



REGULAR CITY COUNCIL MEETING AGENDA

February 10, 2026 at 6:00 PM

Wheatland Community Center: 101 C Street, Wheatland, CA 95692

City Council meetings are held in-person and are no longer available via ZOOM.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact City Hall at (530) 633-2761 or (530) 633-9102 (fax). Requests must be made as early as possible and at least one full business day before the start of the meeting.

1. OPENING MATTERS

1.1 Call to Order and Roll Call

1.2 Pledge of Allegiance to the Flag

2. PUBLIC COMMENT

At this time, the public is permitted to address the City Council on non-agendized items. COMMENTS SHOULD NOT EXCEED THREE (3) MINUTES. In accordance with State Law, however, no action or discussion may take place on any item not appearing on the posted agenda. The Council may respond to statements made or questions asked or may request Staff to report back at a future meeting concerning the matter. Any member of the public may contact the City Clerk's Office related to the proper procedure to place an item on a future City Council agenda. The exceptions under which the Council MAY discuss and/or act on items not appearing on the agenda are contained in Government Code §54954.2(b) (1) (2) (3)

3. CONSENT CALENDAR

3.1 Minutes - January 27, 2026

3.2 Investment Report for the Quarter Ended December 31, 2025

3.3 Consideration and Adoption of Resolution Approving Appointments to the Feather River Air Quality Management District Board of Directors

[3.4](#) Consideration and Adoption of Resolution Adopting the Yuba-Sutter Regional Safety Action Plan

4. PUBLIC HEARING

5. PRESENTATIONS

6. REGULAR CALENDAR

6.1 Authorization to Execute Agreement with HdL Coren & Cone for Property Tax Management and Information Services

6.2 Resolution Directing Preparation of the Engineer’s Report for the Wheatland-Premier Grove Landscaping and Lighting District

6.3 Annual Review of City of Wheatland’s Investment Policy

6.4 Update on Wheatland Aquatic Center Funding

7. REPORTS

8. CLOSED SESSION

9. ADJOURN

AGENDA POSTING CERTIFICATION

I, Josie Camacho, City Clerk for the City of Wheatland, do hereby declare under penalty of perjury that I caused the above agenda to be posted at City of Wheatland City Hall at 111 C Street, Wheatland, CA 95692 and on the City website at www.wheatland.ca.gov.

Date: February 5, 2026 /s/ Josie Camacho, City Clerk



Regular City Council Meeting Minutes

January 27, 2026 at 6:00 PM

Wheatland Community Center: 101 C Street, Wheatland, CA 95692

1. OPENING MATTERS

1.1 Call to Order and Roll Call - **6:00 p.m. - All present.**

1.2 Pledge of Allegiance - **Performed.**

2. PUBLIC COMMENT - None.

3. CONSENT CALENDAR

3.1 Minutes - January 13, 2026

Motion to approve made by Councilmember Teter, Seconded by Councilmember B. Abe

Ayes: Teter, B. Abe, J. Abe, McIntosh, Coe

Noes: None

Abstain: None

Absent: None

Motion passes 5-0-0-0

4. PUBLIC HEARING - None.

5. PRESENTATIONS - None.

6. REGULAR CALENDAR

6.1 Consideration and Adoption of Resolution Authorizing Execution of Agreements Between Olivehurst Public Utility District and City of Wheatland Regarding Provision of Regional Wastewater Treatment Services – **Res. 26-03**

Motion to approve made by Councilmember Teter, Seconded by Councilmember B. Abe

Ayes: Teter, B. Abe, J. Abe, McIntosh, Coe

Noes: None

Abstain: None

Absent: None

Motion passes 5-0-0-0

6.2 Consideration and Adoption of Resolution Authorizing Amendment to Contract with Interwest Consulting Group for Preparation of the Wheatland General Plan Update. - **Res. 26-04**

Motion to approve made by Councilmember Teter, Seconded by Councilmember B. Abe
Ayes: Teter, B. Abe, J. Abe, McIntosh, Coe
Noes: None
Abstain: None
Absent: None
Motion passes 5-0-0-0

7. REPORTS

8. CLOSED SESSION - 7:08 p.m.

8.1 Public Employment (California Government Code Section 54957) Title: City Manager

Reconvened at 7:39 p.m. with no reportable action.

9. ADJOURN - 7:40 p.m.

MINUTES CERTIFICATION

I, Josie Camacho, City Clerk for the City of Wheatland, do hereby declare under penalty of perjury that the above minutes are a true depiction of all actions taken at the City Council meeting held on the first date above written at Wheatland Community Center, 101 C Street, CA.

Date: January 28, 2026 /s/ Josie Camacho, City Clerk



City Council Meeting Staff Report

Meeting Date: February 10, 2026

SUBJECT:

Investment Report for the Quarter Ended December 31, 2025

PREPARED BY:

Susan Mahoney, Finance Director

RECOMMENDATION:

Receive and file the Quarterly Investment Report for the quarter ended December 31, 2025.

DISCUSSION:

The City’s Investment objectives are governed by State law and the City’s adopted Investment Policy. The Quarterly Investment Report provides information regarding the City’s investments in accordance with the Investment Policy.

The attached report is a summary of all cash and investment activity for the quarter ending December 31, 2025. The City follows the practice of combining cash and investments for all funds. Except for the Pool Operations Fund, interest earned on combined cash and investments is allocated quarterly to the various funds based on the respective fund’s cash balance. Interest earned on the cash balance in the Pool Operations Fund is calculated solely on LAIF (State of California Local Agency Investment Fund) earnings.

Cash - Total cash for all funds increased \$502,397 in the quarter ending December 31, 2025. This increase is mainly due to the Yuba Water District reimbursement of Regional Sewer Project expenses and Supplemental Law Enforcement revenue.

Interest Earnings - Total interest earnings for the quarter were \$185,825; a decrease of \$6,298 over the same quarter in 2024. Most of the City’s idle cash is invested in LAIF. The LAIF interest rate for the quarter ending December 31 was 4.20%, down from 4.34% in September 2025. The average rate of return for the City’s investments in CDs and federal securities was 4.23% for the quarter.

Investment Activity - The City uses a ladder investment strategy with a current maximum duration of four years. During the quarter two CDs matured, one CD was purchased, and one medium-term note was purchased. As interest rates continue to drop, the City will invest the majority of matured CDs in LAIF as their rates will be higher than market rates. Details are included in the accompanying report.

FISCAL IMPACT:

This report is for information only.

ATTACHMENT:

- A. Quarterly Investment Report as of December 31, 2025.

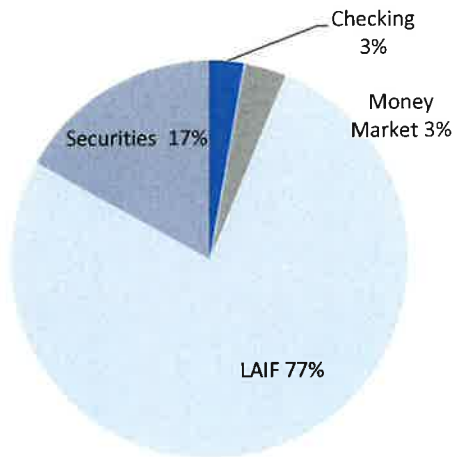
QUARTERLY INVESTMENT REPORT
As of December 31, 2025

Investment Summary

Type of Investment	Percent of Total Investments	Yield	Book Value	Market Value
Five Star Bank Checking Account	0.56%	0.00%	102,875.71	102,875.71
Five Star Bank Money Market Fund	11.86%	4.20%	2,181,461.52	2,181,461.52
Cash on Hand	0.00%	0.00%	600.00	600.00
Local Agency Investment Fund (LAIF)	73.14%	4.20%	13,453,845.34	13,453,845.34
Investments	14.44%	4.23%	2,656,626.57	2,666,360.81
Total City Investments	100.0%		18,395,409.14	18,405,143.38

Percentage of Investments by Type - Year over Year

December 31, 2024



December 31, 2024

Total City Investments \$16,728,949.18

December 31, 2025



December 31, 2025

Total City Investments \$18,405,143.38

The following confirmations are made pursuant to California Code Sections 53600 et seq.:

1. All investments as of December 31, 2025 are in compliance with allowable investments under State law.
2. All investments as of December 31, 2025 are in compliance with the City's investment policy except for Toyota Motor Credit Note.
3. There were sufficient funds available to meet the City's expenditure requirements for the next six months.

Susan Mahoney

February 5, 2026

Date

**City of Wheatland
Cash Balances as of December 31, 2025**

Section 3, Item # 3.2

	Beginning Balance	Activity	Ending Balance
	<u>Sep 30, 2025</u>		<u>Dec 31, 2025</u>
101000 General Fund	1,986,577.24	62,969.24	2,049,546.48
102000 Gas Tax	127,040.44	(7,368.36)	119,672.08
103000 Road Maintenance SB1	369,105.52	31,827.01	400,932.53
104000 TDA	16,364.17	129.39	16,493.56
107000 CDBG 1990	-	18,375.00	18,375.00
108000 Economic Development	15,690.92	(6,000.00)	9,690.92
110000 Water	1,609,010.53	139,837.35	1,748,847.88
120000 Sewer	1,186,107.29	58,271.47	1,244,378.76
121000 Sewer Collection	5,307,053.88	246,684.88	5,553,738.76
122000 Bear River Levee	9,514.71	101.29	9,616.00
123000 Regional Bypass	20,739.41	220.79	20,960.20
124000 General Plan Update	37,535.96	399.61	37,935.57
125000 Storm Drainage	164,763.67	1,754.08	166,517.75
126000 Road Circulation	843,751.59	8,982.62	852,734.21
127000 Wastewater Treatment	696,907.88	7,419.32	704,327.20
128000 Water Distribution	344,655.69	3,669.22	348,324.91
130000 City Hall Facilities	250,202.74	2,663.67	252,866.41
131000 Vehicles and Equipment	9,430.16	100.39	9,530.55
132000 Public Works Facilities	43,962.98	468.03	44,431.01
133000 Law Enforcement Facilities	66,727.52	710.38	67,437.90
134000 Fire Department Facilities	63,315.25	674.06	63,989.31
135000 Parkland Facilities	439,393.70	4,677.81	444,071.51
136000 Public Meeting Facilities	(41,600.92)	(442.89)	(42,043.81)
137000 Caliterra Impact Fee	2,766,802.66	(186,827.37)	2,579,975.29
142000 SLES	21,090.43	143,969.49	165,059.92
143000 Pumpkin Patch Joint	71,531.74	87,016.26	158,548.00
144000 Wheatland Comm Gardens	18,156.00	193.29	18,349.29
146000 Pool Operations	1,143,545.93	12,407.47	1,155,953.40
159100 Johnson Rancho Entitlements	(506.55)	786.10	279.55
159101 Johnson Rancho Planning Docs	50,000.00	-	50,000.00
161000 Wheatland Light/Landscape District	35,854.11	(8,709.31)	27,144.80
162000 Park Place Light/Landscape District	(1,661.51)	(9,713.51)	(11,375.02)
163000 Caliterra Ranch Assessment District	189,315.61	(31,011.82)	158,303.79
164000 Heritage Oaks East Assessment District	(36,428.34)	(387.82)	(36,816.16)
170000 Facilities Maintenance Fund	157,713.93	1,679.03	159,392.96
171000 Vehicles and Equipment Maintenance Fund	272,906.48	2,905.38	275,811.86
198102 Payroll Clearing	(56,195.78)	(372.90)	(56,568.68)
<u>Project Funds:</u>			
190.005 Agricultural Production Standards	13,000.00	-	13,000.00
190.007 Comprehensive Drinking Water	(97,895.77)	(24,477.00)	(122,372.77)
190.009 Regional Sewer Connection	(555,467.22)	269,882.34	(285,584.88)
190.014 First St Senior Housing	20,726.60	(9,383.28)	11,343.32
190.019 Bishop's Annexation	(213.13)	426.26	213.13
190.025 Caliterra KHov	(7,667.00)	9,655.25	1,988.25
190.026 SYTIA	(200.00)	(1,525.00)	(1,725.00)
190.028 Wheatland Road Complete Streets	25,815.00	5,111.55	30,926.55
190.032 1973 Highway 65	(6,118.44)	5,829.69	(288.75)
190.034 WLC-412 3rd Street	(1,913.67)	1,913.67	-
190.038 603 3rd Street	2,335.77	-	2,335.77
190.041 2023 Pavement Maintenance Project	52,809.39	(46,789.36)	6,020.03
190.043 HOME First St Sr Housing	(42,127.01)	6,410.31	(35,716.70)
190.044 General Plan Update	150,807.99	(16,026.15)	134,781.84
190.046 Storm Water Retention Basin	100,000.00	-	100,000.00
190.047 ADA Sidewalk	60,000.00	-	60,000.00
190.048 Pottery World Site Plan	31,105.56	-	31,105.56
190.050 STEP Grant	(320.00)	7,983.96	7,663.96
190.051 Caliterra Ranch Amendment	(54,484.58)	35,384.96	(19,099.62)
190.053 Simba Gas Station	22,926.02	(6,594.79)	16,331.23
190.055 Johnson Rancho 105 Acres	1,562.25	-	1,562.25
190.056 Bishop Planned Dev Amendment	-	-	-
190.057 Main Street Water Break	(10,310.00)	(39,690.00)	(50,000.00)
190.058 Storm Water Plan	-	(2,215.00)	(2,215.00)
190.059 Pavement Sealing	-	(281,559.48)	(281,559.48)
TOTALS	17,902,746.80	502,396.58	18,405,143.38

City of Wheatland
Quarter Ending December 31, 2025
Investments with MBS (Multi Bank Securities) and TVI (Time Value Investments)

	Brokers				Settlement Date	Maturity Date	Interest Rate	Est. Annual Income	CUSIP
	Book Value	MBS Book	MBS Market	TVI Market					
Baxter Credit Union CD	100,000.00			100,039.00	1/22/2024	1/22/2026	4.65%	4,650.00	07181JBE3
UBS Bank CD	125,000.00	125,000.00	125,235.00	100,000.00	3/13/2024	3/13/2026	4.80%	6,000.00	90355GLM6
Prime Alliance Bank CD	100,000.00			100,000.00	4/22/2024	4/22/2026	4.70%	4,700.00	74160NLB4
Bank of America CD	115,000.00			115,035.65	2/12/2025	2/12/2026	4.20%	4,830.00	06051XPT3
Morgan Stanley Bank CD	100,000.00			100,427.00	5/8/2024	5/8/2026	5.00%	5,000.00	61690DQN1
BNY Mellon CD	100,000.00			100,000.00	6/17/2025	6/17/2026	4.30%	4,300.00	06405VJK6
Flagstar Bank CD	119,000.00		119,706.86		7/11/2024	7/10/2026	4.85%	5,771.50	33847GJS2
Morgan Stanley Bank CD	130,000.00		130,708.50		5/7/2025	5/7/2027	4.05%	5,265.00	61690D4C9
Morgan Stanley Bank CD	100,000.00			101,697.00	5/15/2024	5/17/2027	4.90%	4,900.00	61690DQX9
Global Federal CU CD	130,000.00		131,141.40		6/30/2025	6/30/2027	4.25%	5,525.00	37892MAW4
Toyota Financial Savings CD	100,000.00			101,462.00	7/18/2024	7/19/2027	4.65%	4,650.00	89235MPS4
Valley National Bank CD	200,000.00		200,578.00		9/10/2024	9/10/2027	3.85%	7,700.00	919853NX5
American Express Bank CD	200,000.00		200,658.00		9/11/2024	9/13/2027	3.85%	7,700.00	02589AFB3
Celtic Bank Salt Lake CD	130,000.00			130,858.00	12/20/2024	12/20/2027	4.05%	5,265.00	15118RT31
Goldman Sachs Bank	100,000.00		100,532.00		1/14/2025	1/14/2028	4.00%	4,000.00	38150VI59
Toyota Financial Savings CD	100,000.00		101,087.00		2/13/2025	2/14/2028	4.25%	4,250.00	89235MRA1
Goldman Sachs Bank	100,003.72			100,602.00	3/18/2025	3/20/2028	4.00%	4,000.15	38150VS34
BMW Bank CD	110,000.00			110,036.30	4/17/2025	4/17/2028	3.75%	4,125.00	05612LEG3
BNY Mellon CD	100,000.00		100,277.00		5/7/2025	5/8/2028	3.85%	3,850.00	05584CX27
Morgan Stanley Bank CD	125,000.00		124,906.25		12/24/2025	12/26/2028	3.75%	4,687.50	61776NL35
Toyota Motor Credit NOTE	250,000.00		248,215.00		10/22/2025	10/22/2029	4.05%	10,125.00	89236TNW1
Cash w/ Broker	2,634,003.72	1,579,000.00	1,583,045.01	1,055,003.72			4.23%	\$ 111,294	
TOTAL	22,622.85	3,910.21	3,910.21	18,712.64					
	2,656,626.57	1,582,910.21	1,586,955.22	1,073,716.36					

TRANSACTIONS

Purchased

- \$100,000 3.75% Morgan Stanley Bank - purchased 12/24/2025, matures 12/26/2028
- \$250,000 4.05% Toyota Motor Credit - purchased 10/22/2025, matures 10/22/2029

Redeemed

- \$125,000 5.40% State Bank of India - purchased 11/20/2023, matured 11/20/2025
- \$125,000 4.65% Flagstar Bank - purchased 12/21/2023, matured 12/23/2025

Section 3, Item # 3.2



City Council Meeting Staff Report

Meeting Date: February 10, 2026

SUBJECT: Consideration and Adoption of Resolution Approving Appointments to the Feather River Air Quality Management District Board of Directors

PREPARED BY: Bill Zenoni, City Manager

RECOMMENDATION:

Staff recommends that the Wheatland City Council consider adoption of a resolution approving appointments to the Feather River Air Quality Management District Board of Directors for the 2026 calendar year.

DISCUSSION:

The Feather River Air Quality Management District is a bi-county District that was formed in 1991 to administer local, state and federal air quality management programs for Yuba and Sutter counties. The mission of the Feather River Air Quality Management District is to promote and improve the air quality of Yuba and Sutter counties.

The Feather River Air Quality Management District is governed by a nine-member Board of Directors. One member is appointed from each city and two members are appointed from each county. On even numbered years, an additional member is appointed from Sutter County and on odd numbered years, an additional member is appointed from Yuba County. Annually, each city approves the appointment of the directors of the other participating cities (Marysville, Yuba City and Live Oak).

The Wheatland City Council, on January 13, 2026, approved the appointment of Brian Abe and John Abe as the representative Feather River Air Quality Management District board member and alternate respectively for the City of Wheatland for the 2026 calendar year. The District is now requesting that the Wheatland City Council approve the appointments made by the cities of Marysville, Yuba City and Live Oak. Those three municipalities will in turn consider approval of the board appointments for the other three cities, including Wheatland.

The Feather River Air Quality Management District Board of Directors appointments presented for the Wheatland City Council approval are:

City of Marysville

- Councilmember Stuart Gilchrist (Director)
- Councilmember Bruce Buttacavoli (Alternate)

City of Yuba City

- Councilmember Mike Pasquale (Director)
- Councilmember Wade Kirchner (Alternate)

City of Live Oak

Councilmember Aaron Pamma (Director)
Councilmember Jeremy Chapdelaine (Alternate)

FISCAL IMPACT:

None

ATTACHMENTS:

- A. Resolution
- B. Letter from Feather River Air Quality Management District

Attachment 'A'

RESOLUTION NO. 26-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHEATLAND APPROVING APPOINTMENTS TO THE FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT BOARD OF DIRECTORS

WHEREAS, the Feather River Air Quality Management District is a bi-county District that was formed in 1991 to administer local, state and federal air quality management programs for Yuba and Sutter counties; and

WHEREAS, the Feather River Air Quality Management District is governed by a nine-member Board of Directors; and

WHEREAS, the Wheatland City Council, on January 13, 2026, approved the appointment of Brian Abe and John Abe as the representative Feather River Air Quality Management District board member and alternate respectively for the City of Wheatland for the 2026 calendar year; and

WHEREAS, the Feather River Air Quality Management District has requested that the Wheatland City Council approve the board member appointments made by the cities of Marysville, Yuba City and Live Oak.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Wheatland as follows:

1. The following appointments to the Feather River Air Quality Management District Board of Directors are approved for the 2026 calendar year:

City of Marysville

- Councilmember Stuart Gilchrist (Director)
- Councilmember Bruce Buttacavoli (Alternate)

City of Yuba City

- Councilmember Mike Pasquale (Director)
- Councilmember Wade Kirchner (Alternate)

City of Live Oak

- Councilmember Aaron Pamma (Director)
- Councilmember Jeremy Chapdelaine (Alternate)

The foregoing resolution was adopted by the City Council of the City of Wheatland at a regular meeting held on the 10th day of February 2026, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

The foregoing resolution is hereby approved.

Robert Coe, Mayor

ATTEST:

Josie Camacho, City Clerk



Serving Sutter and Yuba Counties

541 Washington Ave
Yuba City, CA 95991
(530) 634-7659
FAX (530) 634-7660
www.fraqmd.org

Christopher D. Brown, AICP
Air Pollution Control Officer

To: City of Wheatland Council Members
From: Christopher D. Brown, AICP, Air Pollution Control Officer
Subject: **Approval of appointments to the Board of Directors of the Feather River AQMD**
Date: February 10, 2026

Recommendation:

Approve the appointments to the Feather River Air Quality Management District Board of Directors for calendar year 2026.

Background and Discussion:

In accordance with the Agreement for Composition of the Feather River AQMD Board of Directors, the following appointments listed below have been made. This action requires the approval of the City of Wheatland Council Members.

Directors/Alternate Directors:

- Councilman Stuart Gilchrist – Director (City of Marysville)
- Councilman Bruce Buttacavoli – Alternate (City of Marysville)
- Councilman Mike Pasquale – Director (City of Yuba City)
- Councilman Wade Kirchner – Alternate (City of Yuba City)
- Councilman Aaron Pamma – Director (City of Live Oak)
- Councilman Jeremy Chapdelaine – Alternate (City of Live Oak)

Fiscal Impact:

None

Committee Action:

None required.



CITY COUNCIL MEETING STAFF REPORT

Meeting Date: February 10, 2026

SUBJECT: Consideration and Adoption of Resolution Adopting the Yuba-Sutter Regional Safety Action Plan

PREPARED BY: Dane H. Schilling, City Engineer

RECOMMENDATION:

City staff recommends that the Wheatland City Council adopt a resolution adopting the Yuba-Sutter Regional Safety Action Plan.

DISCUSSION:

In 2022 the agencies of Yuba County, Sutter County, Yuba City, Marysville, Wheatland and Live Oak collaborated to submit a joint regional application to the Safe Streets and Roads for All program (SS4A) seeking funds for the creation of a Regional Safety Action Plan (“RSAP”) to access roadway safety for all agencies in Yuba and Sutter Counties with Yuba County offering to be the lead agency for the group.

The goal of the RSAP is to create a unified vision and strategy to improve roadway safety, in partnership with local communities, to prevent traffic-related fatalities and serious injuries for all. This can be accomplished by gathering traffic and collision data, various planning documents, community input and local agency input as a basis for developing a regional plan.

In February 2023, the Yuba-Sutter participants were notified that \$800,000 in funding had been awarded by the California Department of Transportation for the RSAP. Fehr & Peers was selected as the best qualified consultant to lead the group into developing the RSAP. The group of agencies began meeting in the Spring of 2024 and other interested parties such as law enforcement officials, special interest groups, school officials were invited into the working groups.

On February 25, 2025, the Wheatland City Council received a presentation from RSAP consultants preparing the Yuba-Sutter Regional Safety Action Plan. The presentation was given just as the community engagement phase of the effort was beginning. Several workshops were held in various locations in Yuba and Sutter Counties, and input was also solicited through social media platforms.

FISCAL IMPACT:

There is no direct fiscal impact expected with the proposed action. However, the adoption of this plan will make the City eligible for certain grant funding opportunities it would not otherwise be eligible for.

ATTACHMENTS:

- A. Resolution w/Exhibit

Attachment 'A'

RESOLUTION NO. 26-___

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHEATLAND ADOPTING THE YUBA-SUTTER REGIONAL SAFETY ACTION PLAN - JANUARY 2026

WHEREAS, in 2022 the agencies of Yuba County, Sutter County, Yuba City, Marysville, Wheatland and Live Oak collaborated to submit a joint regional application to the Safe Streets and Roads for All program (SS4A) seeking funds for the creation of a Regional Safety Action Plan (“RSAP”) to access roadway safety for all agencies in Yuba and Sutter Counties (“Project”); and

WHEREAS, in February 2023, the Yuba-Sutter participant agencies were notified that \$800,000 in funding had been awarded by the California Department of Transportation for the Project. The group of agencies selected a consultant and began meeting in the Spring of 2024 with other interested parties such as law enforcement officials, special interest groups, and school officials in working groups; and

WHEREAS, On February 25, 2025, the Wheatland City Council received a presentation from RSAP consultants preparing the plan just as the community engagement portion of the work was getting underway; and

WHEREAS, the RSAP consultants, under the supervision of the group of member agencies including the City of Wheatland’s City Engineer, have published a final report entitled *Yuba-Sutter Regional Safety Action Plan*, dated January 2026.

NOW, THEREFORE IT IS HEREBY RESOLVED, ORDERED AND FOUND by the City Council of the City of Wheatland, State of California, that the City Council adopts the report entitled *Yuba-Sutter Regional Safety Action Plan*, dated January 2026.

The foregoing resolution was introduced and adopted by the City Council of the City of Wheatland on this 10th day of February 2026, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

The foregoing resolution is hereby approved.

Bob Coe, Mayor

ATTEST:

Josie Camacho, City Clerk

Exhibit 'A'



Section 3, Item # 3.4



YUBA-SUTTER

Regional Safety Action Plan

Final Draft

January 2026

Made possible by a Safe Streets 4 All Planning Grant



Acknowledgments



This study applies a systemic safety approach that identifies certain features on particular roadways that are correlated with specific crash types and frequencies. This broad approach is necessitated by the inherent nature of covering an entire region’s facilities in one study and the limited scope/budget available to prepare roadway safety plans. Limited time is available to perform field observations throughout the study area to contextualize the data, and therefore, it is beyond the scope of work to perform in-depth “hot spot” evaluations at all locations.

The analysis and recommendations in this report are conceptual in nature based upon limited information, and before implementing any changes, or using any of its information for design or construction, more detailed analysis should be conducted to make sure that the design or construction documents reflect specific, detailed, local, and field conditions.

Adrian Engel, P.E.
Registered Professional Engineer

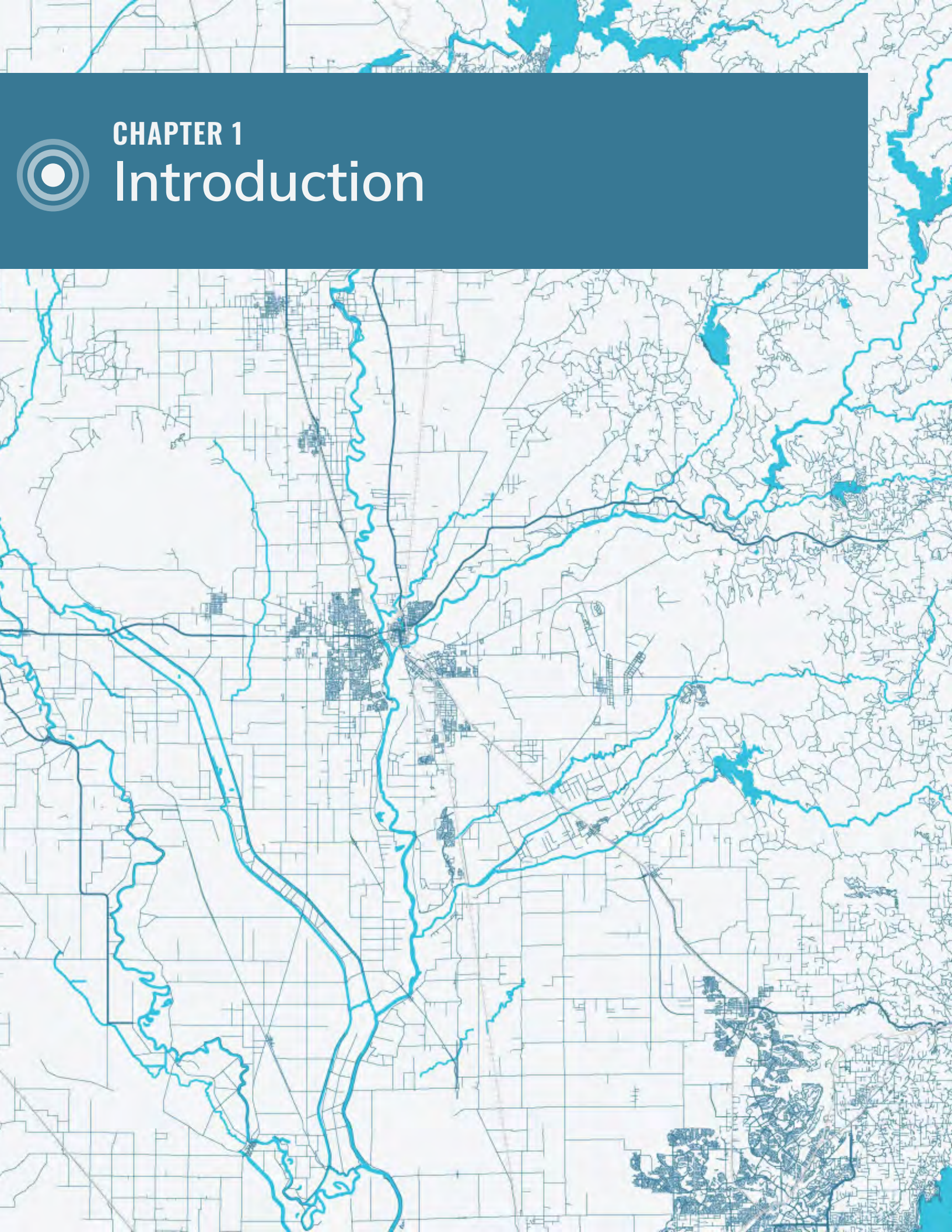


What’s In This Plan

- CHAPTER 1** Introduction
- CHAPTER 2** Community Engagement
- CHAPTER 3** Regional Crash Analysis
- CHAPTER 4** Regional Implementation Plan
- CHAPTER 5** Yuba County Safety Analysis
- CHAPTER 6** Marysville Safety Analysis
- CHAPTER 7** Wheatland Safety Analysis
- CHAPTER 8** Sutter County Safety Analysis
- CHAPTER 9** Yuba City Safety Analysis
- CHAPTER 10** Live Oak Safety Analysis
- APPENDICES**
 - A: Policy Benchmarking & Additional Policy Considerations
 - B: Community Engagement Materials & Feedback
 - C: Safety Corridor Background & Technical Methodology
 - D: Safety Countermeasure Toolbox

Note: Chapters 5 through 10 serve as standalone documents.

CHAPTER 1 Introduction



This Plan and Our Region

Yuba and Sutter Counties and four incorporated cities, Marysville, Wheatland, Yuba City, and Live Oak, are committed to prioritizing transportation safety and eliminating traffic-related deaths and serious injuries on their roadways.

The development of this Regional Safety Action Plan (RSAP) was led by a joint effort of County, City, and partner agencies in the Yuba-Sutter region. By combining efforts, the Yuba-Sutter region can provide leadership in roadway safety and more effectively spearhead the implementation of roadway safety policy, projects, and programs. This RSAP covers the two counties and four incorporated cities in them: Yuba County, Marysville, Wheatland, Sutter County, Yuba City, and Live Oak.

Yuba County and Sutter County are situated in the Sacramento Valley. The counties have a combined total population of over 180,000, with people concentrated in Yuba City and Marysville. Roadway safety is a pressing issue facing the region today. In 2021, the Office of Traffic Safety ranked Yuba County eighth of 58 counties statewide based on the total number

of crashes resulting in injury and fatality, third for crashes involving pedestrians, and fifth for crashes involving motorcycles. Sutter County ranked sixth for total number of crashes resulting in injury and fatality, third for crashes involving bicyclists under the age of 15, and seventh for crashes where a party involved had been drinking.

The beginning chapters of the document cover the regional aspects of the plan, including project vision and goals, potential countermeasures, and a Safety Action Plan that will act as a roadmap for Yuba-Sutter and its member agencies to implement this RSAP. The second portion of the plan contains six jurisdiction-specific chapters, each of which includes crash analysis, focus areas, priority projects, and project lists.

Project team conducting walk audits



1. Introduction

Safe System Approach

The Safe System Approach acknowledges that mistakes are inevitable while also asserting that severe injuries and fatalities are avoidable on our roadways. According to the World Health Organization, the goal of a Safe System is to ensure that if crashes occur, they “do not result in serious human injury.”¹ The Safe System Approach to road safety started internationally as part of the Vision Zero proclamation that death and serious injury on the roadway system is unacceptable.^{2 3}

result, a proactive, redundant system is needed to prevent death and serious injuries.⁴ Countries that have adopted the Safe System Approach have had success reducing highway fatalities, with reductions in fatalities between 50% and 70%.⁵ The Safe System Approach is the foundation for the National Safety Strategy released by the United States Department of Transportation (USDOT) in 2022. In 2022, Caltrans also adopted both a Safe System Approach and a Vision Zero goal as part of their Strategic Highway Safety Plan to eliminate all traffic fatalities and serious injuries by 2050.

As shown in **Figure 1.1**, the Safe System Approach is founded on several principles, including acknowledging that humans make mistakes and humans are vulnerable. As a

Figure 1.1: Safety System Elements and Principles



To anticipate human mistakes, a Safe System seeks to⁶:

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

Creating a Safe System means shifting a major share of the responsibility for preventing crashes from road users to those who design the road transport system. “Individual road users have the responsibility to abide by laws and regulations”⁷ and do so by exhibiting due care and proper behavior on the transportation system. While road users are responsible for their own behavior, this is a shared responsibility with those who design, operate, and maintain the transportation network including the automotive industry, law enforcement, elected officials, and government bodies.⁸ In a Safe System, roadway system designers and operators take on the highest level of ethical responsibility.



