TOWN OF WINDSOR

Local Road Safety Plan

Final Report

Town of Windsor

November 03, 2021



REPORT SIGNATURE SHEET

This Local Road Safety Plan 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

November 3, 2021

Date

Acknowledgements

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

Town of Windsor

Mayor and Councilmembers

Public Works

Community Development

Parks and Recreations

Sonoma County Sheriff's Department

Sonoma County Fire Department

Sonoma County Transportation Authority

Sonoma County Transit

Sonoma County Department of Health Services

Caltrans, District 4

Windsor Unified School District

Bicycle and Pedestrian Advisory Committee

Sonoma County Bicycle Coalition

Executive Director

Safe Routes to School Coordinator

Bell's Ambulance Services

Executive Summary

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

The LRSP is a collaborative process that is similar to a Systemic Safety Analysis Report (SSAR) except a LRSP has 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 Town as the lead and local organizations from the 5 E's and anyone with an interest in improving the Town'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 Town'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

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 Town of Windsor would be a living document with a recommended update every five (5) years.

Data analysis, public input, and Town feedback helped to determine the priority locations in the Town. These locations were analyzed individually for safety countermeasures and benefit-to-cost ratios were estimated. The top five (5) intersections and segments based on benefit-to-cost ratios, along with their proposed countermeasures, are shown in the tables below.

Highest Ranking Priority Intersections and Recommended Countermeasures

Primary Road	Secondary Road	Recommended Countermeasures
Starr Rd	Windsor River Rd	Improve intersection lighting
		Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs
		Install advance stop bar before crosswalk, install curb extensions on north/south crosswalks - if feasible, upgrade pedestrian crossing (ADA compliant ramps, refresh pavement/crosswalk markings, etc.)
		Install green conflict bike lane marking on the eastbound approach at the conflict area before the right turn pocket
		Partner with Safe Routes to School for education on how to cross safely[1]
		School zone enforcement[1]
Old Redwood Highway	Courtyards E	Add intersection lighting
		Improve sight distance to intersection (Clear Sight Triangles)
		Safe crossing educational campaign[1]
Windsor River Rd	Market St	Improve signal timing (coordination, phases, red, yellow, or operation)
		Evaluate protected left turn phase for east leg
		Install flashing yellow arrow indication with permissive left turns
		Speed enforcement[1]
Windsor River Rd	Windsor Rd	Convert intersection to roundabout (from signal) - Designed and funded improvements
		Partner with SMART to create an informational video on how to safely navigate the roundabout[1]
Old Redwood Highway	Hembree Ln	Improve signal hardware: back-plates with retroreflective border
		Improve signal timing (coordination, phases, red, yellow, or operation)
		Evaluate the emergency pre-emption system (opticom) at the signal for timing improvements[1]
		Educate drivers how safely respond to emergency vehicles[1]

[1] Non-Engineering Countermeasure

Highest Ranking Priority Segments and Recommended Countermeasures

Segment	From	To	Recommended Countermeasures
Colleen Dr	Starr Rd	Joni Ct	Evaluate installing additional striping (edgelines and centerlines)
			Evaluate parking on roadway and coordinate with street residents
Old Redwood Highway	Arata Ln	Windsor Rd	Add two-way left-turn lane (without reducing travel lanes) - where feasible
			Improve pavement condition and striping with surface treatment
			Pedestrian crossing enhancements
			Safe crossing campaign for pedestrians[1]
Brooks Road S	Jessica Dr	Lakewood Dr	Replace botts dots with thermoplastic striping on southern end of segment
			Evaluate speed management and opportunities to provide additional protection and accessibility for pedestrians and bicyclists
			Planned pedestrian (RRFB Cycle 10 funded) and speed management improvements between Pulteney Pl and Foothill Dr
			DUI enforcement[1]
Old Redwood Highway	US 101 SB Ramps	Arata Ln	Add segment lighting
			Delineate or Remove/relocate fixed objects outside of Clear Recovery Zone
			Improve pavement condition and striping with surface treatment
			DUI enforcement[1]
Hembree Ln	Northampton Dr	Shiloh Rd	Install dynamic/variable speed warning signs
			Install bicycle and vehicle conflict markings at mixing zones
			Evaluate traffic control at Walmart driveway for possible improvements

[1] Non-Engineering Countermeasure

Systemic countermeasures were also recommended for Town roadways. These countermeasures included Townwide 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	Bicycle and pedestrian safety campaigns (use a light at night, wear bright clothing, etc.)
	Driver education through distracted driving campaigns
	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
	Increased education about travelling around school zones
	Partnering with agencies such as Sonoma County Health and SCTA for public education
Emerging Technologies	ITS infrastructure, web/mobile application (apps) and smart cities practices
	Bicycle detection
	Upgraded controllers for flashing yellow arrows and leading pedestrian intervals
	Installing touchless Accessible Pedestrian Signals
	Communication with traffic signals
	Changeable message signs
	Real-time speed feedback data and reporting
	Increasing frequency of speed surveys
Enforcement	Targeted speed enforcement
	DUI saturation patrols
	Increasing number of traffic enforcement officers
	Distracted driving enforcement
Emergency Response	Evaluate pre-emption at the Lakewood and Central Windsor interchange with US 101
	Evaluate pre-emption at Hembree Lane and Old Redwood Highway
	Improvements to roadways to increase access and potentially shorten response times
	Educate drivers on how to respond to emergency vehicles

It is important to understand the upcoming funding opportunities in the successful implementation of these safety projects. Most of the proposed countermeasures are HSIP fundable (next cycle 11 is scheduled to open in May 2022). However, 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

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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 Stopped Controlled
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
SMART	Sonoma Marin Area Rail Transit
SSAR	Systemic Safety Analysis Report
SWITRS	Statewide Integrated Traffic Records System
TIMS	Transportation Injury Mapping System
TWSC	Two Way Stopped Controlled

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 Town in safety countermeasures and allow eligibility for funding in future HSIP 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 Town 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 establishing the leadership in Step 1, a Town of Windsor Public Works staff member was identified as the Safety Champion/Lead for this project. The Safety Champion helped to reach out the various safety partner for the five traffic safety E's (enforcement, education, emergency response, and emerging technologies) and other important local representatives. 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 Town of Windsor has a current approximate population of 27,000 and is in Sonoma County, California. The Town has a mix of traffic that includes local and recreational traffic. The Town of Windsor 2040 General Plan evaluates how the Town growth and development will occur. The "Transportation and Mobility Element" of this plan contains ten (10) goals for Windsor's transportation system, that focuses on improving all modes of transportation through the town while improving local and regional connectivity. Some of these goals as it pertains to the LRSP are as follows:

Goal M-1: Multimodal Transportation System

Promote the development of an integrated, multimodal transportation system that balances the circulation and mobility needs of pedestrians, bicyclists, public transit, automobiles, and goods movement.

Goal M-2: Complete Streets

Provide "complete streets" with facilities, and amenities that meet the needs of all users, regardless of their age or ability, or whether they are walking, bicycling, taking transit, or driving.

Goal M-3: Streets and Roadways

Provide an interconnected street network that is accessible and friendly to all modes of travel.

Goal M-4: Walkable and Bikeable Community

Provide a safe, efficient, and accessible bicycle and pedestrian system throughout Town. (New Goal, Consultants)

Goal M-5: Public Transit

Provide opportunities for a reliable and integrated transit system for Windsor residents, visitors, and employees to circulate about Town and connect to the broader region without reliance on the automobile.

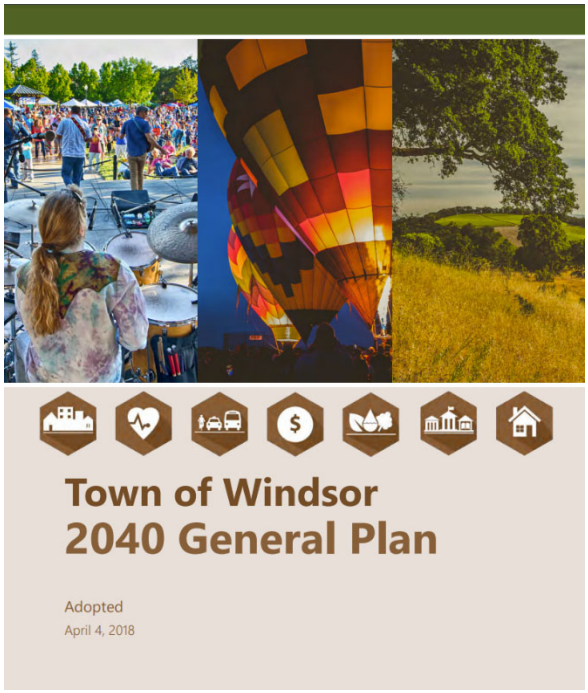


Figure 3 General Plan Document

Goal M-9: Funding Mechanisms

Obtain adequate funding to maintain existing infrastructure and implement future transportation projects.

Goal M-10: Regional Coordination

Encourage continued coordination amongst local and regional transportation organizations to further opportunities for expanded transportation infrastructure and funding within Windsor and Sonoma County.

In meeting the above-mentioned goals, this LRSP will propose improvements to street networks to create safer and more complete road network through town. In addition, the LRSP will complement the *Windsor Bicycle and Pedestrian Master Plan, 2014* with proposed improvements for bicycle and pedestrian accommodations in promoting accessible multimodal travel, improve access to public transit, and provide support for future funding opportunities. The Bicycle and Pedestrian Master Plan is currently being updated. The LRSP was developed with coordination of local and regional safety partners and stakeholders.

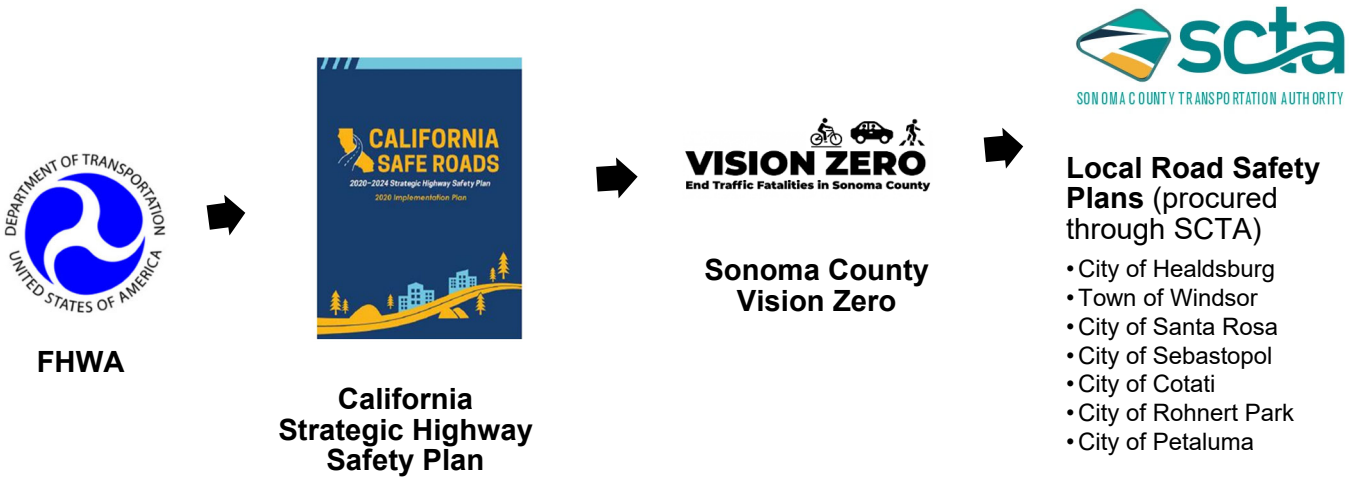
In focusing in on the roadway safety needs, the past five (5) complete years of collisions (2015-2019) were evaluated for the Town roadways. Collision data for 2020 was separated from the 5-year analysis due to potential COVID-19

induced travel pattern impact. In town roadways, there was a total of 3 fatal and 11 severe injury collisions between 2015 to 2019. In 2020 there were 2 severe injury collisions.

In improving roadway safety for the Town of Windsor, it is important to focus on mitigating these high injury collisions and loss of life.

2.2 Guiding Documents

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. This LRSP aims to complement this plan with elements catered specifically for the Town of Windsor. 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.

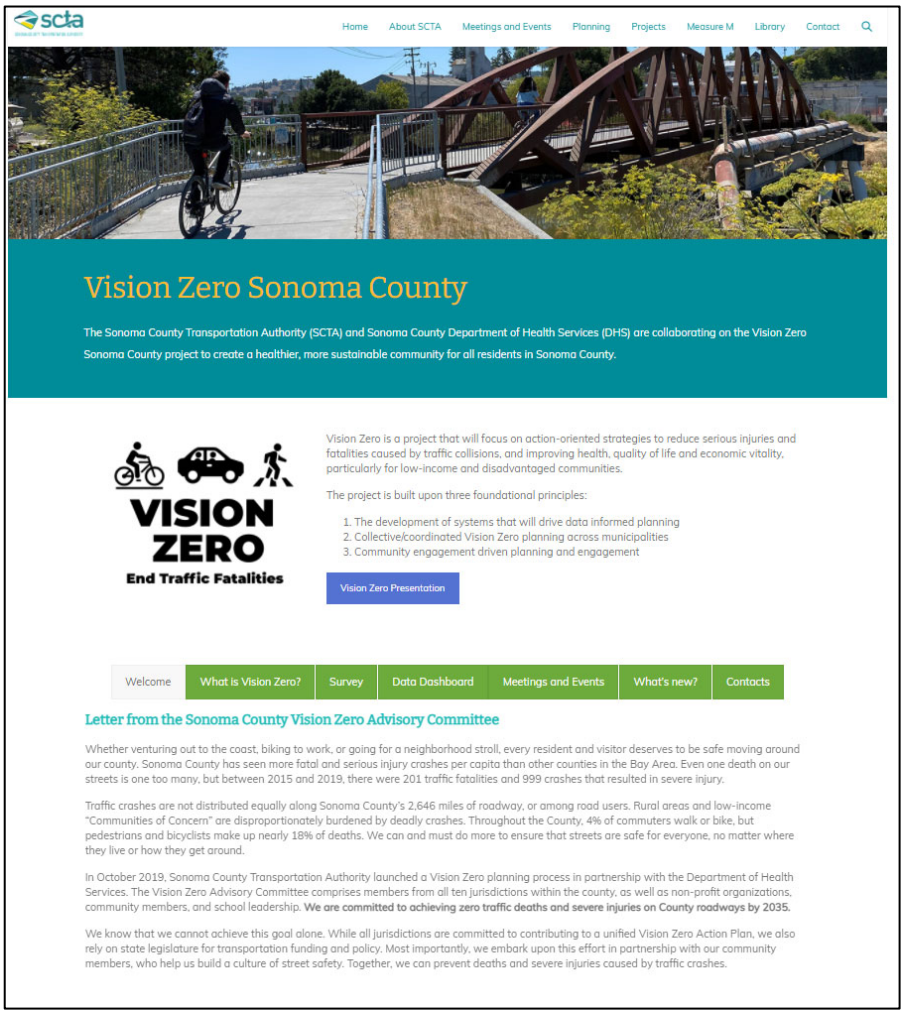


Figure 5 Sonoma County Transit Authority Vision Zero Website

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.

As shown in **Figure 6**, is the comparison of the traditional approach versus the Vision Zero approach.

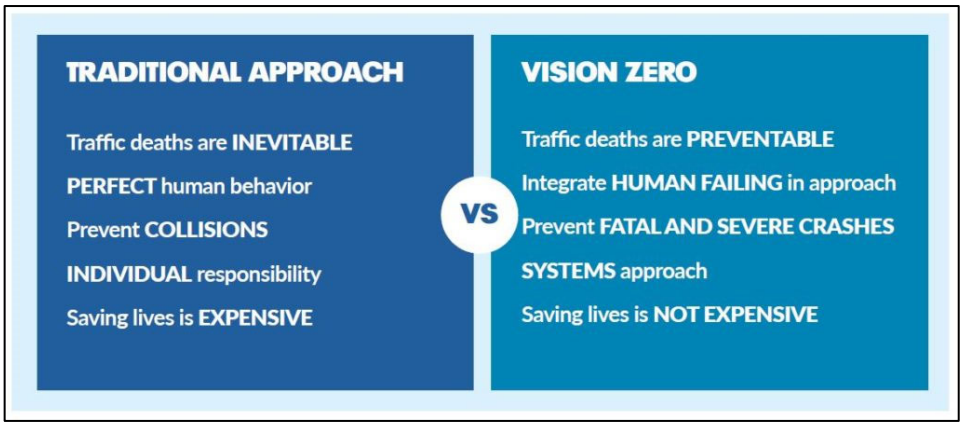


Figure 6 Traditional Approach vs. Vision Zero

2.2.3 Standards and Guidelines

In developing the Town of Windsor 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 Town of Windsor led the formation of the LRSP 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 Town of Windsor. The LRSP Stakeholder Working Group included the following representatives:

- Town of Windsor
- Caltrans, District 4
- Sonoma County Sherriff's Department
- Sonoma County Fire District
- Sonoma County Bicycle Coalition
- Windsor Bicycle and Pedestrian Advisory
- Committee
- Windsor Unified School District
- Sonoma County Transit
- Bell's Ambulance Services
- Sonoma County Department of Health
- Services
- Sonoma County Transportation Authority

3.2 LRSP Stakeholder Working Group Meetings

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

1. February 23, 2021 – 1 p.m. to 3 p.m.
    a. Discussed the LRSP overall process, working group member's safety priorities, past 5 years of collisions (Town and Caltrans roadways), vision, goals, and priorities.
2. May 18, 2021 – 1:30 p.m. to 3:30 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 input, this LRSP will address multiple Strategic Highway Safety Plan (SHSP) Challenge Areas including:

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

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 Town move toward Vision Zero. 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 overtime 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.

Windsor will develop a comprehensive roadway safety plan through the engagement of the community and stakeholders to eliminate traffic fatalities and severe injury collisions.

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 stakeholder working group.

The Town of Windsor will provide a safe and sustainable multimodal transportation system that encourages improved safety for all users, whether it is walking, biking, driving, or public transit, because every person matters.

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.

Goal #1: Strive to eliminate fatal and severe injury collisions Townwide.

Goal #2: Strive to reduce rear-end and broadside collisions Townwide with systemic safety countermeasures.

Goal #3: Improve the health and vitality of our community with a safety plan that provides safe roadway accommodations for pedestrians and bicyclists.

Goal #4: Improve safety around schools with a connected multimodal system, enhanced crossings, enforcement of school zones, education campaigns about school drop off/pick up, bicycle and pedestrian safety, and driver awareness.

Goal #5: Increase walking, biking, rolling (wheelchair, skateboard, scooter, etc.) to downtown district, to work, and to school

Goal #6: Reduce speeding, distracted driving, and improper turning related collisions through engineering, enforcement, and education strategies.

Goal #7: Improve health and safety by encouraging more residents to choose active transportation.

Goal #8: Identify safety countermeasures using the 5-E's (Engineering, Enforcement, Education, Emergency Response, and Emerging Technologies) in improving safety Townwide.

4. Analyze Safety Data

4.1 Planned Improvement Projects

The Town of Windsor has conducted some previous safety analysis that has developed the following planned safety projects. **Figure 8** shows location of some of these improvements within the Town. **Appendix B: Planned Improvement Projects** contains a list of projects and specific project details.

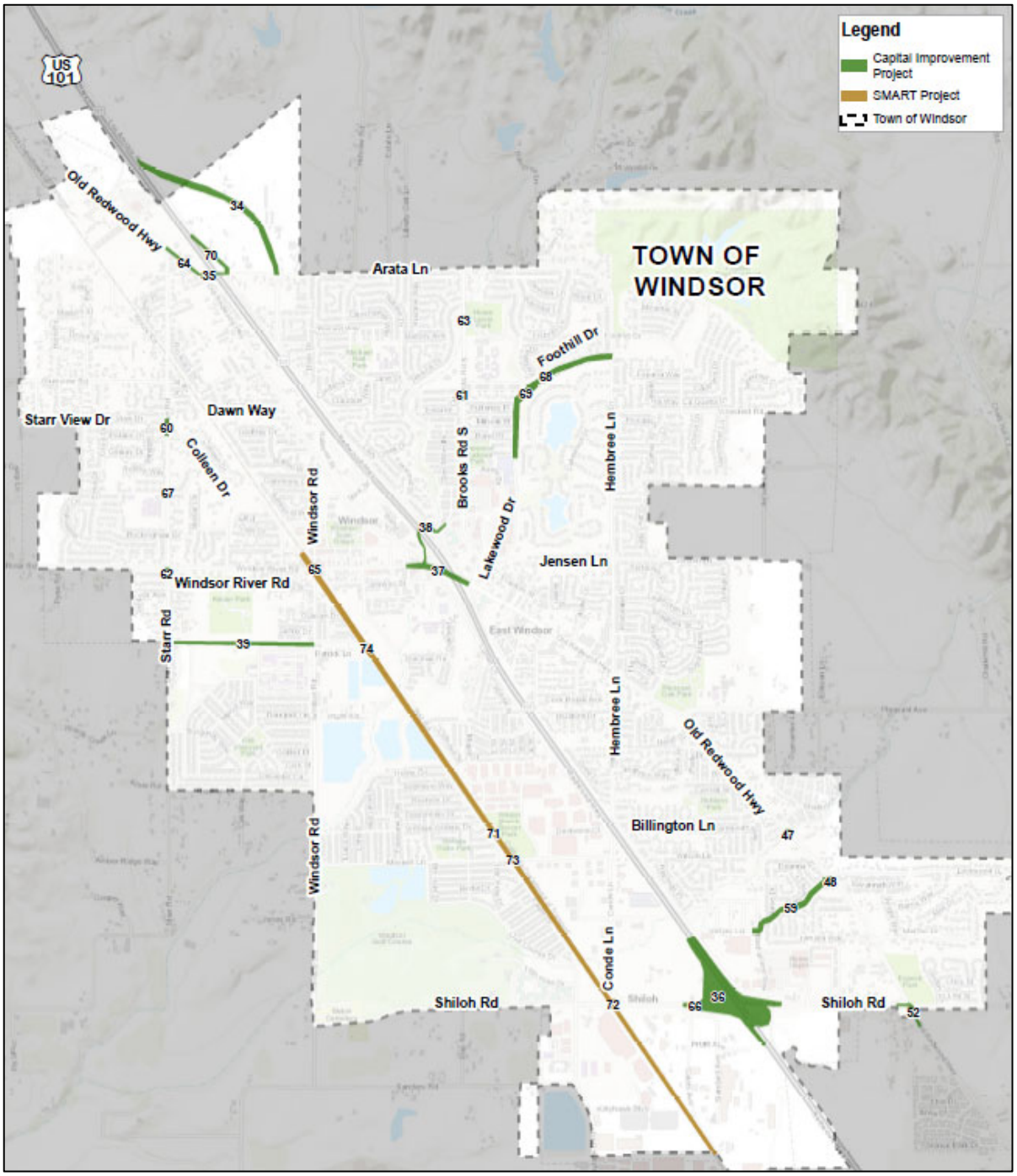


Figure 8 Location of Planned Projects

Table 1 Planned Improvement Projects

Prj ID	Project Name
34	Arata Lane Interchange Phase 2B for Los Amigos Realignment
35	Arata Lane Interchange Phase 2D for Los Amigos Realignment
36	US 101 Interchange Improvements at Shiloh Road
37	Downtown Pedestrian & Bicycle Crossing of US 101 Phase 1
38	Downtown Pedestrian & Bicycle Crossing of US 101 Phase 2
39	Jaguar Way Extension from Windsor Road to Starr Way
47	Old Redwood Highway Bridges Replacement
48	Old Redwood Highway Bridges Replacement
52	Shiloh Road/Old Redwood Highway Intersection
59	Faught Creek Trail Improvements from Victory Lane to Old Redwood Highway
60	Starr Road Sidewalk Improvements South of Starr View Drive
61	Crosswalk Enhancement at Brooks Road South at Natalie Drive
62	Starr Road Sidewalk Improvements from Vivian Court to Windsor River Road
63	Crosswalk Enhancements at Brooks Road South and US 101 Northbound On-ramp
64	Old Redwood Highway from Starr Road to Arata Lane Pedestrian Improvements
65	Windsor Rd at Windsor River Rd Roundabout
66	Shiloh Road Left Turn Intersection Improvements at Caletti Avenue
67	Crosswalk Enhancements at Starr Road and Stellar Lane
68	East Windsor Creek Trail and Pedestrian Bridge
69	East Windsor Creek Trail Pedestrian Bridge
70	Arata Lane Interchange Phase 2C for Northbound On-Ramp
71	Sonoma Marin Area Rail Transit (SMART) Trail
72	SMART Trail
73	SMART Trail
74	SMART Trail

4.1.1 Pedestrian Improvements at Brooks Road South at Natalie Drive

In 2020 the Town received $240,000 from Caltrans through the HSIP Cycle 10 program. This project proposes to install RRFB, construct pedestrian refuge median, curb extension, curb ramps, lane transition/traffic calming median, restripe bike lanes and vehicle lanes and slurry seal pavement at the intersection of Brooks Road south at Natalie Drive. These improvements are in the vicinity of Windsor Middle School and will improve safety for students and other roadway users by speed management techniques, enhanced pedestrian crossing with curb extensions and RRFB, and green conflict markings for bicycle/vehicle conflicts. The project is expected to be in construction in the next years.

4.1.2 Windsor Road/Windsor River Road Roundabout

In 2021, the Town received $2.84 million through the California Transportation Commission's Local Partnership Competitive Program and $3 million through MTC's One Bay Area Grant (OBAG) to construct a roundabout at the intersection of Windsor Road and Windsor River Road. Construction of the roundabout will take place in 2021.

