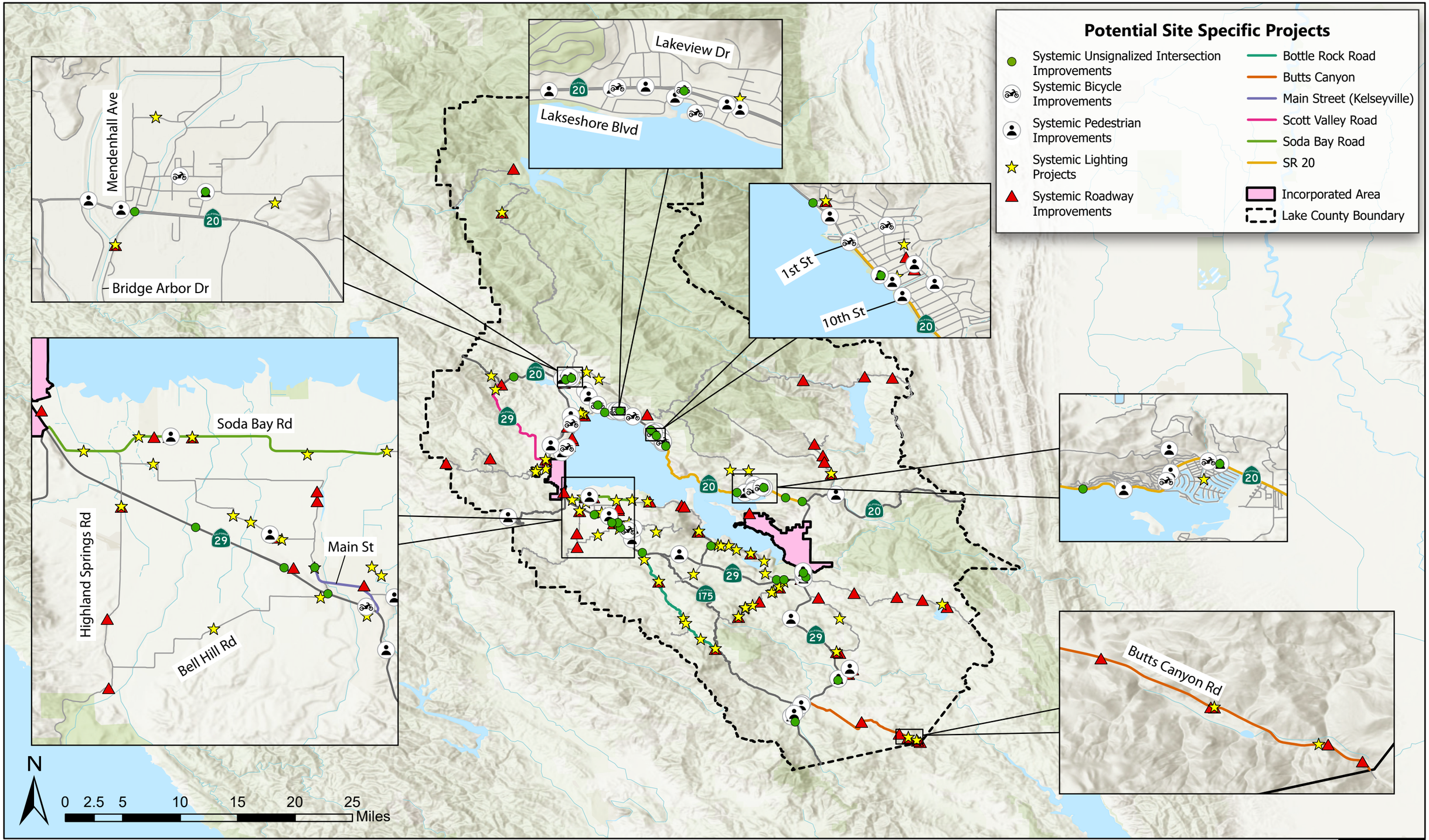


Figure 29

Lake County
Local Road Safety Plan
Potential Projects

GCW
ENGINEERS \ SURVEYORS


Lake County, 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.14 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 County 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

[14] Implementing a Local Road Safety Plan | FHWA

intersections with similar characteristics will help Lake County 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 Lake County 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 County 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.

SR 20
Lake County, CA

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 Lake County, 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.[15]

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

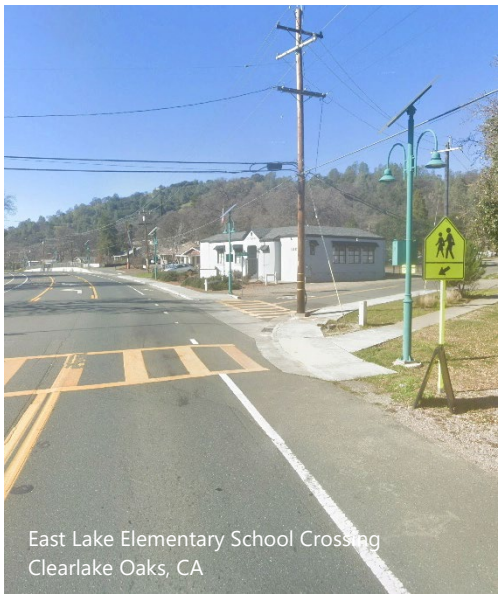
Roadway safety and the implementation of roadway safety plans is a shared responsibility that requires coordinated action. Successful execution of many of the identified strategies will require collaborative

[15] 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.


East Lake Elementary School Crossing
Clearlake Oaks, CA

Sober Ride Home

Transportation Network Companies such as Uber and Lyft as well as traditional taxi companies may work with Lake County to provide discounted or free rides home to intoxicated individuals within the county 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, 2022.16 Lake County 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 County 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.

[16] 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 the unincorporated areas of Lake County 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 unincorporated Lake County. Incorporating safety elements into planned projects will achieve project efficiencies and reduce the overall cost for improving roadway safety.

SR 29 / Thomas Drive
Lake County, CA

Clear Lake
Lake County, CA

FUNDING & TIMEFRAMES

To implement many of the identified countermeasures and strategies detailed in this LRSP, the county 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

Lake County Public Works 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." [17] 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 unincorporated areas of Lake County 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 Lake County 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

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

and/or assessment of ongoing programs, policy frameworks in Lake County, and other existing efforts in the county. 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 Lake County community. The potential projects package is provided in **Appendix E**.
7. Progress and transparency: This LRSP is an update to the *2022 County of Lake 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 2022 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 Lake County'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 Lake County 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 Lake County, with several transportation safety improvements currently planned or underway.
- The top priority safety concerns indicated through the public outreach survey and interactive map were Distracted Driving, Pedestrian Safety, Impaired Driving, and Bicycle Safety.
- A total of 3,038 crashes occurred in the unincorporated areas of Lake County between 2019 and 2023. Approximately 10 percent (306 crashes) resulted in severe injury and fatality.
- For the unincorporated areas of Lake County, the top PCFs are: Improper Turning, Driving or Bicycling Under the Influence of Alcohol or Drug, Unsafe Speed, Wrong Side of the Road, Automobile Right of Way

- The majority of crashes occurred on roadway segments (not at intersections), accounting for nearly 95 percent of the total severe injury and fatal crashes.
- The crash type most likely to result in fatal or serious injury is *Hit Object*. This crash type accounted for 40 percent of fatal or serious injury crashes, followed by *Head-On* crashes which accounted for 9 percent.
- 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 74 percent of crashes on roadways.
- The crash data was reviewed in combination with the public outreach to determine specific locations that may warrant safety improvements.
- Pedestrian crashes accounted for 10 percent of all fatal crashes between 2019 and 2023. Crashes involving a bicyclist or pedestrian accounted for two percent of the overall crashes, but nearly 18 percent of the total crashes resulting in severe injury and fatality.
- 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 20 / Hammond Avenue
Nice, CA