WHAT

A Safe System aims to eliminate fatal and serious injuries for all road users.



WHY

A Safe System acknowledges the vulnerability of the human body.



WHO

A Safe System requires a partnership between cities, counties, Caltrans, police, and road users.

References

1. World Health Organization (2011). Decade of Action for Road Safety 2011-2020. Retrieved from https://www.who.int/roadsafety/decade_of_action/plan/plan_en.pdf, p. 9
2. Johansson, R. (2009). Vision Zero - Implementing a policy for traffic safety. *Safety Science*, 47, 826-831
3. Tingvall, C., & Haworth, N. (1999). An Ethical Approach to Safety and Mobility. Paper presented at the 6th ITE International Conference Road Safety and Traffic Enforcement. 6-7 September 1999, Melbourne, Australia
4. Belin, M.-Å., Tillgren, P., & Vedung, E. (2012). Vision Zero - a road safety policy innovation. *International Journal of Injury Control and Safety Promotion*, 19, 171-179.
5. World Resources Institute (2018). Sustainable and Safe: A Vision and Guidance for Zero Road Deaths. Retrieved from <https://www.wri.org/publication/sustainable-and-safe-vision-and-guidance-zero-road-deaths>.
6. Institute of Transportation Engineers, Road to Zero Coalition, Road to Zero Safe System Working Group. Retrieved from <https://www.ite.org/technical-resources/topics/safe-systems>.
7. World Health Organization (2011). Decade of Action for Road Safety 2011-2020. Retrieved from https://www.who.int/roadsafety/decade_of_action/plan/plan_en.pdf.
8. Federal Highway Administration (2020). Integrating the Safe System Approach with the Highway Safety Improvement Program. Report No. FHWA-SA-20-018. Retrieved from <https://safety.fhwa.dot.gov/hsip/docs/fhwasa2018.pdf>.

Commitment & Vision



Our Commitment

The Yuba-Sutter Region will **work collaboratively** to **eliminate** traffic fatalities and serious injuries by 2050.



Our Vision

The Yuba-Sutter Region will have a **multimodal** and **sustainable** transportation system where users of **all ages** and **abilities** can travel **conveniently, reliably,** and **free from harm.**

Guiding Principles: Safety Is Our Highest Priority.



1. Traffic deaths and serious injuries are a preventable public health issue that must be addressed.



2. Safety is a shared responsibility.



3. Actions towards Vision Zero will be data-driven based on available crash data and risk factors (e.g., exposure, likelihood, and severity).



4. Evaluation will be ongoing. Regular data collection and analysis will help measure performance against Regional Safety Action Plan objectives.

Existing Policy Landscape

In recent years, leaders at the federal and state levels have taken bold and consistent steps to acknowledge the persistent and unacceptable level of severe injuries and fatalities on our roadways, commit to eliminating these occurrences, and follow international best practices and public health fundamentals to form a new safety paradigm in the US. This has specifically involved embracing the Vision Zero goal of safe mobility for all and adopting the Safe System Approach as the way to get there. The Safe System Approach is a significant evolution in how roadway safety is conceptualized.

This Safety Action Plan has been developed to align with the pivot to the Safe System Approach. This chapter summarizes the primary reference documents and policy considerations that influenced the direction, decisions, and priorities in this RSAP. This Plan focuses on addressing crash risk through an assessment of vehicle speed, mass, and exposure that is inherently proactive and systemic. This Plan presents a holistic assessment of the needs and opportunities for enhancing safety consistent with a systemic risk factors, from systematically addressing socioeconomic and land use, features of the built environment, and passive and active safety tools. Finally, this Plan aspires to make safety the default choice: the easy choice for people as they move about and the easy choice for roadway design decisions. This Plan identifies the opportunities to streamline decision making to prioritize safety and improve internal alignment in programs, practices, and policies consistent with the Safe System Approach.

Federal Policy Considerations

National Roadway Safety Strategy

The United States Department of Transportation (USDOT) incorporated the Safe System Approach as part of its most recent National Roadway Safety Strategy (NRSS), adopted in January 2022. This NRSS is the first national commitment to the goal of zero fatalities on America's roadways, and names the Safe System Approach as the way to accomplish that goal. Federal transportation officials have since unveiled a number of policies and programs geared towards the application and implementation of the Safe System Approach at the state and local levels.

Safe Streets and Roads for All (SS4A)

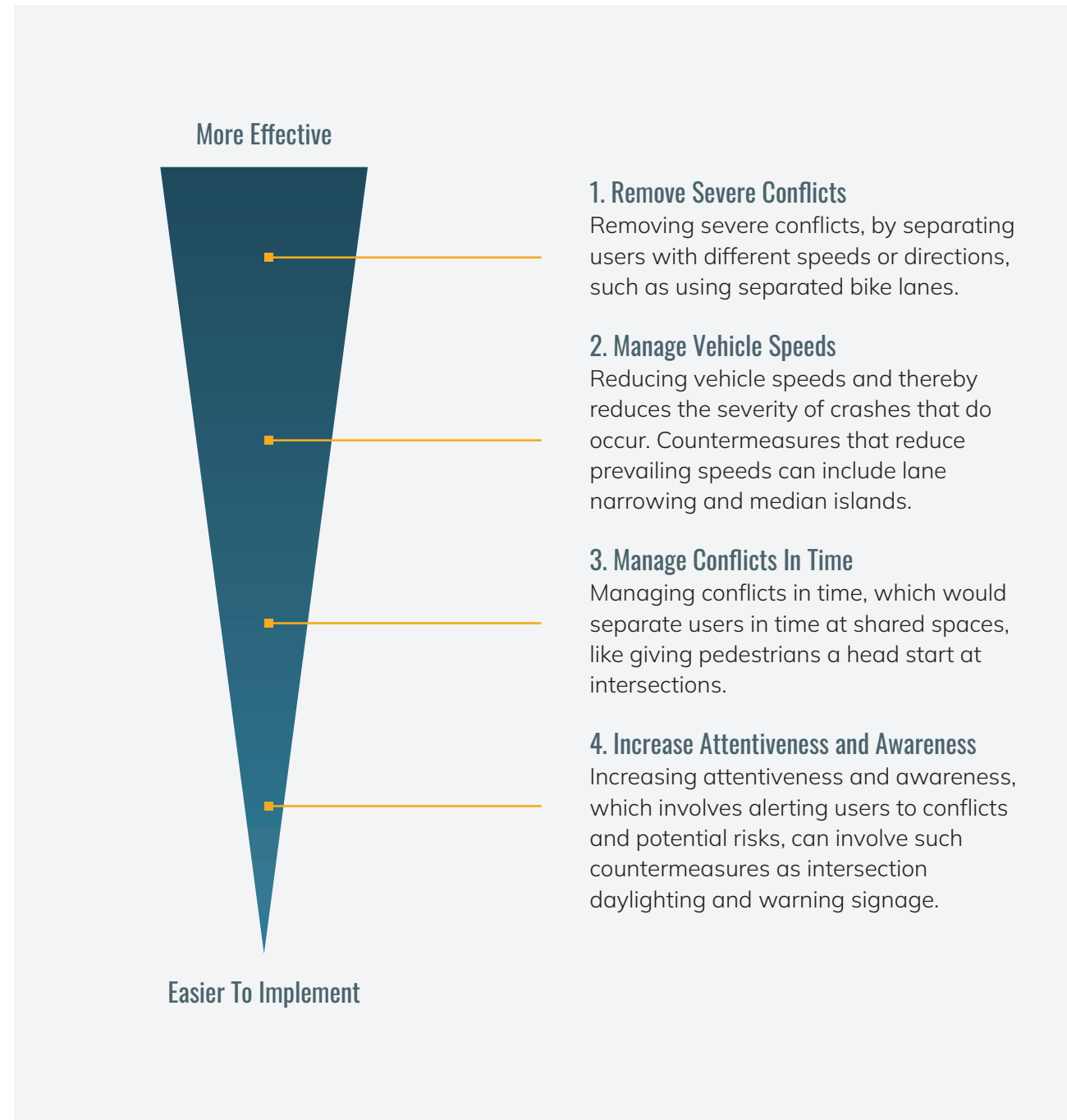
The Safe Streets and Roads for All (SS4A) grant program was established by the Bipartisan Infrastructure Law in 2022, centered around USDOT's National Roadway Safety Strategy and its goal of zero deaths and serious injuries on America's roadways. It provides \$5 billion in grant funding over its five-year duration (2022 - 2026) to develop and implement safety plans and projects. The SS4A grant program provides funding for local agencies to create Comprehensive Safety Action Plans (CSAPs). It also provides funding to implement safety projects, but only to those agencies that have an adopted CSAP or equivalent.

1. Introduction

Safe System Roadway Design Hierarchy

The Safe System Roadway Design Hierarchy, created by the Federal Highway Administration (FHWA) in 2024, provides guidance in contextualizing and assessing infrastructure-based countermeasures and strategies on their alignment with the principles of the Safe System Approach.

The Hierarchy classifies countermeasures into four tiers, from most to least aligned with Safe System principles. Crucially, the Hierarchy prioritizes improvements and countermeasures that make physical changes to the system for the whole population as more effective than measures that rely on roadway users and individual decisions.



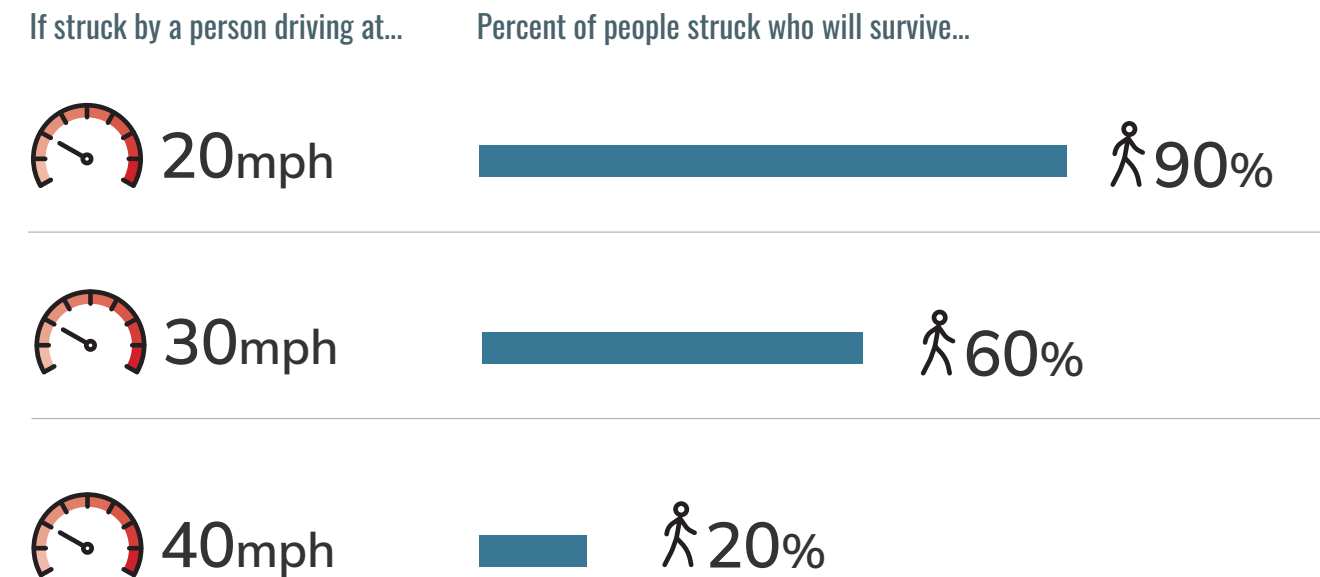
Safe System Approach for Speed Management

The FHWA's 2023 report on the Safe System Approach for Speed Management provides targeted recommendations around speed management. The report notes the need for agencies to place safety and the prevention of injury crashes (as opposed to throughput or travel times) as the highest priority when it comes to speed setting on roadways, and highlights the need to change the physical design and context of the roadway beyond merely changing regulatory speed limits in order to achieve target speeds. The report outlines a five-stage framework to speed management consistent with the Safe System Approach.

Primer on Safe System Approach for Pedestrians and Bicyclists

The Primer, released by the FHWA in 2021, emphasizes the importance of protecting pedestrians and bicyclists, as vulnerable users, under the Safe System Approach. The Primer details the considerations surrounding pedestrians and bicyclists under each of the five elements of the Safe System Approach and provides strategies and actions that can be taken at the federal, state, and local levels towards implementing the Safe System Approach. Also included is an appendix on benchmarking policies, programs, and practices for Safe System consistency.

Speed Management and Roadway Safety



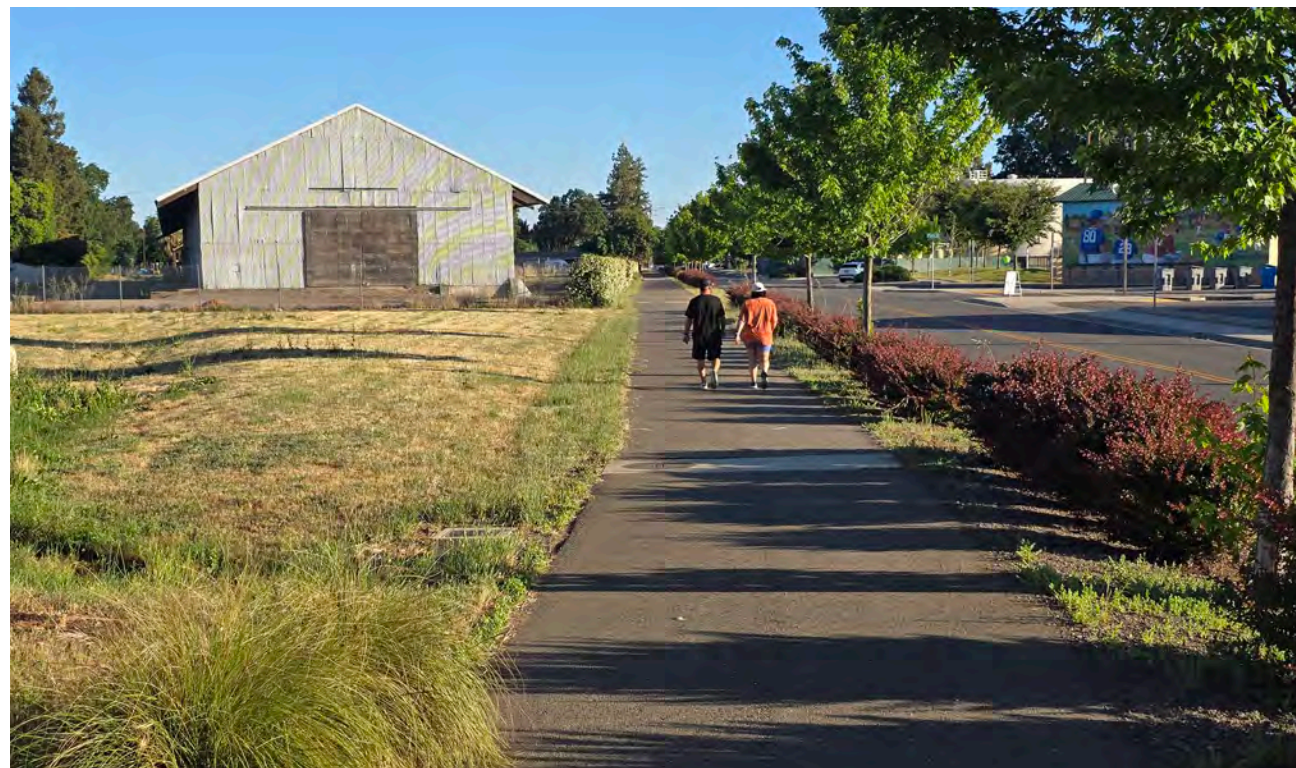
1. Introduction

Regional and Local Policy Considerations

Fully committing to Vision Zero and following the Safe System approach requires a fundamental pivot that involves infusing safety into all programs, policies, and practices within the agency as well as reconsidering existing agency approaches, budgets, and priorities where they conflict with Safe System principles. The Project Team developed a benchmarking tool for Federal Highway Administration as part of the Primer on the Safe System Approach for Pedestrians and Bicyclists where agencies can assess their standing on current safety policy and work against industry best practices. A combination of General Plans, Local Road Safety Plans, Standard Plans & Specifications, and Active Transportation Plans/Bicycle Master Plans were reviewed for the six jurisdictions to identify opportunities to improve how processes prioritize safety.

The General Plans include policies to prioritize safety in roadway projects or enhance safety while making other transportation system improvements. General Plans also bolster a Safe System by addressing the socioeconomic factors that have an impact on roadway safety. Older Improvement Standards and Specifications for some jurisdictions should be updated to focus on reducing the likelihood and severity of crashes (e.g., speed management). Over half of the jurisdictions have Active Transportation Plans/Bicycle Master Plans that identify recommendations for facilities with physical separation between vehicles and bicyclists/pedestrians. Yuba City, Marysville, and Yuba County already have Local Road Safety Plans. Many safety planning benchmarks are current efforts with this RSAP, but others will require additional work beyond the plan. For a detailed listing of relevant local policies, see **Appendix A**.

 Pedestrians in Live Oak City

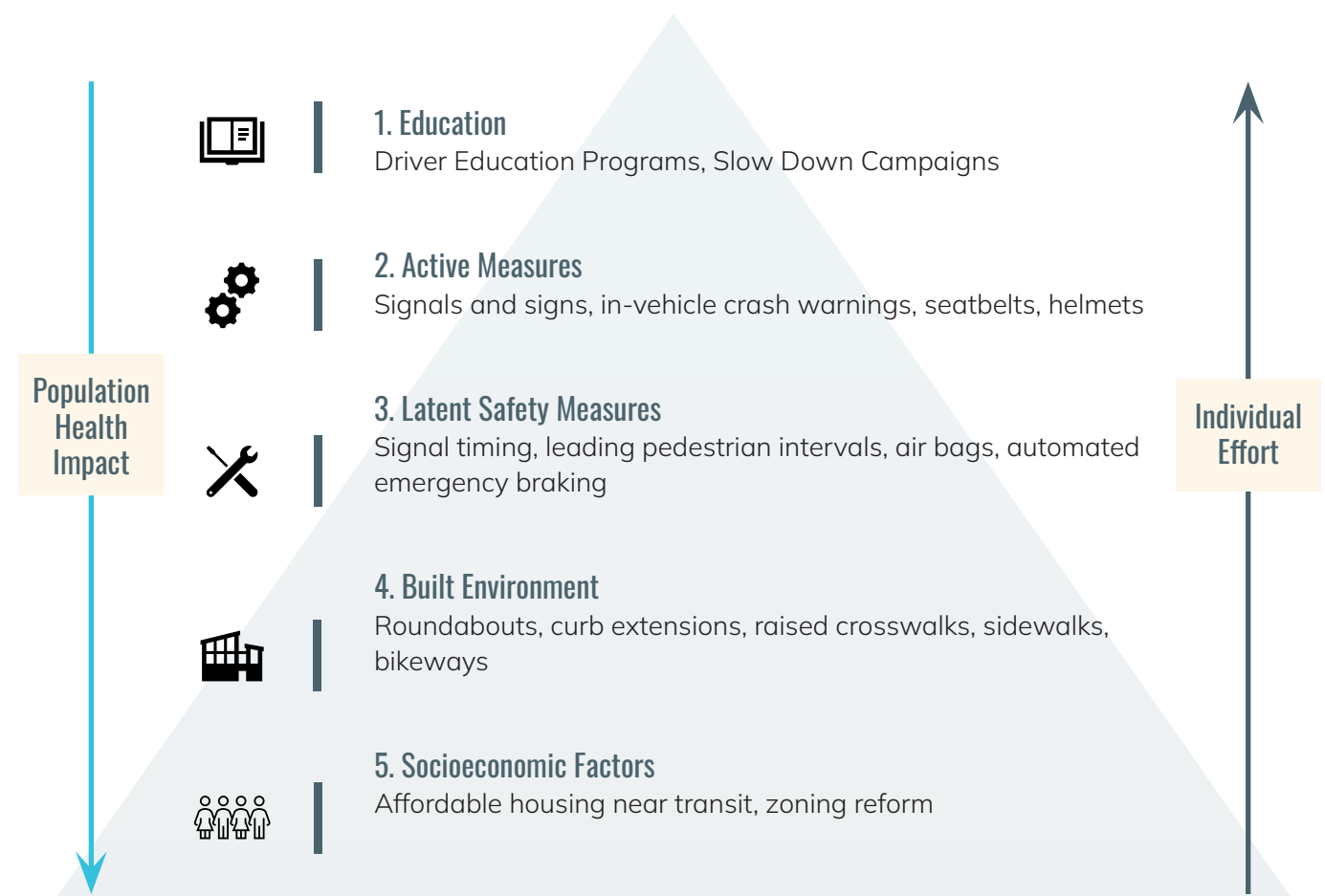


Safety as A Public Health Concern

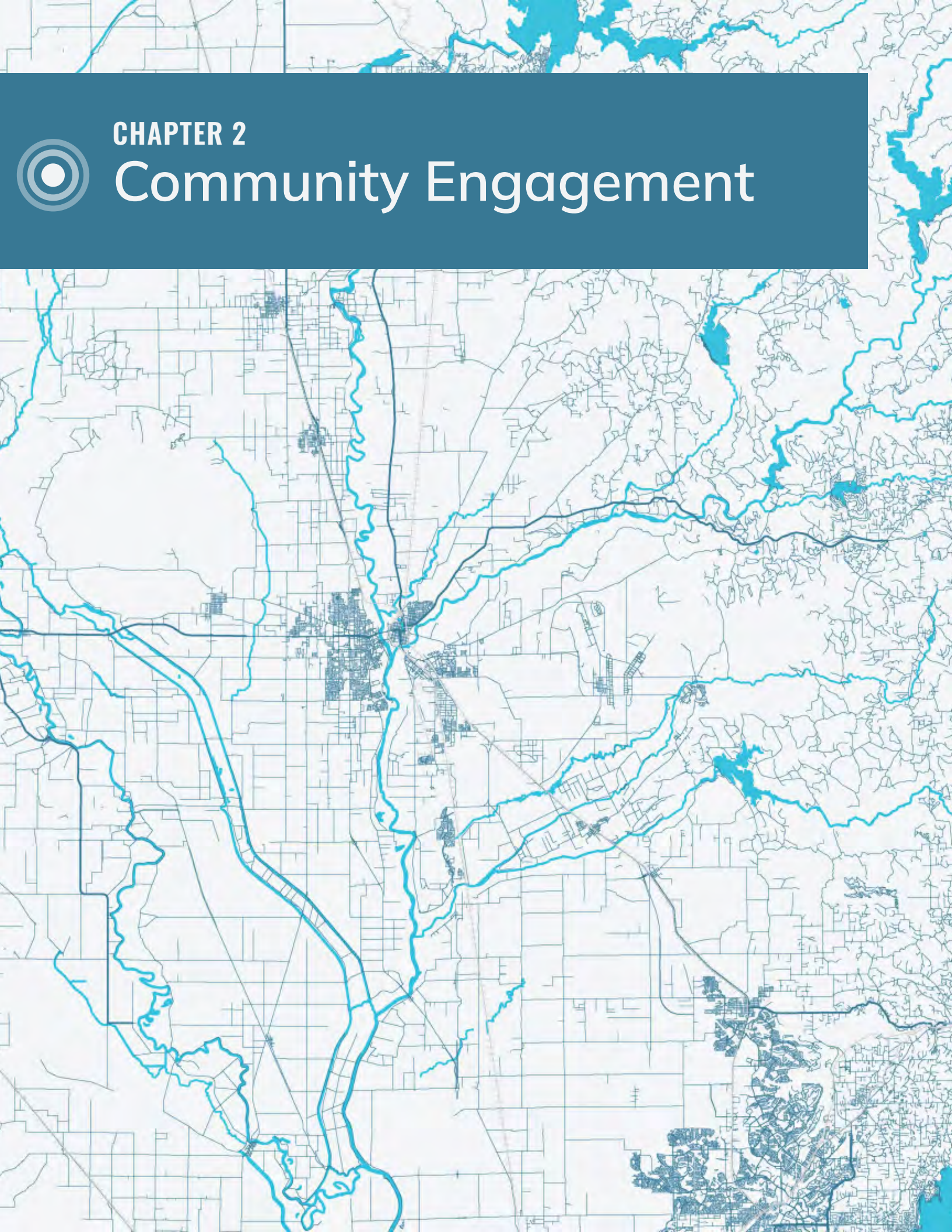
This RSAP draws from emerging best practices which identifies and prioritizes strategies focused on addressing the potential for injury from the force generated by moving vehicles or individuals in a crash. The Safe Systems Pyramid, shown below, draws from public health principles to emphasize that interventions with the broadest reach and lowest individual effort are the most effective. This framework serves as a guide for prioritizing roadway design and operational

strategies that maximize safety impacts while fostering collaboration beyond traditional safety-focused efforts. It highlights the role of agency partners and community stakeholders in the RSAP and addresses upstream, systemic issues to tackle root causes more holistically. The Safe System Pyramid guided the selection and prioritization of implementation strategies in **Chapter 4**.

Safe System Pyramid



CHAPTER 2 Community Engagement



The project team engaged with organizational partners around the region and the community at large, seeking insight to ensure that the resulting Regional Safety Action Plan (RSAP) creates a vision for improving the region's roadways that aligns with the community's values.

Our Community Engagement Journey Towards Vision Zero

1. United for Vision Zero

Establish a multi-agency task force to align strategies, share data, and guide Vision Zero efforts.



3. Listen to Communities

Host pop-ups and listening sessions to collect community insights and ground-truth safety needs.

2. Map the Insights

Launch a project website and web map to gather location-based public input.

4. From Talk to Action

Translate data and public feedback into targeted strategies and implementation priorities.

2. Community Engagement

United for Vision Zero

Vision Zero Task Force

A Task Force was convened for the development of this Regional Safety Action Plan (RSAP) which comprised staff representatives from the partner jurisdictions' agencies as well as community organizations such as Blue Zones and the Yuba Area Bike Advocates. The Task Force is responsible for the Action Plan's development, implementation, and monitoring phases.

Over the course of the development of this RSAP, the Task Force met three times. The first meeting included an introduction on the Safe System Approach and Vision Zero and preliminary discussions on funding, regional coordination, and how best to address the needs of the public. During the second meeting, the Task Force discussed results of the crash data analysis along with the locations with disproportionately high injuries and fatalities and suggested other locations to consider based on their local knowledge. They also shared information about ongoing safety related projects or policies taking place within their jurisdiction or by their organization. During the third meeting, the groups discussed the results of the public facing community engagement along with focus areas...and choosing solutions to fit the contexts of the Yuba-Sutter region.

The Task Force included staff or members from the following agencies and organizations:

- Yuba County Public Works
- City of Wheatland Engineering Department
- Sutter County Public Works
- Yuba City Public Works
- City of Yuba City Public Works
- Marysville Joint Unified School District
- Yuba County Sheriff
- Sutter County Police Department
- Yuba City Police Department
- Sacramento Area Council of Governments
- Yuba Area Bike Advocates
- Blue Zones Yuba-Sutter

 Task Force meeting



Map the Insights

Project Website & Interactive Web Map

A website was developed for the Plan to collect public feedback, consisting of project information, an interactive web map, and a project calendar. In the web map, visitors could identify specific locations within the region where they had roadway safety concerns by leaving comments and tag them by mode of travel (i.e. walking, biking, driving, etc.). The web map was open for public response from November 2024 to June 2025, and made available in English, Spanish, and 10 other languages. The web map received a total of 49 comments. A map and log of all comments are included in **Appendix B**.

49 Total Comments



14 Walking Safety Comments

Unsafe crossings, poor lighting, and no ADA access.



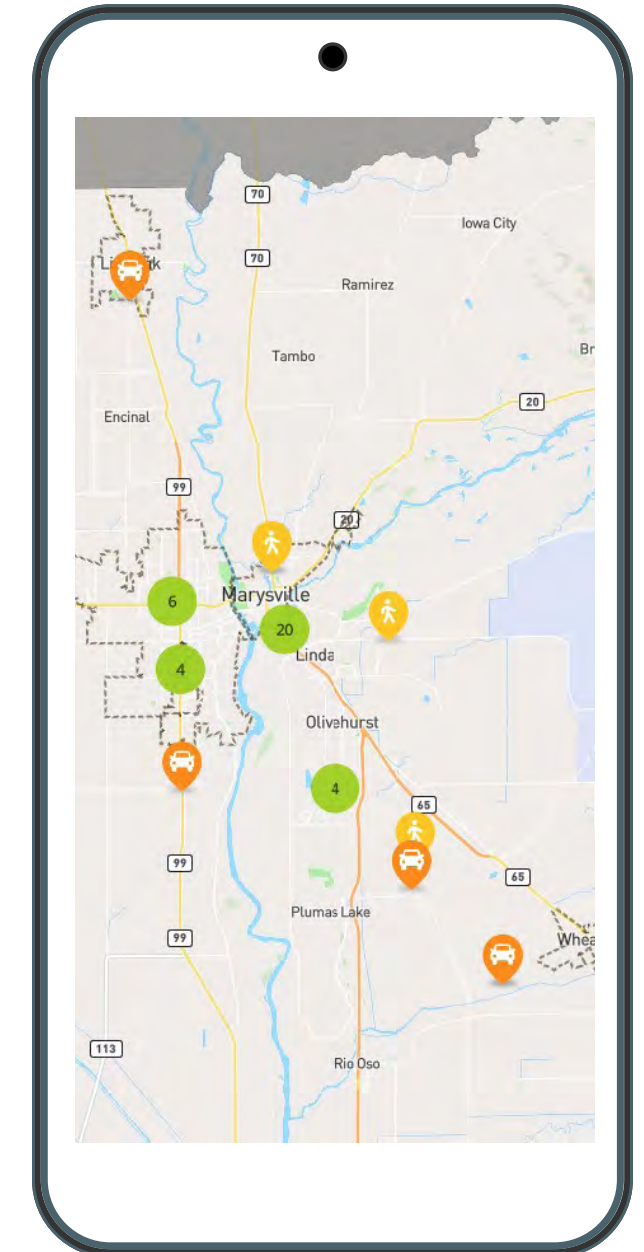
15 Biking Safety Comments

Unsafe crossings, poor lighting, and no ADA access.



20 Driving Safety Comments

Unsafe crossings, poor lighting, and no ADA access.



2. Community Engagement

United for Vision Zero

In-Person Outreach

Task Force and online engagement were supplemented with in-person events around the region to raise awareness and gather public input. At each pop-up event and listening session, project staff was available to inform the public about this Plan and its purpose. Residents were encouraged to share their safety concerns through interactive activities, direct conversations with the project team, and add comments on the web map. Lawn signs and posters that directed community members to project resources were strategically posted in high-traffic areas throughout the community.

Pop-Ups

To meet people where they are and optimize engagement, project staff participated at three community events. These events provided the opportunity for the engagement of a broader cross-section of the public than that which would attend a typical project-specific public meeting. At the first pop-up event in January 2025, the team distributed informational takeaway cards and engaged attendees in conversations about the project while they were in line for food at a Yuba-Sutter Food Bank distribution site. The outreach team later joined a Group Walking event with Blue Zones, a community-based organization, where they discussed the project and safety concerns with other attendees. During the third event, the team shared project information and gathered input at the Family Skate Night, which took place at the Tri-Counties Community Center.

