Local Road Safety Plan

Final Report

City of Healdsburg

December 06, 2021

REPORT SIGNATURE SHEET

This Local Road Safety Plan for the City of Healdsburg has been prepared under the direction of the following Professional Engineer. The Registered Civil Engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

Kathryn Savoy Kleinschmidt, PE
Registered Civil Engineer

December 6, 2021

Date

Acknowledgements

A special thanks to all the Safety Partners that contributed to this plan.

City of Healdsburg

Mayor and Councilmembers

Public Works

Police Department

Sonoma County

Transportation and Maintenance

Health Services

Transportation Authority

Transit

Caltrans, District 4

Healdsburg Unified School District

The Healdsburg School

St. John the Baptist Catholic School

Healdsburg 2040

Executive Summary

In 2020, the City of Healdsburg was awarded a state grant from Caltrans to perform a Local Road Safety Plan (LRSP). The LRSP is a requirement for Cycle 11 of the Highway Safety Improvement Program (HSIP) grant funding. The LRSP includes a citywide analysis of the roadway system in Healdsburg comprising of the current collisions patterns and high-risk roadway characteristics (systemic analysis). Healdsburg's goal is to identify safety countermeasures to help mitigate the City's primary crash type trends and reduce the overall collision severity.

The LRSP is a collaborative process with a local leadership group that represents the 5 E's (not just engineering) and public outreach. **The 5 E's of traffic safety include Engineering, Enforcement, Education, Emergency Services, and Emerging Technologies.**

This holistic approach allows certain areas of concern not showing a crash pattern to be analyzed. Also, it fosters local, state, and agency partnerships to advance local road safety.

In following the overall LRSP process, a Stakeholder Working Group (Working Group) was formed with the City as the lead and local organizations from the 5 E's and anyone with an interest in improving the City's roadway safety. This group gathered for meetings to discuss the overall collision analysis, goals, priorities, safety recommendations, and overall development of the safety plan.

Based on the past 5 years collision analysis and the City's Stakeholder Working Group Meetings, this LRSP will address multiple Strategic Highway Safety Plan (SHSP) Challenge Areas including but not limited to:

1. Bicyclists
2. Intersections
3. Pedestrians
4. Distracted Driving
5. Aggressive Driving / Speeding

In addition, the vision, mission statement, and goals were established in guiding the development of the LRSP. It was also decided that the LRSP for the City of Healdsburg would be a living document with a recommended update every five (5) years.

The following strategies are recommended for the focused study locations and Citywide systemic applications for the 5 E's of Traffic Safety.

1. Engineering: Apply low-cost safety countermeasures at current locations experiencing collisions and systemically at locations with similar risks (comprehensive approach).
2. Enforcement: Enforce actions that reduce high-risk behaviors to include speeding, distracted roadway usage, and Driving Under the Influence (DUI).
3. Education: Educate all road users on safe behaviors.
4. Emergency Response: Improve emergency response times and action

5. Emerging Technologies: Utilize emerging technologies in conveying and collecting information from the roadway users in an effort to improve safety and operations.

Through collision data analysis, public input, and City feedback, priority locations were identified in the City. These locations, along with their proposed engineering countermeasures, are shown in the tables below.

Priority Intersections and Recommended Countermeasures

Primary Road	Secondary Road	Recommended Countermeasures
Healdsburg Ave	Exchange Ave	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
		Pavement improvements
		Update striping and add raised pavement markers
		Median improvements
		OR
		Convert intersection to roundabout [1]
Sherman St	Fitch St	Improve sight distance to intersection (clear sight triangles)
		Convert to All-Way Stop control [2]
		Install yellow school crosswalks
Healdsburg Ave	Plaza St	Improve sight distance to intersection (clear sight triangles)
Dry Creek Rd	Grove St	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
		Install bike box on the North and South approaches
		Replace Bott's dots with thermoplastic striping and raised pavement markers
Healdsburg Ave	Dry Creek Rd	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
		Replace botts dots with thermoplastic striping and raised pavement markers
Matheson St	Healdsburg Ave	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
		Convert signal to mast arm
		Replace Bott's dots with thermoplastic striping
Healdsburg Ave	North St	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
		Install Flashing Yellow Arrow (to North St)
		Convert signal to mast arm
March Ave	Lupine Rd	Upgrade pedestrian crossing [3]
Systemic Projects		Improve and install curb ramps
		Install accessible pedestrian signals and countdown timers at pedestrian crossings
		Pedestrian Leading Intervals at Signals (as appropriate)
		Green conflict bike markings and bike boxes (as appropriate)

[1] This option needs further analysis through an engineering feasiblity study

[2] An engineering study needs to be performed to see if this intersection meets CA MUTCD w arrants for AWSC conversion

[3] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

*Including 30% contingency

**Install left-turn lane and add turn phase (signal has no left-turn lane or phase before); HSIP Funding Eligibility: 90%
Improve sight distance to intersection (Clear Sight Triangles); HSIP Funding Eligibility: 90%

Priority Segments and Recommended Countermeasures

Segment	From	To	Recommended Countermeasures
Healdsburg Ave	Balihache Ave	Frontage Rd	Install delineators, reflectors and/or object markers
			Install dynamic/variable speed warning signs
			Improve striping and pavement markings
Matheson St	East St	2nd St	Install bike lanes and/or sharrows
			Install stop bars before crosswalks
			Improve segment lighting[1]
Healdsburg Ave	Mill St	Exchange Ave	Replace Bott's dots with thermoplastic striping and raised pavement marker
			Install delineators, reflectors and/or object markers
			Evaluate sight distance
Healdsburg Ave	Matheson St	Mill St	Restripe existing parking stalls to meet current standards
			Evaluate sight distance
Grove St	Dry Creek Rd	Grant St	Install delineators, reflectors and/or object markers
			Add segment lighting
Healdsburg Ave	Paul Witke Dr	Dry Creek Rd	Replace Bott's dots with thermoplastic striping
			Install pedestrian crossing improvements (near Circle K)[2]
Healdsburg Ave	Piper St	North St	Restripe existing parking stalls to meet current standards
			Evalute parking removal at locations that block sight distance and have collision history
Dry Creek Rd	US 101	East of Grove St	Replace botts dots with thermoplastic striping
Healdsburg Ave	US 101	Front St	Pedestrian improvements (install sidewalks and crossings where necessary)

[1] A lighting study needs to be performed to evaluate any deficiencies and proposed enhancements.

[2] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

Systemic countermeasures were also recommended for City roadways. These countermeasures included Citywide recommendations that can also be used for more specific project locations. The table below shows some of the non-engineering strategies that are incorporated in the plan.

Recommended Non-Engineering Strategies

Strategy Type	Recommended Strategy
Education	Continue bicycle and pedestrian safety campaigns (bike rodeo at schools by PD)
	Driver education and distracted driving campaigns
	Continue Safe Routes to School maps and outreach at schools
	Social media blasts with quick education tools for all users
	Dangers of speeding/speed management campaigns
	Partnering with agencies such as Sonoma County Health, Sonoma County Bicycle Coalition, and SCTA for public education
Emerging Technologies	Explore ITS infrastructure, web/mobile application (apps) and smart cities practices
	Bicycle detection (City is already implementing this at signalized intersections)
	Upgraded controllers for flashing yellow arrows and leading pedestrian intervals
	Installing touchless Accessible Pedestrian Signals
	Communication with traffic signals
	Changeable message signs
Enforcement	Targeted speed enforcement
	DUI saturation patrols
	Increasing number of traffic enforcement officers
	Distracted driving enforcement
Emergency Response	Review existing emergency vehicle pre-emption at signalized intersections
	Improvements to roadways to increase access and reduce congestion and potentially shorten response times

It is important to understand the upcoming funding opportunities in the successful implementation of these safety projects. Most of the proposed engineering countermeasures are HSIP fundable (next cycle 11 is scheduled to open in May 2022). However, safety countermeasures can be implemented through other funding sources to include:

- Active Transportation Program (ATP)
  - Next call for funding projects is scheduled to start in March 2022
- Congestion Mitigation and Air Quality (CMAQ) program
- Sustainable Transportation Planning Grant (Sustainable Communities)
- Stimulus funding sources
- Capital Improvement Program or with on-going maintenance work
- Office of Traffic Safety grants
- Safe Routes to School

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List of Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
APS	Accessible Pedestrian Signal
ATP	Active Transportation Program or Plan
AWSC	All Way Stop Control
BCR	Benefit to Cost Ratio
BUI	Biking Under the Influence
CA MUTCD	California Manual on Uniform Traffic Control Devices
CMAQ	Congestion Mitigation and Air Quality
DUI	Driving Under the Influence
EPDO	Equivalent Property Damage Only
FHWA	Federal Highway Administration
FSI	Fatal or Severe Injury
HSIP	Highway Safety Improvement Program
HSM	Highway Safety Manual
LRSM	Local Roadway Safety Manual
LRSP	Local Road Safety Plan
SCTA	Sonoma County Transportation Authority
SHSP	Strategic Highway Safety Plan
SSAR	Systemic Safety Analysis Report
SWITRS	Statewide Integrated Traffic Records System
TIMS	Transportation Injury Mapping System
TWSC	Two Way Stop Control

1. Introduction

The project involves the development of a Local Road Safety Plan (LRSP), which provides local agencies an opportunity to address unique roadway safety needs in their jurisdictions. This comprehensive document will both help to guide City in safety countermeasures and allow eligibility for funding in future HSIP grant applications. The process of preparing an LRSP creates a framework to systematically identify and analyze local safety problems and recommend engineering safety improvements for future Highway Safety Improvement Program (HSIP) funding.

Preparing an LRSP facilitates local agency partnerships and collaboration, resulting in a prioritized list of improvements and actions that contribute to California's Strategic Highway Safety Plan (SHSP) overall vision and goals. This SHSP focuses on reducing fatal and severe injury collisions (FSI collisions) with focused challenge areas with a focus on the Five "E's" of Traffic Safety (see **Figure 1**).

Figure 1 California SHSP (2020-2024)

The City and GHD will follow the Federal Highways Administration's (FHWA) Local Road Safety process in the following six (6) steps as shown in **Figure 2**:

Figure 2 FHWA's LRSP Development Process

In working with the first step of establishing leadership, Curt Bates, the Principal Civil Engineer from the City of Healdsburg was identified as the Safety Champion/Lead for this project with a stakeholder working group that consisted of the other E's (enforcement, education, emergency response, and emerging technologies) and other important safety partners. This stakeholder working group was paramount in creating a comprehensive safety plan that is tailored to address the local needs and issues.

2. Background

2.1 Purpose and Need

The City of Healdsburg is located in northern Sonoma County approximately 12 miles north of Santa Rosa, California with an approximate population of 11,800. Healdsburg is home to world class wineries, farm-to-table dining, several Michelin star restaurants, and numerous trails and bikeways that run through the surrounding vineyards and redwood forests. The area is cradled by Lake Sonoma and the Russian River, drawing in many tourists. The City of Healdsburg has a mix of traffic that includes tourist, local, and commuter traffic. The *Healdsburg 2030 General Plan* evaluates how the City growth and development will occur and the *Healdsburg Bicycle & Pedestrian Master Plan* guides pedestrian and bicycle improvements throughout the City.

Focusing in on the roadway safety needs, the past five (5) years of collisions (2015-2019) were evaluated for the City roadways and Caltrans roadways (US 101 Interchanges). As shown in **Figure 3**, there were no fatal and sixteen severe injury collisions on City roadways as well as no fatal and one severe injury collision on Caltrans roadways. In improving roadway safety for the City of Healdsburg, it is important to focus on mitigating these high injury collisions. More information on these collisions can be found in **Section 4.2: Collision Data**.

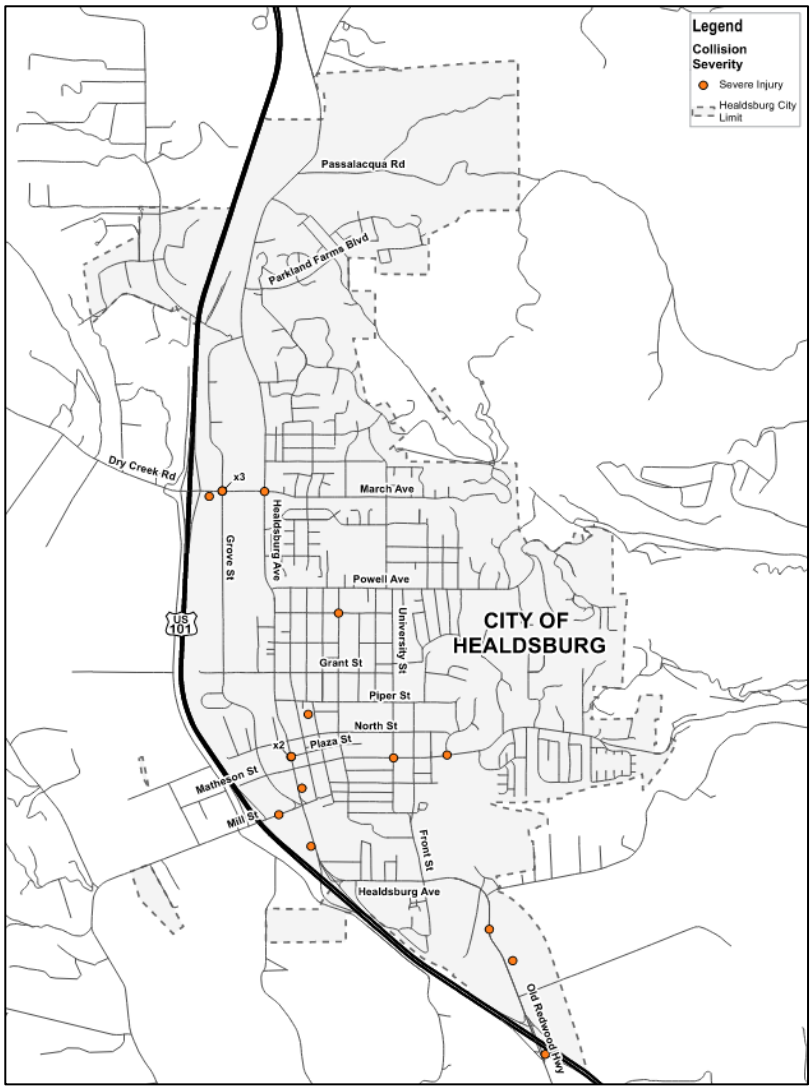
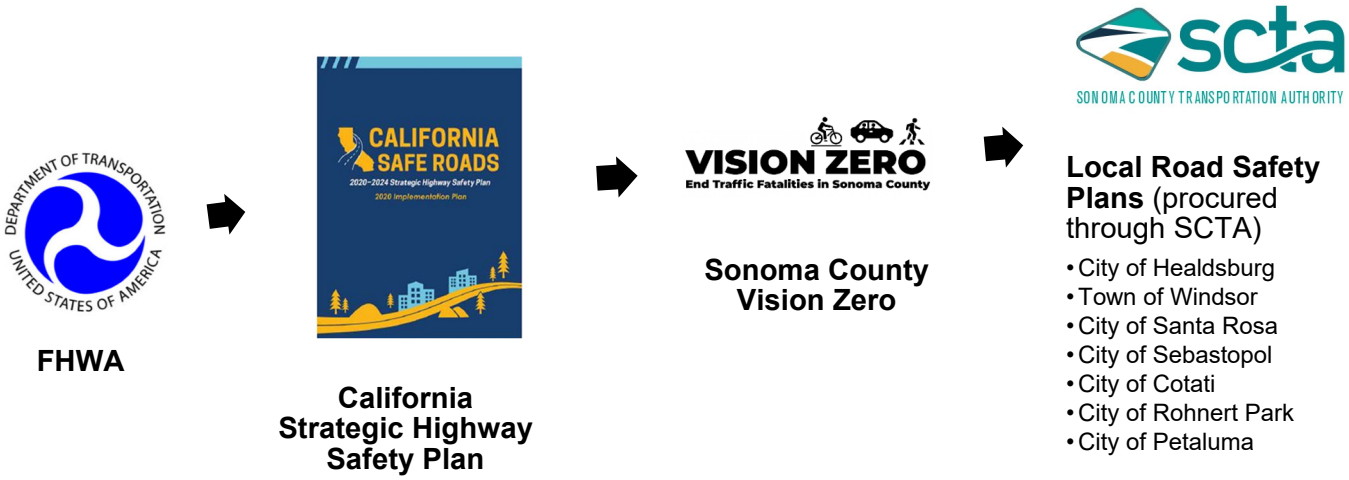


Figure 3 *Severe Injury Collisions in the City of Healdsburg (2015-2019)*

2.2 Guiding Documents and Principals

FHWA requires that each state has a SHSP. The California SHSP is a statewide safety plan that helps provide a framework to reduce fatal and high severity collisions. Sonoma County is also in the process of creating a countywide Vision Zero plan with a similar goal (for more information, see **Section 2.2.2**). In 2020, Sonoma County Transportation Authority procured seven (7) LRSPs throughout Sonoma County. These LRSPs will have similar goals to the California SHSP and Sonoma County Vision Zero but will be more tailored to the local roadway needs of each agency.



2.2.1 California Strategic Highway Safety Plan

The LRSP will complement California's SHSP 2020-2024. Per this plan the recommended challenge areas are shown in **Figure 4**. This plan will focus on challenge/emphasis areas that are determined through data analysis and stakeholder input.

Figure 4 SHSP Challenge Areas

2.2.2 Sonoma County Vision Zero

The Sonoma County Transportation Authority (SCTA) and the Department of Health Services launched a Vision Zero plan for all of Sonoma County. The project website for the *Vision Zero Sonoma County* plan is hosted on SCTA's website and is shown in **Figure 5.** This LRSP aims to complement this plan with elements catered specifically for the City of Healdsburg. SCTA's goal is to produce "a project that will focus on action-oriented strategies to reduce serious

injuries and fatalities caused by traffic collisions, and improving health, quality of life and economic vitality, particularly for low-income and disadvantaged communities". The vision and goals of this document will follow similar standards.

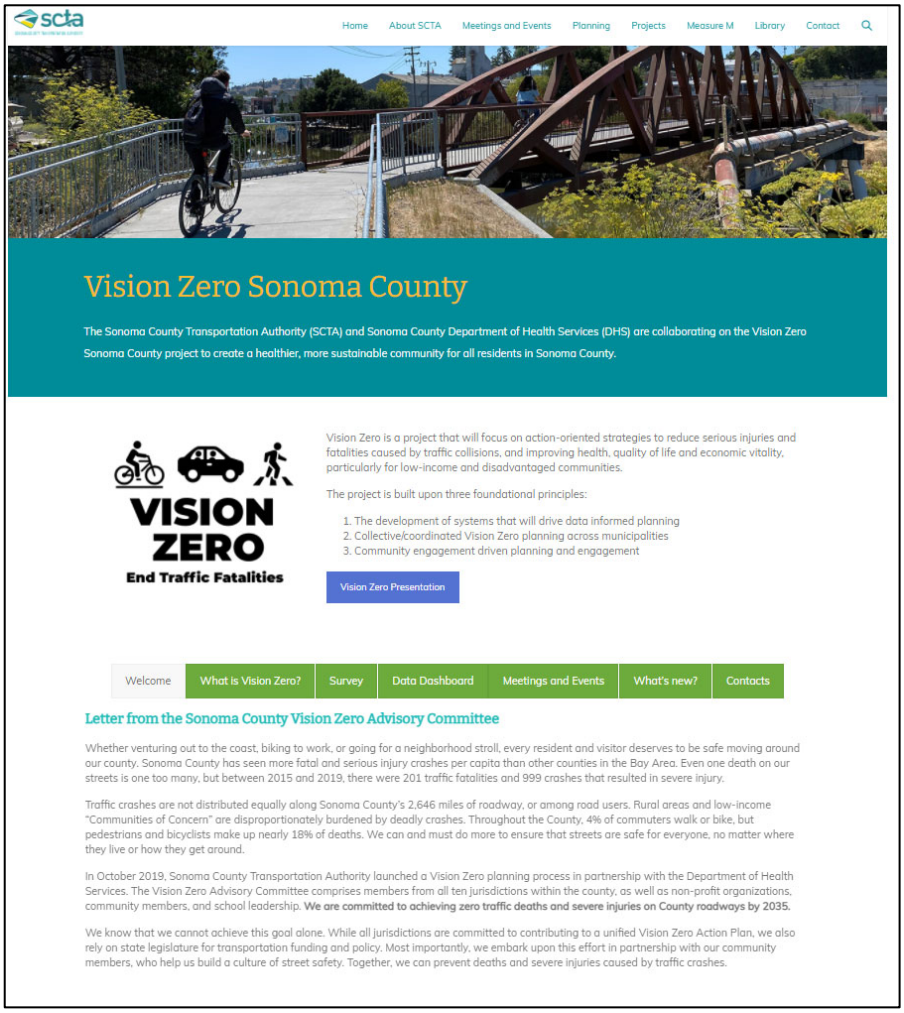


Figure 5 Sonoma County Transit Authority Vision Zero Website

2.2.2.1 Vision Zero

Vision Zero is a significant departure from the status quo in two major ways:

– Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to minimize those inevitable mistakes and reduce their likeliness to result in severe injuries or fatalities. This means that system designers and policymakers are expected to improve the roadway environment, policies (such as speed management), and other related systems to lessen the severity of crashes. Roadway users are however still responsible for their mistakes and should follow all applicable laws and use reasonable judgement when conducting themselves within the public right of way.

– Vision Zero is a multidisciplinary approach, bringing together diverse and necessary stakeholders to address this complex problem. In the past, meaningful, cross-disciplinary collaboration among local traffic planners and engineers, policymakers, and public health professionals has not been the norm. Vision Zero acknowledges that many factors contribute to safe mobility -- including roadway design, speeds, behaviors, technology, and policies -- and sets clear goals to achieve the shared goal of zero fatalities and severe injuries.

2.2.3 Safe Systems Approach

In providing a comprehensive approach to safety, the Safe System approach is to design our vehicles and infrastructure in a manner that anticipates human error and accommodates human tolerances with a goal of reducing fatal and serious injuries. The following framework is intended to assist the vehicle and infrastructure communities in making decisions in alignment with Safe System principles. Implementing and selecting safe system practices and design will incrementally improve safety over time.

The Institute of Transportation Engineers (ITE) defines the safe systems approach and framework as the following:

"*The Safe System approach differs from conventional safety practice by being human-centered, i.e. seeking safety through a more aggressive use of vehicle or roadway design and operational changes rather than relying primarily on behavioral changes – and by fully integrating the needs of all users (pedestrians, bicyclists, older, younger, disabled, etc.) of the transportation system. Safe Systems provide a safety-net for the user by:*

1. Anticipating Human Error – A Safe System is designed to anticipate and accommodate errors by drivers and other road users.

2. Accommodating Human Injury Tolerance – A Safe System is designed to reduce or eliminate opportunities for crashes resulting in forces beyond human endurance."

Adopting a Safe System approach does not absolve users of their responsibility. Other safety practices such as speed management strategies, driver education, enforcement, and effective emergency response will remain essential to improving road safety. With the passing of Assembly Bill (AB) 43, there will be flexibility in setting speed limits.

As shown in **Figure 6**, is a safe systems approach.

Figure 6 Safe Systems Approach

2.2.4 Standards and Guidelines

In developing the City of Healdsburg LRSP, the following standards and guidelines were followed:

1. "Local Roadway Safety, A Manual for California's Local Road Owners", Caltrans, Version 1.5, April 2020.
2. 2020-2024 California's Strategic Highway Safety Plan (SHSP), "California Safe Roads: 2020-2024 Strategic Highway Safety Plan", Caltrans.
3. "Developing Safety Plans, A Manual for Local Rural Road Owners", Federal Highway Administration, March 2012.
4. "Local and Rural Road Safety Briefing Sheets: Local Road Safety Plans," Federal Highway Administration, November 2014.

5. “Highway Safety Manual”, American Association of State Highway Officials (AASHTO), 1st Edition, 2014 supplement.
6. “California Manual of Uniform Traffic Control Devices (CA MUTCD)”, Revision 5, 2014.

2.3 Methodology

The LRSP methodology followed the FHWA’s LRSP development process as shown in **Figure 7** and the Caltrans *Local Roadway Safety Manual* document.

Below is a roadmap created by the Federal Highway Administration to show the process of creating the Local Road Safety Plan. Here are the primary steps used to create this plan:

1. **Identify Stakeholders**

   i) Working Group was formed of the 5 E’s and other interested representatives.

2. **Use Safety Data**

   i) Past 5 years of collisions were analyzed with discussion of other high-risk locations.

3. **Chose Proven Solutions**

   i) FHWA Proven Countermeasures and Caltrans safety countermeasures were used in mitigation collision trends and risk characteristics.

4. **Implement Solutions**

   i) Projects were identified for specific locations and systemically.

Figure 7 FHWA’s LRSP Development Map (Source: Federal Highway Administration)

3. Safety Partners/Stakeholders

3.1 LRSP Stakeholder Working Group Members

Based on community connections, the City of Healdsburg led the formation of the LRSP Stakeholder Working Member Group. This leadership group was crucial in the development of the LRSP and helped in capturing the safety needs, goals, and priorities including safety countermeasures for the City of Healdsburg.

The LRSP Stakeholder Working Group included the following representatives:

- City of Healdsburg
- Caltrans – District 4
- Sonoma County Department of Transportation
- Healdsburg Police Department
- Healdsburg Fire Department
- Healdsburg 2040
- Healdsburg Unified School District
- The Healdsburg School
- St. John the Baptist Catholic School

3.2 LRSP Stakeholder Working Group Meetings

Two meetings were held with the stakeholder working group. The virtual meetings were as follows:

1. January 19, 2021 – 2 p.m. to 4 p.m.
    a. Discussed the LRSP overall process, working group member's safety priorities, past 5 years of collisions (City and Caltrans roadways), vision, goals, and priorities.
2. May 11, 2021 – 2 p.m. to 4 p.m.
    a. Reviewed first meeting, discussed public comments and ways to address their concerns, recent developments, safety countermeasures and projects, refined of LRSP's guiding principles, and coordinated next steps.

The meeting summaries for the stakeholder working group meetings are in **Appendix A: Stakeholder and Public Input**. The stakeholder working group also provided their feedback and comments on the Draft Local Road Safety Plan document before the plan was finalized. With many of the safety countermeasures to include engineering, enforcement, and emergency response, it is important to have buy off from the stakeholders in understanding how the plan will be implemented.

3.3 SHSP Challenge/Emphasis Areas

Based on the collision data analysis and LRSP Stakeholder Working Group Meetings, this LRSP will address multiple Strategic Highway Safety Plan (SHSP) Challenge Areas including:

1. Bicyclists
2. Intersections

3. Pedestrians
4. Distracted Driving
5. Aggressive Driving

3.4 Vision, Mission Statement, and Goals

The members of the stakeholder working group coordinated to establish the vision, mission statement, and goals that guided the development of the document. Ideally, this document will help the City move toward Vision Zero with a safe system approach. The aim of Vision Zero is to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all. Traditionally traffic deaths and severe injuries have been considered as inevitable side effects of modern life. The reality is that these tragedies can be addressed over time by taking a proactive, preventative approach that prioritizes traffic safety as a public health issue.

3.4.1 Vision

A vision statement describes what the Local Road Safety Plan is trying to achieve.

Healdsburg will develop a comprehensive safety plan that strives to eliminate fatal and severe injury collisions through the engagement of stakeholders and citizens– because every person in our community matters.

3.4.2 Mission Statement

The mission statement defines the purpose of the plan, what it does, and what it is about. The mission statement was developed in collaboration with the working group.

The City of Healdsburg will strive to provide a safe and sustainable multimodal transportation system for all users of the public roadways in Healdsburg.

3.4.3 Goals

Safety goals were developed for the Local Road Safety Plan. It is important to capture realistic goals that can be measurable or evolve over time.

1. **Goal:** Create a safe, livable, and welcoming community by developing a roadway safety plan targeted to Healdsburg's transportation and roadway safety needs.
2. **Goal:** Eliminate the potential for fatal and severe injury collisions.
3. **Goal:** Reduce rear end collisions citywide by implementing speed management strategies.
4. **Goal:** Reduce improper turning collisions in the downtown area with speed and parking management.
5. **Goal:** Improve multimodal transportation safety by expanding the City's non-motorized transportation infrastructure.

⑥ **Goal:** Improve the health and vitality of our community with a roadway safety plan targeted to Healdsburg's needs.

⑦ **Goal:** Improve safety around schools.

⑧ **Goal:** Reduce speeding collisions through engineering, enforcement, education, and emerging technologies strategies.

4. Analyze Safety Data

4.1 Recent/Planned Safety Projects

The City of Healdsburg conducted previous safety analysis that developed the following safety projects. **Table 1** shows these improvements within the City and their respective locations. In addition, refer to **Appendix B: Previous Safety Plans and Projects** for specific project details.