Soda Bay
Lake County, CA

APPENDICES

Appendix A
Stakeholder Collaboration

Appendix B
Public Outreach Results & Analysis

Appendix C
Countermeasures and Toolbox

Appendix D
Focus Area Strategy Tables

Appendix E
Potential Project Packages

Appendix F
SS4A Self-Certification Checklist

APPENDIX A

Stakeholder Collaboration

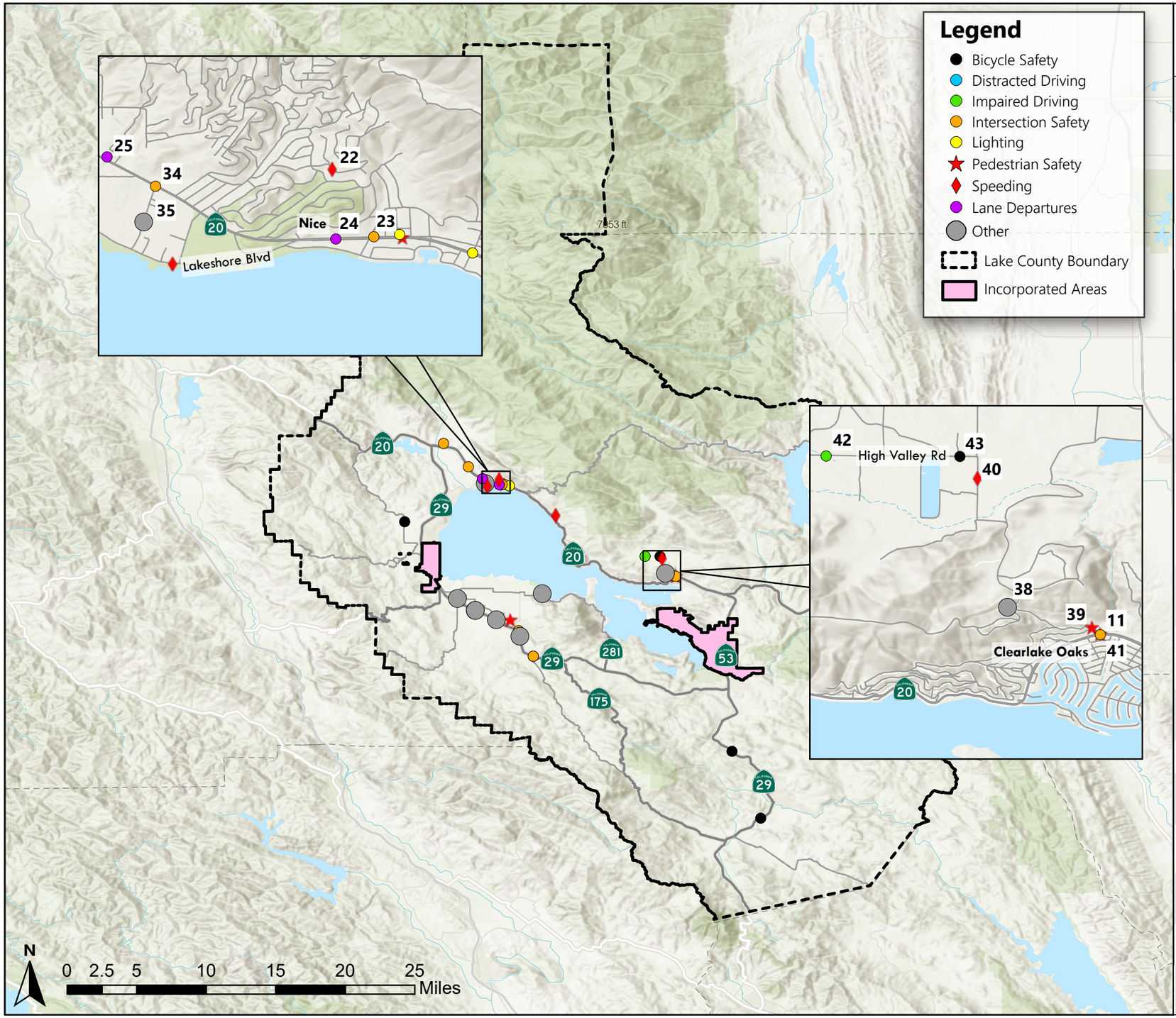
Lake County LRSP Update - Lakeport, Clearlake, Unincorporated Areas Stakeholder Working Groups

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

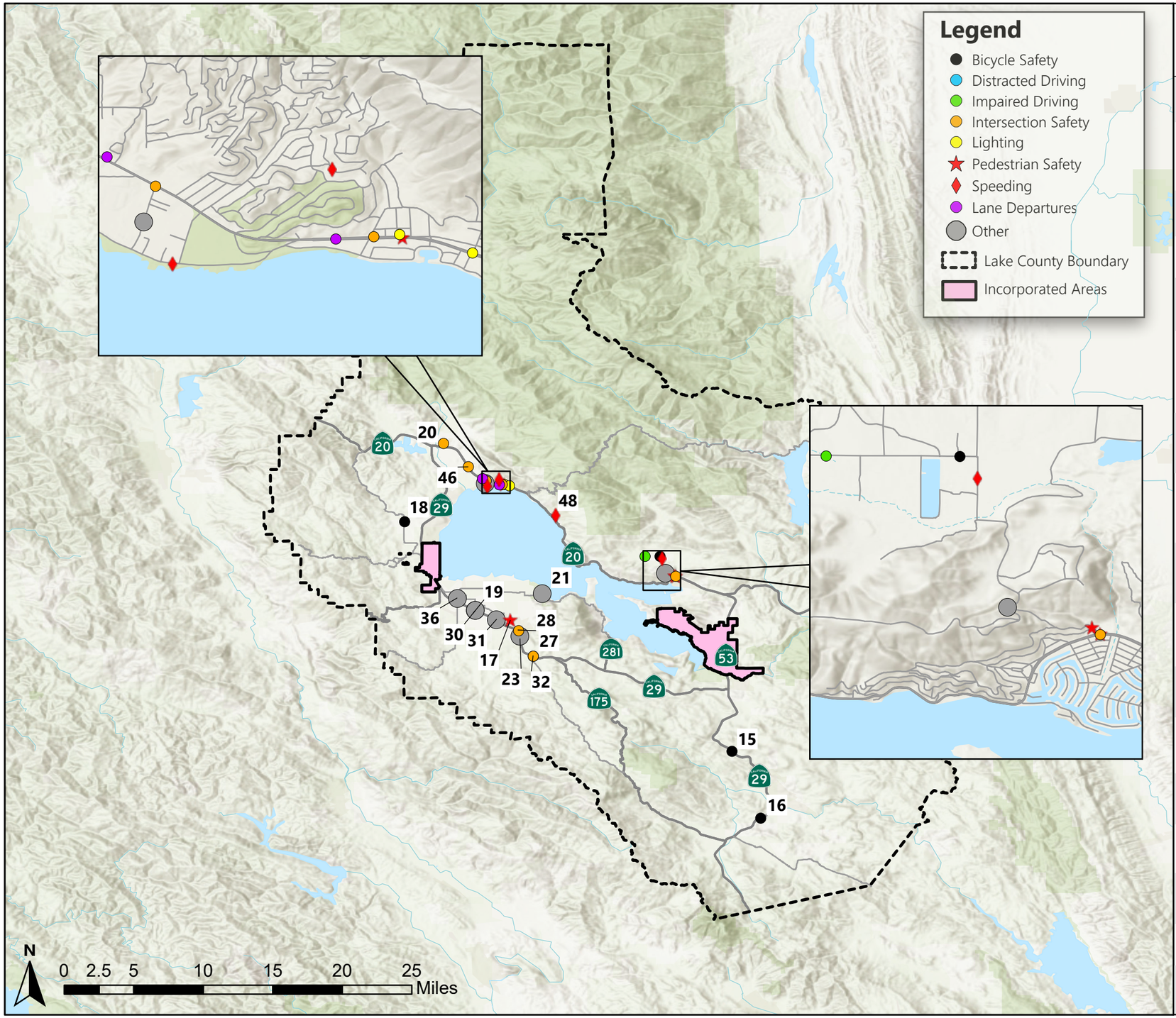


Interactive Map Comments

ID	COMMENT	LIKES
11	School interchange during school hours	1
22	Speeding on Plumas Street in Nice would benefit from the installation of a few speed bumps. In addition to slowing the speeding automotive traffic it would cut down the illegal dirt bike traffic that is rampant in this area.	0
23	Pedestrian lights have malfunctioned since install. Lights regularly flash without any pedestrian around.	1
24	Common passing spot inside turning lane	1
25	Common passing inside turning lane	1
34	This intersection is very unsafe during morning and evening commutes could use a traffic light. Even with a merge lane.	1
35	Road needs to be repaved. The county is improving the park which is nice but the Street is already in poor condition it will only get worse with the increased traffic.	1
38	Corner is dangerous. Road width is not wide enough. Blind corner. Semi trucks, large buses and long vehicles such as limos, box trucks and rv's get stuck around that corner and end up in the ditch, blocking the road for hours and a few times for more than a day, trapping residents in the valley with no way out.	0
39	This is a dangerous area during the drop off and pick up at the school.	1
40	The speed limit needs to be looked at and lowered.	0
41	No comment	0
42	No comment	0
43	Also people walking, riding horses ect.	0
44	People get hit here	0
45	No comment	0
47	No comment	0
49	No comment	0

Figure B-1
Lake County
Local Road Safety Plan (Appendix B)
Interactive Map Heatmap with Comments by Focus Area (Page 1)