Food bank pop up



Project team distributing flyers



Project team collecting feedback



Listening Session

In May, the team hosted four listening sessions, one in each of the four partner cities during evenings. These meetings were conducted in an open-house style, with informational and interactive boards set up around the room for attendees to interact with. For each jurisdiction, one board displayed crash trends and crash hotspot maps and a second board listed the safety corridors identified by the project team for potential improvements and again solicited feedback on the community’s agreement on those corridors being given higher priority, as well as provide an opportunity for them to propose other locations. All boards were translated into Spanish. Boards utilized are in **Appendix B.**

Marysville listening session



Wheatland listening session

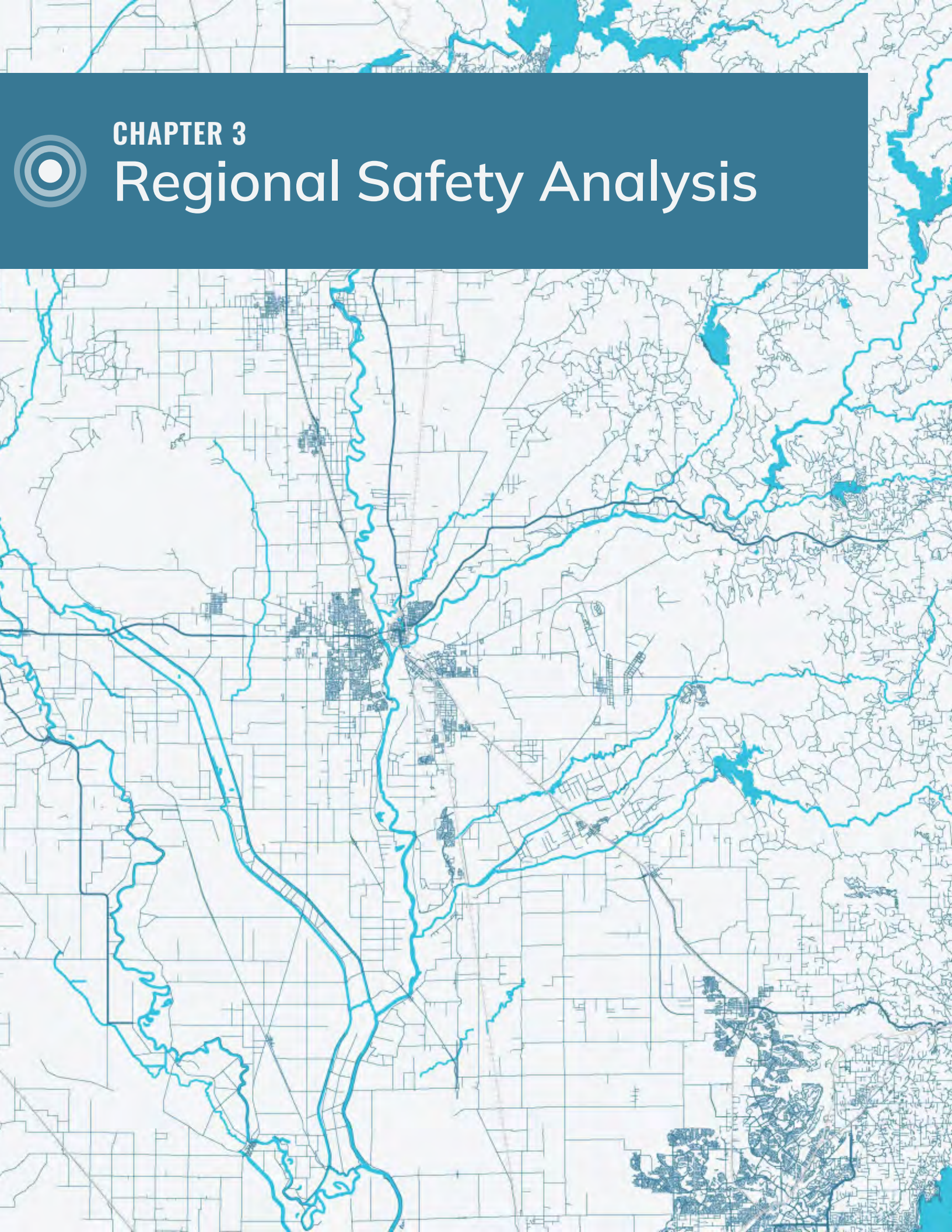


From Talk to Action

Key Takeaways

- Speeding is a primary concern.**
Residents consistently identified vehicle speeding as a top safety issue across neighborhoods.
- Pedestrian crossing safety is a major theme.**
Many comments focused on the need for safer crossings, particularly near schools.
- Infrastructure improvements are widely requested.**
Community members called for enhanced sidewalks, traffic calming measures, and improved lighting—especially in residential and downtown areas.

CHAPTER 3 Regional Safety Analysis



This chapter summarizes key findings from the region’s crash data, including the identification of high-injury safety corridors and region-wide focus areas. Together, these components highlight crash trends across the Yuba-Sutter region and inform the systemic safety strategies presented in Chapter 4.

About the Data

Crash analysis for 2018 to 2023 for Yuba-Sutter Region was carried out using crash data obtained from the California Highway Patrol’s Statewide Integrated Traffic Records System (SWITRS) database. The analysis includes all crashes that led to injury and excludes property-damage-only crashes. Data collected includes the type of crash, primary cause, and at-fault party, etc.

While crash databases such as the SWITRS, accessed through the Transportation Injury Mapping System (TIMS), remain the best source of crash data, they have been found to have certain reporting biases, including:

- Crashes involving people walking, on bicycles, or on motorcycles are less likely to be reported than crashes with people driving.
- Younger victims are less likely to report crashes.
- Alcohol-involved crashes may be underreported.

📷 Bicyclist using crosswalk at signalized intersection



3. Regional Safety Analysis

About KSI Crashes

Severe injuries resulting from a traffic crash can result in a number of catastrophic impacts, including permanent disability, lost productivity and wages, and ongoing healthcare costs. These injuries can include:

- Broken or fractured bones
- Dislocated or distorted limbs
- Severe lacerations
- Severe burns
- Skull, spinal, chest or abdominal injuries
- Unconsciousness at or when taken from the crash scene

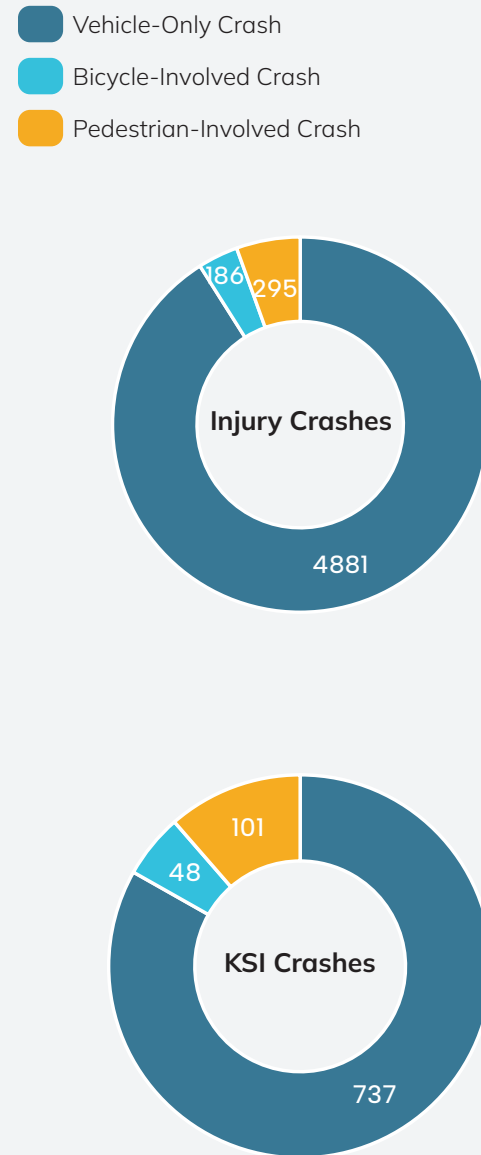
Throughout this analysis, the acronym KSI is used to denote crashes where someone was killed or severely injured.

Summary of KSI Crashes

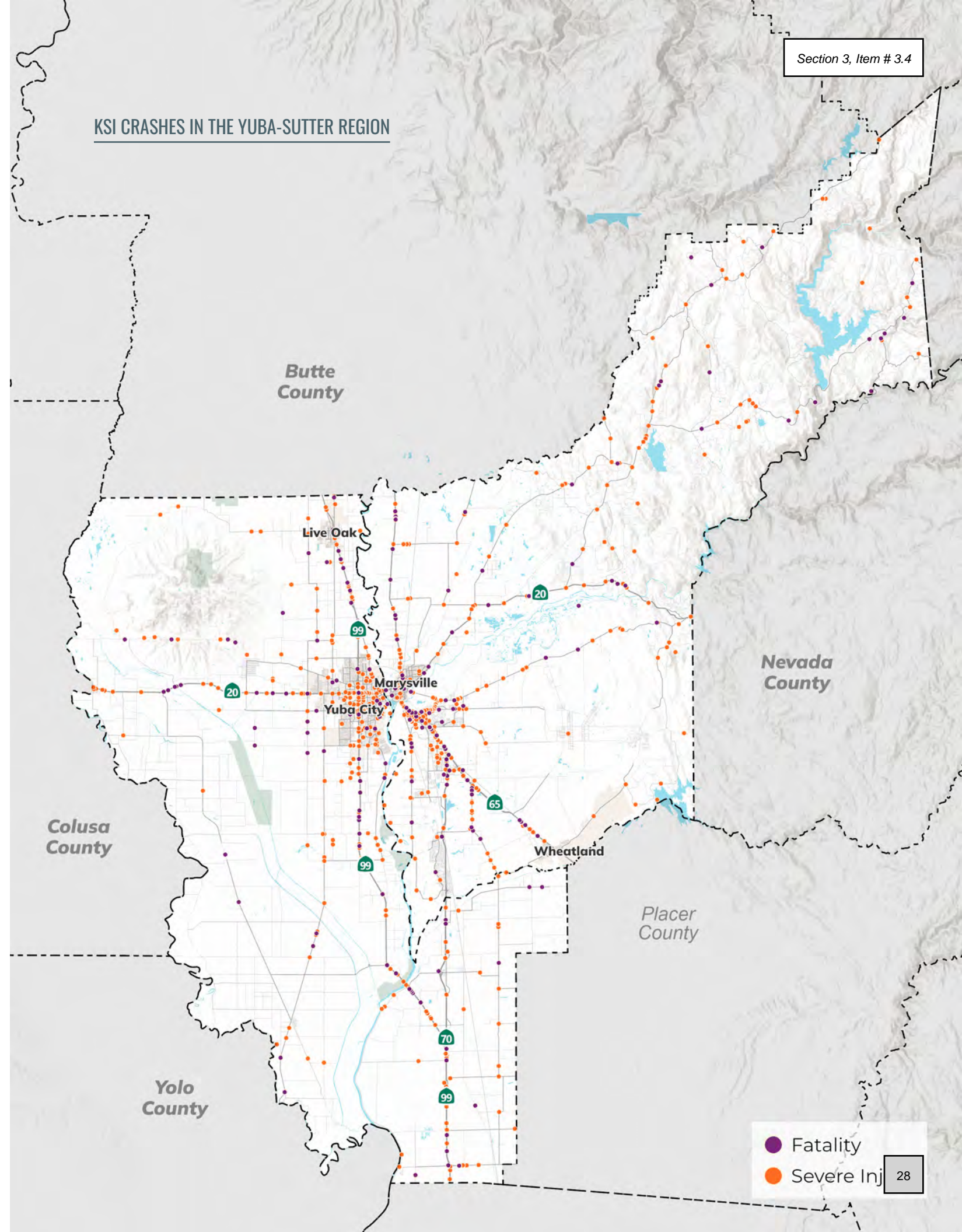
886 of the region's 5,362 crashes resulted in a victim being Killed or Severely Injured (KSI). There was a disproportionately greater share of KSI crashes that involved pedestrians when compared to all crashes. 101 (11 percent of KSI crashes compared to 6 percent) involved pedestrians, and 48 KSI crashes (5 percent) involved bicyclists.

Distracted Driving: The Safe System Approach addresses human mistakes such as loss of attention, distracted driving, and aggressive driving by designing road infrastructure and traffic systems that anticipate these errors. The goal is to minimize their consequences by creating multiple layers of protection that prevent severe crashes even when mistakes occur. These protections include improved visibility, in-vehicle technology, traffic calming measures, lane departure warnings, and physical barriers that separate traffic flows.

Figure 3.3
Crash Mode Share by Severity



KSI CRASHES IN THE YUBA-SUTTER REGION



Section 3, Item # 3.4

● Fatality
● Severe Inj

Crash Data Fact Sheet

The region's crash history includes several categories, as explained below.

What are the different crash types?

Broadside: also known as a T-bone crash, occurs when the front of one vehicle strikes the side of another. These crashes can be severe due to limited protection on vehicle sides. It is the most common type of crash in the Yuba-Sutter region.



Rear End: happens when one vehicle hits the back of another, typically due to sudden stops or following too closely at an unsafe speed. It is the second most common type of crash in the region.



Vehicle/Pedestrian: involves a vehicle striking a pedestrian. In the Yuba-Sutter region, this crash type had the highest rate of KSI outcomes, due to the vulnerability of pedestrians.



Hit Object: occurs when a vehicle collides with a fixed object like a tree, pole, or barrier. These crashes often involve just one party. Hit object crashes make up the largest share of KSI crashes in the region.



Head-On: occurs when two vehicles collide front-to-front, usually on undivided roads. These are among the most dangerous crash types and represent the second highest share of KSI crashes in the region.



Overtaken: occurs when a vehicle flips onto its side or roof, often due to sharp turns or high speeds. Overtaken crashes can be especially hazardous for occupants.



Sideswipe: occurs when two vehicles traveling in the same or opposite directions brush against each other, often during lane changes or merging.



Primary Crash Factor

Determining the cause of a crash is not always straightforward, as multiple contributing factors may be involved. The primary crash factor (PCF), is the element identified by the reporting officer as most responsible for the incident. Below are some of the most common crash factors observed in the Yuba- Sutter region:

- **Unsafe Speed:** refers to motorists operating a vehicle at a speed that exceeds what is considered safe given roadway conditions, including weather, traffic volume, and road characteristics. Even when it is not cited as the primary cause of a crash, speed contributes to the resulting severity of crashes.
- **Improper Turning:** refers to any turn made that violates traffic regulations or safety guidelines. This includes executing an illegal turn, failing to use a turn signal, or making a turn that interrupts traffic flow.
- **Vehicle Right-of-Way Violation:** occurs when a driver fails to properly yield to another vehicle who has the legal right to proceed.
- **Driving or Bicycling Under the Influence:** involves operating a motor vehicle or bicycle while impaired by alcohol or drugs. Impaired driving significantly increases collision risk by reducing reaction time, impairing judgment, and affecting motor coordination.
- **Traffic Signals and Signs:** indicates failure to comply with traffic control devices, including stop signs and traffic signals. Typical violations include running red lights and failing to stop at limit lines.
- **Wrong Side of Road:** involves a vehicle driving on the incorrect side of the road.
- **Following Too Closely:** indicates tailgating or not maintaining a safe distance from the vehicle ahead.

- **Pedestrian Violation:** refers to when pedestrians fail to follow traffic laws, such as crossing outside of designated pedestrian crosswalks or against signals. Pedestrian violations sometimes indicate inadequate pedestrian infrastructure surrounding the crash area.

Who's at fault?

The "at-fault" party refers to the individual determined to be primarily responsible for the crash. In most instances, it is the operator of a motor vehicle making the driving error. In vehicle/pedestrian crashes, it could be a pedestrian who violated rules of the road by walking in areas not designated for pedestrian use. However, pedestrian violations may be overrepresented due to a lack of clear information related to crash circumstance, such as a lack of crosswalks and the increased likelihood that the pedestrian party may be unable to provide their side of the incident at the time of the crash.

Time of Day and Lighting Conditions

Crashes are divided into four categories based on lighting conditions:

- Daylight
- Dusk and dawn
- Dark/nighttime, working streetlights present
- Dark/nighttime, streetlights not present or working.

Knowing the lighting condition of crashes helps reveal where improvements such as increased lighting can help with reducing crash risks.

Driving Under the Influence

This category summarizes the share of crashes that involved a driver or bicyclist impaired by alcohol and/or drugs.

Regional Crash Analysis

Crash Summary

Between 2018 and 2023, the Yuba-Sutter region (encompassing Yuba County and Sutter County) saw 5,362 crashes that led to some degree of injury. 186 crashes (3 percent) involved bicyclists and 295 (5 percent) involved pedestrians.

886 of the region's 5,362 crashes resulted in a victim being Killed or Severely Injured (KSI). A disproportionately greater share of KSI crashes involved pedestrians when compared to all crashes. 101 (11 percent of KSI crashes compared to 6 percent of all crashes) involved pedestrians, and 48 KSI crashes (5 percent) involved bicyclists. Broadside crashes emerged as the most common type of crash, with speeding as the top primary cause of crashes.

INJURY CRASH TOTAL

5,362

KSI CRASH TOTAL

886

Figure 3.1 Injury Crashes by Year

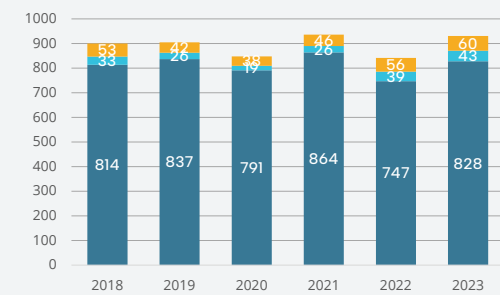
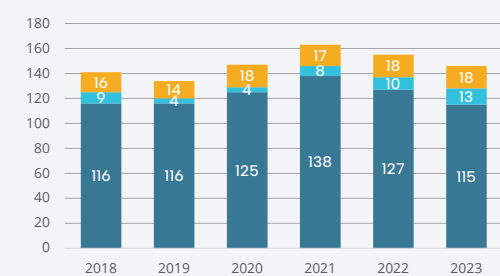
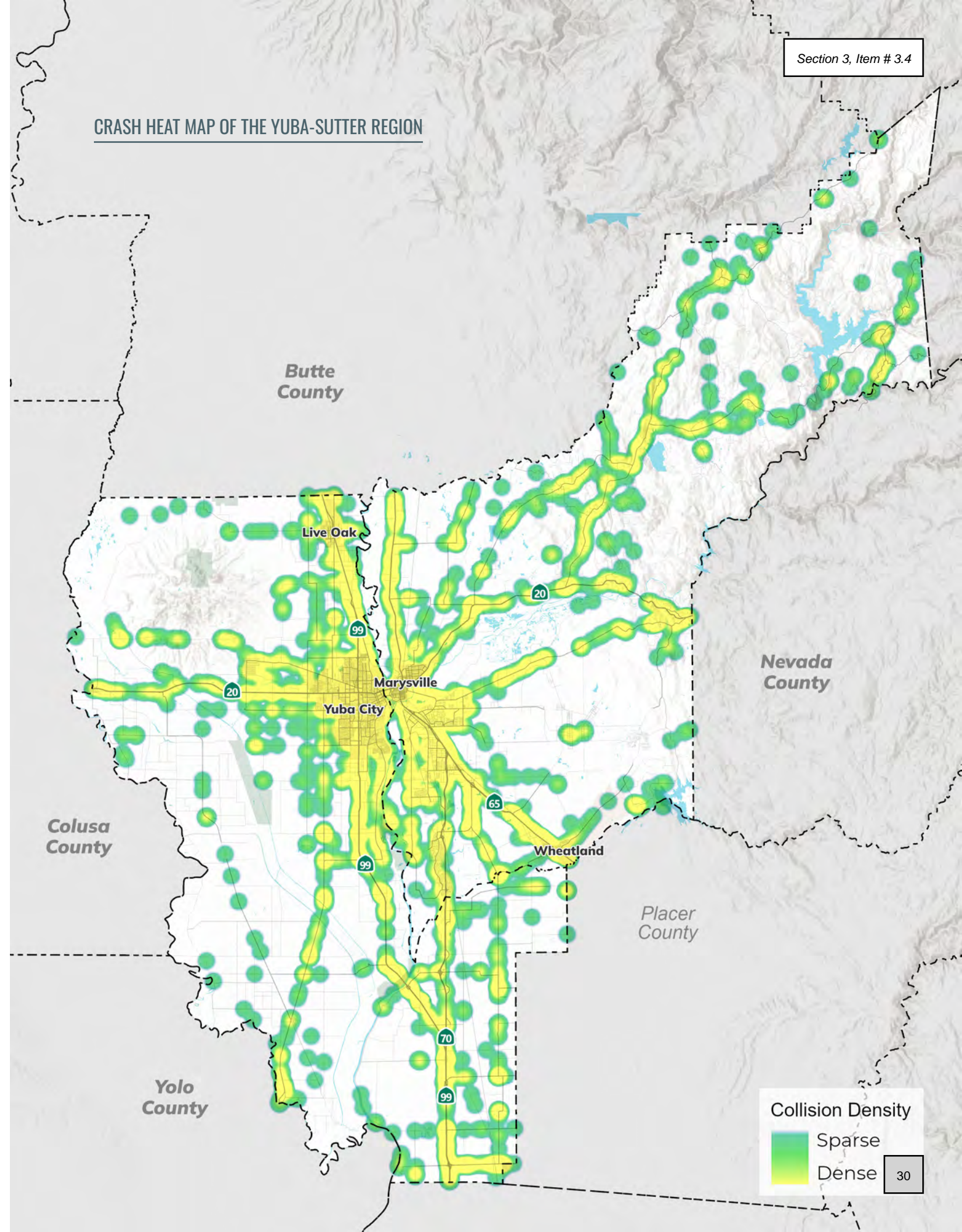


Figure 3.2 KSI Crashes by Year



- Vehicle-Only Crashes
- Bicycle-Involved Crashes
- Pedestrian-Involved Crashes

CRASH HEAT MAP OF THE YUBA-SUTTER REGION



Section 3, Item # 3.4

Collision Density
■ Sparse
■ Dense 30

3. Regional Safety Analysis

Crashes by Crash Type

Broadside (27 percent), rear end (24 percent), and hit object (19 percent) emerged as the most common types of crashes throughout the region, accounting for 70 percent of crashes.

Crashes by Primary Crash Factor (PCF)

Unsafe speed (25 percent), improper turning (22 percent), vehicle right of way violation (16 percent), and driving or bicycling under the influence (12 percent) were the most common reported primary causes of crashes, accounting for 75 percent of crashes.

Figure 3.4
Share of Injury Crashes by Crash Type, 2018 - 2023

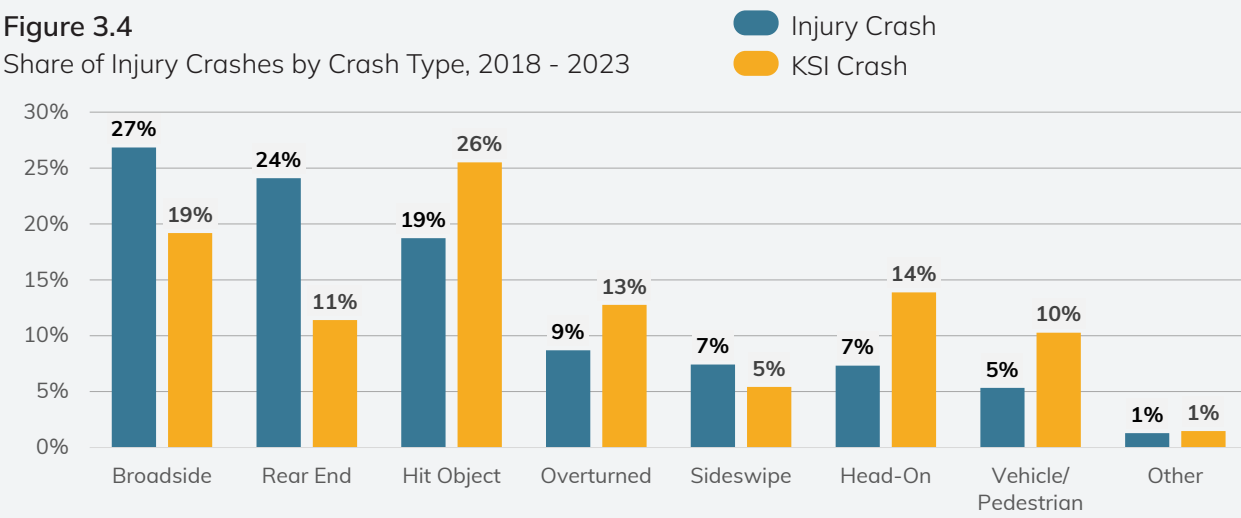
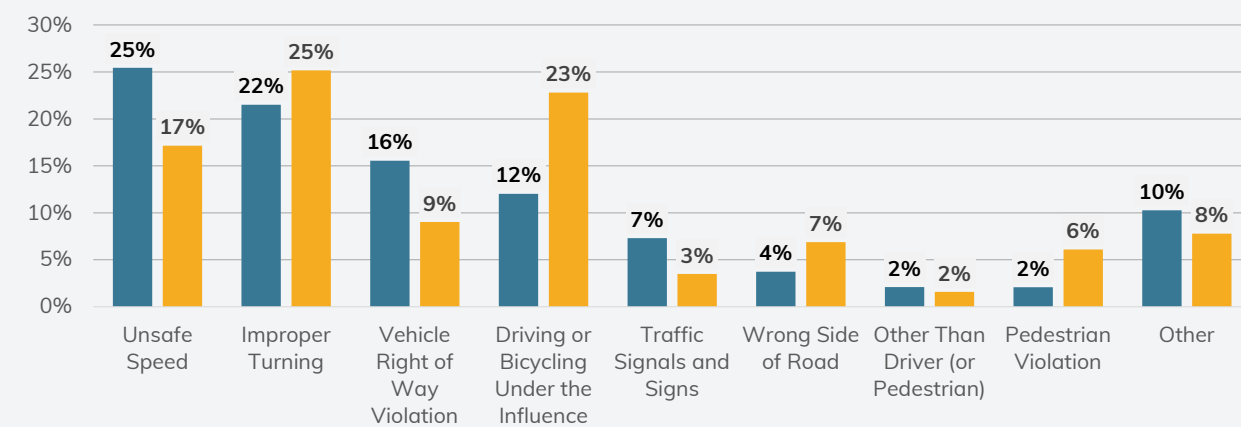


Figure 3.5
Share of Injury Crashes by Primary Crash Factor (PCF), 2018 - 2023



Crashes by Time of Day and Lighting Condition

Overall, most crashes occurred in the daylight (67 percent), 4 percent occurred during dusk and dawn, 14 percent occurred in the dark where streetlight was present, and 15 percent in the dark with no lighting. 54 percent of KSI crashes happened in the daytime, 4 percent occurred during dusk and dawn, and 16 percent occurred in the dark with streetlight present. A disproportionately greater share of KSI crashes occurred during nighttime in areas that lacked lighting, at 26 percent compared to 15 percent of all injury crashes.

Driving Under the Influence (DUI)

13 percent of all crashes involved a DUI charge. Notably, this share was larger for KSI crashes, at 25 percent.

Figure 3.6
Crashes by Time of Day & Lighting, 2018 - 2023

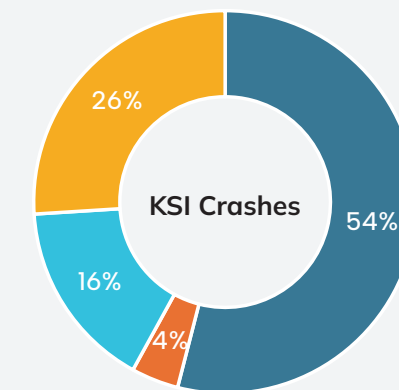
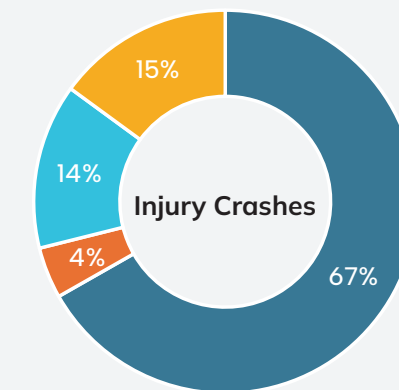
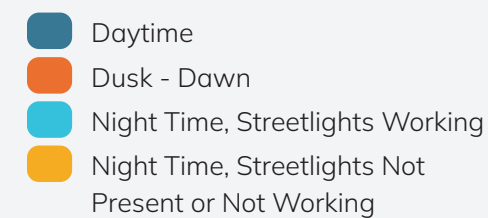
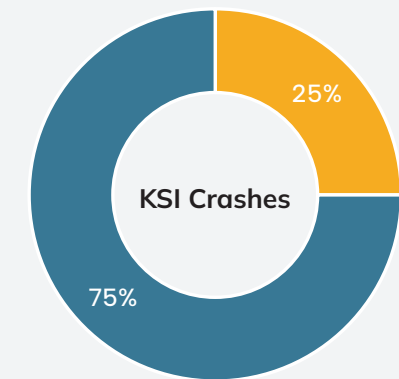
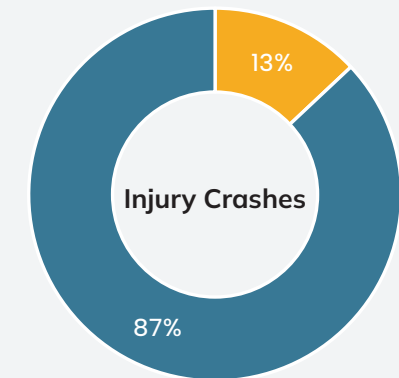


Figure 3.7
DUI Crashes, 2018 - 2023



Railroad Crash Summary

The railroad crash data analyzed covers the same time span as the roadway crash data: 2018 through 2023. There were eight railroad crashes that occurred in the same time period. Six crashes were within unincorporated Yuba County, five of them being on private roads and one being on Virginia Road southeast of Ostrom. There were two crashes within unincorporated Sutter County, one on Paseo Road and the other one on Clark Road south of Live Oak.

Of the crashes reported, two resulted in fatalities, two involved serious injuries, and two involved no injuries. Each crash report includes a narrative field that provides additional context. In six of the eight cases, the narrative stated: "Stopped on Crossing." The remaining two crashes also attributed fault to the road user, though with different wording.

About the Data

Railroad crash data was sourced from the U.S. Department of Transportation's Federal Railroad Administration (FRA), from the Highway-Rail Grade Crossing Incident Data.

According to the USDOT, a highway-rail grade crossing crash is defined as any impact between on-track railroad equipment and a highway user (e.g., automobile, pedestrian, etc.) occurring at a designated highway-rail grade crossing. These incidents are documented by FRA personnel when such crashes occur.

Incident information captured includes:

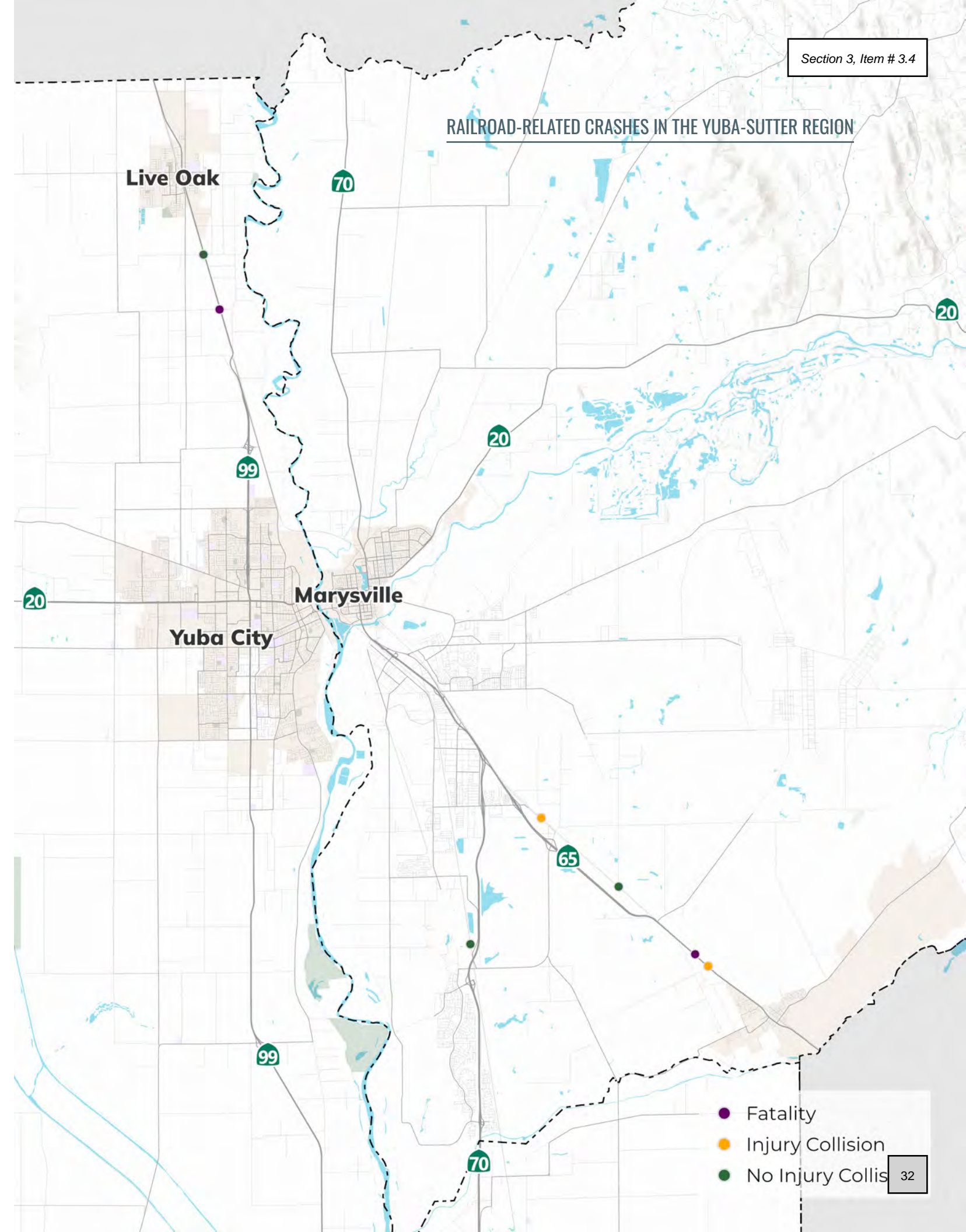
- Crash cause category (e.g., human factors, track issues, signal failures, mechanical problems)
- Casualty data (total killed and injured)
- Damage estimates
- Crash type (e.g., derailment)
- Track type (e.g., main line, yard)
- Track characteristics including signalization and method of operation (e.g., direct train control, yard/restricted limits)

Rail Crossing Rules and Regulations

The California Manual on Uniform Traffic Control Devices provides standards and specifications for all official traffic control devices in California (California MUTCD Part 8, Traffic Control for Rail and Light Rail Transit Crossings, <https://dot.ca.gov/programs/safety-programs/camutcd>).

The California Public Utilities Commission, which oversees the design, construction, and maintenance of rail crossings, hosts a webpage with the rules, guidance, and references for these high-risk areas: <https://www.cpuc.ca.gov/crossings/>

The CPUC also recently updated their Guidance on Pedestrian Treatments for Rail Crossings, which includes geometric design considerations and design elements such as markings, signage, channelization, and warning devices.