Table 1 Safety Projects Recently Completed or Planned within the City of Healdsburg

Safety Project	Location	Details	Status
Five-legged roundabout	Intersection of Healdsburg Ave, Mill St, and Grove St	Replace signals with 5-legged, single lane roundabout to reduce complex intersection geometry. Rail running through the middle to prepare for future SMART train connection.	Completed November 2018
Pedestrian Crossing Improvements	Healdsburg Ave and Plaza St	Remove in-ground flashers and replace with RRFB.	Completed November 2018
Signal Timing Improvements	Citywide	Evaluate and update signal timings to increase red, yellow, and pedestrian timings per standards and safety.	Completed 2019
Pedestrian Crossing Improvements	Healdsburg Ave near Wicked Slush and Healdsburg Veterans Memorial Beach entrance	Install RRFBs, vertical curbs, and ADA improvements	Completed Early Summer 2021
Trail User Crossing Improvements	Foss Creek Pathway at Dry Creek Road	Add a traffic signal for the Foss Creek Pathway crossing at the railroad. The traffic signals on Dry Creek at Healdsburg Ave, Foss Creek Pathway Crossing, and Grove Street will be coordinated.	Completed October 2021
Improve Segment Lighting	Healdsburg Ave from Mill St to Exchange St	Install segment lighting along Healdsburg Ave	Completed October 2021
Interchange Improvements	Dry Creek Rd and US 101 interchange	Overall interchange improvements planned to increase functionality and safety. Interim improvements added EB/WB stop signs at the SB ramp and widening/striping to add left turn lanes at both intersections. Feasibility study proposed roundabouts for future development.	Feasibility study completed, interim improvements completed, awaiting funding
Intersection Improvements	Dry Creek Rd and Grove St	Plan reconfiguration of lanes on south leg for an exclusive left turn lane and split phasing. Potential FYA in east-west direction.	Planned with development to the north
Citywide ATP Projects	Citywide, majority along Healdsburg Ave	Proposed road diet on Healdsburg Ave between Powell Ave and Foss Creek Bridge that reduces travel lanes and adds protected bike lanes and sidewalks. Additional pedestrian crossings with RRFBs and updates to current crosswalks.	Planned, awaiting funding
Pedestrian and Bicycle Connectivity Enhancements	Front St from the end of the existing Foss Creek Pathway to the Healdsburg Memorial Bridge	Install additional pedestrian and bicycle facilities on Front Street to connect the Foss Creek Pathway to Healdsburg Memorial Bridge	In early project feasibility and planning stage

In early summer of 2021, pedestrian crossing improvements were installed at the crosswalk on Healdsburg Avenue near Wicked Slush and Healdsburg Veterans Memorial Beach. These improvements include installing Rectangular Rapid Flashing Beacons (RRFBs), vertical curbs to separate the pedestrian traveled way from the roadway, and ADA improvements. **Figure 8** shows the completed project.

Figure 8 Recently Installed Pedestrian Crossing Improvements on Healdsburg Avenue

4.1.1 Safe Routes to School

The County of Sonoma currently has a Safe Routes to School (SRTS) program that is funded from the One Bay Area Grant and Measure M transportation tax. This program provides services to the City of Healdsburg and has previously partnered with Healdsburg Elementary School, Healdsburg Junior High, and St. John's the Baptist School to educate and promote students walking and biking to school with various initiatives and SRTS maps. Both Healdsburg Elementary School campuses had walk/roll encouragement initiatives including International Walk & Roll to School Day and monthly Walk/Roll events. The Fitch Mountain campus had a 4th Grade Bicycle Rodeo. In addition, the SRTS program for this fiscal year (2021-2022) can still provide services for schools in Healdsburg if requested.

4.2 Collision Data

The City of Healdsburg collision data was gathered using the Statewide Integrated Traffic Records System (SWITRS), Traffic Accident Surveillance and Analysis System (TASAS) for the US 101 Interchanges, and City collision records. Each data set was analyzed, crosschecked, and compiled into one complete comprehensive data set. This process was done to ensure that all reported collisions occurring within the City are accounted for and to provide additional information that one system may not have captured. The data set contains five complete years' worth of collisions spanning from January 1, 2015 to December 31, 2019. In addition, 2020 data was provided by the City from January 1 to October 31 and analyzed separately.

During this period, a total of 580 collisions were reported in the City of Healdsburg. These collisions were classified based on roadway jurisdiction (City or Caltrans). Collisions were further categorized into intersection related collisions and roadway segment related collisions with a separate focus on the City streets and US 101 Interchanges.

The pie chart in **Figure 9** depicts the number of collisions by roadway jurisdiction and collision location (intersection or segment). The highest number of collisions were at City street intersections (290 collisions) followed by City street segments (270 collisions).

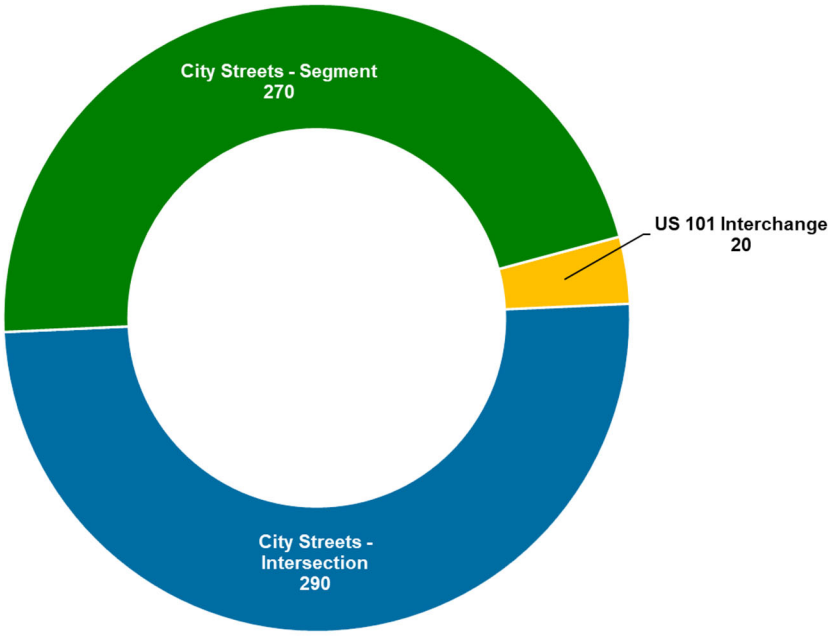


Figure 9 Total Collisions within the City of Healdsburg (2015-2019)

4.2.1 Collisions on City Roadways

There were 560 collisions recorded on the City roadways between 2015 and 2019. **Figure 10** shows the breakdown of collisions by year and severity. The highest number of collisions were reported in 2016. As shown on the collision density map (see **Figure 11** below), areas with high density of collisions include Dry Creek Road at Grove Street, Healdsburg Avenue at Dry Creek Road, Healdsburg Avenue at Exchange Avenue, Healdsburg Avenue at North Street, and Healdsburg Avenue at Mill Street. There were no fatal collisions and sixteen severe injury collision on the City roadways. **Figure 12** displays the top 5 violation categories and the number of collision types per category. Improper Turning was the top violation category with the majority of collision type as sideswipe. The majority of these improper turning collisions occurred in the downtown area and were related to parking maneuvers.

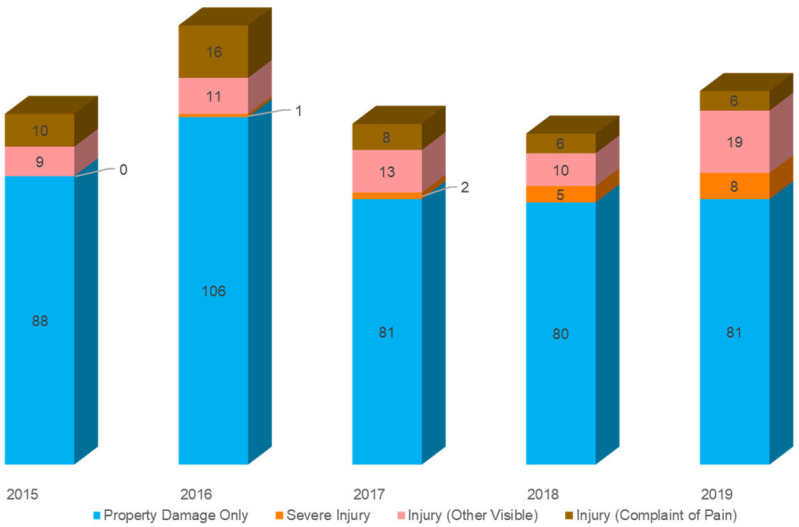


Figure 10 Collisions by Year on City of Healdsburg Roadways (2015-2019)

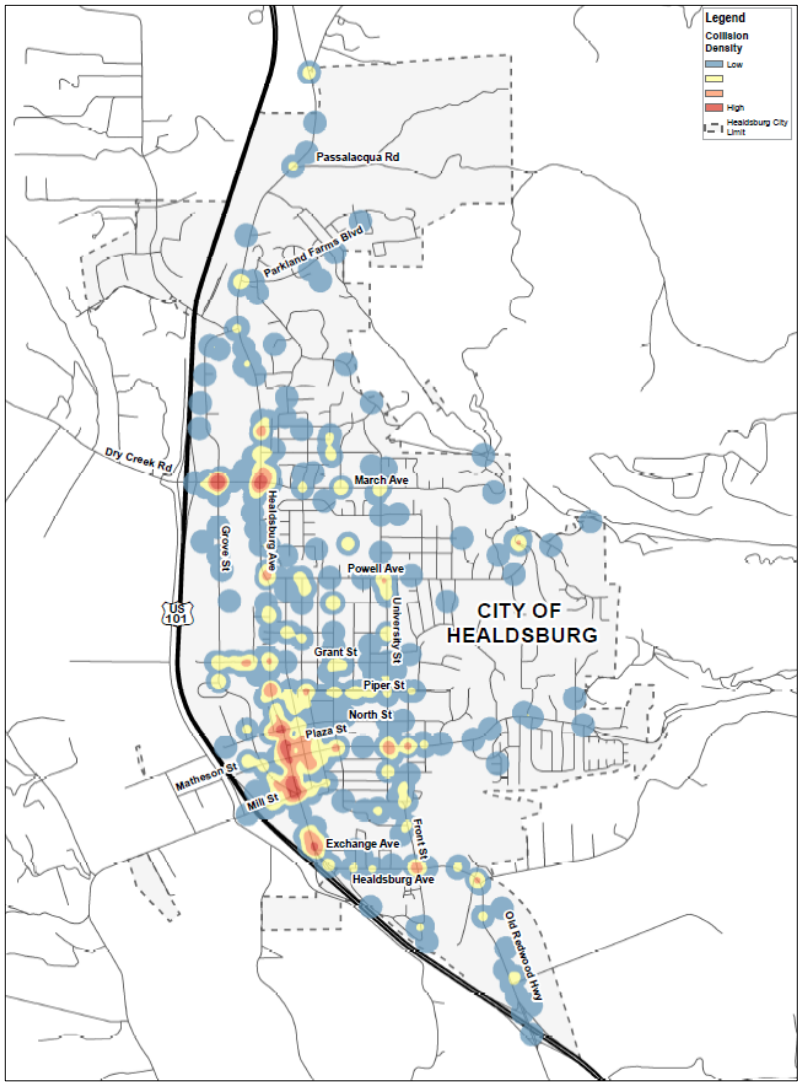


Figure 11 Collision Density on City Roads (2015-2019)

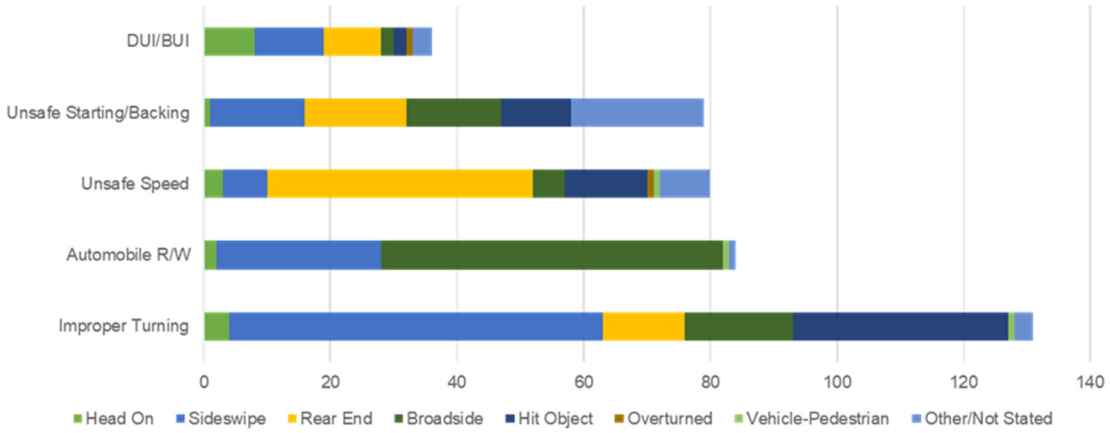


Figure 12 Top Violation Categories for Collisions on City Roadways

Figure 13 summarizes the City collisions based on severity and type. The main collision type was sideswipe followed by broadside. The majority of collisions were recorded as property damage only with just over 22% of the collisions in the past five years recorded as injury collisions.

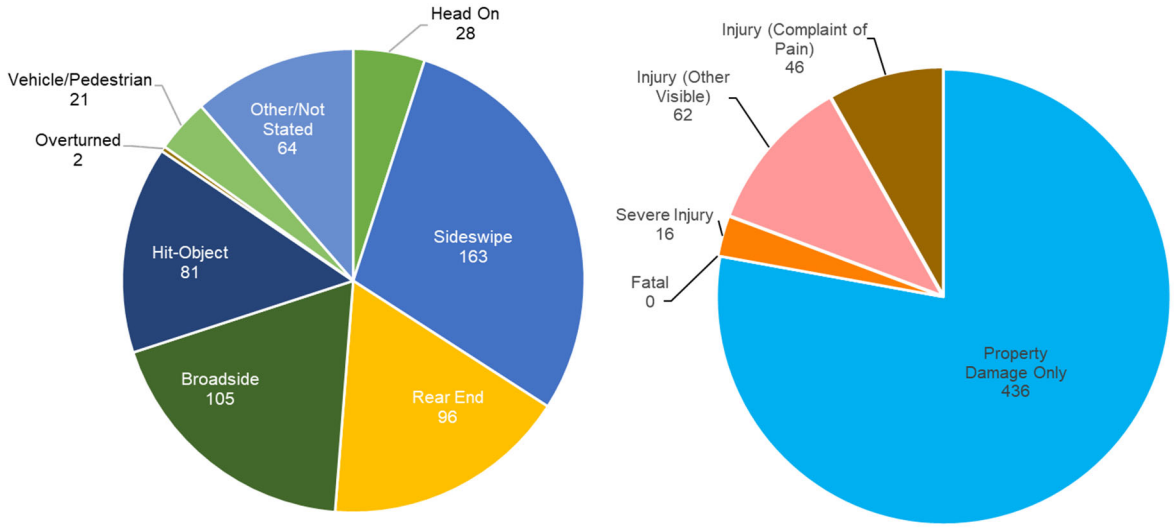


Figure 13 Summary of City Collisions

The total number of collisions and Equivalent Property Damage Only (EPDO) rating were assessed at the city intersection locations to aid in the determination of the top study intersections (refer to **Appendix C: Collision Data** for the breakdown of collision severity and violation type by intersection). Per the Caltrans Local Roadway Safety Manual, it is recommended to rank locations with higher severity as higher focus. The Highway Safety Manual (HSM) methodology of Equivalent Property Damage Only (EPDO) rating assigns a weight to collisions in capturing the relative severity in equivalent property damage only (PDO =1).

Table 2 provides the comprehensive collision costs and EPDO weights that were used in ranking the collisions. Collision costs include both direct and indirect costs. Direct crash costs include ambulance service, police and fire services, property damage, insurance, and other costs directly related to the crashes. Indirect collision costs account for the value society would place on pain and suffering or loss of life associated with the crash.

Table 2 Comprehensive Collision Costs and EPDO Weights (2018 dollars)

Severity	Comprehensive Costs	EPDO Weight
Fatal (K)	$6,418,400	544
Severe Injury (A)	$345,800	30
Minor Injury (B)	$126,500	11
Non-Visible Injury (C)	$71,900	6
PDO (O)	$11,800	1
Based on Table 7-1, Highway Safety Manual, 2010, Adjusted to 2018 dollars.		

The intersection Dry Creek Road and Grove Street had the highest EPDO score at 132 as well as the highest number of collisions (20 total collisions). **Table 3** shows the top intersections, per collision analysis. Further detailed collision analysis is in **Appendix C: Collision Data.**

Table 3 Top Intersections, per Collision Analysis

Primary Road	Secondary Road	Control	EPDO	Total Crashes
Dry Creek Rd	Grove St	Signalized	132	20
Healdsburg Ave	Dry Creek Rd	Signalized	84	15
Healdsburg Ave	Plaza St	TWSC	68	5
Sherman St	Fitch St	TWSC	43	4
Matheson St	Healdsburg Ave	Signalized	38	8
Healdsburg Ave	Exchange Ave	Signalized	30	15
Healdsburg Ave	North St	Signalized	19	9

The intersection of Healdsburg Avenue and Mill Street was also identified as a high severity location through the collision analysis. However, during the analysis period, a five-legged roundabout was installed at this location. Therefore, the collisions at this intersection were analyzed pre-construction (January 2015 to November 2018) and post-construction (December 2018 to October 2020). Heatmaps of injury collisions during these periods are shown in **Figure 14**. Due to the reduction in collisions after the construction of the roundabout, this location will not be considered for future improvements.

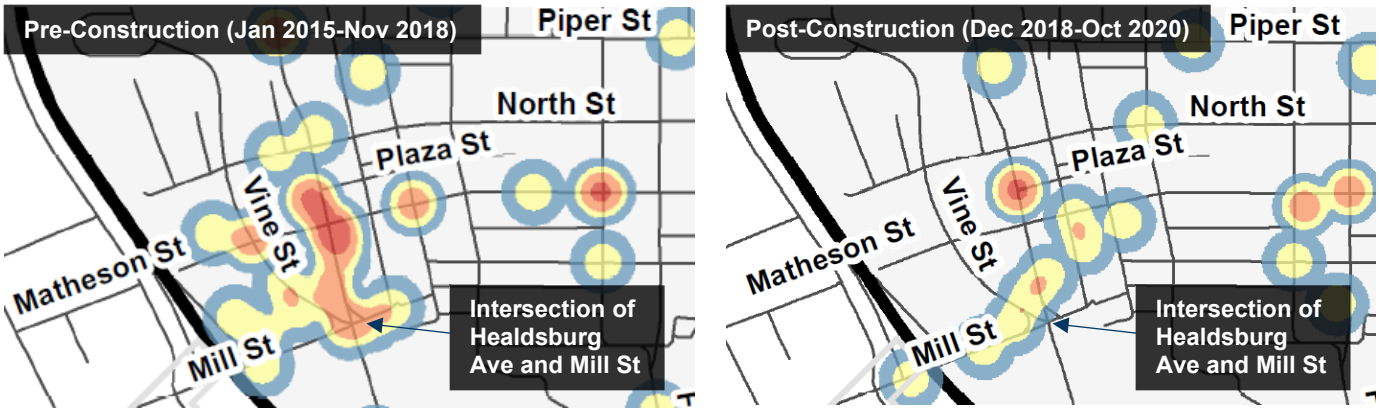


Figure 14 Heatmaps of Injury Collisions at the Intersection of Healdsburg Ave and Mill St

The segment collisions were also analyzed by EPDO and total number of collisions. **Table 4** shows the top segments, per collision analysis. Healdsburg Avenue between Bailhache Avenue and Frontage Road had the highest EPDO rating (74) due to two severe injury collisions. However, Healdsburg Avenue between Matheson Street and Mill Street had the highest number of segment collisions (14 total collisions) and third highest EPDO (68).

Table 4 Top Segments, per Collision Analysis

Primary Road	Begin Segment	End Segment	EPDO	Total Crashes
Healdsburg Ave	Bailhache Ave	Frontage Rd	74	6
Matheson St	East St	2nd St	70	11
Healdsburg Ave	Matheson St	Mill St	62	13
Grove St	Dry Creek Rd	Grant St	47	8
Healdsburg Ave	Mill St	Exchange St	42	8
Healdsburg Ave	Paul Wittke Dr	Dry Creek Rd	38	13
Healdsburg Ave	Piper St	North St	20	10

4.2.2 Collisions on Caltrans Roadways (Interchanges)

There were 20 collisions at the US 101 interchanges between 2015 and 2019. As seen by the collision density map (see **Figure 15**), the Dry Creek Road interchange has a high density of collisions with 13 total collisions with other “hot spots” at the Old Redwood Highway/Healdsburg Avenue interchange. In total, there was no fatal and one severe injury collision at the interchanges. The majority of collisions were broadsides.

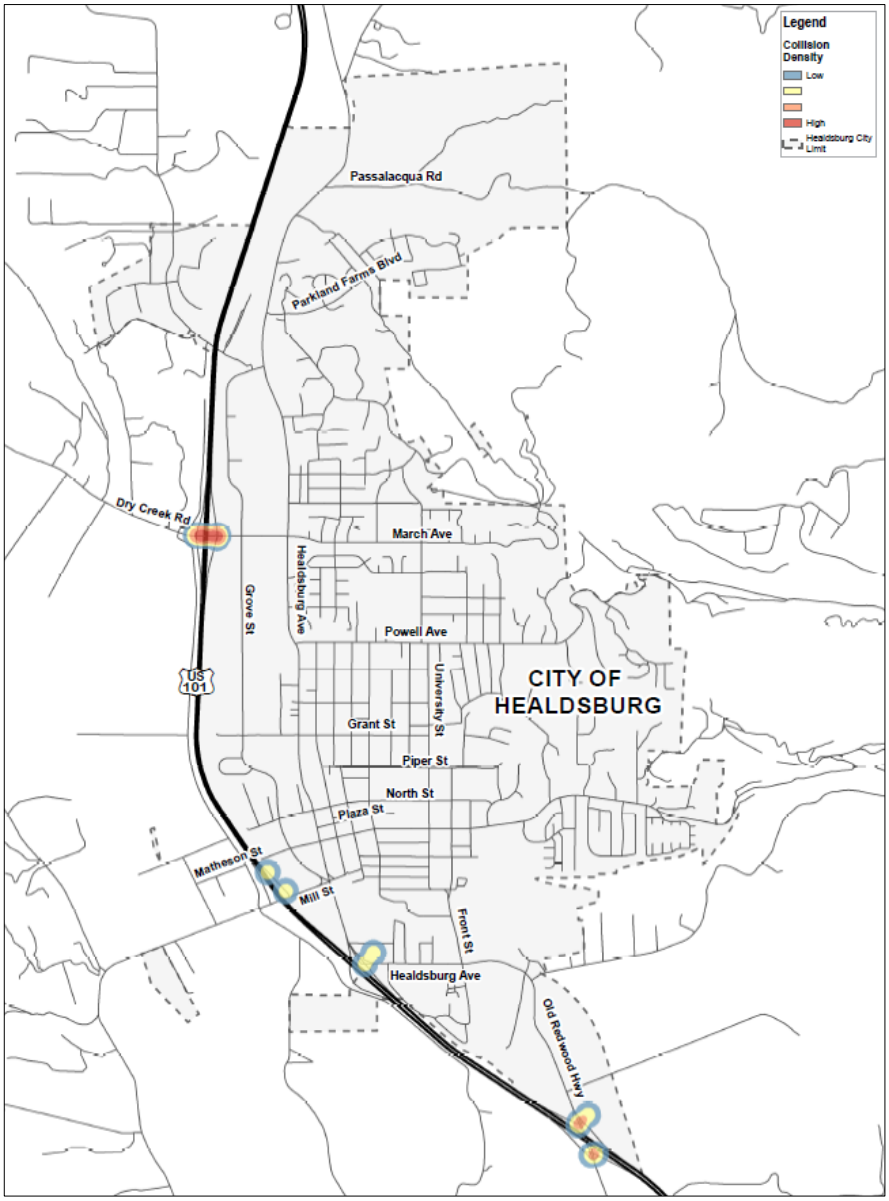


Figure 15 Collision Density on Caltrans Roads

Figure 16 summarizes the Caltrans collisions on the Interchanges based on severity and type. There was 1 (one) severe injury collision at the Old Redwood Highway and US 101 interchange. The majority of the interchange collision were broadside which is typical for intersections. No collisions on US 101 mainline were analyzed due to no local road interface.

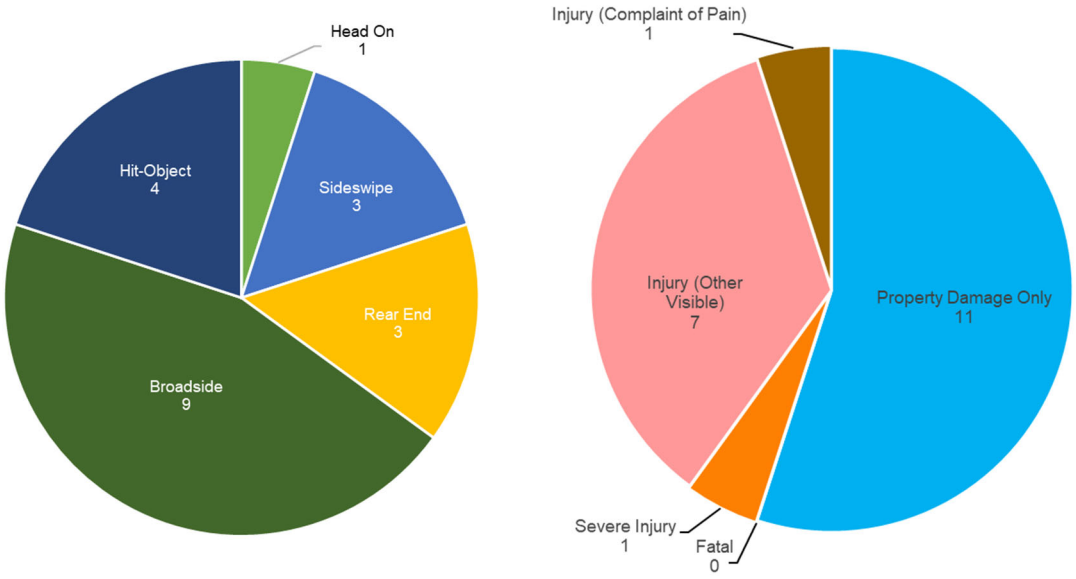


Figure 16 Summary of Interchange Collisions

4.2.3 Collisions Related to Challenge Areas

4.2.3.1 Bicyclists

There was a total of twenty-one (21) bicycle collisions on the City roadways and none on the Caltrans roadways. Of these collisions, three (3) were severe injury collisions. The top violation categories for bicycle-related collisions not including unknown/not stated are shown in **Figure 17** below. The primary collision type is “Other” with the top violation category listed as traffic signals and signs. The majority of bicycle collisions were along Healdsburg Avenue. The location of each collision is outlined in **Figure 18**.

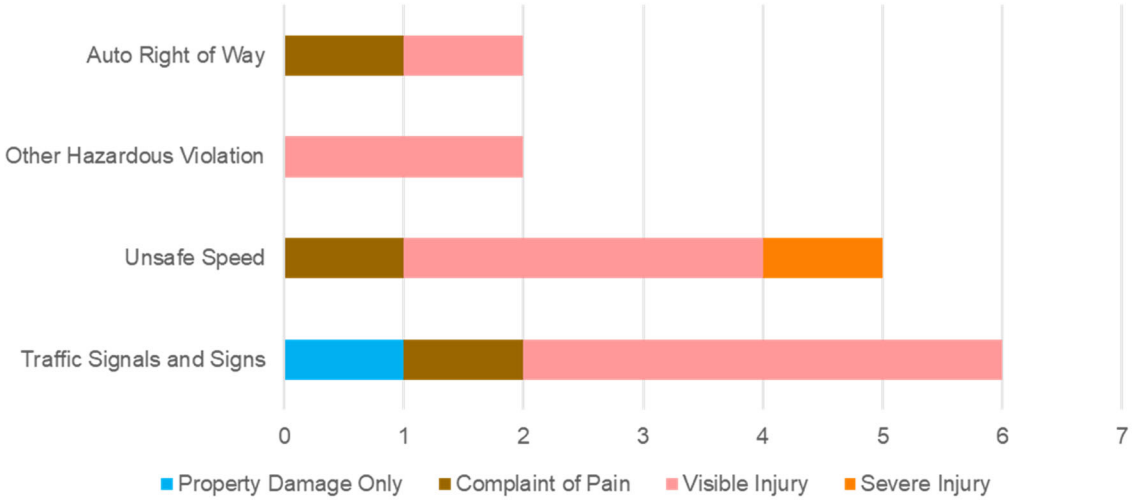


Figure 17 Top Violation Categories for Bicycle-Related Collisions

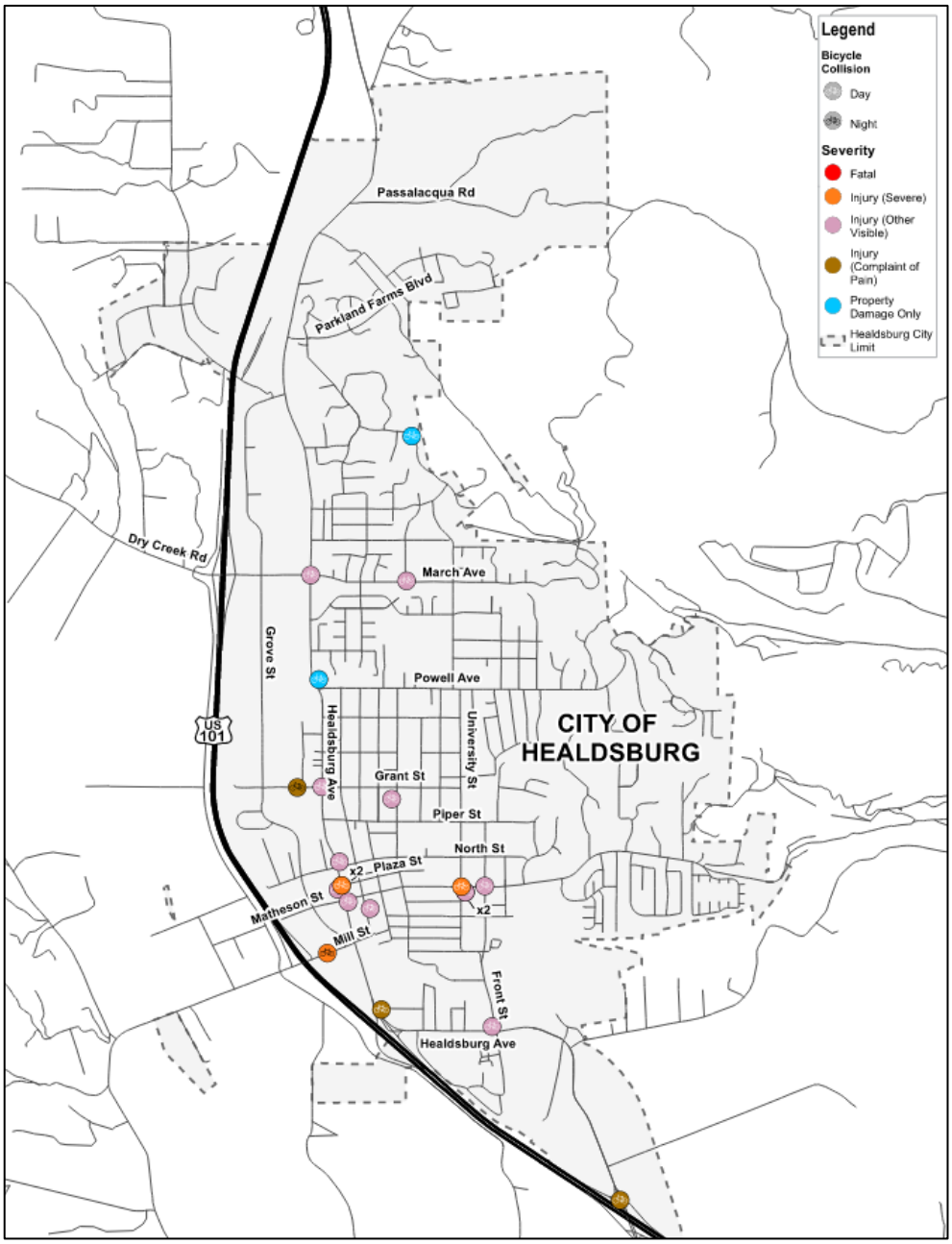


Figure 18 Map of Bicycle Collisions (2015-2019)

4.2.3.2 Intersections

As mentioned in **Section 4.2**, there were 290 collisions at City intersections during the study period. These account for approximately 52% of all collisions on City roadways. The top collision type was sideswipe and the top violation category was improper turning. **Figure 19** outlines the top five violation categories and their associated collision types for the intersections.