GCW ENGINEERS \ SURVEYORS



Interactive Map Comments

ID	COMMENT	LIKES
15	Widen highway to be safe for bicycles and pedestrians from HVL to LL`	1
16	Widen highway to be safe for bicycles and pedestrians between HVL & Middletown	0
17	Sidewalks all along Gaddy Lane	1
18	Scotts Valley Road is a popular route for bicycles. A separate lane/path would also help tractors and horses that travel along this road.	1
19	traffic entering highway 29 from popular events at That Ranch and the Shannon Mercantile create a hazard and needs to be addressed via an overpass, round about or some other solution	1
20	This intersection sees far too many collisions, people speed and do not heed stop signs. An urban traffic circle would be the most effective intervention at this intersection. All of Upper Lake could use an improved sidewalk and street light network as well.	1
21	Damaged or missing highway guardrails that have not been repaired, creating increased risk of severe injuries or fatalities in roadway departure crashes.	1
27	I witness many close calls at this intersections. Primarily a driver stopped heading west waiting to turn left on bottle rock road.	0
28	Many pile ups in the mornings with parents dropping students off for school. I am unaware of any route solutions.	1
30	Planning should have project development to mitigate traffic and distraction created by this activity	0
31	Merritt Rd merginf to Hwy 29 northbound needs an extended merge lane	0
32	This intersection is very dangerous from people diving out in front of traffic unsafely, and people making turns traffic abruptly stops creating a risk of a large accident.	0
33	There is a section of road that is unsafe when driving. Needs repaired.	0
36	Get this bridge repair completed. Been going way too long.	0
46	No comment	0
48	No comment	0

GCW ENGINEERS \ SURVEYORS

Figure B-2

Lake County

Local Road Safety Plan (Appendix B)

Interactive Public Outreach Map with Comments by Focus Area (Page 2)

7. Please provide any comments relating to transportation safety in Lake County below.
I do not want light pollution to increase. We need more sheriff's deputies to enforce the existing laws- should be number 1 in all things
The road conditions - even Hwy 20 - are pretty poor.
Reduced speed limits at priority locations of Highway 20
I think many issues are caused by people not being able to pass enough. Especially on Highway 20 through Lucerne. It's a weird area because it's a major highway that connects Sacramento to the coast, and it goes right through town and barely has multiple lanes until you hit Mendocino. I think safety would be increased dramatically by adding more passing lanes, not just broken yellow lines.
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.
Road conditions are very poor in Lake County, Cars dodging potholes is also a problem.
Clearlake Oaks at High Valley is so dangerous!!!! Day and night school in and school out.
I was an avid cyclist prior to moving to Lake County, often riding 100-150 miles per week. I am okay riding narrow roads. I am okay riding high traffic roads. Many of our Lake County roads are both narrow and high traffic, which is a potentially deadly combination. If we were to widen shoulders in some key areas, cycling would be much more common throughout
It would be nice to have more sidewalks in the County especially on Gaddy Lane. This road is traveled by a lot and is not safe for pedestrians.
The roads need basic maintenance and repaving more than anything.
Trucks on state hwy 20 along the lake shore
Cyclists should be cited for riding in crosswalks when bike lanes are available. If not available, they should follow the same rules of the road as any other vehicle. Bicyclists in sidewalks can be distracting and harmful. There is a large need for sidewalks that span in Nice from Marina Market all along Lakeshore, by Keeling Park, towards Hammond Ave. This is a huge pedestrian corridor that is overlooked. This area also needs lighting. I almost hit a group of kids on bicycles who were riding in dark clothes in the middle of the street next to the Boat House Bar. There are also cars parked blocking the road often making it a transportation nightmare. High street, 17th st, Hartley in Lakeport All need new or improved sidewalks. As well as 11th st. If possible, move or underground power so that poles are not in the way. Often have to push a stroller in the bike lane, if there is one. Would love to be able to walk Lakeport safely. Start slowing traffic on Lakeport blvd.
The speed limit on lakeshore blvd is 35 and people routinely go 40-50 with so many pedestrians. I have almost been hit while running multiple times due to poor lighting, distracted drivers, people speeding, and terrible intersections.
There should be more opportunities to cross the highways (29 and 20) via overpasses- such as at popular destinations like That Ranch and the Shannon Mercantile. It is not reasonable to expect a safe exit/entry during the many events those two places have, without endangering the driving public.
More sidewalks in rural areas.
Please please PLEASE do something about the overpass at Hamburger Hill. It's chaos.
The survey site doesn't work correctly. I live in blue lakes and Hwy 20 is extremely dangerous. The project to "straighten " the Hwy now allows drivers to drive faster and more dangerously. The county has done nothing to make my community safer. It would be great to see our tax dollars better spent.
If you include the low PCI and the need for maintenance in your local road safety plan it may be eligible for a different kinds of funding. There are many streets, especially in the unincorporated parts of Lake County that contain deep potholes or bulging areas of the road. This will lead to people swurving and driving in the wrong lane which poses a
I am in favor of the use of roundabouts all around the county where intersections and traffic flow can benefit.

PUBLIC COMMENTS – SURVEY QUESTION 7

There is a lack of Uber/Lyft transportation. There are plenty of places to go drink, but a lack of uber/lyft operators almost encourages drinking and driving. Getting DUIs in Lake County is almost a right of passage for people. Between are dimmly lit intersections and crosswalks, and drunk/distracted drivers we are not moving traffic safety forward no matter how many things we try. In my observation Lake County seems to accept it's current state.
The roads are awful, not maintained regularly especially "county roads."
In Upper Lake, the intersection of Middle Creek Rd and 2nd NEEDS TO BE A 3 WAY STOP! We have frequent accidents and even more near misses there! Its on the way to the school and there is a ton of traffic there. Its only a 1 way stop now, and causes stand offs between the other 2 directions of roads.
Intersection of middle creek and 2nd in Upper Lake needs to be a 3 way stop. Many accidents happen there.
The county should seriously consider adding urban traffic circles (similar to roundabouts) at dangerous intersections in residential or urban areas. These function better than stop signs, keep traffic moving, reduce the number and severity of collisions, and are compatible with better street lighting, sidewalks, and bike lanes. I spent nearly a decade living in a moderately sized city and urban traffic circles were all over, and they work very well.
Too many people exceed the speed limits especially through Nice and Lucerne in throughout the day but very little enforcement. Put up more cameras if there isnt enough law enforcement officers
Potholes
when its raining lights need to be on and this needs to be enforced
needs major surface repair
Please give attention and support for safety on Scotts Valley Road, including pedestrian, bicycle, and maintenance
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.
People in Lake County are nice drivers. But they are also very slack about how they handle their cars. So while people are conscious about being nice, I do find that drivers here are much more negligent and unpredictable in their movements. It's very common for people to cross the median or drive into shoulder because the think it's faster. E.g. Scott's valley/11th street. (Ironically they're often the slowest drivers in a corner.) Or people will simply turn from the lane of traffic and not from a marked turn lane or from the right most possible position on the road. And we don't do any meaningful enforcement about such rules. I once compared lake county roads to someone recklessly pointing a gun with a finger in the trigger. They might not
People drive so crazy here especially from clearlake oaks to nice round about
I've seen significant improvements in the past few years. Keep moving forward
A major concern is the ongoing lack of timely repair to damaged transportation safety infrastructure, particularly unrepaired or missing guardrails. Guardrails are critical for preventing severe injuries and fatalities, and prolonged delays in repair leave motorists exposed to avoidable danger. Additionally, there is concern about the placement of physical obstacles or objects near highways or roadways for unofficial "space defense," deterrence, or similar purposes. These create unexpected hazards for drivers and significantly increase crash risk at highway speeds.
With so many 2-lane roadways rated for highway speed, a campaign to encourage folks to abide by the solid 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.
I moved to Lake County because I heard it had a strong equestrian community. I was surprised at how dangerous the country roads are for horses, bikes, and pedestrians to be able to travel. Soda bay road is a great road which connects many communities, but is extremely dangerous for bicycles or horses with no bike lane and narrow roads while people
There have been some improvements to the crosswalks throughout Nice and Lucerne, which is great!! It's so dark at night when I'm driving home from late-night meetings. Please keep up the improvements. The flashing lights are so great, and I'm able to see the pedestrians so much better, and it draws my attention to the crosswalk in advance.
Make East Lake School safe!
Improve crosswalk at Eastlake School in Clearlake Oaks.