Roundabouts reduce the number of conflict points at the intersection and are a proven countermeasure to reduce collisions.

4.1.3 Old Redwood Highway Corridor Enhancement Plan

The Town of Windsor is currently developing the Old Redwood Highway Corridor Enhancement Plan (ORHCEP) to reimagine and revitalize the Corridor to improve multimodal mobility and support a vibrant economy. The Plan will look at current usage, conditions, and potential improvements to the segment of Old Redwood Highway between Starr Road and Shiloh Road. The Plan will be used as a blueprint to seek and secure funding and implement projects. The LRSP was developed in parallel with the ORHCEP; any roadway safety concern identified through the ORCHEP was taken into consideration in developing the LRSP. Mobility improvements along the corridor will potentially create a safer corridors for pedestrians and bicyclists.

4.2 Collision Data

The Town of Windsor collision data was gathered using the Statewide Integrated Traffic Records System (SWITRS) and data provided by Sonoma County Sheriff's Department. 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 Town are accounted for and to provide additional information that one system may not have captured. The data set contains six years' worth of collisions spanning from January 1, 2015 to December 31, 2020. Collision data for the year 2020 was collected and analyzed separately as the COVID-19 pandemic altered traffic patterns outside of the typical conditions.

Between 2015-2019 there were a total of 793 collisions. These collisions were classified based on roadway jurisdiction (Town or Caltrans). Collisions were further categorized into intersection related collisions and roadway segment related collisions with a separate focus on the Town 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 Town street intersections (409 collisions) followed by town street segments (337 collisions).

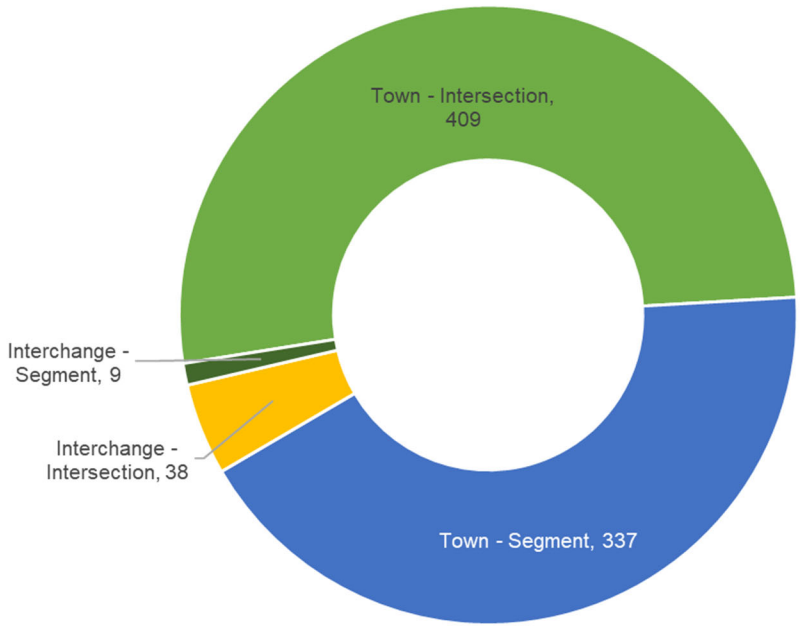


Figure 9 Total Collisions within the Town of Windsor (2015-2019)

4.2.1 Collisions on Town Roadways

There were 746 collisions recorded on the Town 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), collisions are concentrated along Town arterials including Old Redwood Highway, Windsor River Road, Hembree Lane, Windsor Road, Starr Road, Shiloh Road and Brooks Road South. During the 5-year period there were a total of 3 fatal (in 2016, 2018, and 2019) and 10 severe injury collisions in Town roadways. Sideswipe, rear-end and hit object are the most common type of collisions. **Figure 12** shows the top violation categories by collision type.

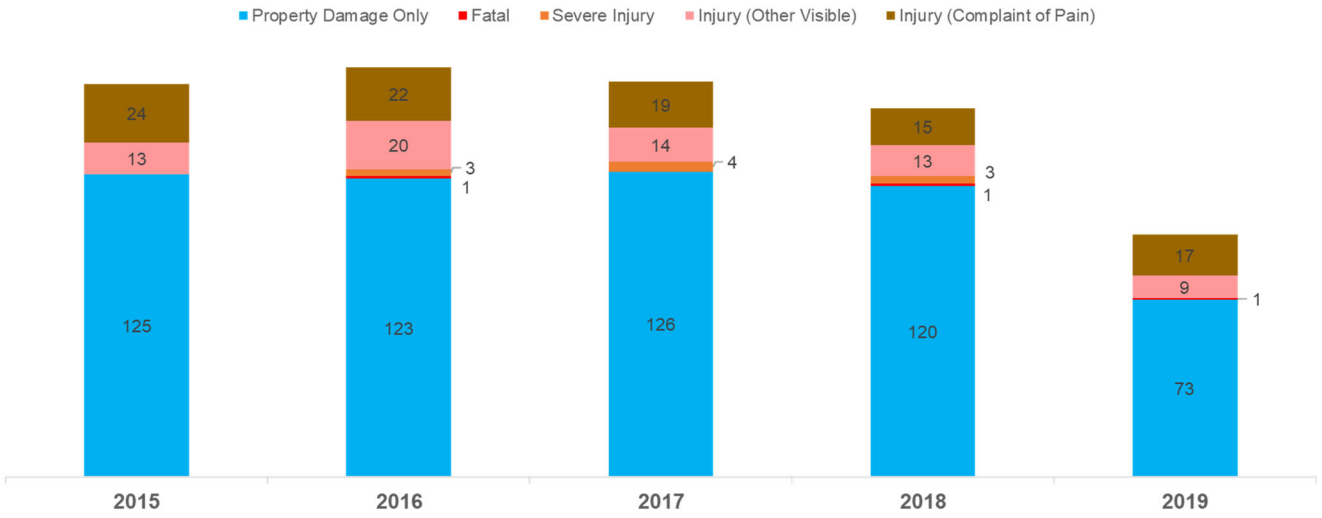


Figure 10 Collisions by Year on Town of Windsor Roadways (2015-2019)

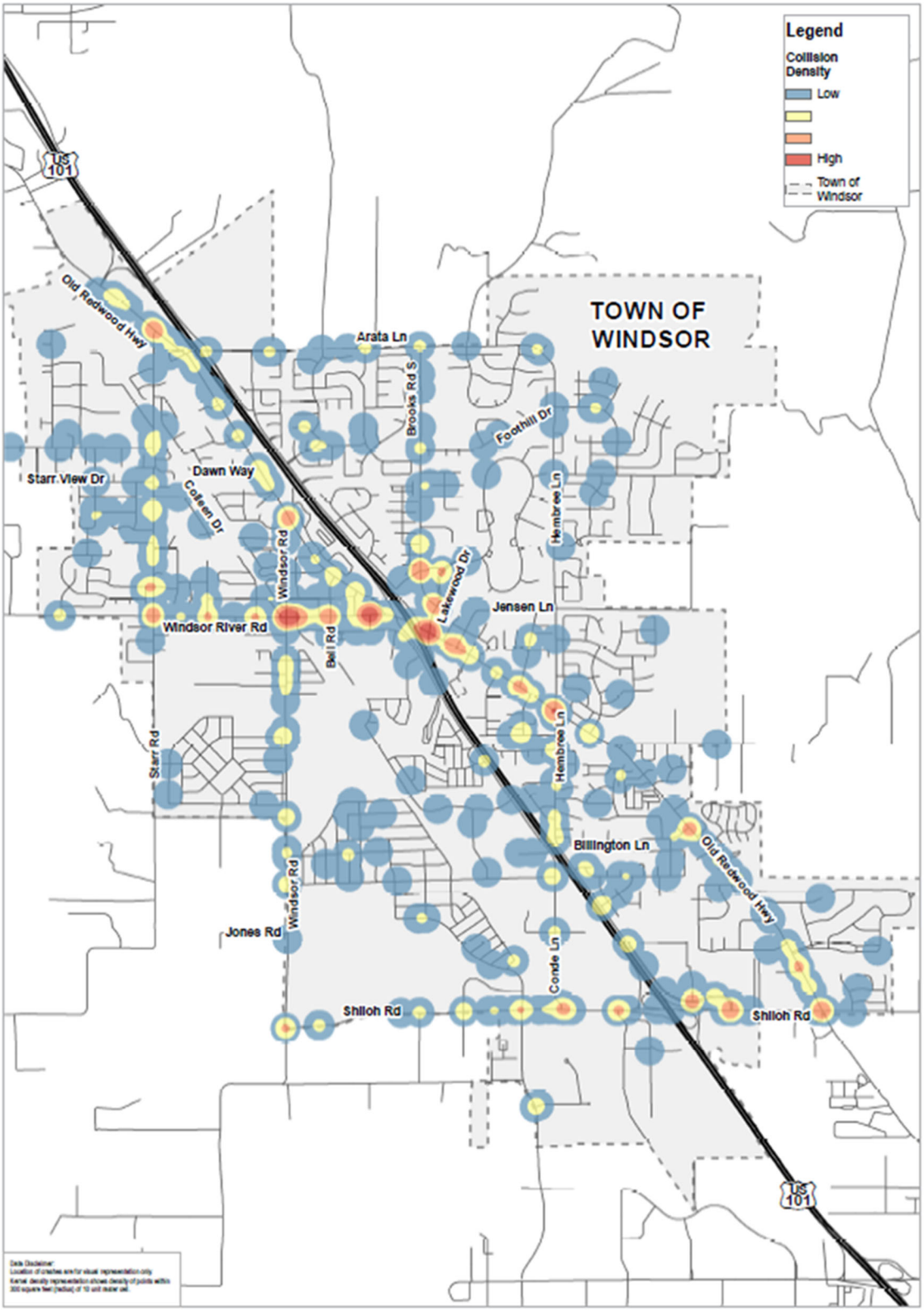


Figure 11 Collision Density on Town Roads (2015-2019)

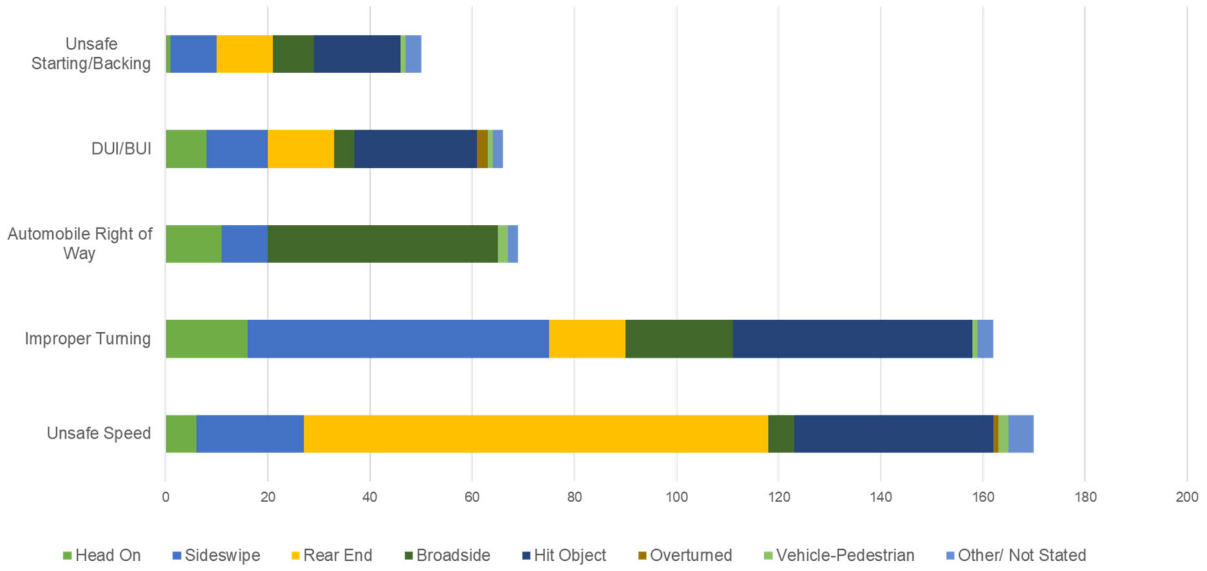


Figure 12 Top Violation Categories for Collisions on Town Roadways

Figure 13 summarizes the Town collisions based on severity and type.

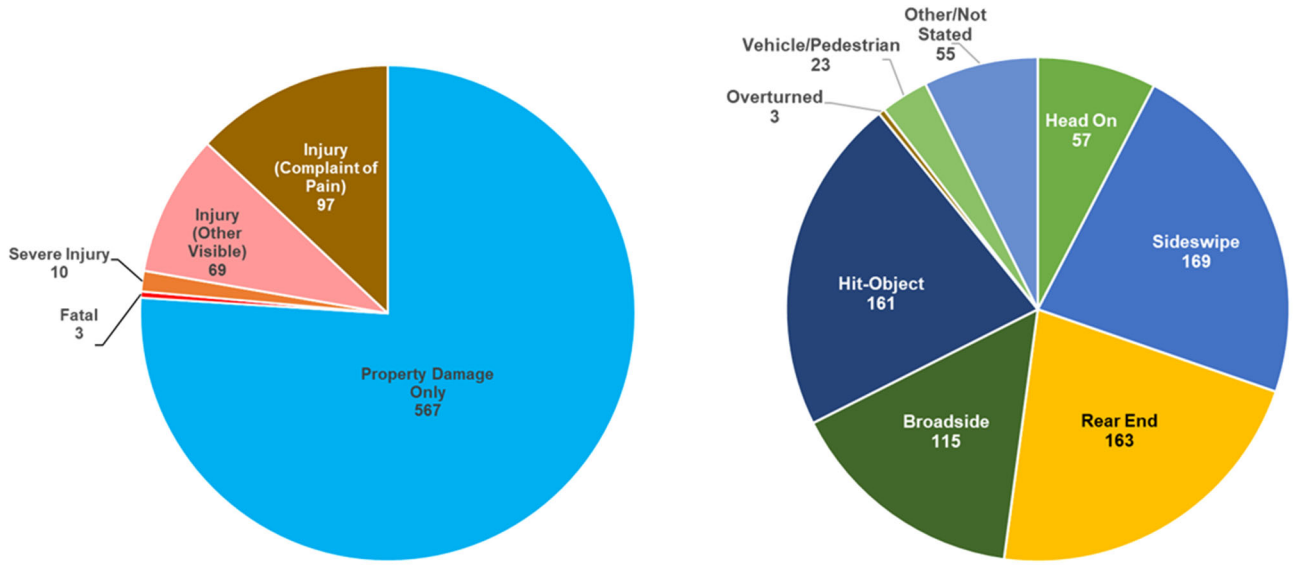


Figure 13 Summary of Town Collisions

The total number of collisions and Equivalent Property Damage Only (EPDO) rating were assessed at the town intersection and segment locations to aid in the determination of the top study intersections and locations (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 of Starr Road at Windsor River Road has the highest EPDO score at 550 due to one fatal collision at the intersection. The intersection of Windsor River Road at Windsor Road had the highest number of collisions (19 total collisions). Intersection collisions is one of the challenge areas identified by the LRSP Stakeholder Working Group. Further analysis for Challenge area collisions is included in **Section 4.2.3** of the LRSP. **Table 3** shows the top intersections, per collision analysis. Further detailed collision analysis for all intersections is in **Appendix C: Collision Data**.

Table 3 Top Intersections, per Collision Analysis

Primary Road	Secondary Road	Control	EPDO	Total Crashes
Starr Road	Windsor River Road	AWSC	550	7
Old Redwood Highway	Windsor Road	Roundabout	63	9
Windsor River Road	Market Street	Signal	51	7
Old Redwood Highway	Courtyards E	TWSC	48	4
Windsor River Road	Windsor Road	Signal	44	19
Old Redwood Highway	Hembree Lane	Signal	41	11
Old Redwood Highway	Windsor River Road	Signal	29	19
Brooks Road S	Los Amigos Road	Signal	25	10
Old Redwood Highway	Shiloh Road	Signal	24	9

The segment collisions were also analyzed by EPDO and total number of collisions. Old Redwood Highway between Arata Lane to Windsor Road had the highest EPDO score (565) due to a fatal collision at the segment. Hembree Lane from Northampton Drive to Shiloh Road has the highest number of collisions (34). **Table 4** shows the top segments, per collision analysis. Further detailed collision analysis for all roadway segment is in **Appendix C: Collision Data**.

Table 4 Top Segments, per Collision Analysis

Primary Road	Begin Segment	End Segment	EDPO	Total Crashes
Old Redwood Highway	Arata Lane	Windsor Road	565	7
Colleen Drive	Starr Road	Joni Court	545	2
Old Redwood Highway	US 101 SB Ramps	Arata Lane	65	15
Old Redwood Highway	Pleasant Avenue	Shiloh Road	55	15
Hembree Lane	Northampton Drive	Shiloh Road	49	34

Primary Road	Begin Segment	End Segment	EDPO	Total Crashes
Brooks Road S	Jessica Drive	Lakewood Drive	35	25
Old Redwood Highway	Lakewood Drive	Alden Lane	25	15

4.2.2 Collisions on Caltrans Roadways (Interchanges)

There were 47 Town reported collisions at US 101 ramps between 2015 and 2019. As seen by the collision density map (see **Figure 14**), the intersections of US 101 Southbound Ramps and Old Redwood Highway and US 101 Northbound Ramps and Lakewood Drive have high densities of collisions. In total, there were no fatal and one (1) severe injury collision on Caltrans roadways. The majority of collisions were broadsides. **Figure 15** shows the top violation categories by collision type.

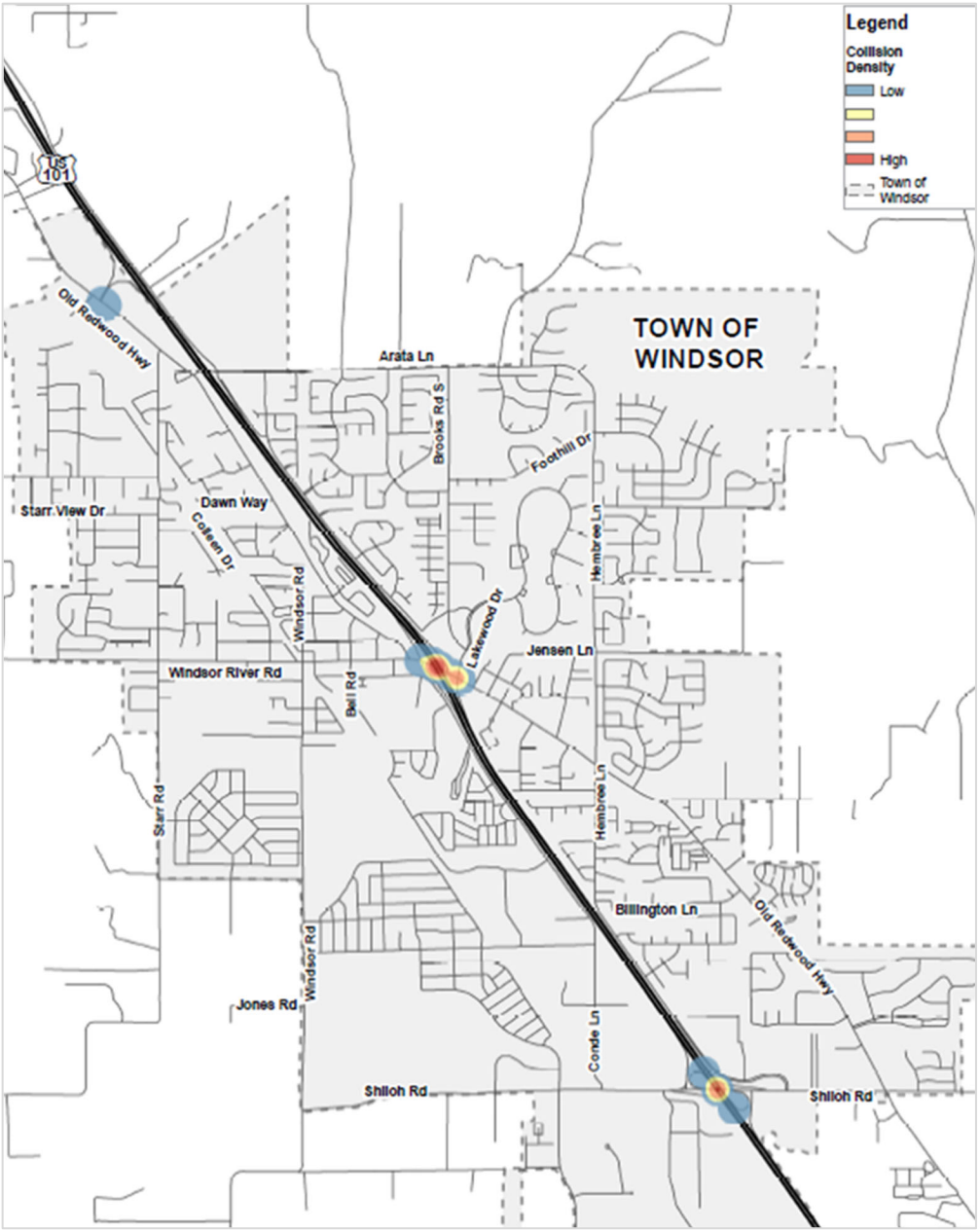


Figure 14 Collision Density at Interchanges (2015-2019)

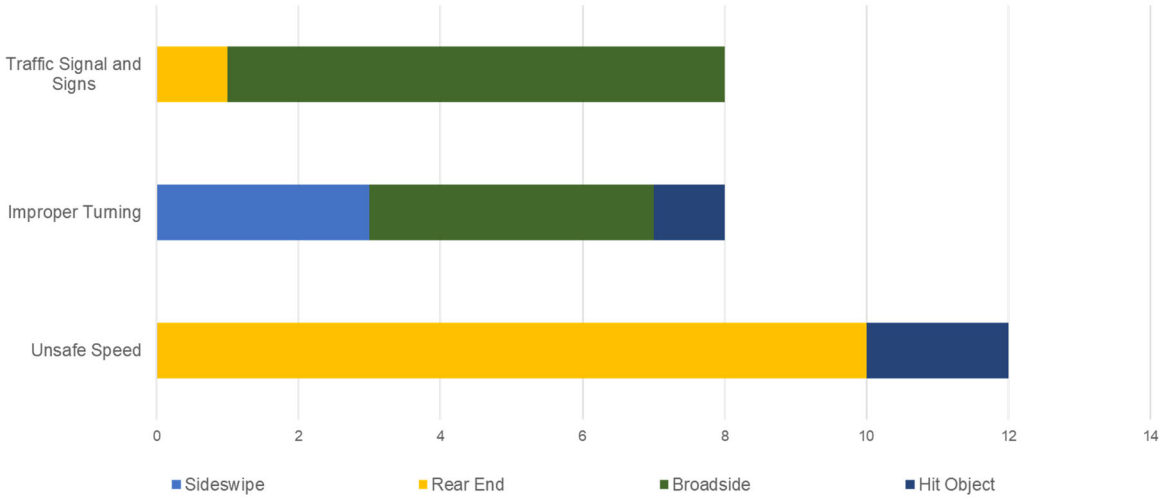


Figure 15 Top Violation Categories for Collisions at Interchanges (2015-2019)

Figure 16 summarizes the Town collisions based on severity and type.

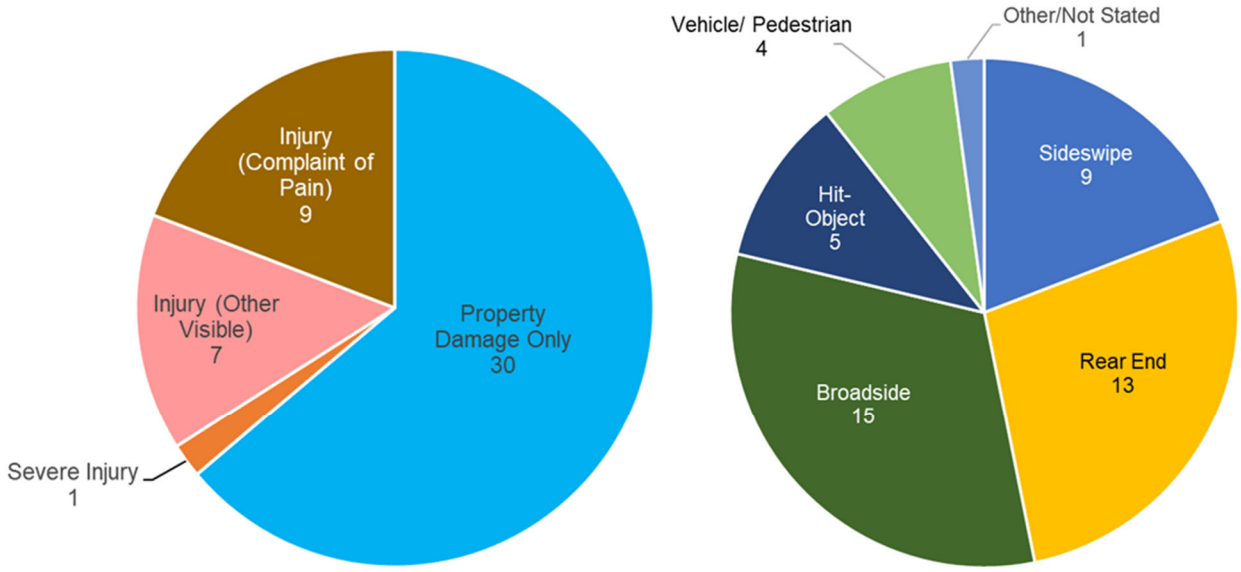


Figure 16 Summary of Interchange Collision by Type and Severity (2015-2019)

4.2.3 Collisions Related to Challenge Areas

Challenge areas consistent with the SHSP (see **Section 2.2.1**) for the LRSP were identified by the LRSP stakeholder working group. Collisions between 2015 and 2019 in Town roadways pertaining to each challenge area are described in the following sections.