Safety Corridors

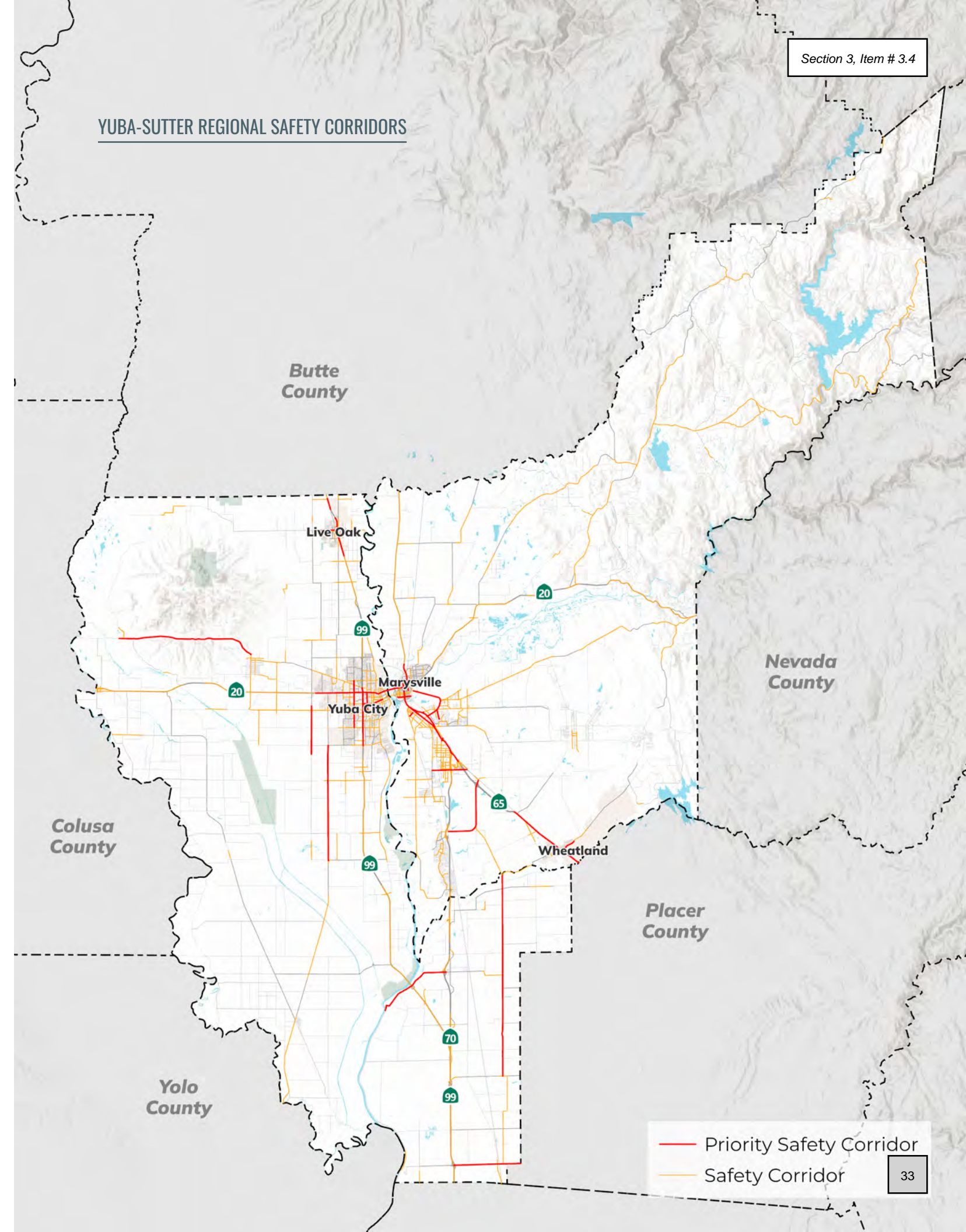
Safety corridors are defined as the roadways with the highest number and risk of crashes resulting in severe injury or death. This section discusses the methodology used to identify them.

Policy Background: Assembly Bill 43

Assembly Bill (AB) 43 is state traffic safety legislation aimed at reducing road fatalities by giving local governments more flexibility in setting speed limits. AB 43 enables jurisdictions to consider pedestrian and cyclist safety, school zones, and crash history when setting speed limits. If a jurisdiction, after completing an engineering and traffic survey, finds that the speed limit on a roadway segment is higher than reasonable or safe, they may declare a default speed limit that has been reduced an additional five miles per hour if that segment is designated as a *safety corridor*. A safety corridor is a roadway segment within an overall roadway network where the highest number of serious injury and fatality crashes occur; AB 43 stipulates that a jurisdiction's set of safety corridors must account for at least 25 percent of all killed or seriously injured (KSI) crashes and must comprise 20 percent of its streets or less. More information on AB 43 can be found in **Appendix A**.

Methodology

The methodology developed for this safety corridor identification is based on best practices identified from a review of Safe System-focused Vision Zero programs, as well as the recent *California Manual on Uniform Traffic Control Devices* definition of Safety Corridors. Safety corridors were designated based on crash frequency and contextual risk factors such as crash severity and mode, proximity to schools, the presence of vulnerable populations, etc. This methodology adopts a proactive, systemic safety analysis rather than relying solely on historical crash data. It incorporates known risk factors from national and state-level research. A network of safety corridors was developed using the 5-year crash dataset for 2018-2023 from the Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center database. Other data sources such as the USDOT Equitable Transportation Community (ETC) and Wejo speed data were used to incorporate contextual data into the network. For a full description of the technical methodology, see **Appendix B**.



Focus Areas

Focus areas were identified to represent the most significant patterns behind injury crashes—especially KSI crashes—in the region. Six such focus areas, denoted ‘A’ through ‘F’, were identified across the region, with each one applicable to several or all of the jurisdictions covered by this RSAP.

The following pages contain cutsheets that present each focus area, along with the following information:

- Description and associated information about each focus area
- Number of crashes associated, including number of KSI crashes among those (note that focus areas are not mutually exclusive; crashes can fall under multiple, and totals will exceed 100%)
- A map identifying locations of crashes within the focus area

Engineering countermeasures that can potentially address these crashes are also presented in each jurisdictions’ chapter.

Yuba-Sutter Region Focus Areas:

- FOCUS AREA A**
Crashes on State Highways Serving as Main Streets
- FOCUS AREA B**
Right-of-Way Issues at Intersections
- FOCUS AREA C**
Driving Under the Influence
- FOCUS AREA D**
Crashes Involving People Walking and Biking
- FOCUS AREA E**
Improper Turning Away from Intersections
- FOCUS AREA F**
Hit Object



3. Regional Safety Analysis



FOCUS AREA A

Crashes on State Highways Serving as Main Streets

INJURY CRASH STATISTICS

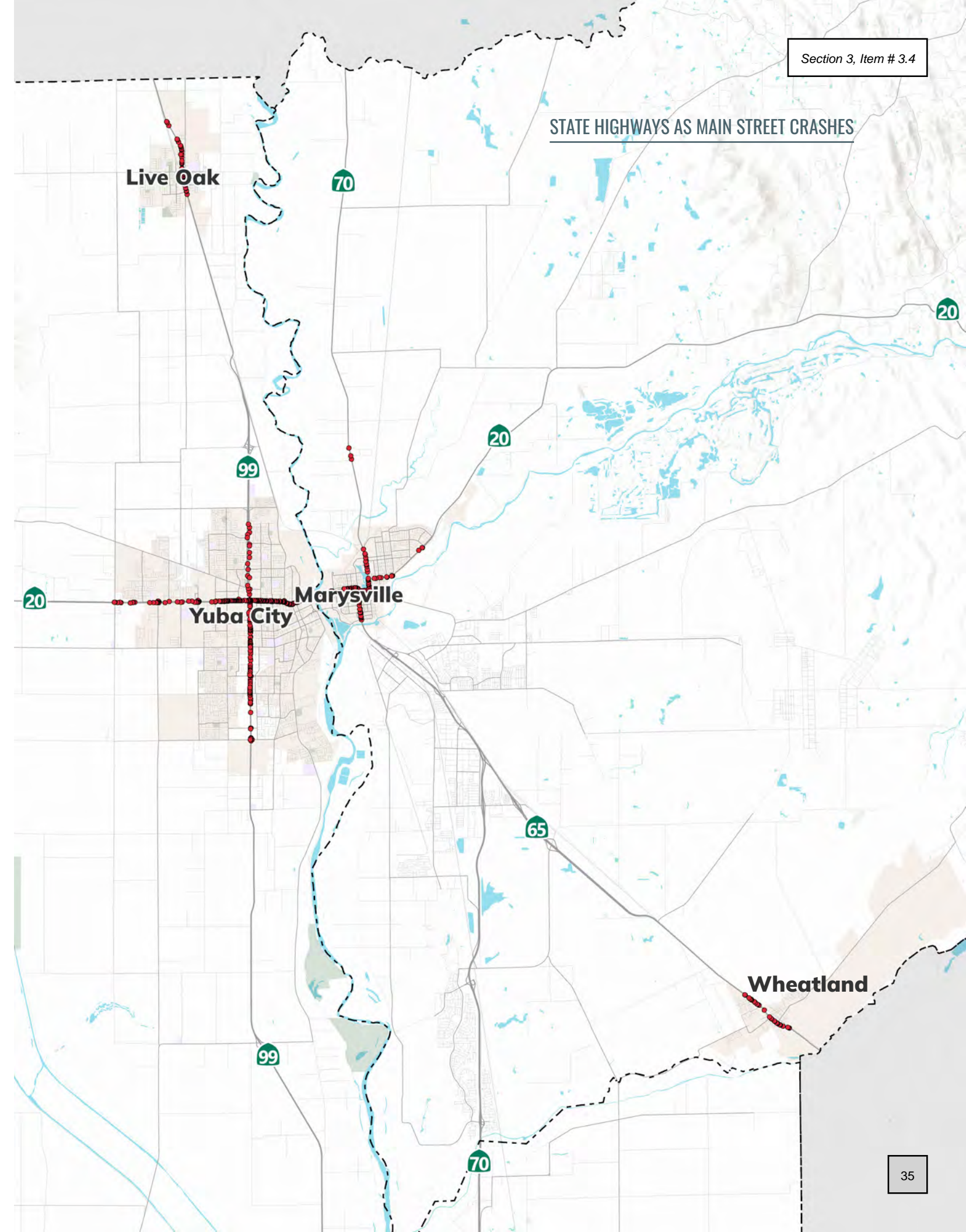
829 (15%) Total Crashes

80 (9%) KSI Crashes

State Routes 20, 49, 65, 70, 99, and 113 traverse through the region and serve as key corridors within Yuba and Sutter County jurisdictions. Due to their high volumes and travel speeds, these highways present elevated safety risks and are frequently the sites of crashes. 39 percent of all crashes and 42 percent of KSI crashes in the Yuba-Sutter region occurred on state highways. Sections of highways that function as Main Streets in more populous areas often see conflicts between

different modes of transportation—40 percent of all highway crashes (16% overall) occurred in such areas throughout the region. Speeds exceeding 60 mph were a factor in 40 percent of “main street” highway crashes, and in 10 percent of bicycle- and pedestrian-related incidents on these highways.

Countermeasures that can improve safety along highway main streets focus on slowing vehicle speeds, organizing traffic flow, and reducing conflict points between drivers, pedestrians, and bicyclists.



3. Regional Safety Analysis

Complete Streets on the State Highway System

Caltrans Complete Street Contextual Design Guidance (DIB94)

The Yuba-Sutter region includes a mix of rural communities, suburban neighborhoods, and semi-urban downtown centers, many of which are bisected by state highways. These state routes frequently serve as community main streets in areas with growing residential development, schools, transit use, and walkable town centers. However, these corridors often lack adequate facilities for people walking, biking, or accessing transit, leading to serious safety risks, particularly for vulnerable road users.

Through the published Complete Streets Contextual Design Guidance (Design Bulletin 94), Caltrans has provided new flexibility in the design of complete streets projects on the State Highway system. The guidance includes considerations for changing speed limits, constructing appropriate bike facilities, and increasing shoulder widths – all context-sensitive solutions appropriate to better serving travelers of all ages and abilities.

Project Criteria

A project must meet the following criteria to follow this new guidance:

- Located in an urban area, suburban area, or rural main street
- Posted speed limit does not exceed 45 MPH
- Includes a bike, pedestrian, or transit facility.

Suggested Guidance

Some of the guidance suggested by DIB 94 is as follows:

- **Design Contexts:** Reallocate roadway space to enhance safe and efficient connectivity for communities, regardless of travel mode. To accommodate bicycle and pedestrian facilities, use strategies such as narrowing or removing travel lanes, adjusting median or turn lane widths, and reducing or eliminating on-street parking.
- **Vehicle Speeds:** Traffic calming and speed management strategies are tools to achieve safe and predictable speed transitions. Proposed speed limits should be based on place type, helping avoid sharp accelerations or decelerations along transitions such as from a rural area into a commercial district where pedestrians are more likely to be present.
- **Roadway Cross-sections:** Cross-sectional design should consider factors such as place type, operating speed, and current and potential users when establishing or modifying lane widths and preferred sidewalk and bikeway widths. Considering the community context and place type is key to aligning the class and location of treatments such as bicycle facilities for optimal safety and connectivity.
- **Crosswalks:** The placement and frequency of crosswalks should support pedestrian safety and visibility, particularly near schools, transit stops, and community destinations.

Where does this apply in Yuba-Sutter?

Several corridors in the region not only meet the DIB 94 eligibility criteria but also reflect ongoing safety concerns and latent demand for safer multimodal travel, particularly for non-motorized users. Examples include:

SR 20 through Marysville and Yuba City

This route traverses central business districts and neighborhoods with significant pedestrian activity. Speed limits are typically 35–45 MPH, and these corridors serve local bus routes but lack safe crossing opportunities and continuous bike facilities.

SR 99 in Yuba City

This route is a key corridor with significant pedestrian activity, transit stops, and adjacent commercial and residential areas. It lacks consistent or protected bicycle facilities, often depending on narrow shoulders or intermittent bike lanes. This route also experiences land use transitions that would benefit from more predictable speed profiles.

In each of these locations, existing land use, speed profiles, and community access needs, make the roadway a good candidate for design treatments as outlined in DIB 94. Several sites identified in this plan's crash analysis have shown repeated collisions on these highway segments, underscoring the need for safety improvements catered towards low-speed, multimodal infrastructure.

The design flexibilities provided under DIB 94 offer local agencies and Caltrans a valuable opportunity to modernize transportation infrastructure in a way that is both efficient and responsive to local context. Designing with this guidance in mind allows for rural and suburban settings like Yuba and Sutter Counties to design solutions that better match the context of the communities they serve.

SR 70 through Linda and Olivehurst

This route serves as a main spine for residential communities and local schools. SR 70 has multiple driveways, cross streets, and transit stops—features typically found in a rural main street context. Current roadway geometry and traffic volumes, however, present safety challenges especially for pedestrians and cyclists, especially at uncontrolled crossing points.

SR 99 in Live Oak

This state highway cuts through small-town centers where pedestrian activity is high, but facilities are lacking or outdated and are candidates for safety enhancements, including sidewalk improvements, safer crossings, and improved visibility for vulnerable road users.

3. Regional Safety Analysis



FOCUS AREA B

Right of Way Issues at Intersections

INJURY CRASH STATISTICS

1,005 (20%) Total Crashes

94 (11%) KSI Crashes

Improper turning is one of the primary causes of crashes and accounts for 1,153 crashes (nearly 22 percent) of all and 223 (25 percent) of KSI crashes in the Yuba-Sutter region. Of those 1,153 crashes,

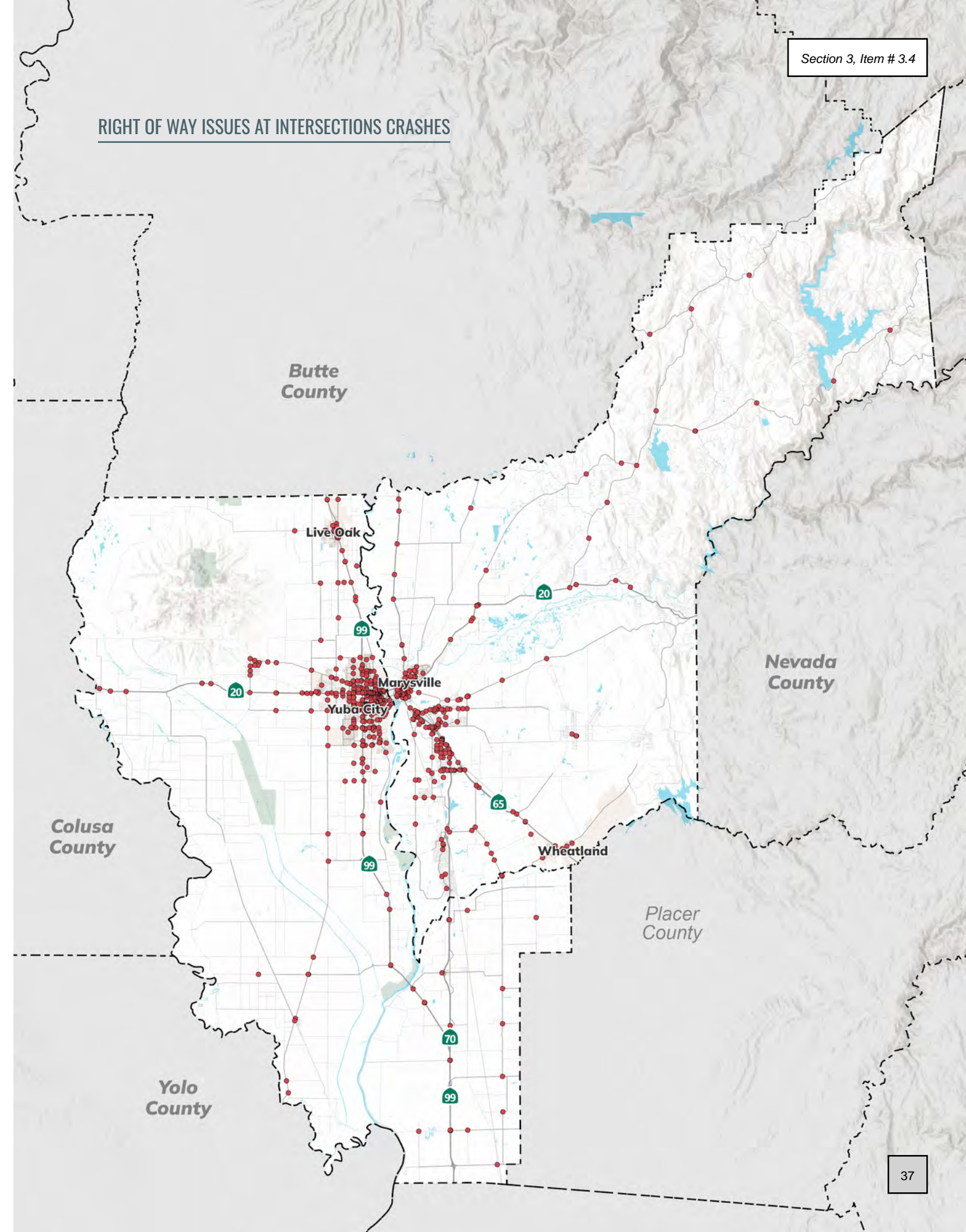
740 occurred away from the intersection of two roadways, accounting for 14 percent of the region's crashes. Crashes with a primary collision factor of improper turning that aren't occurring at intersections of roadways include a wide range of actions, such as mis-attributing a turn into a driveway. In the moments leading up to these collisions, 43 percent of at-fault parties made an unsafe turning action (e.g. making abrupt lane changes) and 25 percent ran off

the road. This crash type is strongly related to roadway departure on highways and county roads where speeds exceed 55 MPH.

32 percent of this crash category led to an object being hit and 17 percent to the vehicle overturning, the majority of which occur outside of city limits in more rural parts of the region. Countermeasures for this focus area include a combination of signage, roadway enhancements, and visibility improvements such as rumble strips, curve warning signs, guardrails, and additional shoulder space, which can help prevent dangerous turning maneuvers and roadway departures by guiding drivers and providing recovery space.



RIGHT OF WAY ISSUES AT INTERSECTIONS CRASHES



3. Regional Safety Analysis



FOCUS AREA C

Driving Under the Influence

INJURY CRASH STATISTICS

707 (13%) Total Crashes

227 (26%) KSI Crashes

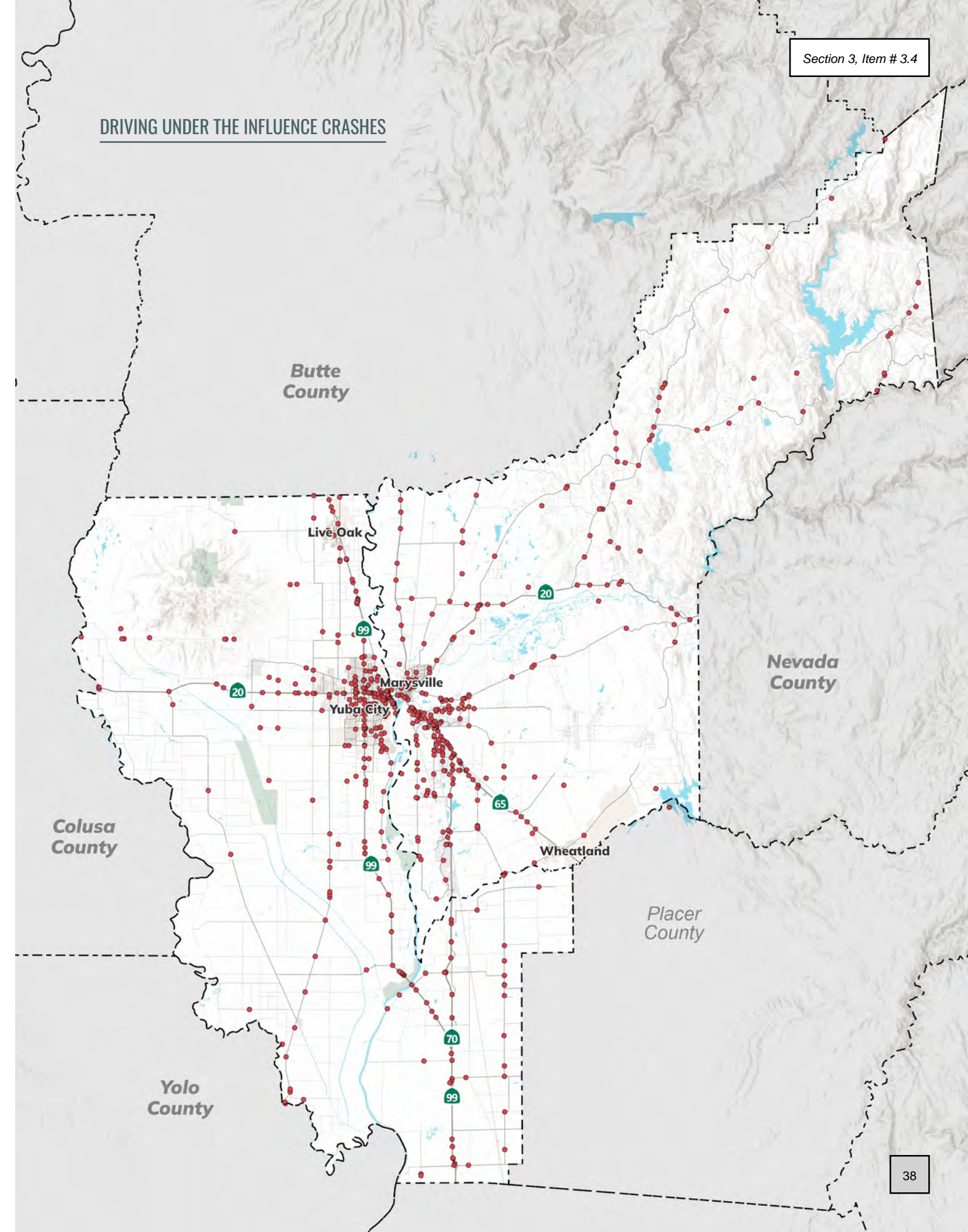
Driving under the influence (DUI) is a significant contributor to injury crashes, especially and disproportionately to KSI crashes. 26 percent of KSI crashes involves alcohol impairment. Friday, Saturday, and Sunday see higher crash frequency from 6pm to 3am, compared to other times of day and days of the week.

Within cities, there are higher concentrations of DUI crashes on arterial and collector roads along commercial areas, where there is also a

higher share of DUI crashes involving bicyclists and pedestrians—even with crosswalks present. In the unincorporated areas, 63 percent of DUI crashes occurred on rural roads, and 44 percent resulted in a hit object crash. Narrow two-lane corridors such as SR-113, and curved road segments also host sites of DUI crashes. Countermeasures for DUIs are typically programs that target education and enforcement rather than engineering or infrastructure changes.



DRIVING UNDER THE INFLUENCE CRASHES



3. Regional Safety Analysis



FOCUS AREA D

Crashes Involving People Walking and Biking

INJURY CRASH STATISTICS

480 (9%) Total Crashes

149 (17%) KSI Crashes

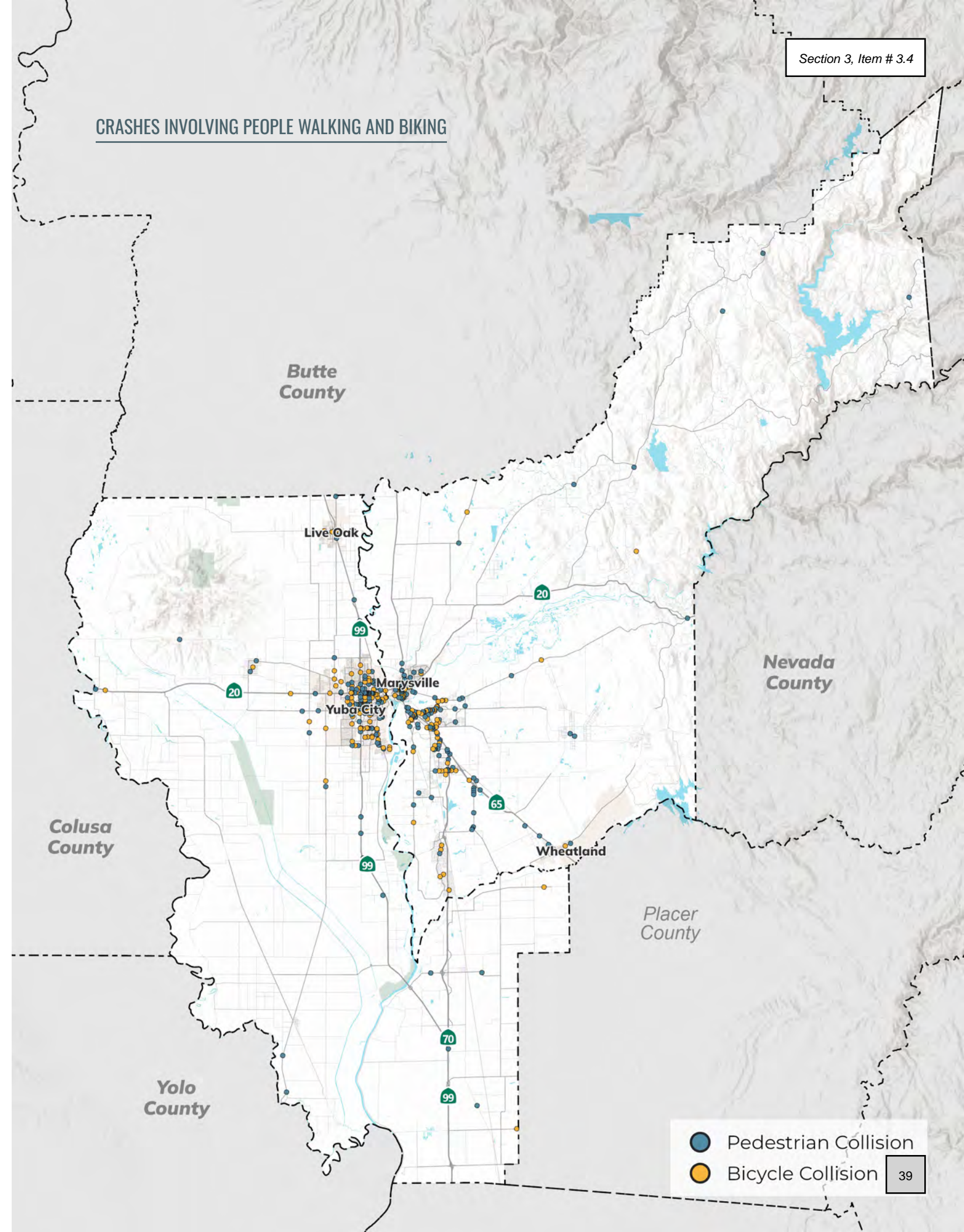
People walking and riding bicycles are considered vulnerable roadway users. Although crashes involving bicyclists and pedestrians make up less than nine percent of all crashes, they account for nearly seventeen percent of all KSI crashes in the region.

Sutter County's KSI crashes are concentrated within Yuba City, while Yuba County's crashes are dispersed throughout Marysville and the unincorporated communities of Linda and Olivehurst. There are higher rates of KSI crashes involving bicyclists and pedestrians on wide four-lane arterials along commercial

areas, sometimes with two-way left turn medians or median islands. Mid-block crashes occurred more often in areas where pedestrian crossings are sparse, mainly in unincorporated areas. Additionally, 24 percent of KSI crashes involving bicyclists and pedestrians occurred within a quarter-mile of a school and 25 percent ran off the road. Countermeasures for crashes involving bicyclists and pedestrians that occurred within a quarter-mile of a school typically offer vulnerable road users with dedicated, protected space and increased visibility, like bikeways and lighting.



CRASHES INVOLVING PEOPLE WALKING AND BIKING



3. Regional Safety Analysis



FOCUS AREA E

Improper Turning Away from Intersections

INJURY CRASH STATISTICS

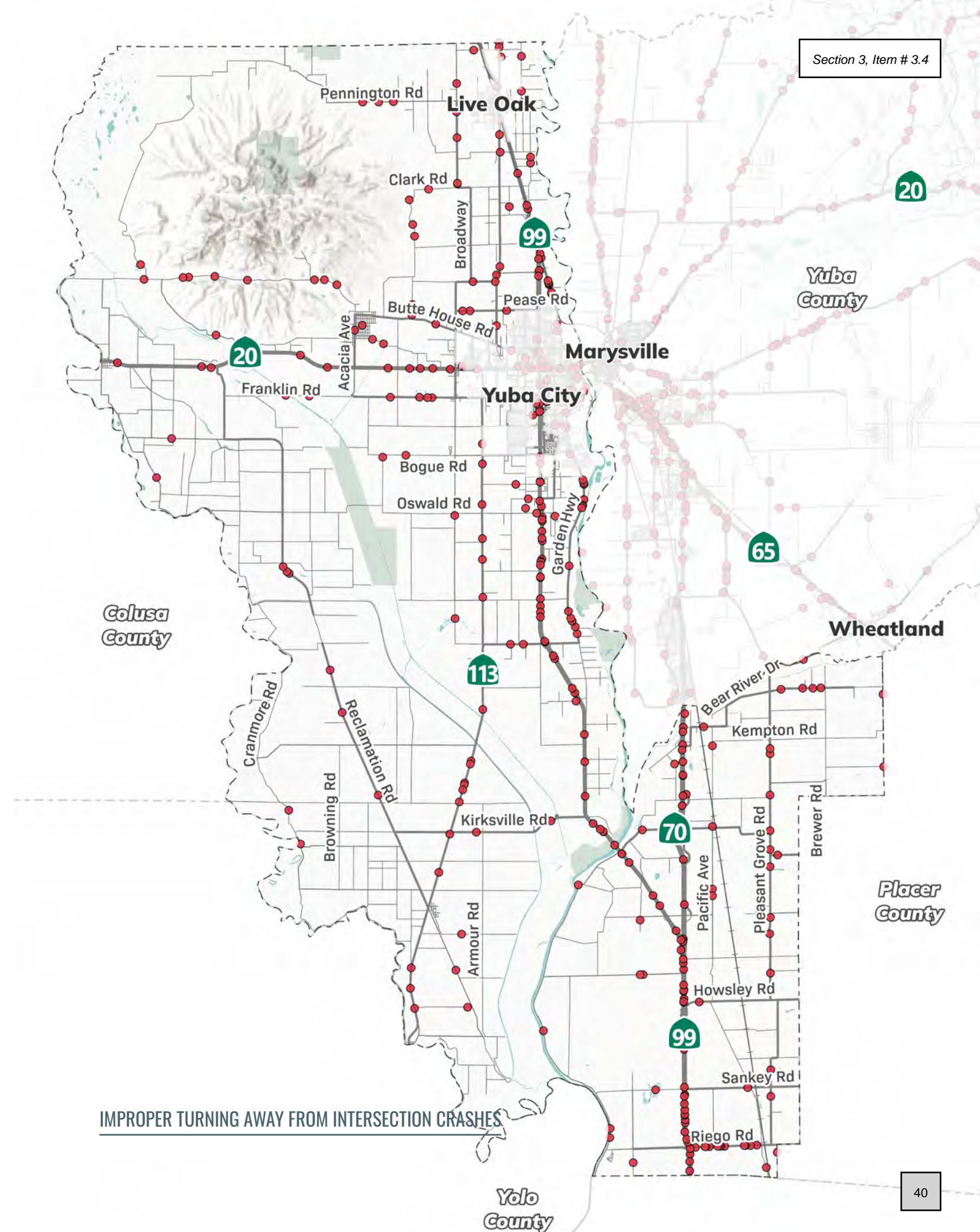
740 (14%) Total Crashes

172 (19%) KSI Crashes

Improper turning is one of the primary causes of crashes and accounts for 1,153 crashes (nearly 22 percent) of all and 223 (25 percent) of KSI crashes in the region. Of those 1,153 crashes, 740 occurred away from an intersection, accounting for 14 percent of the region's crashes. In addition, 32 percent of crashes with improper turning as the primary factor and occurring away from intersections led to hit object and 17 percent to overturned, both crash types happening almost exclusively outside of city limits. This indicates roadway departure on highways and county roads where speeds exceed 55MPH. In the moments leading up to this focus area, 43 percent of at-fault parties

made an unsafe turning action (e.g. making abrupt lane changes) and 25 percent ran off the road.