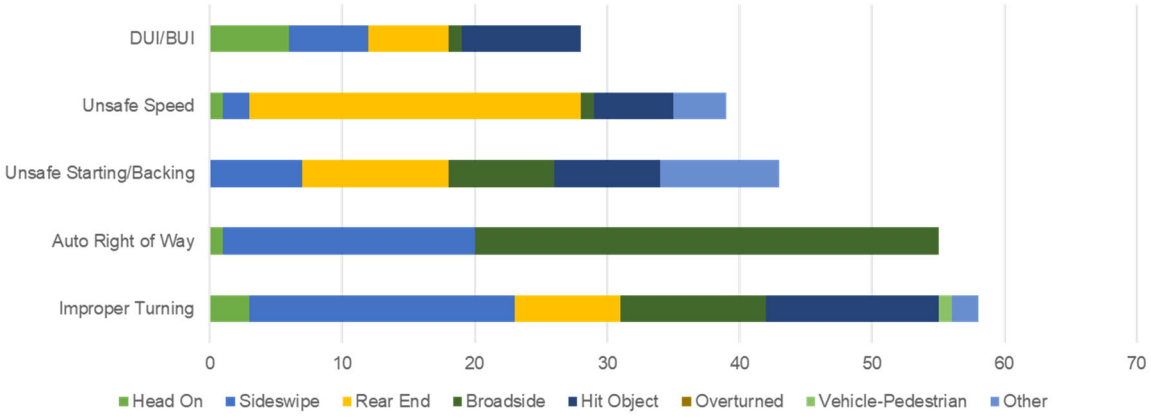


Figure 19 Top Violation Categories for Intersection Collisions

4.2.3.3 Pedestrians

There were twenty-one (21) total pedestrian collisions on the City roadways and none on Caltrans roadways. The pedestrian location at the time of collision, along with corresponding severity, is shown in **Figure 20**. Most pedestrians were crossing in a crosswalk at an intersection. Five (5) pedestrian collisions resulted in a severe injury. The mapped location of each collision is shown in **Figure 21**.

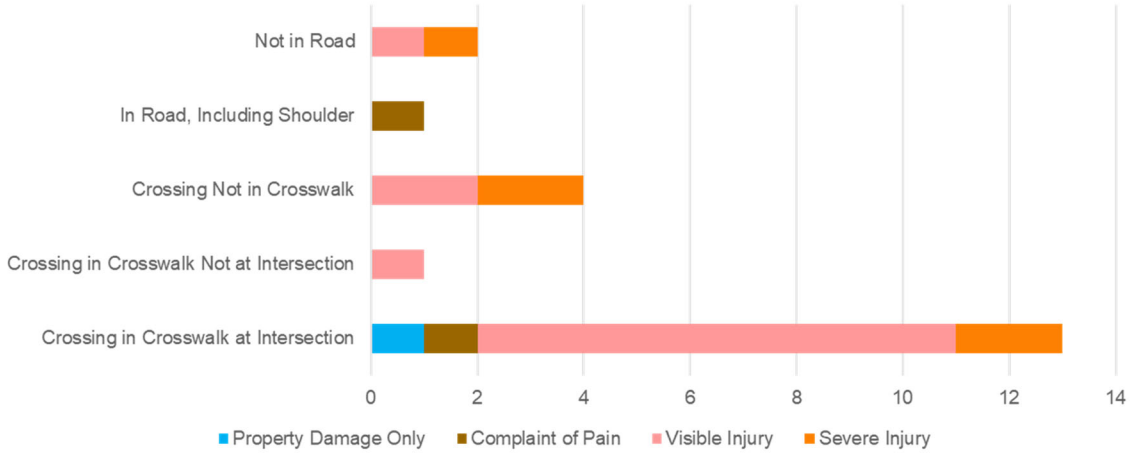


Figure 20 Pedestrian Location at Time of Collision

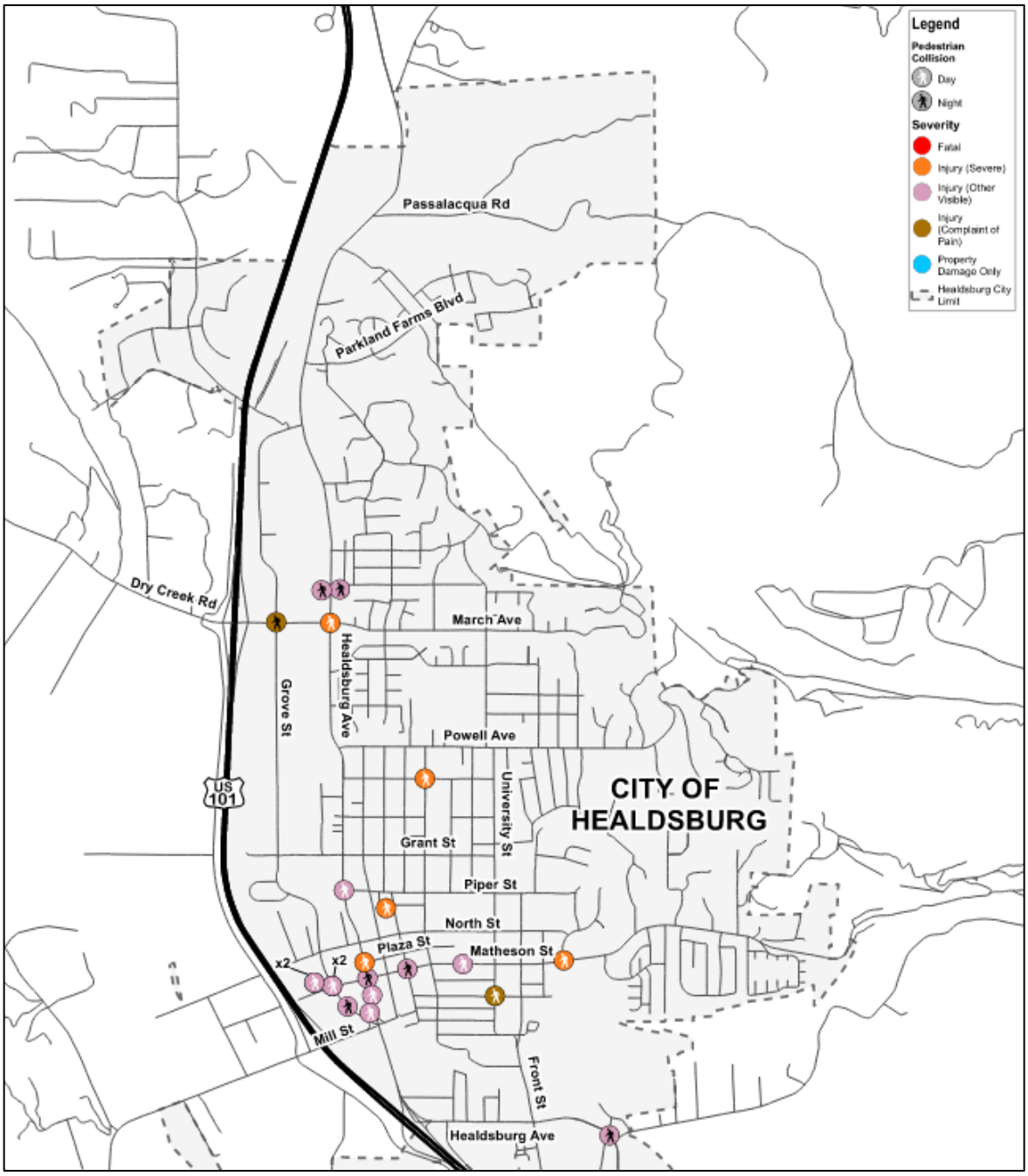


Figure 21 Map of Pedestrian Collisions

4.2.3.4 Distracted Driving

Distracted driving is categorized in collision data as inattention. Categories for inattention include cell phones (handheld or hands-free), electronic equipment, smoking, eating, children, animal, personal hygiene, and reading. From 2015 to 2019, there were 29 collisions with at least one party cited due to inattention. This is five percent (5%) of all collisions. There was one (1) severe injury collision as a result of inattention where a distracted driver hit a pedestrian.

4.2.3.5 Aggressive Driving

Aggressive driving can be quantified through collision data through unsafe speed violations. There were eighty (80) collisions due to unsafe speed on City roadways between 2015 and 2019. This is approximately fourteen percent (14%) of all collisions on City roadways. Many of these collisions resulted in property damage only rear end collisions. There were three (3) severe injury collisions as a result of unsafe speed – one involving a bike, one involving a pedestrian, and one involving a fixed object.

4.3 Field Reconnaissance

A field visit was performed on June 9, 2021 to analyze the roadways throughout the City of Healdsburg and observe areas with high densities of public comments and collisions. Notes and photos from this visit are compiled in **Appendix D: Field Reconnaissance**.

Some general notes made based on what was observed during the sight visit are as follows

- Leading Pedestrian Intervals could be installed in the downtown.
- There is an active biking community.
- A sign reflectivity study should be considered. Many signs are faded.
- Green conflict markings could help increase safety for bicycle and vehicle mixing zones.

5. Public Outreach

5.1 Social Pinpoint Website

A project website was created on the Social Pinpoint platform to inform the public about the LRSP and provide a platform for input. **Figure 22** displays the homepage for the website found at lrsp.mysocialpinpoint.com/healdsburg. The project website will have Google Translate enabled that can translate the webpage in over 100 languages and detects the user's browsers settings to automatically display the website in their language preference. In addition, the user can toggle the preferred language on the upper right corner of the webpage. Visitors to the page were invited to provide comments on an interactive project map and share their thoughts through a project survey. Comments from the interactive map and detailed results from the survey are included in **Appendix A: Stakeholder and Public Input**.

The City reached out to Corazon Healdsburg, a Hispanic community center in the City, to gather feedback for the plan as well.

Figure 22 Public Website Home Page

5.1.1 Interactive Map

The interactive map feature on the website allowed the public to drag icons to a location within the City and leave a comment regarding driving, pedestrian, or bicycle suggestions at that location. **Figure 23** shows the interactive map feature from the website. Some of the public concerns collected from the interactive map are as follows:

- "It is common for people to drive 60mph on Dry Creek Road. That makes it very dangerous for residents pulling onto Dry Creek Rd from residential side streets, and for cyclists. Forget about walking. There should be a posted speed limit not to exceed 40MPH, and it should be enforced. Dry Creek Road is not a freeway."
- "Poor visibility (west bound) at 2-way stop onto or crossing Fitch St. due to parked residential cars/trucks. Added issue of pedestrians crossing streets also, especially during school hours."

- “There need to be crosswalks on Grove Street. There is no way to safely cross the street and cars are always driving too fast.”
- “Most of Grant St from Healdsburg Ave all the way to University is crumbling from poor quality chip seal and should be resurfaced, as it is one of the main streets and connects schools.”
- “My husband who's been cycling Healdsburg for 30 years now was nearly killed by a motorist who blew through the stop sign on Fitch and Tucker. This needs a four way stop.”

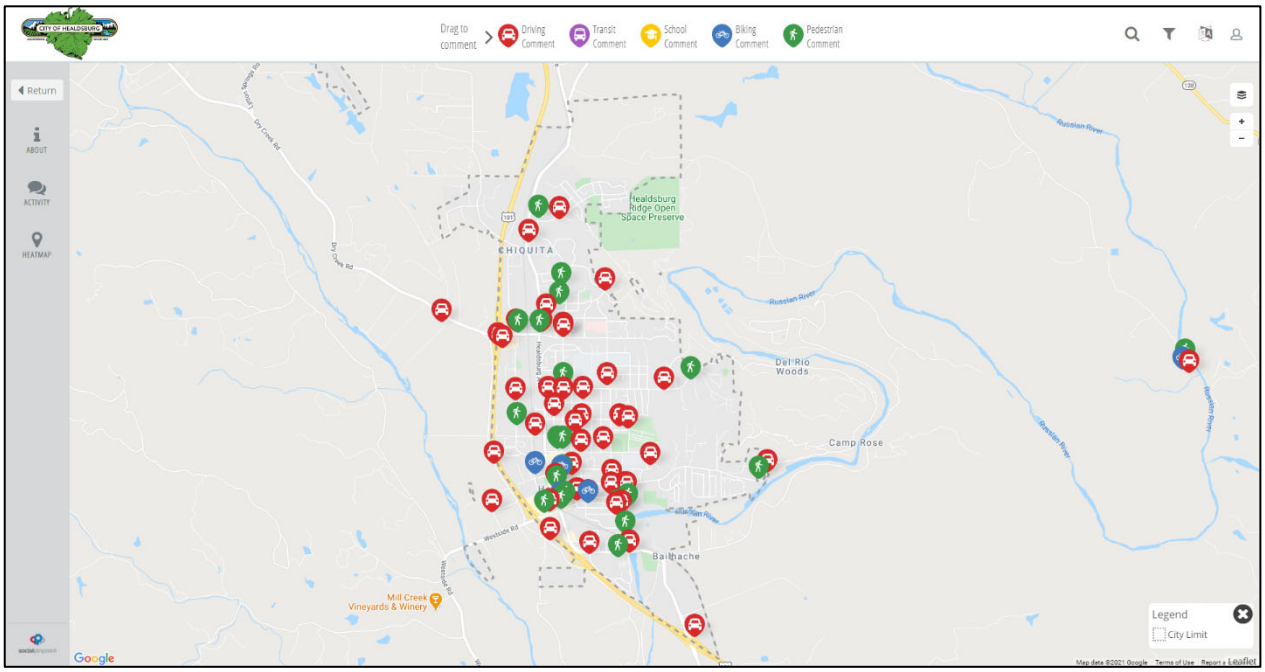


Figure 23 Public Website Interactive Map

5.1.2 Public Survey

The City of Healdsburg Public Survey asked six questions relating to the LRSP. As of February 28, 2021, the survey received 36 responses. According to the survey, one of the primary safety issues for Healdsburg was a lack of infrastructure (see **Figure 24** for a chart with the responses). Common suggestions for roadway improvements included adding bicycle facilities, such as bike lanes, and general improvements to intersections.

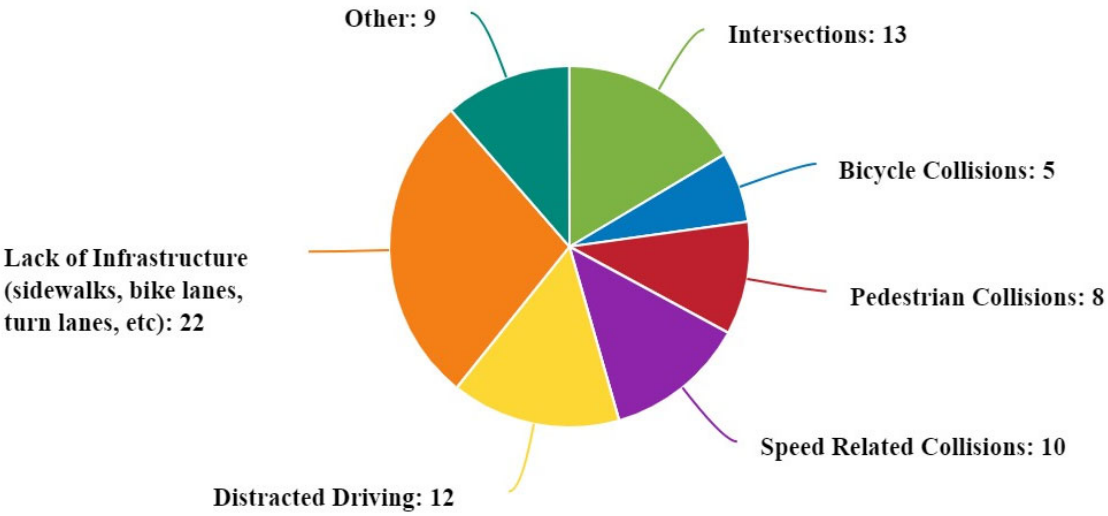


Figure 24 Public-Identified Roadway Issues

6. Identify Strategies

Through coordination and feedback from the City of Healdsburg, LRSP working group, and public outreach, safety projects and strategies were identified for the Local Road Safety Plan. Countermeasure development was coordinated with the City to collect feedback and identify recommended countermeasures.

The LRSP will reference specific location engineering projects and systemic safety applications. In addition, safety strategies and projects that address the other E's to include Enforcement, Education, Emergency Response, and Emerging Technologies will be discussed below.

6.1 Engineering Strategies

Per the HSIP program, engineering countermeasures are available for grant funding. In accordance with the most recent HSIP Cycle (Cycle 10), the approved countermeasures and crash reduction benefits were quantified in the HSIP analyzer. The recommended countermeasures for the 8 priority intersections are presented in **Appendix E: Recommended Projects**. Since the next HSIP Cycle 11 call for projects opens in Spring 2022, further safety analysis should be conducted at that time in refining the collision data and subsequent safety projects and Benefit to Cost Ratios (BCRs).

Countermeasures were evaluated and prioritized based on benefit to cost ratios as prescribed in Caltrans most recent Local Road Safety Manual (LRSM). The benefit value of a crash is the expected reduction in crashes with the countermeasure and the associated costs with the crash. Caltrans has opted to use 5 years of observed crashes in estimating future expected crashes. A benefit in reduction of cost can include benefits derived from savings of societal cost (emergency response, medical cost, and property damage). Cost associated with a project is based on planning level estimates of construction cost, planning and environmental cost and costs associated with right-of-way and utilities.

6.1.1 City Intersection Projects

The locations and characteristics of the eight (8) priority intersections are shown in **Table 5** below.

Table 5 Priority Intersection Characteristics

City Intersection Mitigations	Secondary Road	Control	EPDO	Total Crashes	Common Crashes/Issues								
					Top Type of Collision	Top Violation Category	Night	Wet	Ped	Bike	Involv. w/Fixed Object	Crossing Not in Crosswalk	DUI
Dry Creek Rd	**Grove St**	Signalized	132	20	Broadside (6)	Auto Right of Way (6)	3	4	1	0	3	0	2
Healdsburg Ave	**Dry Creek Rd**	Signalized	84	15	Rear End (5)	Unsafe Speed (4), Auto Right of Way (4)	2	1	1	1	2	0	1
Healdsburg Ave	**Plaza St**	TWSC	68	5	Other (Bicycle Collisions) (3)	Unsafe Speed (2)	0	1	1	2	0	0	0
Sherman St	**Fitch St**	TWSC	43	4	Broadside (2)	Auto Right of Way (2)	0	0	1	0	0	1	0
Matheson St	**Healdsburg Ave**	Signalized	38	8	Rear End (2)	Improper Turning (2), Traffic Signals & Signs (2), Unsafe Starting or Backing (2)	3	0	1	1	0	0	1
Healdsburg Ave	**Exchange Ave**	Signalized	30	15	Sideswipe (4), Rear End (4)	Improper Turning (7)	6	4	0	1	2	0	1
Healdsburg Ave	**North St**	Signalized	19	9	Broadside (4)	DUI (2), Improper Turning (2), Unsafe Starting or Backing (2)	1	1	0	1	0	0	1

The countermeasures recommended for these locations are presented in **Table 6**.

Table 6 Recommended Countermeasures for Priority Intersections

Primary Road	Secondary Road	Relevant Challenge Area	CRF	Recommended Countermeasures	Reasoning
Dry Creek Rd	**Grove St**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	6 broadside and 4 rear end collisions
			-	Install bike box on North and South approaches	Observed high volumes of bicylists during field reconnaisance
			-	Replace Bott's dots with thermoplastic striping and raised pavement markers	Provide better lane visibility
Healdsburg Ave	**Dry Creek Rd**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	5 rear end and 4 broadside collisions
			-	Replace Bott's dots with thermoplastic striping and raised pavement markers	Provide better lane visibility
Healdsburg Ave	**Plaza St**	Intersection	20%	Improve sight distance to intersection (clear sight triangles)	Trees, bushes, and parked vehicles blocking sight for drivers on Plaza St
			-	Speed enforcement	2 collisions caused by unsafe speed
Sherman St	**Fitch St**	Intersection	20%	Improve sight distance to intersection (clear sight triangles)	Trees along Fitch St block view of on-coming vehicles for drivers on Sherman St
			50%	Convert to All-Way Stop control (if meets warrants)[2]	2 broadside collisions caused by Auto Right of Way violations
		Pedestrian	-	Install yellow school crosswalks	Within a half mile from schools, no crosswalks at this location, student hit and injured walking home from school
Matheson St	**Healdsburg Ave**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	2 rear end collisions
			-	Replace botts dots with thermoplastic striping	Provide better lane visibility
			30%	Convert signal to mast arm	2 rear end collisions and 2 collisions caused by traffic signal violations
Healdsburg Ave	**Exchange Ave**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	4 rear end and 3 broadside collisions
			-	Pavement improvements	Pavement failure through intersection
			-	Update striping and add raised pavement markers	Provide better lane visibility
			-	Median improvements	
				OR	
			Varies	Convert intersection to roundabout[1]	Intersection has complex geometry with US 101 on ramp access
Healdsburg Ave	**North St**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	4 broadside and 3 rear end collisions
			30%	Convert signal to mast arm	4 broadside and 3 rear end collisions
			-	Install Flashing Yellow Arrow (to North St)	Reduce broadside collisions, not enough space to install left turn lane with protected phase
March Ave	**Lupine Rd**	Pedestrian	35%	Upgrade pedestrian crossing[3]	Per public comments and City recommendation

[1] This option needs further analysis through an engineering feasiblity study

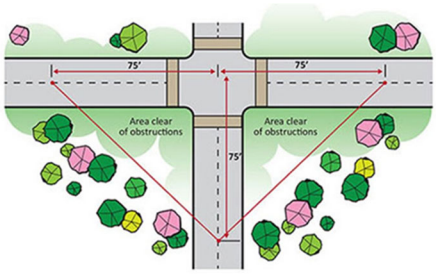
[2] An engineering study needs to be performed to see if this intersection meets CA MUTCD warrants for AWSC conversion

[3] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

Some of the proposed countermeasures at City intersections are highlighted below.

Install overhead mast arm (currently just signal side mounts):

- Matheson St / Healdsburg Ave
  - For the Matheson Street approaches
- Healdsburg Ave / North St
  - For the North Street approaches



Evaluate sight distance at intersections (clear sight triangles):

- Healdsburg Ave / Plaza St
- Sherman St / Fitch St

Figure 25 shows a conceptual drawing of proposed improvements at the intersection of Dry Creek Road and Grove Street. It should be noted that bicycle facilities are planned on Grove Street in the *Healdsburg Bicycle & Pedestrian Master Plan*.

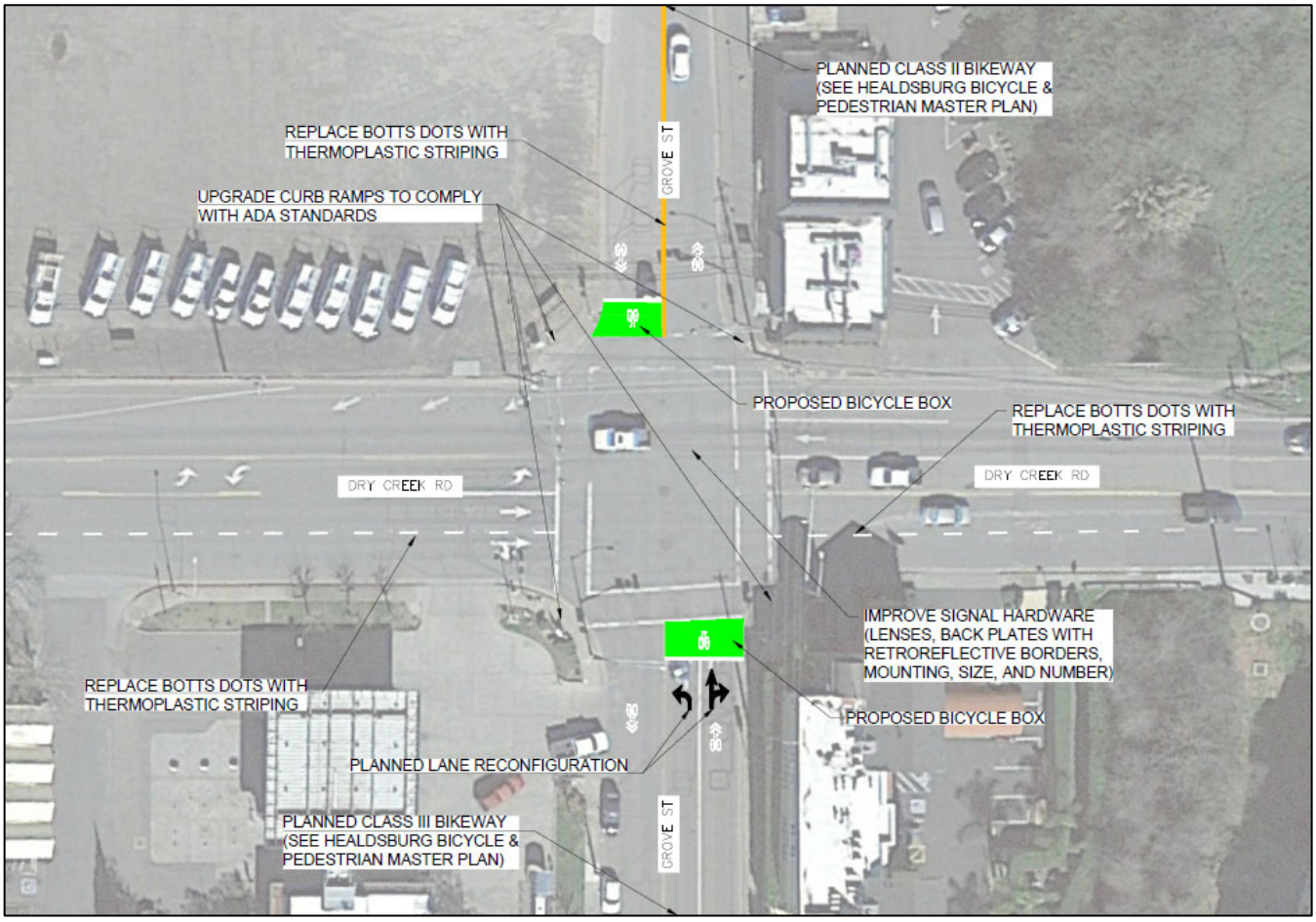


Figure 25 Conceptual Drawing of Improvements at Dry Creek Rd and Grove St

6.1.2 City Segment Projects

Through the analysis period there were 270 collisions reported on City of Healdsburg roadway segments (non-intersection related). A breakdown of roadway collisions on City streets are included in **Appendix C: Collision Data**.

Segment countermeasures were developed in the same manner as the intersections. Nine (9) priority segments were chosen based on EPDO and collision frequency. These priority segments and their characteristics are shown in **Table 7** below.

Table 7 Priority Segment Characteristics

Primary Road	Begin Segment	End Segment	EPDO	Total Crashes	Common Crashes/Issues								
					Top Type of Collision	Top Violation Category	Night	Wet	Ped	Crossing Not in Crosswalk	Bike	Involv. w/Fixed Object	DUI
Healdsburg Ave	**Bailhache Ave**	**Frontage Rd**	74	6	Hit Object (5)	Unsafe Speed (3)	5	2	0	0	0	4	3
Matheson St	**East St**	**2nd St**	70	11	Broadside (5)	Traffic Signals and Signs (3)	2	2	1	0	3	0	1
Healdsburg Ave	**Matheson St**	**Mill St**	62	13	Sideswipe (8)	Auto Right of Way (6)	4	2	1	0	0	2	1
Grove St	**Dry Creek Rd**	**Grant St**	47	8	Rear End (5)	Unsafe Speed (4)	2	0	0	0	0	2	0
Healdsburg Ave	**Mill St**	**Exchange St**	42	8	Broadside (4)	Auto Right of Way (4)	1	1	0	0	0	0	0
Healdsburg Ave	**Paul Wittke Dr**	**Dry Creek Rd**	38	13	Sideswipe (2), Rear End (2), Broadside (2), Hit Object (2), Veh/Ped (2)	Unsafe Speed (3), Improper Turning (3)	2	0	2	2	0	2	0
Healdsburg Ave	**Piper St**	**North St**	20	10	Sideswipe (5)	Auto Right of Way (3), Traffic Signals and Signs (3)	1	0	0	0	0	1	0

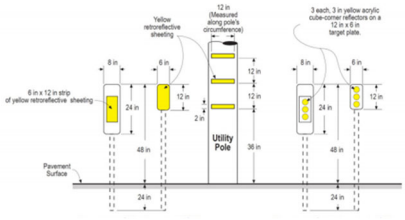
The countermeasures recommended for these locations are presented in **Table 8**.