4.2.3.1 Pedestrians

There were twenty-five (25) total pedestrian collisions for the Town roadways and four (4) pedestrian collisions at Interchanges. Two (2) Town pedestrian collisions were fatal and four (4) resulted in a severe injury. Most pedestrian collisions involved pedestrians in roads, including shoulder and pedestrians crossing in crosswalk al intersection.

Figure 17 shows pedestrian collisions by location of pedestrian and severity and **Figure 18** shows the fault for each of these collisions.

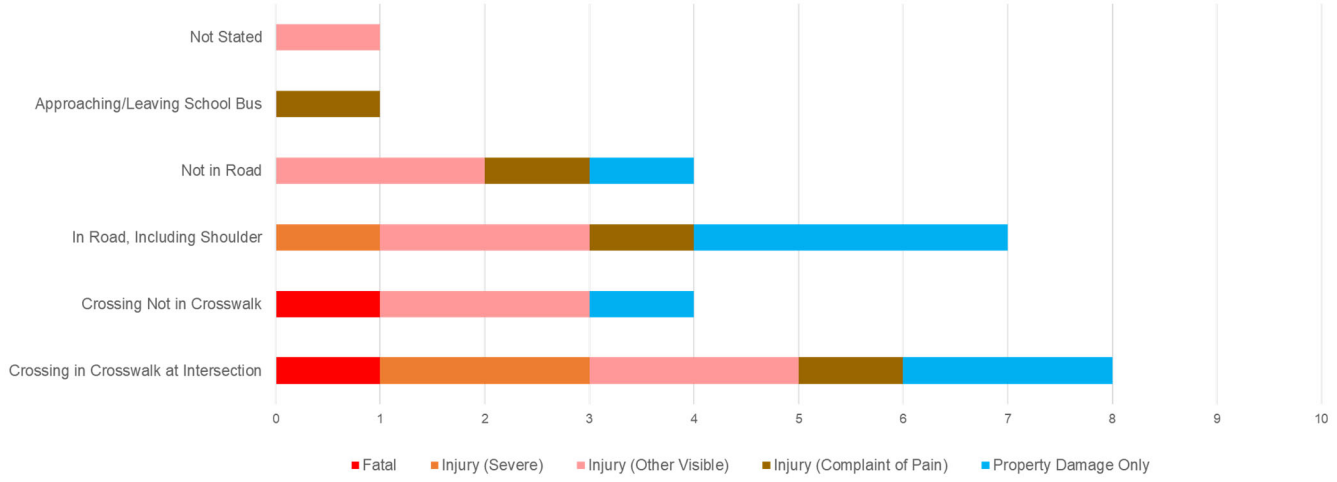


Figure 17 Pedestrian Location at Time of Collision

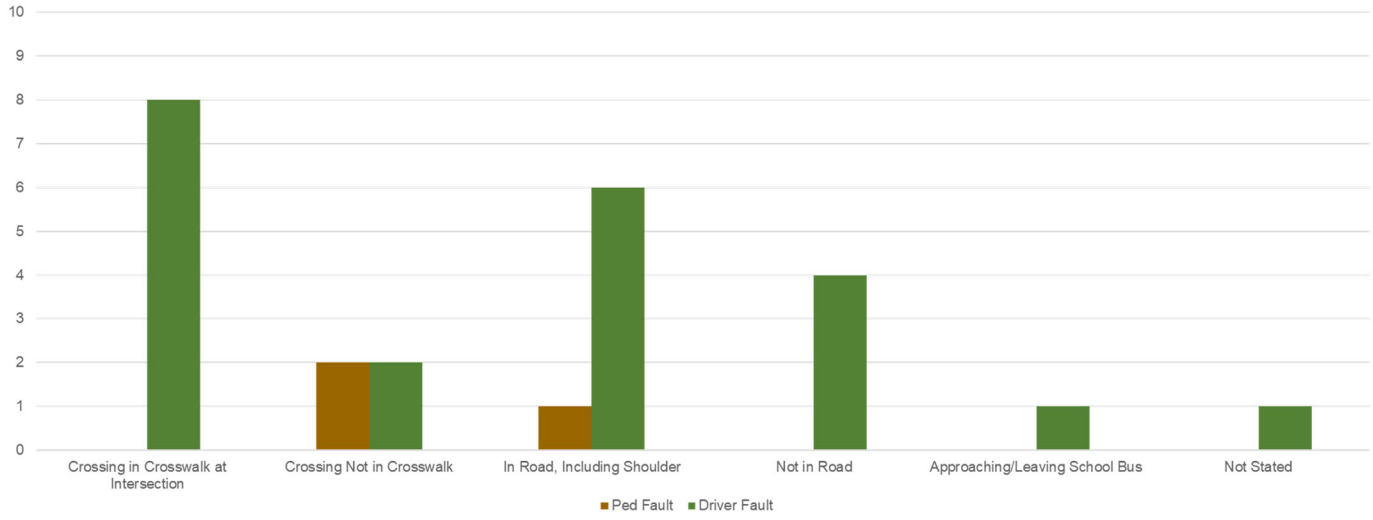


Figure 18 Fault for Pedestrian Collisions

The locations of all Town collisions are shown in **Figure 19**.

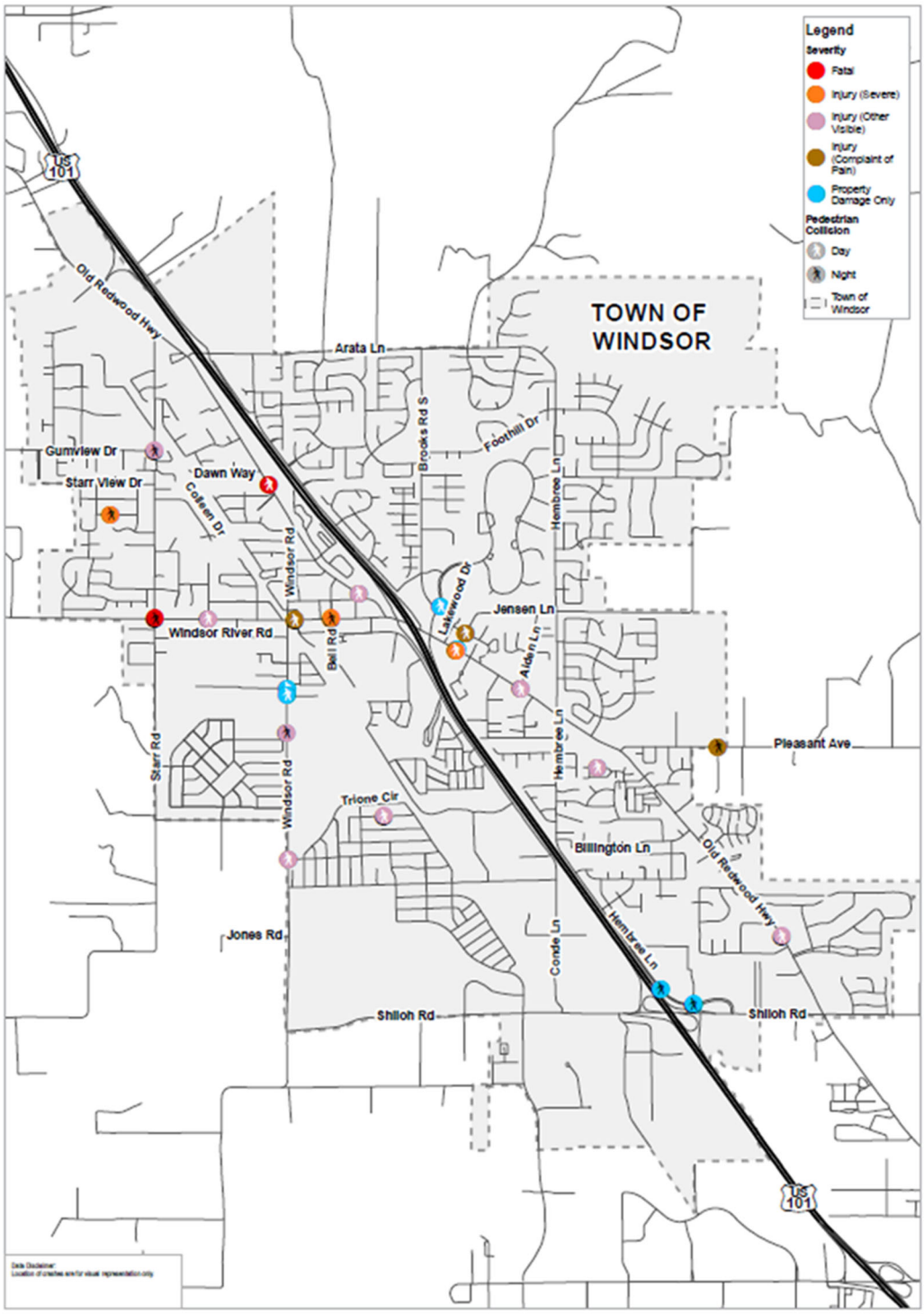


Figure 19 Pedestrian Collisions on Town Roadways (2015-2019)

4.2.3.2 Distracted Driving

There were seventeen (17) collisions due to distracted driving on Town roadways between 2015 and 2019. This is approximately two percent (2%) of all collisions on Town roadways. 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. Of these collisions, fourteen (14) were due to a cell phone in use.

4.2.3.3 Aggressive Driving

Aggressive driving can be quantified through collision data through unsafe speed violations. There were 170 collisions due to unsafe speed on Town roadways between 2015 and 2019. This is approximately twenty-three percent (23%) of all collisions on Town roadways. Many of these were rear end collisions which resulted in property damage only. There was one (1) severe injury collision as a result of unsafe speed.

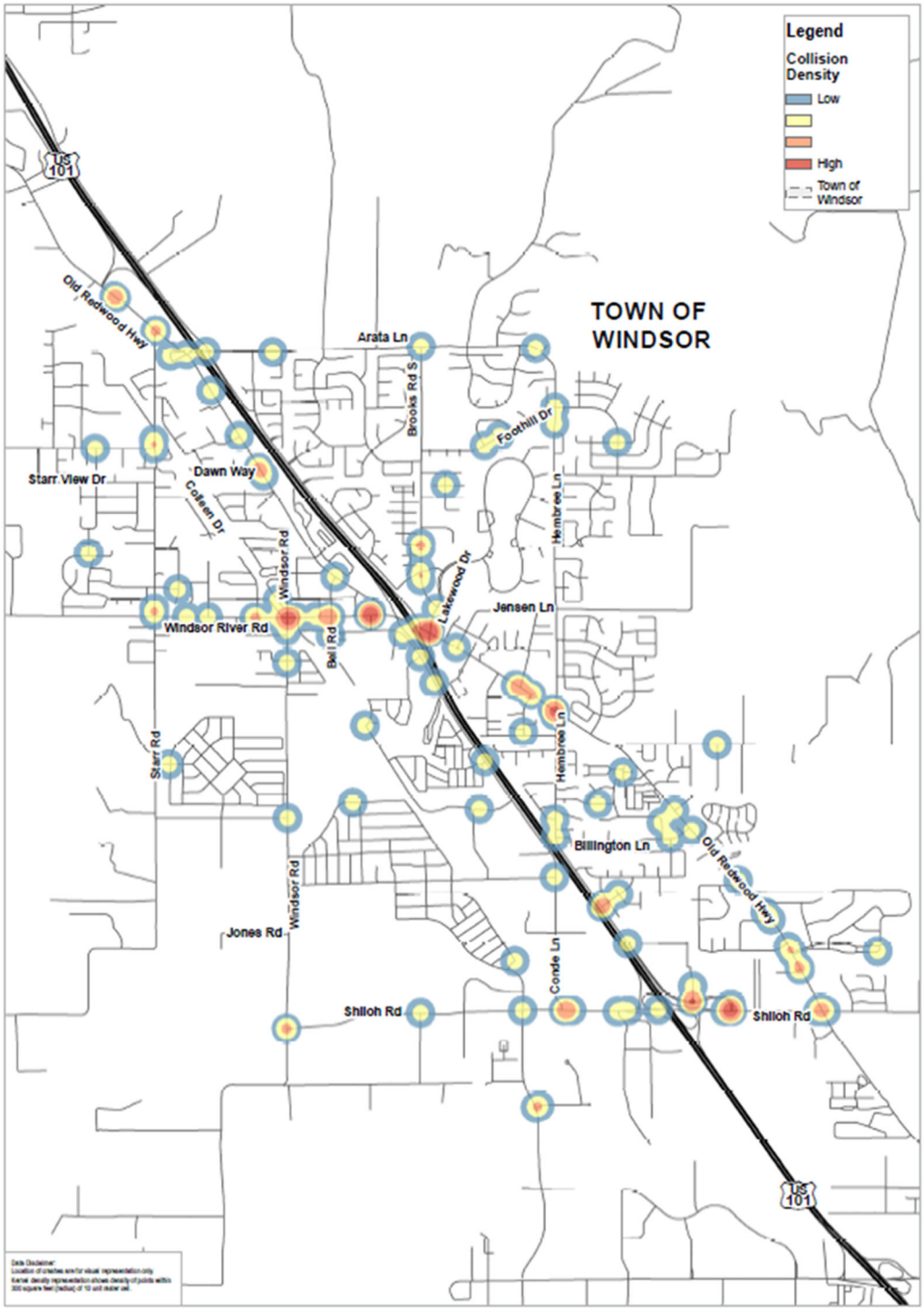


Figure 20 Collision Density of Unsafe Speed Violation Category Collision (2015-2019)

4.2.3.4 Bicyclists

There were twenty-one (21) total bicycle collisions for the Town roadways and one (1) bicycle collision on Caltrans roadways. There were no fatal and no severe injury bicycle collisions on Town roadways. The location of each collision is shown in **Figure 21** and the fault for these collisions is shown in **Figure 22**.

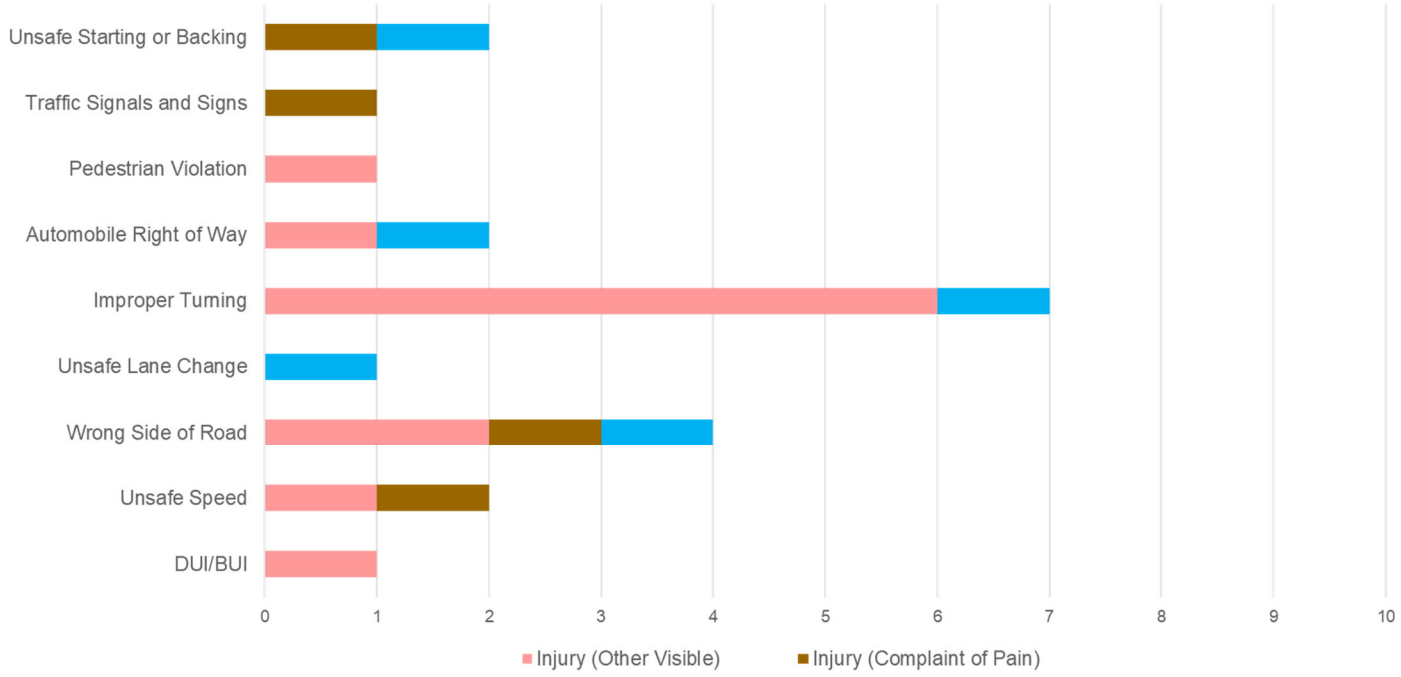


Figure 21 Bicycle Collisions by Violation Type and Severity on Town Roadways (2015-2019)

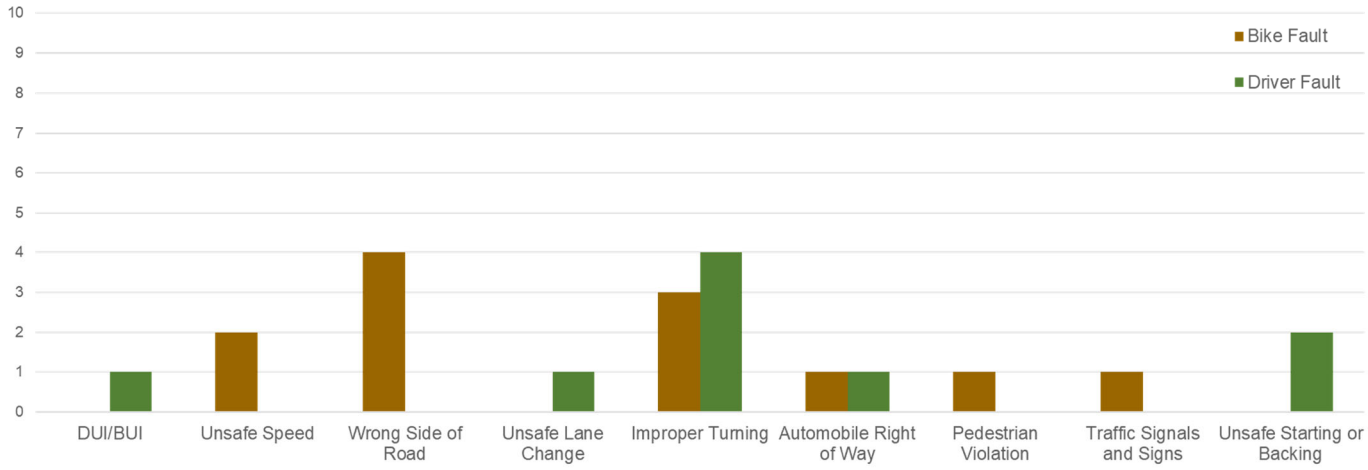


Figure 22 Fault for Bicycle Collisions

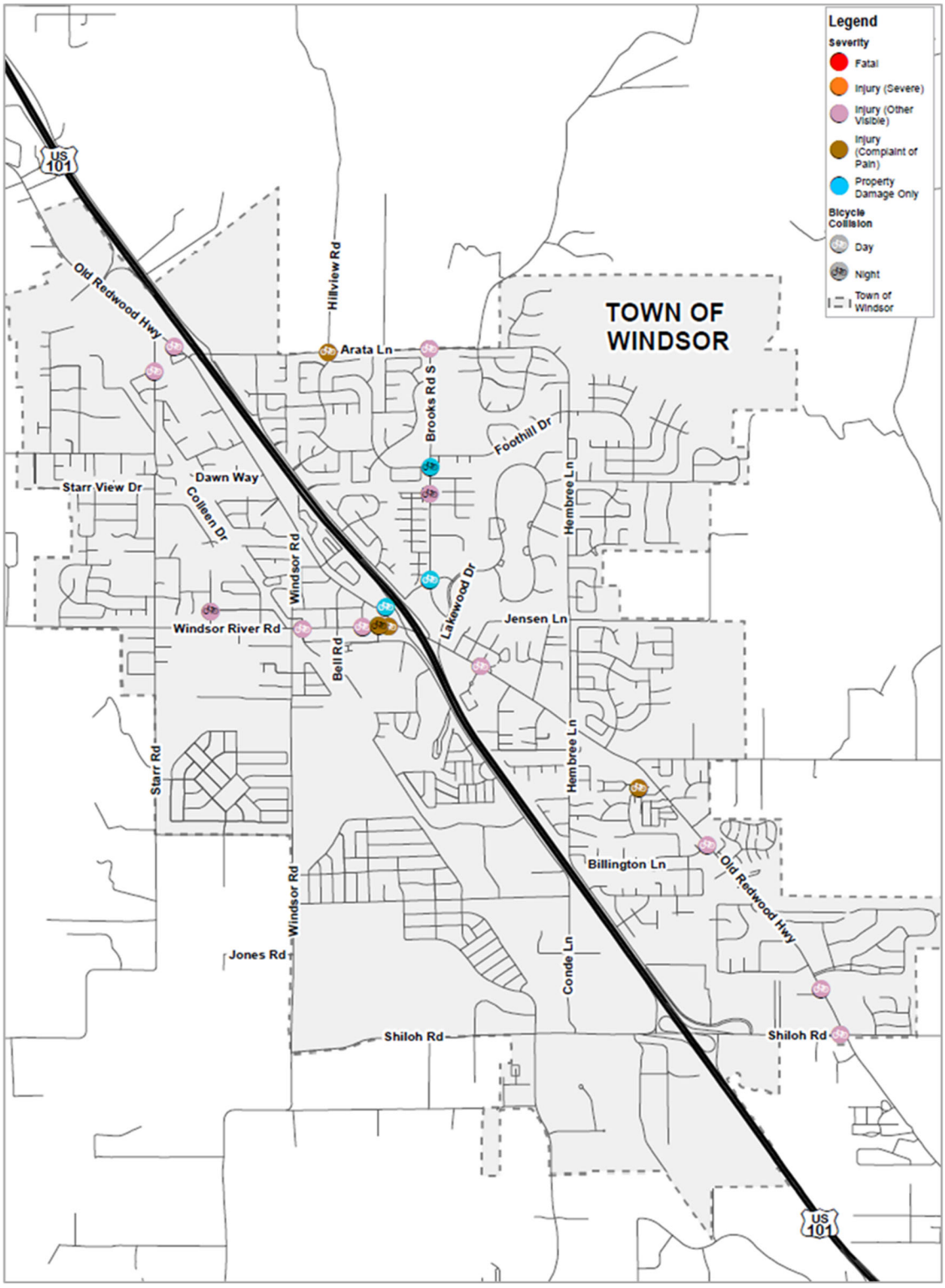


Figure 23 Bicycle Collisions on Town Roadways (2015-2019)

4.2.3.5 Intersections

In the 5-year (2015-2019) there were 409 collisions at Town intersections. These account for approximately 55% of all collisions on Town roadways. The top collision type is rear-end collisions and a top violation category is unsafe speed. **Figure 24** outlines the top five violation categories and their associated collision types for the intersections. Further detailed collision analysis for all intersections is in **Appendix C: Collision Data**.

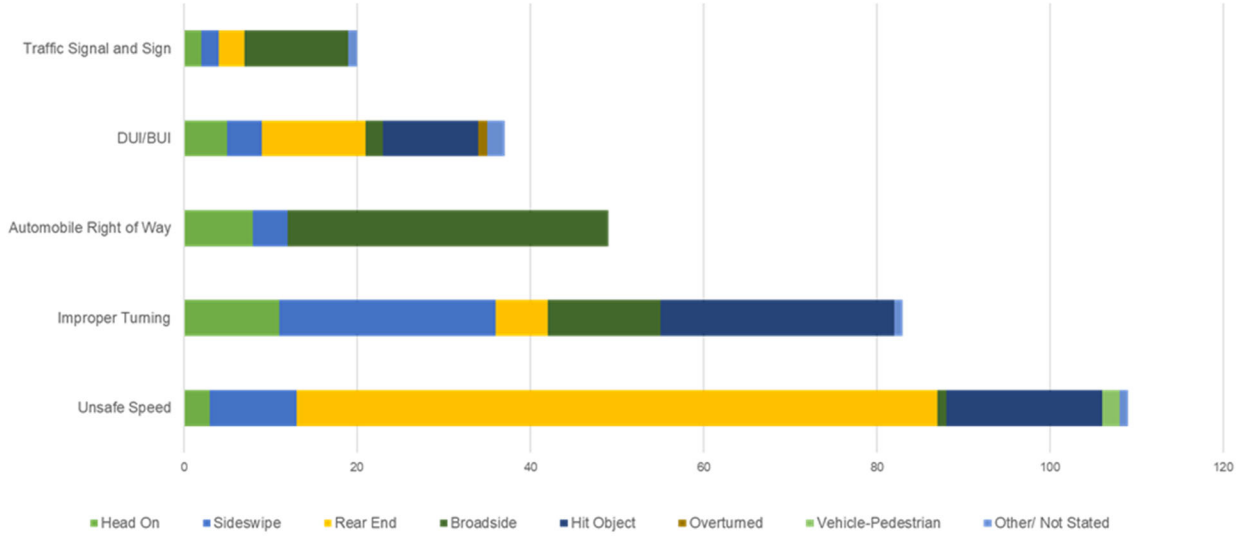


Figure 24 Top Violation Categories for Intersection Collisions

4.2.4 2020 Collisions

In 2020, there were a total of 108 collisions reported in the Town of Windsor. The highest number of collisions were along Town street segments as seen in **Figure 25**.