A combination of signage, roadway enhancements, and visibility improvements, such as rumble strips, curve warning signs, guardrails, and delineators, can help prevent unsafe turning and mitigate roadway departures by guiding drivers and providing recovery space. Pairing these countermeasures with speed limit reductions can reduce crash severity by lowering the kinetic energy transferred during high-speed impacts, helping prevent serious injuries.



3. Regional Safety Analysis



FOCUS AREA F

Hit Object

INJURY CRASH STATISTICS

1,004 (19%) Total Crashes

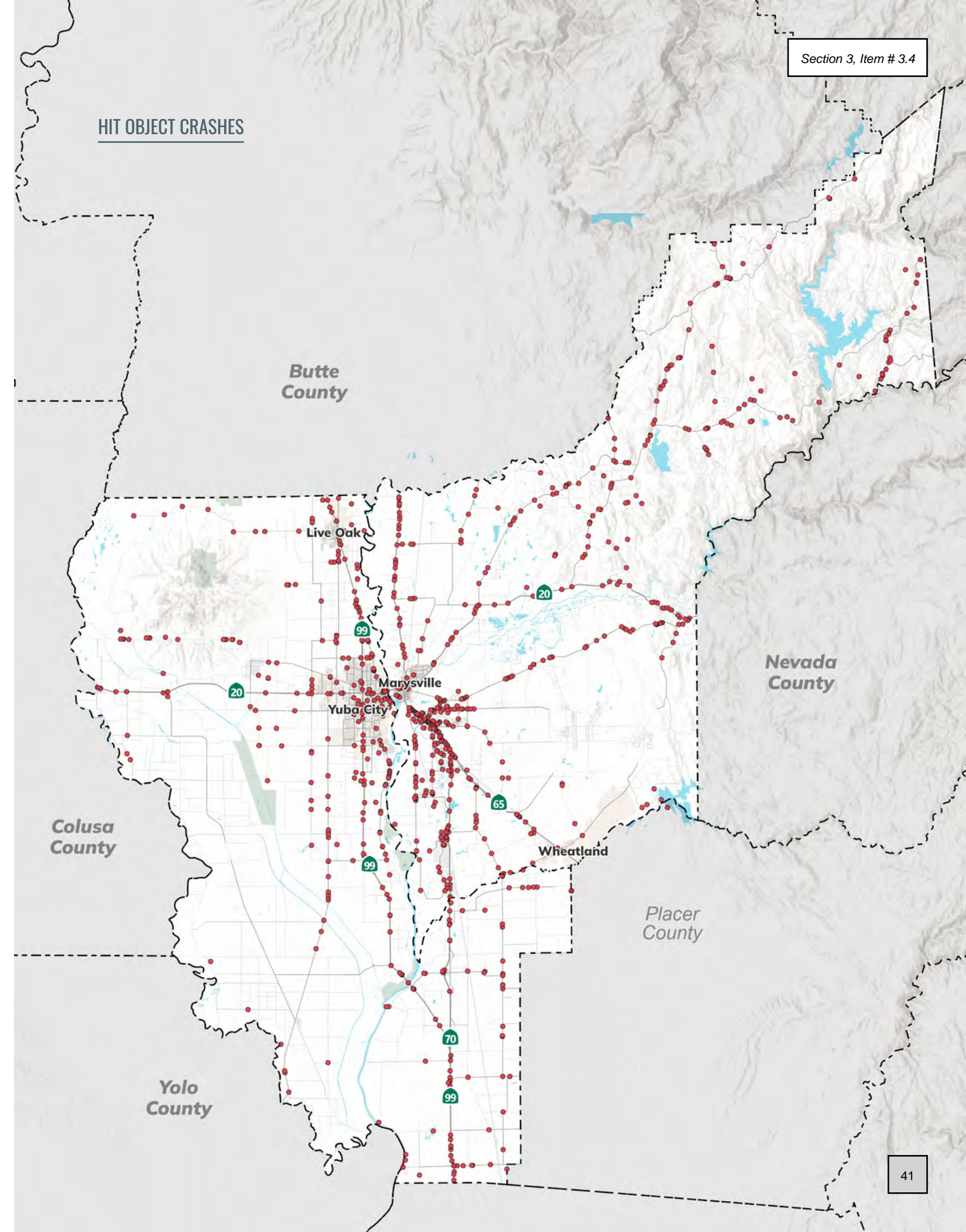
229 (26%) KSI Crashes

Overall, 1,004 of crashes resulted in hit object, making up 19 percent of the region's crashes. However, this type of crash accounted for 26 percent of KSI crashes. 95 percent of all hit object crashes involved only one party.

896 crashes, or 89 percent, of hit object crashes occurred outside of city limits. Out of those, 68 percent occurred on non-state facilities. In unincorporated Sutter County, many of these hit object crashes occurred on two-lane rural county roads—typically narrow lanes without shoulders, most of which have posted speed limits of 55MPH and up. In unincorporated Yuba County, many non-state-highway hit object crashes occurred in and near residential areas, mainly Linda and Olivehurst, where some roads range from two- to four-lanes and often have on-street parking.

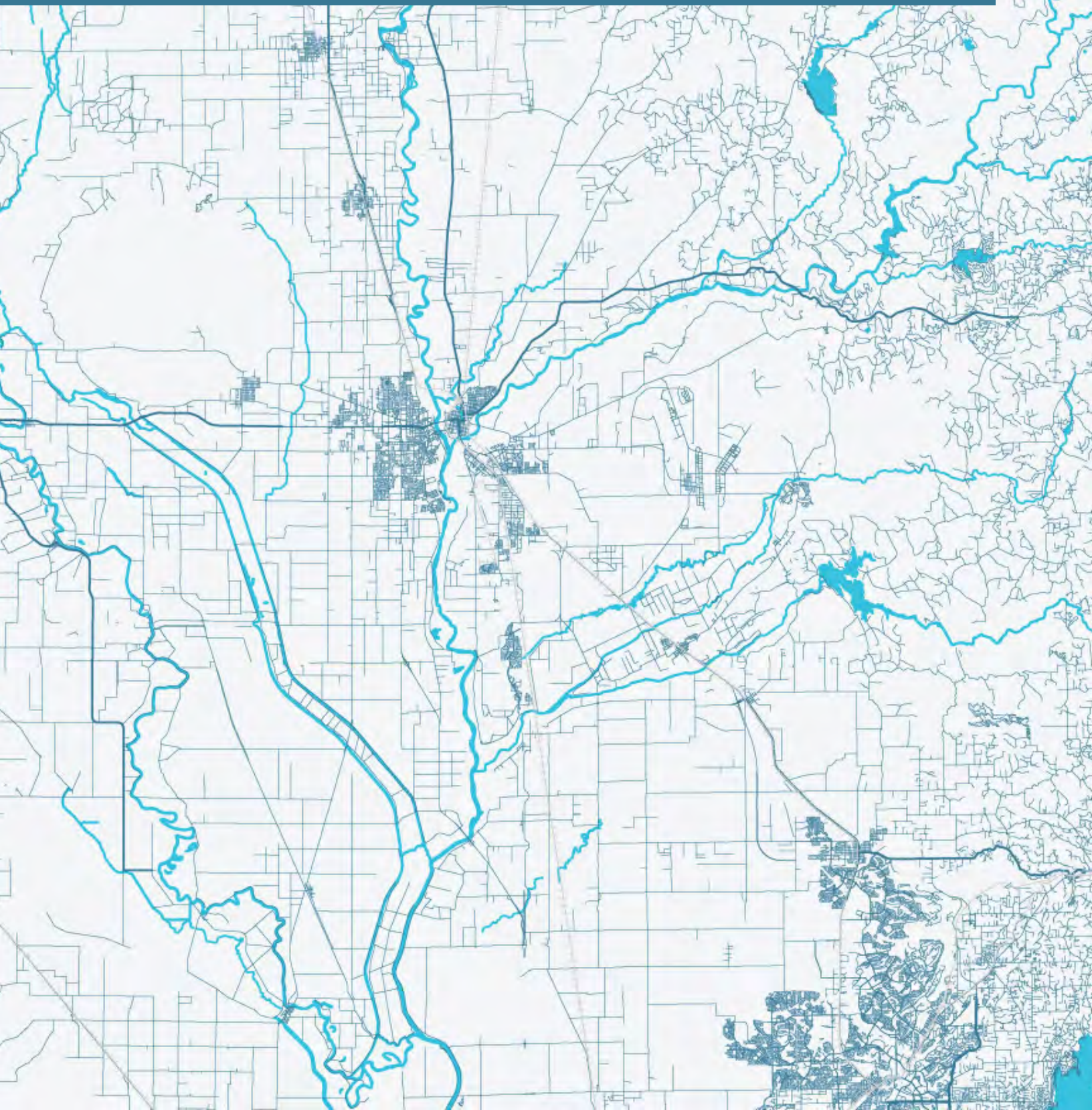
Most of the objects hit were fixed objects (83 percent), such as trees and utility poles, nine percent were other objects such as items dropped from a vehicle, and two percent were animals.

Countermeasures like clear zone improvements and widened shoulders help prevent crashes with objects and provide recovery space, while rumble strips and reflectors enhance driver awareness and guidance, especially in low-visibility conditions. Speed limit reductions are especially critical, as lower speeds directly reduce the kinetic energy transferred during a crash, which in turn lowers the risk of severe injury or fatality.





CHAPTER 4 Regional Implementation Plan



Engineering & Programmatic Countermeasures

This section presents a toolbox of safety countermeasures that can be deployed to address crash trends and the systemic factors behind them. Systemic improvements, both engineering and programmatic/non-engineering related, were identified for implementation.

What Are Engineering Countermeasures?

Engineering countermeasures are physical, infrastructure-based improvements that can be made to roadways to reduce likelihood of crashes.

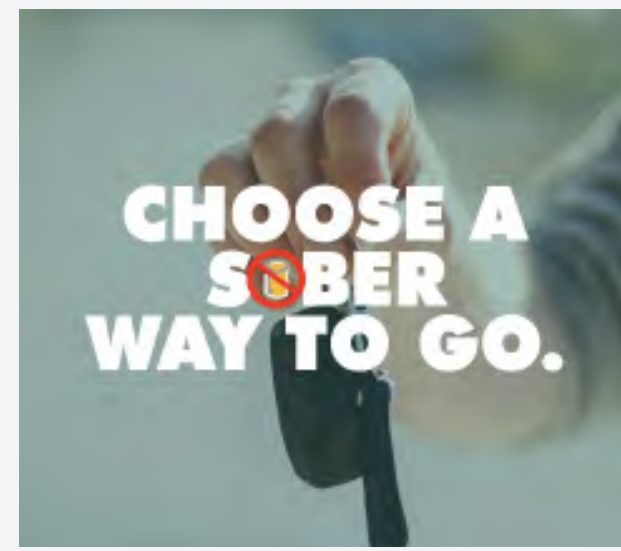
Example: Rectangular Rapid Flashing Beacon



What Are Programmatic/Non-engineering Countermeasures?

Programmatic/Non-engineering countermeasures introduce education, enforcement, and other policy instruments as means of encouraging safer roadways through user behavior, and they can be used to tackle traffic safety problems such as alcohol and drug impaired driving, distracted driving, speeding, and pedestrian and bicyclist safety.

Example: OTS Go Safely California campaign resources



4. Regional Implementation Plan

Engineering Countermeasures

Engineering countermeasures are presented in a toolbox in **Appendix D**, which includes descriptions of the countermeasures, its applicable tier(s) in the Safe System Roadway Design Hierarchy, estimated high-level cost, and opportunities for quick-build versions. Countermeasures that are part of FHWA’s list of Proven Safety Countermeasures and/or in the 2020 Caltrans Local Roadway Safety Manual (LRSM) are also noted. Both distinctions can be advantageous for use in Caltrans Highway Safety Improvement Program (HSIP) grant funding applications.

As practitioners select countermeasures for specific projects, they should consider crash history, contextual factors, design features, costs, and a range of other issues. In each jurisdictions’ chapter in subsequent sections of this Plan, countermeasures from this toolbox are paired with focus areas to provide a systemic approach to addressing crash trends.

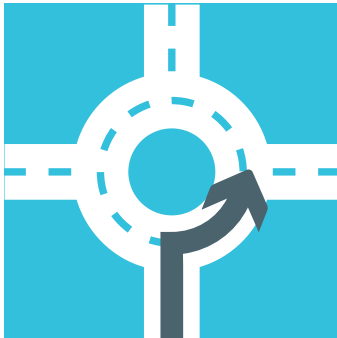
Example Countermeasure - Roundabout

Roundabouts represent a proactive approach to improving intersection safety and efficiency within the Yuba-Sutter region. Their design aligns with the goals of the Regional Safety Action Plan by reducing severe crashes, enhancing traffic flow, and accommodating diverse users. Implementing roundabouts in strategic rural and urban locations can serve as a cost-effective and sustainable measure to advance both safety and mobility outcomes identified in the plan.

Example Engineering Countermeasure

Roundabout

INTERSECTIONS & ROADWAYS



Description

A roundabout is a circular intersection where traffic flows in one direction around a central island, and vehicles must yield at entrance lanes. Unlike conventional intersections, roundabouts eliminate severe conflicts from crossing and left-turn movements. The design of a roundabout forces drivers to slow down, which narrows the range of vehicle speeds and reduces the severity of crashes. Additionally, pedestrians only need to cross one direction of traffic at a time, minimizing their exposure to vehicles.

FHWA PROVEN COUNTERMEASURE

<p>Context Urban/Rural</p> <p>LRSM ID S16/NS04</p> <p>Cost \$\$\$</p> <p><i>Low-Cost / Quick-Build Alternative Available</i></p>	<p>Safe System Hierarchy</p> <ul style="list-style-type: none"> ● Tier 1 Remove Severe Conflicts ● Tier 2 Reduce Vehicle Speeds ● Tier 3 Manage Conflicts in Time ● Tier 4 Increase Attentiveness and Awareness
---	---

Programmatic Countermeasures

Programmatic countermeasures can also be effective in reducing the likelihood and severity of crashes. Programmatic countermeasures include education, enforcement, and other strategies. *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 11th Edition*, published by the National Highway Traffic Safety Administration (NHTSA) in 2023, provides a range of information on example traffic safety programs, including examples and effectiveness rankings.

What’s Included?

- Speed limit decrease opportunities, especially near schools or in downtowns
- Enforcement based on crash history
- High-visibility DUI enforcement
- DUI prevention through partnerships with public health agencies
- Education and public awareness campaigns targeted at speeding, DUIs, and increasing awareness of people walking and biking
- Automated enforcement with red-light cameras or speed cameras

More information on these and other programs can be found in **Appendix D**.

Local Efforts

Locally, several safety programs have already been implemented. CHP has previously been awarded grants from the California Office of Traffic Safety to perform targeted enforcement in high-frequency crash areas. Marysville has recently performed a round of DUI enforcement. Live Oak is in the process of performing engineering and traffic studies to implement lower speed limits in key areas.

There have been several other efforts through Blue Zones and First Five Sutter County as well as other local groups that have conducted education and outreach related to active transportation. Additionally, several of the jurisdiction’s Health Departments have funding for bike helmet give-aways.

Example Programmatic Countermeasure

◎

Speed Limit Modification

Description

California Assembly Bill (AB) 43 was passed in 2021 to provide a means to lower speed limits on corridors that meet certain criteria. AB 43 focused on giving local jurisdictions more flexibility in setting speed limits, especially regarding vulnerable road users:

- Speed Limit Reduction: Reduction of additional 5 mph based on several factors, including designation of Safety Corridors, as described in Chapter 3
- Prima Facie Speed Limits: Options for 15 and 25 mph in certain areas such as school zones depending on context
- Business Activity Districts: Option for 20 or 25 mph speed limits

Effectiveness and Cost

★ ★ ★ ★ ★

Cost: \$

4. Regional Implementation Plan

Implementation Plan

This section presents the Action Plan for the Yuba-Sutter Region partner agencies. Yuba-Sutter is committed to providing regional leadership to improve roadway safety and working to eliminate fatalities and severe injuries on the roadway network. The Action Plan is comprised of strategies to facilitate successful implementation and evaluate and communicate progress.

Infrastructure

A priority corridor list was prepared for each jurisdiction based on the locations of the safety corridor network that had the highest number of severe and fatal crashes, community input, location of sensitive land uses, as well as review of the jurisdiction's other infrastructure needs and priorities. See identified projects in each jurisdiction's section.

Prioritization

The FHWA Safe System Roadway Design Hierarchy provides guidance on how to prioritize projects when reviewing development applications and making land use and transportation planning decisions. Projects identified in the project list, as well as any future projects, should prioritize higher tiers with the goal of first removing severe conflicts. Project priorities should include those with the greatest potential of reducing crash risk (exposure, likelihood, and severity).

Policies and Practices

In addition to infrastructure projects, the success of this RSAP is dependent on changes to the policies and practices that institutionalize the Safe System Approach for the region's partner agencies in. As a result of the benchmarking assessment described in **Appendix A** and recommendations from the

Task Force, the Action Plan contains strategies, institutional improvements, and new standard practices that center safety in the day-to-day operations of the Yuba-Sutter counties and local agencies. For example, rolling safety projects into existing capital improvement projects by consolidating safety improvements with maintenance efforts such as roadway resurfacing can be cost efficient and expedite project implementation and delivery. Yuba-Sutter's commitment to the goals of this RSAP emphasize that safety considerations are prioritized in projects over other competing factors.

Oversight, Coordination, and Partnership

The Action Plan also provides for oversight and accountability towards the commitment to safety. Yuba-Sutter will continue the momentum from the Task Force that convened during the creation of this plan. Having the leadership and oversight of this group will help maintain buy-in and support from elected officials and the community as Yuba-Sutter encourages Caltrans to implement countermeasures on state-owned facilities identified in the RSAP.

Continued communication and transparency with community members can allow for greater trust and support of the RSAP's goals. The Action Plan also contains policies that promote

community education to develop collective awareness around safety, target educational campaigns towards identified emphasis areas, and create a culture that supports both policy and infrastructure changes.

Partner agencies must work together to carry out the projects and policies listed in each jurisdiction chapter and assume a shared responsibility for the implementation of the Plan.

Yuba-Sutter's city councils and county boards of supervisors should receive regular updates on if their jurisdictions are on track to meet the Vision Zero goal. The future success of this plan will require a comprehensive effort across government and the community, including partnerships with neighborhoods and community based organizations to encourage engagement and support.

Implementation Phasing & Sequencing

Implementing countermeasures, policies, and projects identified in the Plan typically requires an ongoing, long-term commitment. To facilitate the evaluation and prioritization of funding, it is desirable to consider the implementation of safety projects through different time horizons.

Jurisdictions should seek overlapping opportunities where safety improvements will be implemented as part of an upcoming effort such as the repaving program or CIP. Implementation should also happen proactively as part of any development impact review process to ensure that new developments align with the Safe System Approach and meet safety requirements. All transportation construction projects should be reviewed to ensure they align with the Safe System Approach and follow recommendations in this Plan.

Consistency with the Safe System

This Plan builds on existing safety practices to ensure consistency with the Safe System Approach. The Plan establishes a framework for the Region to guide transportation-related implementation moving forward to be aligned with the Safe System Approach. This includes rethinking how the jurisdictions in the Yuba-Sutter Region prioritize projects and allocate funding to address safety concerns systematically and proactively. The Plan also includes guidance for developing projects by reviewing them through a safety-first lens. All transportation projects should be reviewed to ensure severe crash risks are minimized for vulnerable road users.

Caltrans Project Implementation

Caltrans Project Delivery

Once the Regional Safety Action Plan (RSAP) is adopted, projects taking place on the California State Highway System (SHS), such as Highways 20, 70, and 99, will involve Caltrans. Project delivery with Caltrans is a structured, multi-phase approach designed to ensure projects are safe, efficient, and aligned with statewide mobility goals.

Following project identification from the planning process, Caltrans or one of the cities or counties involved with the RSAP will prepare a Project Initiation Document (PID). This document outlines the project's purpose, scope, schedule, and estimated cost, and serves as the foundation for securing funding. The PID includes analysis of key issues such as traffic operations, environmental impacts, multimodal considerations, and community involvement. It is essential for programming the project into the State Transportation Improvement Program (STIP) or Regional Transportation Improvement Program (RTIP), which commits funding from sources like the State Highway Account.

Projects may be developed directly by Caltrans as part of the State Highway Operation and Protection Program (SHOPP) which focuses on maintenance of existing facilities but will incorporate feasibility, safety, and multimodal elements as identified by various planning processes. Alternatively, the local agencies may implement projects on the SHS through the encroachment permit process for smaller, less complex projects or through the formal Project Study Report approval process for larger projects.

Following programming, the project enters the development phase, which includes environmental studies, securing necessary approvals and permits, acquiring rights of way, and completing detailed design plans. Caltrans then prepares and advertises the construction contract. Once a contractor is selected, the project moves into construction and contract administration, where Caltrans oversees the execution of the work to ensure compliance with specifications, timelines, and safety standards. The final step is project close-out, which includes documentation, final inspections, and transitioning the project into operational status.

Throughout this process, Caltrans coordinates closely with local agencies, especially when projects are locally sponsored or require regional input. This collaboration ensures that projects reflect community needs and are delivered efficiently and equitably.

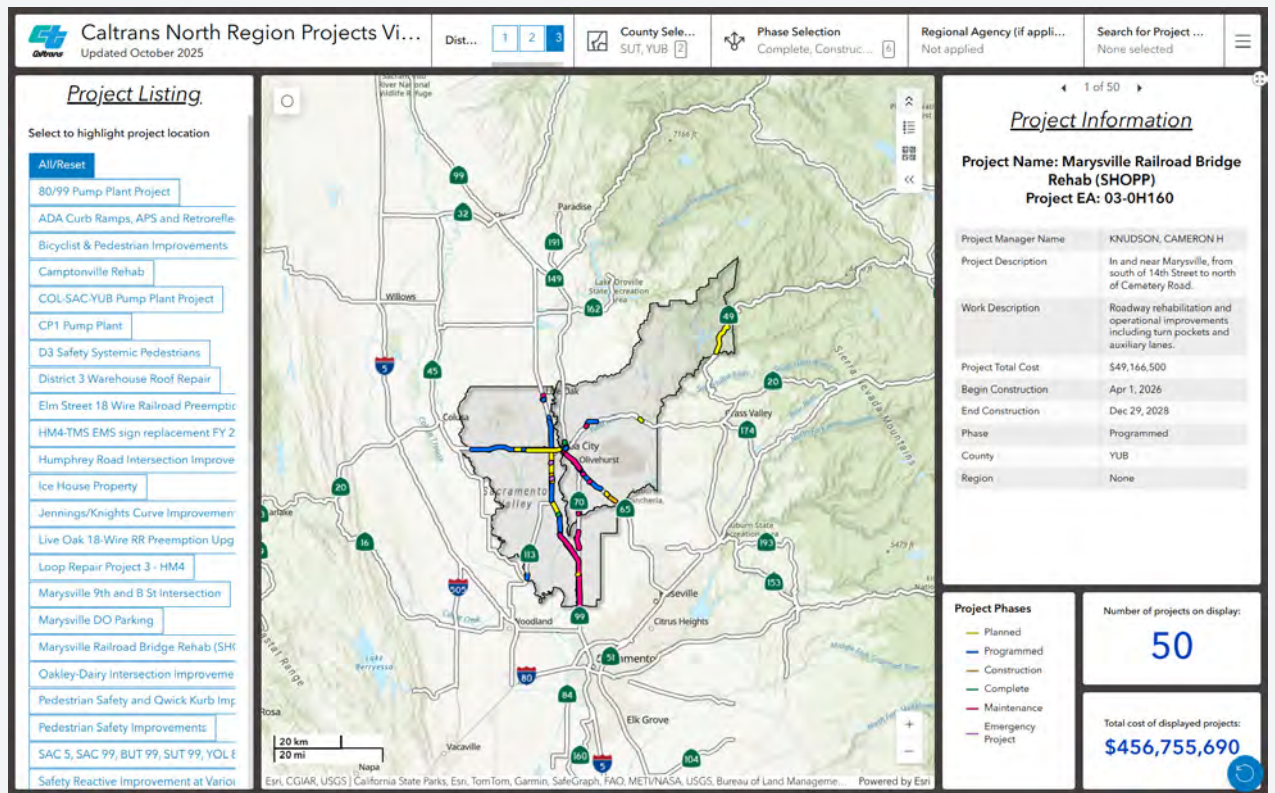
More information on project delivery can be found from the link here: <https://dot.ca.gov/programs/project-delivery>

Caltrans Project Delivery can be reached at:

- ProjectDeliveryWeb@dot.ca.gov
- (916) 653-2451

North Region Projects Viewer

The North Region Projects Viewer is a publicly available map-based web application that displays Caltrans projects occurring within the Caltrans North Region, consisting of Caltrans Districts 1, 2, and 3, under six project phase categories: Complete, Construction, Maintenance, Planned, Programmed and Emergency. Members of the public may use this tool to view projects and track their progress. The application can be accessed from the link here: <https://www.arcgis.com/apps/dashboards/239772ff383d416483addc029ae9c6fa>



4. Regional Implementation Plan

Performance Measures

This Plan is a policy document and requires regular updates and monitoring to evaluate its efficacy and to ensure the Region is on track to achieve zero KSI crashes by 2050. Each jurisdiction in the Yuba-Sutter Region will monitor the following performance measures on an annual basis and make additional adjustments to the Plan as needed to meet the zero goal. The goal of monitoring is to understand if the measures are effective at reducing crashes as the region works toward zero fatalities and serious injuries. Additionally, ongoing monitoring will help to identify locations with high propensity for KSIs based on exposure, likelihood, and severity. Historic crash patterns can inform these considerations, but design decisions will be proactive and based on reducing safety risk. Every five years, the Yuba-Sutter Region will update their Safety Action Plan to reevaluate the crash data and performance measures. Performance measures will be added or removed to meet the goal of reducing fatal and severe injury crashes to zero.

Plan Implementation Metrics
The number of roadway miles and intersections improved
The percentage of streets where the operating speed matches the target speed
The number of projects implemented with the systemic deployment of countermeasures
Policy and Programmatic Changes
The provision of continuous sidewalks, low stress bicycle facilities, and traffic calming improvements alongside land use zoning changes
Set contextually appropriate target speeds and prioritize and implement speed management strategies to meet those targets
Standardize the selection and implementation of pedestrian and bicycle improvements based on contextual factors such as speed and volume
The prioritization of projects for transportation connections to communities of persistent poverty and underserved populations along Walk and Roll Routes and key transit corridors
The collaboration with transit, land use, and social service partners for strategies at the base of the Safe Systems Pyramid
The review and reprioritization of the city's and county's annual CIP budget to shift funding toward proactive and opportunistic opportunities to efficiently address safety priorities
The collaboration with agency partners to make meaningful progress on cross-jurisdictional efforts
The creation of a rapid response program to evaluate roadway design and context of crash locations after KSI crashes
Crash Statistics
The number of KSI crashes on Safety Corridors
The number of crashes where the crash type was identified as unsafe speed
The number of DUI-related crashes
The number of youth bicyclist-involved crashes

Funding

Below are federal and state funding sources applicable to the future implementation of this Plan.

FEDERAL FUNDING	
Funding Source	Program Purpose
Safe Streets and Roads for All (SS4A) Grant Program	The Safe Streets & Roads for All (SS4A) grant program is a Federal grant program established by the Bipartisan Infrastructure Law centered around the Department of Transportation's National Roadway Safety Strategy and its goal of zero deaths and serious injuries on America's roadways. It provides \$5 billion in grant funding over 5 years to develop safety action plans and implement safety projects.
Congestion Mitigation and Air Quality (CMAQ) Improvement Program	The FAST Act continued the CMAQ program to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	This program supports surface transportation infrastructure projects that will improve safety; environmental sustainability; quality of life; mobility and community connectivity; economic competitiveness and opportunity including tourism; state of good repair; partnership and collaboration; and innovation.
Reconnecting Communities and Neighborhoods Program	The Reconnecting Communities and Neighborhoods program combines the Reconnecting Communities Pilot (RCP) and Neighborhood Access and Equity (NAE) discretionary grant programs into a single funding opportunity. The program funds projects that address the impact of transportation infrastructure, such as freeways and railroads, that form barriers for travel in communities. The program funds the removal, retrofit, mitigation, or replacement of the infrastructure in question.
Community Development Block Grant (CDBG) Program	The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Communities often use CDBG funds to construct and repair streets and sidewalks.

4. Regional Implementation Plan

STATE FUNDING	
Funding Source	Program Purpose
Highway Safety Improvement Program (HSIP)	California's Local HSIP focuses on infrastructure projects with nationally recognized crash reduction factors (CRFs). Local HSIP projects must be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.
Active Transportation Program (ATP)	ATP is a statewide competitive grant application process with the goal of encouraging increased use of active modes of transportation. The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of State Programs.
SB-1 Transportation Funding	The State Transportation Improvement Program (STIP) is the biennial five-year plan for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements.
Caltrans Sustainable Transportation Planning Grant Program	This program is intended to encourage local and regional planning that furthers state goals, including, but not limited to, the goals and best practices cited in the Regional Transportation Plan Guidelines adopted by the California Transportation Commission.
California Office of Traffic Safety (OTS)	OTS administers traffic safety grants in the following areas: Alcohol Impaired Driving, Distracted Driving, Drug-Impaired Driving, Emergency Medical Services, Motorcycle Safety, Occupant Protection, Pedestrian and Bicycle Safety, Police Traffic Services, Public Relations, Advertising, and Roadway Safety and Traffic Records.
Affordable Housing and Sustainable Communities (AHSC)	The Affordable Housing and Sustainable Communities (AHSC) Program makes it easier for Californians to drive less by making housing, jobs, and key destinations accessible by walking, biking, and transit.







Action Plan



The following pages present safety strategies organized into three priorities: integrate the Safe System Approach in policy and practice; systemically and proactively address common crash focus areas; educate all roadway users.

Priority A: Integrate Safe System in Policy and Practice

These strategies aim to infuse roadway safety concepts, especially the Safe System Approach, as part of routine practices and design decisions.

<p> Action 1</p>	<p>Maintain the Vision Zero Task Force and advance safety plans and projects; coordinate on funding opportunities.</p>
<p>Timeline</p>	<p> Ongoing</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department & Sheriff’s Department • Sutter County Public Works Department & Sheriff’s Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department • Caltrans • California Highway Patrol • Partner Organizations (Blue Zones, YABA, etc.)
<p>Evaluation Metric</p>	<p>Number of meetings with Vision Zero Task Force. Number of federal, state, regional, and local funding opportunities applied for regionally.</p>
<p> Action 2</p>	<p>Prioritize safety in funding decisions, such as during regular updates to local capital improvement plans.</p>
<p>Timeline</p>	<p> Ongoing</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department
<p>Evaluation Metric</p>	<p>Documented roadway safety considerations during decision-making processes for major plan updates, including local Capital Improvement Plans, local General Plan Updates, and SACOG’s Metropolitan Transportation Plan.</p>

<p> Action 3</p>	<p>Integrate safety improvements into regular maintenance based on countermeasures from this plan. Find opportunities for partnership through infrastructure project bundling.</p>
<p>Timeline</p>	<p> Ongoing</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department • Caltrans
<p>Evaluation Metric</p>	<p>Percent of regular maintenance projects that infuse roadway safety countermeasures from this Plan. Number of infrastructure projects bundled.</p>
<p> Action 4</p>	<p>Evaluate and implement lower speed limits in business districts, school areas, and other areas that have a high concentration of vulnerable road users, as eligible through AB 43.</p>
<p>Timeline</p>	<p> Long Term</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department • Local School Districts
<p>Evaluation Metric</p>	<p>Number of qualifying roadways with lower speed limits.</p>


<p> Action 5</p>	<p>Update street design standards to include designs that reduce kinetic energy and reflect Complete Streets principles based on state and national guidance (e.g. National Association of City Transportation Officials).</p>
<p>Timeline</p>	<p> Short Term</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department
<p>Evaluation Metric</p>	<p>Design standards updated.</p>
<p> Action 6</p>	<p>Work with emergency responders to identify barriers and improve response times, as necessary.</p>
<p>Timeline</p>	<p> Ongoing</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County • Sutter County • City of Marysville • City of Wheatland • City of Yuba City • City of Live Oak • Local Emergency Responders
<p>Evaluation Metric</p>	<p>Annual meetings with emergency response agencies to review the previous year’s emergency response metrics and methods for improvement.</p>


Priority B: Systemically and Proactively Address Common Crash Focus Areas

These strategies target key areas for improvement identified through crash analysis, including intersection control and vulnerable users.

<p> Action 1</p>	<p>Advance design concepts and apply for grant funding or identify other financing methods for three priority corridors every five years.</p>
<p>Timeline</p>	<p> Ongoing</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department
<p>Evaluation Metric</p>	<p>Number of projects advanced through design or grant applications.</p>
<p> Action 2</p>	<p>Install low-cost safety improvements at six regional locations per year—including new road markings, signs, and minor signal modifications—that address the focus areas in this plan.</p>
<p>Timeline</p>	<p> Short Term</p>
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department
<p>Evaluation Metric</p>	<p>Number of low-cost projects that address focus areas implemented regionally per year.</p>


4. Regional Implementation Plan


Action 3	Complete three projects that improve bicycle and pedestrian safety near schools and community destinations such as parks and downtown business areas within five years.
Timeline	 Short Term
Responsible Agency	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department
Evaluation Metric	Number of bicycle and pedestrian projects implemented.



Action 2	Deter impaired driving by targeting education and outreach at alcohol-serving establishments. Develop a public promotional campaign encouraging the use of taxis, rideshares, on-demand transit, and other services as alternatives to impaired driving.
Timeline	 Long Term
Responsible Agency	<ul style="list-style-type: none"> • Local Police Departments • Yuba County Sheriff • Sutter County Sheriff • California Highway Patrol • Local Businesses • Yuba-Sutter Transit
Evaluation Metric	Number of establishments reached. Number of programs established.