PUBLIC COMMENTS – SURVEY QUESTION 7

East Lake Elementary School in Clearlake Oaks needs an upgraded sidewalk that's safe for students and staff members. The current sidewalk is extremely outdated and basic. There have been multiple incidents of drivers ignoring the current flashing school zone signs and staff members is the middle of the crosswalk holding a "stop" sign. The current crosswalk needs to be updated to accommodate the current traffic conditions and increase safety of staff and students.
East lake elementary school in Clearlake oaks needs a cross walk. Make the school and surrounding areas safer for the
The school in Clearlake Oaks on Hwy 20 is in desperate need of a safer way to cross the highway. Many families 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
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.
Protect children
We need flashing lights and warning stripes at the East Lake Elementary crosswalk. Having a pedestrian/ bicycle lane around the entire lake would create safety and increase tourism.
A new/updated crosswalk by east lake elementary school is incredibly needed. It's a shame that we do not feel safe taking our children to school
The cross walk to East Lake Elementary across the highway is incredibly unsafe. I pray to God it doesn't take a 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.
The safety of our children is a high priority. Please upgrade the crosswalks at East Lake Elementary School in Clearlake Oaks! ♥ Help keep our students safe!
Street lights or solar lights are needed. Pedestrian safety needs improvement
Pedestrian lights crosswalks at East Lake Elementary School in Clearlake oaks. Drivers often do not stop when 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.
Pedestrian light crosswalk at East Lake Elementary school in Clearlake Oaks. Drivers often do not stop when 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!
Crosswalk safety is very important for all students at every school. Eastlake is on hwy 20.
Excessive speeds on residential roads in the county areas. I realize this is outside of Caltrans responsibility but is a serious problem. We have drivers, and some are actual neighbors, flying up our residential road at approximately 40-50 mph in addition to coming around a blind corner. We need to be able to have speed bumps installed without all of the red tape
We need more law enforcement south of lower lake it has become increasingly dangerous to drive from Middletown to lower lake and the one thing we rarely see in this area is law enforcement
Need turn pockets on Hwy 29 x C st !!!!!!!!!!
I regularly see passing in the turning lanes from glenhaven all the way to blue lakes. Lighting in the main town of nice is extremely dark. We need lighting at all crosswalks and bus stops. The new crosswalk indicators have malfunctioned in nice and upper lake, always flashing without any pedestrians around. Local Drivers seem to just ignore the crosswalk flashing lights because of this malfunction
Too many pedestrians have died. Like it or not our hwy and local road systems ARE used by vulnerable residents, and with improvements could be an appeal for tourists and rec to modernize safety on roadways.
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.
In Clearlake particularly, the quality of the actual streets is another concern. Paving and potholes are a big problem.

PUBLIC COMMENTS – SURVEY QUESTION 7

In my opinion the biggest issues are lack of sidewalks/lighting, and the fact that there a ton of unsafe drivers in lake county. My family lives close enough to the schools in lakeport that my children should be able to walk, but there is I don't think a single sidewalk from our house to the schools, and very few street lights. On top of that people speed like crazy in that area, so I wouldn't even walk that path on my own, let alone allow my kids to. Addition to that, you can't drive anywhere in this county without running into an elderly person that shouldn't be driving. I have personally been cut off by someone not looking, daily they are turning from the far right and not using left turn lanes, plowing through stop signs or alternatively sitting at stop signs and blocking traffic. I understand that there isn't much that can be done about them driving past when they should, but I have called to report these things and I have never seen enforcement happen in the city or the county.
I see lots of speeding traffic use the center turn lane to pass vehicles following the speed limit. Need to leave they're "City Driving" behind when they move to the Country.
I unfortunately feel that education campaigns would be a waste of public funds at this time in our county. I 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
Educating the community what the street signals mean for example "yield"
We need better driving schools offered
All of the county roads need to be repaved for real. Not just patches. The lighting between Lucerne and Upper Lake Sucks. There are people always walking along the highway at all hours of the night, dressed in black or dark colors. When it rains water fills the potholes and divets that cause swirving. People use the turn lanes to pass always in front of the school in Lucerne and Park in Upper Lake. There is not enough enforcement to catch these dangerous drivers.
Lack of turn pockets, acceleration and deacceleration lanes are lacking. There is a lack of roadside recovery area and lack og guardrail along steep slopes. Move the rumble strips at least 1' off the fog line
This county probably has the craziest drivers I've ever seen in my life. People wake up at 4am and go 100mph everywhere and are raging. Get them TWEAKERS!!! They like to speed with speed!!! This is DEATHPROOF!
There needs to be more law enforcement near the schools during school arrival and exiting times, drivers are endangering children
I live in Middletown and many times cars making their way from Lake County to Calistoga on highway 29, they cut around through Stewart street in Middletown to avoid traffic and they speed going 40+miles an hour on a street with many children playing on the street and people walking or riding their bikes. I think it would be great if there could be a stop sign or speed bumps to stop these speedsters from hurting persons.
Night driving in Nice is way too dark especially where there is high pedestrian traffic. Better lighting is needed. Also people drive way too fast. In Lakeport and Kelseyville I also see people driving too fast. Speed bumps heading in and out of town proper would help.
Get the big rigs off of Hopland Grade
Better lighting especially around crosswalks and more sidewalk flashing light letting people no that someone is crossing and biggest issue is spiders especially on hwy 20
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.
The fallen culvert on Hartley, 11th Street and Lakeport Blvd are hazardous. I know a lot of effort has been put into downtown lately, but our other main roads are embarrassing.
The cross walk in front of the East Lake School across highway 20 should have more safety measures.
East lake school in Clearlake oaks needs a very obvious and enforced safeguard at their crosswalk on highway 20. 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 measures. People often walk between lower lake and
North Shore needs more street lights running on HWY 20 especially through Nice and Lucerne. The light up crosswalks are no help when more than half of these pedestrians don't use them!

PUBLIC COMMENTS – SURVEY QUESTION 7

Driver education is also a key to safety. Most younger drivers and most possibly a language issue have created a noticeable decline in driving skills and understanding of the laws. Failing right of ways, intersection protocol, turn lanes
On stewart st there is. O stop people ise it to cut trafic lights. And they sped by there is no sto signs or speed bumb in
Drivers speed on our rural roads. In a 25 mph drivers speed 50+
Please please add passing lanes on 20
Highway 20 between the roundabout in upper Lake and Lucerne needs to be reduced to 35 to 45 the entire way. There are three different speed limits within a 5 mile radius if the speed limit is stated at 55 people are going 65+ with no regulation and little patrol.
Reduce speed limits on highway 20
Speed humps on residential streets where speeding is constant ex: Lakeshore Blvd in Nice!
Please update the crosswalk in front of East Lake school in Clearlake Oaks. The staff, students, and parents deserve a safe crosswalk.
There is no safe walkable or even a way to bicycle to get from Lakeport to Upper Lake/Nice. Please fix this!!
-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.
We need to improve traffic safety conditions and reduce vehicle speeds
Potholes are the worst especially for cyclists, motorized wheelchairs and pedestrians. County needs to find a better way of temporarily fixing so when the first rains comes it doesn't get washed away. Sidewalks are badly needed in Clearlake
Elk Mtn. Rd. Needs realignment and repaveing. The pot holes and uneven roadway have caused many accidents and injuries through the years.
School pedestrian access is paramount
Intersection at Hwy 29 & Highland Springs Rd make the East and West bound right hand lanes right turn only to many driver use them at passing lanes and creates road rage as well. Same goes for Hwy 29 and Red Hills Rd. Plus I think these intersections cause accidents by the people using these right hand lanes to pass.
People need better sidewalks. Add sidewalk on Hwy 53 in Clearlake from Olympic traffic light to Walmart. People get hit all the time as there is no clear path
South Main Street paving. Someones got to give or come to an agreement.
Lines painted clearly with reflectors on both sides of the road (middle and shoulder) along with physical barriers to oncoming traffic in high risk areas
Desperately in need of more stop signs an stop lights.
See above. Our rural roads have no consistency in fence setbacks, so some have wide areas for pedestrian use, some do not. We are still rural and people ride horses along roads to get to parks. There also need to be bike lanes on busy
Hey 20 east from beginning of county line pass blue lakes to 59 , 29, cut off notorious for cars passing 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
East Lake Elementary School on highway 20 in clearlake oaks needs an updated crosswalk it is out dated and unsafe
The survey is not working properly
Don't forget horses, bicycles, and tractors on the non-highway roads. Scotts Valley Road is frequently used by all of those as well as many speeding motorists. It is also important to consider our beautiful and rare night sky. Don't let increased lighting created light pollution and affect owl and other night hunting creatures. Mandate 'dark sky' fixtures.
East Lake Elementary School on Hwy 20 needs a better crosswalk sign. This is a main crosswalk for over 50 students daily. Maybe put in rumble strips and or more flashing lights.
sidewalks and bike lanes in school areas to promote safe travel to and from schools.
Why does it take years to get bridges replaced. Stop using chip seal to maintain roads that clearly need repaved. Repair roads where the pavement has warped from heat and ground moisture they look like a wash board. Repair roads that have distinct unlevel road surfaces that vehicle operation is unsafe. Have a more improved way of communicating to the public the importance of securing there loads and reporting these hazards from roads that can cause accidents.