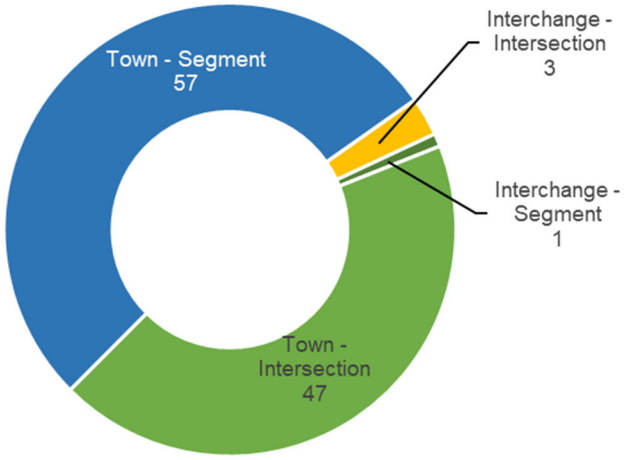


Figure 25 Total Collisions on Town of Windsor Roadways (2020)

There were 104 collisions recorded on Town roadways in 2020. There were no fatal collisions and two (2) severe injury collisions on the Town roadways. The details of the severe injury collisions are listed below.

– Collision at intersection of Shiloh Road and Day Road

- Rear end collision due to unsafe speed

– Collision on Ginny Road, west of Windsor Road

- Vehicle to pedestrian collision due to improper driving with pedestrian in the road/shoulder

There were 5 pedestrian and 4 bicycle collisions on Town roadways in 2020; 1 bicycle collision was recorded under Caltrans jurisdiction (Old Redwood Highway at Central Windsor interchange SB ramp) during this year. Sideswipe collisions were the most common collision type. The top five violation categories in order (not including unknown or not stated collisions) for Town roadways are listed below.

- Unsafe Speed
- Improper Turning
- Other Improper Driving
- Driving Under the Influence
- Unsafe Starting/Backing

There were 4 Town reported collisions at US 101 ramps in 2020. In total, there were no fatal and no severe injury collisions on Caltrans roadways. All 4 collisions were unique with different collision types and violation categories.

Given that 2020 had COVID shelter in place orders, this year was not used in analysis as it was not expected to be representative of normal traffic conditions. To show the change in collisions in 2020, **Figure 26** shows the number and severity of collisions over time.

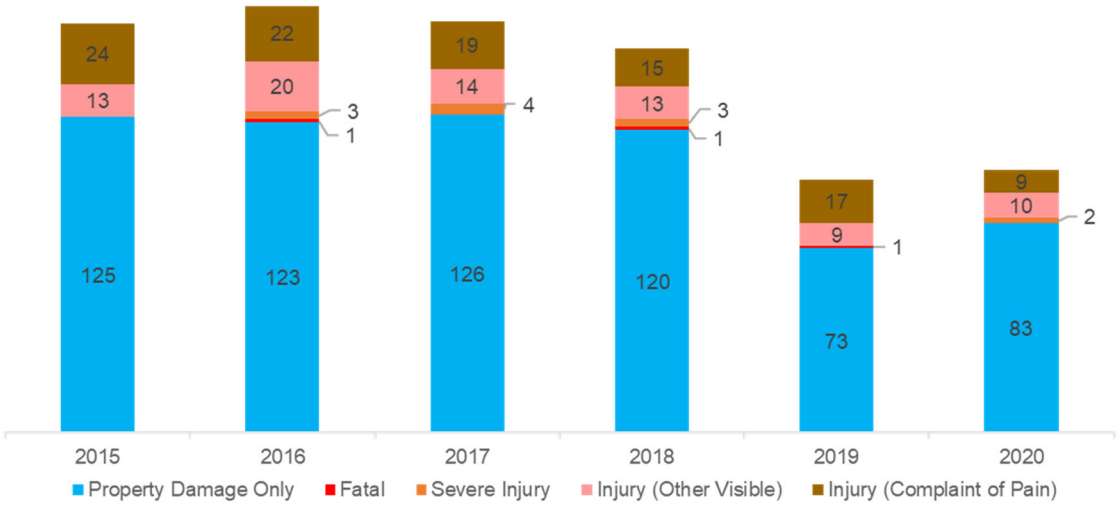


Figure 26 Collisions by Year on Town of Windsor Roadways (2015-2020)

4.3 Field Reconnaissance

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

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

– Pedestrian push button upgrades to Accessible Pedestrian Signals (APS) were implemented throughout the town

– Retroreflective borders are implemented on traffic signals under Caltrans jurisdiction

– Discontinuous sidewalk along Old Redwood Highway

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 27** displays the homepage for the website found at lrsp.mysocialpinpoint.com/Windsor. The project website had 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**.

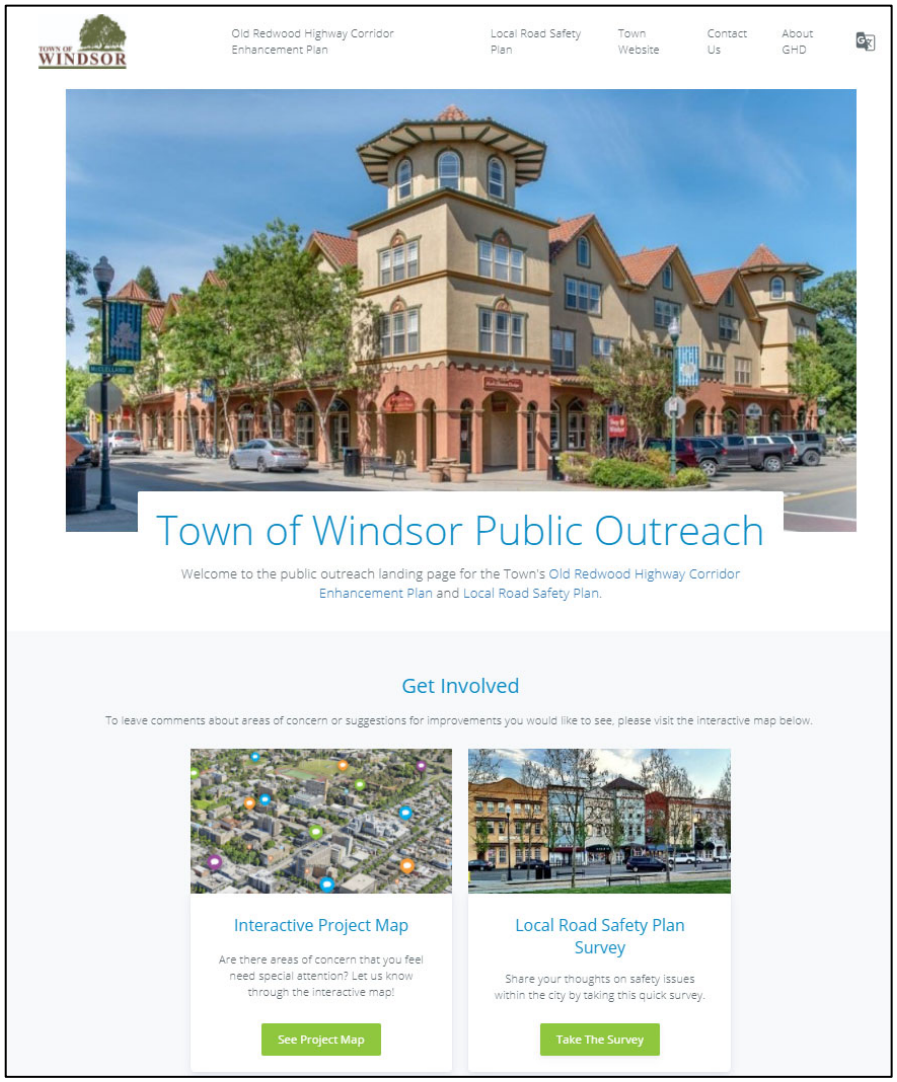


Figure 27 Public Website Home Page

The website was promoted through a variety of platforms including Nextdoor and Facebook. Some agencies from the stakeholder working group also promoted this website. For example, the Town's Safe Routes to School program translated a paragraph for outreach to Spanish to send to schools.

5.1.1 Interactive Map

The interactive map feature on the website allowed the public to drag icons to a location within the Town and leave a comment regarding driving, pedestrian, bicycle, and transit suggestions at that location as well as general and circulation comments. **Figure 28** shows the interactive map feature from the website. Some of the public concerns collected from the interactive map are as follows:

- Lack of bicycle markings at various locations throughout the Town
- Pedestrian safety at crossings
- Unsafe pedestrian and bicycle facilities at the US 101 interchanges
- Speed limit/speeding drivers on Arata Lane near Foothill Regional Park
- Lack of safe crossings for students

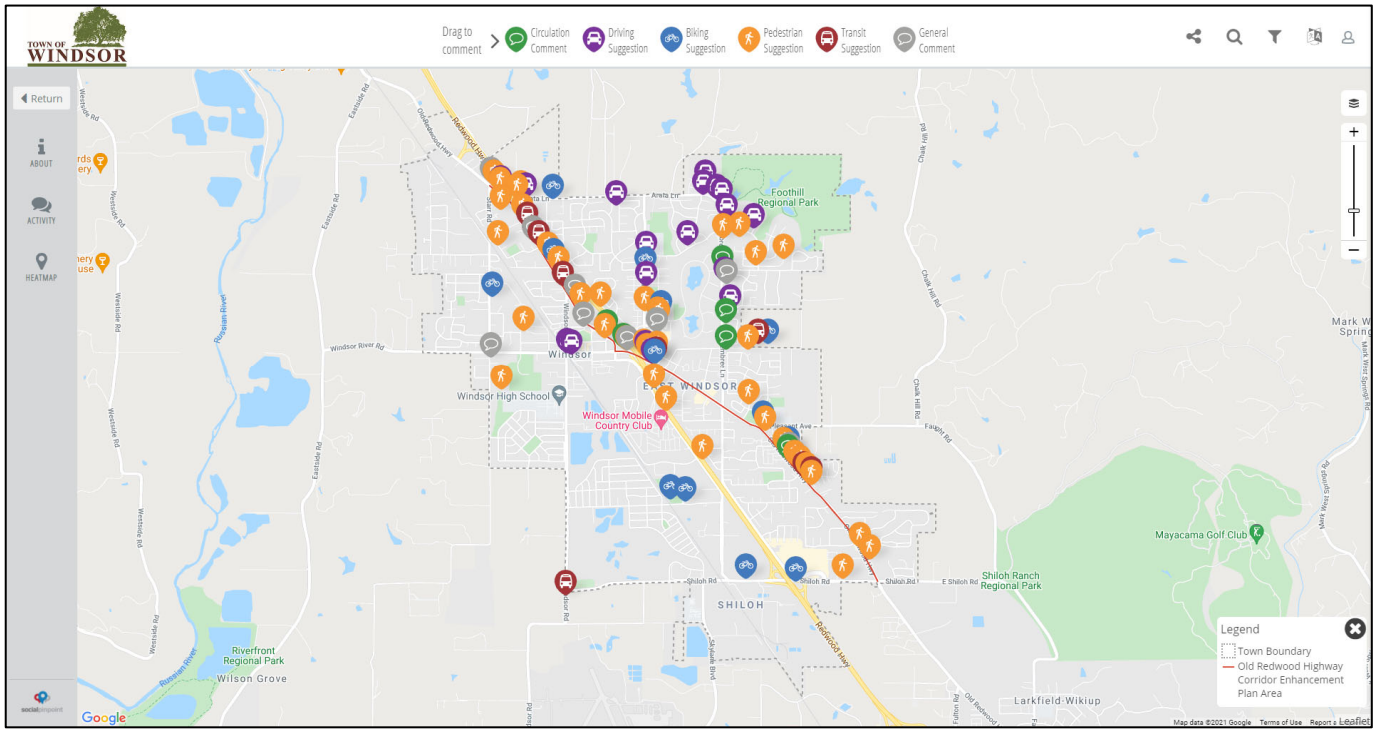


Figure 28 Public Website Interactive Map

5.1.2 Public Survey

The Town of Windsor Public Survey asked ten questions relating to the LRSP. As of May 7, 2021, the survey received 10 responses. According to the survey, the primary safety issues for Windsor were a lack of infrastructure, uncontrolled roadway crossings, and intersections (see **Figure 29** for a chart with the responses). Common suggestions for roadway improvements included pedestrian enhancements such as sidewalks and improvements to crossings, especially around school zones. One hundred percent (100%) of the respondents were familiar with flashing yellow left-turn arrows.

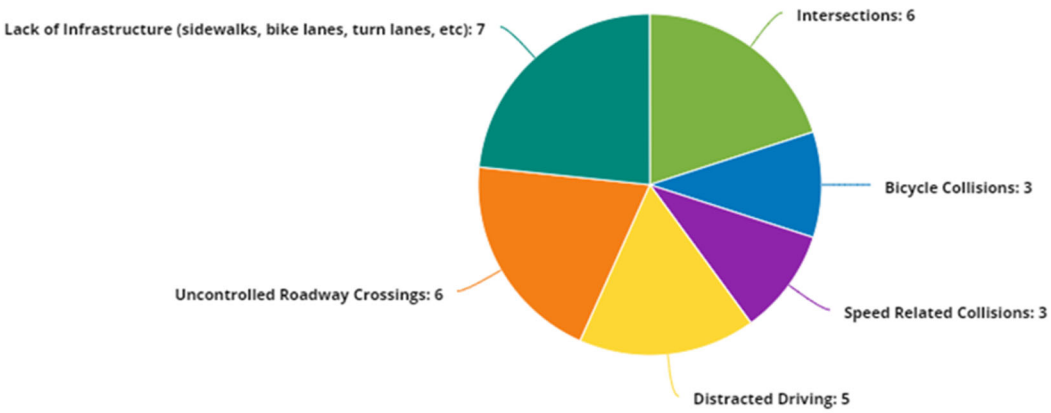


Figure 29 Public-Identified Roadway Issues

6. Identify Strategies

Through coordination and feedback from the Town of Windsor, LRSP working group, and public outreach, safety projects and strategies were identified for the Local Road Safety Plan. Countermeasure development was coordinated with the Town 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

6.1.1 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.
2. **Intersections** – Projects were identified for the top intersections with collision severity and frequency.
3. **Pedestrians** – Providing pedestrian accommodations to include crossing enhancements and continuous sidewalks. In the plan, we have identified current safety projects to include Rectangular Rapid Flashing Beacons (RRFB) at intersection crossings, sidewalk and ADA improvements, and pedestrian signal 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 (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.
    b. Install raised median on approaches

These challenge/emphasis areas were considered when recommending the countermeasures outlined in the following sections of this plan (see "Relevant Challenge Area" column in **Tables 6** and **8**).

6.1.2 Town Intersection Projects

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 9 priority intersections are presented in **Appendix E: Recommended Projects**. Since the next HSIP Cycle 11 is in 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.

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

Table 5 Priority Intersection Characteristics

		Crash Characteristics			
Intersection	**Control**	**Relative Severity**	**Total Crashes**	**Top Type of Collision** (Number of Collisions)	**Top Violation Category** (Number of Collisions)
Starr Road / Windsor River Road	AWSC	550	7	Rear End (2), Broadside (2)	N/A (all unique)
Old Redwood Highway / Windsor Road	Roundabout	63	9	Hit Object (4)	DUI (3), Improper Turning (3)
Windsor River Road / Market Street	Signal	51	7	Broadside (3)	Unsafe Speed (3), Auto Right of Way (3)
Old Redwood Highway / Courtyards E	TWSC	48	4	Broadside (2)	Auto Right of Way (2)
Windsor River Road / Windsor Road	Signal	44	19	Rear End (7)	Unsafe Speed (5)
Old Redwood Highway / Windsor River Road	Signal	29	19	Rear End (9)	Unsafe Speed (6)
Old Redwood Drive / Hembree Lane	Signal	41	11	Sideswipe (3), Rear End (3)	Unsafe Speed (3)
Brooks Road S / Los Amigos Road	Signal	25	10	Broadside (7)	Auto Right of Way (5)
Old Redwood Highway / Shiloh Road	Signal	24	9	Hit Object (3), Rear End (3)	Unsafe Speed (3), Improper Turning (3)

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	Collision Reduction Factor	Recommended Countermeasures	Reasoning
Starr Rd	**Windsor River Rd**	Intersections	40%	Improve intersection lighting	1 fatal collision at night. Lighting at intersection is set back slightly on legs and not directly into intersection.
			15%	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	2 rear end and 2 broadside collisions.
		Pedestrians	35%	Install advance stop bar before crosswalk, install curb extensions on north/south crosswalks - if feasible, upgrade pedestrian crossing (ADA compliant ramps, refresh pavement/crosswalk markings, etc.)	1 fatal pedestrian collision. School crossing. No existing stop bars.
		Bicyclists	-	Install green conflict bike lane marking on the eastbound approach at the conflict area before the right turn pocket	Conflict markings does not exist at the intersection.
		Pedestrians, Bicyclists	-	Partner with Safe Routes to School for education on how to cross safely[1]	1 pedestrian collision due to a pedestrian right of way violation.
		-	-	School zone enforcement[1]	School crossing.
Old Redwood Highway	**Windsor Rd**	Intersections	-	Evaluate roundabout signage (Add advisory speed signs of 15 MPH on approaches)	Seems like vehicles are hitting median signs due to high speeds through the roundabout.
		Pedestrians	-	Evaluate a raised crosswalk on Old Redwood Highway approaches	Raised crossings can help to mitigate speed.
		Aggressive Driving	-	Roundabout education and enforcement[1]	4 hit object collisions. 3 collisions with improper turning violation. Seems like vehicles are hitting median signs due to high speeds through the roundabout. All collisions after December 2016.
Windsor River Road	**Market St [2]**	Intersections	15%	Improve signal timing (coordination, phases, red, yellow, or operation)	3 focus intersections on Windsor River Rd.
			30%	Provide protected left turn phase (for east leg)	3 broadside and 2 rear end collisions.
			-	Install flashing yellow arrow indication at intersections with permissive left turns	3 broadside collisions
			-	Speed enforcement[1]	3 unsafe speed collisions
Old Redwood Highway	**Courtyards E**	Intersections	40%	Add intersection lighting	3 night collisions. No overhead lights at intersection (1 light at intersection).
			20%	Improve sight distance to intersection (Clear Sight Triangles)	Trees on ORH block sight for drivers on Courtyards E/2nd St. 2 broadside collisions. 2 collisions due to automobile right of way violations.
			-	Safe crossing educational campaign[1]	1 pedestrian collision due to a pedestrian right of way violation.
Windsor River Road	**Windsor Rd**	Intersections	Varies	Convert intersection to roundabout (from signal) - Planned and funded improvements	The Town received funding for a roundabout at this intersection through Caltrans' LPP.
		-	-	Partner with SMART to create an informational video on how to safely naviagte the roundabout	Educational component to ensure proper usage of the roundabout.
Old Redwood Highway	**Windsor River Rd**	Intersections	15%	Improve signal hardware: back-plates with retroreflective border	9 rear end and 4 broadside collisions.
			15%	Improve signal timing (coordination, phases, red, yellow, or operation)	3 focus intersections on Windsor River Rd and 5 focus intersections on Old Redwood Highway.
		Bicyclists	35%	Install Bicycle Box	2 bicycle collisions.
		Pedestrians	-	Install detectible warning surfaces on curb ramps - north east and north west corner of intersection	Current textured concrete curb ramps do not meet ADA requirements.
Old Redwood Highway	**Hembree Ln**	Intersections	15%	Improve signal hardware: back-plates with retroreflective border	3 rear end and 2 broadside collisions.
			15%	Improve signal timing (coordination, phases, red, yellow,	5 focus intersections on Old Redwood Highway. Received feedback
			-	Evaluate the emergency pre-emption system (opticom) at the signal for timing improvements[1]	Per stakehoder suggestion.
			-	Educate drivers how safely respond to emergency vehicles[1]	Per stakehoder suggestion.
Brooks Road S	**Los Amigos Rd**	Intersections	15%	Improve signal timing (coordination, phases, red, yellow, or operation)	5 collisions due to automobile right of way violations.
Old Redwood Highway	**Shiloh Rd**	Intersections	Varies	Convert intersection to roundabout (from signal) - Planned improvements	The Town currently has a plan to build a roundabout at this intersection
					OR
			15%	Improve signal hardware: back-plates with retroreflective border	3 rear end and 1 broadside collisions.
			15%	Improve signal timing (coordination, phases, red, yellow, or operation)	5 focus intersections on Old Redwood Highway.
			10%	Install raised pavement markers and striping (Through Intersection)	Intersection is skewed.

[1] Non-Engineering Countermeasure

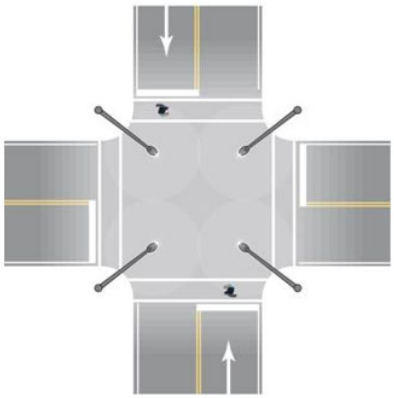
[2] Intersection recently had a signal installed after evaluation of a possible roundabout. Due to R/W constraints, a roundabout wasn't feasible.

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



Improve signal hardware, back plates with retroreflective border and improve signal timing and coordination:

- Windsor River Road/Market Street
- Old Redwood Highway/Windsor River Road
- Old Redwood Highway/Hembree Lane
- Brooks Road S/Los Amigos Road
- Old Redwood Highway/Shiloh Road



Improve intersection lighting:

- Starr Road/Windsor River Road
- Old Redwood Highway/Courtyards E/2nd St

Appendix E: Recommended Projects contains conceptual drawings of proposed improvements at the intersections of Starr Road at Windsor River Road and Windsor River Road at Market Street.

6.1.3 Town Segment Projects

Through the analysis period there were 337 collisions reported on Town of Windsor roadway segments (non-intersection related). A breakdown of roadway collisions on Town 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

Segment	Length (mi)	Crash Characteristics			
		EPDO	Total Crashes	Top Type of Collision (Number of Collisions)	Top Violation Category (Number of Collisions)
Old Redwood Highway (Arata Lane to Windsor Road)	0.71	565	7	Rear End (2), Broadside (2)	Improper Turning (3)
Colleen Drive (Starr Road to Joni Court)	0.26	545	2	Sideswipe (1), Hit Object (1)	Improper Turning (2)
Old Redwood Highway (US 101 SB Ramps at Arata Lane)	0.39	65	15	Sideswipe (6)	Improper Turning (5)
Old Redwood Highway (Pleasant Avenue to Shiloh Road)	1.24	55	15	Hit Object (5)	Improper Turning (6)
Hembree Lane (Northhampton Drive to Shiloh Road)	0.70	49	34	Sideswipe (12)	Improper Turning (9)
Brooks Road S (Jessica Drive to Lakeood Drive)	0.88	35	25	Hit Object (6)	Improper Turning (6)
Old Redwood Highway (Lakewood Drive to Alden Lane)	0.38	25	15	Sideswipe (6)	Unsafe Speed (5)

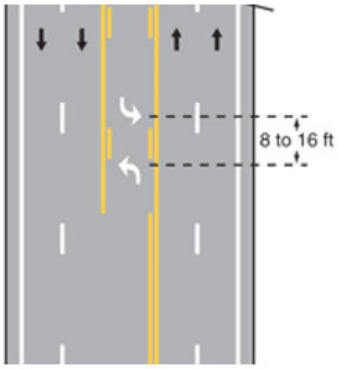
The countermeasures recommended for these locations are presented in **Table 8**.

Table 8 Recommended Countermeasures for Priority Segments

Primary Road	Segment Start	Segment End	Relevant Challenge Area	Collision Reduction Factor	Recommended Countermeasures	Reasoning
Old Redwood Highway	**Arata Ln**	**Windsor Rd**	-	30%	Add two-way left-turn lane (without reducing travel lanes) - where feasible	2 rear end collisions. No left turn lanes on ORH at minor intersections.
				-	Improve pavement condition and striping with surface treatment	Centerline fading and some minor pavement failure.
			Pedestrian	-	Pedestrian crossing enhancements	Recommendation from ORHCEP
				-	Safe crossing campaign for pedestrians[1]	1 collision with pedestrian crossing not in crosswalk.
Colleen Dr	**Starr Rd**	**Joni Ct**	-	25%	Install edgelines and centerlines	1 fatal sideswipe and 1 hit object collision. Vehicles parked along roadway reduce width of travelled way. Pavement width is around 26'-28'.
				-	Evaluate parking on roadway and coordinate with street residents	Vehicles parked along roadway reduce width of travelled way. Pavement width is around 26'-28'.
Old Redwood Highway	**US 101 SB Ramps**	**Arata Ln**	-	35%	Add segment lighting	6 night collisions. Portions of segment do not have existing lighting.
				35%	Delineate or Remove/relocate fixed objects outside of Clear Recovery Zone	5 collisions where vehicle was involved with fixed object, including with power poles (2), a business sign (1), and a building (1).
				-	Improve pavement condition and striping with surface treatment	Most markings are faded and pavement has some failure.
				-	DUI enforcement[1]	5 collisions with alcohol involved.
Old Redwood Highway	**Pleasant Ave**	**Shiloh Rd**	-	35%	Add segment lighting	9 night collisions. Segment lighting is inconsistent.
				-	Improve pavement condition and striping with surface treatment	Most markings are faded and pavement has some failure.
Hembree Lane	**Northampton Dr**	**Shiloh Rd**	Aggressive Driving	30%	Install dynamic/variable speed warning signs	Significant horizontal curves on southern end of segment. 9 collisions due to improper turning violations.
			Bicyclists	-	Install bicycle and vehicle conflict markings at mixing zones	Collisions are clustered at commercial driveways.
			-	-	Evaluate traffic control at Walmart driveway for possible improvements	Collisions are clustered at commercial driveways.
Brooks Road S	**Jessica Dr**	**Lakewood Dr**	Distracted Driving	30%	Replace botts dots with thermoplastic striping on southern end of segment	6 collisions due to improper turning violations. Horizontal curve on southern end of roadway near Lakewood Drive.
			Aggressive Driving	-	Evaluate speed management and opportunities to provide additional protection and accessibility for pedestrians and bicyclists	6 collisions due to improper turning
			Pedestrian	-	Planned pedestrian (RRFB Cycle 10 funded) and speed management improvements between Pulteney Pl and Foothill Dr	6 collisions due to improper turning
			-	-	DUI enforcement[1]	3 collisions with alcohol involved.
Old Redwood Highway	**Lakewood Dr**	**Alden Ln**	-	25%	Install edgelines and centerlines	4 sideswipe collisions. Replace botts dots with thermoplastic striping.
				-	Evaluate adding segment lighting	5 night collisions.