Priority C: Educate All Roadway Users

These strategies represent a variety of educational and outreach programs and strategies that encourage behavior change in road users.

Action 1	Launch high-visibility multilingual education PSA campaigns against speeding, distracted driving, impaired driving, and other high-risk behaviors, with a focus on safety corridors. The campaigns should have both digital and in-person components for greatest reach into the communities.
Timeline	 Short Term
Responsible Agency	<ul style="list-style-type: none"> • Yuba County Public Works Department • Sutter County Public Works Department • City of Marysville Public Works Department • City of Wheatland Engineering Department • City of Yuba City Public Works Department • City of Live Oak Public Works Department • Local law enforcement agencies • California Highway Patrol
Evaluation Metric	Estimated number of people reached.

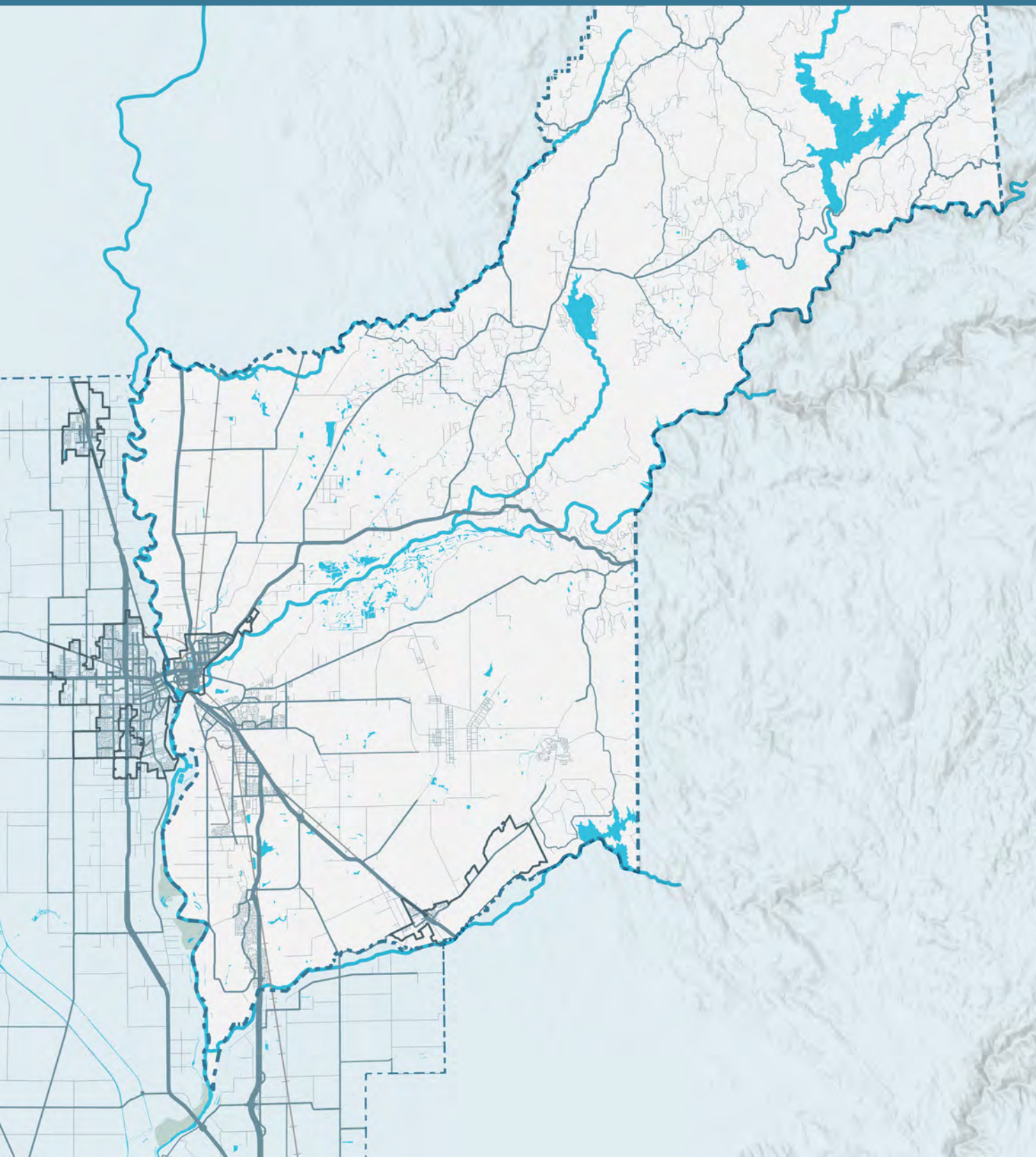
Action 3	Improve data collection and reporting on speed, impairment, cell phone use, and distraction for KSI crashes.
Timeline	 Long Term
Responsible Agency	<ul style="list-style-type: none"> • Local Police Departments • Yuba County Sheriff • Sutter County Sheriff • California Highway Patrol
Evaluation Metric	Share of crash records including this data.

 Action 4	<p>Partner with community-based organizations such as YABA, Blue Zones, and Civic Thread on educational campaigns focused on vulnerable road users, such as Safe Routes to School and early driver education.</p>
<p>Timeline</p>	 Long Term
<p>Responsible Agency</p>	<ul style="list-style-type: none"> • Yuba County • Sutter County • City of Marysville • City of Wheatland • City of Yuba City • City of Live Oak • Local community-based organizations (CBOs) • Local School District
<p>Evaluation Metric</p>	<p>Number of joint campaigns between local agencies and CBOs.</p>

Our commitment: Yuba-Sutter will periodically review the effectiveness of the strategies to identify those that would be helpful to expand and those that could be replaced. Each strategy includes an implementation timeline and evaluation metric(s), and identifies the parties and partnerships needed to be successful.



CHAPTER 5 Yuba County Crash Analysis



This Plan and Our Region

Introduction

Yuba County is rich in history, natural beauty, and agricultural significance. Covering approximately 644 square miles, Yuba County is geographically diverse, with the western portion consisting of fertile valley land ideal for farming, while the eastern portion has the rugged terrain of the Sierra Nevada foothills. The county is home to the Yuba River, Feather River, and Bear River, which contribute to its scenic landscapes and recreational opportunities.

Agriculture plays a vital role in Yuba County's economy, with crops such as rice, peaches, and walnuts being widely cultivated. The county also has a strong presence of cattle ranching and dairy farming. Additionally, Yuba County is known for its biodiversity, boasting a high number of native plant species.

The county is connected to the greater Sacramento Region by a network of state facilities that carry high volumes of traffic. State Route (SR) 70 runs north-south through the county seat of Marysville, SR 20, provides east-west access, and SR 65 connects to Beale Air Force Base and the City of Wheatland to Roseville, and Rocklin in Placer County.

Yuba County is home to several fairly populous unincorporated communities that fall under county jurisdiction. These communities include Linda, Olivehurst, Arboga, Plumas Lake, Loma Rica, Browns Valley, and Oregon House, among others.

Project team conducting walk audits

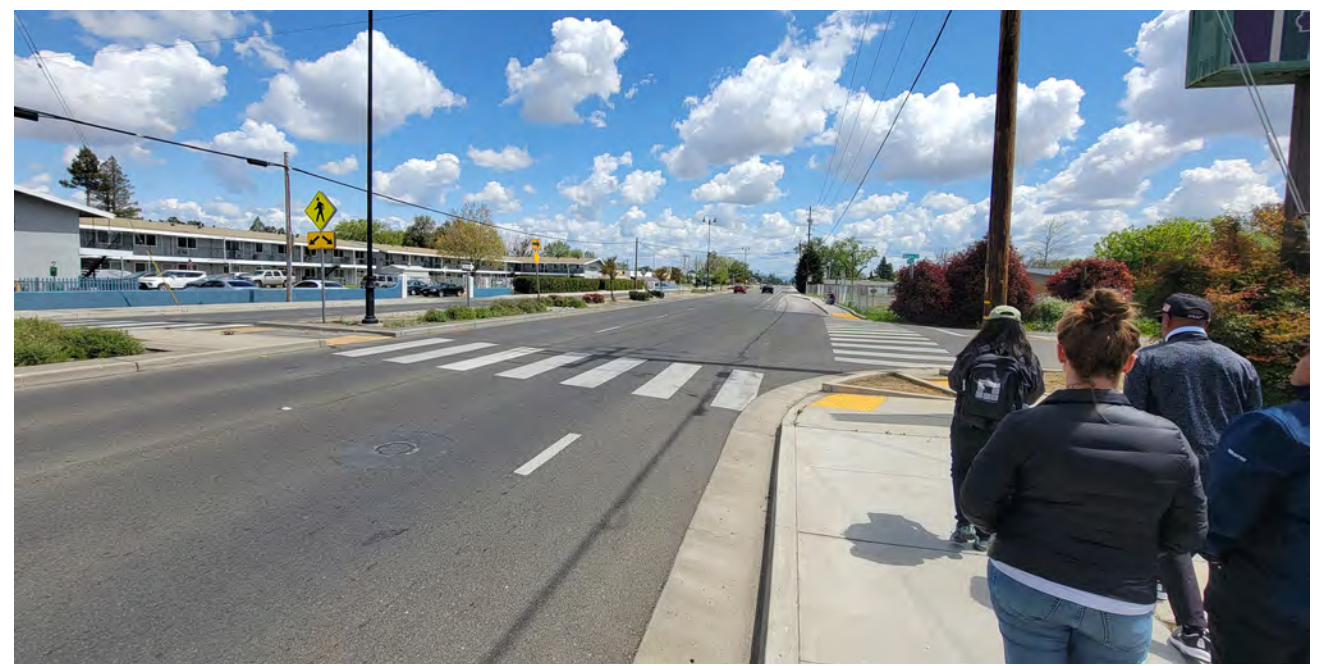


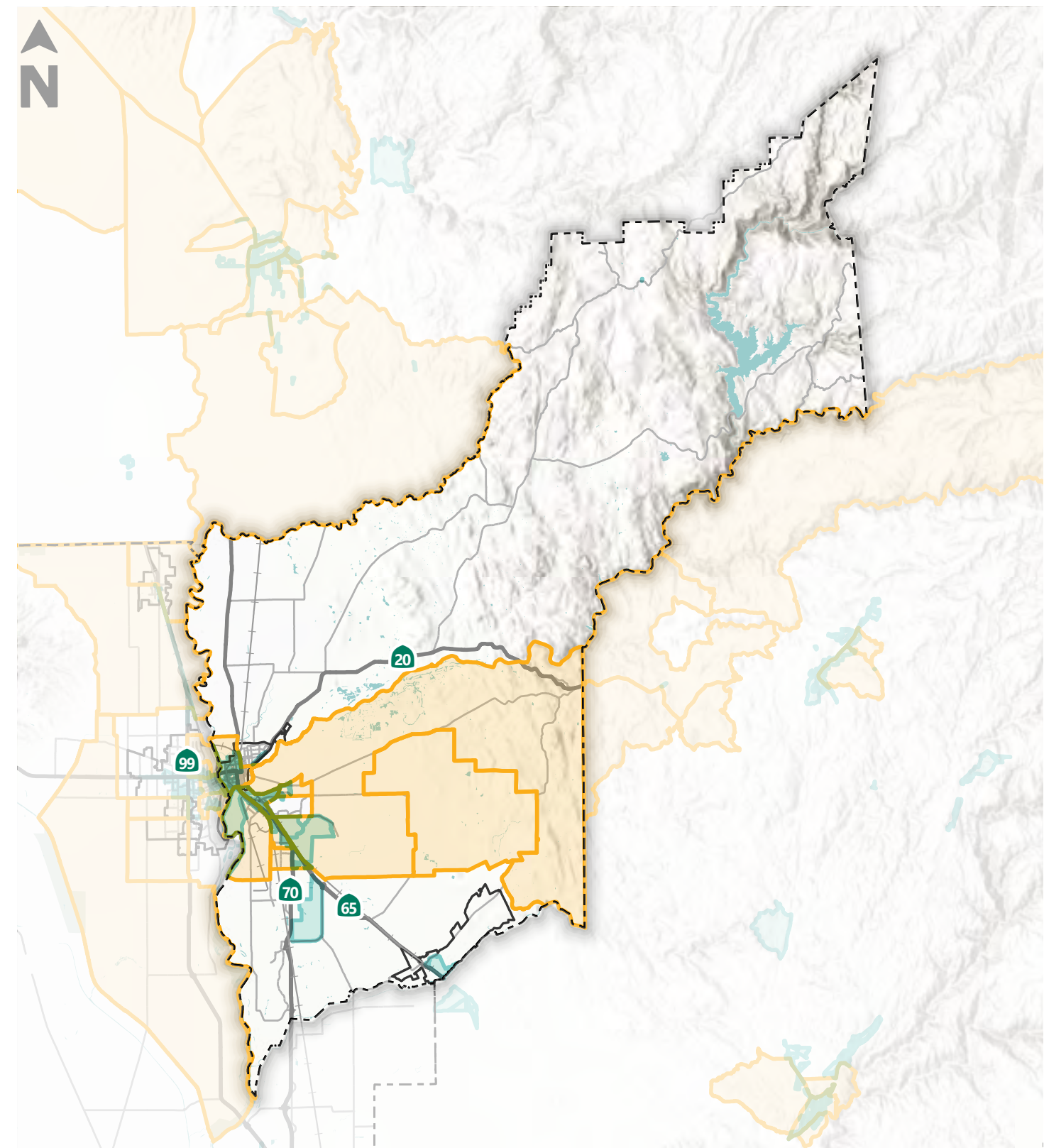
Figure 5.1: Caltrans Transportation Equity Index & USDOT Areas of Persistent Poverty

Communities of Concern

Sociodemographic data sources are helpful to better understand the community, as well as when applying for state and federal grant funding to implement infrastructure projects. Figure 5.1 shows locations in Yuba County that meet the criteria for two community metrics relevant to grant applications:

- Caltrans Transportation Equity Index (EQI) Transportation-Based Priority Populations: 7 percent of Yuba County's population meets Caltrans' threshold for Transportation-Disadvantaged status, compared to 16 percent statewide.
- USDOT Areas of Persistent Poverty and Historically Disadvantaged Communities: 41 percent of Yuba County's population lives in areas of persistent poverty and historically disadvantaged communities, compared to 28 percent statewide.

In CalEnviroScreen, which evaluates environmental burdens including air pollution, traffic density, and health vulnerabilities, Yuba County received a score of 20, where the state had a score of 23, indicating parity between Yuba County and the state as a whole.



Legend

Caltrans Transportation Equity Index (EQI) Transportation-Based Priority Populations

USDOT Areas of Persistent Poverty and Historically Disadvantaged Communities (APPHDC)



Plans

Yuba County has previously made commitments to roadway safety, as outlined in the Yuba County General Plan and recently completed Local Roadway Safety Plan. Refer to **Appendix A** for a list of policies and goals supporting improving roadway safety.

Projects

There are numerous improvement projects currently underway or planned within unincorporated Yuba County.

The following roadway safety-related projects are planned on state facilities owned and operated by Caltrans:

- Install centerline or shoulder rumble strips on State Route 20 at various locations throughout Yuba County.
- Upgrade crosswalk to ladder type at various locations on SR 65 and 70 in southwest Yuba County.
- Upgrade guardrail, signs, Transportation Management System elements; install sidewalks, curb and gutter, lighting, and acceleration and deceleration lanes; rehabilitate pavement and drainage systems along SR 65 between SR 70 and South Beale Road.
- Upgrade crosswalk to ladder type on SR 70 near Algodon Road and south of Plumas Lake Boulevard.

The following safety-related projects are being designed or in construction on county roadways:

- Addition of curbs, gutters, sidewalks, and bike lanes along Arboga Road, Grand Avenue, Jay Street, Cottonwood Avenue, Garden Avenue, and Vine Avenue in West Linda, in addition to storm drains on Garden Avenue.
- Curb, gutter, sidewalk, bike lanes, and storm drain along 13 roads in Olivehurst: Second Ave, Third Ave, Fourth Ave, Fifth Ave, Sixth Ave, Eighth Ave, Ninth Ave, Tenth Ave, Eleventh Ave, Western Ave, Beaver Lane, Canal Street, and Tulsa Avenue.
- Streetscape improvements on Feather River Boulevard from Arboga Road to Alicia Avenue, including new sidewalks, crosswalks, Class II bike lanes, storm drains, striping, signage, curbs, gutters, American Disability Act compliant ramps, LED street lights, and improved transit stops.

The following recently completed projects in Yuba County enhance safety for roadway users, particularly pedestrians, bicyclists, and children:

- Bike path on the western edge of the Plumas Lake community
- Safe Routes to School: Sidewalks, crosswalks, bike lanes, curbs, and gutters on 11th Avenue in Olivehurst

INJURY CRASH TOTAL

1,972

KSI CRASH TOTAL

397

Figure 5.2
Injury Crashes by Year, 2018 - 2023

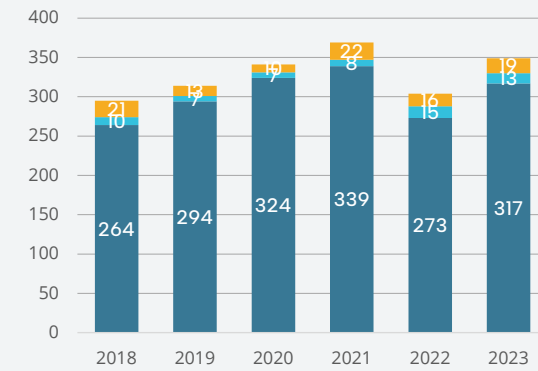
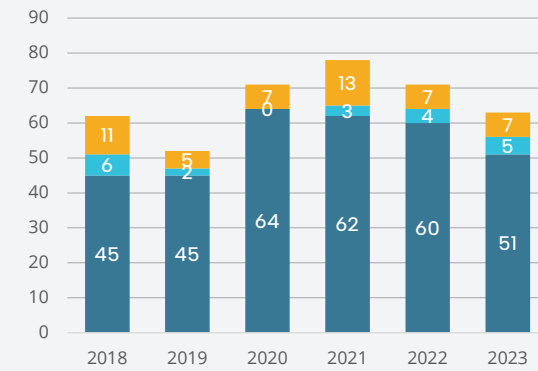


Figure 5.3
KSI Crashes by Year, 2018 - 2023



KSI = Killed or Severely Injured

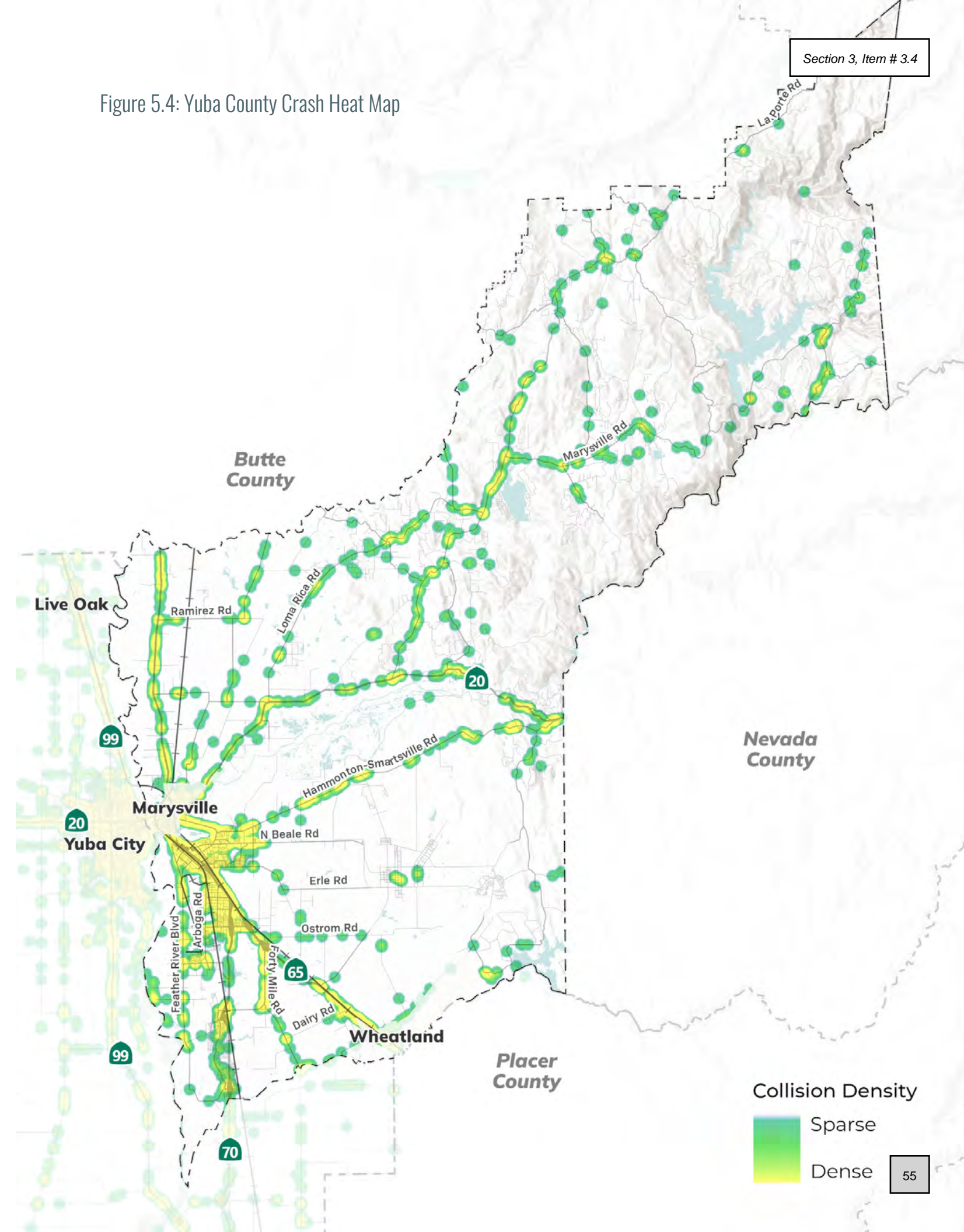
- Vehicle-Only Crashes
- Bicycle-Involved Crashes
- Pedestrian-Involved Crashes

Crash Summary

This section summarizes key findings from the county's crash data obtained from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) database, for the years 2018 to 2023. The analysis includes all crashes that led to injury and excludes property-damage-only crashes.

Within the six-year period Yuba County saw a total of 1,972 crashes that led to some degree of injury. 82 crashes (four percent of all injury crashes) involved bicyclists and 148 (six percent) involved pedestrians. 438 crashes resulted in a victim being Killed or Severely Injured (KSI).

Figure 5.4: Yuba County Crash Heat Map



About KSI Crashes

Severe injuries resulting from a traffic crash can result in a number of catastrophic impacts, including permanent disability, lost productivity and wages, and ongoing healthcare costs. These injuries can include:

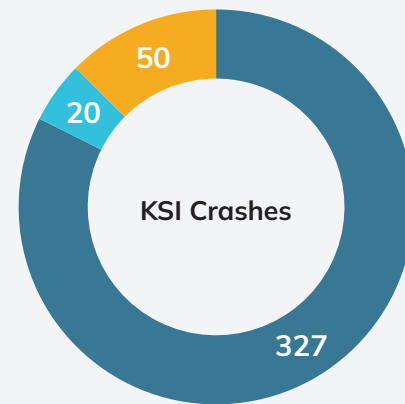
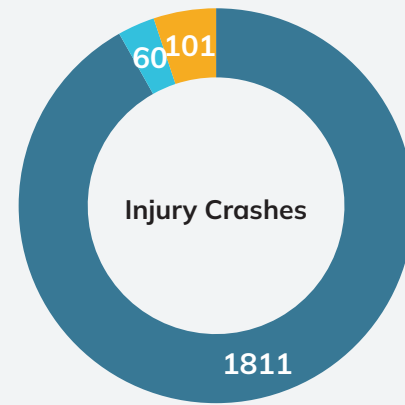
- Broken or fractured bones
- Dislocated or distorted limbs
- Severe lacerations
- Severe burns
- Skull, spinal, chest or abdominal injuries
- Unconsciousness at or when taken from the collision scene

Throughout this analysis, the acronym KSI is used to denote crashes where someone was killed or severely injured.

KSI Summary

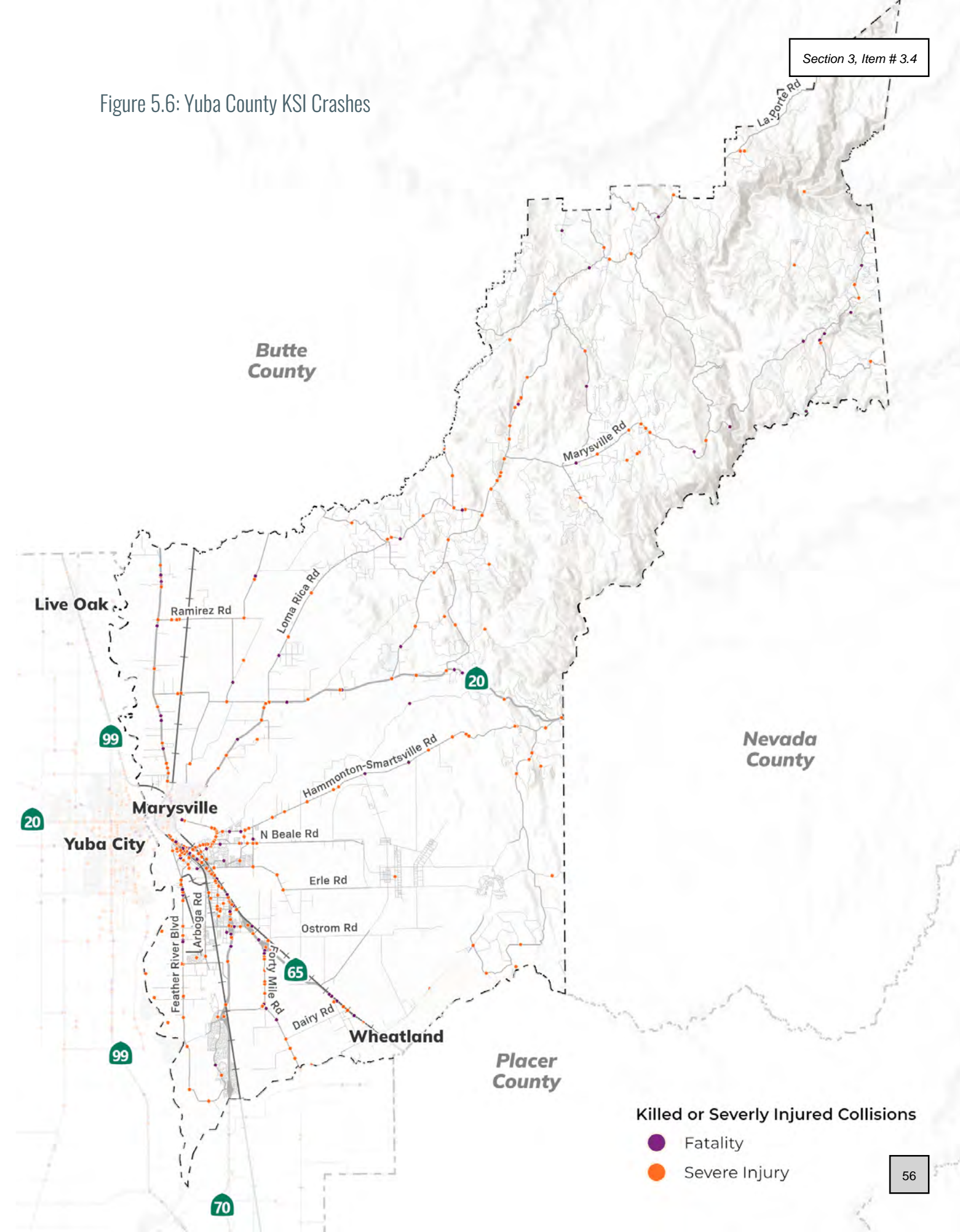
There is a disproportionately greater share of bicycle and pedestrian crashes among KSI crashes, as compared to all injury crashes. Out of 397 KSI crashes, 20 (five percent of KSI crashes) involved bicyclists, and 50 (13 percent) involved pedestrians. There was a total of 102 fatalities: 83 vehicle drivers or passengers, 14 pedestrians, and five bicyclists.

Figure 5.5
Crash Mode Share by Severity



- Vehicle-Only Crashes
- Bicycle-Involved Crashes
- Pedestrian-Involved Crashes

Figure 5.6: Yuba County KSI Crashes



Crashes by Crash Type

Overall, hit object (29 percent), broadside (21 percent), and rear-end (20 percent), were the most common crash types in Yuba County. Similarly, among KSI crashes, hit object (32 percent) was also the most common type of crash, followed by overturned (15 percent) and head-on (15 percent).

Crashes by Primary Crash Factor

Improper turning (28 percent) was the leading reported primary cause of crashes resulting in injury, followed by unsafe speed (25 percent) and Vehicle Right of Way Violation (14 percent).

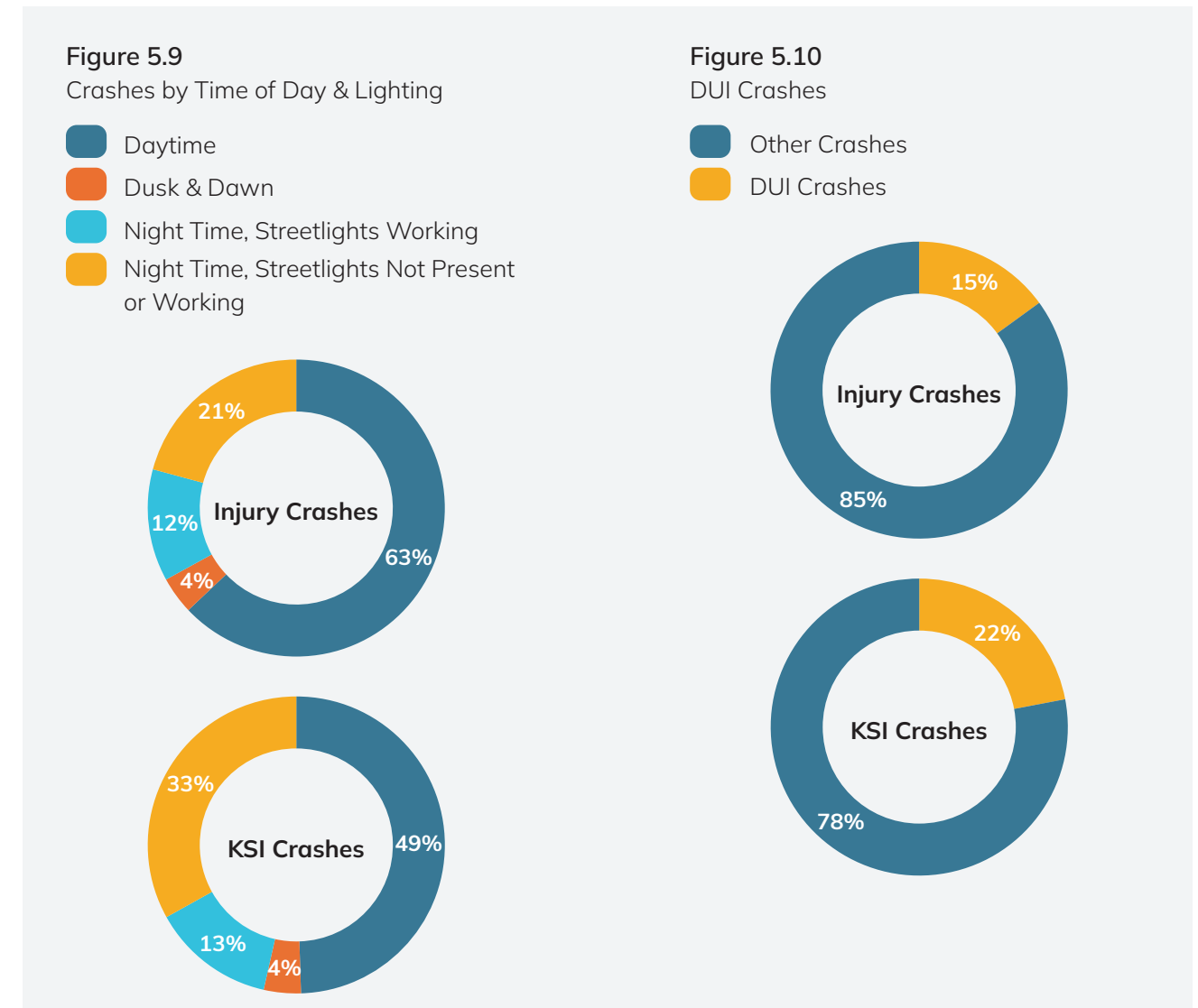
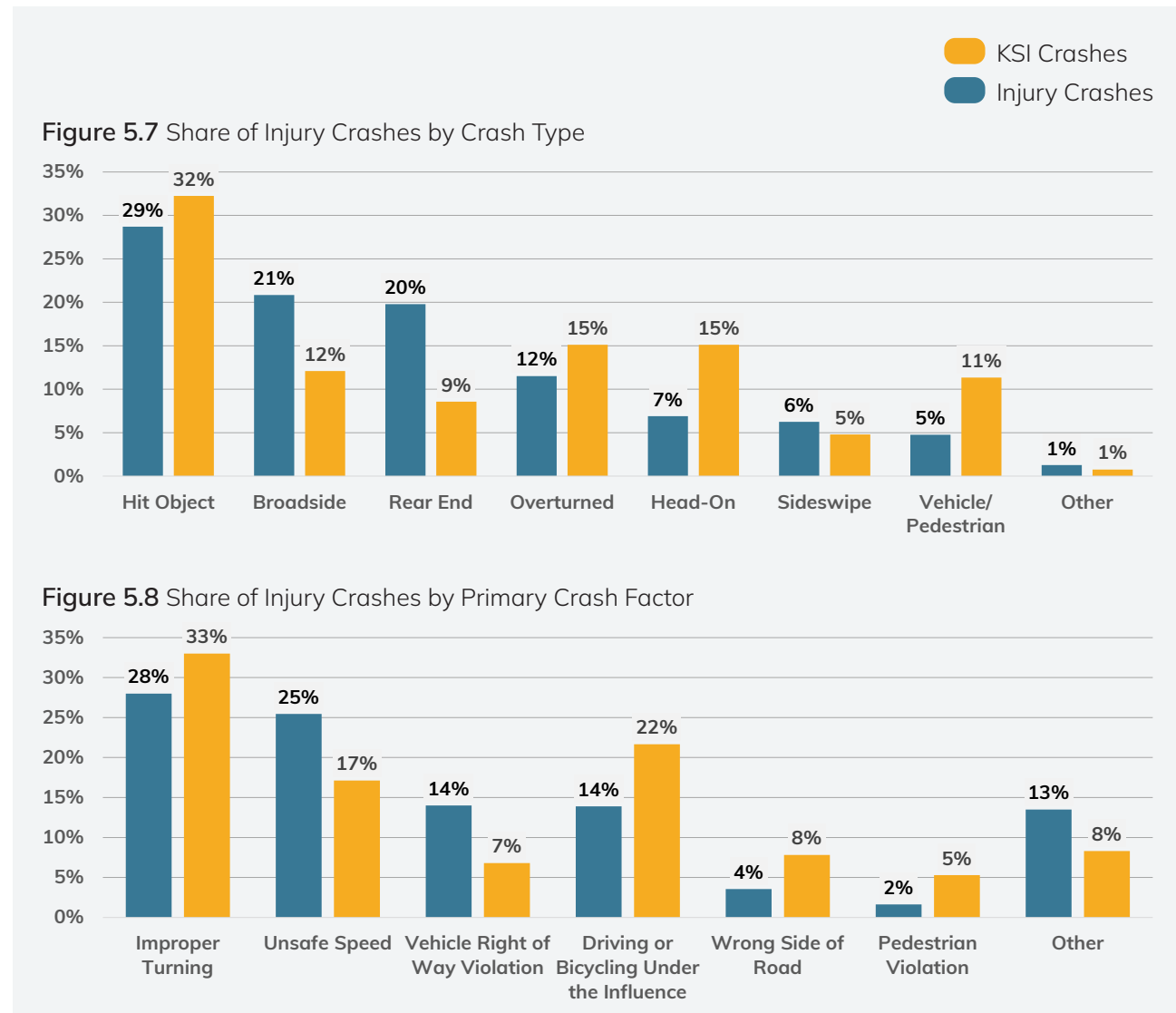
Improper turning (33 percent) was the leading reported primary cause of KSI crashes followed by Driving or Bicycling Under the Influence (22 percent) and Unsafe Speed (17 percent).