Table 8 Recommended Countermeasures for Priority Segments

Segment	From	To	CRF	Recommended Countermeasures	Reasoning
Healdsburg Ave	Bailhache Ave	Frontage Rd	15%	Install delineators, reflectors and/or object markers	5 collisions with fixed objects
			30%	Install dynamic/variable speed warning signs (at locations where speed limit decreases)	3 collisions as a result of unsafe speed
			-	Improve striping and pavement markings	
Matheson St	East St	2nd St	35%	Install bike lanes and/or sharrows	3 bike collisions
			-	Install stop bars before crosswalks	3 collisions as a result of traffic sign violations
			-	Improve segment lighting	2 nighttime collisions
Healdsburg Ave	Matheson St	Mill St	-	Restripe existing parking stalls to meet current standards	4 collisions along on-street parking zones
			-	Improve sight distance - remove vegetation at driver eye height/parking at access points	4 collisions at access points
Grove St	Dry Creek Rd	Grant St	35%	Add segment lighting	2 nighttime collisions
			15%	Install delineators, reflectors and/or object markers	2 collisions involved with fixed objects
Healdsburg Ave	Mill St	Exchange St	-	Replace botts dots with thermoplastic striping	
			30%	Install dynamic/variable speed warning signs (at locations where speed limit decreases)	3 collisions as a result of unsafe speed
			-	Evaluate sight distance	
Healdsburg Ave	Paul Wittke Dr	Dry Creek Rd	Varies	Install pedestrian crossing (near Circle K)[1]	2 pedestrian collisions, not in crosswalks
			-	Replace botts dots with thermoplastic striping	
Healdsburg Ave	Piper St	North St	-	Restripe existing parking stalls to meet current standards	Sideswipe collisions with parked vehicles and while pulling away from curb
			-	Evaluate parking removal at locations that block sight distance and have a collision history	
Dry Creek Rd	US 101	East of Grove St	-	Replace botts dots with thermoplastic striping	Per City recommendation
Healdsburg Ave	US 101	Front St	-	Pedestrian improvements (install sidewalks and crossings where necessary)	Per public comments and City recommendation

[1] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

Some of the proposed countermeasures along City segments are highlighted below.



Install delineators, reflectors and/or object markers:

- Healdsburg Ave (Balihache Ave to Frontage Rd)
- Grove St (Dry Creek Rd to Grant St)

Install speed feedback signs:

- Healdsburg Ave/Old Redwood Hwy (Healdsburg Ave Bridge to US 101 Interchange, at speed limit changes)
  - Drops from 45 mph to 30 mph on the approach to Wicked Slush
  - Drops to 15 mph on the approach to the bridge
- Healdsburg Ave (before Exchange Ave at US 101 NB Off Ramp)

6.1.3 Identified Challenge/Emphasis Areas

Per the SHSP, the identified challenge/emphasis areas for the LRSP were as follows:

1. **Bicycling** – Bicycling safety countermeasures/projects were recommended at multiple locations.
   a. The stakeholder working group identified the Foss Creek Trail entrance on Grove Street as an area for future improvements. During the field reconnaissance, several southbound bicycles turning left onto Foss Creek Trail were observed. There are not currently any bicycle facilities on this portion of Grove Street, so the bicyclists typically are sharing the road with vehicles. A bicycle box is recommended at this location to alert drivers of the possibility of turning bicyclists. **Figure 26** shows a conceptual drawing of the proposed bike box.
2. **Intersections** – Projects were identified for the top intersections with collision severity and frequency.
3. **Pedestrians** – Providing pedestrian accommodations to include crossing enhancements. Other locations for pedestrian improvements are identified in the engineering strategies. Non-engineering strategies to improve pedestrian safety will be discussed in a later section of the report.
4. **Distracted Driving** – Prevention of distracted roadway usage is addressed though education and enforcement component of the non-engineering strategies. These strategies can be communicated through social media channels and through the schools.

5. **Aggressive Driving** – Aggressive driving can include improper speeds, improper turning and improper passing. Engineering strategies were identified for intersections and segments at locations where these issues were identified. Non-engineering strategies to prevent aggressive driving includes enforcement in selective areas. Some engineering strategies to address aggressive driving includes:

   a. Speed Management

      i. Traffic calming measures to include speed feedback signs, raised crosswalks, chicanes, speed reporting programs, and roundabouts.

      ii. Assembly Bill 43 (AB 43) was signed into law by Governor Newsom on October 8, 2021. This bill will change several aspects of speed setting and enforcement in California with a goal to make roadways safer for all road users. The new law is set to go into effect by June 30, 2024 and allows agencies more flexibility with keeping the previous speed limit, allows business and residential districts to have 15 and 20 mph speed limits, and allows the agency to round down the proposed speed limit based on an engineering study due to a high presence of bicycles or pedestrians.

Figure 26 Conceptual Drawing of Bike Box on Grove Street near Foss Creek Trail Entrance

6.1.4 Systemic Safety Countermeasures

When selecting countermeasures, just focusing on locations with a current collision issue is a reactive approach to roadway safety planning. A reactive approach targets recent hot-spots and specific problems that are associated with these locations; as a result of this approach, locations with low traffic volumes but with similar safety issues as hot spot locations are not addressed. In order to mitigate collisions in a both a reactive and proactive approach, Caltrans' Local Road Safety Manual suggests agencies utilize a comprehensive approach that includes systemic and hot spot location improvements in developing a safety plan.

Some systemic safety countermeasures options at intersections for the current high-risk roadway characteristics are listed below:

- Retroreflective Back plates and improved signal hardware, additional head per lane, and upgrade 8" signal heads to 12" indications
- Pedestrian countdown signals, APS push buttons
- ADA improvements to include new curb ramps with detectable warning strips
- Bike green conflict paint for vehicle and bicycle conflict areas and bike boxes where appropriate

6.1.5 Active Transportation

Healdsburg has an active walking and biking community, with many multimodal improvements already on the roadways or in planning and design. In evaluating future transportation projects, it is important to look for opportunities to incorporate facilities and safety improvements for bicycle, pedestrians, and transit. This will help to provide a safe alternative to driving and reduce greenhouse gases while increasing the health and vitality of the community.

6.2 Non-Engineering Strategies

A comprehensive approach to selecting countermeasure recognizes that not all safety issues can be addressed through infrastructure improvement. The comprehensive approach to safety involves the 5 E's of traffic safety. Besides engineering safety countermeasures, it is important to recommend safety countermeasures to coincide with the other safety E's.

6.2.1 Education

Education strategies are listed below.

- Continue bicycle and pedestrian safety campaigns (bike rodeo at schools by police department)
- Driver education through distracted driving campaigns
- Continue Safe Routes to School maps and outreach at schools
- Social media blasts with quick education tools for all users
- Dangers of speeding/speed management campaigns
- Partnering with agencies such as Sonoma County Health, Sonoma County Bicycle Coalition, and SCTA for public education

The California Office of Traffic Safety has resources that can be used by the City to help in traffic safety education for residents. Some campaigns highlighted in their website include impaired driving, distracted driving, pedestrian & bicycle safety, and speeding. The website provides educational materials, safety tips, facts, and resources to use in educating the public on traffic safety.

6.2.2 Emerging Technologies

Possible emerging technologies strategies are listed below.

- Explore ITS infrastructure, web/mobile application (apps) and smart cities practices
- Bicycle detection at signalized intersections
    - Currently the City is in the process of changing out the induction loop detection to video detection. With the video detection, bicyclists will be picked up and the call for a green light will be initiated.
- Upgraded controllers for flashing yellow arrows and leading pedestrian intervals
- Installing touchless Accessible Pedestrian Signals
- Communication with traffic signals
- Changeable message signs

6.2.3 Enforcement

Enforcement strategies are listed below.

- Targeted speed enforcement
    - Focus areas can include:
        - School zones
        - Areas of concern for residents (based on public feedback)

- DUI saturation patrols
- Increasing number of traffic enforcement officers
    - Possible through grants/OTS funding
- Distracted driving enforcement

6.2.4 Emergency Response

Emergency response strategies are suggested below.

- Review existing emergency vehicle pre-emption at signalized intersections
- Evaluate improvements to roadways to increase access and potentially shorten response times

7. Prioritize and Incorporate Strategies

7.1 Funding Sources

The City of Healdsburg can look for opportunities to incorporate safety enhancements with the Capital Improvement Program. However, it is noted that funding is very limited and typically used from roadway paving. Additional funding opportunities can come through grant funding to include HSIP, ATP, and CMAQ.

The primary source of potential funding for projects recommended in this plan is HSIP funding. Each cycle has available project funding for Benefit to Cost Ratio (BCR) and funding set-aside projects. BCR projects use expected benefit and estimated cost to determine eligibility and likelihood for receiving funding. The expected benefit is determined using the crash history and the predicted collision reduction from the recommended countermeasures. On the other hand, funding set-aside projects do not require a collision history. Per the last call for HSIP projects (closed November 2020), the set aside countermeasures available to agencies consisted of guardrail upgrades, pedestrian crossing enhancements, and installing edgelines. These set-aside countermeasures could be applied at multiple locations as long as the requested funding was within the amount available per agency.

ATP funding for engineering projects is primarily for installing or improving non-mobilized transportation infrastructure. Projects are more likely to receive this type of funding if it helps to increase the number of walkers and bikers, in a disadvantaged community, or improves the safety of children, specifically at school zones. Ultimately, the goal of this funding is to increase the use of active transportation.

7.2 Prioritized Projects

In evaluating how to implement safety projects, prioritized lists of projects are included in below. **Table 9** contains a prioritized list of the proposed intersection projects on City roadways based on their respective expected benefits. **Table 10** shows a prioritized list of the proposed segment projects for City roadway segment based on expected benefits. These tables also show potential funding opportunities. It should be noted that upgrading pedestrian push buttons and installing ADA improvements at signalized intersections are not current HSIP countermeasures. However, these improvements can be included in a Pedestrian Crossing Enhancements set-aside project provided the cost does not exceed 20% of the total project cost.

In addition, the last HSIP call for projects, Cycle 10, the awarded projects through the BCR application started at a BCR of 12. Even though the minimum for the grant application was a BCR of 3.5, the projects submitted were very competitive. Some of this was due to funding shortfalls with COVID lockdowns and the HSIP grant application deadline extension which allowed more agencies to submit. Therefore, the maximum project cost is also included for a BCR of 10.

Low-cost systemic countermeasures are preferred by Caltrans in the HSIP process.

Table 9 *Priority of City Intersection Projects*

			HSIP Funding Estimation						Potential Alternative Funding	
Primary Road	Secondary Road	Recommended Countermeasures	Max Cost of Project for BCR of 10	Benefit to Cost Ratio (BCR)	Preliminary Estimated Cost*	HSIP Funding Reimbursement Ratio**	Additional Funding Needed	Systemic Project	HSIP Set-Aside (No Collision History Required)	ATP Funding
Healdsburg Ave	Exchange Ave	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 12,069	9.28	$ 13,000	100%	$ -	-	-	-
		Pavement improvements	-	-	-	-	-	-	-	-
		Update striping and add raised pavement markers						Y	-	
		Median improvements						-	-	-
		OR								
		Convert intersection to roundabout [1]	$ 739,368	2.84	$ 2,600,000	100%	-	-	-	Y
Sherman St	Fitch St	Improve sight distance to intersection (clear sight triangles)	$ 323,868	166.09	$ 19,500	90%	$ 1,950.00	-	-	-
		Convert to All-Way Stop control [2]						-	-	-
		Install yellow school crosswalks	-	-	-	-	-	-	Pedestrian Crossing Enhancements	Y
Healdsburg Ave	Plaza St	Improve sight distance to intersection (clear sight triangles)	$ 206,700	159.00	$ 13,000	90%	$ 1,300	-	-	-
Dry Creek Rd	Grove St	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 159,837	122.95	$ 13,000	100%	$ -	-	-	-
		Install bike box on the North and South approaches	-	-	-	-			-	-
		Replace Bott's dots with thermoplastic striping and raised pavement markers	-	-	-	-	-	Y	-	-
Healdsburg Ave	Dry Creek Rd	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 68,952	53.04	$ 13,000	100%	$ -	-	-	-
		Replace botts dots with thermoplastic striping and raised pavement markers	-	-	-	-	-	Y	-	-
Matheson St	Healdsburg Ave	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 14,802	11.39	$ 13,000	100%	$ -	-	-	-
		Convert signal to mast arm	$ 59,208	2.28	$ 260,000	100%	$ -	-	-	-
		Replace Bott's dots with thermoplastic striping	-	-	-	-	-	Y	-	-
Healdsburg Ave	North St	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 7,461	0.43	$ 19,500	100%	$ -	-	-	-
		Install Flashing Yellow Arrow (to North St)						-	-	-
		Convert signal to mast arm	$ 29,844	1.15	$ 260,000	100%	$ -	-	-	-
March Ave	Lupine Rd	Upgrade pedestrian crossing [3]	-	-	-	-	-	-	Pedestrian Crossing Enhancements	Y
Systemic Projects		Improve and install curb ramps	-	-	-	-	-	Y	-	Y
		Install accessible pedestrian signals and countdown timers at pedestrian crossings	-	-	-	-	-	Y		
		Pedestrian Leading Intervals at Signals (as appropriate)	-	-	-	-	-	Y		
		Green conflict bike markings and bike boxes (as appropriate)	-	-	-	-	-	Y		

[1] This option needs further analysis through an engineering feasiblity study

[2] An engineering study needs to be performed to see if this intersection meets CA MUTCD warrants for AWSC conversion

[3] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

*Including 30% contingency

**Install left-turn lane and add turn phase (signal has no left-turn lane or phase before); HSIP Funding Eligibility: 90%
Improve sight distance to intersection (Clear Sight Triangles); HSIP Funding Eligibility: 90%

Table 10 Priority of City Segment Projects

				HSIP Analyzer Results						Potential Alternative Funding	
Segment	From	To	Recommended Countermeasures	Max Cost of Project for B/C Ratio of 10	B/C Ratio	Preliminary Estimated Cost*	HSIP Funding Reimbursement Ratio**	Additional Funding Needed	Systemic Project	HSIP Set-Aside	ATP Funding
Healdsburg Ave	Balihache Ave	Frontage Rd	Install delineators, reflectors and/or object markers	$ 369,538	37.90	$ 97,500	100%	-	-	-	-
			Install dynamic/variable speed warning signs						-	-	-
			Improve striping and pavement markings	-	-	-	-	-	-	-	-
Matheson St	East St	2nd St	Install bike lanes and/or sharrows	$ 366,366	212.69	$ 17,225	90%	$ 1,723	-	-	Y
			Install stop bars before crosswalks	-	-	-	-	-	-	Pedestrian Crossing Enhancements	
			Improve segment lighting[1]						-	-	-
Healdsburg Ave	Mill St	Exchange Ave	Replace Bott's dots with thermoplastic striping and raised pavement marker	$ 176,291	73.50	$ 23,985	100%	-	-	-	-
			Install delineators, reflectors and/or object markers								
			Evaluate sight distance	-	-	-	-	-	-	-	
Healdsburg Ave	Matheson St	Mill St	Restripe existing parking stalls to meet current standards	$ 130,690	372.34	$ 3,510	100%	-	-	Installing Edgelines	-
			Evaluate sight distance	-	-	-	-	-	-	-	-
Grove St	Dry Creek Rd	Grant St	Install delineators, reflectors and/or object markers	$ 75,808	2.89	$ 262,600	100%	-	-	-	-
			Add segment lighting						-	-	-
Healdsburg Ave	Paul Witke Dr	Dry Creek Rd	Replace Bott's dots with thermoplastic striping	$ 59,789	10.00	$ 59,789	90%	-	-	-	Previously Applied
			Install pedestrian crossing improvements (near Circle K)[2]						-	Pedestrian Crossing Enhancements	
Healdsburg Ave	Piper St	North St	Restripe existing parking stalls to meet current standards	$ 13,100	47.42	$ 2,763	100%	-	-	Installing Edgelines	-
			Evalute parking removal at locations that block sight distance and have collision history	-	-	-	-	-	-	-	-
Dry Creek Rd	US 101	East of Grove St	Replace botts dots with thermoplastic striping	-	-	-	-	-	-	Installing Edgelines	
Healdsburg Ave	US 101	Front St	Pedestrian improvements (install sidewalks and crossings where necessary)	-	-	-	-	-	-	Pedestrian Crossing Enhancements	Y

[1] A lighting study needs to be performed to evaluate any deficiencies and proposed enhancements.

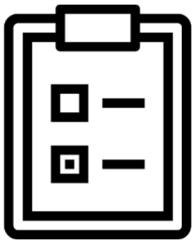
[2] An engineering study needs to be performed to evaluate the preferred pedestrian crossing enhancements

*Including 30% contingency

**Install bike lanes; HSIP Funding Eligibility: 90%

8. Evaluation Process

To evaluate the success of this plan, yearly collision analysis, along with requests for public feedback, can take place and be compared to the established goals.



1. **Goal:** Create a safe, livable, and welcoming community by developing a roadway safety plan targeted to Healdsburg's transportation and roadway safety needs.
    - **Measure of Success:** If this goal is successful, residents will express an increased feeling of safety while using Healdsburg's transportation systems. Additionally, the number and severity of collisions each year will decrease.
2. **Goal:** Eliminate the potential for fatal and severe injury collisions citywide.
    - **Measure of Success:** This can be achieved by continuing the trend of zero fatal collisions as well as smaller reductions of 1 severe injury collision per year.
3. **Goal:** Reduce rear end collisions citywide by implementing speed management strategies.
    - **Measure of Success:** This goal will be effective if there is a decrease in "Unsafe Speed" collisions after implementing speed management strategies outlined in this plan.
4. **Goal:** Reduce improper turning collisions in the downtown area with speed and parking management.
    - **Measure of Success:** This goal will be effective if there is a decrease in "Improper Turning" collisions after implementing parking and speed management strategies outlined in this plan.
5. **Goal:** Improve multimodal transportation safety by expanding the City's non-motorized transportation infrastructure.
    - **Measure of Success:** Public feedback expressed the need for pedestrian and bicycle infrastructure enhancements. Improvements and installations of non-motorized transportation facilities will capture this goal.
6. **Goal:** Improve the health and vitality of our community with a roadway safety plan targeted to Healdsburg's needs.
    - **Measure of Success:** This goal will be effective if there is a decrease in injury collisions and the public expresses the feeling of safety while using all modes of transportation, especially biking and walking.
7. **Goal:** Improve safety around schools.
    - **Measure of Success:** Public feedback shows there are areas where pedestrian and bicycle infrastructure can be installed or improved as well as the need for speed management in school zones. An evaluation of the improvements of multimodal transportation infrastructure and enforcement around schools will capture effectiveness of this goal.

⑧ **Goal:** Reduce speeding collisions through engineering, enforcement, education, and emerging technologies strategies.

- **Measure of Success:** A decrease in “Unsafe Speed” violations after implanting engineering, enforcement, education, and emerging technologies will determine if this goal is met.

9. Next Steps

The City Council unanimously approved the adoption of the Local Road Safety Plan on December 6, 2021. This safety plan will be a living document and will guide the City's roadway safety needs for the next five years. It will be updated as needed and the goals will be monitored.

10. References

Traffic Data

- City of Healdsburg Collision Data, Statewide Integrated Traffic Records System, 2015-2019.
- City of Healdsburg Collision Data, Transportation Injury Mapping System, 2015-2019.
- Collision Reports, City of Healdsburg, 2015-2020.
- TASAS Selective Record Retrieval: TSAR, California Department of Transportation, 2015-2019.
- TASAS Selective Record Retrieval: Table B, California Department of Transportation, 2015-2019.

Manuals

- "Developing Safety Plans, A Manual for Local Rural Road Owners", Federal Highway Administration, March 2012, http://safety.fhwa.dot.gov/local_rural/training/fhwasa12017/.
- 2020-2024 California's Strategic Highway Safety Plan (SHSP), "California Safe Roads: 2020-2024 Strategic Highway Safety Plan", Caltrans.
- "Local Roadway Safety, A Manual for California's Local Road Owners", Caltrans, Version 1.5, April 2020
- "Highway Safety Manual", American Association of State Highway Officials (AASHTO), 1st Edition, 2014 supplement.
- "California Manual of Uniform Traffic Control Devices (CA MUTCD)", Revision 5, 2014.
- "Healdsburg Bicycle & Pedestrian Master Plan", Sonoma County Transportation Authority, 2013.

Websites

- California Department of Transportation, "Strategic Highway Safety Plan (SHSP)", https://dot.ca.gov/programs/safety-programs/shsp.
- California Department of Transportation, "Local Roadway Safety Plan (LRSP) and Systemic Safety Analysis Report Program (SSARP)", https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/local-roadway-safety-plans.
- California Department of Transportation, "HSIP Cycle 10", https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/apply-now.
- City of Healdsburg Local Road Safety Plan, https://lrsp.mysocialpinpoint.com/healdsburg.
- Institute of Transportation Engineers, https://www.ite.org/technical-resources/topics/safe-systems/

Surveys

- Local Road Safety Plan Project Survey, https://lrsp.mysocialpinpoint.com/healdsburg.

Appendix A

Stakeholder and Public Input

Meeting Summary

January 19, 2021

To:	Curt Bates	Project:	City of Healdsburg Local Road Safety Plan (LRSP)
From:	Kathy Kleinschmidt (GHD)	Ref/Job No.:	11219822
CC:	Kiera Bryant (GHD)	File No.:	LRSPMS0001.docx

Subject: Local Roadway Safety Plan (LRSP) Meeting #1 Summary – January 19th, 2021

The following is GHD's understanding of the discussions and decisions for the above referenced meeting. Please notify GHD of any discrepancies in the information recorded.

This meeting record has been prepared to serve as documentation for the virtual meeting conducted on January 19th, 2021 via Microsoft Teams platform. A PowerPoint presentation was used to focus the discussion.

All participants attending virtually, no sign-in sheet was circulated. Rather, the list of attendees will be provided at the end of this document.

1. **Introductions**
    a. Attendees of LRSP meeting
        i. Self-introductions of meeting attendees
            1. Attendees and respective introductions are listed at the back of the document
2. **Meeting Summary**
    a. Focus Challenge Areas per SHSP (see poll results)
        i. Bicyclists
        ii. Intersections
        iii. Pedestrians
        iv. Distracted Driving
        v. Aggressive Driving
    b. Potential Additional Challenge Areas (input from stakeholders)
        i. Speeding (from Walter)
            1. Especially along Healdsburg Ave
        ii. Speed Limits (from Brian)
            1. Speed surveys completed by the city in 2019
    c. Collision Analysis
        i. Received 2020 data through October from City PD
        ii. Compared collision hot spots pre- and post-construction of the roundabout at Healdsburg Ave and Mill St
        iii. Planned improvements at Dry Creek Rd and Grove St for signal timing and new developments in the area
        iv. Collisions listed as Unknown/Other are Hit-and-Run collisions where the primary collision factor cannot be immediately determined
        v. Would like to RRFBs near schools (input from Rob)
        vi. Safe bike and pedestrian infrastructure along Healdsburg Ave (input from Walter)

GHD
669 Pacific Street Suite A San Luis Obispo California 93401 United States
T +1 805 242 0461 **W** www.ghd.com

d. Previous Projects
    i. RRFBs in downtown area – functioning well at Healdsburg Ave and Plaza St
    ii. Five-legged roundabout at Healdsburg Ave and Mill St

3. **Next Steps**
    a. Draft Mission, Vision, and Goals
        i. Asked stakeholder group to provide feedback via email
    b. Compile current and previous safety projects within Healdsburg
        i. Asked stakeholders to provide any current information they have
        ii. City looking to apply for Caltrans ATP grants eventually
    c. Determine timeframe to launch Social Pinpoint page
        i. Looking to launch within 2 weeks – first week of February
        ii. City PIO will publicize page to city
    d. Develop countermeasures and safety projects
    e. Schedule next LRSP meeting
        i. Virtual meeting with the working group in March/April

List of Attendees

1. **Curt Bates** – Safety Champion/Principal Engineer, City of Healdsburg
2. **Ben Kageyama** – Senior Civil Engineer, City of Healdsburg
    a. Provide support on traffic, bike, and pedestrian matters in the city
3. **Matt Jenkins** – Healdsburg Police Department Lieutenant
    a. Wants to see improvements for safer travel through Healdsburg, reduce collisions department needs to respond to.
4. **Katie Yim** – Caltrans District 4
5. **Ahmad Rahimi** – Caltrans District 4
    a. Work together with SCTA and the City for projects in Caltrans jurisdiction and aid with capturing all the funding needed/available for safety projects
6. **Kimberly Overton** – Caltrans District 4
    a. Pedestrian and bicycle planner
7. **Rob Smith** – Maintenance and Operation Supervisor, Healdsburg Unified School District
    a. Voicing safety improvements for children walking/biking to and from the schools
8. **Tanya Bruno** – Director of Operations, The Healdsburg School
    a. Safety on the south end of town to provide a safer routes to downtown for students
9. **Walter Niederberger –** Healdsburg 2040
    a. Focused on bicycle and pedestrian safety, provide feedback on bicycle infrastructure needed especially along Healdsburg Avenue
10. **Brian Geagan** – Healdsburg 2040
    a. Enhance pedestrian and bicycle infrastructure which will enhance overall life in Healdsburg. Interested in how improving infrastructure will enhance traffic safety
11. **Kathy Kleinschmidt** – GHD
    a. Meeting and plan facilitator
12. **Frank Penry** – GHD
    a. Project Manager
13. **Kiera Bryant** – GHD
14. **Farid Rahman** – GHD

Meeting Summary

May 11, 2021

To:	Curt Bates	Project:	City of Healdsburg Local Road Safety Plan (LRSP)
From:	Kathy Kleinschmidt	Ref/Job No.:	11219822
CC:	Kiera Bryant	File No.:	LRSPMS002.docx

Subject: Local Roadway Safety Plan (LRSP) Meeting #2 Summary – May 11, 2021

The following is GHD's understanding of the discussions and decisions for the above referenced meeting. Please notify GHD of any discrepancies in the information recorded.

This meeting record has been prepared to serve as documentation for the virtual meeting conducted on May 11, 2021 via Microsoft Teams platform. A PowerPoint presentation was used to focus the discussion.

All participants attending virtually, no sign-in sheet was circulated. Rather, the list of attendees will be provided at the end of this document.