[1] Non-Engineering Countermeasure

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



Install two-way left-turn lane (without reducing travel lanes – where feasible:

- Old Redwood Highway from Arata Lane to Windsor Road
- Brooks Road S from Jessica Drive to Lakewood Drive



Install bicycle conflict markings at intersection mixing zone and driveways:

- Hembree Lane from Northampton Drive to Shiloh Road

Appendix E: Recommended Projects contains a conceptual drawing of proposed improvements at the segment of Brooks Road South from Jessica Drive to Lakewood Drive.

6.1.3.1 Old Redwood Highway Corridor Enhancement Project Recommendations

The Old Redwood Highway (ORH) Corridor Enhancement project is underway, and recommendations are being made to improve safety along the corridor. These preliminary recommendations include providing continuous sidewalk along ORH with curb and gutter, especially on the northern sections. It is noted in the northern section there are more fixed object collisions and lack of pedestrian accommodations. So providing a curb and gutter section with sidewalk will help to improve safety in providing some deflection for errant vehicles and accommodations for pedestrian out of the roadway. Other ORH recommendations include corridor lighting, bikeways, multi-use paths, pedestrian and bicycle crossing enhancements, motorized transportation improvements, and bus stops.

6.1.4 Systemic Safety Countermeasures

When selecting countermeasures, just focusing on locations with a current collision issues is a reactive approach to roadway safety planning. A reactive approach targets recent hot-spots and specific problems that are associated with these locations; because of this approach, locations with low traffic volumes but with similar safety issues as hot spot locations are not addressed. 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 shown below.

- Retroreflective back plates
- Green conflict bicycle markings at intersections and driveways
- Install bike boxes where appropriate
  - Potential locations at ORH at Lakewood Drive and ORH at Windsor River Road
- Improving signal timing at signalized intersections along Old Redwood Highway between Windsor Road and the US 101 interchange

– Install roundabouts at intersections
    - Can help mitigate speed, increase pedestrian and bicycle safety, and increase traffic flow
    - Potential locations: Windsor Road at Mitchell Lane, Starr Road at Old Redwood Highway, Old Redwood Highway at Shiloh Road (currently being studied)

6.1.4.1 Pedestrian Crossing Considerations

In evaluating the need for pedestrian crossings, there were several instances within the Town where pedestrians had to cross the roadway for trash pick-up services or postal mail services via mailboxes. It is recommended that the Town work with the various agencies to minimize the need for pedestrian crossings with relocation of trash and mail services on the same side as the residence and or business.

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.

- Bicycle and pedestrian safety campaigns
    - Use a light at night, wear bright clothing
- Driver education through distracted driving campaigns
    - Can be during Distracted Driving Awareness Month in April
- 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
    - Keep Kids Alive Drive 25
- Increased education about travelling around school zones
    - Especially during school drop off and pick up
- Partnering with agencies such as Sonoma County Health and SCTA for public education
    - For example, partnering with SMART to create an informational video about the planned roundabout at Windsor Road and Windsor River Road

The California Office of Traffic Safety has resources that can be used by the Town 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.

- ITS infrastructure, web/mobile application (apps) and smart cities practices
- Bicycle detection
- Upgraded controllers for flashing yellow arrows and leading pedestrian intervals
- Installing touchless Accessible Pedestrian Signals
- Communication with traffic signals
- Changeable message signs
- Real-time speed feedback data and reporting
- Increasing frequency of speed surveys
- Flashing stop signs or flashing beacons at stop-controlled locations where vehicles are failing to stop
    - For example, at Hembree Lane and Vinecrest Drive

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
    - Can be funded through Police Traffic Services grant from the Office of Traffic Safety
- Distracted driving enforcement

6.2.4 Emergency Response



Emergency response strategies are suggested below.

- Evaluate pre-emption at the Lakewood and Central Windsor interchange with US 101
    - Existing raised median makes it difficult to negotiate causing the fire department to travel against oncoming traffic
- Evaluate pre-emption at Hembree Lane and Old Redwood Highway
- Improvements to roadways to increase access and potentially shorten response times
- Educate drivers on how to respond to emergency vehicles

7. Prioritize and Identify Strategies

In evaluating how to implement safety projects, a prioritized list of projects with additional systemic projects is included in **Appendix E: Recommended Projects**. The Town of Windsor 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.

Table 9 contains a prioritized list of the proposed intersection projects on Town roadways based on their respective estimated benefit-to-cost ratios. **Table 10** shows a prioritized list of the proposed segment projects for Town 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 Benefit to Cost Ratio (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, we have also included the max project cost for a BCR of 10 with the expected project benefits.

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

Table 9 *Priority of Town Intersection Projects*

			HSIP Analyzer Results					Potential Alternative Funding	
Primary Road	Secondary Road	Recommended Countermeasures	Max Project Cost for B/C Ratio of 10	Estimated B/C Ratio	Total Expected Benefit	Preliminary Estimated Cost**	HSIP Funding Reimbursement Ratio*	HSIP Set-Aside	ATP Funding
Starr Rd	Windsor River Rd	Improve intersection lighting	$ 780,369	66.70	$ 7,803,692	$ 117,000	100%	-	-
		Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs					100%	Pedestrian Crossing Enhancements	-
		Install advance stop bar before crosswalk, install curb extensions on north/south crosswalks - if feasible, upgrade pedestrian crossing (ADA compliant ramps, refresh pavement/crosswalk markings, etc.)					100%	-	-
		Install green conflict bike lane marking on the eastbound approach at the conflict area before the right turn pocket	-	-	-	$ 3,250	-	-	-
		Partner with Safe Routes to School for education on how to cross safely[1]	-	-	-	-	-		
		School zone enforcement[1]	-	-	-	-	-	-	-
Old Redwood Highway	Courtyards E	Add intersection lighting	$ 488,545	46.98	$ 4,885,448	$ 104,000	100%	-	-
		Improve sight distance to intersection (Clear Sight Triangles)					90%	-	-
		Safe crossing educational campaign[1]	-	-	-	-	-	-	-
Windsor River Rd	Market St	Improve signal timing (coordination, phases, red, yellow, or operation)	$ 297,463	10.90	$ 2,974,627	$ 273,000	50%	-	-
		Evaluate protected left turn phase for east leg					100%	-	-
		Install flashing yellow arrow indication with permissive left turns					100%	-	-
		Speed enforcement[1]	-	-	-	-	-	-	-
Windsor River Rd	Windsor Rd	Convert intersection to roundabout (from signal) - Designed and funded improvements	-	-	-	-	-	-	-
		Partner with SMART to create an informational video on how to safely navigate the roundabout[1]					-	-	-
Old Redwood Highway	Hembree Ln	Improve signal hardware: back-plates with retroreflective border	$ 29,942	3.84	$ 299,424	$ 78,000	100%	-	-
		Improve signal timing (coordination, phases, red, yellow, or operation)					50%	-	-
		Evaluate the emergency pre-emption system (opticom) at the signal for timing improvements[1]	-	-	-	-	-	-	-
		Educate drivers how safely respond to emergency vehicles[1]	-	-	-	-	-	-	-
Old Redwood Highway	Shiloh Rd	Convert intersection to roundabout (from signal) - Planned improvements	-	-	-	$ 2,600,000	-	-	Y
		Improve signal hardware: back-plates with retroreflective border	$ 22,559	2.67	$ 225,590	$ 84,500	100%	-	-
		Improve signal timing (coordination, phases, red, yellow, or operation)					50%	-	-
		Install raised pavement markers and striping (Through Intersection)					100%	-	-
Old Redwood Highway	Windsor River Rd	Improve signal hardware: back-plates with retroreflective border	$ 23,859	2.45	$ 238,587	$ 97,500	100%	-	-
		Improve signal timing (coordination, phases, red, yellow, or operation)					50%	-	-
		Install Bicycle Box					100%	-	-
		Install detectible warning surfaces on curb ramps - north east and north west corner of intersection	-	-	-	$ 2,600	-	-	Y
Brooks Rd S	Los Amigos Rd	Improve signal timing (coordination, phases, red, yellow, or operation)	$ 10,074	1.55	$ 100,741	$ 65,000	50%	-	-
Old Redwood Highway	Windsor Rd	Evaluate roundabout signage (Add advisory speed signs of 15 MPH on approaches)	-	-	-	$ 13,000	-	-	-
		Evaluate a raised crosswalk on Old Redwood Highway approaches					-	Pedestrian Crossing Enhancements	-
		Roundabout education and enforcement[1]					-	-	-

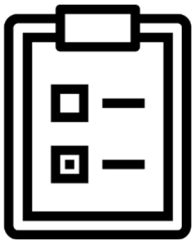
[1] Non-Engineering Countermeasure

Table 10 Priority of Town Segment Projects

Segment	From	To	Recommended Countermeasures	HSIP Analyzer Results: Max Project Cost for B/C Ratio of 10	Estimated B/C Ratio	Total Expected Benefit	Preliminary Estimated Cost**	HSIP Funding Reimbursement Ratio*
Colleen Dr	Starr Rd	Joni Ct	Evaluate installing additional striping (edgelines and centerlines)	$ 110,165	154.36	$ 1,101,650	$ 7,137	100%
			Evaluate parking on roadway and coordinate with street residents	-	-	-	-	-
Old Redwood Highway	Arata Ln	Windsor Rd	Add two-way left-turn lane (without reducing travel lanes) - where feasible	$ 295,968	80.95	$ 2,959,681	$ 36,563	90%
			Improve pavement condition and striping with surface treatment	-	-	-	-	-
			Pedestrian crossing enhancements	-	-	-	-	-
			Safe crossing campaign for pedestrians[1]	-	-	-	-	-
Brooks Road S	Jessica Dr	Lakewood Dr	Replace botts dots with thermoplastic striping on southern end of segment	-	-	-	-	-
			Evaluate speed management and opportunities to provide additional protection and accessibility for pedestrians and bicyclists	$ 55,380	12.17	$ 553,801	$ 45,500	90%
			Planned pedestrian (RRFB Cycle 10 funded) and speed management improvements between Pulteney Pl and Foothill Dr	-	-	-	-	-
			DUI enforcement[1]	-	-	-	-	-
Old Redwood Highway	US 101 SB Ramps	Arata Ln	Add segment lighting	$ 145,118	8.93	$ 1,451,184	$ 162,500	100%
			Delineate or Remove/relocate fixed objects outside of Clear Recovery Zone					90%
			Improve pavement condition and striping with surface treatment	-	-	-	-	-
			DUI enforcement[1]	-	-	-	-	-
Hembree Ln	Northampton Dr	Shiloh Rd	Install dynamic/variable speed warning signs	$ 38,928	5.99	$ 389,281	$ 65,000	100%
			Install bicycle and vehicle conflict markings at mixing zones	-	-	-	-	-
			Evaluate traffic control at Walmart driveway for possible improvements					-
Old Redwood Hwy	Lakewood Dr	Alden Ln	Install edgelines and centerlines	$ 28,275	2.03	$ 282,745	$ 139,133	100%
			Evaluate adding segment lighting					100%
Old Redwood Highway	Pleasant Ave	Shiloh Rd	Add segment lighting	$ 20,636	1.60	$ 206,360	$ 128,700	100%
			Improve pavement condition and striping with surface treatment	-	-	-	-	-

[1] Non-Engineering Countermeasure

8. Evaluation Process



To evaluate the success of this plan, yearly collision analysis, along with requests for public feedback, can be analyzed by the Town. This information can be reviewed and evaluated every 2 years to compare results to the established goals and track progress. Collision information from SWITRS and the Sheriff's Department will need to be compiled and organized to determine the number, type, violation, and severity of collisions, along with whether or not pedestrians or bicyclists were involved.

- **Goal:** Strive to eliminate fatal and severe injury collisions Townwide.
    - **Measure of Success:** This can be achieved by smaller reduction goals of 1 fatal or severe injury (FSI) collision reduction per year toward the zero goal.
- **Goal:** Strive to reduce rear end and broadside collisions Townwide with systemic safety countermeasures.
    - **Measure of Success:** After the implementation of safety countermeasures, a reduction of these collision types is seen.
- **Goal:** Improve the health and vitality of our community with a safety plan that provides safe roadway accommodations for pedestrians and bicyclists,
    - **Measure of Success:** Increase in multimodal infrastructure and improvements and subsequent pedestrian and bicycle counts. Currently, the Town of Windsor does not collect pedestrian and bicycle counts but that might be an addition in capturing this metric.
- **Goal:** Improve safety around schools with a connected multimodal system, enhanced crossings, education campaigns around school drop off/pick up, bicycle and pedestrian safety and driver awareness, safe routes to school, and enforcement of school zones.
    - **Measure of Success:** Residents will feel more comfortable choosing multimodal transportation to travel to and from school zones and express an increased feeling of safety in these areas.
- **Goal:** Increase walking, biking, rolling (wheelchair, skateboard, scooter, etc.) to downtown district, to work, and to school.
    - **Measure of Success:** The increase in the number of residents choosing to bike, walk, or roll throughout the town.
- **Goal:** Reduce speeding, distracted driving, and improper turning related collisions through engineering, enforcement, and education strategies.
    - **Measure of Success:** A reductions of these types of collisions throughout the town as a result of implemented strategies.
- **Goal:** Improve health and safety by encouraging more residents to choose active transportation.
    - **Measure of Success:** An increase in the number of residents choosing to bike or walk throughout the town as a result of safer facilities.
- **Goal:** Identify safety countermeasures using the 5-E's in improving Townwide safety.
    - **Measure of Success:** Countermeasures from all 5-E's are implemented Townwide.

9. Next Steps

The Town of Windsor Town Council unanimously adopted the Local Road Safety Plan on November 3, 2021. This safety plan will be a living document and will guide the Town'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

- Town of Windsor Collision Data, Statewide Integrated Traffic Records System, 2015-2019.
- Town of Windsor Collision Data, Transportation Injury Mapping System, 2015-2019.
- Collision Data, Town of Windsor, 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.

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.
- Town of Windsor Local Road Safety Plan, https://lrsp.mysocialpinpoint.com/windsor.

Surveys

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

Appendix A

Stakeholder and Public Input

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Meeting Summary

February 23, 2021

To:	Mona Ibrahim	Project:	Town of Windsor Local Road Safety Plan (LRSP)
From:	Kathy Kleinschmidt (GHD)	Ref/Job No.:	11220961
CC:	Emily Darke (GHD)	File No.:	LRSPMS0001.docx

Subject: Local Roadway Safety Plan (LRSP) Meeting #1 Summary – February 23, 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 February 23rd, 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. Pedestrians
        ii. Distracted Driving
        iii. Aggressive Driving
        iv. Bicyclists
        v. Intersections
        vi. Speeding (added per chat)
    b. Collision Analysis
        i. Received 2020 data through November 16, 2020 from SWITRS database
            1. Police Department says that there are additional collisions after this date and will coordinate with GHD
        ii. Trend of declining crashes each year since 2016
        iii. Most common collision type on town roads were rear-ends and broadsides
            1. Same trend for Caltrans collisions
        iv. High severity collisions between 2015 and November 2020
            1. 3 fatal collisions (all on Town roads)
            2. 13 severe injury collisions (12 on Town roads, 1 at Caltrans interchange)
            3. One recent collision near Town Green due to motorcycle driving recklessly to escape from police. Motorcyclist hit DHV and is in critical condition.
        v. Violation categories

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

1. Top violation category for Town is unsafe speed, followed by improper turning and automobile right of way
2. Eris Weaver wants to prioritize areas where there are near misses
    a. Many bicyclists have videos of near misses
        i. Reported to police but no significant changes made at the time
        ii. Most reports have gone to CHP or Santa Rosa Police Department
    b. We can document near misses through input on interactive map on public website
3. Top violation category for interchanges is unsafe speed

vi. Pedestrian Collisions
1. 2 fatal collisions

vii. Bicycle Collisions
1. No fatal or severe injuries, but many with other visible injury

viii. Top Study Locations
1. Top 5 intersections by EPDO and Total Collisions
2. Top 5 segments by EPDO and Total Collisions

ix. Projects occurring/planned in the Town
1. Jaguar Way is preferred to be a Class I bikeway by council
2. Old Redwood Highway (ORH) Corridor Enhancement Plan to reimagine how it can be a better road for all users, businesses, communities, and residents.

x. Safety Countermeasures
1. Town has some Leading Pedestrian Intervals (LPIs)
    a. Alden and ORH
    b. SB on-ramp at Central Windsor/ORH
    c. Eris Weaver has experience issues with LPIs with so many people driving the other way are punching through yellow
2. There are some retroreflective back plates
    a. Mostly on south side of road in areas such as along Shiloh Rd and Hembree corridors
3. Bicycle safety education program in place
    a. Some bicyclist collisions were youth
        i. Would be nice to see data across ages/time of day
        ii. Around 8-10% of kids bike to school
    b. Wants education for drivers, since there is a lot of education for bikes/pedestrians
4. Emergency Services
    a. Coordinate response with Windsor PD
    b. Lakewood intersection at US 101 is problematic
        i. Islands make it difficult to navigate this intersection coming from Old Redwood Highway
    c. Hembree and Old Redwood Highway is where fire station is located
        i. Has Opticom but can sometimes back up traffic which frustrates drivers
            1. Existed in infrastructure for a while but there have been changes/upgrades in recent years

3. **Next Steps**
    a. Draft Mission, Vision, and Goals
        i. Asked stakeholder group to provide feedback via Microsoft Forms
        ii. Kathy will send the link with the form and answers
    b. Launch Social Pinpoint page before next meeting and share link with Stakeholders
        i. Stakeholders are encouraged to share the link to this page to gain visibility
    c. Develop countermeasures and safety projects
    d. Schedule next LRSP meeting

List of Attendees

1. **Mike Cave** – Town of Windsor
    a. Safety and security of motorists on the operations side
2. **Olivia Lemen** – Parks and Recreation, Town of Windsor
    a. Connectivity within parks, schools, family using transportation systems and roadways
3. **Ahmad Rahimi** – Regional Project Management, Caltrans
    a. Safety projects that accommodate all users
4. **Steven Schmitz** – Transit Planner, Sonoma County Transit
    a. Offer safe and efficient service for residents and workers in Windsor
    b. Interested in location of pedestrian collisions and how they can be minimized
5. **Dylan Fong** – Sergeant, Sonoma County Sherriff's Department
    a. Answer questions regarding collisions
6. **Cyndi Foreman** – Division Chief and Fire Marshall, Sonoma County Fire Department
    a. Code 3 responses in the fire district (e.g. controlled lights)
7. **Lois Standring** – Chief Business Officer, Windsor Unified School District
8. **Eris Weaver** – Executive Director, Sonoma County Bicycle Coalition
    a. Make sure that roads are safe for cyclists and pedestrians
9. **Michael Charleton**
10. **Sarah Hadler** – Sonoma County Bicycle Coalition and Safe Routes to School Program
11. **Kathy Kleinschmidt** – GHD
    a. Meeting and plan facilitator
12. **Frank Penry** – GHD
    a. Project Manager
13. **Kiera Bryant** – GHD
14. **Emily Darke** – GHD

Meeting Summary

May 18, 2021

To:	Mona Ibrahim	Project:	Town of Windsor Local Road Safety Plan (LRSP)
From:	Kathy Kleinschmidt (GHD)	Ref/Job No.:	11220961
CC:	Emily Darke (GHD)	File No.:	LRSPMS0002.docx

Subject: Local Roadway Safety Plan (LRSP) Meeting #1 Summary – May 18, 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 18th, 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. First Meeting Summary
        i. Determined challenge/emphasis areas
            1. Pedestrians
            2. Distracted Driving
            3. Bicyclists
            4. Aggressive Driving
            5. Intersections
        ii. Showed collision analysis
        iii. Discussed recent/planned/potential projects in the Town
    b. Vision and Mission Statement
        i. Chose vision between top two options
            1. Preference to use "Windsor will strive to improve safety for all modes of travel through the development of a plan of action to end traffic fatalities and serious injuries with the engagement of stakeholders and citizens."
            2. Send options via email for further analysis
            3. Majority of collisions are speed-related and distracted driving
                a. Police department is limited with resources
                    i. Does best to educate and increase visibility of police vehicles
                b. Many collisions with people unfamiliar with roadways
        ii. Reviewed proposed goals

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

1. Police has some distracted driving campaigns
    a. Include “distracted driving” in goals
2. Many streetlights are being hit recently
    a. Police says circumstances seem to be different for each collision
    b. Have the same set-back as fire hydrants
    c. Add more public outreach regarding cell phones
3. Potential education campaign for teen outreach about driving during school
    a. School will be resuming in the fall which will increase traffic volumes

c. Updated Collision Analysis
    i. Top violations were unsafe speed and improper turning
    ii. Many high-speed broadsides on straight-aways
        1. Would help to have more stop signs
            a. Potential locations: Hembree Ln, Windsor Rd at Mitchell Rd (almost a blind turn)
                i. Development will go in soon near Windsor Rd and Mitchell Rd

d. Public Website Engagement
    i. Received 93 comments and 10 survey responses as of May 17, 2021
        1. Peaked in March
        2. Did anyone reach out to Spanish-speaking communities to let them know that this website was available?
            a. Safe Routes to School program translated a paragraph for outreach to Spanish to send to schools
            b. Town tried reaching out to Hispanic Chamber of Commerce, considered reaching out to Our Lady of Guadalupe
                i. Typically prefer outreach in-person
            c. Best to demonstrate that there is input from the community to help have greater possibilities for funding
            d. Could put website on electronic message boards around town
    ii. Survey results
        1. Main issue identified in survey was lack of infrastructure
        2. Crossing guards near schools were a common recommendation
    iii. Interactive map comments
        1. No bike lockers currently at schools
        2. Starr Rd/ORH could benefit from pedestrian enhancements
        3. Pedestrian crossing near Central Windsor interchange is being studied in ORH Corridor Enhancement Plan
    iv. Speed limit recently reduced on Hembree near Foothill Park
        1. Limited visibility for crosswalk installation
            a. Speed feedback sign would probably be a better solution
        2. Vehicles have to pay to enter the park, so they park on the street

e. Recently awarded projects
    i. HSIP Cycle 10 grant for enhancing pedestrian crossings
    ii. Vehicles will not be permitted on eastern section of Jaguar Way
    iii. Construction will likely begin for roundabout at Windsor Road and Windsor River Road around July/August

f. Priority locations
    i. Old Redwood Highway at Windsor Road signs are often hit
        1. Vehicle going into landscape

2. Not much deflection on approaches
3. City wants to decrease the amount of equipment getting hit here
4. Concern for pedestrian and bicyclist safety if vehicles are travelling too fast
5. Potential location for raised crosswalk
    a. Fire Department does not have an issue with one here
6. Speed feedback type sign on Old Redwood Highway to alert vehicles to slow down if they are travelling too fast
7. City has advisory speed limit on approaches

ii. City is starting to implement video detection at signals
iii. City does not currently have accessible push buttons
iv. A potential roundabout is currently being studied for Old Redwood Highway at Shiloh Road
v. Hembree Lane near Shiloh Road does not seem to be a concern

g. Non-Engineering Strategies
    i. Fire Department is forced to go left of center near Old Redwood Highway since vehicles don't move over
        1. Potential area for education component
        2. Median forces emergency vehicles to go left of center
        3. Timing at Central Windsor interchange is checked every month
    ii. Intersection of Fire Department at Hembree Lane can get congested near school hours
        1. Currently has Opticom button
            a. Sometimes will hold up traffic for a while
            b. The City will discuss this further with the City

3. Next Steps

a. Incorporate feedback from meeting into draft report
b. Send draft report for review

List of Attendees

1. **Alejandro Perez** – Senior Civil Engineer, Town of Windsor
2. **Mona Ibrahim** – Engineer II, Town of Windsor
3. **Mike Cave** – Deputy Director of Operations, Public Works, Town of Windsor
4. **Olivia Lemen** – Parks and Facilities Manager, Town of Windsor
5. **Eris Weaver** – Executive Director, Sonoma County Bicycle Coalition
6. **Sarah Hadler** – Sonoma County Bicycle Coalition and Safe Routes to School Program
7. **Seana Gause** – Senior, Programming and Projects, Sonoma County Transportation Authority
8. **Cyndi Foreman** – Fire Marshal, Sonoma County Fire District
9. **Pam Bell** – Owner, Bell's Ambulance Service
10. **Travis Perkins** – Traffic Deputy, Sonoma County Sheriff's Department
11. **Kathy Kleinschmidt** – Assistant Project Manager, GHD
12. **Farid Rahman** – Transportation Engineer, GHD

Response to Interactive Map Comments | Town of Windsor LRSP

Comment	Comment Type (from SPP)	Response
We need complete sidewalks on both sides of Starr Road from Windsor River Road all the way to Old Redwood Highway to enhance safety to pedestrians, including children walking to school.	Pedestrian Suggestion	Sidewalks to be installed from Starr View Dr to Colleen Dr as a Capital Improvement Project.
Pedestrian bridge would be useful here. *(Btwn Daybrook Dr and Park Glen Dr)*	Pedestrian Suggestion	Noted.
Pedestrian bridge would be useful here for students walking to and from school. *(Btwn Starr Rd and Windsor HS)*	Pedestrian Suggestion	Planned improvements in this area for pedestrians and bicyclists.(Jaguar Way Improvements)
Sidewalks need to be added along Shiloh to the Walmart/HomeDepot area. In general sidewalks on the south side of Windsor need to be added and or improved to allow safe walking along these roads. These are long overdue.	Pedestrian Suggestion	Planned roadway improvements including sidewalks between Hembree and ORH.
Kids going to school from the East side of Windsor to Starr Road to either Windsor Christian Academy or to Calle need sidewalks from Arata to Starr on ORH.	Pedestrian Suggestion	May be addressed in the ORH Corridor Enhancement Plan. Will follow up.
Not a pedestrian friendly interchange. The sidewalk bounces back and forth on either side of the street n this section *(US 101 and Arata Ln Interchange)*	Pedestrian Suggestion	Planned interchange improvements may address this.
Need a crosswalk at the off ramp *(NB US 101 Ramp at Arata Ln)*	Pedestrian Suggestion	Planned interchange improvements may address this.
Crosswalk would be helpful here. There is no sidewalk on east side of Hembree here. *(Hembree Ln btwn Foothill Dr and Skylark St)*	Pedestrian Suggestion	Proposed countermeasure south of Foothill Regional Park Entrance
I would suggest that there would be no parking along the curve. I would install a crosswalk with blinkers and lower the speed limit. *(Foothill Dr near Valle Vista St)*	Pedestrian Suggestion	May look into parking need in this area.
Foothill neighborhood has awful sidewalks. I recently fell (twice) once on Hembree and once on Foothill due to the lifted sidewalks.	Pedestrian Suggestion	Concern noted. May be part of Capital Improvement funds for townwide pedestrian facility improvements.
Sidewalks are buckled all through Foothill neighborhood. I've fallen twice in the last three months. Once on Foothill and once on Espana. I'm 52.LOL. I walk every day-twice! It's a never-ending problem. Who's responsible? Homeowner, HOA, Town...I don't know. They are just not safe.	Pedestrian Suggestion	Concern noted. May be part of Capital Improvement funds for townwide pedestrian facility improvements.
Would like the Town to move forward on developing the connection from the southbound 101 off ramp intersection through the Town owns property between the Shell and Chevron Stations.	Pedestrian Suggestion	Noted.