PUBLIC COMMENTS – SURVEY QUESTION 7

All schools should have speed humps to slow traffic down. Middle Creek and Second Street in Upper Lake should be a 3 way stop!! Or make Second Street the thru street, putting a Stop sign at the corner of Middle Creek /Second. Way too many near misses of people failing to stop at the Second Street stop sign, they don't realize that Middle Creek doesn't have a Stop sign as it curves onto Second Street!!
My father, husband, and also a couple of neighbors have all been rear ended at high speeds while waiting to turn left at Mirabel Road off of Highway 29. I would love to see a turn laying there and in many other places off of Highway 29 on
I think that the north shore communities with many public roads directly off of Hwy need much better signage.
Communities need to be more walkable and bikable, and public transit needs to have more route options for all areas of the county.
Road surface on Highway 175 much worse than the Mendocino County Side.
Since we have already invested so much time and energy into cars. Why not pay some attention to the folks 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
Speeding and Parking enforcement need to be addressed
En lower lake la calle winchester st no tiene alcantarillas dedesague en tiempos de lluvias la calle se inunda totalmente probocando que los autos caigan ala ssnja que con el agua quedan inbisibles
Bicycle sharing on major roadways
Slowing people down! Speed deterrents , speed bumps, higher curbs also in center third lane when appropriate have islands.
people who live in the Lake Pillsbury basin pay property taxes like the rest of lake county but get NO services!
Please no more round abouts in Lake County. Please stop approving projects on the dangerous roads that are 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 lighting especially at street corners. If theres a power pole we can put a light up. We need all officers enforcing traffic laws. I generally only see CHP on the road they need help. I think there are roads that bicycles and pedestrians should not be able to walk or ride. The narrow part of highways, and roads where there are no emergency parking would need signs that state its too dangerous for them. People need to walk where they can see the cars coming. Bikes should only be used where a bike lane can be added and maintained.
Sweep or clean the road ways especially where bikes are suppose to ride on the shoulder. The shoulder needs cleared of debris so bikes can safely ride in the shoulder areas and crap doesn't fly up and hit windshields and pedestrians or
Wider pedestrian walkway badly needed on Bell Hill Road between Highway 29 and Main Street in Kelseyville.

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 (South Campus, Downtown) where a significant number of pedestrian crashes have occurred in order to apply a targeted approach and create a greater overall reduction in crashes. In the South Campus area, recommendations from the South Campus Neighborhood Improvement Plan may comprise the majority of the engineering improvements which would be bolstered by an increase in enforcement contingent upon available Police staffing levels.

(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 (South Campus, Downtown, etc). *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

Lake County Unincorporated 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 highest area of concern in public outreach survey
Accounts for 6% of Serious and Fatal Crashes, and 7% of All 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	Lake County - 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.	Lake County - Public Works & Law Enforcement, and Other Local Partners	Short-term / Medium-term	Monthly social media blast providing educational materials from Lake County - Public Works (Secondary parties may be used to amplify and extend the reach of the campaign through coordination with the Lake County 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.*	Lake County Police / Sheriff 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 Lake County Unincorporated	Lake County Police / Sheriff 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

Lake County Unincorporated 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 third highest priority in the public outreach survey
Second most common Primary Crash Factor, accounting for 20 percent of all crashes and 32 percent of fatal and serious injury crashes

Objectives	**Success Indicators**
Alcohol/drug involved crashes, injuries, and fatalites 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	Lake County 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
	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for increased presence	Increased number of ride-hailing services and vehicles available	Lake County 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
	Coordinate with Transportation Network Companies (Uber, Lyft, etc.) for a Sober Ride Home program	Established program to provide Sober Rides Home to residents	Lake County 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.*	Lake County Police / Sheriff 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
	Publicized DUI Checkpoints	Publicly noticed DUI checkpoints conducted during high alcohol-involved periods, contingent on staff resources	Lake County Police / Sheriff 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)
	Increased rate of crash data completion	Crash data for all applicable fields are completed for all crashes within Lake County Unincorporated	Lake County Police / Sheriff 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

Lake County Unincorporated 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.
20 percent of the crashes identifying 'Unsafe Speed' as the PCF

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	Lake County Public Works and Lake County Police / Sheriff	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	Lake County Public Works and Lake County Police / Sheriff	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.	Lake County Public Works and Lake County Police / Sheriff	Short-term / Long-term	Short-term: Grant Application(s) completed Long-term: Constructed safety countermeasures		HSIP, NHTSA 402, SS4A

Lake County Unincorporated 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 4th highest concern in the public outreach survey, and 'Intersection Improvements' ranked as the 4th highest preferred safety improvement
Improper turning is the most common primary collision factor
Rear-end and broadside are the 2nd and 3rd most common crash types

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 Lake County Unincorporated		Lake County Police / Sheriff 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, 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 ***Signalized*** Intersection Safety Countermeasures	Add intersection lighting	Lake County 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
			Improve signal timing (coordination, phases, red, yellow, or operation)					
			Install Emergency Pre-emption systems					
			Install raised pavement markers and striping (through intersection)					
			Install flashing beacons as advance warning (S.I.)					
			Improve pavement friction (High Friction Surface Treatments)					
			Install pedestrian countdown signal heads					
			Install pedestrian crossing (S.I)					
			Modify signal phasing to implement a Leading Pedestrian Interval (LPI)					
		Potential ***Unsignalized*** Intersection Safety Countermeasures	Upgrade intersection pavement markings (NS.I.)					HSIP, ATP, CMAQ, SS4A
			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		Lake County 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.*

Lake County Unincorporated 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.
10% of fatal crashes involved a pedestrian
The majority (over 50%) occurred in the roadway
30% occurred crossing an intersection not in a crosswalk

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 Lake County Unincorporated. 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.*	Lake County School District & Lake County Public Works	Long-term	**Short-term**: Pilot pedestrian safety program initiated at least one Lake County 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	Lake County School District & Lake County 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 Lake County Unincorporated	Lake County Police / Sheriff 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	Lake County School District & Lake County 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 , SS4
Engineering	ADA Compliance	Design standards are reviewed and updated as needed for ADA compliance. Constructed projects are ADA compliant.	Lake County Public Works	Short-term / Long-term	**Short-term:** Standards reviewed and updated **Long-term:** Projects meet ADA compliance	Completed ADA compliant projects	ATP , SS5
	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 pedestrian crossing 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)	Lake County 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

Lake County Unincorporated 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
1.5% of Fatal crashes, and 2% of serious injury crashes involved a bicyclist

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	Lake County School District & Lake County Public Works Local Bike Advocacy Groups	Long-term	**Short-term:** Pilot bicycle safety program initiated at least one Lake County School District affiliated school **Long-term:** Bicycle safety program incorporated into Physical Education curriculum across all Lake County 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	Lake County Police/ Sheriff & Lake County Public Works Local Bike Advocacy Groups	Long-term	Bicycle Safety & Basics course for Lake County 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	Lake County Police/ Sheriff & Lake County 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	Lake County Public Works & Department of Motor Vehicles	Long-term	Driver safety training provided in the Lake County 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	Lake County 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 Lake County Unincorporated	Lake County Police / Sheriff 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	Safe Routes to School Planning	Comprehensive plan to improve walking and biking safety for students to / from school	Lake County School District & Lake County 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
	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)	Lake County 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

Lake County Unincorporated 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.
•36% of fatal crashes, 26% of serious injury crashes, 27% of all crashes in conditions of 'Dark – No Street Lights' and Dark 'Street Lights not Functioning'

Objectives	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.	Lake County School District & Lake County 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 Lake County Unincorporated	Lake County Police / Sheriff 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	Lake County 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

Lake County Unincorporated 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
Collison types associated with lane departures accounted for 74 percent of the total roadway 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 Lake County Unincorporated	Lake County Police / Sheriff 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	Lake County 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	Lake County 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 emergency vehicle notifications	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, SS4A

Lake County Unincorporated 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. 16% of fatal crashes and 21% of 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	Lake County Police/ Sheriff & Lake County 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

Lake County Unincorporated – POTENTIAL PROJECT PACKAGES

Background

Past HSIP Awards

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.
11	Lake County – Tribal / Robinson Rancheria Guardrail & Sign Replacement	Replacement of street signs (regulatory, warning, information) and guardrails, plus crosswalk enhancements (on Pomo Way), on lands administered by the Robinson Rancheria in Lake County.

Previous LRSP Recommendations

- Intersection Safety – Systemic Unsignalized Intersections – 10 locations
- Pedestrian Safety – Systemic Pedestrian Crosswalk at Unsignalized Intersections – 3 locations
- Point Lakeview Road
- Systemic Roadway Project – 14 locations
- Systemic Pedestrian Crossings – 4 locations
- Systemic Dynamic/Variable Speed Warning Signs – 14 locations

Projects from Previous Studies

- Lucerne Roads Complete Streets and Safety Improvements – SR 20 and 1st Avenue through 17th Avenue
  (2026 Lake County Draft Regional Transportation Plan/Active Transportation Plan)
- Highway 20 Northshore Communities Traffic Calming Plan and Engineering Feasibility Study

LAKE COUNTY UNINCORPORATED POTENTIAL PROJECTS

1. Systemic Roadway Improvements
2. Systemic Lighting Project
3. Systemic Unsignalized Intersection Improvements
4. Systemic Pedestrian Improvements
5. Systemic Bicycle Improvements
6. Site Specific: Scotts Valley Road
7. Site Specific: Soda Bay Road
8. Site Specific: Bottle Rock Road
9. Site Specific: Butts Canyon
10. Site Specific: Main Street (Kelseyville)
11. Site Specific: SR 20

1. Systemic Roadways

Project Description

The potential project is to improve roadway segments with features primarily to reduce lane departure crashes – this is often attributed to run-off-the road or side-swipe crash types. This project aims to improve pedestrian safety as well.