1. Introductions

- a. Attendees of LRSP meeting
  - i. Self-introductions of meeting attendees
    1. Attendees are listed at the back of the document

2. Meeting Summary

- a. Summary of 1st Stakeholder Meeting
  - i. Meeting Summary
    1. Challenge/Emphasis areas
       - a. Bicyclists
       - b. Intersections
       - c. Pedestrians
       - d. Distracted Driving
       - e. Aggressive Driving
  - ii. Vision, Mission, and Goals
    1. Sent Microsoft Form asking for input on the mission, vision, and goals
    2. Preferred Vision
       - a. "Healdsburg will develop a comprehensive safety plan with engagement of stakeholders and citizens that encourages improved safety for all users, whether it is walking, biking, and driving – because every person in our community matters."
       - b. Consensus to combine this vision with "The City of Healdsburg will strive toward the elimination of all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all." And include transit
    3. Discussed strategies for implementing goals
- b. Recent Developments

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i. Updates to collision analysis
    1. Reviewed collision density maps
    2. Top violation categories
        a. Many improper turning collisions result in sideswipes
            i. Some due to parking too close to driveways/intersections
            ii. Confirmed with PD that these include sideswipes as a result of drivers hitting other vehicles while attempting to parallel park due to being too close.
        b. Many automobile right of way collisions result in broadside collisions
        c. Many unsafe speed collisions result in rear end collisions
ii. Public website engagement
    1. 72 interactive map comments and 36 survey responses
    2. Summarized survey results
        a. Top concern was lack of infrastructure (bike lanes, sidewalks, etc.)
            i. Additional concerns about speeding and distracted driving resulting in running stop signs
        b. Better crossings and speed enforcement were top suggestions in and around school zones
        c. Most did not have any questions or concerns about the roundabout at Healdsburg Ave and Mill St
            i. Concerns about drivers driving too fast through roundabout, sun glare, driving on the curb, and what happens when the Smart train begins using the tracks
        d. Most were not familiar with the planned US 101 and Dry Creek Rd interchange improvements.
            i. Most interested in learning more about the project as it progresses – emails collected through survey so can send out information if needed.
        e. Most would like to see improvements to bicycle infrastructure, sidewalks, and streets (repave)
    3. Summarized interactive map comments
        a. Top locations for Public Comment
            i. Healdsburg Ave at Mill St
                1. Safety for bicyclists and pedestrians at the roundabout
            ii. Healdsburg Plaza
                1. More bike racks
                2. Shrubs block sight, vehicles cannot see pedestrians
                3. Better ped timing at signal
            iii. 1st St/Front St at Mason St
                1. No safe ped crossing
                2. Vehicles speed around corner
                3. Confusing intersection geometry
            iv. March Ave at Lupine Rd
                1. Congested with parked vehicles
                2. Poor sight distance
                3. Concerns about safety of children crossing

iii. Safety projects in the City
    1. Dry Creek Rd and Grove St Intersection
        a. Changing lane configuration of south leg with split phasing
        b. Evaluating a flashing yellow arrow in east-west direction
        c. Changes to be made with new development in this area
    2. Dry Creek Rd and US 101 Interchange
        a. Interim improvements completed – stop sign added at SB ramp, road widened and turn lanes added
        b. Feasibility study completed recommended roundabouts
    3. Citywide ATP projects
        a. Applied for Cycle 5 funding to complete a road diet on Healdsburg Ave
        b. Funding not awarded during this cycle but is highly competitive for regional funding in the next cycle

c. Safety Projects
    i. Methodology
        1. Collision analysis
        2. Public comments
        3. Recent safety improvements
        4. City feedback and recommendations
    ii. Priority locations
    iii. Recommended countermeasures
        1. Priority intersections
            a. Improvements to signals systemically
                i. Improve signal hardware
                ii. Touchless APS
                iii. Signal head per lane where feasible
                iv. City recently implemented timing changes
            b. Dry Creek Rd and Grove St
                i. Looking to install FYA and NB left turn phase with incoming development in the area
                ii. Concerns from stakeholders at intersection for bicyclists and peds and users of the Foss Creek Trail
                iii. New signal to be installed on Dry Creek Rd near the railroad tracks for peds and bicyclists using the trail and walking between the shopping center, hotel, and new development
            c. Evaluate sight distance at intersections
            d. Install overhead mast arms (if feasible)
            e. Install yellow school crosswalks and All-Way Stop control (if warrants met) at Sherman St / Fitch St
            f. Ped crossing enhancements at March Ave and Lupine Rd
                i. Multiple public comments regarding this location, city has already considered improvements here
        2. Priority segments
            a. Install edgelines and centerlines to replace the bott dots
            b. Speed feedback signs recommended along Healdsburg Ave/Old Redwood Highway between US 101 interchange and Healdsburg Ave bridge
                i. Pedestrian crossing enhancements being installed at Wicked Slush; to be completed within the next month

c. Install delineators, reflectors, and/or object markers where there is a trend of hit object collisions
d. Add/improve segment lighting
e. Evaluate sight distance along Healdsburg Ave
i. May result in removing some parking and painting red curbs close to intersections in the downtown area

iv. Potential funding sources for projects
1. Highway Safety Improvement Program (HSIP)
a. Benefit-to-cost ratio projects
b. Set-aside funding
2. Active Transportation Program (ATP)
3. Congestion Mitigation and Air Quality (CMAQ)
4. Sustainable Transportation Planning Grants

v. Non-engineering safety projects
1. Education
a. City champions education campaigns and partners with other agencies to help provide education components to projects
i. City will reach out to various agencies and groups depending on needs for campaigns
b. Education campaigns for schools through Safe Routes to School and aided by the County Health
i. Not able to complete this past year due to Covid-19
c. Vision Zero campaign lead by SCTA and Sonoma County Health
2. Emerging Technologies
a. Bike detection at signals
b. Looking to upgrade controllers for FYA and leading pedestrian intervals
c. Touchless Accessible Pedestrian Signals
d. Changeable message sign may be helpful
3. Enforcement
a. PD already doing speed enforcement when possible
i. Received OTS funding for enforcement from 2014 to 2016
ii. Funding does not cover hiring more officers so limited ability for additional enforcement
b. Will include information in draft LRSP regarding additional OTS funding for PD
4. Emergency Response
a. City already has Opticom system at all signals
b. Improvements to roadways to increase access and potentially shorten response times where needed and feasible

d. LRSP Timeframe
i. LRSP schedule for completion
1. Final LRSP around June/July 2021
a. Will send to stakeholders for input after the City reviews
b. Will send to the public for review via Social Pinpoint
c. Will go to City council for adoption

3. Next Steps

a. Respond to Microsoft Form with input on Vision, Mission, and Goals
i. Results will be compiled and incorporated into the plan

b. Plan to be completed in June/July 2021
    i. Draft report will be sent to stakeholders for comment before being sent to City Council for adoption

List of Attendees

1. Curt Bates – Principal Engineer, City of Healdsburg
2. Ben Kageyama – Senior Civil Engineer, City of Healdsburg
3. Matt Jenkins – Healdsburg Police Department Lieutenant
4. Steve Schmitz – Sonoma County Transit
5. Kimberly Overton – Caltrans District 4 Bicycle and Pedestrian Coordinator
6. Robert Smith – Healdsburg USD Maintenance and Ops
7. Walter Niederberger – Healdsburg 2040
8. Nancy Jean Andrews – Healdsburg 2040
9. Brian Geagan – Healdsburg 2040
10. Kristin Thigpen – Sonoma County Department of Health Services Vision Zero
11. Seana Gause – Sonoma County Transit Authority Senior Programming and Projects
12. Kathy Kleinschmidt – GHD
13. Kiera Bryant – GHD

Memorandum

March 1, 2021

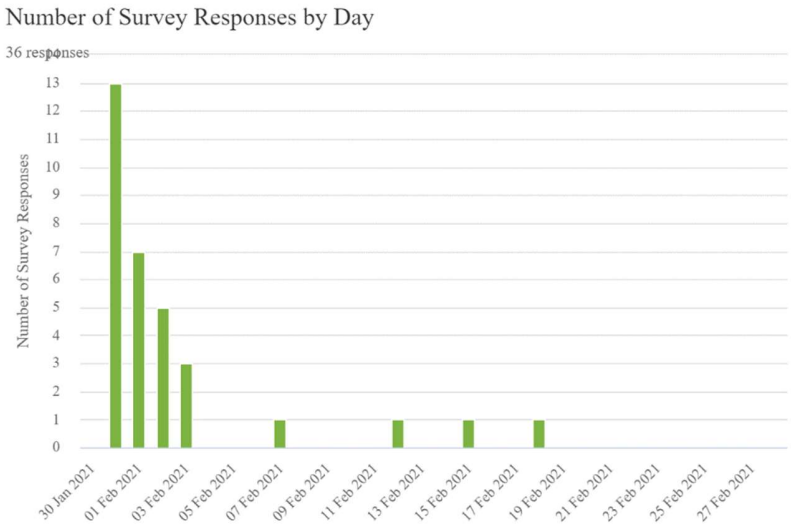
To:	Curt Bates	Project:	City of Healdsburg Local Road Safety Plan
From:	Kathy Kleinschmidt	Ref/Job No.:	11219822
CC:	Emily Darke	File No.:	11219822MEM003 - SOCIAL PINPOINT - UPDATE.DOCX

Subject: Local Road Safety Plan Status Update – Public Survey Results

1. Introduction

This memorandum documents the public survey results from the City of Healdsburg's Local Road Safety Plan (LRSP) website via Social Pinpoint. The survey closed on February 28, 2021.

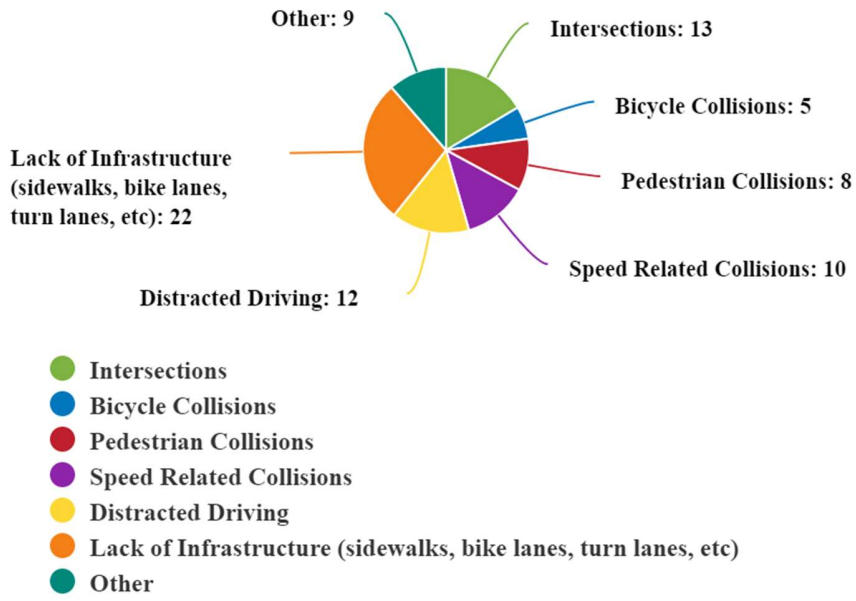
2. Public Survey Results



The "Healdsburg LRSP Public Survey" received thirty-six (36) responses as of February 28, 2021. The number of survey responses by date are shown in the graph above. The responses to each of the survey questions are summarized below.

GHD
669 Pacific Street Suite A San Luis Obispo California 93401 United States
T +1 805 242 0461 **W** www.ghd.com

Question 1. What are the main roadway safety issues for Healdsburg? Check all that apply.



The top roadway safety issue in Healdsburg, according to survey responses, is lack of infrastructure.

Please provide any other additional details regarding the main safety concerns selected.*

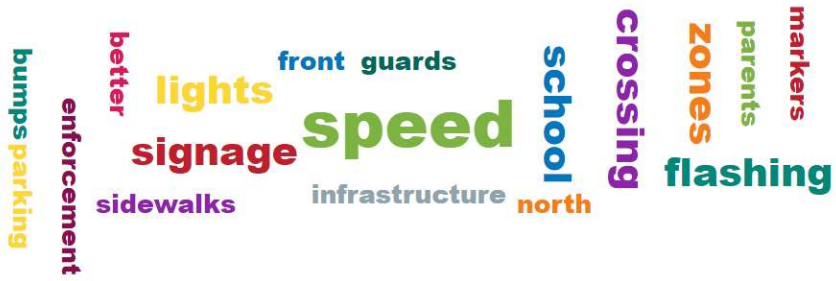
- “A lot of ppl run the stop signs around rosewood and poppyhill”
- “Backups due to one lane roads.”
- “Biking in Healdsburg is very dangerous.”
- “drunk drivers”
- “Far too many speeders and people running stop signs in this town”
- “Healdsburg Ave is no safe for bicyclists. Bike lanes are urgent.”
- “I bicycle commute and the place that is scariest to walk or bicycle across is the Dry Creek intersection and the one below (trying to walk from the hospital to Plank Coffee with crossing the large street).”
- “I have lived in Hbg since 1988 and think that roads are generally fine. In some areas there could be better lanes for bikes/pedestrians. One issue in some of the older neighbors downtown, is that the street is narrow, so if you have cars parked on both sides of street, and 2 cars are coming in opposite directions, there is often not enough room for both, so one car needs to stop or yield and allow the other one one to go.”

- “Insufficient stop signs in downtown & surrounding area. Prime example: East Street at Plaza Street.”
- “Many intersections require more stop signs (turn several two-way stops into four-way, where visibility is poor). Streets are not wide enough to allow modern large vehicles to park and maintain safe access for emergency vehicles. Not enough bike lanes in general. Other: chip seal from just a few years ago is deteriorating and creating many bumpy roads that used to be pristine- these need resurfacing and not in a quick-fix bandaid manner like the last time. Plan for long-term.”
- “Many people drive right through the intersection of Matheson and East Street. Before and after school, it's parents. The rest of the day it's old people. (And I am 73. Have almost been hit many times.) I wish I had an answer! Signal light?”
- “More Sidewalks especially on Front Street from Mason to Healdsburg Ave. We all have to jaywalk to get to the river park”
- **"Need lighting on Grove St"**
- **"Need more bike lanes--especially Healdsburg Ave."**
- “North Healdsburg Avenue us a torn up high speed freeway in the way to the county dump. It’s unsafe, has excessive speed, is loud, and full of flying trash. Fix the road, slow the traffic to 25 mph & have stop lights and lighted crosswalks to cross the street to go across to the community center and park. It’s a horrible dangerous loud & dirty accident waiting tk happen.”
- “Not enough 4-way stops. Speed limits are too high.”
- “Pedestrians around the plaza do not pay attention to vehicles and do not follow any type of road laws”
- “people are driving too fast around town, especially on University Avenue where there is a lot of activity with kids, pets, elders, etc”
- “Poor pavement conditions and lack of adequate bike lanes”
- “Poor road conditions, street surfaces uneven and in need of repair/resurfacing. Need increased use of stop signs to control traffic/speed.”
- “Really presumptive question. Very hard to start with this survey -- and leading to create "problem" mindset.”
- “Road surfaces need major improvements.”
- “Sidewalks need to be installed and/or repaired everywhere”
- “speeding on narrow streets”
- “Way too many people on cellphones paying little attention to how they are driving, where they are driving and not aware of cars around them.”

- “Would like to feel safe while riding a bi[ke]”

*Responses in **bold** are new since previous memo on February 10th.

*Question 2. What roadway improvements would you like to see in and around school zones?**

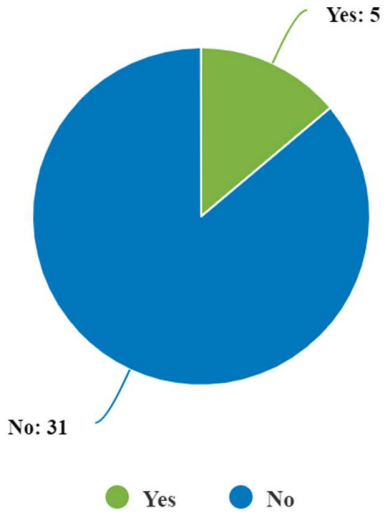


- **"-"**
- “better crosswalk on Powell by the high school.”
- ”bike and pedestrian signage and infrastructure.”
- “Crossing lights”
- “Enforcement of 25 MPH zones, easy-to-see signage, lots of crossing guards.”
- “enforcement of drop off areas. We live by the junior high and there are constantly parents letting children off in the middle of the block on the opposite side of the drop off area and then kids run out in front of their parent's car without looking. It is EXTREMELY dangerous.”
- “Fix Northern HB Ave.! See above. Kids and family’s run for their lives to get to the park between Dry Creek Road & No. Grove St.”
- **"Flashing sidewalk markers"**
- “Installation of flashing signs (triggered by vehicle approaching) reminding drivers of speed limit.”
- “Install the sidewalks there on Front St.”
- “Lower speed limits or less parking (creates visibility issues).”
- “marked well”
- “More blinking lights at crosswalks.”
- “More marking on the road for the start and the end of the school zones”
- “More notices to slow down. Crossing guards”

- “na”
- “N/A”
- “no comment”
- “None”
- “None. Should have instruction "If you have no specific improvement, please write in "none".”
- “No opinion”
- “Police presence”
- “Road surfaces need major improvements.”
- “Sidewalks”
- “Signage and restricted parking times. Identified pick up/drop off zones.”
- “Signal at North street should be demand actuated or timed for Healdsburg avenue, north and southbound as primary”
- **"Slow down cars. "**
- “Soft speed bumps or flashing warnings lights installed”
- “So many of the streets in Hburg are in awful shape (even worse after all the PG&E gas work).”
- “speed bumps”
- “Speed Humps”
- “Unsure”
- **"Visible markers for people to slow down and better infrastructure so students can safely walk or bike to school."**

*Responses in **bold** are new since previous memo on February 10th.

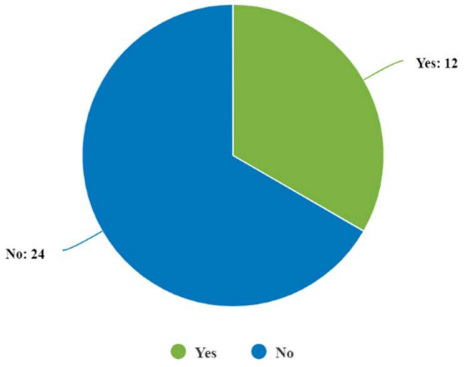
Question 3. Are there any questions or concerns you have with the current 5-legged multi-lane roundabout at Healdsburg Ave and Mill St?



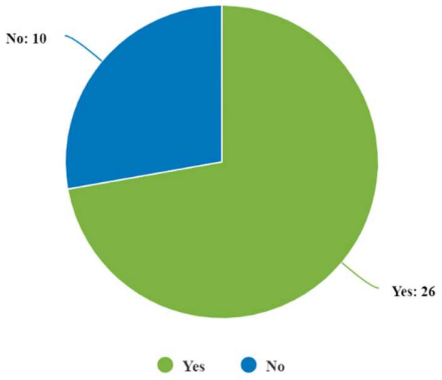
Please list your questions/concerns.

- “Healdsburg residents need to be taught how to use it. For example; use your signal when exiting the roundabout. I'm also concerned about drivers exceeding the speed limit going through the roundabout.”
- “It is difficult to always stay off the curb circling the roundabout. Could it have a yellow circle around it or some kind of reflecting light?”
- “people are still driving too fast and it's confusing for not only locals but tourists!”
- “Sun glare from people exiting from out of town at dusk blinds drivers and I was almost hit on my bicycle by a BUS going by and not seeing me!”
- “What happens when the Smart train comes.”

Question 4. Are you familiar with the future planned US 101 and Dry Creek Road improvements?



Question 5. Would you be interested in learning more about the Dry Creek Road Interchange Improvement project as it progresses?



*Question 6. What other roadway safety improvements would you like to see?**

- **"1. University & Mason turn , Mason/Front/1st St. - no safe way for pedestrians to cross street.**

2. 73-77 Front St. + east side of Front St. near Davis Winery - no sidewalk

3. PLEASE smooth out old rail tracks on North (horrible) and Matheson Sts. It's hard to avoid and I always have to steel myself for the harshness of the rough tracks. " "A SLOWER speed for baliache and Rio Lindo Ave . The speed is currently 45 mph and there are NUMEROUS bikers, joggers and runners not to mention blind corners and no sidewalks."

- **"A SLOWER speed for baliache and Rio Lindo Ave . The speed is currently 45 mph and there are NUMEROUS bikers, joggers and runners not to mention blind corners and no sidewalks. "**
- **"Better infrastructure for safe transportation by bikers, walkers, etc."**
- "Better sidewalks. Better roads."
- "Continue to keep up with the bike lanes!!!"
- "Eliminate roadway parking on University Ave."
- "Fix repave No. Healdsburg Ave."
- "I don't want to see a roundabout at Dry Creek Rd interchange"
- "improved roadway by Montage"
- "In general, install and fix existing sidewalks"
- "LIGHTS, LIGHTS, LIGHTS! The City switched all the overhead lights on the streets with LEDs or something but they are virtually useless to use at night. One must walk in the middle of the street for safety's sake. It is absolutely dangerous to stay on the sidewalk as one cannot see trip hazards and it is very dark and unsafe. PLEASE BRING BACK LIGHTS TO OUR STREETS!"
- "Many more protected bike lanes. More pedestrian and bike only areas ("open streets"). Traffic calming features to encourage lower speeds and more cautious driving."
- "Many streets in and around the downtown area are in a desperate need of re-surfacing."
- "Maybe putting in speed bumps in the neighborhoods sto discourage speeding."
- "More bike lanes and better paving for cyclists."
- "More bike lanes with green markings like downtown Windsor has."
- "More crosswalks and more trash cans all around town. The trash cans around town now are disgusting. You can hear rats in the ones downtown. They need to be cleaned at least once a month. Would love to see more park benches all around town too. There are a ton of cars parked in driveways that impede into sidewalks, this should not be allowed. Also, lots of unkept hedges impeding into sidewalks."
- "More intersections with stop signs"

- “More speed bumps or whatever can slow down traffic near schools and side streets like Brown Street which is narrow and some drivers speed thru.”
- “more traffic police, more citations written for speeding, failure to completely stop at stop signs, drunk driving.”
- “N/A”
- “None”
- “None. HBG is a small and quaint town which is why people clamber to come here. Leave it alone please.”
- “Plan parking areas with care, please. Many downtown streets changed parking style a while back and it created dangerous visibility issues. For example, East St in front of St. John’s church: used to be parallel parking and one could see people backing out much easier, plus pedestrians were more visible. In trying to create more spaces to park, the city created a more dangerous situation. Perhaps consider a low parking garage downtown, or even better, an underground parking structure.”
- “Road improvements on Healdsburg Ave. between Parkland Farms and Montage.”
- “Road surfaces need major improvements, especially near the plaza. On plaza street.”
- **"Sidewalks on grove st"**
- “Smoothing out Westside Road.”
- “speed bumps on University Avenue”
- “Speed limit on Parkland Farms Blvd is 35mph from Healdsburg Avenue to Saddle Draw and this seems a bit fast for a residential neighborhood with kids and deer”
- “Street resurfacing, defined cross walks, additional use of roundabouts when appropriate.”
- “The quality of out street surfaces is terrible. The liability connect to this is also an issue of concern. I sprained my ankle last month from stepping in a pot-hole,”
- “There are lots of problem intersections not addressed in this survey! And I think the Dry Creek/101 interchange functions fine as is. Pedestrian traffic is dangerous at the railroad tracks near the river, the lack of a crosswalk or sidewalk in that area. Visibility issues throughout basically the entire length of East Street. I think traffic lights should be installed at Plaza & Healdsburg Ave and Piper & Center since both intersections are high use and dangerous for pedestrians”
- “To me, the Dry Creek intersection was not that big of a problem. Hope the investment /cost is worthwhile. I would like to see more walking paths + trails. Am 100% working from home now and it would be great to have more access to walking paths and trails w/o needing to drive to some park etc.”

- “Traffic lights need induction loops which are triggered by bicyclists, not only cars. There are not enough bicycle racks throughout the city.”

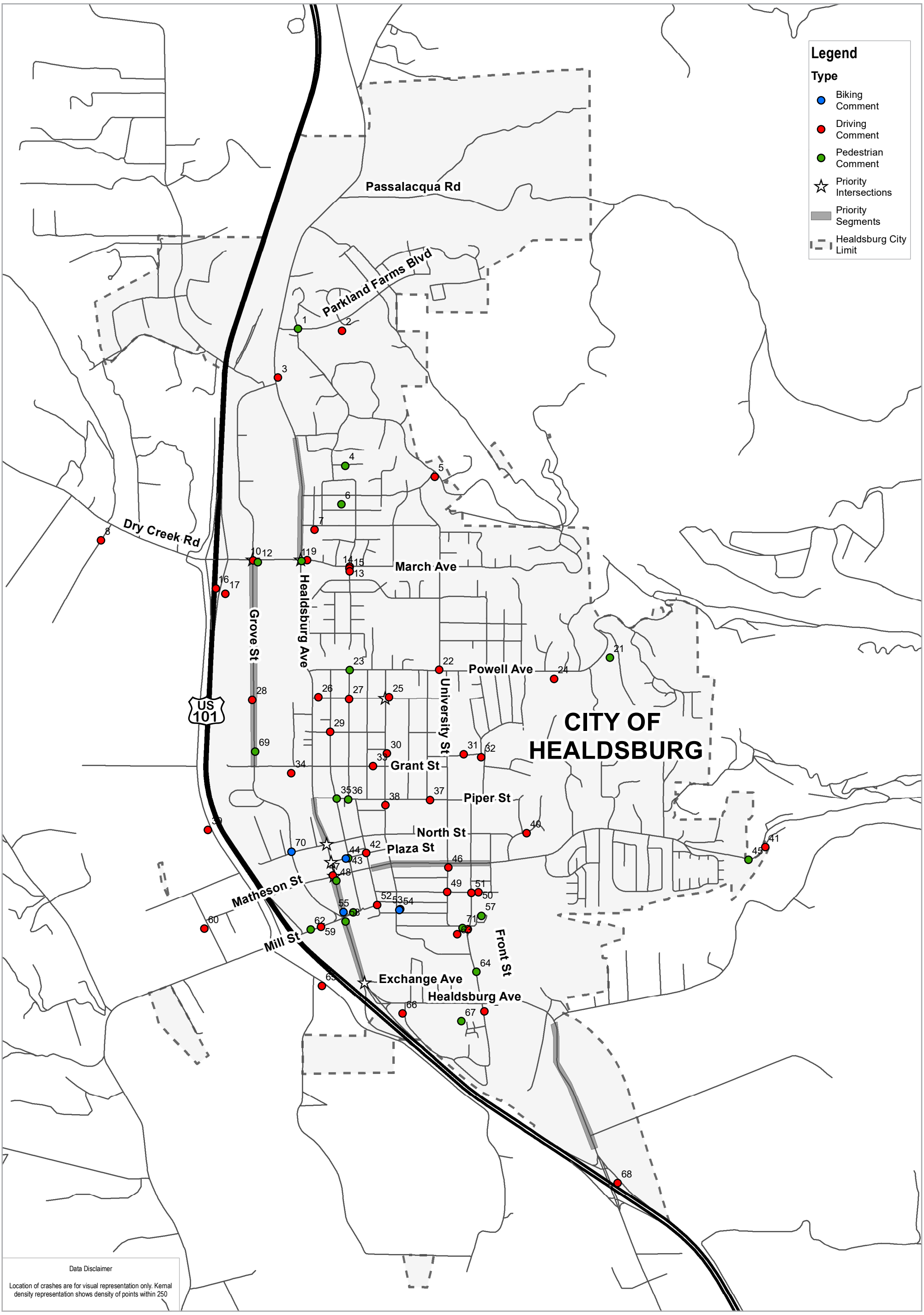
*Responses in **bold** are new since previous memo on February 10th.

Question 7. Additional Comments.

- “How many pets, kids and elders need to die?”
- “I LOVE the roundabout!”
- “I think roundabouts are a valuable addition to our town. We had lots in Chico and they were a great help with traffic.”
- “It’s a loud dangerous dirty road that is heavily traveled and beyond reoaur.”
- “N/A”
- “Poorly designed survey. Hard to understand map. Presumption that reader has a problem in Q.1. Useless data.”
- “The intersection of East Street and Plaza Street needs four-way stop signs. I have witnessed or appeared moments after three accidents at this location.”

3. Next Steps

In moving forward with the LRSP process, the next step is to schedule another stakeholder meeting to go over the suggested countermeasures to include engineering and the other E’s (Enforcement, Education, Emergency Response, and Emerging Technologies), public comments, and solidify our Vision, Goals, and Mission Statement. This meeting is likely to occur in March or April 2021.