Comment	Comment Type (from SPP)	Response
We NEED flashing lights for this crosswalk! The cars are flying coming around the corner and can barely see pedestrians. *(Sugar Maple Ln and Shadetree Dr)*	Pedestrian Suggestion	Planned crosswalk enhancements around this location as part of the Safe Routes to School improvement
Fix broken and displaced sidewalks. *(Brooks Rd S near Glen Miller Dr)*	Pedestrian Suggestion	May be part of Capital Improvement funds for townwide pedestrian facility improvements.
Can we install Stop signs here? Safer for pedestrians and for car cross traffic. *(Lakewood Dr and Los Amigos Rd)*	Pedestrian Suggestion	An All-Way Stop warrant would need to be conducted and met.
This area really NEEDS a pedestrian bridge -- something to get walking teens over 101 to/from school without putting them through the whole freeway onramp/offramp mess. It's a safety issue! Bike/walking paths could connect either ends of the bridge to surface/main streets. *(Over US 101 btwn Los Amigos Rd and Bambi Ln)*	Pedestrian Suggestion	Bike and ped overcrossing over US 101 proposed in Traffic Impact Fee, location not yet determined.
Please make sidewalks on Conde a priority. This goes hand in hand with making Windsor an Age-Friendly "City".	Pedestrian Suggestion	Concern noted. May be part of Capital Improvement funds for townwide pedestrian facility improvements.
Conde Road needs to be widened as there are areas where there is not enough space for two vehicles and a bicycle. Sidewalks also need to be added from the veterinarian to the light going into the school.	Pedestrian Suggestion	Planned roadway improvements from Oakfield Ln to Mitchell Ln. Widening not planned/may not be feasible.
This would be another good place for a pedestrian bridge. Teens on the south-east side of town should have a way to bike/walk over 101 to get to the high school without having to go up to/through the current 101 onramp/offramp mess. Bell road could take them to a crossing at Trione or the SMART bike path could take them to the north end of the corp yard and then create a new path across town land to Windsor Road? Something to get the teens from the southeast side of town safely to high school. *(Over US 101 btwn Dove Ln and Conde Ln)*	Pedestrian Suggestion	Bike and ped overcrossing over US 101 proposed in Traffic Impact Fee, location not yet determined.
A bike lane for walk and roll to school is needed for the full length of Starr Rd	Biking Suggestion	Planned crosswalk and sidewalk enhancements around this location as part of the Safe Routes to School improvement. May consider bike lanes as well.

Comment	Comment Type (from SPP)	Response
Cycling from here to the other side of the freeway is not for the faint of heart. Don't have easy solutions, but it would be great to make it easier for cyclists to navigate the on-ramps and the Home Depot/Wal Mart turns. If you look in the bushes you can see where pedestrians have cut their own paths through the fence. This is actually a pretty good solution. With the new supermarket here makes sense to improve non-automotive access, especially with so many people living just west of 101. *(Shiloh Rd west of US 101)*	Biking Suggestion	Planned roadway improvements including sidewalks between Hembree and ORH.
No sane person would want to walk or bicycle aross this overpass. It needs another pedestrian/bike bridge, either there or a little north on Hembree to get bikes and pedestrians across 101, especially to the high school. *(Shiloh Rd east of US 101)*	Biking Suggestion	Bike and ped overcrossing over US 101 proposed in Traffic Impact Fee, location not yet determined.
When is the bike path coming and where are the neighborhood connection points? *(Mitchell Ln near Wilson Ranch Soccer Park)*	Biking Suggestion	Concern noted. May be part of Capital Improvement funds for townwide bicycle facility improvements.
With new wineries coming in, and Mitchell Lane becoming a cycling route, consider adding green bike lanes to Mitchell from the Smart Tracks to Conde Ln. *(Mitchell Ln and Cameron Dr)*	Biking Suggestion	Concern noted. May be part of Capital Improvement funds for townwide bicycle facility improvements.
Bike lane needs to be added. There is a portion of the road where the bike lane disappears and we need to ride in the car lane. *(Arata Ln near Los Amigos Rd)*	Biking Suggestion	Concern noted. May be part of Capital Improvement funds for townwide bicycle facility improvements.
Improvements to Conde might be achieved with a wider road shoulder on the west side with rubber type bollard protection for bike/ped users.	Biking Suggestion	Concern noted. May be part of Capital Improvement funds for townwide bicycle facility improvements.
Wider bike lanes *(Brooks Rd S)*	Biking Suggestion	Concern noted. May be part of Capital Improvement funds for townwide bicycle facility improvements.
Bike boxes!! Less cars on the road, more bikes being used for errands. Bike theft is a MASSIVELY HUGE problem in SoCo and there's ZERO safe places to lock up bikes so people can do errands on bikes. I would love to see bike boxes between Safeway & Raley's (grocery, bakery, CVS, Post Office, UPS, restaurants, medical offices); near Oliver's (grocery, town green, library, restaurants, businesses); and near Home Depot area. Come on Windsor, LET'S DO THIS!!! Let's lead NorCal in + change!	Biking Suggestion	Suggestion noted.

Response to Interactive Map Comments | Town of Windsor LRSP

Comment	Comment Type (from SPP)	Response
In order for this intersection to be safe and functional there will need to be a subway. The sooner we face that reality the better. *(Windsor River Rd and Windsor Rd)*	Driving Suggestion	A subway is not currently planned here. Planned intersection improvements will address safety and functionality.
Glad this is going to be a roundabout but wondering how that's going to work with a train going through it as well as cars. ? *(Windsor River Rd and Windsor Rd)*	Driving Suggestion	Can provide an educational component for this roundabout.
I think the Town really needs a northbound onramp here! *(US 101 and Arata Ln Interchange)*	Driving Suggestion	Planned interchange improvements may address this.
Some overhanging branches worry me on windy days...some thick ones just west of chicken farm. *(Arata Ln near Biggs Way)*	Driving Suggestion	Concern noted.
Install cameras at stop signs *(Arata Ln at Elsbree Ln)*	Driving Suggestion	Cameras not typically installed at stop signs. Can suggest more enforcement.
People frequently don't stop at the stop sign. This leads to danger as they round the corner to Foothill Park. *(Arata Ln at Elsbree Ln)*	Driving Suggestion	Concern noted. Can suggest more enforcement.
This area needs speed bumps. Drivers fly up this hill and can't see pedestrians crossing the street to the Foothill Park entrance until they crest the hill. I'm surprised there aren't more car v. pedestrian accidents in front of the Foothill Park entrance. A crosswalk with flashers leading into the Foothill Park lot/entrance is really needed here too. *(Arata Ln near Foothill Regional Park)*	Driving Suggestion	Speed bumps not a feasible traffic calming device here. Proposed countermeasure for dynamic speed feedback sign along this segment.
This area needs speed bumps. Drivers (mostly younger) go flying up hill and can't see pedestrians on the downhill side crossing the street to get to the Foothill park entrance. I'm surprised more pedestrians don't get hit/killed by speeding drivers here. A crosswalk at the park entrance/driveway with flashers would be great too. *(Arata Ln at Foothill Regional Park)*	Driving Suggestion	Speed bumps not a feasible traffic calming device here. Proposed countermeasure for dynamic speed feedback sign along this segment.
Lower the speed limit and/or do something to slow traffic along the curve adjacent to Foothill Regional Park. There is a lot adults/kids/bikes/dogs along this stretch coming out from between cars & crossing the street. Maybe a crosswalk? *(Hembree Ln near Foothill Dr)*	Driving Suggestion	Proposed countermeasure for dynamic speed feedback sign along this segment.
Both the Arata/0ld Red and Star/Old Red intersections could be prime locations for round abouts as there is undeveloped land adjacent and traffic levels might be at acceptable levels. Lower GHG as well as pedestrian safety considerations.	Driving Suggestion	Planned project to convert ORH and Starr Rd intersection to roundabout.

Comment	Comment Type (from SPP)	Response
Foothill Drive between Brooks & Hembree has been a known high speed road to Town leaders for years. With children walking & bicycling to school along with many people running and walking it presents a dangerous situation. We've had two parked cars hit & totaled in the last couple of years and I've personally seen people nearly hit at the bend in the road near school. Traffic calming measures are desperately needed to hopefully avoid a tragedy in our neighborhood	Driving Suggestion	Proposed countermeasure for dynamic speed feedback sign along this segment
I've seen a lot of people blow through this stop sign. It needs cameras. *(Hembree Ln and Vinecrest Rd)*	Driving Suggestion	Cameras not typically installed at stop signs. Can suggest more enforcement.
Some huge and heavy overhanging branches worry me. They look dry and brittle and in a breeze could fall on Hembree. Just before the Senior facility (Vinecrest)).	Driving Suggestion	Concern noted.
Stop sign here (Foothill and Brooks) should be better marked.	Driving Suggestion	Concern noted. Will look into conditions at this location.
Slow down vehicles. Too many speeding cars. *(Brooks Rd S near Lakewood Meadows Park)*	Driving Suggestion	Proposed countermeasure to look at speed management along this segment.
This 3 point gauntlet of Shiloh and Windsor Rd has become increasingly challenging. With the combination of thoughtless speedy drivers not using their blinkers and poor visibility with the steep pitch near the intersection, I'm surprised there aren't more accidents. Perhaps stop signs?	Transit Suggestion	No current plans at this intersection. An All-Way Stop warrant would need to be conducted and met. Concern noted.
Just a thank you for finishing the sidewalk on the north bound side of Star and Windsor River Rd.	General Comment	Noted. Thank you.
Old Redwood in the area of the Palms Shopping center has historically had both Palm And Redwood trees along the route. Should consideration be given to expanding the palm tree theme. Perhaps we wouldn't have to use mature palms but smaller trees and less expensive infrastructure.	General Comment	Noted. No plans currently.

Comment	Comment Type (from SPP)	Response
There are footpaths that end in each of these two larger commercial centers, but there is no good way to cross between them. The median is raised and there is only one crosswalk, yet the paths do not lead to the crosswalk. If you are walking between the CVS lot and Raleys, that crosswalk ends in a driveway. Pedestrians have to climb in the grass (hard with a stroller) or risk it walking in the area intended for cars. Can we put in a pedestrian crossing near the Lakewood Drive end or fix this?	General Comment	Concern noted. May be part of Capital Improvement funds for townwide pedestrian facility improvements.
Brooks Rd from Lakewood to Foothill could use a road diet. A town study a few years ago indicated the time delay with a reduction from 2 to 1 land was negligible but perception was everything. Round abouts at the Safeway Center as well as ____would complement the road diet. More safety and welcoming for bike ped.	Circulation Comment	Noted.
Suggest if we are to move forward with the underpass bike/ped improvements which I support, we make a choice between this improvement or the over crossing, don't believe we can afford both	Circulation Comment	Noted.
Take down the barrier to the west end of Jensen Lane for improved circulation. Doing so would be most helpful for evacuations & also, in general, relieve congestion at Hembree ORH intersection.	Circulation Comment	Noted.

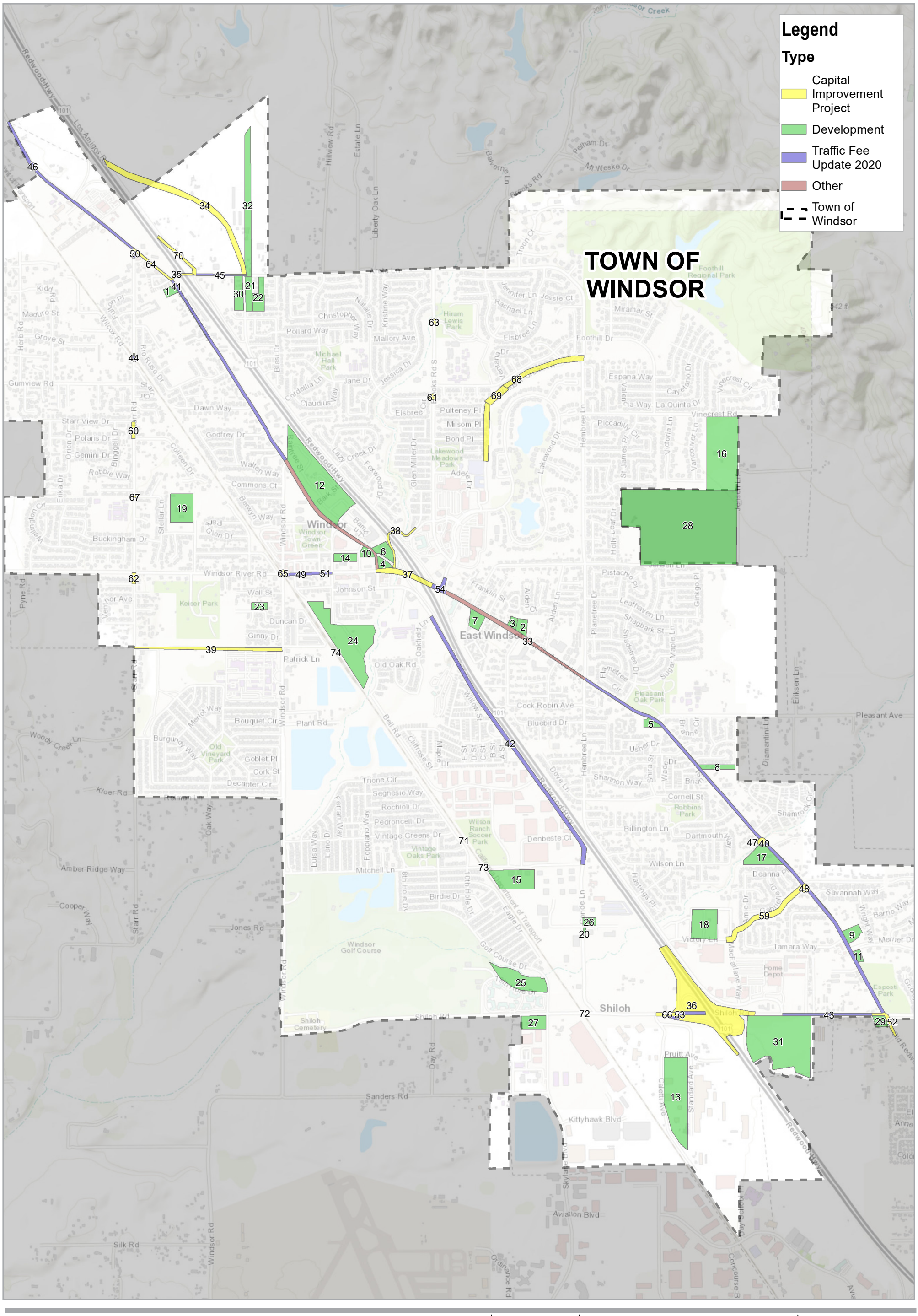
Town of Windsor LRSP Draft		
Feedback on Draft Report via project website. Reviewer comments are shown as written.		Response
1	Greater emphasis on forms of transportation other than cars. Widen bike lanes, improve pedestrian crossings. There are too many, "No pedestrian crossing" signs in Windsor. Make walking a priority. Improve bus stops and bus services so that public transit becomes a viable alternative, rather than an afterthought.	Concerns Noted. This plan is a requirement for HSIP funding and therefore the plan focuses on the those requirements. The Town has a Bicycle and Pedestrian Master Plans, which addresses recommended pedestrian, bicycle, and transit improvements.
2	The "road diet" is not needed. To ,remove traffic lanes goes against all logic. The back-up at the junior high will be dismal, and the problems will increase exponentially if the development planned for near Arata and Los Amigos. This is a bad idea. Windsor residents soundly opposed this last it was brought to the table. The Road Diet is a BAD idea.	Concerns noted. The goal of the roadway improvements is to provide speed management and increased protection and accommodations for bicyclists and pedestrians. Text in report has been modified to reflect this and further public input will be conducted for the project.
3	Brooks road doesn't need a diet. It needs more officers on our roads. Spend money where it will do it's best. Don't spend so much on changing our roads. They aren't the problem. It's the drivers. Make them change.	Concerns noted. The goal of the roadway improvements is to provide speed management and increased protection and accommodations for bicyclists and pedestrians. Text in report has been modified to reflect this and further public input will be conducted for the project.
4	Brooks Rd South works properly now as is . Reduction in lanes would hurt businesses, push traffic into residential streets and create significant over crowding reducing overall safety.	Concerns noted. The goal of the roadway improvements is to provide speed management and increased protection and accommodations for bicyclists and pedestrians. Text in report has been modified to reflect this and further public input will be conducted for the project.
5	Brooks Drive is already a disaster at many times of the day trying to turn right onto Lakewood. To take away lanes and funnel everyone into the one lane will make this all but impassable. I know there will still be a two-way lane for people that are turning left or going straight across Lakewood, but that means that people going North on Brooks will also have to use this to turn into the street/parking lot between Applebees and the dental office. This is just an accident waiting to happen IMO, and adding unnecessary roadblocks and traffic to an already bad situation.	Concerns noted. The goal of the roadway improvements is to provide speed management and increased protection and accommodations for bicyclists and pedestrians. Text in report has been modified to reflect this and further public input will be conducted for the project.
6	Please don't take away lanes and please require developers to create street with a wide width. I live on Christopher Way love that the streets are much wider than those in newer developments. Driving down any street in Vintage Green or Ventana neighborhoods is ridiculous. If/when there is an emergency there is little room for firetrucks and ambulance with care parked along the roadside. I have no idea why this was even allowed. Currently on Brooks Rd there is plenty of room for cyclists and we really need the 4 lanes with the Windsor Middle school and Brooks Elementary there is plenty of traffic with kids being dropped off and picked up. Please leave the 4 lanes!	Concerns noted. The goal of the roadway improvements is to provide speed management and increased protection and accommodations for bicyclists and pedestrians. Text in report has been modified to reflect this and further public input will be conducted for the project.
7	Under 6.1.4, Potential roundabout locations: Hembree at Foothill and/or Vinecrest. I'm no engineer, but my common sense tells me that those intersections are far too small for roundabouts, and are right next to homes. I can't see the town installing this type of infrastructure without declaring eminent domain. I hope that the town notifies the residents living in these homes that this has been identified as a future possibility in this draft so that they can comment.	Concerns with the limited right of way are noted. We have revised the text to identify additional stop sign enhancements (upsizing stop signs or flashing beacons on stop signs) on Hembree. We have observed vehicles not stopping at those stop signs.
8	My initial reaction to the LRSP Report is actually positive! There are some really important improvements that could be beneficial. Star RD at Windsor River Rd is deffinately in need of more lighting. One concern I have is Brooks Rd S. I feel like That whole road was recently re-striped already and is fine the way it is! There are turn lanes, and if we put it on a diet, all you're going to do is backup all the traffic all the way to the middle school. Light timimg at Brooks Rd S and Los Amigos won't be able to fix that! In fact, I think that retimeing all those lights going from Los Amigos to Lakewood and under the freeway would be wonderful! It's very complicated getting through there sometimes. As for the rest, I would not be please to see so many projects resulting in only a 15% reduction in Incidents! For an intersection with 4 events, there might not be a change at all! Anything less than a 25-50% is just not worth putting the town through the ringer with all the construction! Side note, there was a section that talked about how light timing and frustration resulted in faster speeds and more aggressive driving. I will attest to the frustration I feel just dropping my kids off at school or going to the town green. But adding more restrictions isn't going to reduce those people to following speed limits. It could make it worse! Be contientious and logical in what we spend money on for the future! We have a lot of roadways that need serious repair and a redesign could be a part of that, such as North Starr Rd. Due to Cali being there it's a disaster pretty much for all drop offs and pickups. I think the report needs some revisions before being adopted! I'd love to participate in a workshop to look more in detail at the benefits and drawbacks of certain changes! Thank you!	Thanks for taking the time to provide comments as they are noted. The purpose of this plan is to identify HSIP countermeasures and their possible crash reductions per the HSIP guidance. In evaluating countermeasures, up to 3 countermeasures can be applied multiplicatively in reducing crashes. A possible countermeasures is traffic signal timing improvements. Corridor signal timing, typically favors the main corridor vs the side street. Old Redwood Highway (ORH) is a main corridor and a corridor enhancement plan is currently underway that should evaluate the signal timing. Other factors to note with increased traffic by the schools is there is currently a lack of bus drivers for the school district which corresponds to more vehicles on the road.

9	This is quite extensive and am encouraged at the detail. Few things that I would like to comment on. 1. Recently with the work on the Lakewood Dr, traffic often backs up on the freeway exit lane (NB101). This is very dangerous, and they have no work ahead signs on the freeway (only near the exit). So an electronic sign on the freeway, for the central exit warning when there is stopped traffic. This could be automatic sensing stopped traffic on off ramp. This also occurs when there are downtown events on the Green. 2. Another issue is a north bound 101 freeway on ramp at Arata. Reducing traffic at the Central exit/Old redwood Hwy should be a priority. This will help traffic, bicyclists and pedestrians. Less traffic is better. Adding a on ramp to Healdsburg would help. Everyone on the east side of 101 would use it to go north. I live on Cockspur and would use it all the time. Thanks for the opportunity to comment.	Concerns are noted. The construction on Lakewood Dr is related to PG&E construction (short-term). However, there is a Dynamic Message Sign over the US 101 northbound lanes before this exit that is a possible solution for messages to drivers if Caltrans agrees. Caltrans controls the message sign and what messages are relayed to the public. In addition, the Arata NB Ramp project is identified as a future project in the Town's Capital Improvement Project.
10	Please prioritize road crossings within walking distance to schools, so that children may safely walk to school. In particular, please add a flashing crosswalk light or other equivalent safety measures on Old Redwood Highway at Thrushwing. My daughter and I recently experienced two unsafe incidents there while walking to Mattie Washburn. In the first, someone grew impatient waiting for cars in front of them to turn left and drove into the bike lane where my daughter and I were waiting to cross. In the second, we had stepped in front of a stopped car on the near side of the street, and paused in order to make sure the car coming the other direction saw us, but they did not see us at all and did not even slow down. Both of these incidences could have been avoided with a flashing crosswalk light. I worry that someone will be injured on the way to Mattie or another Windsor school. Also, it upsets me that the town does not do more to promote safety and thereby encourage more families to walk to school, an activity that benefits everyone. Thank you	Concerns are noted. This location is currently being discussed and a solution is in progress. There are current plans and programs in the Town related to pedestrian and bicycle safety including Safe Routes to School and the Old Redwood Highway Corridor Enhancement Plan.
11	I read the full report, nice work. I was surprised that there were only 10 respondents to the survey, that seems mighty low. My comment or question is about how to accelerate the change towards roadways that accommodate bicyclists and pedestrians. For example, the east side of Starr Road just north of Stellar Lane and south of Colleen is treacherous for bicyclists. My understanding is that this section of roadway will only be improved when the owners of the properties development them. From appearances this could take a decade or more. Is there a way that the town could take on this responsibility to accelerate progress? Thank you for the work!	Thanks for taking the time to leave comments. The project survey was advertised on the Town's website and social media and at Old Redwood Highway Corridor Enhancement Plan meetings. Public input from the website was gathered from February to May 2021. Future improvements on Starr Road are dependent on future development due to the limited roadway width.