Crashes by Time of Day and Lighting Condition

Overall, most crashes occurred in the daylight (63 percent), 4 percent occurred during dusk and dawn, 12 percent occurred in the dark where streetlight was present, and 21 percent in the dark with no lighting. 49 percent of KSI crashes happened in the daytime, 4 percent occurred during dusk and dawn, and 13 percent occurred in the dark with streetlight present. A disproportionately greater share of KSI crashes occurred during nighttime in areas that lacked lighting, at 33 percent compared to 21 percent of all injury crashes.

Driving Under the Influence

15 percent of all crashes resulting in injury involved someone driving under the influence of alcohol or drugs. Notably, this share was larger for KSI crashes, at 22 percent.



Safety Corridors

Safety corridors are the roadway segments within Yuba County that had the highest number of crashes resulting in severe injury or death (KSI) in the six-year study period. Priority safety corridors are the safety corridors that experienced the highest rate of KSI crashes, are adjacent to sensitive land uses, and have high potential for severe crashes and thus, should be prioritized for improvements. The following is a list of Yuba County's priority safety corridors as identified through a safety corridor systemic analysis, task force input, and community feedback. Figure 5.11 displays Yuba County's network of safety corridors, which are shown in orange. Priority corridors are shown in red. Refer to **Appendix C** for a more detailed explanation of the safety corridor identification technical methodology.

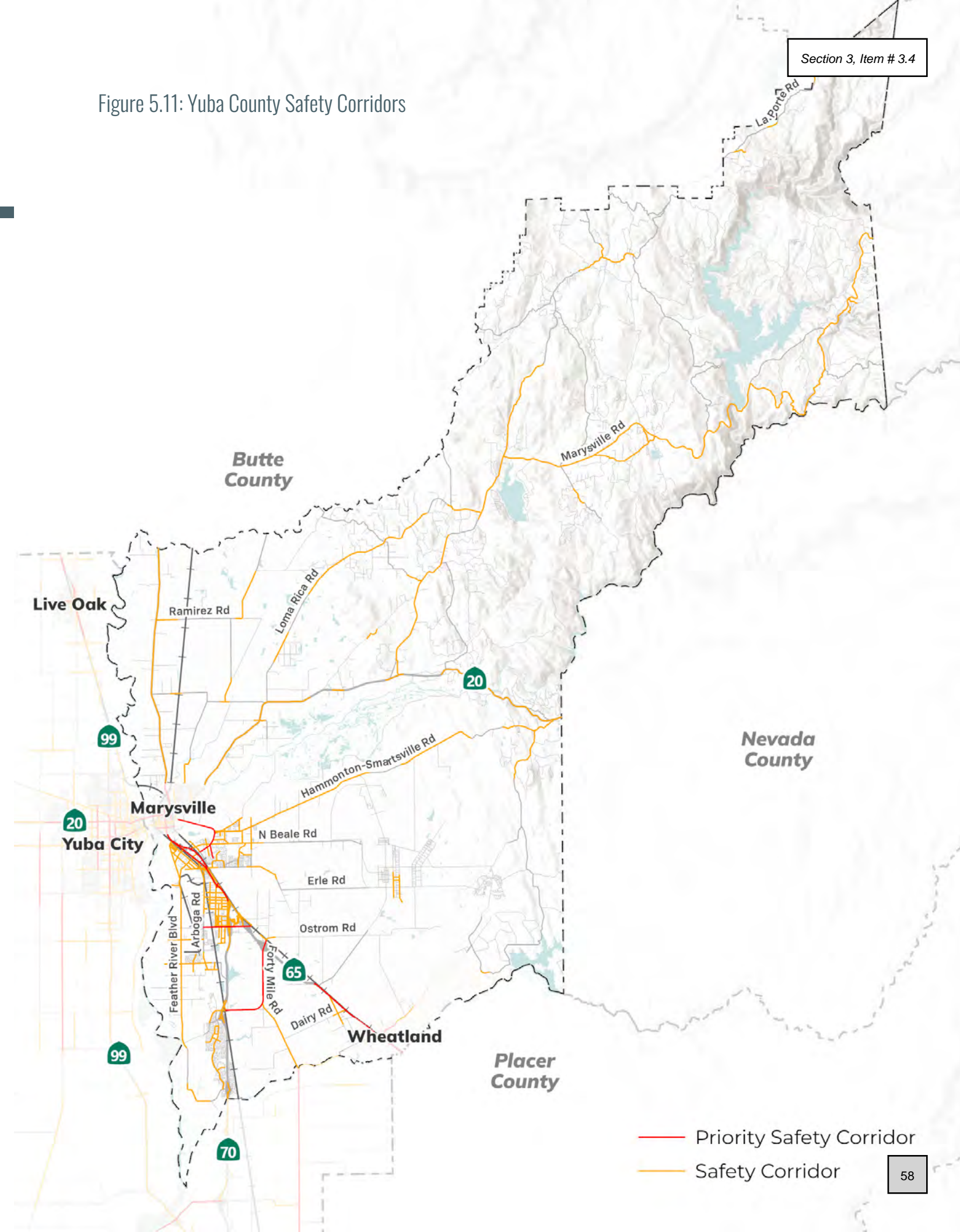
- SR 70 from Yuba River to SR 65 Junction
- SR 65 from Morrison Rd/Rancho Rd to Wheatland city limits
- North Beale Rd/Lindhurst Ave from SR 70 to Erle Rd
- Simpson Ln from Yuba River to Hammonton-Smartsville Rd
- Hammonton-Smartsville Rd from Simpson Ln to Avondale Ave/Rupert Ave
- Grove Ave from Hammonton Smartsville Rd to Shoreline Dr
- Olivehurst Ave from Powerline/Chestnut roundabout to Lindhurst Ave
- McGowan Pkwy from Arboga Rd to Rancho Rd
- Plumas Arboga Rd from SR 70 to Forty Mile Rd
- Forty Mile Rd from Rancho Rd to Plumas Arboga Rd

Priority Safety Corridors were identified to provide the list of locations for actionable next steps with additional study. Studies could include recommended engineering safety countermeasures with targeted improvements to address crash history or focused programs identified in the Action Plan chapter.

Safety Corridor Inset:



Figure 5.11: Yuba County Safety Corridors



— Priority Safety Corridor
— Safety Corridor

Community Snapshot

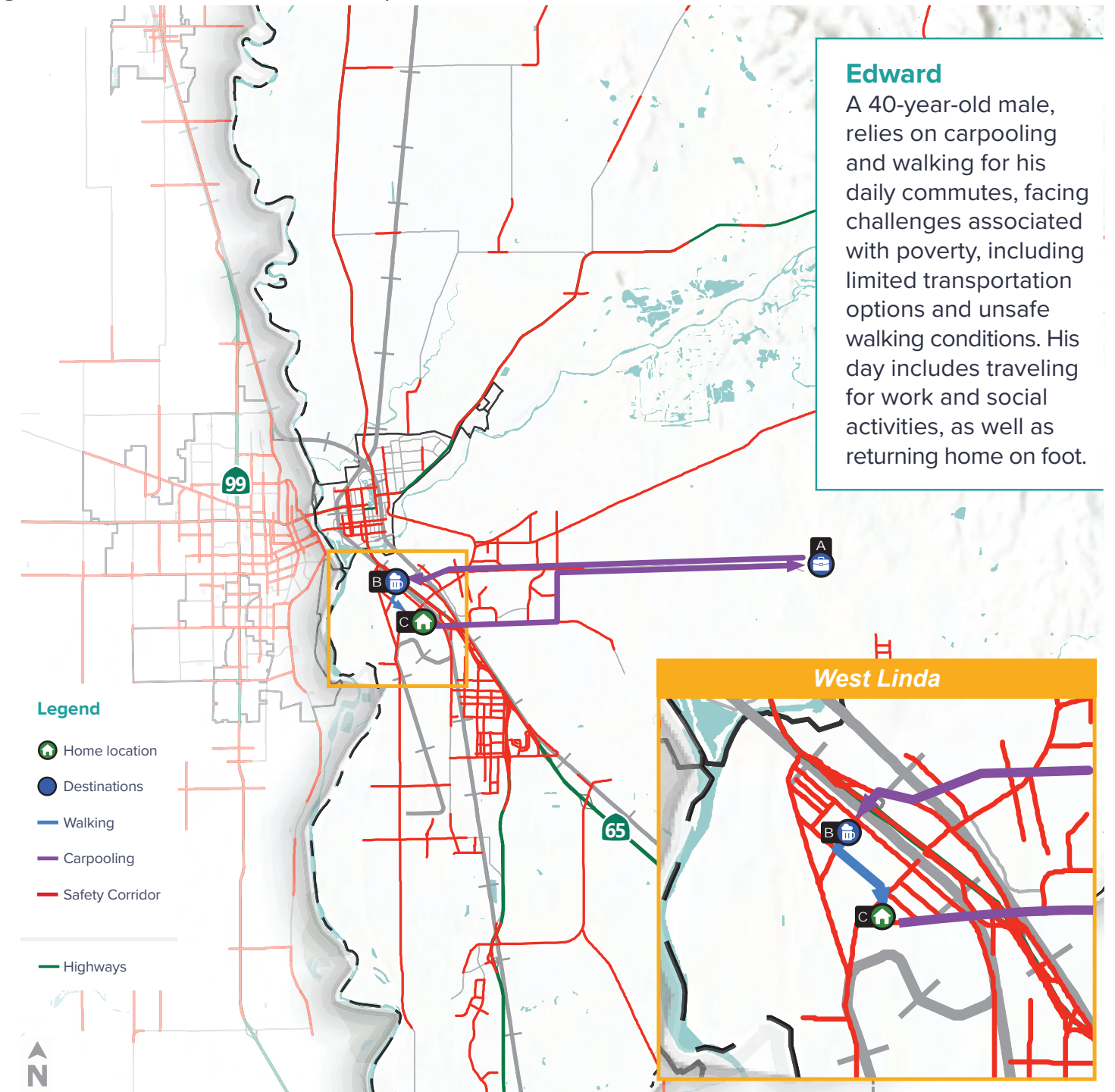
This community snapshot features Edward, a fictional character created to illustrate the daily transportation challenges faced by someone without a personal vehicle in unincorporated Yuba County. The experiences of this character are based on census data as well as local lived experiences.




Edward's daily routine highlights the transportation struggles faced by individuals living in poverty, as shown in Figure 5.12. Without access to a personal vehicle, he relies on carpooling with co-workers to travel nearly 10 miles to his job and later to a nearby bar and grill for socializing. His return home is on foot, covering about a mile. This walk, however, is fraught with safety hazards. The route along Alicia Avenue lacks sidewalks, has poor lighting, and offers limited safe crossing points, making it a dangerous journey.

Although a majority of Yuba County residents (84 percent) primarily rely on cars for transportation, a significant portion still travel on foot (11 percent). Edward's experience underscores the broader challenges of inadequate infrastructure and limited mobility options in underserved communities, and how pedestrians should be given greater consideration when planning and implementing safety improvements.

Figure 5.12: Yuba County Community Snapshot



Edward
A 40-year-old male, relies on carpooling and walking for his daily commutes, facing challenges associated with poverty, including limited transportation options and unsafe walking conditions. His day includes traveling for work and social activities, as well as returning home on foot.

-  **A** Edward does not have access to a vehicle and either walks or carools throughout his day. His day starts after getting picked up by a carpool of co-workers, which takes him to his job nearly 10 miles away.
- B** After work, Edward carpool to a favorite bar and grill that is not too far from Edwards house.
- C** After socializing, Edward walks one mile home, facing difficulties due to a lack of sidewalks, poor lighting, and limited crossing opportunities along Alicia Avenue.



Focus Areas

Six focus areas were identified through a systemic analysis of crash records to represent the most significant patterns behind injury crashes—and especially KSI crashes—in the region. These focus areas are identified with the letters “A” through “F” and each one is applicable to one, several, or all of the communities covered by this RSAP. Following each crash focus area is a set of potential countermeasures that should be considered for implementation to improve safety outcomes.

Appendix D contains a more detailed summary of each countermeasure.

Yuba County’s traffic safety challenges can be understood through a subset of these focus areas:



FOCUS AREA C
Driving Under the Influence



FOCUS AREA D
Crashes Involving People Walking and Biking



FOCUS AREA B
Improper Turning Away from Intersections



FOCUS AREA B
Hit Object



FOCUS AREA C

Driving Under the Influence

INJURY CRASH STATISTICS

293 (15%) Total Crashes

92 (23%) KSI Crashes

Driving under the influence (DUI) is a significant contributor to injury crashes, especially and disproportionately to KSI crashes. Alcohol impairment was involved in 15 percent (of Yuba County's total crashes but accounted for 23 percent of all Yuba County's KSI crashes. Figure 5.12 displays all DUI crashes within unincorporated Yuba County.

Two-thirds of DUI crashes were concentrated in the southwest portion of the county—many of them in and near Linda, West Linda, and Olivehurst—on Hammonton Smartville Road, North Beale Road, State Routes 65 and 70, Arboga Road, Feather River Boulevard, Olivehurst Avenue, and Forty Mile Road. The rest of the crashes were dispersed widely north of the Yuba River, on SR 70 and SR 49, and Marysville Road, mostly. Local law enforcement and public works staff identified

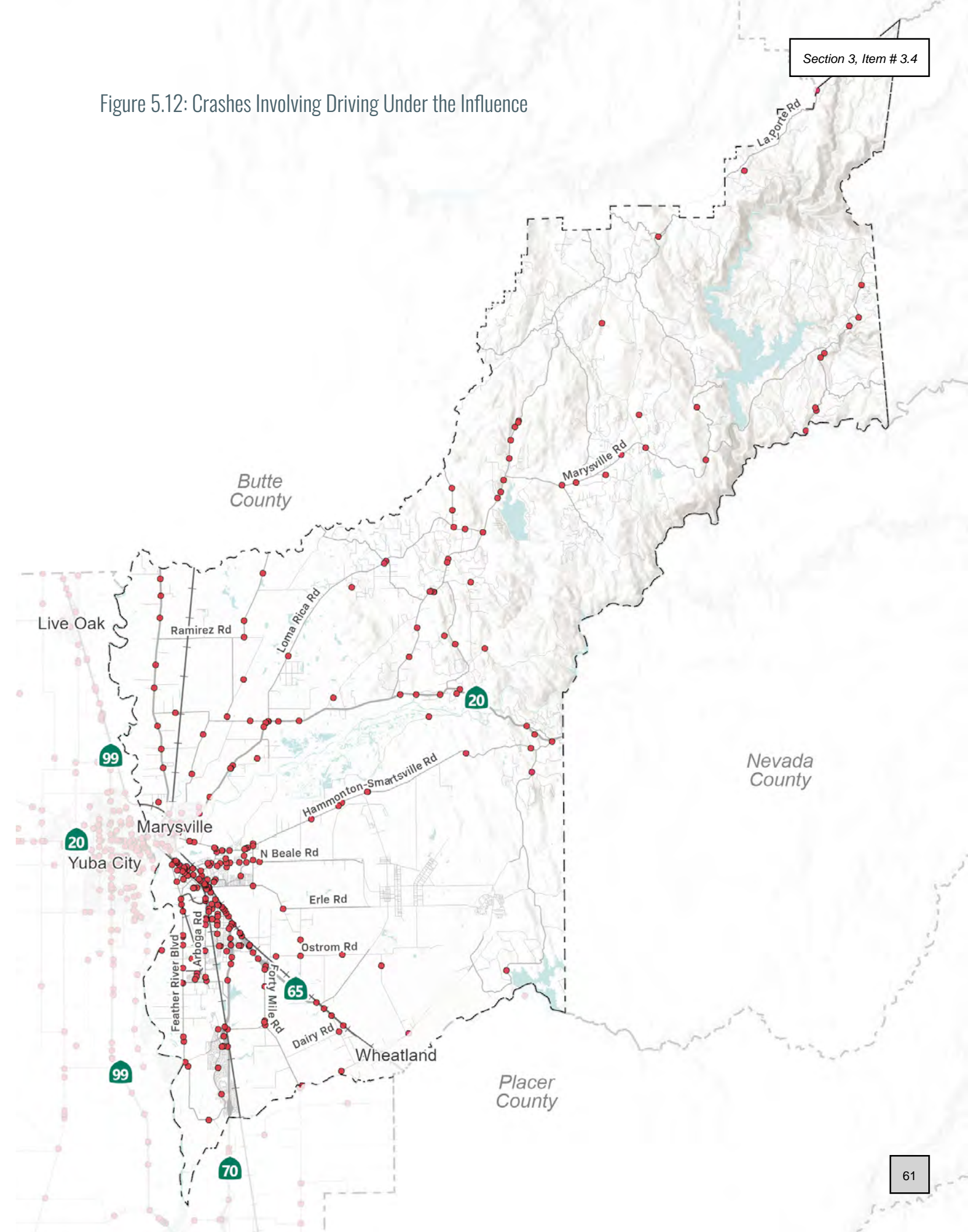
the Amphitheater and Casino as probable influences. Friday, Saturday, and Sunday see higher crash frequency around 6pm to 3am, compared to other times of day and days of the week. Most DUI crashes occurred on county and state roads where there are posted speed limits of 55 MPH.

Hit object was the most common type of crash to result from DUI crashes and accounted for 48 percent (142 crashes) of them and 42 percent of KSI crashes (40 crashes). These DUI-hit object crashes were spread across the county in a pattern similar to that of all DUI crashes.

The most effective countermeasures for DUI crashes fall under non-engineering programs that target education and enforcement.



Figure 5.12: Crashes Involving Driving Under the Influence





FOCUS AREA D

Crashes Involving People Walking and Biking

INJURY CRASH STATISTICS

160 (8%) Total Crashes

70 (18%) KSI Crashes

Pedestrians and bicyclists are vulnerable roadway users. Although crashes involving people walking and biking make up only eight percent of all crashes, they account for nearly eighteen percent of all KSI crashes in unincorporated Yuba County. Figure 5.13 displays all crashes that involved people walking and biking.

These crashes are concentrated in the unincorporated communities of West Linda, Linda, and Olivehurst. There are higher rates of KSI crashes involving bicyclists and pedestrians on arterials such as McGowan Parkway, Feather River Boulevard, North Beale Road,

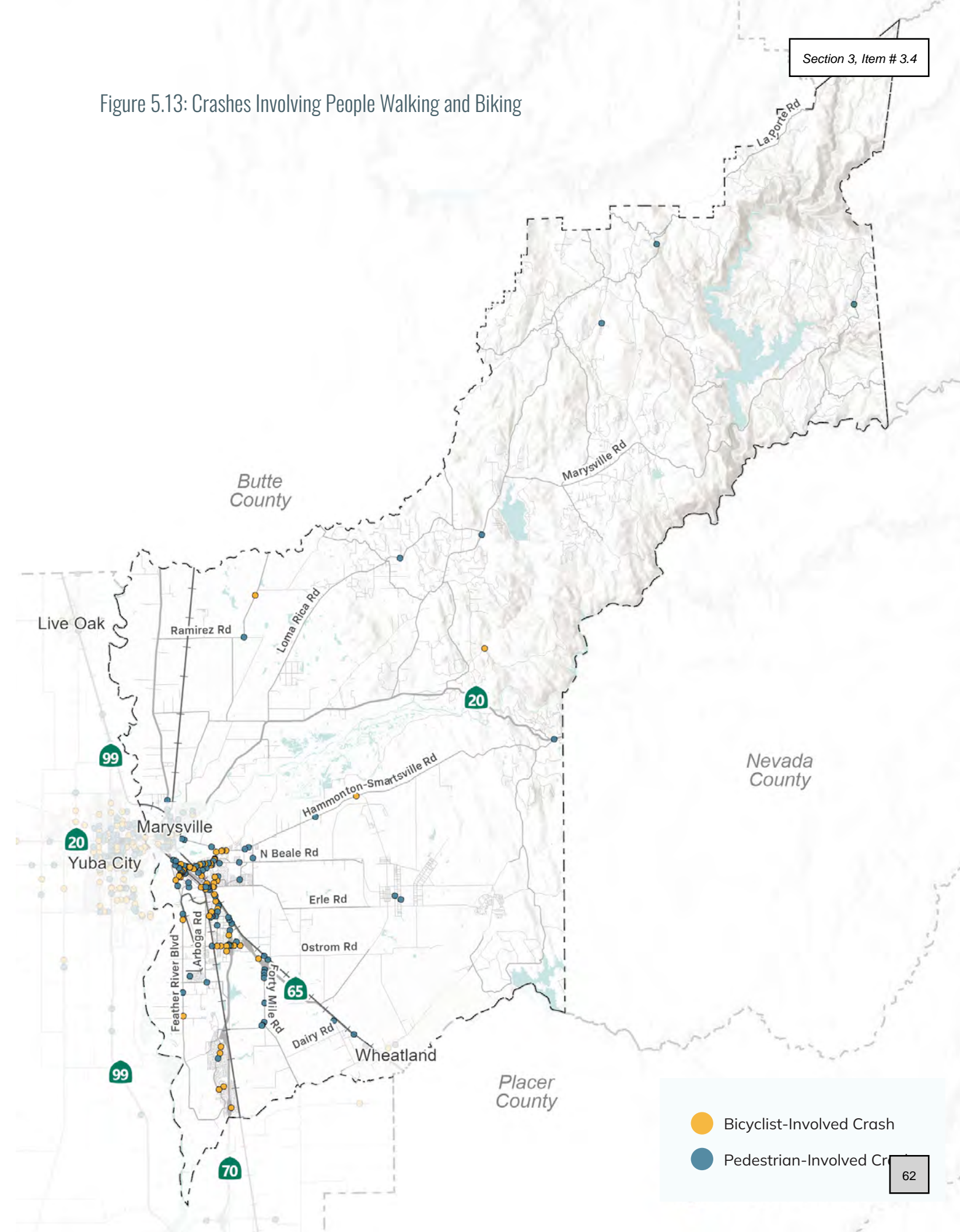
and Forty Mile Road. There are numerous crashes on arterial segments where retail businesses and homes are present along either side of the road:

- Feather River Boulevard, between Alicia Avenue and SR 70
- North Beale Road, between Silverwood Street and Hammonton Smartville Road

Mid-block crashes occurred in some areas where pedestrian crossings are sparse—particularly on Lindhurst Avenue and Hammonton Smartville Road.



Figure 5.13: Crashes Involving People Walking and Biking



● Bicyclist-Involved Crash
● Pedestrian-Involved Crash

The following countermeasures reduce risks for crashes involving pedestrians and bicyclists by making them more visible to drivers, providing safer and more frequent opportunities to cross busy roads, and creating dedicated or protected spaces for their use.

Potential Countermeasures

-  Add Sidewalk
-  High-Visibility Crosswalk
-  Rectangular Rapid Flashing Beacon
-  Leading Pedestrian Interval and Pedestrian Recall
-  Separated Bikeway
-  Buffered Bike Lanes
-  Curb Extensions
-  Co-Locate Bus Stops and Pedestrian Crossings
-  Pedestrian Hybrid Beacon
-  Shared-Use Path
-  Bike Lane
-  Green Conflict Striping





FOCUS AREA E

Improper Turning Away from Intersections

INJURY CRASH STATISTICS

383 (19%) Total Crashes

99 (25%) KSI Crashes

Improper turning remains one of the leading primary contributors to crashes and accounts for 552 of Yuba County's crashes. Moreover, most of them occurred away from an intersection, rather than at them. Of those 552 crashes, 383 took place away from an intersection, making up 19 percent of the county's crashes. 99 (25 percent) of Yuba County's improper-turning KSI crashes occurred away from an intersection. Figure 5.14 displays the locations of these crashes.

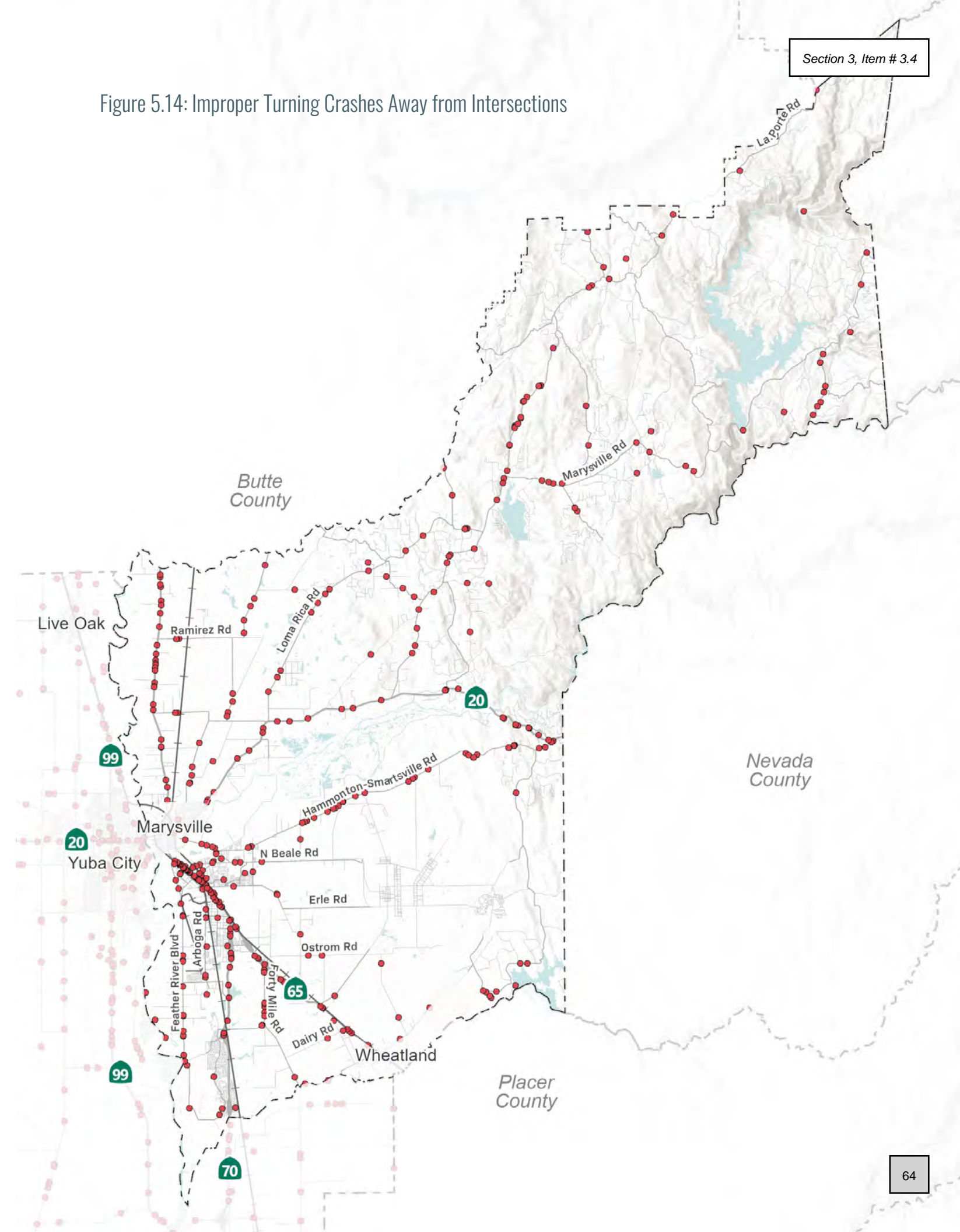
58 percent of these crashes led to hit object and 22 percent to overturned. 70 percent were traveling at speeds exceeding 50 MPH. In the moments leading up to them, 44 percent of parties that were at fault made an unsafe turning action and 27 percent ran off the

road. This pattern could suggest that high-speed unsafe lane changes, erratic steering, or distracted driving on roads may have led to these crashes.

SR 70 experienced the highest frequency of improper turning crashes occurring away from intersections. These crashes were highly concentrated along SR 70 between the northwest limits of Linda and Olivehurst Avenue and moderately concentrated on SR 70 north of Marysville as well as Hammonton Smartville Road. The remaining crashes were mostly dispersed on corridors within the vicinity of Linda, Oliveshurst, and Wheatland, such as Feather River Boulevard, in addition to more rural roads such as SR 20, Marysville Road/Willow Glen Road, and Loma Rica Road.












Figure 5.14: Improper Turning Crashes Away from Intersections



A combination of signage, roadway enhancements, and visibility improvements, such as rumble strips, curve warning signs, guardrails, and delineators, can help prevent unsafe turning and roadway departures by guiding drivers and providing recovery space. These countermeasures, especially when paired with speed limit reductions, reduce crash severity by lowering the kinetic energy transferred during high-speed impacts, helping prevent serious injuries.

Potential Countermeasures

- | | | | |
|---|--|---|------------------------------------|
|  | Rumble Strips |  | Guardrail |
|  | Safety Edge |  | Widen/Pave Shoulder |
|  | Create/Increase Clear Zone |  | Speed Limit Reduction |
|  | Curve Advance Warning Sign |  | Chevron Signs on Horizontal Curves |
|  | Delineators, Reflectors, and/or Object | | |





FOCUS AREA F

Hit Object

INJURY CRASH STATISTICS

566 (29%) Total Crashes

129 (32%) KSI Crashes

Hit-object crashes emerged as the most prevalent crash type in unincorporated Yuba County. This crash type composes 566 (29 percent) of the county’s crashes overall, and 129 (32 percent) of the county’s KSI crashes. As expected, 96% of all hit-object crashes involved only one party. Figure 5.15 displays all hit object crases between 2018 and 2023 in unincorporated Yuba County.

Two-thirds of this type of crash occurred on non-state facilities. Many of these county road hit object crashes occurred in rural eastern Yuba County on narrow, tree-lined roadways and near residential areas, mainly Linda and Olivehurst, where roads are two to four lanes and many have on-street parking. Leading up to the crashes, 40 percent of at-fault vehicles made some unsafe turning movement, such as abrupt lane changes or erratic steering wheel maneuvers, and 30 percent ran off the road.

A smaller share of vehicles were proceeding straight (19 percent). As a result, most of the objects hit were fixed objects (80 percent), such as trees and utility poles on the side of the road; 10 percent were other objects such as items dropped from a vehicle or a parked vehicle; and two percent were animals.

Similar to the improper turning crash focus area, a significant amount of hit object crashes took place on SR 70, especially between the northwest limits of Linda and the SR 70 and SR 65 merge. Hit object crashes were also frequently reported along Hammonton Smartville Road, SR 20, Marysville Road/ Willow Glen Road, and Loma Rica Road. Within the unincorporated communities, hit object crashes were prominent along North Beale Road and Feather River Boulevard and in the northern portion of Plumas Lake.