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Miles

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

N

CITY OF HEALDSBURG
LOCAL ROAD SAFETY PLAN

LOCATIONS OF PUBLIC COMMENTS FROM SOCIAL PINPOINT

Project No. **11219822**
Revision No. **-**
Date **02/11/2021**

FIGURE X

C:\Users\kbryant\Desktop\GIS\Healdsburg LRSP\Healdsburg LRSP_Comments.mxd
Print date: 11 May 2021 - 13:26

Data source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019. Created by: kbryant

Created_On	Type	Comment_ID	Comment	Latitude	Longitude
2/5/2021 16:11	Pedestrian Comment	1	Please consider adding a marked crosswalk at the intersection of Parkland Farms Blvd and Rosewood. Dog walkers, bicyclists, hikers going toward the open space, and joggers do not have a marked crosswalk for the entire length of Parkland Farms Blvd. If not this intersection, perhaps another along Parkland Farms.	38.637831	-122.872847
1/28/2021 15:18	Driving Comment	2	Need a stop sign and or crosswalk at intersection. Scary place to cross and or drive.	38.637741	-122.870021
1/29/2021 17:46	Driving Comment	3	On Hbg Ave start at Dry Creek Rd north, to just north of Parkland Farms crossing. Both north and south directions, all lanes are effected, the entire distance. Complaint: at night the lane lines are very hard to see, if you can see them at all. Add rain to darkness, and the lines are completely invisible. Been this way for years. Definitely time to fix with all the new development at north end. Anyone not familiar with this road will not have a clue where to be or know 2 lanes in each directio	38.63538	-122.874139
1/31/2021 8:01	Pedestrian Comment	4	Drivers do not stop at intersection of Paul Wittke and Rosewood. This is a very dangerous intersection for pedestrians and for drivers who obey the stop sign.	38.630952	-122.869806
1/29/2021 17:28	Driving Comment	5	The intersection where Poppy Hill ends at Sunnyvale Drive is not safe for traffic, bikes or pedestrians. Fast traffic coming up/down Sunnyvale to/from the lookout (hangout) and city facilities above intersects with traffic coming up Sunnyvale and left on Poppy Hill as well as traffic coming up Poppy Hill and straight or right onto Sunnyvale. This blind 90 degree right turn on Sunnyvale is also on a hill. There are no traffic lines or yield signs or warnings at this intersection.	38.630402	-122.864055
1/31/2021 8:07	Pedestrian Comment	6	Rosewood Drive between Paul Wittke and Solar Way is used as a speed way by irresponsible drivers. They accelerate as they drive south. Those drivers often drive through the STOP sign at Paul Wittke and Rosewood so they can accelerate to at least 30 mph as they approach Solar Way. Why can't we have speed bumps?	38.629008	-122.870064
1/31/2021 8:04	Driving Comment	7	Very dangerous intersection of Sunnyvale and Healdsburg Ave. Pedestrians cross and near misses are common. Lots of activity due to food pantry there. Drivers going south on Healdsburg Ave often drive over the speed limit. It is only a matter of time before a pedestrian gets killed there.	38.627734	-122.87178
2/2/2021 10:54	Driving Comment	8	It is common for people to drive 60mph on Dry Creek Road. That makes it very dangerous for residents pulling onto Dry Creek Rd from residential side streets, and for cyclists. Forget about walking. There should be a posted speed limit not to exceed 40MPH, and it should be enforced. Dry Creek Road is not a freeway.	38.627203	-122.885535
1/31/2021 11:32	Driving Comment	9	Cars driving East on March, often stop abruptly here to try to turn across traffic into Garrett's. It backs traffic up into the intersection and causes near collisions. Please add signs or a barrier so cars cannot turn across the double yellow lines into the Garett's parking lot.	38.626208	-122.872259
1/25/2021 14:51	Driving Comment	10	TEST Comment - Improve safety at this intersection (Dry Creek and Grove Street).	38.626193	-122.87575
1/28/2021 16:59	Pedestrian Comment	11	Busy intersection for pedestrians - hard to see people crossing and drivers try to get through the signal quickly. I live within walking distance of Big John's, but am too nervous about that intersection to consider walking/biking to do grocery shopping,	38.626158	-122.872617
1/31/2021 8:55	Pedestrian Comment	12	This is a dangerous intersection! I work at Plank, and park on Grove by Valero, so I have to cross the intersection. My self or co-workers have almost daily (!!!) close calls to being hit by left or right turning vehicles.	38.626108	-122.87545
1/28/2021 15:19	Driving Comment	13	The intersection at March ave. and Lupine Rd. is VERY dangerous for school kids coming from the high school and going to school. There should be a pedestrian crossing light or some other notification of pedestrians crossing. It should be a 4 way notification for safety. Kids are at risk of their safety with the present conditions. It has been this way for too long. I am very surprised that there hasn't been a major injury accident at this area. March Ave. traffic speed is way to fast.	38.625884	-122.869531
2/1/2021 8:00	Driving Comment	14	Very difficult to turn from Lupine onto March due to high number of cars parked on March Ave. it requires pulling way out into the intersection to determine if cars are coming.	38.625793	-122.869546
1/31/2021 15:33	Driving Comment	15	In agreement that this intersection at March and Lupine is extremely dangerous-compounded by parked cars and trucks on March on either side of the stop sign which makes it virtually impossible to see oncoming traffic.	38.625643	-122.869527
1/29/2021 18:19	Driving Comment	16	That intersection with the off ramps still needs reconfiguration to allow for high traffic times vs low traffic times. A traffic circle?	38.624783	-122.878132
2/5/2021 9:46	Driving Comment	17	A traffic circle is not needed. It doesnt hurt to sit for a moment. A waste of money.	38.624515	-122.877531
2/2/2021 6:21	Pedestrian Comment	18	This is County Public Road. Anyone walking on this road could hurt themselves.	38.623096	-122.787938
2/2/2021 6:23	Biking Comment	19	This is a County Public Road. It is in horrendous condition. Anyone biking on it could get injured. See photo. Thank you	38.622302	-122.78831
2/2/2021 6:19	Driving Comment	20	This road is a County Public Road. It is in horrendous condition. See picture.	38.621989	-122.787437
1/31/2021 12:42	Pedestrian Comment	21	Many people walking dogs or walking/jogging up Powell to Villa Chanticleer area. Very narrow road, really not safe for pedestrians or bicyclists. Not sure what can be done...a trail of some sort? I used to walk up there, but stopped. Now, when I take my dog to the dog park, I worry about these people. Most people drive slowly and carefully, but not all. It only takes one.	38.621296	-122.852769
1/28/2021 17:10	Driving Comment	22	Awkward intersection that would probably benefit from three way stop in BOTH places Powell intersects Univerity as opposed to only eastern side. When heading south on University, the left turn onto Powell is difficult as cars accelerating from three way stop intersection just to the left, and eastbound cats on Powell have no stop and coming down a hill with somewhat limited sight lines.	38.620692	-122.863765
1/31/2021 11:40	Pedestrian Comment	23	At Johnson & Powell is a major walking pattern using the pedestrian only extension of Lupine to connect to Johnson to get to town. People, some with baby carriages, bikes, pets, groceries cross Powell on foot here. This is the only way for hundreds/thousands of walking folks who live in all the north of Powell neighborhoods, to get to city center services. This needs a crosswalk with lighted warning signs. Autos speed up on their way from Healdsburg Ave. up to University St. stop sign.	38.620685	-122.869517
1/30/2021 9:26	Driving Comment	24	Powell Ave badly needs to be rebuilt. Between potholes, above grade brass fixtures for sewer lines, large patches where pipes have been repaired and the multiple layers of cheap chip sealing, it is becoming worse and worse. It is one of the major east-west streets in the city and one of two connectors to Fitch Mt. Please invest in doing a proper rebuilding of this street.	38.620234	-122.856369
1/31/2021 20:20	Driving Comment	25	Poor visibility (west bound) at 2-way stop onto or crossing Fitch St. due to parked residential cars/trucks. Added issue of pedestrians crossing streets also, especially during school hours.	38.619318	-122.866995
1/31/2021 20:22	Driving Comment	26	Poor visibility and cars traveling fast when turning from Sherman onto Healdsburg Ave.	38.619318	-122.871544
1/31/2021 10:38	Driving Comment	27	This is a blind corner. Drivers don't stop at the stop sign and/or can't see because of parked cars and high fences. Unsafe intersection.	38.619224	-122.86957
1/31/2021 23:08	Driving Comment	28	There need to be crosswalks on Grove street. There is no way to safely cross the street and cars are always driving too fast.	38.619184	-122.875793
2/2/2021 5:49	Driving Comment	29	With the absence of a stop sign, cars often speed along center street, and there is poor visibility when trying to drive through center street along Lincoln street. Healdsburg PD strategically placed a stationary speedometer a few months back and I believe this is a known problem intersection. I recommend a 4-way stop.	38.617566	-122.870773

2/3/2021 8:03	Driving Comment	30	Driving south on Fitch, pass the Junior High, many vehicles speed. I've complained many times but not much is done other than putting up an electronic speed sign which everyone ignores. It would nice to have soft speed bumps installed in front of the school gym for the safety of our children.	38.616485	-122.867124
1/31/2021 11:08	Driving Comment	31	Reed Ct is too narrow to allow parking on both sides of the street. It used to have more red curb and the paint has faded, plus there are more large trucks parking there. Restricts emergency vehicle access. Please paint one side red.	38.616443	-122.862191
2/5/2021 9:02	Driving Comment	32	Sharp corner on Reed Ct / White Gates Ave: most through traffic slows for sharp turn then accelerates faster than is safe creating excess speed and noise, particularly by motorcycles and HD diesel trucks. Would speed bumps work to discourage through-traffic on this small street that was built to be a 'court'? Two-way traffic waits for opposite-direction traffic quite frequently. IMO this should be a slow, neighborhood street, not generally for through-traffic between Powell & University.	38.616298	-122.861063
1/31/2021 11:31	Driving Comment	33	Most of Grant St from Healdsburg Ave all the way to University is crumbling from poor quality chip seal and should be resurfaced, as it is one of the main streets and connects schools.	38.615848	-122.868031
1/31/2021 10:51	Driving Comment	34	Grant and Vine, Stop sign heading West on Grant invisible due to tree branches. I called this in to Public Works several months ago..hasn't been addressed.	38.615496	-122.873282
1/29/2021 16:57	Pedestrian Comment	35	A busy intersection for pedestrians, an alternate route for drivers, and the long crosswalks make this a difficult intersection. I think this intersection would benefit from a stoplight	38.61421	-122.870353
1/31/2021 10:35	Pedestrian Comment	36	Need a crosswalk here very badly!	38.614175	-122.869628
1/31/2021 11:23	Driving Comment	37	Piper St is too narrow to allow parking on both sides of the street. One side should have red curb, between Fitch and University.	38.614146	-122.864348
2/1/2021 11:59	Driving Comment	38	We need more stop signs on Fitch. People race from Matheson to North, then to Piper, and on. And Matheson/So. Fitch Mountain Road from Badger Park intersection on is a hazard.	38.613886	-122.867231
2/2/2021 8:32	Driving Comment	39	This portion of southbound Hwy 101 has seen over 20 accidents, some fatal, over the past 6 years. It is between the SB Dry Creek on ramp and the SB Westside off ramp. Most happen at about the location of the turn. I am a FF and have responded there 3 times in the last two weeks.	38.612645	-122.878647
2/3/2021 11:13	Driving Comment	40	I live on Tee Drive. Many drivers use Tee as a shortcut to avoid going through downtown. They race up Piper, down Tee Drive, and over to Matheson to connect to First Street. Rarely does anyone make a stop at the stop signs at the top or bottom of Tee Drive, and most are speeding. This is a residential Street where children play.	38.612478	-122.858133
1/31/2021 18:34	Driving Comment	41	In case of emergency, Fitch Mountain residents (and all the Rivers Bend, Bird courts, Greens Drive) need an alternate egress in case the mountain is on fire. The town traffic becomes gridlock anytime there is the tiniest incident. Maybe add some more roads that actually connect from N Fitch Mountain to S Fitch so there are multiple ways out.	38.611774	-122.84277
1/31/2021 11:11	Driving Comment	42	The Plaza X East St intersection is a notoriously dangerous intersection because of poor visibility in addition to high foot traffic. It should have a 4-way stop.	38.611472	-122.868464
2/2/2021 5:55	Pedestrian Comment	43	Healdsburg needs more bike racks for the community to kick their bikes. They are scarce, and really only located near bus transit stops. I recommend more bike racks near the plaza to promote biking in to town.	38.611212	-122.869621
2/2/2021 5:56	Biking Comment	44	Healdsburg needs more bike racks for the community to kick their bikes. They are scarce, and really only located near bus transit stops. I recommend more bike racks near the plaza to promote biking in to town.	38.611191	-122.869766
1/31/2021 18:36	Pedestrian Comment	45	There is a ton of pedestrian activity that stops abruptly where the sidewalk ends on S. Fitch because so many blind turns and no pedestrian path around Fitch Mtn. Would be amazing to have a running / cycling path that circles the base of the mountain!	38.611136	-122.843843
2/2/2021 12:31	Driving Comment	46	Many people traveling either way on Matheson at University view the stop signs as a suggestion. Needs better police enforcement.	38.610747	-122.863176
1/29/2021 17:51	Driving Comment	47	This intersection has pretty lityle shrubs at corners. Although maintained they block your ability to see pedestrians crossing at the corner. Especially in a sedan. And the corner next to pizzando is the worst one. Tourists love to walk out into street, despite the no walk sign. There is no warning, once you see them it is too late. They should be removed. God forbid a small child dart out, they would never be seen.	38.610355	-122.870613
1/30/2021 9:31	Pedestrian Comment	48	The intersection of Matheson St. and Healdsburg Ave. needs to have the traffic controls reprogrammed. It would help pedestrians a great deal if there was a point in the cycle where all vehicle traffic stopped and pedestrians could cross in any direction (including across the intersection) in safety. A similar arrangement is needed at North St. and Healdsburg Ave. I have experienced this in other cities and it makes a huge, positive difference in the pedestrian experience.	38.610078	-122.87039
1/28/2021 15:47	Driving Comment	49	Please add flashing crosswalk lights to this crosswalk. Too often we have speeders coming down this way as well, and although I would like a 4 way stop there, just supplementing the existing crosswalk with safety features would be sufficient.	38.609514	-122.863251
1/31/2021 8:41	Driving Comment	50	Drivers are turning right off First St. and racing down Tucker St. to turn left on Second St. as a "shortcut" to Matheson. The proposed 4-way stop is a great start, but would suggest a soft speed bump midway on Tucker to prevent acceleration after the right turn at the stop. This would slow drivers reversing the shortcut from Matheson back to First via Tucker as well.	38.609509	-122.861239
1/28/2021 15:46	Driving Comment	51	Please turn this intersection from a 2 way to a 4 way. We have had issues with speeders coming from the Healdsburg Ave bridge and coming down First or Front Street at speeds in excess of 15-20 mph for YEARS. The HPD response has been to put out a speed limit sign with a radar but that's useless after speeders realize HPD isn't actually around to stop them. The giant redwood tree on the corner makes it very difficult to see who is coming on 1st street when you're on Tucker as well.	38.609476	-122.861695
1/31/2021 11:15	Driving Comment	52	Poor visible creates a dangerous intersection here, which should include a 3-way stop.	38.608869	-122.867749
1/29/2021 20:23	Driving Comment	53	Fitch and Tucker street intersection. People blow through the Tucker stop sign. I was broadsided in my car and my husband was nearly killed by a motorist who did not stop at that intersection last week. Needs a four way stop.	38.608663	-122.86627
1/29/2021 20:26	Biking Comment	54	My husband who's been cycling healdsburg for 30 years now was nearly killed by a motorist who blew through the stop sign on Fitch and Tucker. This needs a four way stop.	38.608608	-122.86633
1/31/2021 18:56	Biking Comment	55	This cross walk I use for the bike path going north. I ride my bike across Mill St. & then go past the wine tasting room, and want to cross Healdsburg Ave. to continue on the bike path... it is very difficult to see and gauge traffic that is coming out of the round about onto Healdsburg Ave. I must look back over my shoulder while on the narrow sidewalk, sometimes with customers on stools at the sidewalk window seats. Sometimes the traffic is going quite fast.	38.608512	-122.869931
2/2/2021 9:21	Pedestrian Comment	56	The Pedestrian crosswalk it's not very visible. Cars coming from the East cannot see a pedestrian standing on the Northside of crosswalk.	38.608489	-122.869306
1/31/2021 12:37	Pedestrian Comment	57	People driving north on 1st Street drive way to fast. Many people cross 1st to head towards 2nd St and the easement into the back of Badger Park. Many people crossing Tucker and First with kids and dogs-Healdsburg Elementary School is north on 1st and others walking south to go get to Memorial Beach or to Healdsburg school. I think we need a 4 way stop at 1st and Tucker. I also wouldn't oppose speed bumps.	38.608319	-122.861052

1/28/2021 17:02	Pedestrian Comment	58	Pedestrian crosswalks on outer edges of the circle are extremely dangerous. Cars entering circle are looking mainly left to enter and often accelerating for quick exit. Additionally, pedestrians often can't see cars on other side of circle; cars can't see pedestrians around bends. Obviously, we need pedestrian access to all sides, but feel like crosswalks further from circle would be safer or some kind of flashing light alert to signal drivers of pedestrians using the crosswalks.	38.608034	-122.869798
2/1/2021 6:58	Driving Comment	59	Better lines with clear marking need to be put for this section of road. Constantly see East bound traffic in West Bound lane. Also constantly see right lane west bound traffic moving into left lane right at freeway on ramp.	38.607758	-122.871373
1/29/2021 21:57	Driving Comment	60	The west bound lane is very bumpy for a 45 mph zone.	38.607668	-122.878883
2/1/2021 14:31	Driving Comment	61	This is a potential collision location due to the 3 way interchange and the location of the East bound stop sign on Mason located AFTER the turn from Mason onto Front street. I suggest that a round about or that the stop sign is located BEFORE the turn. If you are driving on Front street it is natural to go either to the right at the fork onto First or follow the left turn onto Mason without stopping. And when you are driving on Mason towards the stop sign to take a left onto First,	38.60764	-122.861921
2/1/2021 6:59	Pedestrian Comment	62	Sidewalks need for pedestrians. Lots of foot traffic in area, most have to cut through parking lot.	38.607624	-122.872038
1/31/2021 10:51	Driving Comment	63	Lots of folks fly around this corner and it can be dangerous, especially if someone is trying to cross the street at Haydon and University.	38.607389	-122.862601
1/29/2021 17:04	Pedestrian Comment	64	I don't know the history on this project, but the Foss Creek Pathway has no direct access to the river and pedestrians have to jaywalk. If a sidewalk cannot be completed all the way from the pathway to the intersection perhaps a crosswalk should be installed	38.605499	-122.861361
1/29/2021 21:56	Driving Comment	65	Drivers heading south on Healdsburg Avenue going through the stop sign in order to beat traffic coming north off the freeway is very dangerous. I am not sure if a stop light will work as there is a stop light just beyond this.	38.604791	-122.871308
2/2/2021 8:32	Driving Comment	66	Traffic control you have set up here for the road work on Healdsburg Avenue has created a dangerous merge situation for cars on W/NB Healdsburg Avenue meeting traffic exiting from Hwy 101. You have provided no weaving area, essentially causing Hbg Avenue traffic to race to cut into the left lane just before the cones end the right lane.	38.603405	-122.866116
1/31/2021 12:46	Pedestrian Comment	67	We need a real sidewalk on the north side of the Avenue here. My granddaughter attends the Pine Tree nursery school here. Walking from my house on 1st St feels unsafe to walk with her. The Healdsburg School is on the south side of the street. It would be nice to have decent sidewalks on both sides.	38.603021	-122.862339
1/29/2021 18:21	Driving Comment	68	Visibility from the northbound off ramp at the stop sign is often obscured by tall weeds.	38.594884	-122.85228
2/18/2021 21:16	Pedestrian Comment	69	There needs to be street lighting on Grove St. It is extremely dark at night and poses a danger for cars, cyclists and pedestrians. Now that we have more hotels on Dry Creek Rd and new developments there are many more drivers and pedestrians that use it as a way to get downtown.	38.616577	-122.875605
2/24/2021 17:46	Biking Comment	70	The old railroad tracks are horrible to ride over. here and also at Matheson the tracks need to be smoothed over.	38.611539	-122.873273
2/23/2021 11:32	Pedestrian Comment	71	Walking and crossing the street in this area is dangerous, there is no safe place there. The sidewalk ends and it's difficult to walk or cross the street safely.	38.60771	-122.862256
2/21/2021 12:58	Driving Comment	72	Intersection of eastbound Healdsburg Ave and Front street at bridge approach needs left turn lane w/o separate signal. Frequent waits now at busy times. Would need to move signal pole and likely buy right of way but worth it!	38.603517	-122.86085

City of Healdsburg LRSP Draft Comments

#	*Comment*	*Response*
1	Looking at all the intersection improvements, one area that needs to be looked at is the intersection of Haydon Street and Fitch Street. Right now there are only stop signs on Haydon. I believe this area needs a 4 way stop. Living on Haydon, I've seen too many close calls, as motorists tend to speed on Fitch Street.	Comment noted. All-way stop control installation needs to be per an engineering study following CA's Manual on Uniform Traffic Control warrants for multi-way stop control. This intersection can be studied in the future.
2	How about fixing Millcreek road since there has been extensive very large Truck traffic	Comment noted. Mill Creek Road is not under the City of Healdsburg jurisdiction but rather the County of Sonoma. We will send them this request.
3	Please repave Healdsburg Ave. North of Dry Creek Rd. It is heavily used and extremely warn. Also update signage and install flashing lights to reduce the traffic speed on the road before the Community Center. Traffic is excessive and extremely fast on the road. It is used in and out of town by large construction trucks, loaded trucks and vehicles on the way to and from the county refuse center, and tourists besides local traffic. It is uneven and very dangerous. Even walking on the sidewalk is a hazard to pedestrians.	Comment noted. The City is pursuing funding options for repaving and constructing roadway improvements on Healdsburg Avenue, north of Dry Creek Road. Funding availability and construction timeline is unknown at this point.
4	1. Please add: Install bike lanes and/or sharrows to each priority intersection. 2. Include the Veterans Memorial Bridge area of Headsburg Ave. The bridge needs to have sharrows. This is a hazardous area for both pedestrians & cyclists.	Comment noted. The City will research if bike lanes or sharrows can, or should be added to the priority intersections. The City will investigate if sharrows can be added to the Memorial Bridge.
5	I would be interested if there is any data that shows the % of tourists vs local were involved? Thank you. There are tree branches that cover the stop signs - they need to be cut and maybe more signs that warn stop ahead. How many incidents involved the roundabout. Very difficult to see oncoming cars at Prentice and March. Provide those who rent/use with an abbreviated copy the safety rules. 1. Bicycle riders shall stop at all stop signs. Bicycle riders will follow the rules of the road and they will use hand signals. Build a multi-level parking Garage - will provide a balance of building heights - the Garage can be as tall as either of the Hotels across the street. This would provide some sort of continuity. 5in how many were locals and tourists	Comments noted. Traffic collision data collected does provide CDL and vehicle registration information but no analysis has been performed to separate out local addresses versus non local addresses. City will continue to clear vegetation from blocking street signs. Roundabout collision data is available. City will pursue preparation of an educational document to provide people regarding bicycle rules and safety. This document is for roadway safety and does not address City vehicle parking.
6	Making a left turn from Paul Wittke onto Healdsburg Avenue is very dangerous as a hedge blocks the view of oncoming right lane traffic. It is necessary to pull part way into Healdsburg Avenue to see oncoming traffic. Either take out the hedge or trim about a foot off of it. I think now without water it is dead anyway. Ed Baker	Comment noted. City will review sight distance at this location and determine if hedges need to be trimmed or removed and, if so, will provide a letter to the property owner responsible for the hedges to remove them or trim them back to a distance/height that allows for the necessary sight distance.
7	Greetings! i suggest regular tree trimming on the perimeter of roads where trees hang onto / into he bike lane or side walk, such as near Simi. thanks for the new paved bike path. I see its near completion. this is awesome. we need some new asphalt on southbound Healdsburg ave. between Grove and dry creek. Its especially dangerous near giant muffler. Green painted bike paths like SF and RP would be a bonus! Peddle on!	Comments noted. City will continue to require tree and vegetation trimming as necessary. See comment #3 above for Healdsburg Avenue paving. City is exploring the use of green bike facilities in certain areas of Healdsburg.
8	"Scatter" pedestrian crossings (where lights allow pedestrians to cross in all directions including diagonally) at Matheson & Center and Matheson & Healdsburg Ave. intersections. Improved bicycle safety considerations when using Foss Creek bike way at existing round-about (Mill St. & Healdsburg Ave.) and any other proposed roundabouts. Thank you!	Comments noted. There is not a current safety or operational reason to install a pedestrian scramble at Matheson and Healdsburg.
9	Thanks for looking ahead to improve road safety. I support all measures that slow traffic and reinforce road sharing, while recognizing that we still use our vehicles daily. The roundabout is a success and I support more. I served on the original Central Healdsburg Avenue Study Area committee, and a roundabout at the Central Healdsburg offramp was part of one of our early conversations. It made perfect sense on paper, but we scaled back to one roundabout, due to cost and to the likelihood that two would be twice as hard to get funded and approved over community skepticism. Realigning that area (including the Exchange intersection) is still a good idea. More stop signs, better signage, education-and-enforcement, all make sense to me. I support the road diet concept. If you live in a small town by choice, you have to get used to the small town pace and not expect to drive 55 on surface streets. As part of the Hot Ave plan, are you looking at a roundabout for the Avenue/Powell intersection? It seems like there's plenty of space, and the geometry there is terrible. This suggestion may be tangential, but adding more ADA corner cuts and sidewalk benches on common corridors would encourage more pedestrian traffic, which (I've heard) can add to traffic calming measures. Thanks for reading!	Comments noted. The Exchange intersection is identified in the Central Healdsburg Avenue Plan for future improvements. Speed management is also a component of the LRSP.
10	As someone from OC, Ca please no more roundabouts, also people don't know how to drive in them, very unsafe, maybe just work on timing the traffic signals better. The signals work just fine down there. I don't know if the city can deal with more roundabout construction and you take forever. You still haven't repaired the steel plate by the 7-11, I mean for real. Get it together Healdsburg.	Comments noted. Steel plate has been removed and area has been repaved.
11	We DO NOT need a roundabout at Dry Creek Rd/Highway 101 exit. The stop signs work well AND IT IS NO BIG DEAL TO WAIT 30 seconds for your turn. It would be a giant waste of money.	Comment noted. Future planning with traffic volume growth do show the delay will increase considerably with the stop signs. Healdsburg City Council has already recommended future roundabouts at this location.

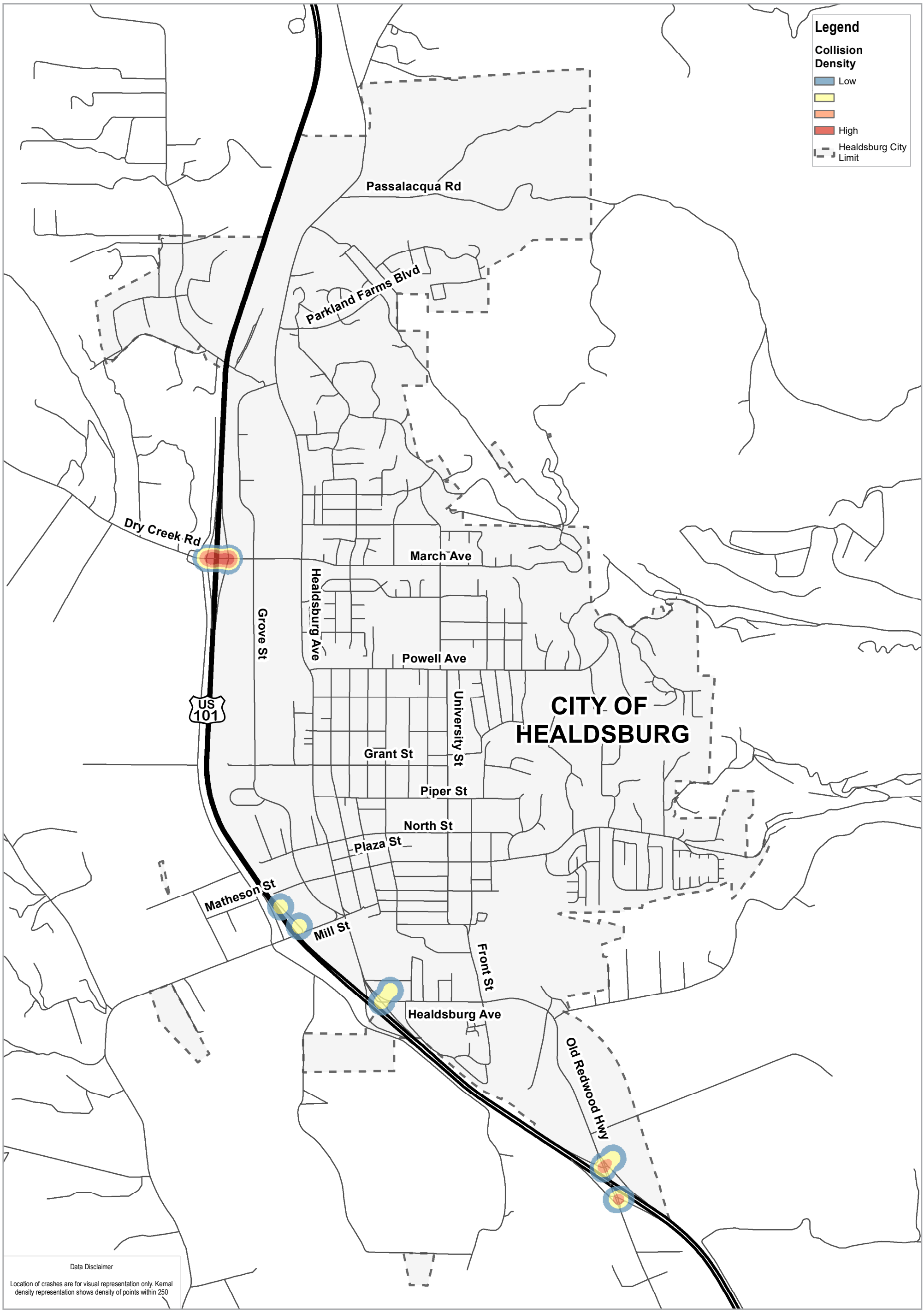
12	Thank you for this opportunity to add my thoughts and visions to this excellent project. I am Art Read, residing at 535 Fitch Street since 1978, telephone number 707 395 4123, and have been writing and drawing graphics about bicycles for 46 years. Longstanding local graphics include the Spoke Folk Cyclery's frog (Phineas T. Phrogg) on a bike and the Healdsburg Farmers' Market jackalope corn cob in a late forties pickup truck logos. I had regular columns in The Healdsburg Tribune (Read about Bikes) and in California and Texas Bicyclist Magazines (Ridin' with Read) in the 1980's and Read And Wipe magazine (Song of Sweatloose) in the mid 1970's. When I began writing and drawing "Sweatloose" in 1975 I made a decision to stop at stop signs rather than take the culturally accepted (now legal since 2007 in Idaho) option of treating them as yield signs. So I have been thinking about bicycle safety for about 50 years and actually honing my own behavior in that regard for at least 46 years. That one decision about the red octogons has 'saved my bacon' (eggs and hash browns too, no doubt) several times and stitched the vehicle operating community back together a little bit, one stop at a time. My offerings to the Local Roads Safety Plan are several, and could be achieved at minimal cost for most; and at minimal cost for a trial basis for the major offering, which I'll offer here first: I noticed in the plan that resurfacing of the four lane portion of Healdsburg Avenue is included. When this is accomplished, it seems to me that it would be easy to try out a separated from motorized traffic " transportation parkette" in the outside lanes; using the same movable barriers we have used to create outdoor dining and living space in the downtown restaurant district during the COVID pandemic which have effectively extended the Plaza Park and increased the livability factor of our town. With some paint for striping and the dotted lines for merging near intersections, we could perhaps have the first two-lane-in-each-direction human powered vehicle paths by dividing the existing right lane space in half. The right portion could be for those traveling slower -- maybe suggested speeds of 9 mph and less -- and the left lanes for those who are seasoned cyclists and/or commuters and errand runners trying to "get somewhere" in the shortest amount of time for which the "arterial" routes of any city are always the shortest, most direct and with the least elevation changes. If after a reasonable trial period the consensus was that we didn't like them; they could be easily switched back at low cost. The benefits of a successful trial period extended to permanence would be to make Healdsburg more livable by reducing motorized traffic and modeling successful no-carbon transportation that could meme out and put the brakes on climate crises. This would be a wonderful adjunct to the Foss Creek multipurpose trails and would reduce our carbon footprint in daily life.	Comments noted. Healdsburg is about to finish the extension of Foss Creek Trail (Phase7/8) from the Skate Park to Grove Street north of the Community Center, and is working on future pedestrian and bicycle improvements including the Healdsburg Avenue North project and the connectivity improvements on Front Street and Healdsburg Avenue South. Projects funded under the local roadway safety plan must include design elements and speed controls that are in compliance with State standards, mainly the Caltrans Manual on Uniform Traffic Control Devices and California Vehicle Code.
13	1. We have this amazing pathway on the west side of town that is very difficult to access if you live on the East side of Healdsburg Avenue. Healdsburg avenue can become like a freeway at times and some of the sidewalks are very narrow with several obstructions and difficult to walk on or ride a bike. From Powell Avenue to Parkland Farms Blvd, Healdsburg Avenue becomes like a freeway; therefore making it difficult for families to walk along Healdsburg Avenue and even more difficult to cross the street to access the pathway. So if you could include traffic calming devices along this stretch of road the community would appreciate it or conducting a study to identify if all four lanes are needed - reducing to two lanes would definitely reduce speed; thus making it safer for pedestrians. 2. The intersection of Powell Avenue and Johnson street is heavily used by residents living on the north end of town trying reach the Downtown Plaza - it is also considered a bike lane by the city but there is no crosswalk. This intersection is very dangerous to cross so conducting an engineering study to identify traffic calming enhancements is highly recommended or a four way stop. 3. March Avenue and University Street is heavily utilized by kids in the morning walking to Fitch Mountain school. Including this area in any study would be great as it can become dangerous when parents are late to school because kids can't cross the street. 4. Ensuring there are crosswalks to access Gibbs Park on Prentice and Sunnyvale would create a safer pathway for residents walking to the neighborhood park. 5. Study to identify enhancements that would make it safer for kids to cross Powell Avenue in the mornings and afternoons is highly recommended. The intersection on Fitch Street and Prince Avenue are heavily utilized during school hours to reach the High School and line of sight is not great as one of the intersections is at the top of a hill and some of the sidewalks have a large amount of vegetation making it difficult for drivers to see oncoming traffic. 6.Potentially reconfiguring the city designated bike lane might mitigate several concerns. 7. Thermoplastic striping for designated bike lanes would create better visibility for drivers - similar to what other city's already do. 8. Sidewalk on Grove street from Grant Avenue to Dry Creek road is needed, especially as kids are utilizing the road to get to the skatepark. 9. Grant Street and Healdsburg Avenue is also an area for a potential study as kids from west side of town utilize this cross street to get to Junior High	Comments noted. The City of Healdsburg is pursuing roadway improvements on Healdsburg Avenue between Powell Avenue and North of Parkland Farms Boulevard including pedestrian, bicycle and transit related enhancements. Traffic calming measures are part of the proposed project. The City is exploring pedestrian crossing improvements at the intersection of Powell Avenue and Johnson Street. There is an all way stop at the intersection of March Avenue and University Avenue. The City will explore adding crosswalks to all legs of this intersection. Gibbs Park is in a residential neighborhood with an all way stop controlled intersection at Prentice Drive and Sunnyvale Drive. There are currently no pedestrian ramps or crosswalks. City will explore options for pedestrian enhancements as part of other planning documents, specifically the City's bicycle and pedestrian plan. Comment noted regarding Powell Avenue crosswalks. There is an existing lighted, crossing on Powell Avenue at Prince Avenue. City will explore additional improvements to other existing crosswalks of Powell Avenue. City will send letters to property owners notifying them to trim their hedges/vegetation such that it does not block sidewalk access. City uses thermoplastic striping as a standard when restriping streets bike lanes, etc. City requires property owners that develop property along Grove Street to construct sidewalk, and, City is currently studying a potential sidewalk gap closure project to construct contiguous sidewalk or pathway along Grove Street. A new pedestrian ramp was recently constructed at the south east corner of the intersection of Healdsburg Avenue and Grant Street.