Project Need

In the unincorporated areas of Lake County:

- Collison factors such as unsafe speed, wrong side of the road, and impaired driving account for more than half of the crashes
- Hit object is the most frequent crash type (all crashes and serious/ fatal), followed by head-on and broadside. These are attributed to roadway safety.
- Roadway (vs Intersection) crashes account for 87% of all, and 95% of serious injury and fatal crashes.
- Distracted driving accounted for 3 fatal and 15 serious injury crashes on roadways
- The primary crash type on roadways was hit object (50%)
- Majority (over 70% injury crashes) occurred on state highways vs local roads

Public Endorsement

In the public survey, distracted driving was the highest concern. Pedestrian safety was also the most preferred improvement. Two map comments referenced lane departure safety.

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

Table 1 shows the potential locations for roadway improvements on local (non-state) roadways with severe or fatal crashes. This list is preliminary. It may be modified, expanded or reduced in subsequent phases of grant application or planning. The limits along each roadway and specific countermeasures will be defined in subsequent planning phases.

Lake County Unincorporated – POTENTIAL PROJECT PACKAGES

Table 1. Lake County Potential Roadway Improvements Locations

	Associated Crash History		
Primary Roadway	**Secondary Roadway**	**Severity**	**Crash Type**
7th Avenue	Country Club Drive	Severe Injury	Overturned
Bartlet Springs Rd	Twin Valley Rd	Severe Injury	Overturned
	Walker Ridge Rd	Severe Injury	Hit Object
	Selkirk Road	Severe Injury	Overturned
	Brim Road	Fatal	Overturned
Big Valley Rd.	Renfro Dr.	Severe Injury	Head-On
Bottle Rock Road	SR-175	Severe Injury	Hit Object
	Nancy Drive	Severe Injury	Hit Object
Bridge Arbor North	SR-20	Severe Injury	Other
Butts Canyon Rd	Guenoc Rd	Severe Injury	Overturned
	Guenoc Rd	Severe Injury	Hit Object
	Napa County Line	Fatal	Overturned
	Napa Co. Ln.	Severe Injury	Overturned
	Guenoc Road	Severe Injury	Hit Object
	Oat Hill Road	Severe Injury	Overturned
Country Club Dr	Ogden Rd	Severe Injury	Hit Object
	5th Avenue	Severe Injury	Hit Object
	Tenth Avenue	Severe Injury	Vehicle/ Pedestrian
Doe Trail	Wolf Creek Road	Severe Injury	Overturned
E Finley Road	Dorn Xing	Severe Injury	Other
Elk Mountain Road	18 N 42	Severe Injury	Overturned
Finley East Rd	Dorn Crossing	Severe Injury	Hit Object
Foothill Dr	SR-20	Severe Injury	Overturned
Hartmann Rd	Coyote Valley Rd	Severe Injury	Hit Object
	Hidden Valley Road	Severe Injury	Overturned
Highland Springs Road	Fritch Rd	Severe Injury	Hit Object
	Bell Hill Road	Severe Injury	Hit Object
	Matthews Road	Severe Injury	Hit Object
Hill Road East	Hill Road	Severe Injury	Broadside
Lake St	Tish A Tang Rd	Severe Injury	Broadside
	Lower Lake, school area	NA	NA
Lakeshore Blvd	Park Way	Severe Injury	Hit Object
	Lakeview Drive	Severe Injury	Head-On
	Rocky Point Road	Severe Injury	Hit Object

	Hill Road	Fatal	Broadside
	Beach Lane	Severe Injury	Overturned
Lee Barr Dr.	SR-29	Severe Injury	Head-On
Loch Lomond Road	Black Oak Rd	Severe Injury	Hit Object
Merritt Rd	SR-29	Severe Injury	Rear End
Morgan Valley Rd.	Reiff Rd.	Severe Injury	Overturned
	Oak Haven Rd.	Severe Injury	Hit Object
	Rocky Creek Rd	Fatal	Hit Object
	Mcrae's Ridge Road	Severe Injury	Overturned
New Long Valley Road	Pomo Trail	Severe Injury	Hit Object
Nice Lucerne Cutoff	Lakeshore Blvd	Fatal	Head-On
	Lakeshore Boulevard	Severe Injury	Overturned
	Rodman Slough Bridge	Fatal	Hit Object
	Lakeshore Boulevard	Severe Injury	Broadside
Point Lakeview Road	Miller Road	Severe Injury	Hit Object
Scotts Creek Road	Panther Ridge Road	Fatal	Overturned
Scotts Valley Rd	Hill Rd, East	Severe Injury	Hit Object
	SR-20	Severe Injury	Hit Object
Seigler Canyon Rd.	Big Canyon Rd.	Severe Injury	Sideswipe
	Perini Road	Severe Injury	Broadside
Simmons Road	Elk Mountain Road	Severe Injury	Hit Object
Soda Bay Rd	Westlake Dr.	Severe Injury	Hit Object
	Reeves Ln	Severe Injury	Broadside
	Montezuma Way	Fatal	Head-On
	Glebe Road	Severe Injury	Hit Object
	Mission Rancheria Rd	Severe Injury	Head-On
	Stone Drive	Fatal	Hit Object
	Little Borax Lake Road	Severe Injury	Overturned
	Mission Rancheria Road	Fatal	Vehicle/ Pedestrian
	Bayshore Lane	Severe Injury	Broadside
South Main Street	Sr-175 Hopland Ext	Severe Injury	Rear End
Spring Valley Road	Wolf Creek Road	Severe Injury	Hit Object
	Dogwood Way	Severe Injury	Head-On
Spruce Grove Rd	Deer Hill Road	Severe Injury	Hit Object
	Old Spruce Grove Rd.	Severe Injury	Hit Object
	Deer Hill Rd	Severe Injury	Hit Object
State St	Main St	Severe Injury	Hit Object
Sulphur Bank Drive	North Drive	Severe Injury	Overturned

Trail 17	Scotts Creek Road	Fatal	Overturned
Westlake Road	Nice-Lucerne Cutoff	Fatal	Hit Object

Potential Countermeasures

Potential countermeasures are provided in **Table 2,** 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 2. 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
R21	Geometric Mod.	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	High
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
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

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.

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 Description

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

Project Need

In the unincorporated areas of Lake County:

- 36% of fatal crashes, 26% of serious injury crashes, 27% of all crashes in conditions of 'Dark – No Street Lights' and Dark 'Street Lights not Functioning'
- The most common crash is hit-object (this may be attributed to lighting in some areas)
- The majority of crashes are along roadway segments, which often have less lighting than intersections (87% of all, and 95% of serious injury and fatal crashes)
- 50% of crashes involving a pedestrian occurred along a roadways, which often have less lighting than intersections

Public Endorsement

Better Street lighting was listed as a priority for improvements in the public survey. Lighting conditions were specified in two locations on the outreach map for the Lake County Unincorporated area- both were near Nice off Hwy 20.

Potential Locations

Lighting conditions for all potential locations should be verified in a field/lighting evaluation to determine if levels are sufficient.

Table 3 shows the potential locations on local roads where a 'Dark Conditions No Streetlights' or 'Streetlights not Working' resulted in an injury crash.

Table 3. Potential Lighting Project Locations, Lake County Unincorporated

Primary Road	Secondary Road	Intersection	Severity	Crash Type	Lighting
Bell Hill Rd	Hilltop Dr	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Bell Hill Ln	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Big Valley Rd	Highland Springs Rd	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Renfro Dr.	N	Severe Injury	Head-On	Dark - No Street Lights
	Argonaut Rd	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Bottle Rock Rd.	Saw Mill Rd.	Y	Other Visible Injury	Broadside	Dark - No Street Lights
	SR-175	N	Severe Injury	Hit Object	Dark - No Street Lights
	Sulphur Creek Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Elliotts Way	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Nancy Drive	N	Severe Injury	Hit Object	Dark - No Street Lights
Bridge Arbor North	SR-20	N	Severe Injury	Other	Dark - No Street Lights
Butts Canyon Rd	8919 Butts Canyon Rd.	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Guenoc Road	N	Severe Injury	Hit Object	Dark - No Street Lights
Cal Packing Rd	Soda Bay Rd	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Clover Valley Road	Sam Alley Ridge Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Country Club Dr	4th St	N	Other Visible Injury	Sideswipe	Dark - No Street Lights
Elk Mountain Road	18 N 42	N	Severe Injury	Overturned	Dark - No Street Lights
	Mendenhall Ave	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Foothill Dr	SR-20	N	Severe Injury	Overturned	Dark - No Street Lights
Gaddy Lane	Blue Ct	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	State Street	Y	Other Visible Injury	Hit Object	Dark - No Street Lights
Hartmann Rd	Coyote Valley Rd	N	Severe Injury	Hit Object	Dark - No Street Lights
	Coyote Valley Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
High Valley Rd.	Dwinell Dr.	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Cerrito Dr	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Highland Springs Road	Matthews Road	N	Severe Injury	Hit Object	Dark - No Street Lights
Keys Blvd	6th St	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Konocti Road	Single Spring Drive	N	Other Visible Injury	Vehicle/ Pedestrian	Dark - No Street Lights
	Vista Mountain Estates Rd	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Lakeshore Blvd	Shannon Lane	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Live Oak Drive	SR-29	N	Other Visible Injury	Head-On	Dark - No Street Lights
Loch Lomond Road	Black Oak Rd	N	Severe Injury	Hit Object	Dark - No Street Lights
Manzanita Dr	Wright Way	N	Other Visible Injury	Hit Object	Dark - No Street Lights