Appendix B

Planned Improvement Projects

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.


Legend
Type
Capital Improvement Project
Development
Traffic Fee Update 2020
Other
Town of Windsor
TOWN OF WINDSOR
Redwood Hwy
Los Amigos Rd
Hillview Rd
Estate Ln
Liberty Oak Ln
Brooks Rd
Pelham Dr
Mt Weske Dr
Windsor
East Windsor
Shiloh
Foothill Regional Park
Hiram Lewis Park
Michael Hall Park
Keiser Park
Windsor Town Green
Lakewood Meadows Park
Old Vineyard Park
Robbins Park
Pleasant Oak Park
Vintage Oaks Park
Wilson Ranch Soccer Park
Windsor Golf Course
Shiloh Cemetery
Esposti Park
Home Depot
Windsor River Rd
Old Redwood Hwy
Starr Rd
Windsor Rd
Pleasant Ave
Foothill Dr
Mallory Ave
Pollard Way
Johnson St
Old Oak Rd
Plant Rd
Bell Rd
Shiloh Rd
Sanders Rd
Kittyhawk Blvd
Aviation Blvd
Skylane Blvd
Day Rd
Silk Rd
Jones Rd
Amber Ridge Way
Gumview Rd
Dawn Way
Starr View Dr
Buckingham Dr
Commons Ct
Bouquet Cir
Burgundy Way
Merlot Way
Woody Creek Ln
Kroer Rd
Oak Way
Cooper Way
Trione Cir
Seghesio Way
Rochioli Dr
Pedroncelli Dr
Vintage Greens Dr
Denbeste Ct
Mitchell Ln
Wilson Ln
Billington Ln
Dartmouth Way
Cornell St
Shannon Way
Usher Dr
Bluebird Dr
Cock Robin Ave
Tamara Way
Savannah Way
Deanna Pl
Pulteney Pl
Milsom Pl
Bond Pl
Elsbree
Jessica Dr
Jane Dr
Claudius
Cordelia Ln
Foxwood Dr
Glen Miller Dr
Lakewood Dr
Hembree Ln
Victoria Ln
Vancouver Ln
Piccadilly Cir
Holly Leaf Dr
Johnson Ln
Eriksen Ln
Franklin St
Alden Ln
Planetree Dr
Leafhaven Ln
Shagbark St
Sugar Maple Ln
Ginkgo Pl
Pistachio Pl
Oakfield Ln
Willow St
Maple Dr
Cliffrose St
Dove Ln
Hastings Pl
Concourse Blvd
Standard Ave
Pruitt Ave
Caletti Ave
MacFarlane Way
Tamara Way
Ordinance Rd
Golf Course Dr
Eagle Dr
Birdie Dr
10th Hole Dr
8th Hole Dr
Fairtree St
Lazy Creek Dr
Walten Way
Benwyn Way
Colleen Dr
Robbie Way
Erika Dr
Orion Dr
Polaris Dr
Gemini Dr
Binggeli Dr
Stellar Ln
Glen Dr
Wall St
Duncan Dr
Ginny Dr
Patrick Ln
Venhor Ave
Pyne Rd
Herb Rd
Kidd Rd
Grove St
Maguire St
Wilcox Rd
Rio Ruso Dr
Blasi Dr
Starr Cir
Starr View Dr
Christopher Way
Natalie Dr
Kristine Way
Jennifer Ln
Jessie Ct
Rachael Ln
Miramar St
Elsbree Ln
Foothill Dr
Espana Way
Cayetano Dr
Vinecrest Cir
Vinecrest Rd
La Quinta Dr
Lia Way
Valencia Dr
Troon Ct
Brooks Rd S
Bamboo Creek
Pellandini Ln
Diamantini Ln
Shamrock Cir
Wade Dr
Shira St
Brianne Cir
Merher Dr
Wright Way
Barrio Way
Amie Dr
Victory Ln
MacFarlane Way
Pruitt Ave
Standard Ave
Caletti Ave
Redwood Hwy
Concourse Blvd
Aviation Blvd
Skylane Blvd
Day Rd
Windsor Rd
Silk Rd
Sanders Rd
Shiloh Rd
Kittyhawk Blvd

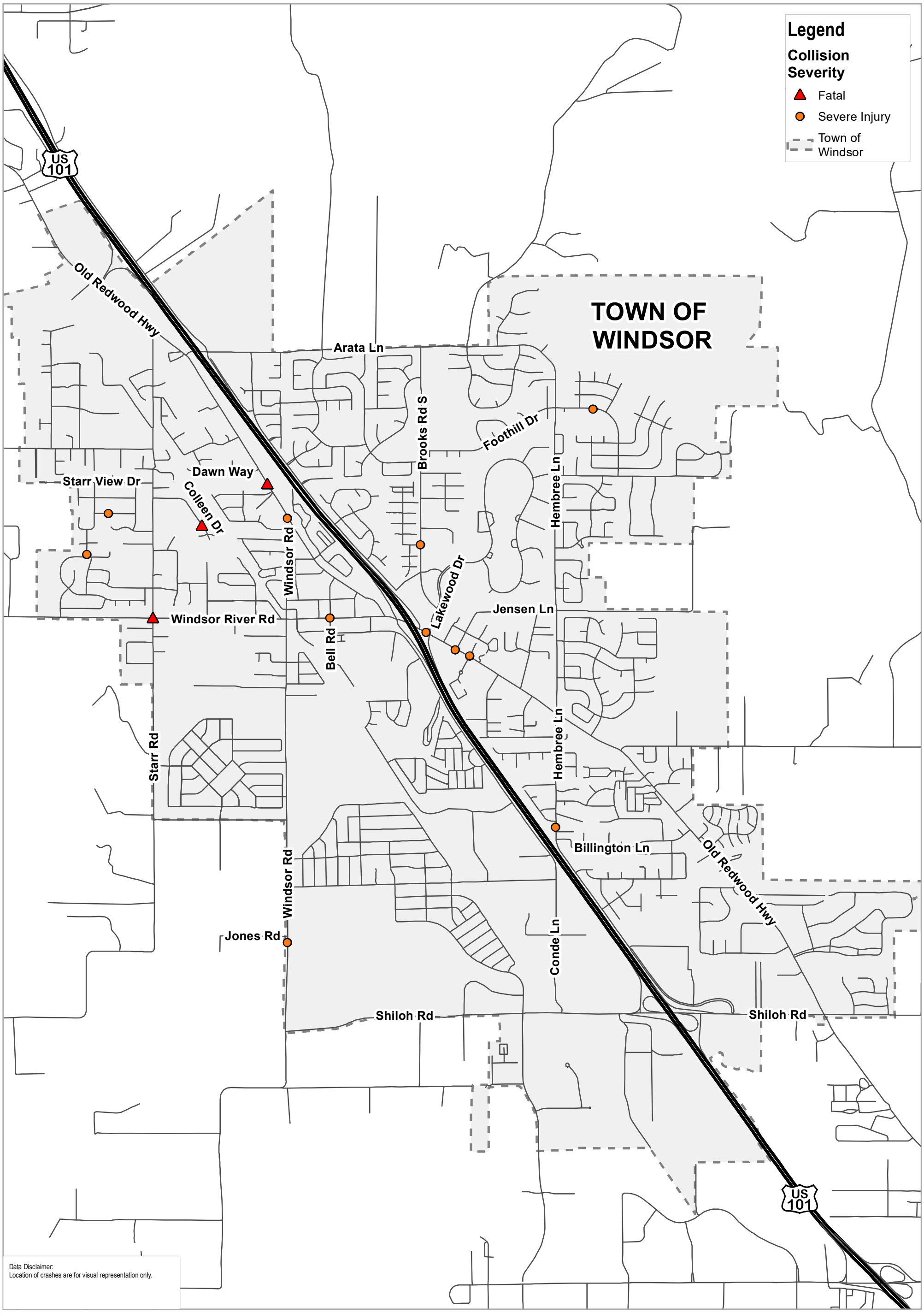
Prj ID	Project Name	Location	Improvements
1	Kashia Windsor Affordable Housing Development	10221 Old Redwood Hwy	
2	Redwood Views Affordable Apartments	8490/8500 Old Redwood Hwy	
3	Redwood Glen Apartments	8550/8560 Old Redwood Hwy	
4	Shell Gas Station, Carwash, & Convenience Store	9033 Old Redwood Hwy	New ADA path of travel to public right-of-way
5	Artesian of Windsor	6675 Old Redwood Hwy	
6	Redwood Market	9120/9200 Old Redwood Hwy	Land swap to accommodate future pedestrian improvements
7	Heritage Park Apartments	8685 Old Redwood Hwy	
8	6500 Old Redwood Drive	6500 Old Redwood Hwy	Construction of new street to provide access to parcels
9	The Oaks	6122 Old Redwood Hwy	
10	Richardson Apartments	Old Redwood Hwy at Richardson Street (north of McDonalds)	Signage, striping, and lighting improvements
11	Windsor Live + Work	6100 Old Redwood Hwy	
12	Vintage Oaks on the Town Green	9290 Old Redwood Hwy	
13	BoDean Co. Asphalt Processing Plant	470, 510, 590, 600, 610 Caletti Ave	
14	Windsor Town Green Hotel/""The McClelland""	Richardson St	
15	Carol Shelton Winery Mixed Use Project	900 Mitchell Lane	
16	The Estates at Ross Ranch	1295 Jensen Lane	Extension of Prince George Way and Jensen Ln, addition of Portland Way
17	Creekwalk	6405 Old Redwood Hwy	
18	Portello	Northwest corner Hembree Lane/Victoria Lane (north of Walmart)	
19	Windsor Veterans Village	711 and 9500 Oak Park Street	
20	The Overlook	Southeast corner of Windsor Rd/Mitchell Ln	
21	280 Arata Lane Subdivision (aka Los Amigos)	280 Arata Lane	
22	330 Arata Lane Subdivision	330 Arata Lane	
23	Duncan Village	484 Wall St	
24	Mill Creek (formerly ""Windsor Mill"")	8703, 8711, 8713, 8716 and 8777 Bell Road	Completion of Bell Rd, addition of street bridge over Windsor Creek, Pedestrian bridge to Windsor Elementary
25	19th Hole	0 19th Hole Dr	
26	Farrow Construction Building	700 American Way	
27	Shiloh Road Mixed Use	1200 Shiloh Road/5823 Skylane Boulevard	
28	Jensen Lane Annexation and Subdivision	657 and 1296 Jensen Lane,	
29	Sky Mixed-Use / Apartments	60 Shiloh Road	
30	Sherlock Homes	260 Arata Lane	Frontage improvements along Arata Ln project frontage
31	Clearwater at Windsor	376 Shiloh Road	
32	North of Arata Subdivision	325 Arata Lane	
33	Old Redwood Highway Corridor Enhancement Plan	Old Redwood Hwy	
34	Arata Lane Interchange Phase 2B for Los Amigos Realignment	Arata Lane Interchange	Los Amigos Road Realignment
35	Arata Lane Interchange Phase 2D for Los Amigos Realignment	Arata Lane Interchange	Arata Lane Widening / 101 Overcrossing
36	US 101 Interchange Improvements at Shiloh Road	Shiloh Road Interchange	Provide 2 lanes in ea direction for Shiloh Overpass, reconfigure ramps
37	Downtown Pedestrian & Bicycle Crossing of US 101 Phase 1	Old Redwood Highway Underpass	Downtown Bike and Pedestrian Crossing of US 101, Phase 1
38	Downtown Pedestrian & Bicycle Crossing of US 101 Phase 2	Bicycle and Pedestrian Overcrossing	Downtown Bike and Pedestrian Crossing of US 101, Phase 2
39	Jaguar Way Extension from Windsor Road to Starr Way	Jaguar Way from Windsor Road to Starr Road	Allow for through access to Windsor HS for bikes and peds
40	Traffic Impact Fee	Old Redwood Highway from Hembree Lane to Shiloh Road	Roadway widening, curb, gutter, sidewalk, storm drainage, traffic striping, and traffic signal modifications
41	Traffic Impact Fee	Old Redwood Highway from Town Limits to Windsor Road	Roadway widening, curb, gutter, sidewalk, storm drainage, traffic striping, and signal modifications
42	Traffic Impact Fee	Conde Lane from Oakfield Lane to Mitchell Lane	Curb, gutter, sidewalk, storm drainage, and bike lane striping, marking, and signage
43	Traffic Impact Fee	Shiloh Road from Hembree Lane to Old Redwood Highway	Roadway widening, curb, gutter, sidewalk, storm drainage, traffic striping
44	Traffic Impact Fee	Starr Road at Railroad Crossing	Railroad crossing improvements including rail, ballast, cross ties, concrete grade panels, and asphalt concrete access walkway
45	Traffic Impact Fee	Arata Road from NB Off-Ramp to Los Amigos Road	Road widening, curb, gutter, sidewalk, storm drainage, traffic striping
46	Traffic Impact Fee	Old Redwood Highway Bridge Crossing at Sotoyome Creek	Replacement of bridge, accommodations for road widening project, safety rails and guardrail (if necessary)

Prj ID	Project Name	Location	Improvements
47	Old Redwood Highway Bridges Replacement	Old Redwood Highway Bridge Crossing at Pool Creek	Replacement of bridge, accommodations for road widening project, safety rails and guardrail (if necessary)
48	Old Redwood Highway Bridges Replacement	Old Redwood Highway Bridge Crossing at Faught Creek	Replacement of bridge, accommodations for road widening project, safety rails and guardrail (if necessary)
49	Traffic Impact Fee	Windsor Road / Windsor River Road, Westbound Left Turn Extension on Windsor River Road	Extending WBL turn lane to 660', limits to Bill Beedie Way turns, restriping, triangle curb island at Bill Beedie Way
50	Traffic Impact Fee	Old Redwood Highway at Starr Road	Adding turning lanes, roadway widening, curb, gutter, sidewalk, storm drainage, traffic striping, traffic signal modifications
51	Traffic Impact Fee	Windsor River Road at Bell Road/Market Street	Adding EBL turn lane with striping and traffic signal modifications
52	Shiloh Road/Old Redwood Highway Intersection	Old Redwood Highway at Shiloh Road	Adding turning lanes, roadway widening, curb, gutter, sidewalk, storm drainage, traffic striping, and traffic signal modifications
53	Traffic Impact Fee	Shiloh Road at Caletti Avenue	Rebuild EB approach to 101, reconstructing SB on-ramp entry, raised median on Shiloh, relocate traffic signal and adding new traffic signal
54	Traffic Impact Fee	Lakewood Drive at Old Redwood Highway	Widening N side of ORH for NBR turn lane widening W side of Lakewood for add SBR, traffic signal at on-ramp intersection
55	Traffic Impact Fee	Townwide	ADA compliant appx 430 curb ramps throughout the town
56	Traffic Impact Fee	Townwide	Class I Bicycle/Pedestrian Facilities
57	Traffic Impact Fee	Various Locations	Intersection improvements as the need arises
58	Traffic Impact Fee	Various Locations	Improve transit access and safety issues as the need arises
59	Faught Creek Trail Improvements from Victory Lane to Old Redwood Highway	Faught Creek Trail from Victory Lane to Old Redwood Highway	Formalize an existing compacted 8 foot trail extending from Old Redwood Highway to Gabrielle Drive on north side of creek. Trail would be located at top of bank following Gabrielle Drive to Amie Drive. Crossing improvements to be installed on Amie Drive to connect trail on Gabrielle to Victory Lane. Formalize a footpath from Amie Drive to the improved trail to be installed by the Portello (Victoria Oaks) Subdivision.
60	Starr Road Sidewalk Improvements South of Starr View Drive	Starr Road between Starr View Drive and Colleen Drive	The project consists of the construction of approximately 150 linear feet of sidewalk and removal of architectural barriers on the east side of Starr Road opposite Colleen Court. This project will provide an accessible route of travel for people with disabilities, and parents and children walking to and from the Cali Calmecac School as well as a safer environment for residents and pedestrians walking in the Starr Road neighborhood.
61	Crosswalk Enhancement at Brooks Road South at Natalie Drive	Brooks Road South at Natalie Drive	Brooks Road South at Natalie Drive - Improve existing crosswalk with a pedestrian-activated warning system such as an RRFB and a pedestrian refuge island for pedestrian safety and for placement of a flashing beacon. Construction also includes a curb extension be constructed on the west side of the street to reduce the crossing distance and increase pedestrian visibility and a curb ramp should be constructed on the east side of the crossing to provide an accessible crossing.
62	Starr Road Sidewalk Improvements from Vivian Court to Windsor River Road	Starr Road from Windsor River Road to Vivian Court	The project consists of the removal of existing architectural barriers (existing non-ADA compliant asphaltic driveway surfaces and other minor barriers) and will close an existing sidewalk gap with the construction of approximately 325 lineal feet of sidewalk on the east side of Starr Road between Windsor River Road and Vivian Court The project will provide an ADA complaint accessible route of travel for people with disabilities, as well as parents and children walking from and to Cali Calmecac Language Academy and Keiser Community Park. Improvements will include a pedestrian ramp, curb, gutter and sidewalk.
63	Crosswalk Enhancements at Brooks Road South and US 101 Northbound On-ramp	Brooks Road South, south of Jessica Drive and Los Amigos Road, north of Old Redwood Highway	Brooks Road South near Hiram Lewis Park. The proposed crosswalk installation includes a new high-visibility school crosswalk with yield markings, pedestrian activated lighted beacon, pedestrian refuge island, ADA ramps and a street light. US 101 northbound on-ramp. This location is in the Caltrans right-of-way and a previous project installed a raised crosswalk to increase pedestrian visibility. In March 2017, the Town requested, and Caltrans agreed that pedestrian activated light beacon is warranted at the location of the raised crosswalk. The proposed enhanced crosswalk installation includes two pedestrian activated light beacons.
64	Old Redwood Highway from Starr Road to Arata Lane Pedestrian Improvements	Old Redwood Highway between Starr Road and Arata Lane	This intersection of Starr Road-ORH will be analyzed for a possible roundabout. The project consists of improvements at the Starr Road/ Old Redwood Highway intersection including; traffic signal improvements or roundabout, curb & gutter along the west side of the intersection, crosswalks across the north leg of Old Redwood Highway (ORH) and the west leg of Starr Road, an all-weather surface pathway connection from the Arata Lane crosswalk to the existing sidewalk on the west side of ORH, and related drainage improvements. Construction costs are to be determined and construction is expected in FY 23/24.

Appendix C

Collision Data

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.



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

N

GHD

TOWN OF WINDSOR
LOCAL ROAD SAFETY PLAN

HIGH SEVERITY COLLISIONS ON TOWN OF WINDSOR ROADWAYS (2015-2019)

Project No. **11220961**
Revision No. **-**
Date **04/27/2021**

FIGURE X

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Print date: 27 Apr 2021 - 09:44

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

Collisions at Selected Intersections

Intersection ID	Primary Road	Secondary Road	Severity					Type								Pedestrian	Bicycle	Year					EPDO	Fatal + Injury	Total
			Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturned	Vehicle/ Pedestrian	Other/Not Listed			2015	2016	2017	2018	2019			
1	OLD REDWOOD HWY	US 101 SB RAMPS					1				1									1			1	0	1
2	OLD REDWOOD HWY	REDWOOD CT					1		1											1			1	0	1
3	OLD REDWOOD HWY	STARR RD			2		7	1		3	1	3			1				5	2		2	29	2	9
4	OLD REDWOOD HWY	ARATA LN					2			1					1					1		1	2	0	2
5	OLD REDWOOD HWY	MILLER LN				2			1		1							1		1			12	2	2
6	OLD REDWOOD HWY	RIO RUSO DR				2		1		1												2	12	2	2
7	OLD REDWOOD HWY	DAWN WAY					3		1	2										1		2	3	0	3
8	OLD REDWOOD HWY	WINDSOR RD		1	2	1	5	1		1	1	4	1		1		1		1	3	5		63	4	9
9	OLD REDWOOD HWY	BARK ST					1					1						1					1	0	1
10	OLD REDWOOD HWY	MARKET ST				1	2	1		1		1							1		2		8	1	3
11	OLD REDWOOD HWY	RICHARDSON ST			1		2			1		1		1		1				2		1	13	1	3
12	OLD REDWOOD HWY	WINDSOR RIVER RD				2	17		5	9	4	1					2	2	3	7	3	4	29	2	19
13	OLD REDWOOD HWY	US 101			2	4	12		2	7	6	2		1		1		1	4	2	5	6	58	6	18
14	OLD REDWOOD HWY	LAKEWOOD DR			4	7	19	2	10	10	2	3		3		3		5	9	7	4	5	105	11	30
15	OLD REDWOOD HWY	3RD ST		1		1	5	1	1		2			2	1	2		1	1	4	1		41	2	7
16	OLD REDWOOD HWY	COURTYARDS E		1	1	1	1		1	1	2						1	1		1	1	1	48	3	4
17	OLD REDWOOD HWY	BLUEBIRD DR			1		1		1		1							1		1			12	1	2
18	OLD REDWOOD HWY	AIDEN LN			1	1	3		1	2		1		1		1		1		1	1	2	20	2	5
19	OLD REDWOOD HWY	WINDSOR PALMS DR				1	2		3									1			2		8	1	3
20	OLD REDWOOD DR	HEMBREE LN			2	2	7		3	3	3				2			4	1	1	3	2	41	4	11
21	OLD REDWOOD HWY	SHADETREE DR				1	3		2		1	1						1	1	1	1		9	1	4
22	OLD REDWOOD HWY	VIKING CT					1		1												1		1	0	1
23	OLD REDWOOD HWY	ANISH WAY				1				1										1			6	1	1
24	OLD REDWOOD HWY	BILLINGTON LN			2	2	3	1	1	3	1	1					1	1	3	1		2	37	4	7
25	OLD REDWOOD HWY	DEANNA PL				2				1	1									1	1		12	2	2
26	OLD REDWOOD HWY	ANNA DR			1							1							1				11	1	1
27	OLD REDWOOD HWY	TAMARA WAY					1	1												1			1	0	1
28	OLD REDWOOD HWY	MERNER DR					1					1						1					1	0	1
29	OLD REDWOOD HWY	KENDALL DR			1	1	3		1	2	1	1					1		1		3	1	20	2	5
30	OLD REDWOOD HWY	SHILOH RD				3	6		2	3	1	3						3	2	1	2	1	24	3	9
31	SHILOH RD	US 101					8		2	2	4							4	1	1	1	1	8	0	8
32	HERB RD	MILDRED CT					1		1										1				1	0	1
33	GUMVIEW RD	BERRY LN					1			1								1					1	0	1
34	STARR RD	FULTON PL			1						1						1		1				11	1	1
35	STARR RD	GUMVIEW RD			2					1		1				1			2				22	2	2
36	STARR RD	STARBUST CT					1	1														1	1	0	1
37	STARR RD	STARR VIEW DR			1		1				2							1			1		12	1	2
38	STARR RD	ROBBIE WAY				2		1			1									1		1	12	2	2
39	STARR RD	SPRINGFIELD CT					1					1						1					1	0	1
40	STARR RD	STELLAR LN					1			1								1					1	0	1
41	STARR RD	BUCKINGHAM DR					3	1		1		1						1		2			3	0	3
42	STARR RD	WINDSOR RIVER RD	1				6			2	2	1		1	1	1		1	1	2	2	1	550	1	7
43	STARR VIEW DR	ORION DR					1		1										1				1	0	1
44	STARR VIEW DR	BINGGELI DR					1				1									1			1	0	1
45	ORION DR	GEMINI DR					1		1											1			1	0	1
46	BINGGELI DR	GEMINI DR					1					1										1	1	0	1
47	BINGGELI DR	ROBBIE WAY					1			1												1	1	0	1
48	WINDSOR RIVER RD	KENSINGTON CT				1	1	1	1											2			7	1	2
49	WINDSOR RIVER RD	OAK PARK ST			1		4		2	1		1		1		1		2		2	1		15	1	5
50	WINDSOR RIVER RD	SPENCER ST				1					1							1					6	1	1
51	WINDSOR RIVER RD	WINDSOR AVE					4	1		1	1	1							3			1	4	0	4
52	WINDSOR RIVER RD	WINDSOR RD			1	3	15	2	1	7	4	5						2	3	8	3	3	44	4	19
53	WINDSOR RIVER RD	LARSEN WAY			1	1	6		1	1	4				2		1	2	2	2	2		23	2	8
54	WINDSOR RIVER RD	HONSA AVE			1		2		1	1	1							2	1				13	1	3
55	WINDSOR RIVER RD	MARKET ST		1		3	3	1		2	3			1		1		2	3	1	1		51	4	7
56	WINDSOR RIVER RD	RICHARDSON ST			2					1	1						2			2			22	2	2
57	BUCKINGHAM DR	SHEFFIELD ST					2	1	1										1		1		2	0	2
58	BUCKINGHAM DR	STELLAR LN					1			1											1		1	0	1
59	OAK PARK ST	DAYBROOK DR					1	1												1			1	0	1
60	OAK PARK ST	WILD OAK DR			1		1	1	1								1	1			1		12	1	2
61	WINDSOR RD	WALTEN WAY					1					1							1				1	0	1
62	WINDSOR RD	COMMONS CT					1		1													1	1	0	1
63	WINDSOR RD	JOE RODOTA DR					1				1							1					1	0	1
64	WINDSOR RD	WALL ST					1			1											1		1	0	1
65	WINDSOR RD	DUNCAN DR					2			1	1										1	1	2	0	2
66	WINDSOR RD	GINNY DR					1		1										1				1	0	1
67	WINDSOR RD	JAGUAR WAY					2				1			1		1					2		2	0	2
68	WINDSOR RD	S WHS DWY			1									1		1				1			11	1	1
69	WINDSOR RD	PLANT RD					1		1										1				1	0	1
70	WINDSOR RD	REIMAN LN			1	1	1			2	1								1	1	1		18	2	3
71	WINDSOR RD	VINTAGE GREENS DR			1									1		1			1				11	1	1
72	WINDSOR RD	MITCHELL LN				1	2				1	2						3					8	1	3