Appendix B

Previous Safety Plans and Projects

Appendix C

Collision Data



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Miles

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

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GHD

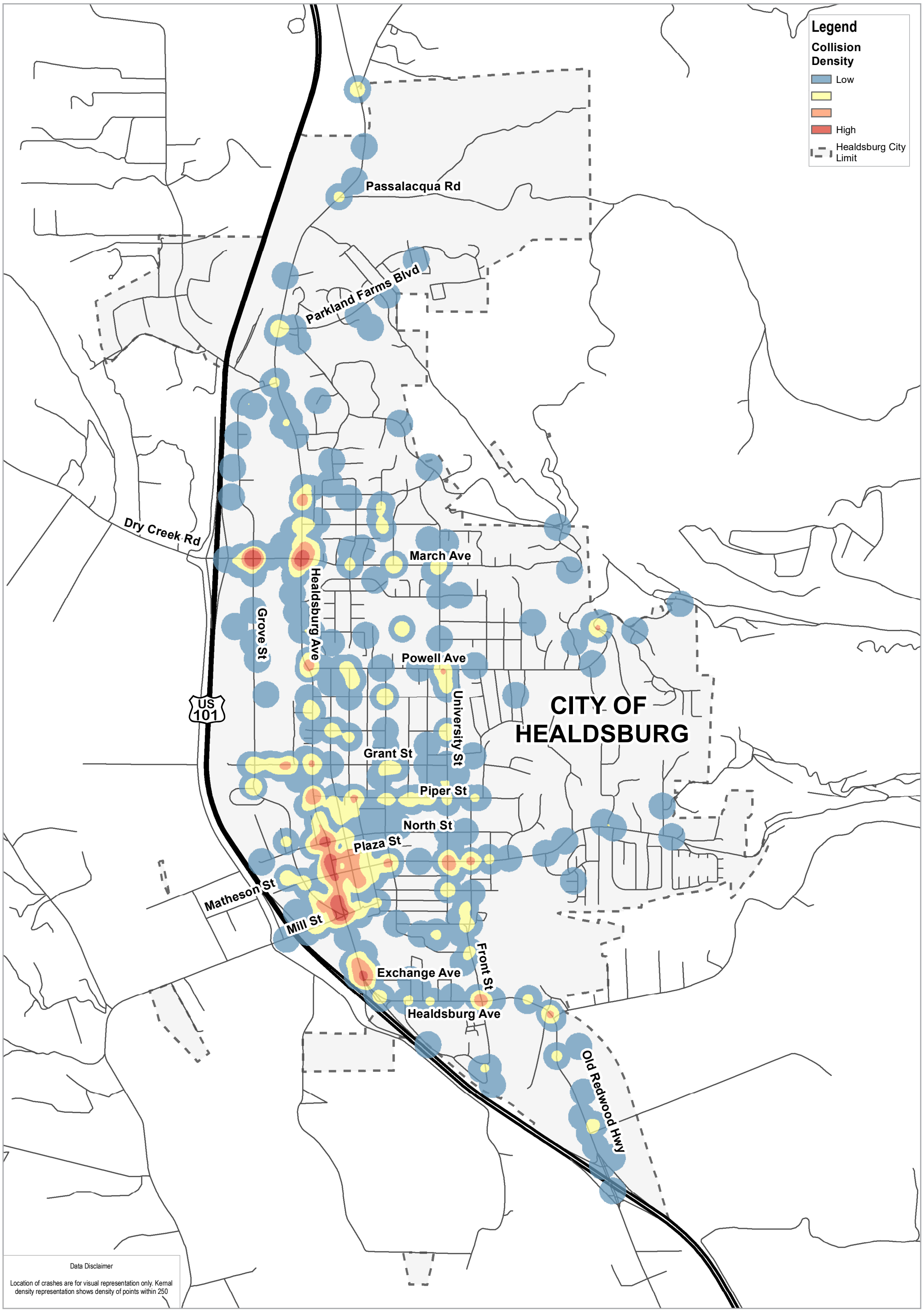
CITY OF HEALDSBURG
LOCAL ROAD SAFETY PLAN
COLLISION DENSITY ON CALTRANS ROADWAYS (2015-2019)

Project No. **11219822**
Revision No. **-**
Date **05/21/2021**

FIGURE X

C:\Users\kbryant\Desktop\GIS\Healdsburg LRSP\Healdsburg LRSP_CaltransHeatmap.mxd
Print date: 21 May 2021 - 13:38

Data source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019. Created by: kbryant



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Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

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GHD

CITY OF HEALDSBURG
LOCAL ROAD SAFETY PLAN
COLLISION DENSITY ON CITY OF HEALDSBURG ROADWAYS (2015-2019)

Project No. **11219822**
Revision No. **-**
Date **05/21/2021**

FIGURE X

C:\Users\kbryant\Desktop\GIS\Healdsburg LRSP\Healdsburg LRSP_CityHeatmap.mxd
Print date: 21 May 2021 - 13:44

Data source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019. Created by: kbryant

Appendix D

Field Reconnaissance

Field Visit – Healdsburg LRSP

Date: Wednesday, June 9, 2021 during the morning

Existing Conditions: Many pedestrians and bicyclists outside, sunny and clear

General Notes:

- ATP funding for Healdsburg Ave road diet project may come through
- Leading pedestrian intervals could be installed downtown
- Active community (lots of bikers during the weekdays)
- Consider a sign reflectivity study for the City (many street signs are faded)

Notes for Priority Locations:

1. Dry Creek Rd at Grove St
    a. Faded back plates
        i. Upgrade signal heads

    b. Suggest installing a bike box on northbound left

    c. Suggest upgrading pedestrian push buttons
    d. Street sign is faded

e. Flashing yellow arrow is already funded

f. Grove St lane configuration will be changed to a left lane and a combined through and right lane

g. Many bicyclists through this intersection

   i. Connection to Dry Creek Rd which extends to wineries and Lake Sonoma

h. This area can get congested

i. Ramps are not ADA compliant

2. Future SMART Trail at Dry Creek Road
    a. Intersection will likely be a signal coordinated with the signals on Grove and Healdsburg
        i. Not a HAWK because pedestrians walk in platoons so the HAWK would be triggered often

    b. Currently in construction

Future trail looking south from Dry Creek Rd

Future trail looking north from Dry Creek Rd

3. Healdsburg Ave at March Ave
    a. Additional suggested improvements include retroreflective borders, pedestrian countdown timers, ADA compliant ramps, upgraded pedestrian push buttons

b. Possible improvement could be installing a left turn arrow
c. Leading pedestrian interval could help improve safety for permissive left turns
d. Busy intersection

4. Foss Creek Trail at Grove St
   a. Many bikers (very limited to no bicycle facilities along Grove St or Healdsburg Ave)

Bicyclists and pedestrians entering Foss Creek Trail

   b. Grove St is an alternative bicycle route to Healdsburg Ave
   c. Suggest installing sharrows along Grove St
   d. ADA ramps are not compliant
   e. 47’ wide at location south of Dry Creek Rd
   f. Advance signage for pedestrian/bicycle crossing
      i. It would be nice to also add wayfinding signage
   g. Suggest installing bike box for left turn crossing maneuver for the trail
      i. The City liked this idea, but was concerned about slickness of the green paint for motorcyclists

Bicyclist turning left onto trail

5. Healdsburg Ave at North St
    a. Difficult to see signals due to trees, 8” heads

        i. Suggest trimming trees and installing larger signal heads

    b. Parking spots near intersection
        i. Consider removing parallel parking spots near intersections at all departures other than eastbound
            A. Can be converted to bike parking, loading zone, storefront, etc.

6. Healdsburg Ave at Plaza St

a. No detectible warning surface on curb ramps
    i. Suggest pedestrian crossing upgrades to comply with ADA standards

b. Potential location for raised pedestrian crossing

i. Could help reduce speed at this intersection

c. In pavement lights are covered

d. No yield lines

i. Suggest installing yield lines prior to crosswalk

e. Limited sight distance from minor road approach

i. Suggest installing R10-15 sign here

7. Healdsburg Ave at Matheson St

a. Signal heads are blocked by trees

b. 8” signal heads on minor road approaches

c. Outdated pedestrian push buttons

i. Suggest installing new push buttons

d. Poor lighting

e. Ramps are not ADA compliant
    i. Suggest pedestrian crossing upgrades to comply with ADA standards

8. Healdsburg Ave between Matheson St and Mill St

View from driveway onto Healdsburg Ave

9. Healdsburg Ave at Mill St

Median noses on curves have tire marks from vehicles hitting curb

10. Sherman St at Fitch St

11. Healdsburg Ave at Exchange Ave
    a. Southwest and northeast pole have 8” heads
    b. Seems like there is a likelihood for driver confusion at this location

        i. Advance signage on southbound approach would be helpful for vehicles to know which lane they need to be in (continuing on Healdsburg Ave or entering US 101)
    c. Lane guidemarks through the intersection for southbound approaches may help reduce sideswipes

12. Healdsburg Ave near Healdsburg School

Discontinuous sidewalk across from Healdsburg School

13. Healdsburg Ave near Wicked Slush


ENTER

Appendix E

Recommended Projects

Memorandum

April 9, 2021

To:	Curt Bates	Project:	City of Healdsburg Local Road Safety Plan
From:	Kathy Kleinschmidt	Ref/Job No.:	11219822
CC:	Kiera Bryant Emily Darke	File No.:	11219822MEM001.DOCX

Subject: Local Road Safety Plan Status Update – Safety Countermeasures

1. Introduction

This memorandum documents the proposed safety countermeasures for study locations throughout the City of Healdsburg. Please provide any feedback and comments on these countermeasures before our next Stakeholder Working Group in May 2021.

2. Proposed Safety Countermeasures

2.1 Collision Analysis

Collisions in Healdsburg were analyzed for collision density, severity, type, and trends. In complying with the Highway Safety Improvement Program (HSIP) requirements, a deep-dive analysis of the past five (5) years of data (2015-2019) were analyzed for recommended safety countermeasures and subsequent recommended projects. The Highway Safety Manual (HSM) methodology of Equivalent Property Damage Only (EPDO) rating assigns a weight to collisions in capturing the relative severity in equivalent property damage only (PDO =1). This weighting helps the locations with highest collision severity to rank the highest and hence perform the best with the Benefit to Cost Ratios (BCRs) for HSIP. In this analysis, the study segments and intersections for City roads were determined based off the top five locations by EPDO weight and by total collisions. After removing duplicates in the two lists, seven (7) study intersections and seven (7) study segments were chosen. **Tables 1** and **2** list the intersections and segments with their associated EPDO, total collisions, and the common crashes and issues reported.

GHD
943 Reserve Drive Roseville California 95678 USA
T 916 782 8688 **F** 916 782 8689 **W** www.ghd.com

Table 1. City Study Intersections

Primary Road	Secondary Road	Control	EPDO	Total Crashes	Common Crashes/Issues								
					Top Type of Collision	Top Violation Category	Night	Wet	Ped	Bike	Involv. w/Fixed Object	Crosing Not in Crosswalk	DUI
Dry Creek Rd	**Grove St**	Signalized	132	20	Broadside (6)	Auto Right of Way (6)	3	4	1	0	3	0	2
Healdsburg Ave	**Dry Creek Rd**	Signalized	84	15	Rear End (5)	Unsafe Speed (4), Auto Right of Way (4)	2	1	1	1	2	0	1
Healdsburg Ave	**Plaza St**	TWSC	68	5	Other (Bicycle Collisions) (3)	Unsafe Speed (2)	0	1	1	2	0	0	0
Sherman St	**Fitch St**	TWSC	43	4	Broadside (2)	Auto Right of Way (2)	0	0	1	0	0	1	0
Matheson St	**Healdsburg Ave**	Signalized	38	8	Rear End (2)	Improper Turning (2), Traffic Signals & Signs (2), Unsafe Starting or Backing (2)	3	0	1	1	0	0	1
Healdsburg Ave	**Exchange Ave**	Signalized	30	15	Sideswipe (4), Rear End (4)	Improper Turning (7)	6	4	0	1	2	0	1
Healdsburg Ave	**North St**	Signalized	19	9	Broadside (4)	DUI (2), Improper Turning (2), Unsafe Starting or Backing (2)	1	1	0	1	0	0	1

Table 2. City Study Segments

Primary Road	Begin Segment	End Segment	EPDO	Total Crashes	Common Crashes/Issues								
					Top Type of Collision	Top Violation Category	Night	Wet	Ped	Crossing Not in Crosswalk	Bike	Involv. w/Fixed Object	DUI
Healdsburg Ave	**Balihache Ave**	**Frontage Rd**	74	6	Hit Object (5)	Unsafe Speed (3)	5	2	0	0	0	4	3
Matheson St	**East St**	**2nd St**	70	11	Broadside (5)	Traffic Signals and Signs (3)	2	2	1	0	3	0	1
Healdsburg Ave	**Matheson St**	**Mill St**	62	13	Sideswipe (8)	Auto Right of Way (6)	4	2	1	0	0	2	1
Grove St	**Dry Creek Rd**	**Grant St**	47	8	Rear End (5)	Unsafe Speed (4)	2	0	0	0	0	2	0
Healdsburg Ave	**Mill St**	**Exchange St**	42	8	Broadside (4)	Auto Right of Way (4)	1	1	0	0	0	0	0
Healdsburg Ave	**Paul Wittke Dr**	**Dry Creek Rd**	38	13	Sideswipe (2), Rear End (2), Broadside (2), Hit Object (2), Veh/Ped (2)	Unsafe Speed (3), Improper Turning (3)	2	0	2	2	0	2	0
Healdsburg Ave	**Piper St**	**North St**	20	10	Sideswipe (5)	Auto Right of Way (3), Traffic Signals and Signs (3)	1	0	0	0	0	1	0

2.2 Recommended Countermeasures

Recommended countermeasures for the priority locations were chosen per the most recent *Caltrans, Local Roadway Safety Manual (Version 1.5), April 2020,* guidance from the City on preferred countermeasures,

crash characteristics, observations from Google Maps and public comments. For further information on Caltrans recommended countermeasures via *Local Roadway Safety Manual,* refer to **Attachment A.** The recommended countermeasures for intersections and segments within the City of Healdsburg are shown below.

As presented in **Tables 3** and **4**, the location and a list of possible recommended safety countermeasures and subsequent Crash Reduction Factor (CRF) are displayed. One or many of the countermeasures can be selected for application. It is noted that if more than one countermeasure is applied at a location the Combined Crash Reduction Factor (CCRF) is adjusted multiplicatively by the following equation (CCRFi = 1-[(1-CRF1)*(1-CRF2)*(1-CRF3)] etc.).

Table 3. City Intersection Countermeasures

Primary Road	Secondary Road	Relevant Challenge Area	CRF	Recommended Countermeasures	Reasoning
Dry Creek Rd	**Grove St**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	6 broadside and 4 rear end collisions
			55%	Install left-turn lane and add turn phase (to Grove St)	6 broadside collisions caused by Auto Right of Way violations
			15%	Improve signal timing	6 broadside and 4 rear end collisions
			-	Replace botts dots with thermoplastic striping (RPMs)	Provide better lane visibility
Healdsburg Ave	**Dry Creek Rd**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	5 rear end and 4 broadside collisions
			-	Replace botts dots with thermoplastic striping (RPMs)	Provide better lane visibility
Healdsburg Ave	**Plaza St**	Intersection	20%	Improve sight distance to intersection (clear sight triangles)	Trees, bushes, and parked vehicles blocking sight for drivers on Plaza St
		Aggressive Driving	-	Speed feedback signs and enforcement	3 collisions caused by unsafe speed
Sherman St	**Fitch St**	Intersection	20%	Improve sight distance to intersection (clear sight triangles)	Trees along Fitch St block view of on-coming vehicles for drivers on Sherman St
			50%	Convert to All-Way Stop control (if meets warrants)	2 broadside collisions caused by Auto Right of Way violations
		Pedestrian	-	Install yellow school crosswalks	Within a half mile from schools, no crosswalks at this location, student hit and injured walking home from school
Matheson St	**Healdsburg Ave**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	2 rear end collisions
			-	Replace botts dots with thermoplastic striping	Provide better lane visibility
			30%	Convert signal to mast arm	2 rear end collisions and 2 collisions caused by traffic signal violations
Healdsburg Ave	**Exchange Ave**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	4 rear end and 3 broadside collisions
			-	Pavement improvements	Pavement failure through intersection
			-	Update striping, RPMs	Provide better lane visibility
			-	Median improvements on south leg of Exchange Ave	
				OR	
			Varies	Convert intersection to roundabout	Intersection has complex geometry with US 101 on ramp access
Healdsburg Ave	**North St**	Intersection	15%	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	4 broadside and 3 rear end collisions
			30%	Convert signal to mast arm	4 broadside and 3 rear end collisions
			-	Install Flashing Yellow Arrow (to North St)	Reduce broadside collisions, not enough space to install left turn lane with protected phase

Table 4. City Segment Countermeasures

Segment	From	To	CRF	Recommended Countermeasures	Reasoning
Healdsburg Ave	Balihache Ave	Frontage Rd	35%	Remove or relocate fixed objects outside of Clear Recovery Zone	5 collisions with fixed objects
			30%	Install dynamic/variable speed warning signs	3 collisions as a result of unsafe speed
			-	Improve striping and pavement markings	
Matheson St	East St	2nd St	35%	Install bike lanes and/or sharrows	3 bike collisions
			-	Install stop bars before crosswalks	3 collisions as a result of traffic sign violations
			-	Improve segment lighting	2 nighttime collisions
Healdsburg Ave	Matheson St	Mill St	-	Improve sight distance	
Grove St	Dry Creek Rd	Grant St	30%	Install dynamic/variable speed warning signs	4 unsafe speed collisions
			35%	Add segment lighting	2 nighttime collisions
			35%	Remove or relocate fixed objects outside of Clear Recovery Zone	2 collisions involved with fixed objects
Healdsburg Ave	Mill St	Exchange St	30%	Install dynamic/variable speed warning signs	
			-	Replace botts dots with thermoplastic striping	
			-	Improve sight distance	
Healdsburg Ave	Paul Wittke Dr	Dry Creek Rd	30%	Install dynamic/variable speed warning signs	3 unsafe speed collisions
				Install pedestrian crossing (near Circle K)	2 pedestrian collisions, not in crosswalks
			-	Replace botts dots with thermoplastic striping	
Healdsburg Ave	Piper St	North St	30%	Install dynamic/variable speed warning signs	
			-	Reduce number of on-street parking spots/make spots larger	

2.3 Systemic Approach

In addition to analyzing intersections and segments by number of collisions and relative severity (EPDO), a systemic approach can be taken with applying countermeasures with similar roadway risk characteristics. For HSIP funding, the goal will be to balance the need to have a competitive BCR (i.e. last call minimum BCR was 3.5 but funding was awarded for a BCR closer to 8) and maximizing as many locations as possible that can benefit from similar safety countermeasures. However, HSIP does have set asides that require no BCR and therefore a systemic approach of these projects can be identified as long they meet the funding requirement (e.g. HSIP Cycle 10 had set aside funding were as follows: $250K per agency available for pedestrian crossing enhancements, $1M per agency for guardrail upgrades, and $250K per agency for installing edgelines).

2.4 Funding

Benefit-to-cost (B/C) ratios for applicable HSIP projects based off the recommended countermeasures, along with additional sources for funding are shown for study intersections and segments below.

Funding for City Intersection Projects

			HSIP Analyzer Results								Potential Alternative Funding	
Primary Road	**Secondary Road**	**Recommended Countermeasures**	**Max Cost of Project for B/C Ratio of 8**	**B/C Ratio**	**Total Expected Benefit**	**Total Estimated Project Cost**	**HSIP Funding Reimbursement Ratio***	**Additional Funding Needed**	**HSIP Competitive**	**Systemic Project**	**HSIP Set-Aside**	**ATP Funding**
Dry Creek Rd	**Grove St**	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 1,631,503	72.03	$ 13,052,024	$ 181,200	50%	$ 90,600	Y	-	-	-
		Install left-turn lane and add turn phase (to Grove St)								-	-	-
		Improve signal timing								-	-	-
		Replace botts dots with thermoplastic striping (RPMs)	-	-	-	-	-	-	-	Y	-	-
Healdsburg Ave	**Dry Creek Rd**	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 86,190	8.57	$ 689,521	$ 80,500	100%	$ -	Y	-	-	-
		Replace botts dots with thermoplastic striping (RPMs)	-	-	-	-	-	-	-	Y	-	-
Healdsburg Ave	**Plaza St**	Improve sight distance to intersection (clear sight triangles)	$ 258,375	147.64	$ 2,067,000	$ 14,000	90%	$ 1,400	Y	-	-	-
Sherman St	**Fitch St**	Improve sight distance to intersection (clear sight triangles)	$ 404,835	167.37	$ 3,238,681	$ 19,350	90%	$ 1,935.00		-	-	-
		Convert to All-Way Stop control (if meets warrants)								-	-	-
		Install yellow school crosswalks	-	-	-	-	-	-	-	-	Pedestrian Crossing Enhancements	Y
Matheson St	**Healdsburg Ave**	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 18,503	2.57	$ 148,021	$ 57,500	100%	$ -	N	-	-	-
		Convert signal to mast arm	$ 74,010	2.57	$ 592,081	$ 230,000	100%	$ -	N	-	-	-
		Replace botts dots with thermoplastic striping	-	-	-	-	-	-	-	Y	-	-
Healdsburg Ave	**Exchange Ave**	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size,	$ 15,086	1.05	$ 120,691	$ 115,000	100%	$ -	N	-	-	-
		Pavement improvements	-	-	-	-	-	-	-	-	-	-
		Update striping, RPMs								Y	-	
		Median improvements								-	-	-
		OR										
		Convert intersection to roundabout	$ 924,210	3.36	$ 7,393,680	$ 2,200,000	100%	-	N	-	-	Y
Healdsburg Ave	**North St**	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	$ 43,834	2.03	$ 350,669	$ 172,500	100%	$ -	N	-	-	-
		Install Flashing Yellow Arrow (to North St)								-	-	-
		Provide protected left turn phase (to Healdsburg Ave)								-	-	-
		Convert signal to mast arm	$ 37,305	1.30	$ 298,441	$ 230,000	100%	$ -		-	-	-
Systemic Project (see 'Systemic Project' field in table for locations)		Replace botts dots with thermoplastic striping	-	-	-	-	-	-	-	4		-

*Improve signal timing (coordination, phases, red, yellow, or operation); HSIP Funding Eligibility: 50%
Install left-turn lane and add turn phase (signal has no left-turn lane or phase before); HSIP Funding Eligibility: 90%
Improve sight distance to intersection (Clear Sight Triangles); HSIP Funding Eligibility: 90%

Funding for City Segment Projects

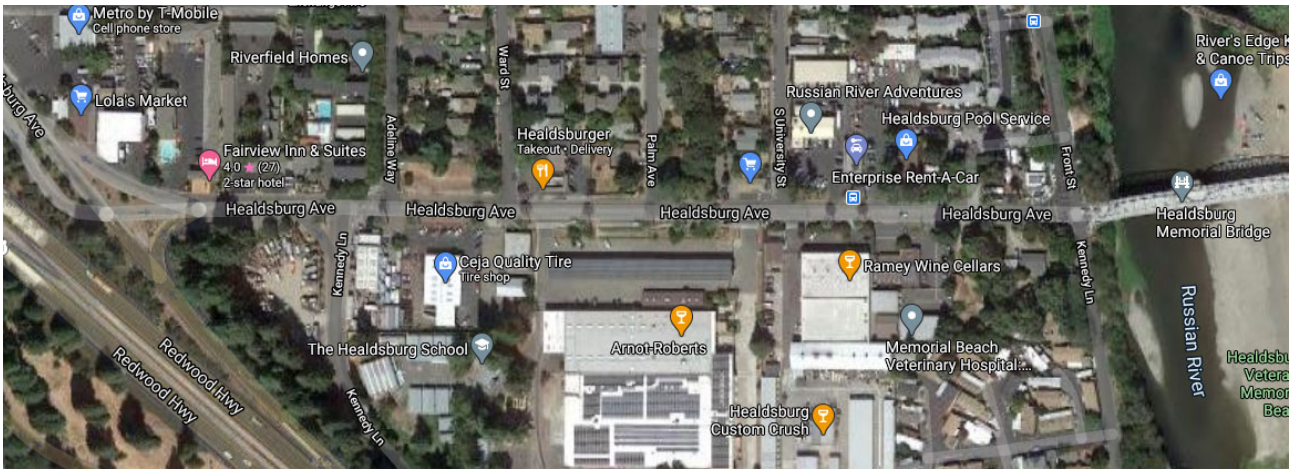
				HSIP Analyzer Results								Potential Alternative Funding	
Segment	**From**	**To**	**Recommended Countermeasures**	**Max Cost of Project for B/C Ratio of 8**	**B/C Ratio**	**Total Expected Benefit**	**Total Estimated Project Cost**	**HSIP Funding Reimbursement Ratio***	**Additional Funding Needed**	**HSIP Competitive**	**Systemic Project**	**HSIP Set-Aside**	**ATP Funding**
Healdsburg Ave	**Balihache Ave**	**Frontage Rd**	Remove or relocate fixed objects outside of Clear Recovery Zone	$ 1,020,792	12.91	$ 8,166,339	$ 632,500	90%	$ 63,250	Y	-	-	-
			Install dynamic/variable speed warning signs								Y	-	-
			Improve striping and pavement markings	-	-	-	-	-	-	-	-	-	-
Matheson St	**East St**	**2nd St**	Install bike lanes and/or sharrows	$ 457,958	92.28	$ 3,663,661	$ 39,700	90%	$ 3,970	Y	-	-	Y
			Install stop bars before crosswalks	-	-	-	-	-	-	-	-	Pedestrian Crossing Enhancements	
			Improve segment lighting								-	-	-
Healdsburg Ave	**Matheson St**	**Mill St**	Install edgelines	$ 163,363	163.36	$ 1,306,900	$ 8,000	100%	$ -	Y	-	Installing Edgelines	-
			Improve sight distance	-	-	-	-	-	-	-	-	-	-
Grove St	**Dry Creek Rd**	**Grant St**	Install dynamic/variable speed warning signs	$ 542,280	-	$ 4,338,236	-	90%	-		Y	-	-
			Add segment lighting								-	-	-
			Remove or relocate fixed objects outside of Clear Recovery Zone								-	-	-
Healdsburg Ave	**Mill St**	**Exchange St**	Install dynamic/variable speed warning signs	$ 182,370	2.54	$ 1,458,961	$ 575,000	100%	$ -	N	Y	-	-
			Improve sight distance	-	-	-	-	-	-	-	-	-	
			Replace botts dots with thermoplastic striping	-	-	-	-	-	-	-	-	-	-
Healdsburg Ave	**Paul Witke Dr**	**Dry Creek Rd**	Road Diet (Reduce travel lanes fom 4 to 3 and add a two way left-turn and bike lanes)	$ 138,775	1.04	$ 1,110,197	$ 1,063,900	90%	$ 106,390	N	-	-	Previously Applied
			Install pedestrian crossing (near Circle K)								-	Pedestrian Crossing Enhancements	
			Install Separated Bike Lanes								-	-	
Healdsburg Ave	**Piper St**	**North St**	Install dynamic/variable speed warning signs	$ 19,650	0.27	$ 157,201	$ 575,000	100%	$ -	N	Y	-	-
			Reduce number of on-street parking spots/make spots larger	-	-	-	-	-	-	-	-	-	-
Systemic Project (see 'Systemic Project' field in table for locations)			Install dynamic/variable speed warning signs	$ 725,093	2.52	$ 5,800,741	$ 2,300,000	100%	$ -	N	4	-	-

*Remove or relocate fixed objects outside of Clear Recovery Zone; HSIP Funding Eligibility: 90%
Install bike lanes; HSIP Funding Eligibility: 90%
Remove or relocate fixed objects outside of Clear Recovery Zone; HSIP Funding Eligibility: 90%
Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes); HSIP Funding Eligibility: 90%
Install/upgrade pedestrian crossing (with enhanced safety features); HSIP Funding Eligibility: 90%
Install Separated Bike Lanes; HSIP Funding Eligibility: 90%

As shown in the tables above, the HSIP provides set-aside funding that do not require BCRs to be determined. This allows for jurisdictions to complete applications for locations that may not have a previous crash history but may have other concerns. These applications fare well when a systemic approach is taken for determining locations.