Merritt Road	North Main Street	Y	Other Visible Injury	Broadside	Dark - No Street Lights
Mid Lake Road	Sr-20	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Morgan Valley Rd	Reiff Rd	N	Other Visible Injury	Hit Object	Dark - No Street Lights
New Long Valley Road	Pomo Trail	N	Severe Injury	Hit Object	Dark - No Street Lights
Nice Lucerne Cuttoff Rd.	Lakeshore Blvd.	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Old Lucerne Rd	Big Oak Way	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Point Lakeview Road	Miller Road	N	Severe Injury	Hit Object	Dark - No Street Lights
	Lassen Way	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Konocti Vista Drive	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Sunset Ridge Drive	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Riggs Rd W/O Riggs Ct	Riggs Ct	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Riggs Road	Scotts Creek Road	N	Other Visible Injury	Overturned	Dark - No Street Lights
Scotts Valley Rd.	Hill Rd.	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Mountview Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Laurel Dell Road	N	Other Visible Injury	Rear End	Dark - No Street Lights
Seigler Canyon Rd	Seigler Springs Rd N	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Perini Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Perini Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	SR-29	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Mile Post 1.34	N	Other Visible Injury	Hit Object	Dark - No Street Lights
Seventh Avenue	SR-20	N	Other Visible Injury	Sideswipe	Dark - No Street Lights
Soda Bay Road	State Park Road (East)	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Stone Drive	N	Fatal	Hit Object	Dark - No Street Lights
	Osprey Court	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Big Valley Road	N	Other Visible Injury	Hit Object	Dark - No Street Lights
	Mission Rancheria Road	N	Fatal	Vehicle/ Pedestrian	Dark - No Street Lights
Spruce Grove Rd	Deer Hill Road	N	Severe Injury	Hit Object	Dark - No Street Lights
	13505 Spruce Grove Rd.	N	Other Visible Injury	Hit Object	Dark - No Street Lights

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 high.

Considerations

- Field evaluation to confirm lighting needs
- Systemic locations added in as needed.

3. Systemic Unsignalized Intersections

Project Description

The potential project is to enhance and upgrade unsignalized intersections with safety features.

Project Need

In the unincorporated areas of Lake County:

- Improper turning is the most common primary collision factor
- Rear-end and broadside are the 2nd and 3rd most common crash types

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 4th highest concern in the public outreach survey. In the same survey, *'Intersection Improvements'* ranked as the 4th highest preferred safety improvement. Additionally, there were 4 individual georeferenced map comments regarding intersection safety.

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. The majority of locations are local side-streets intersection a state highway.

Table 5. Potential Unsignalized Intersection Locations

Intersection	Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	PDO	Total	Intersection Control	Map Votes
SR-29/Main Street	1	0	2	2	5	10	Unsignalized	1
SR-29/Bell Hill Road	0	1	3	4	5	13	Unsignalized	0
SR-20/SR-53	0	1	1	0	4	6	Roundabout	0
SR-29/Point Lakeview Road	0	1	1	0	0	2	Unsignalized	0

SR-29/Seigler Canyon Road	0	1	0	0	1	2	Unsignalized	0
SR-20/Howard Avenue	0	1	0	0	1	2	Unsignalized	0
SR-29/Anderson Ranch Parkway	0	1	0	0	0	1	Unsignalized	0
SR-20/Catholic Church Road	0	1	0	0	0	1	Unsignalized	0
SR-20/Foothill Boulevard	0	1	0	0	0	1	Unsignalized	0
SR-20/Lakeshore Boulevard	0	1	0	0	0	1	Unsignalized	0
SR-29/Grange Road	0	1	0	0	0	1	Unsignalized	0
Lakeshore Boulevard/Collier Ave	0	1	0	0	0	1	Unsignalized	0
SR-20/Saratoga Springs Road	0	1	0	0	0	1	Unsignalized	0
SR-29/Rancheria Road	0	0	1	5	9	15	Unsignalized	0
SR-20/Pyle Road	0	0	4	0	7	11	Roundabout	0
Merritt Rd/Big Valley Rd	0	0	3	1	7	11	Unsignalized	0
SR-20/Lakeview Drive	0	0	1	2	5	8	Unsignalized	0
SR-29/Bottle Rock Rd	0	0	4	1	1	6	Unsignalized	2
Lake Street/ Jessie Street	0	0	1	2	3	6	Unsignalized	0
SR-281/Fairway Drive	0	0	0	2	2	4	Unsignalized	0
SR-29/Thomas Drive	0	0	0	1	3	4	Unsignalized	2
SR-29/Merritt Rd	0	0	1	1	0	2	Unsignalized	1
SR-20/Sixth Avenue	0	0	1	0	0	1	Unsignalized	0
SR-20/Hoover Street	0	0	1	0	0	1	Unsignalized	0
Government St/First Street	0	0	0	1	0	1	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. 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 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
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.

Considerations

- Any intersections including a state highway will require coordination with Caltrans to pursue improvement projects.
- 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 Improvements

Project Description

The potential project is to construct crosswalks, multiuse paths, sidewalks and enhancements to locations with these features.

Project Need

In the unincorporated areas of Lake County:

- 10% of fatal crashes involved a pedestrian
- The majority (over 50%) occurred in the roadway (potentially indicating the need for more sidewalks)
- 30% occurred crossing an intersection not in a crosswalk
- Half of the pedestrian crashes in the roadway occurred along SR 20

From the Survey:

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

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

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

Public Endorsement

In the public survey, *'Pedestrian Safety'* was the 2nd highest ranked safety concern. '*Expanded Sidewalk Network*' and '*More or Improved Pedestrian Crosswalks*' was ranked 3rd and 5th priority for preferred improvements in the survey. In addition, 3 map comments were on pedestrian safety.

Potential Locations and Risk Factors

Locations were dispersed, but generally along the major state highways, SR 20, SR 29 and SR 53. **Table 7** shows potential locations on local roads, based on crash data analysis, public outreach, previous studies, etc.

Table 7. Potential Locations for Pedestrian Improvements in Lake County Unincorporated

Primary Road	Secondary Road	Intersection	Severity
Soda Bay Road	Mission Rancheria Road	N	Fatal
Country Club Drive	Tenth Avenue	N	Severe Injury
Alterra Drive	Lakeshore Blvd.	N	Other Visible Injury
High Valley Road	Cerrito Dr	N	Other Visible Injury
Konocti Road	Single Spring Drive	N	Other Visible Injury
Renfro Drive	Big Valley Road	N	Other Visible Injury
Country Club Dr	SR-20	N	Other Visible Injury
Dry Creek Cut Off	Dry Creek Annex Road	N	Possible Injury
Lakeshore Blvd.	Howard Ave.	N	Possible Injury

Government St	First St	Y	Possible Injury
County Club Drive	6th Avenue	N	PDO
Hidden Valley Rd	Huckleberry Ct	N	PDO
School Crossing Associated with the following schools*			
Public Outreach Map Comments on Local Roads: Gaddy Lane, Clearlake Oaks Schools			
Blue Heron School (9-11)	Highlands Academy (2-8)	Lower Lake High School (9-12)	Pomo Elementary School (TK-7)
Burns Valley Elementary School (K-7)	Kelseyville Elementary School (K-5)	Lucerne Elementary School	Riviera Elementary School (K-5)
Clover Valley High School (Continuation School)	Kelseyville High School (9-12)	Middletown High School (9-12)	Shade Canyon (K-8)
Cobb Mountain Elementary School (K-6)	Kelseyville Learning Academy (K-12)	Middletown Middle School (7-8)	Terrace Middle School (4-8)
Coyote Valley Elementary School (K-6)	Lake County International Charter School (K-8)	Minnie Cannon Elementary School (K-6)	Upper Lake Elementary School (K-5)
East Lake Elementary School (TK-7)	Lewis School (Independent Study) (K-12)	Mt. Vista Middle School (6-8)	Upper Lake High School (9-12)
Ed Donaldson Education Center (9-12)	Loconoma Valley High School (Continuation School) (11-12)	Natural Continuation High School (9-12)	Upper Lake Middle School (6-8)
Hance Community School (7-12)	Lower Lake Elementary School (TK-7)	Obsidian Middle School (6-8)	William C. Carle High School (Cont.) (9-12)
Other projects as identified in the ATP and other studies.			