Intersection ID	Primary Road	Secondary Road	Severity					Type								Pedestrian	Bicycle	Year							
			Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturned	Vehicle/ Pedestrian	Other/Not Listed			2015	2016	2017	2018	2019	EPDO	Fatal + Injury	Total
73	WINDSOR RD	SHILOH RD				1	5	2	1	1		2						1	3	1	1		11	1	6
74	STARR RD	VENTOR AVE					1				1								1				1	0	1
75	BURGUNDY WAY	DECANTER CIR					1					1									1		1	0	1
76	CONDE LN	JOHNSON ST				1					1									1			6	1	1
77	CONDE LN	OAKFIELD LN			1					1											1		11	1	1
78	CONDE LN	DRY CREEK DR					2			1					1					1	1		2	0	2
79	CONDE LN	BELL RD					1				1										1		1	0	1
80	CONDE LN	MITCHELL LN					3			1		2						1			2		3	0	3
81	CONDE LN	AMERICAN WAY				1	1				1	1								1	1		7	1	2
82	CONDE LN	SHILOH RD				2	4		1	4		1						1	2	1		2	16	2	6
83	BELL RD	GRAYSON WAY					1					1						1					1	0	1
84	FOPPIANO WAY	ROCHIOLI DR					1	1												1			1	0	1
85	VINTAGE GREENS DR	CARANO WAY					1					1									1		1	0	1
86	GOLF COURSE DR	9TH HOLE DR					1	1													1		1	0	1
87	EAGLE DR	18TH HOLE DR					2					2									1	1	2	0	2
88	CLIFFROSE ST	CHINABERRY WAY				1						1						1					6	1	1
89	SHILOH RD	DAY RD				1	2			3									2			1	8	1	3
90	SHILOH RD	19TH HOLE DR					4					4						1	1	1		1	4	0	4
91	SHILOH RD	SKYLANE BLVD				2	2	1	1	1		1						1	2	1			14	2	4
92	SHILOH RD	CALETTI AVE			2	1	2	2	1	1	1								2	1	1	1	30	3	5
93	SHILOH RD	HEMBREE LN			1	2	5		1	7								2	2	3		1	28	3	8
94	SHILOH RD	GRIDLEY DR			1						1								1				11	1	1
95	SKYLANE BLVD	KITTYHAWK BLVD					2	1	1									1	1				2	0	2
96	ARATA LN	LOS AMIGOS RD/NB OFF RAMP			1	1				1	1							1	1				17	2	2
97	ARATA LN	HILLVIEW RD				1					1						1		1				6	1	1
98	ARATA LN	BIGGS WAY			1	1					1	1						1	1				17	2	2
99	ARATA LN	BROOKS RD S			1	1			1			1					1	2					17	2	2
100	ARATA LN	BROOKS RD					1				1											1	1	0	1
101	ARATA LN	DAVIDA CT					1					1						1					1	0	1
102	HEMBREE LN	FOOTHILL DR					1					1							1				1	0	1
103	HEMBREE LN	PINECREST RD					2					1			1			2					2	0	2
104	HEMBREE LN	BLUEBIRD DR			1	1	1	2			1								1	1		1	18	2	3
105	HEMBREE LN	YERBA BUENA WAY					1	1											1				1	0	1
106	HEMBREE LN	DOVE LN					1			1												1	1	0	1
107	HEMBREE LN	BILLINGTON LN				1	1		1	1								1				1	7	1	2
108	HEMBREE LN	NORTHAMPTON DR				2	1		1	2								1		1		1	13	2	3
109	HEMBREE LN	VICTORY LN				2	1			1	1	1								1	2		13	2	3
110	HEMBREE LN	MACFARLANE WAY					7			3		2		1	1	1		4	1	2			7	0	7
111	HEMBREE LN	LEAFHAVEN LN			1						1							1					11	1	1
112	JANE DR	CAMELOT DR					1			1								1					1	0	1
113	JANE DR	CLAUDIUS WAY					1					1								1			1	0	1
114	JANE DR	NATALIE DR					1					1									1		1	0	1
115	HAMPTON SUITES DWY	LOS AMIGOS RD					1		1									1					1	0	1
116	BROOKS RD S	JESSICA DR			1							1									1		11	1	1
117	BROOKS RD S	FOOTHILL DR					2				1	1						2					2	0	2
118	BROOKS RD S	GLEN MILLER DR		1			2	1		1	1							1	1	1			32	1	3
119	BROOKS RD S	LOS AMIGOS RD				3	7		1	1	7	1					2	2	2	2	3	1	25	3	10
120	BROOKS RD S	LAKEWOOD DR			1	3	3	1	1	1	2	1			1			1	3	3			32	4	7
121	FOOTHILL DR	VENTANA DR				1						1									1		6	1	1
122	BROOKS RD S	ESPARTO ST			1					1												1	11	1	1
123	LAKEWOOD DR	LOS AMIGOS RD			1		4	1			3	1						3		2			15	1	5
124	3RD ST	FRANKLIN ST				1								1		1		1					6	1	1
125	3RD ST	JENSEN LN			1							1									1		11	1	1
126	AIDEN LN	GORDON CT					2			1		1							1	1			2	0	2
127	FOOTHILL DR	ESPANA WAY					1					1						1					1	0	1
128	VINECREST RD	ST JAMES PL					1		1												1		1	0	1
129	PEPPERTREE DR	WISTERIA WAY					1				1							1					1	0	1
130	OLD REDWOOD HWY	4TH ST					2		1	1									1	1			2	0	2
131	WINDSOR PALMS DR	JAY BIRD WAY					1					1									1		1	0	1
132	WINDSOR PALMS DR	COCK ROBIN AVE					2				1				1				1		1		2	0	2
133	DOVE LN	HARVEST CT					1			1										1			1	0	1
134	GINKGO PL	ELDERBERRY ST					1		1									1					1	0	1
135	USHER DR	MATTHEW CIR				1		1									1	1					6	1	1
136	BILLINGTON LN	YALE ST					1								1			1					1	0	1
137	WILSON LN	ANTHONY CT					2		1		1								1		1		2	0	2
138	WILSON LN	MATTHEW CT					1		1										1				1	0	1
139	WILSON LN	NORTHAMPTON DR					1					1							1				1	0	1
140	NORTHAMPTON DR	HASTINGS PL					1			1											1		1	0	1
141	NORTHAMPTON DR	ETON LN					1					1							1				1	0	1
142	DEANNA PL	GABRIELLE DR					1				1									1			1	0	1
143	PLEASANT AVE	DIAMANTINI LN				1			1							1			1				6	1	1
144	WINTER BORN WAY	SUMMER WHEAT DR					1		1													1	1	0	1
145	MERNER DR	LOCKWOOD DR					1			1								1					1	0	1

Intersection ID	Primary Road	Secondary Road	Severity					Type								Pedestrian	Bicycle	Year					EPDO	Fatal + Injury	Total
			Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturned	Vehicle/ Pedestrian	Other/Not Listed			2015	2016	2017	2018	2019			
146	MCCLELLAND DR	HONSA AVE					**1**					**1**									**1**		**1**	**0**	**1**
147	MCCLELLAND DR	RICHARDSON ST					**2**		**1**	**1**											**1**	**1**	**2**	**0**	**2**
148	PARADE GARDEN WAY	MILSOM PL					**1**		**1**										**1**				**1**	**0**	**1**
149	GOLF COURSE DR	17TH HOLE DR					**1**					**1**								**1**			**1**	**0**	**1**
150	RIO RUSO DR	CHIQUITA LN					**1**								**1**			**1**					**1**	**0**	**1**
152	TRIONE CIR	FOPPIANO WAY					**1**		**1**									**1**					**1**	**0**	**1**
153	LOS AMIGOS RD	ARATA LN					**1**								**1**				**1**				**1**	**0**	**1**
156	MARKET ST	MCCLELLAND DR					**1**		**1**											**1**			**1**	**0**	**1**
158	DECANTER CIR	CORK ST					**1**				**1**										**1**		**1**	**0**	**1**
159	MCCLELLAND DR	DUVANDER LN					**1**			**1**											**1**		**1**	**0**	**1**
160	HEMBREE LN	JENSEN LN					**1**					**1**									**1**		**1**	**0**	**1**
161	SAVANNAH WAY	WRIGHT WAY					**1**								**1**						**1**		**1**	**0**	**1**
162	MARCELLA LN	BODEN PL					**1**								**1**							**1**	**1**	**0**	**1**
163	BROOKS RD S	NATALIE DR					**2**		**1**		**1**						**1**					**2**	**2**	**0**	**2**
164	ESMOND CIR	ESMOND CT					**1**		**1**													**1**	**1**	**0**	**1**
		Total	1	5	49	80	309	35	78	121	92	82	1	16	19	18	17	95	98	101	86	64	-	-	444

Collisions at Selected Segments

Segment ID	Road	From	To	Severity					Type								Pedestrian	Bicycle	Year							
				Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturned	Vehicle/ Pedestrian	Other/Not Listed			2015	2016	2017	2018	2019	EPDO	Fatal + Injury	Total
20	REDWOOD CT	END	OLD REDWOOD HWY			1						1											1	11	1	1
21	EVERGREEN AVE	OLD REDWOOD HWY	OLD REDWOOD HWY					2				1	1										2	2	0	2
22	STARR RD	OLD REDWOOD HWY	WINDSOR RIVER RD			1	1	9		3	4		3			1			1	3	2	2	3	26	2	11
23	MARTIN RD	END	GUMVIEW RD					1		1											1			1	0	1
24	GUMVIEW RD	POSEY RD	STARR RD			1		2		1			2							1			2	13	1	3
25	WILCOX RD	1020' N OF STARR RD	STARR RD					1			1											1		1	0	1
26	RIO RUSO DR	ENTRADA LN	OLD REDWOOD HWY					1					1							1				1	0	1
27	COLLEEN DR	STARR RD	JONI CT	1				1		1			1							1		1		545	1	2
28	BUCKINGHAM DR	SOUTHAMPTON DR	STELLAR LN					1		1										1				1	0	1
29	GEMINI DR	ORION DR	BINGELLI DR		1										1		1			1				30	1	1
30	ORION DR	STARR VIEW DR	END					3		1			1			1				2		1		3	0	3
31	ERIKA DR	ORION DR	WELLINGTON CIR		1							1									1			30	1	1
32	SHEFFIELD ST	BUCKINGHAM DR	END					1	1										1					1	0	1
33	COMMONS CT	END	WINDSOR RD					2		1	1								1			1		2	0	2
34	WILD OAK DR	OAK PARK ST	WINDSOR RIVER RD					3	1	1			1						1		1		1	3	0	3
35	BERWYN WAY	COMMONS CT	WINDSOR RD					1		1									1					1	0	1
36	EMILY ROSE CIR	WINDSOR RD	MARSHALL WAY					1			1									1				1	0	1
37	MCCLELLAND DR	WINDSOR RD	RICHARDSON ST					2					1			1			1				1	2	0	2
38	RICHARDSON ST	OLD REDWOOD HWY	WINDSOR RIVER RD					1				1										1		1	0	1
39	MARKET ST	OLD REDWOOD HWY	WINDSOR RIVER RD				1						1										1	6	1	1
40	WINDSOR RIVER RD	KENSINGTON LN	WINDSOR RD				1	6	1	1	2		3						1	1	1	1	3	12	1	7
41	WINDSOR RIVER RD	WINDSOR RD	OLD REDWOOD HWY			1	1	5		2	1	2		1	1		1		1	3		2	1	22	2	7
42	BELL RD	WINDSOR RIVER RD	325' S OF WINDSOR RIVER RD					2		1					1						1		1	2	0	2
43	JOHNSON ST	BELL RD	CONDE LN					1		1									1					1	0	1
44	WINDSOR RD	OLD REDWOOD HWY	DUNCAN DR					1		1										1				1	0	1
45	WINDSOR RD	DUNCAN DR	PLANT RD			1		5	1	1	1	2	1				1		1		3	1	1	16	1	6
46	WINDSOR RD	PLANT RD	SHILOH RD		1	1			1	1										2				41	2	2
47	BOUQUET CIR	MERLOT WAY	DECANTER CIR					2		2												2		2	0	2
48	DECANTER CIR	BURGUNDY WAY	PINOT NOIR WAY					3		2	1									1	2			3	0	3
49	WINEMAKER WAY	DECANTER CIR	WINDSOR RD					2	1	1										1	1			2	0	2
50	BELL RD	JOSHUA DR	CONDE LN				1	2		2						1				1	2			8	1	3
51	CAMERON DR	BELL RD	MITCHELL LN					2		2											1	1		2	0	2
52	TRIONE CIR	MITCHELL LN	10TH HOLE DR					1		1												1		1	0	1
53	SEGHESIO WAY	PADRONCELLI DR	TRIONE CIR			1		2		2						1			1		2			13	1	3
54	LUISA WAY	TRIONE CIR	MITCHELL LN					1	1														1	1	0	1
55	CARANO WAY	VINTAGE GREENS DR	MITCHELL LN					2					1		1				1		1			2	0	2
56	VINTAGE GREENS DR	WINDSOR RD	TRIONE CIR					3		3									2		1			3	0	3
57	MITCHELL LN	WINDSOR RD	10TH HOLE DR					1					1										1	1	0	1
58	MITCHELL LN	10TH HOLE DR	CONDE LN					2					1			1			1			1		2	0	2
59	DENBESTE CT	MITCHELL LN	CONDE LN					2			1					1			2					2	0	2
60	GOLF COURSE DR	8TH HOLE DR	19TH HOLE DR					1		1											1			1	0	1
61	15TH HOLE DR	GOLF COURSE DR	EAGLE DR			1					1									1				11	1	1
62	KITTYHAWK BLVD	SKYLANE BLVD	EARHART CT					1						1					1					1	0	1
63	STANDARD AVE	CALETTI AVE	END					1					1								1			1	0	1
64	SHILOH RD	WINDSOR RD	SKYLANE BLVD			1	1	8	1	2		2	5						3	4	1	1	1	25	2	10
65	SHILOH RD	SKYLANE BLVD	CALETTI AVE			1		3	1	1	1		1						1	1	1	1		14	1	4
66	SHILOH RD	CALETTI AVE	HEMBREE LN			1	3	5		1	6		2							3	4		2	34	4	9
67	SHILOH RD	HEMBREE LN	TOWN LIMITS			1		1								2		1			2			12	1	2
68	ARATA LN	OLD REDWOOD HWY	OLSON FARM RD			1		4		1	1		2			1			1	2	1	1		15	1	5
69	HEMBREE LN	OLSON FARM RD	NORTHAMPTON DR		1			7	1	2			5						1	2	1	4		37	1	8
70	HEMBREE LN	NORTHAMPTON DR	SHILOH RD			1	1	32		12	3	6	5		1	7	2		10	9	6	5	4	49	2	34
71	ALEXIS WAY	ASHLEY DR	CAMELOT DR					1					1						1					1	0	1
72	JANE DR	END	NATALIE DR					2		1	1								1	1				2	0	2
73	CORDELLIA LN	LOS AMIGOS RD	JANE DR				1	1				2										1	1	7	1	2
74	NATALIE DR	CHRISTOPHER WAY	BROOKS RD S					1		1											1			1	0	1
75	BROOKS RD S	JESSICA DR	LAKEWOOD DR			1		24		5	3	7	6			4		1	7	6	6	6		35	1	25
76	MILSOM PL	END	END					1					1									1		1	0	1
77	LAKEWOOD DR	OLD REDWOOD HWY	MEDICAL CENTER PLZ					7		2	1		4				1		1	2	1	2	1	7	0	7
78	LAKEWOOD DR	MEDICAL CENTER PLZ	LAKEWOOD DR					4	1			1	2						2	2				4	0	4
79	3RD ST	OLD REDWOOD HWY	JENSEN LN					1					1						1					1	0	1
80	ALDEN LN	JENSEN LN	OLD REDWOOD HWY					1	1												1			1	0	1
81	WINDSOR PALMS DR	OLD REDWOOD HWY	COCKROBIN AVE			1		1		1		1							1	1				12	1	2
82	COCKROBIN AVE	BLUEBIRD DR	HEMBREE LN				1		1										1					6	1	1
83	CONDE LN	OLD REDWOOD HWY	MITCHELL LN			2		4		2	1		2			1			1	2	2	1		26	2	6
84	CONDE LN	MITCHELL LN	SHILOH RD					1					1								1			1	0	1
85	MIRAMAR ST	END	END					1		1										1				1	0	1
86	FOOTHILL DR	HEMBREE LN	VINECREST RD		1			2		2					1					2		1		32	1	3
87	ST JAMES PL	VINECREST RD	PEPPERTREE DR					1					1							1				1	0	1
88	QUAKING ASPEN LN	PLANETREE DR	FLAMETREE CIR					1					1							1				1	0	1
89	QUINCE ST	SHADETREE DR	END					1		1												1		1	0	1
90	BROAD OAK WAY	HEMBREE LN	CREEKSIDE DR					1		1												1		1	0	1
91	BIGGS CT	HEMBREE LN	END					1		1											1			1	0	1
92	SHANNON WAY	HEMBREE LN	SHIRA ST					1		1										1				1	0	1
93	SHIRA ST	CORNELL ST	OLD REDWOOD HWY					1								1						1		1	0	1
94	CORNELL ST	SHIRA ST	BILLINGTON LN					1					1							1				1	0	1
95	YALE ST	BILLINGTON LN	WILSON LN					1			1								1					1	0	1
96	WILSON LN	ANTHONY CT	DARTMOUTH WAY					2		2							1	1		2				2	0	2
97	BILLINGTON LN	HEMBREE LN	OLD REDWOOD HWY					1		1												1		1	0	1
98	MACFARLANE WAY	VICTORY LN	HEMBREE LN					1								1							1	1	0	1
99	TAMARA WAY	AMIE DR	OLD REDWOOD HWY					1					1								1			1	0	1
100	SAVANNAH WAY	OLD REDWOOD HWY	END					1					1									1		1	0	1
101	CHRIS ST	GRIDLEY DR	MATHIDE DR					2		2											2			2	0	2
102	BLUEBIRD DR	END	HEMBREE LN					1	1											1				1	0	1
103	OLD REDWOOD HWY	US 101 SB RAMPS	ARATA LN			3	4	8	1	6	2		5		1			1	6	2	3	3	1	65	7	15
104	OLD REDWOOD HWY	ARATA LN	WINDSOR RD	1		1	1	4	1		2	2	1		1			1		3		1	3	565	3	7

Segment ID	Road	From	To	Severity					Type								Pedestrian	Bicycle	Year					EPDO	Fatal + Injury	Total
				Fatal	Injury (Severe)	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturned	Vehicle/ Pedestrian	Other/Not Listed			2015	2016	2017	2018	2019			
105	OLD REDWOOD HWY	WINDSOR RD	WINDSOR RIVER RD					11		3	4	1	1			2		1	1	1	3	5	1	11	0	11
106	OLD REDWOOD HWY	WINDSOR RIVER RD	US 101 SB RAMPS			1	2	4		1	2	2	1			1	1	2	1	1	2	1	27	3	7
107	OLD REDWOOD HWY	US 101 SB RAMPS	LAKEWOOD DR		1		2	4		2	2	2				1			2	2	2	1	46	3	7
108	OLD REDWOOD HWY	LAKEWOOD DR	ALDEN LN				2	13	1	6	4	1	1			2		3	4	3	4	1	25	2	15
109	OLD REDWOOD HWY	PLEASANT AVE	SHILOH RD			3	2	10	4		1	1	5		1	3	1		2	2	2	6	3	55	5	15
110	ADELE DR	BROOKS RD S	MEDICAL CENTER PLZ					1					1						1					1	0	1
111	HASTINGS PL	WILSON LN	END					1								1			1					1	0	1
112	STARR RD	WINDSOR RIVER RD	KLOER RD				1			1									1					6	1	1
118	SKYLANE BLVD	SHILOH RD	CITY BOUNDARY					1								1			1					1	0	1
119	MILLER LN	END	OLD REDWOOD HWY					1			1								1					1	0	1
120	PLEASANT AVE	OLD REDWOOD HWY	CITY BOUNDARY					2	1	1									1				1	2	0	2
121	JENSEN LN	HEMBREE LN	CITY BOUNDARY					1					1						1					1	0	1
122	PRUITT AVE	STANDARD AVE	END					1			1								1					1	0	1
123	STARR VIEW DR	END	STARR RD					1					1										1	1	0	1
124	LEAFHAVEN LN	HEMBREE LN	GINKGO PL					1								1				1				1	0	1
125	VALLE VISTA ST	FOOTHILL DR	END					1		1										1				1	0	1
126	LOS AMIGOS RD	ARATA LN	BROOKS RD S					1		1											1			1	0	1
129	JESSICA DR	JANE DR	BROOKS RD S					1					1								1			1	0	1
130	PULTENEY PL	BROOKS RD S	END					2			2										2			2	0	2
131	POLARIS DR	VENUS DR	BINGGELI DR					1					1									1		1	0	1
132	COURTYARDS E	2ND ST	END					1								1						1		1	0	1
133	A ST	CIRCLE DR	MAPLE DR					1			1											1		1	0	1
134	OAKFIELD LN	CONDE LN	ENZOS WAY					2					2				1	1	1			1		2	0	2
135	ESPANA WAY	END	FOOTHILL DR					1								1						1		1	0	1
136	CLAUDIUS WAY	CORDELLIA LN	JANE DR					1				1											1	1	0	1
137	USHER DR	SHIRA ST	END			1									1		1						1	11	1	1
139	18TH HOLE DR	EAGLE DR	GOLF COURSE DR					1			1												1	1	0	1
Total				2	6	27	26	287	22	100	55	37	84	2	11	37	14	8	74	83	73	73	45	-	-	348

Appendix D

Field Reconnaissance

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Field Visit – Windsor LRSP

Date: Wednesday, June 9, 2021

Existing Conditions: Afternoon, clear and sunny

General Comments:

– All the Town has upgraded pedestrian push buttons
– Retroreflective borders are only on Caltrans signal heads at the time

Old Redwood Highway:

– Discontinuous sidewalk along Old Redwood Highway

Windsor River Road:



– Consider raised pedestrian crossings on Windsor River Rd at Market Street
  - Recent improvement project added curb extensions and removed the EB left turn lane. Vehicle queuing was observed behind vehicles trying to make the left turn.
– Roundabout in progress at Windsor River Rd and Windsor Rd (SMART rail crossing at that intersection)



At Starr Road

– Cyclists don't stop
– Improve ADA ramps
– Windsor River Rd may not expect to stop
– Sidewalk is discontinuous

Brooks Road S:

– Town has some planned improvements for pedestrian and bicycle improvements
– Refresh striping
– Near school

At Arata Lane

– Potential roundabout location

Shiloh Road:

At Old Redwood Highway

– Has yellow backplates
– Upgraded detection

Conde Lane:

– Not many stops
– Frontage road
– Intersection of Conde Ln/Johnson St used to be a 3-way stop but was converted for access control and increased circulation

Hembree Lane:

– Speeds are high on this road
    - At Arata at the Foothill Regional Park there was a lot of pedestrian crossing activity with parking on both sides of the road
        – Evaluate future pedestrian crossing improvements and speed management

At Foothill Drive

– Potential location for a roundabout

At Vinecrest Drive

– Drivers are not stopping at this location
– One collision here where driver went through wall into someone's backyard
    - Guardrail and sign installed after this
– Another recent collision where vehicle hit guardrail installed after first collision
– Connects many residential neighborhoods

Appendix E

Recommended Projects

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.



0 500' 1000'

N

GHD

TOWN OF WINDSOR
LOCAL ROAD SAFETY PLAN

PROPOSED IMPROVEMENTS ON BROOKS RD S (JESSICA DR TO LAKEWOOD DR)

Project No. **11220961**
Report No. **MEMO001**
Date **9/30/2021**

FIGURE E.3

Filename: N:\US\Santa Rosa\Projects\561\11220961\Digital_Design\ACAD 2017\Civil 3D\1122096`1_001.dwg Plot Date: 30 September 2021 - 3:26 PM

Source: GHD



0 50' 100'

N

GHD

TOWN OF WINDSOR
LOCAL ROAD SAFETY PLAN

PROPOSED IMPROVEMENTS AT STARR RD AND WINDSOR RIVER RD

Project No. **11220961**
Report No. **MEMO001**
Date **8/27/2021**

FIGURE E.1

Filename: N:\US\Santa Rosa\Projects\561\11220961\Digital_Design\ACAD 2017\Civil 3D\1122096`1_001.dwg Plot Date: 27 August 2021 - 8:18 AM

Source: GHD



0 50' 100'

N

GHD

TOWN OF WINDSOR
LOCAL ROAD SAFETY PLAN

PROPOSED IMPROVEMENTS AT WINDSOR RIVER RD AND MARKET ST

Project No. **11220961**
Report No. **MEMO001**
Date **8/27/2021**

FIGURE E.2

Filename: N:\US\Santa Rosa\Projects\561\11220961\Digital_Design\ACAD 2017\Civil 3D\1122096!_001.dwg Plot Date: 27 August 2021 - 11:57 AM

Source: GHD



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