2.5 Stakeholder Feedback

2.5.1 City Recommendations



The segment of Healdsburg Avenue between Kennedy Lane and the Healdsburg Memorial Bridge was determined to be an area of focus, per City recommendation. The Healdsburg School is located adjacent to this segment and could benefit from additional pedestrian and bicycle facilities. The collision data for this location is shown below. Since this corridor does not have any pedestrian or bicycle collisions between 2015 and 2019, pedestrian and bicycle related projects will not qualify for HSIP benefit-to-cost ratio funding. In addition, the vehicle collisions were all property damage only (low severity). However, HSIP set-aside funding for “Pedestrian Crossing Enhancements” can be pursued at this location.

- Intersection-Related Collisions – 8 total collisions (all property damage only)
    - At Kennedy Lane – 1 collision
    - At Ward Street – 2 collision
    - At S University Street – 1 collision
    - At Front Street – 4 collisions
- Non-Intersection-Related Collisions – 3 total collisions (all property damage only)
    - Between Kennedy Lane and Front Street – 3 collisions

Additionally, the City has previously analyzed the feasibility of installing roundabouts at the US 101 northbound and southbound ramps on Dry Creek Road. There were five (5) injury collisions reported at the northbound ramps and three (3) injury collisions reported at the southbound ramps between 2015 and 2019.

Recently, this interchange had improvements completed in September 2019. This included conversion of the southbound ramps intersection from two-way stop control (TWSC) to all-way stop control (AWSC) and left turn lanes on Dry Creek Road for the northbound and southbound ramps. Assuming the collision severities are “Injury (Other Visible)”, converting the intersections to roundabouts from TWSC (since historical collision data covered this type of traffic control and NB ramps still have that control) has a projected benefit of $19,138,176 whereas conversion from AWSC to a roundabout is significantly less at $8,213,761. Another option would be to submit two applications for the NB and SB ramps separately, as the HSIP analyzer spreadsheet, will not allow you to toggle options (TWSC vs AWSC conversion to roundabout) for the two different intersections.

In evaluating a competitive HSIP application, a roundabout project for Kings County received funding with a B/C ratio of 8.29. To achieve a similar BCR for this project, the maximum cost of installing the two roundabouts for conversion from TWSC to a roundabout would be approximately $2.3 M.

In addition, it is recommended that more public outreach be conducted for this proposed project. Per public comments gathered through the online survey, there are concerns with the proposed roundabouts at the US 101 and Dry Creek Road interchange.

2.5.2 Popular Comments via Interactive Map Tool

The Social Pinpoint interactive map feature allows stakeholders to “Like” or “Dislike” other comments. The top 5 most popular comments are shown below, along with relevant collision information and potential countermeasures.

1. **Intersection of March Avenue and Lupine Road – 7 Likes**

    a. Comment: “The intersection at March ave. and Lupine Rd. is VERY dangerous for school kids coming from the high school and going to school. There should be a pedestrian crossing light or some other notification of pedestrians crossing. It should be a 4 way notification for safety. Kids are at risk of their safety with the present conditions. It has been this way for too long. I am very surprised that there hasn't been a major injury accident at this area. March Ave. traffic speed is way to fast.”

    b. Additional Comments at this intersection: “Very difficult to turn from Lupine onto March due to high number of cars parked on March Ave. it requires pulling way out into the intersection to determine if cars are coming.”, “In agreement that this intersection at March and Lupine is extremely dangerous-compounded by parked cars and trucks on March on either side of the stop sign which makes it virtually impossible to see oncoming traffic.”

    c. Response: This can be addressed through the “Pedestrian Crossing Enhancements” set-aside funding in the HSIP. Additionally, this intersection may benefit from evaluating sight distance with parked vehicles. There are two property damage only collisions at this location from the past five years and neither involved bicyclists or pedestrians.

2. **Intersection of Tucker Street and University Street – 6 Likes**

    a. Comment: “Please add flashing crosswalk lights to this crosswalk. Too often we have speeders coming down this way as well, and although I would like a 4 way stop there, just supplementing the existing crosswalk with safety features would be sufficient.”

    b. Response: This can be addressed through the “Pedestrian Crossing Enhancements” set-aside funding in the HSIP. There are two injury collisions at this location from the past five years, one of which involved a pedestrian.

3. **Intersection of Powell Avenue and University Avenue – 5 Likes**

    a. Comment: “Awkward intersection that would probably benefit from three way stop in BOTH places Powell intersects Univerity as opposed to only eastern side. When heading south on University, the left turn onto Powell is difficult as cars accelerating from three way stop intersection just to the left, and eastbound cats on Powell have no stop and coming down a hill with somewhat limited sight lines.”

    b. Response: Only one property damage only collision at this intersection. Consider evaluating sight distance at this location.

4. **Intersection of Tucker Street and 1st Street – 5 Likes**

    a. Comment: “Please turn this intersection from a 2 way to a 4 way. We have had issues with speeders coming from the Healdsburg Ave bridge and coming down First or Front Street at speeds in excess of 15-20 mph for YEARS. The HPD response has been to put out a speed limit sign with a radar but that’s useless after speeders realize HPD isn’t actually around to

stop them. The giant redwood tree on the corner makes it very difficult to see who is coming on 1st street when you're on Tucker as well."

b. Response: One complaint of pain collision at this location. Consider increasing speed enforcement at this location or adding traffic calming devices.

5. Intersection of Johnson Street and Powell Avenue – 4 Likes

a. Comment: "At Johnson & Powell is a major walking pattern using the pedestrian only extension of Lupine to connect to Johnson to get to town. People, some with baby carriages, bikes, pets, groceries cross Powell on foot here. This is the only way for hundreds/thousands of walking folks who live in all the north of Powell neighborhoods, to get to city center services. This needs a crosswalk with lighted warning signs. Autos speed up on their way from Healdsburg Ave. up to University St. stop sign."

b. Response: Consider adding a pedestrian crossing through the "Pedestrian Crossing Enhancements" set-aside funding in the HSIP. One property damage only and one injury collision at this location. No collisions related to pedestrians.

3. Next Steps

In moving forward with the LRSP process, the next step is to get concurrence on the recommended countermeasures and overall proposed safety project for the City. There are a variety of countermeasures that can be applied reactively and proactively in mitigating collisions. Other non-engineering countermeasures will also be included in the LRSP. These countermeasures will involve the other E's (Enforcement, Education, Emergency Response, and Emerging Technologies). At the 2nd Stakeholder Working Group meeting these will be discussed. This 2nd meeting is likely to occur in May 2021.

Attachment A

Countermeasures for Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
S01	Lighting	Add intersection lighting (S.I.)	Night	40%	20	100%	Medium
S02	Signal Mod.	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	All	15%	10	100%	Very High
S03	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High
S04	Signal Mod.	Provide Advanced Dilemma Zone Detection for high speed approaches	All	40%	10	100%	High
S05	Signal Mod.	Install emergency vehicle pre-emption systems	Emergency Vehicle	70%	10	100%	High
S06	Signal Mod.	Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low
S07	Signal Mod.	Provide protected left turn phase (left turn lane already exists)	All	30%	20	100%	High
S08	Signal Mod.	Convert signal to mast arm (from pedestal-mounted)	All	30%	20	100%	Medium
S09	Operation/ Warning	Install raised pavement markers and striping (Through Intersection)	All	10%	10	100%	Very High
S10	Operation/ Warning	Install flashing beacons as advance warning (S.I.)	All	30%	10	100%	Medium
S11	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	100%	Medium
S12	Geometric Mod.	Install raised median on approaches (S.I.)	All	25%	20	90%	Medium
S13PB	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low
S14	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (S.I.)	All	50%	20	90%	Medium
S15	Geometric Mod.	Reduced Left-Turn Conflict Intersections (S.I.)	All	50%	20	90%	Medium
S16	Geometric Mod.	Convert intersection to roundabout (from signal)	All	Varies	20	100%	Low
S17PB	Ped and Bike	Install pedestrian countdown signal heads	P & B	25%	20	100%	Very High
S18PB	Ped and Bike	Install pedestrian crossing (S.I.)	P & B	25%	20	100%	High
S19PB	Ped and Bike	Pedestrian Scramble	P & B	40%	20	100%	High
S20PB	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	100%	Very High
S21PB	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	100%	Very High

Source: "Table 1. Countermeasures for Signalized Intersections", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

GHD
669 Pacific Street Suite A San Luis Obispo California 93401 USA
T +1 805 242 0461 **W** www.ghd.com

Countermeasures for Non-Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS01	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	100%	Medium
NS02	Control	Convert to all-way STOP control (from 2-way or Yield control)	All	50%	10	100%	High
NS03	Control	Install signals	All	30%	20	100%	Low
NS04	Control	Convert intersection to roundabout (from all way stop)	All	Varies	20	100%	Low
NS05	Control	Convert intersection to roundabout (from stop or yield control on minor road)	All	Varies	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
NS07	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	100%	Very High
NS08	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	100%	High
NS09	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	100%	High
NS10	Operation/ Warning	Install transverse rumble strips on approaches	All	20%	10	90%	High
NS11	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS12	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	100%	Medium
NS13	Geometric Mod.	Install splitter-islands on the minor road approaches	All	40%	20	90%	Medium
NS14	Geometric Mod.	Install raised median on approaches (NS.I.)	All	25%	20	90%	Medium
NS15	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (NS.I.)	All	50%	20	90%	Medium
NS16	Geometric Mod.	Reduced Left-Turn Conflict Intersections (NS.I.)	All	50%	20	90%	Medium
NS17	Geometric Mod.	Install right-turn lane (NS.I.)	All	20%	20	90%	Low
NS18	Geometric Mod.	Install left-turn lane (where no left-turn lane exists)	All	35%	20	90%	Low
NS19PB	Ped and Bike	Install raised medians / refuge islands (NS.I.)	Ped and Bike	45%	20	90%	Medium
NS20PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	Ped and Bike	25%	10	100%	High
NS21PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	Ped and Bike	35%	20	100%	Medium
NS22PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	Ped and Bike	35%	20	100%	Medium
NS23PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	Ped and Bike	55%	20	100%	Low

Source: "Table 2. Countermeasures for Non-Signalized Intersections", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

Countermeasures for Roadways

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
R01	Lighting	Add segment lighting	Night	35%	20	100%	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	100%	Medium
R04	Remove/ Shield Obstacles	Install Guardrail	All	25%	20	100%	High
R05	Remove/ Shield Obstacles	Install impact attenuators	All	25%	10	100%	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 (without reducing travel lanes)	All	30%	20	90%	Medium
R14	Geometric Mod.	Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes)	All	30%	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	100%	High
R22	Operation/ Warning	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	100%	Very High
R23	Operation/ Warning	Install chevron signs on horizontal curves	All	40%	10	100%	Very High
R24	Operation/ Warning	Install curve advance warning signs	All	25%	10	100%	Very High
R25	Operation/ Warning	Install curve advance warning signs (flashing beacon)	All	30%	10	100%	High
R26	Operation/ Warning	Install dynamic/variable speed warning signs	All	30%	10	100%	High
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	100%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	100%	Very High
R29	Operation/ Warning	Install no-passing line	All	45%	10	100%	Very High
R30	Operation/ Warning	Install centerline rumble strips/stripes	All	20%	10	100%	High
R31	Operation/ Warning	Install edgeline rumble strips/stripes	All	15%	10	100%	High
R32PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R33PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R34PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R35PB	Ped & Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium
R36PB	Ped and Bike	Install raised pedestrian crossing	P & B	35%	20	90%	Medium
R37PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	100%	Medium
R38	Animal	Install animal fencing	Animal	80%	20	90%	Medium

Source: "Table 3. Countermeasures for Roadways", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

Observations for Intersections

Priority	Primary Road	Secondary Road	Observations from Google Maps	Comments
1	Dry Creek Rd	Grove St	Permitted left turn phasing on Grove St with no dedicated left turn lanes, protected left turn phasing on Dry Creek, faded back plates and street signs, multiple driveways within close proximity to intersection, crosswalk striping fading, botts dots centerline on north leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
2	Healdsburg Ave	Dry Creek Rd	Faded back plates and street signs, botts dots centerlines along Healdsburg Ave legs, botts dots lane markings on south leg, faded crosswalk striping, pavement in okay condition - could be resealed, bike lanes only on east leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
3	Healdsburg Ave	Plaza St	RRFB on north leg, stop control on east leg (3-legged intx), no marked x-walk on south leg, poor sight distance from east leg to north and south legs	
4	Sherman St	Fitch St	No marked crosswalks, stop bars on Sherman St fading, trees on west leg block view for vehicles on south leg, school xing sign on west leg but no marked school x-walk	
5	Matheson St	Healdsburg Ave	Faded back plates and street signs, permitted left turn phasing on Matheson St, signals on Matheson pedestal-mounted with smaller lenses, no marked bike lanes, botts dots centerline on west leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
6	Healdsburg Ave	Exchange Ave	Faded back plates and street signs, poor pavement condition on south leg and through intersection, faded lane markings and striping, US 101 SB On Ramp branches off from this intersection on south leg, confusing lane configuration	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
7	Healdsburg Ave	North St	Faded back plates and street signs, good pedestrian visibility, signals on North St approaches difficult to see, permitted left turn phasing on all approaches, left turn lanes on major approaches only	City recently updated red, yellow, and bike phase timings for all 12 signals within the city

Observations for Segments

Priority	Primary Road	Begin Segment	End Segment	Observations from Google Maps	Comments
1	Healdsburg Ave	Balihache Ave	Frontage Rd	Marked bike lanes along entire segment in both directions, markings are faded and bike lanes are narrow, double yellow centerline is also faded, pavement is in okay condition - not many potholes or ruts but looks like beginning of raveling, relatively straight segments with some small curve	There is segment lighting here but not sure if it is not functioning well or if there's not enough or people are hitting objects in areas where there isn't lighting
2	Matheson St	East St	2nd St	Marked on-street parking, dashed yellow centerline, cracked pavement, no marked bike lanes	
3	Healdsburg Ave	Matheson St	Mill St	Marked on-street parking, downtown area segment, double yellow centerline - faded for majority of segment, patchy pavement, no marked bike lanes, portion right before roundabout is recently repaved from construction	Vehicles pulling away from curb and out of driveways being hit, ped hit crossing driveway
4	Grove St	Dry Creek Rd	Grant St	Double yellow centerline, white edgelines, no marked bike lanes, unpaved shoulder, few sidewalks, raveling and patchy pavement	
5	Healdsburg Ave	Mill St	Exchange St	TWLTL, all striping besides at intx are botts dots, no marked bike lanes, sharrow in SB direction, awkwardly marked sharrow in NB direction, narrow sidewalks, unkempt sidewalk in NB direction, some marked on-street parking	
6	Healdsburg Ave	Paul Wittke Dr	Dry Creek Rd	Botts dots lane markings, TWLTL, faded arrows, failing pavement - alligator cracking, raveling, patchy, narrow sidewalks, no bike lanes, no on-street parking	Ped collisions happened at night, seem to be at gas station driveway
7	Healdsburg Ave	Piper St	North St	Marked on-street parking, downtown area, double yellow centerline, midblock pedestrian crossing with in-ground flashers, beginnings of failing pavement - alligator cracking and slight raveling, no marked bike lanes	Mostly hitting parked vehicles (probably due to improper parallel parking), also seem to be hit when pulling away from curb

Attachment A

Countermeasures for Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
S01	Lighting	Add intersection lighting (S.I.)	Night	40%	20	100%	Medium
S02	Signal Mod.	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	All	15%	10	100%	Very High
S03	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High
S04	Signal Mod.	Provide Advanced Dilemma Zone Detection for high speed approaches	All	40%	10	100%	High
S05	Signal Mod.	Install emergency vehicle pre-emption systems	Emergency Vehicle	70%	10	100%	High
S06	Signal Mod.	Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low
S07	Signal Mod.	Provide protected left turn phase (left turn lane already exists)	All	30%	20	100%	High
S08	Signal Mod.	Convert signal to mast arm (from pedestal-mounted)	All	30%	20	100%	Medium
S09	Operation/ Warning	Install raised pavement markers and striping (Through Intersection)	All	10%	10	100%	Very High
S10	Operation/ Warning	Install flashing beacons as advance warning (S.I.)	All	30%	10	100%	Medium
S11	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	100%	Medium
S12	Geometric Mod.	Install raised median on approaches (S.I.)	All	25%	20	90%	Medium
S13PB	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low
S14	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (S.I.)	All	50%	20	90%	Medium
S15	Geometric Mod.	Reduced Left-Turn Conflict Intersections (S.I.)	All	50%	20	90%	Medium
S16	Geometric Mod.	Convert intersection to roundabout (from signal)	All	Varies	20	100%	Low
S17PB	Ped and Bike	Install pedestrian countdown signal heads	P & B	25%	20	100%	Very High
S18PB	Ped and Bike	Install pedestrian crossing (S.I.)	P & B	25%	20	100%	High
S19PB	Ped and Bike	Pedestrian Scramble	P & B	40%	20	100%	High
S20PB	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	100%	Very High
S21PB	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	100%	Very High

Source: "Table 1. Countermeasures for Signalized Intersections", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

GHD
669 Pacific Street Suite A San Luis Obispo California 93401 USA
T +1 805 242 0461 **W** www.ghd.com

Countermeasures for Non-Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
NS01	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	100%	Medium
NS02	Control	Convert to all-way STOP control (from 2-way or Yield control)	All	50%	10	100%	High
NS03	Control	Install signals	All	30%	20	100%	Low
NS04	Control	Convert intersection to roundabout (from all way stop)	All	Varies	20	100%	Low
NS05	Control	Convert intersection to roundabout (from stop or yield control on minor road)	All	Varies	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
NS07	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	100%	Very High
NS08	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	100%	High
NS09	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	100%	High
NS10	Operation/ Warning	Install transverse rumble strips on approaches	All	20%	10	90%	High
NS11	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS12	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	100%	Medium
NS13	Geometric Mod.	Install splitter-islands on the minor road approaches	All	40%	20	90%	Medium
NS14	Geometric Mod.	Install raised median on approaches (NS.I.)	All	25%	20	90%	Medium
NS15	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (NS.I.)	All	50%	20	90%	Medium
NS16	Geometric Mod.	Reduced Left-Turn Conflict Intersections (NS.I.)	All	50%	20	90%	Medium
NS17	Geometric Mod.	Install right-turn lane (NS.I.)	All	20%	20	90%	Low
NS18	Geometric Mod.	Install left-turn lane (where no left-turn lane exists)	All	35%	20	90%	Low
NS19PB	Ped and Bike	Install raised medians / refuge islands (NS.I.)	Ped and Bike	45%	20	90%	Medium
NS20PB	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	Ped and Bike	25%	10	100%	High
NS21PB	Ped and Bike	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	Ped and Bike	35%	20	100%	Medium
NS22PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	Ped and Bike	35%	20	100%	Medium
NS23PB	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	Ped and Bike	55%	20	100%	Low

Source: "Table 2. Countermeasures for Non-Signalized Intersections", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

Countermeasures for Roadways

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
R01	Lighting	Add segment lighting	Night	35%	20	100%	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	100%	Medium
R04	Remove/ Shield Obstacles	Install Guardrail	All	25%	20	100%	High
R05	Remove/ Shield Obstacles	Install impact attenuators	All	25%	10	100%	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 (without reducing travel lanes)	All	30%	20	90%	Medium
R14	Geometric Mod.	Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes)	All	30%	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	100%	High
R22	Operation/ Warning	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	100%	Very High
R23	Operation/ Warning	Install chevron signs on horizontal curves	All	40%	10	100%	Very High
R24	Operation/ Warning	Install curve advance warning signs	All	25%	10	100%	Very High
R25	Operation/ Warning	Install curve advance warning signs (flashing beacon)	All	30%	10	100%	High
R26	Operation/ Warning	Install dynamic/variable speed warning signs	All	30%	10	100%	High
R27	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	100%	Very High
R28	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	100%	Very High
R29	Operation/ Warning	Install no-passing line	All	45%	10	100%	Very High
R30	Operation/ Warning	Install centerline rumble strips/stripes	All	20%	10	100%	High
R31	Operation/ Warning	Install edgeline rumble strips/stripes	All	15%	10	100%	High
R32PB	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R33PB	Ped and Bike	Install Separated Bike Lanes	P & B	45%	20	90%	High
R34PB	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R35PB	Ped & Bike	Install/upgrade pedestrian crossing (with enhanced safety features)	P & B	35%	20	90%	Medium
R36PB	Ped and Bike	Install raised pedestrian crossing	P & B	35%	20	90%	Medium
R37PB	Ped and Bike	Install Rectangular Rapid Flashing Beacon (RRFB)	P & B	35%	20	100%	Medium
R38	Animal	Install animal fencing	Animal	80%	20	90%	Medium

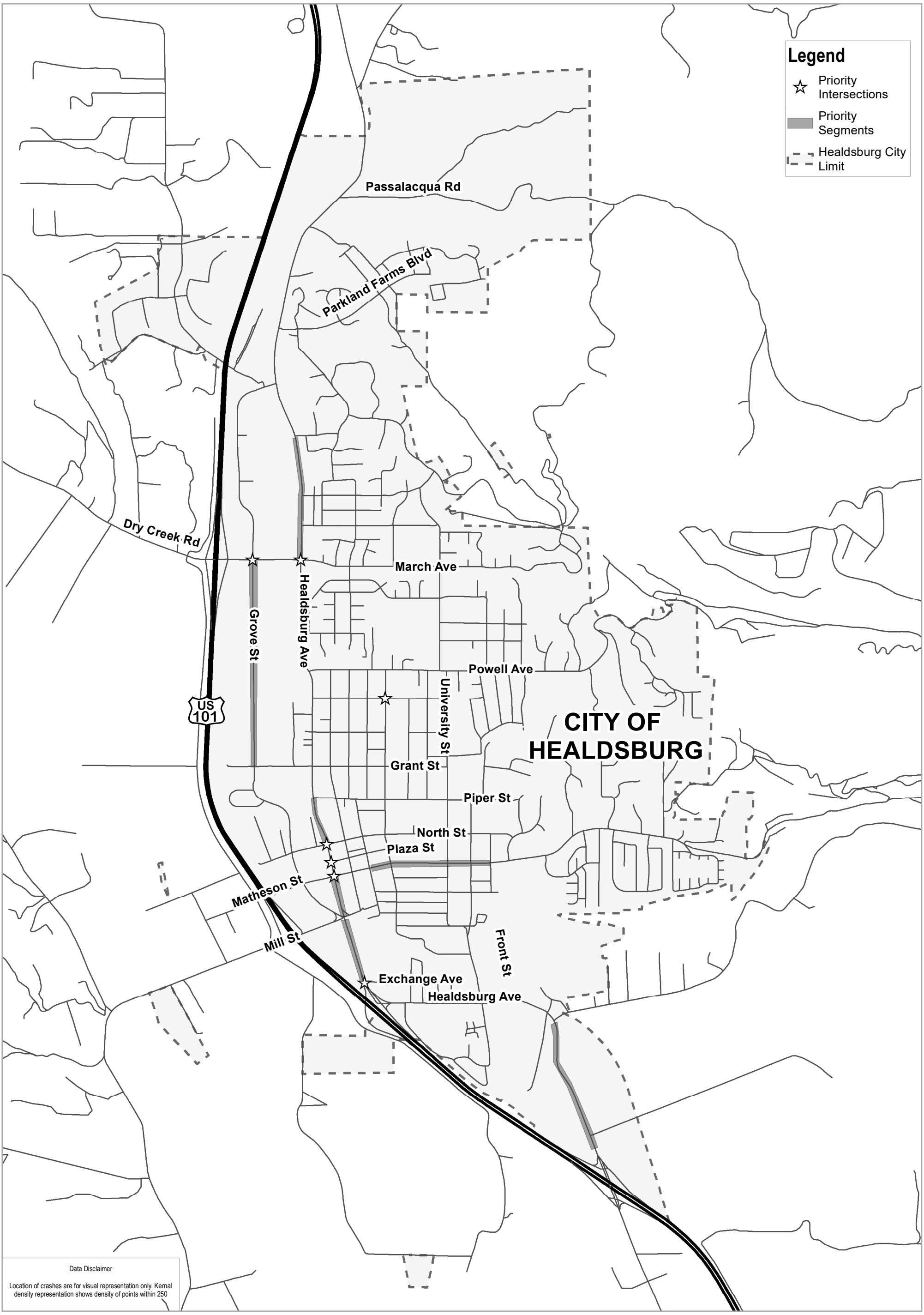
Source: "Table 3. Countermeasures for Roadways", Local Road Safety Manual, Version 1.5. Caltrans, April 2020.

Observations for Intersections

Priority	Primary Road	Secondary Road	Observations from Google Maps	Comments
1	Dry Creek Rd	Grove St	Permitted left turn phasing on Grove St with no dedicated left turn lanes, protected left turn phasing on Dry Creek, faded back plates and street signs, multiple driveways within close proximity to intersection, crosswalk striping fading, botts dots centerline on north leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
2	Healdsburg Ave	Dry Creek Rd	Faded back plates and street signs, botts dots centerlines along Healdsburg Ave legs, botts dots lane markings on south leg, faded crosswalk striping, pavement in okay condition - could be resealed, bike lanes only on east leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
3	Healdsburg Ave	Plaza St	RRFB on north leg, stop control on east leg (3-legged intx), no marked x-walk on south leg, poor sight distance from east leg to north and south legs	
4	Sherman St	Fitch St	No marked crosswalks, stop bars on Sherman St fading, trees on west leg block view for vehicles on south leg, school xing sign on west leg but no marked school x-walk	
5	Matheson St	Healdsburg Ave	Faded back plates and street signs, permitted left turn phasing on Matheson St, signals on Matheson pedestal-mounted with smaller lenses, no marked bike lanes, botts dots centerline on west leg	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
6	Healdsburg Ave	Exchange Ave	Faded back plates and street signs, poor pavement condition on south leg and through intersection, faded lane markings and striping, US 101 SB On Ramp branches off from this intersection on south leg, confusing lane configuration	City recently updated red, yellow, and bike phase timings for all 12 signals within the city
7	Healdsburg Ave	North St	Faded back plates and street signs, good pedestrian visibility, signals on North St approaches difficult to see, permitted left turn phasing on all approaches, left turn lanes on major approaches only	City recently updated red, yellow, and bike phase timings for all 12 signals within the city

Observations for Segments

Priority	Primary Road	Begin Segment	End Segment	Observations from Google Maps	Comments
1	Healdsburg Ave	Balihache Ave	Frontage Rd	Marked bike lanes along entire segment in both directions, markings are faded and bike lanes are narrow, double yellow centerline is also faded, pavement is in okay condition - not many potholes or ruts but looks like beginning of raveling, relatively straight segments with some small curve	There is segment lighting here but not sure if it is not functioning well or if there's not enough or people are hitting objects in areas where there isn't lighting
2	Matheson St	East St	2nd St	Marked on-street parking, dashed yellow centerline, cracked pavement, no marked bike lanes	
3	Healdsburg Ave	Matheson St	Mill St	Marked on-street parking, downtown area segment, double yellow centerline - faded for majority of segment, patchy pavement, no marked bike lanes, portion right before roundabout is recently repaved from construction	Vehicles pulling away from curb and out of driveways being hit, ped hit crossing driveway
4	Grove St	Dry Creek Rd	Grant St	Double yellow centerline, white edgelines, no marked bike lanes, unpaved shoulder, few sidewalks, raveling and patchy pavement	
5	Healdsburg Ave	Mill St	Exchange St	TWLTL, all striping besides at intx are botts dots, no marked bike lanes, sharrow in SB direction, awkwardly marked sharrow in NB direction, narrow sidewalks, unkempt sidewalk in NB direction, some marked on-street parking	
6	Healdsburg Ave	Paul Wittke Dr	Dry Creek Rd	Botts dots lane markings, TWLTL, faded arrows, failing pavement - alligator cracking, raveling, patchy, narrow sidewalks, no bike lanes, no on-street parking	Ped collisions happened at night, seem to be at gas station driveway
7	Healdsburg Ave	Piper St	North St	Marked on-street parking, downtown area, double yellow centerline, midblock pedestrian crossing with in-ground flashers, beginnings of failing pavement - alligator cracking and slight raveling, no marked bike lanes	Mostly hitting parked vehicles (probably due to improper parallel parking), also seem to be hit when pulling away from curb



Paper Size ANSI B

0 0.1 0.2 0.3 0.4

Miles

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

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GHD

CITY OF HEALDSBURG
LOCAL ROAD SAFETY PLAN

LOCATIONS OF PUBLIC COMMENTS FROM SOCIAL PINPOINT

Project No. **11219822**
Revision No. **-**
Date **02/11/2021**

FIGURE X

C:\Users\kbryant\Desktop\GIS\Healdsburg LRSP\Healdsburg LRSP_Comments.mxd
Print date: 11 May 2021 - 13:28

Data source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019. Created by: kbryant

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