**Schools in Lake County unincorporated area. This list may not be complete.*

Potential Countermeasures

Potential countermeasures are provided in **Table 8,** along with corresponding HSIP data as applicable.

Table 8. Countermeasures for Pedestrians Crosswalks

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
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
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

R38PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	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.

Considerations

- Projects should be constructed where they would provide the greatest benefit considering pedestrian generators, existing and planned sidewalks.
- 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. Systemic Bicycle Improvements

Project Description

The potential project is to construct crosswalks, bicycle lanes, multiuse paths, sidewalks and enhancements to locations with these features.

Project Need

In the unincorporated areas of Lake County:

- 1.5% of Fatal crashes, and 2% of serious injury crashes involved a bicyclist
- Half of the bicycle-related crashes occurred along SR 20.

From the Survey:

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

"Lighting on roads and expanded area for bike riders"

Public Endorsement

Bicycle Safety was ranked as the 4th highest priority in the public outreach survey. Four map comments referenced bicycle safety.

Potential Locations and Risk Factors

Table 9 shows potential locations on local roads, based on crash data analysis, public outreach, previous studies, etc.

Table 9. Potential Locations for Bicycle Improvements in Lake County Unincorporated

Primary Road	Secondary Road	Intersection	Severity
Lakeshore Boulevard	Hill Road	N	Fatal
Lakeshore Boulevard	Beach Lane	N	Severe Injury
Country Club Dr	Ogden Rd	N	Severe Injury
1st Avenue	Highland Avenue	N	Other Visible Injury
2nd St	League St.	N	Other Visible Injury
Lakeshore Boulevard	Park Way	Y	Other Visible Injury
Schindler Street	First Street	Y	Possible Injury
Outreach Map Locations on Local Roads: High Valley Road, Scotts Valley Road			
School Crossing Associated with the following schools*			
Blue Heron School (9-11)	Highlands Academy (2-8)	Lower Lake High School (9-12)	Pomo Elementary School (TK-7)
Burns Valley Elementary School (K-7)	Kelseyville Elementary School (K-5)	Lucerne Elementary School	Riviera Elementary School (K-5)
Clover Valley High School (Continuation School)	Kelseyville High School (9-12)	Middletown High School (9-12)	Shade Canyon (K-8)

Cobb Mountain Elementary School (K-6)	Kelseyville Learning Academy (K-12)	Middletown Middle School (7-8)	Terrace Middle School (4-8)
Coyote Valley Elementary School (K-6)	Lake County International Charter School (K-8)	Minnie Cannon Elementary School (K-6)	Upper Lake Elementary School (K-5)
East Lake Elementary School (TK-7)	Lewis School (Independent Study) (K-12)	Mt. Vista Middle School (6-8)	Upper Lake High School (9-12)
Ed Donaldson Education Center (9-12)	Loconoma Valley High School (Continuation School) (11-12)	Natural Continuation High School (9-12)	Upper Lake Middle School (6-8)
Hance Community School (7-12)	Lower Lake Elementary School (TK-7)	Obsidian Middle School (6-8)	William C. Carle High School (Cont.) (9-12)
Other projects as identified in the ATP and other studies.			

**Schools in Lake County unincorporated area. This list may not be complete.*

Potential Countermeasures

Potential countermeasures are provided in **Table 10,** along with corresponding HSIP data as applicable.

Table 10. Countermeasures for Pedestrians Crosswalks

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
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
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

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.

Considerations

- Projects should be constructed where they would provide the greatest benefit considering pedestrian generators, existing and planned sidewalks.
- 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.

6. – 10. Site Specific Corridors (Local Roads)

Project Description

The potential project is to provide safety improvements along specific segments of local roadways in the Lake County unincorporated area.

Project Need

- High crashes/mile corridors

Potential Locations

6. **Scotts Valley Road (SR 20-Mountain View Rd)**
   - Crashes per mile: 2.3
   - ~11 miles
   - 0 Fatal, 2 Severe Injury
7. **Soda Bay Road (Sr-29 to Gaddy Ln)**
   - Crashes per mile: 10.4 and 9.1 (by segment)
   - ~17 miles
   - 3 Fatal, 6 Severe Injury
8. **Bottle Rock Road (SR-29 to 175)**
   - Crashes per mile: 2.9
   - ~11 miles
   - 0 Fatal, 2 Severe Injury
9. **Butts Canyon (29 to County Line)**
   - Crashes per mile: 3.8
   - ~12 miles
   - 1 Fatal, 5 Severe Injury
10. **Main Street (Kelseyville)**
    - **2 injury crashes ('Other Visible Injury')**

Table 11 summarizes additional corridors with fatal and severe injury crashes.

Table 11. Corridor Fatal and Severe Injury Crashes

Roadway	Fatal Crashes	Severe Injury Crashes
Barlett Springs	1	3
Lakeshore Blvd	1	5
Morgan Valley Rd	1	3
Nice-Lucerne Cutt off	2	2

Table 12 shows potential countermeasures for roadway segments.

Table 12. Countermeasures for Roadways

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
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
R21	Geometric Mod.	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	High
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
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
R36PB	Ped and Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium
R38PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	90%	Medium

Source: HSIP

BCR Potential

The Benefit Cost Ratio (BCR) would be determined by specific locations, limits and countermeasures applied.

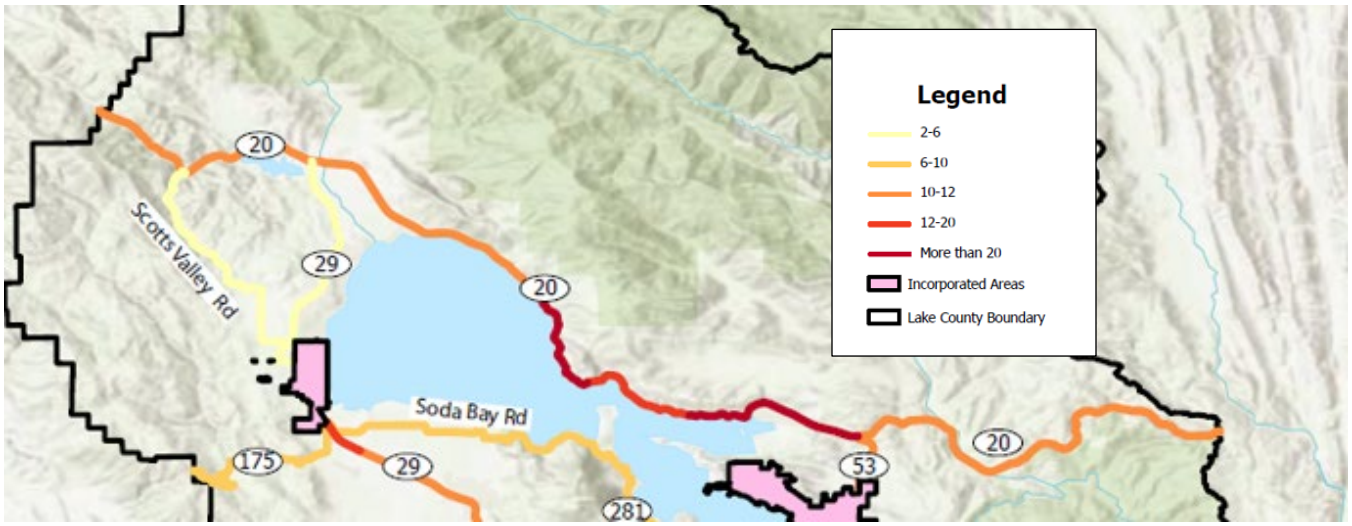
11. SR 20

Project Description

The potential project is to provide safety, traffic calming and multimodal improvements along SR 20.

Project Need

- Long established needs on this corridor in previous studies
- High crashes/ mile corridor



- Over 30% of intersection crashes occur along SR 20
- Nearly half of pedestrian crashes occur along SR 20

Public Endorsement

Corridor with most map comments – 2 on lane departures and 2 on intersection safety

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 SR 20

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
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
NSI01NT	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	90%	Medium
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
R21	Geometric Mod.	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	High
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

Lake County Unincorporated – POTENTIAL PROJECT PACKAGES

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP	Systemic Approach Opportunity?
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
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
SI01NT	Lighting	Add intersection lighting (S.I.)	Night	40%	20	90%	Medium
SI03	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	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

Source: HSIP

Considerations

- Any intersections including a state highway will require coordination with Caltrans to pursue improvement projects.
- Countermeasures and locations should be considered with past studies/plans.

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
Lake County 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	11

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)	11
Public Outreach (Appendix B for detail)	13-19

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)
Lake County Policies and Standards	7
Lake County 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)	81-85

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)	87-91
Implementation Funding and Time Frames (Appendix D for detail)	93-97

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)
Lake County Local Road Safety Plan	May xx, 2026	Cover Page