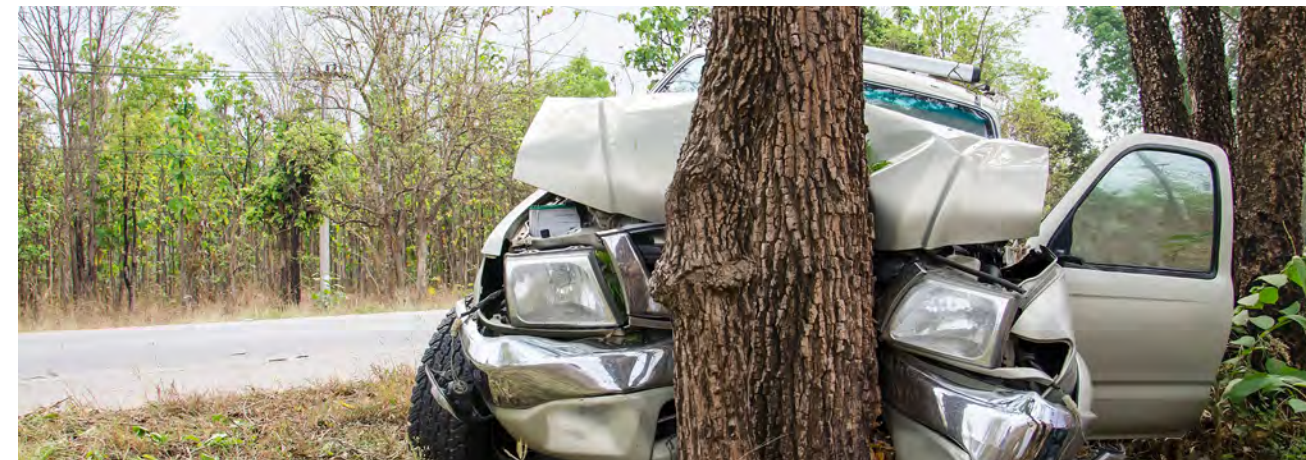
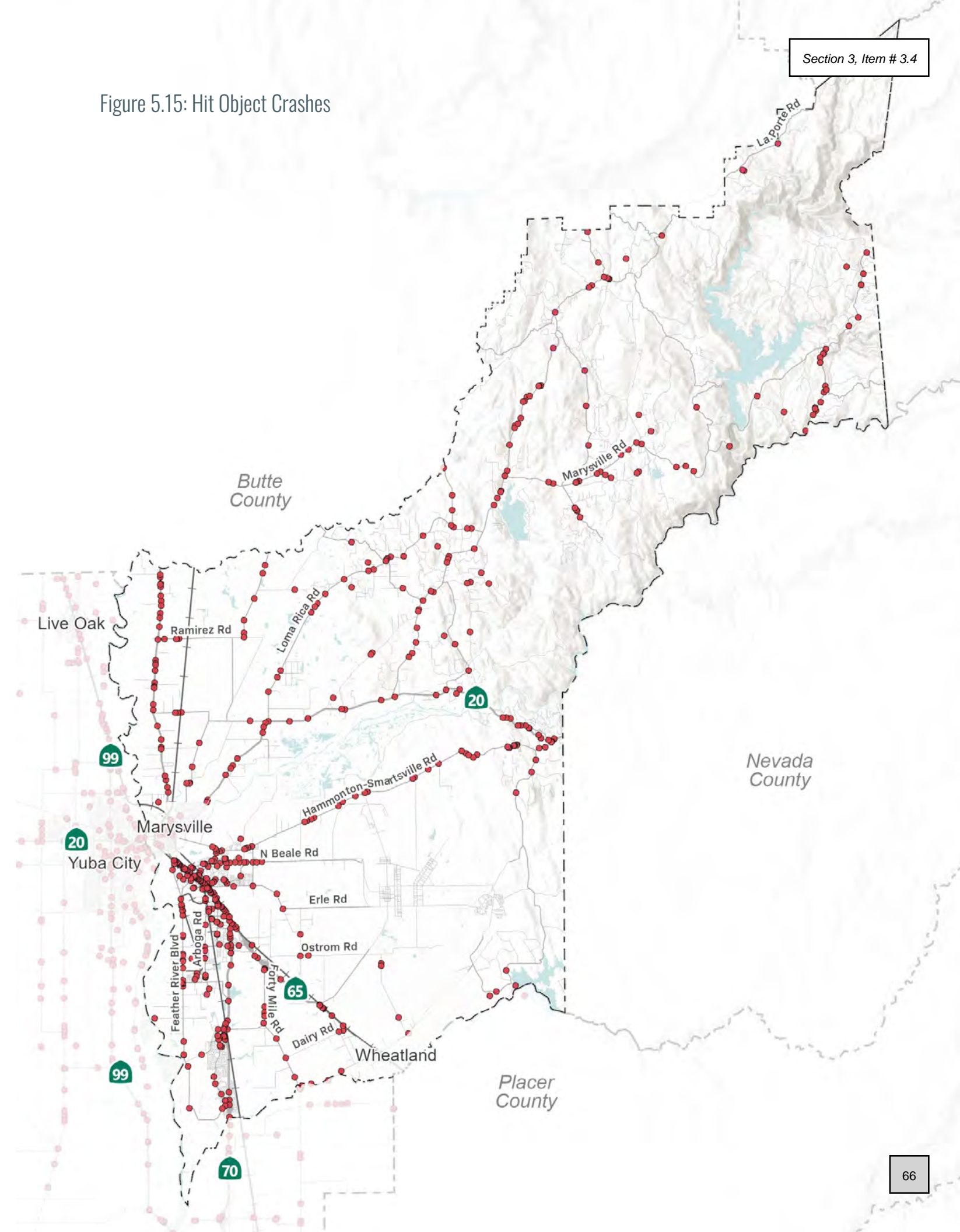


Figure 5.15: Hit Object Crashes



Yuba County

Countermeasures like guardrails, clear zone improvements, and widened or paved shoulders can help prevent crashes with objects and provide recovery space. Rumble strips, safety edge treatments, and delineators or reflectors enhance driver awareness and guidance, especially in low-visibility conditions. Speed limit reductions are especially critical, as lower speeds directly reduce the kinetic energy transferred during a crash, which in turn lowers the risk of severe injury or fatality.

Potential Countermeasures



Delineators, Reflectors, and/or Object



Speed Limit Reduction



Rumble Strips



Guardrail



Safety Edge



Widen/Pave Shoulder

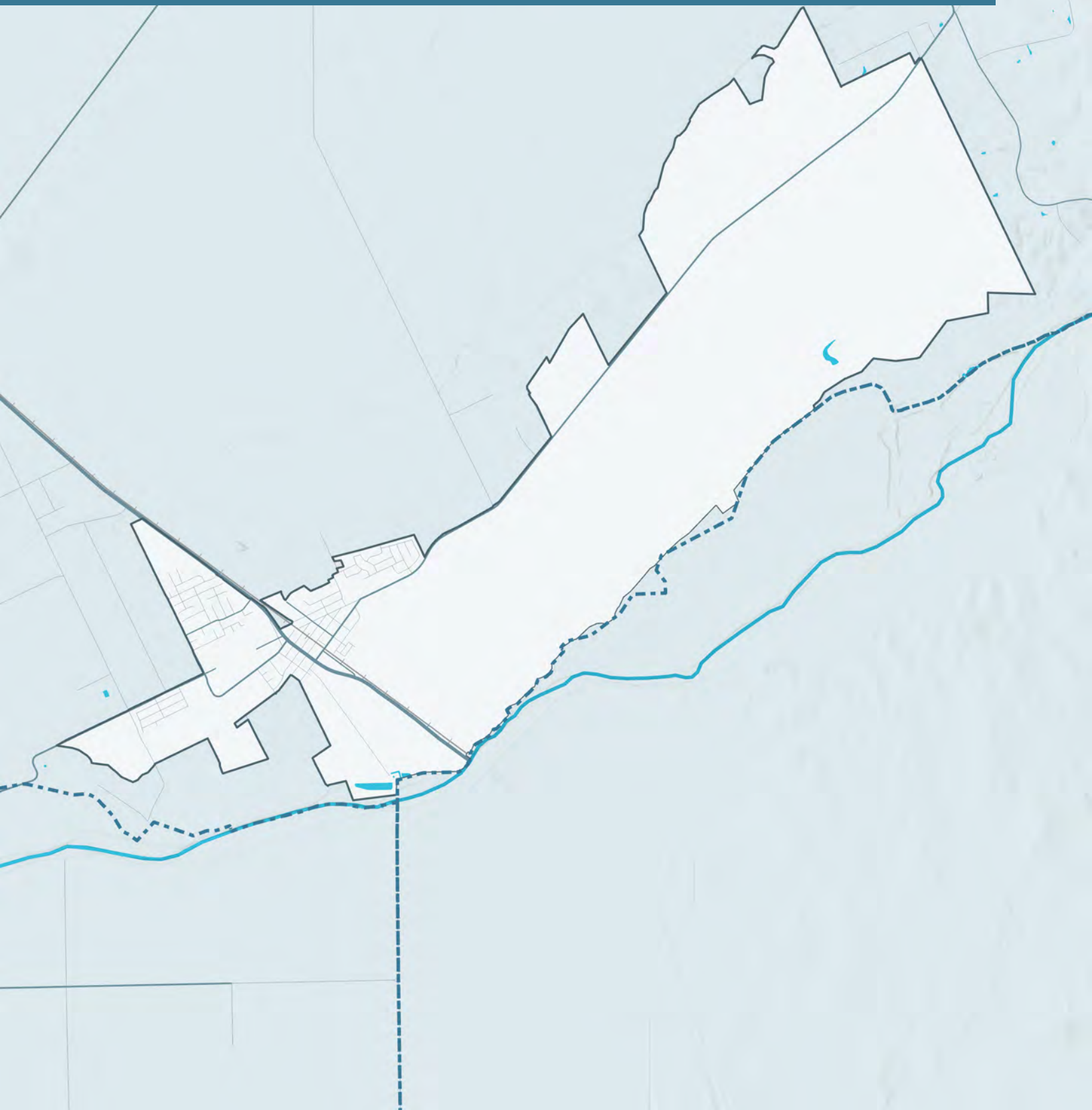


Create/Increase Clear Zone





CHAPTER 7 Wheatland Crash Analysis



Introduction

Wheatland is located in southern Yuba County, about 40 miles north of Sacramento. The Beale Air Force Base, Toyota Amphitheatre, and Hard Rock Hotel & Casino are located nearby. It is the gateway city to Camp Far West, a regionally significant recreation area. Wheatland is a small but growing community with a population of approximately 3,700 residents. The city's roadway network is centered around State Route 65/D Street, a vital north-south corridor that bisects town and connects Wheatland to other parts of the region, such as Marysville and the greater Sacramento area. Adjacent to this road is the Union Pacific Railroad (UPRR). Spenceville Road is another key corridor, extending from the middle of town to the east, and provides access to the Camp Far West Reservoir and Beale Air Force Base via the Vassar Lake Gate.

Wheatland is a predominantly residential community, with about half of the city's population living on either side of State Route 65 and UPRR tracks. All of the schools are situated on the west side and the primary retail destinations on the east or along the highway. Wheatland Elementary School and Virginia School are accessed off Olive Street near SR 65, and Wheatland Union High School and Bear River Middle School via Wheatland Road. The historic downtown core is a compact, walkable district east of the highway that features a collection of well-preserved 19th- and early 20th-century buildings that house local businesses. Most residents must cross SR 65 multiple times per day either by driving, biking, or walking to access their destinations.

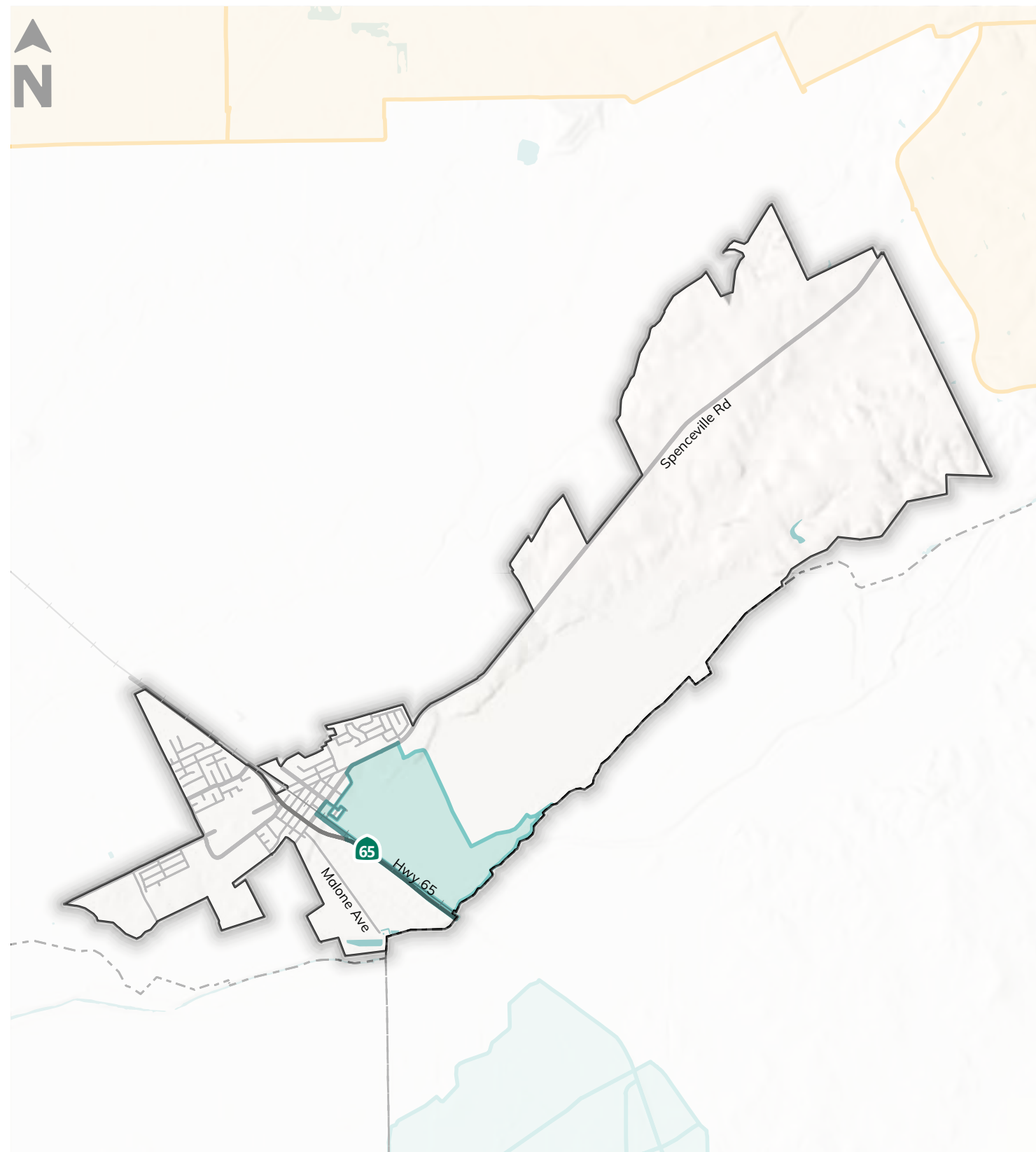
Communities of Concern

Sociodemographic data sources are helpful to better understand the community, as well as when applying for state and federal grant funding to implement infrastructure projects. Figure 7.1 shows locations in Wheatland that meet the criteria for two community metrics relevant to grant applications:

- Caltrans Transportation Equity Index (EQI) Transportation-Based Priority Populations: 2 percent of Wheatland's population meets Caltrans' threshold for Transportation-Disadvantaged status, compared to 16 percent of Californians.
- USDOT Areas of Persistent Poverty and Historically Disadvantaged Communities: none of Wheatland qualifies as an area of persistent poverty or historically disadvantaged community, compared to 28 percent statewide.

In CalEnviroScreen, which evaluates environmental burdens including air pollution, traffic density, and health vulnerabilities, Wheatland received a score of 22, where the state had a score of 23, indicating parity between Wheatland and the state as a whole.

Figure 7.1: Caltrans Transportation Equity Index & USDOT Areas of Persistent Poverty



Legend

■ Caltrans Transportation Equity Index (EQI) Transportation-Based Priority Populations

■ USDOT Areas of Persistent Poverty and Historically Disadvantaged Communities (APPHDC)

Plans

The City of Wheatland has already made commitments to improving roadway safety through policies set in the Wheatland General Plan:

- 2.A.10: The City shall give priority to street and highway improvements that increase safety, minimize maintenance costs, and increase the efficiency of the street system.
- 2.C.2: The City shall promote street, alley, and sidewalk maintenance to encourage their safe use.
- 2.C.4: The City shall require ADA compliance for existing and proposed street sidewalks.
- 2.C.5: The City shall promote elderly friendly roadways, including the use of bikeways for golf carts and motorized wheelchairs.

Projects

There are numerous improvement projects currently underway or planned within Wheatland. There is a series of safety improvements planned on state facilities owned and operated by Caltrans along State Route 65 between Evergreen Drive and State Street, including rehabilitating pavement, adding bike lanes, upgrading facilities to comply with Americans with Disabilities Act (ADA) standards, constructing a multi-use path, and enhancing existing crosswalks. There are newly installed traffic signals at the State Route 65 and McDevitt Drive intersection.

In addition, improvements are planned at the intersections of SR 65 & Oakley Lane and SR 65 & Dairy Lane. While both these intersections are located in unincorporated Yuba County, they are frequently traveled by Wheatland residents, with members of the community expressing concern during the community engagement process.

📷 Typical Intersection in Wheatland



INJURY CRASH TOTAL

73

KSI CRASH TOTAL

2

Figure 7.2
Injury Crashes by Year, 2018 - 2023

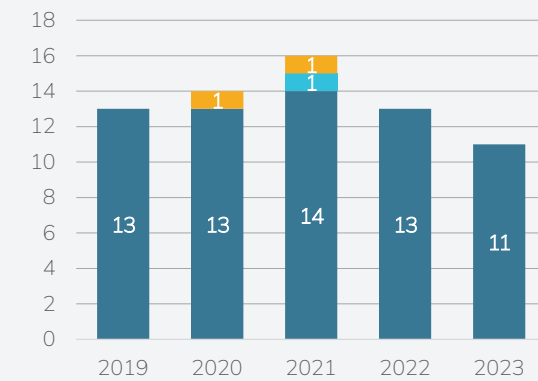
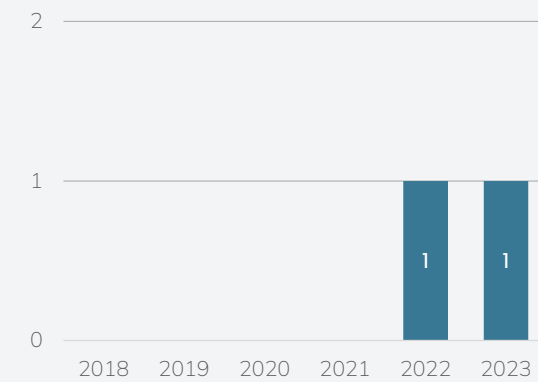


Figure 7.3
KSI Crashes by Year, 2018 - 2023



KSI = Killed or Severely Injured

- Vehicle-Only Crashes
- Bicycle-Involved Crashes
- Pedestrian-Involved Crashes

Crash Summary

This section summarizes key findings from the city’s crash data obtained from the California Highway Patrol’s Statewide Integrated Traffic Records System (SWITRS) database, for the years 2018 to 2023. The analysis includes all crashes that led to injury and excludes property-damage-only crashes.

Within the six-year period, Wheatland saw a total of 73 crashes that led to some degree of injury. One crash involved a bicyclist and two involved pedestrians. In total, there were two crashes that involved at least one person that was killed or severely injured (KSI).

There was a concentration of crashes on D Street/ SR 65 between Main Street and State Street where cars traveling northbound rear-ended other vehicles as the posted speed limit drops from 55 MPH to 35 MPH, right before the signal at Main Street.

Figure 7.4:
Wheatland Crash Heat Map



About KSI Crashes

Severe injuries resulting from a traffic crash can result in a number of catastrophic impacts, including permanent disability, lost productivity and wages, and ongoing healthcare costs. These injuries can include:

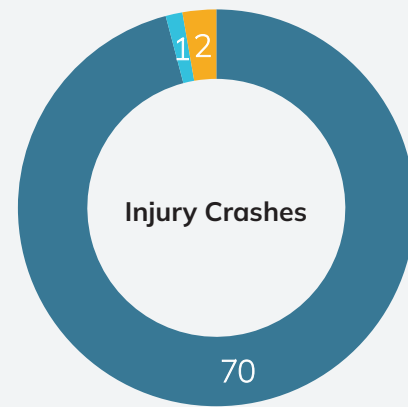
- Broken or fractured bones
- Dislocated or distorted limbs
- Severe lacerations
- Severe burns
- Skull, spinal, chest or abdominal injuries
- Unconsciousness at or when taken from the collision scene

Throughout this analysis, the acronym KSI is used to denote crashes where someone was killed or severely injured.

KSI Crash Summary

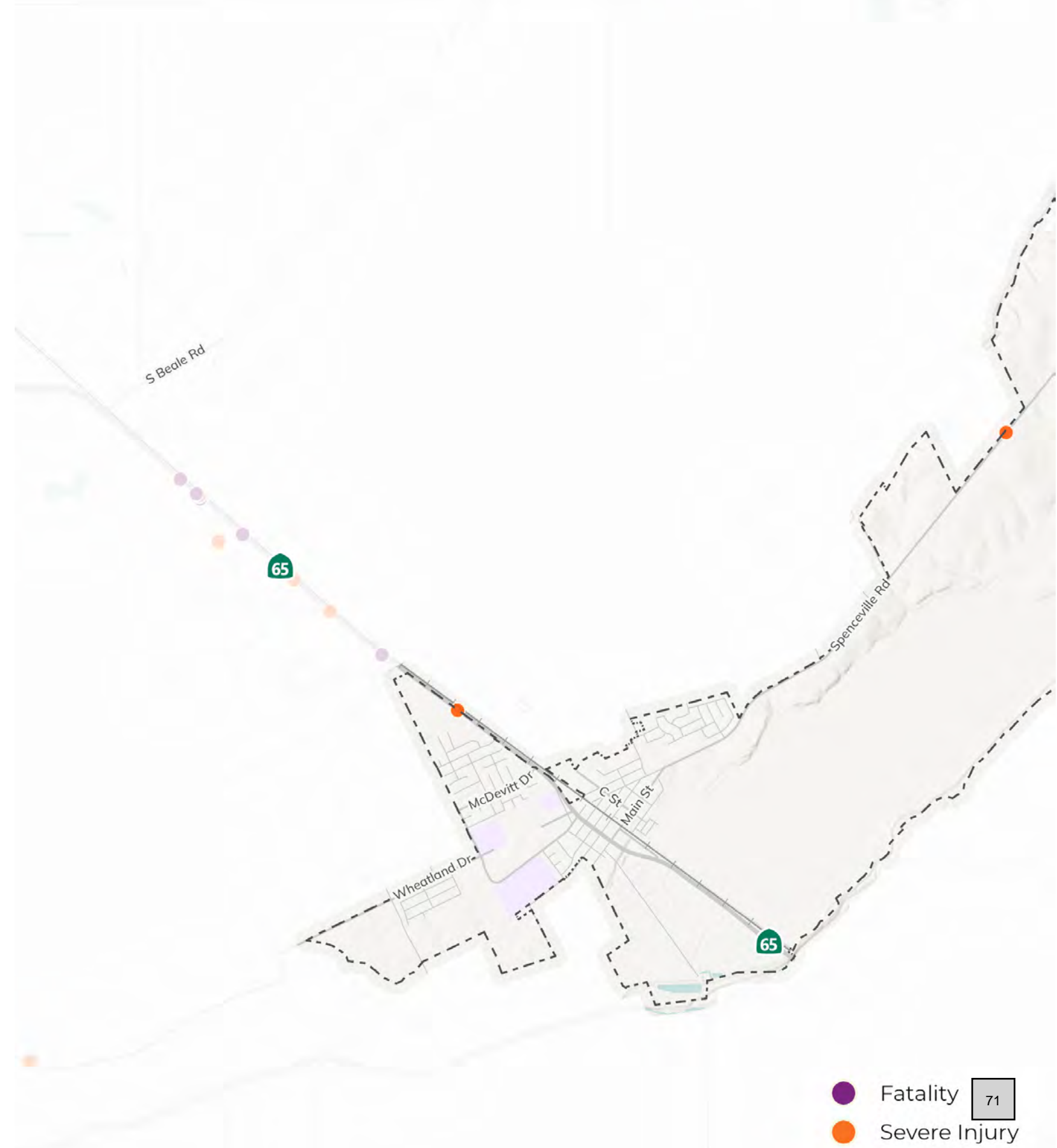
In the six-year period, there were two crashes within Wheatland that resulted in severe injury; there were no fatalities. Both crashes involved only vehicles, with no pedestrians or cyclists affected.

Figure 7.5
Crash Mode Share by Severity



- Vehicle-Only Crashes
- Bicycle-Involved Crashes
- Pedestrian-Involved Crashes

Figure 7.6: Wheatland KSI Crashes



Crashes by Crash Type

Overall, rear-end crashes were the most common type of crashes in Wheatland, making up 62 percent of all crashes resulting in injury. Most of Wheatland's crashes occurred on SR 65, the main corridor in town. Rear-end crashes were most common approaching Main Street, as the speed limit changes from 55 MPH to 35 MPH.

Crashes by Primary Crash Factor

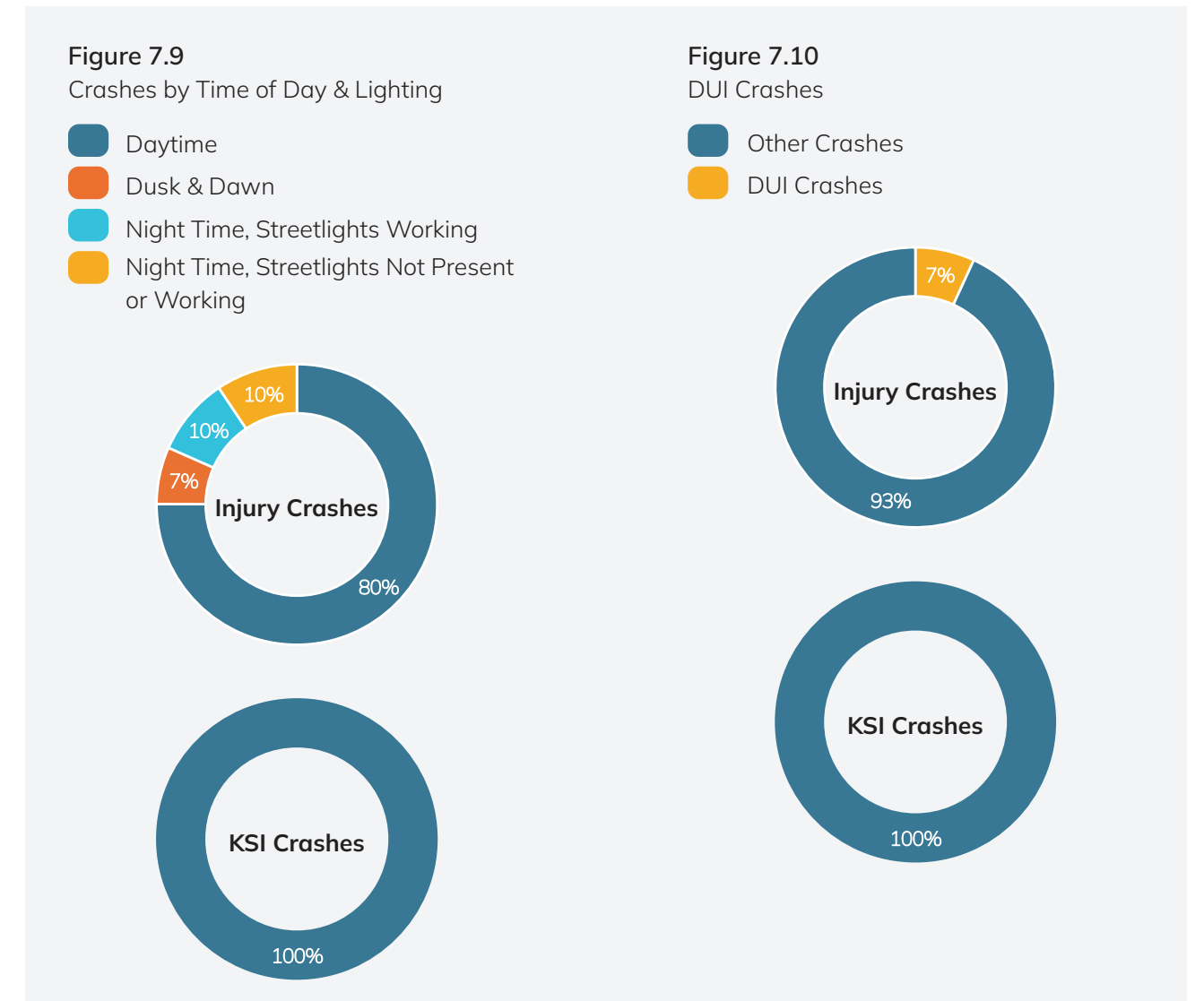
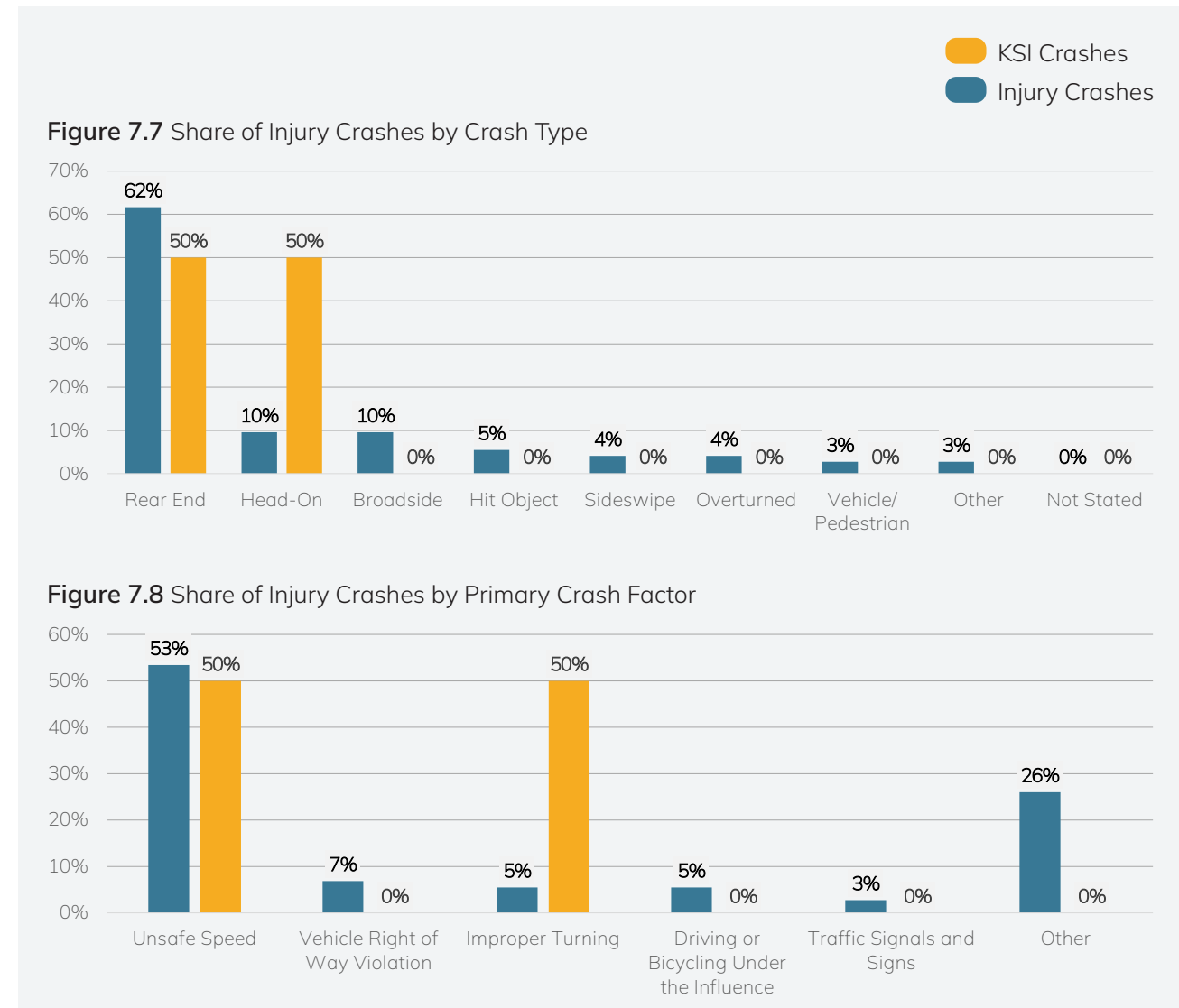
Unsafe speed (53 percent) was the leading reported primary cause of crashes in Wheatland. The remaining crashes were attributed to several other factors, such as vehicle right of way violation, improper turning, and driving under the influence, etc. Unsafe speed and improper turning were the causes behind one KSI crash each.

Crashes by Time of Day and Lighting Condition

Overall, most crashes occurred in the daylight (80 percent), 10 percent occurred in the dark where streetlight was present, and 10 percent happened in the dark with no lighting. All crashes that took place under no lighting conditions occurred on SR 65, except for one at the Spenceville Road and Boyd Lane intersection. Both KSI crashes occurred in daylight.

Driving Under the Influence

7 percent of crashes (5 crashes) involved someone driving under the influence of alcohol or drugs. No KSI crashes involved a DUI.



Safety Corridors

Safety corridors are the roadway segments within Wheatland that had the highest number of crashes resulting in severe injury or death (KSI) between 2018 and 2023. Priority safety corridors are the safety corridors that experienced the highest rate of KSI crashes, are adjacent to sensitive land uses, and have high potential for severe crashes and thus, should be prioritized for improvements.

The following is a list of Wheatland’s priority safety corridors as identified through a safety corridor systemic analysis, task force input, and community feedback. Figure 7.11 displays Wheatland’s network of safety corridors, which are shown in orange. Priority corridors are shown in red. Refer to **Appendix C** for a more detailed explanation of the safety corridor identification technical methodology.

- SR 65 beyond the city limits, from Dry Creek Levee Road to Bear River
- Main Street from SR 65 to Spenceville Road
- Spenceville Road from Main Street to east of McCurry Street

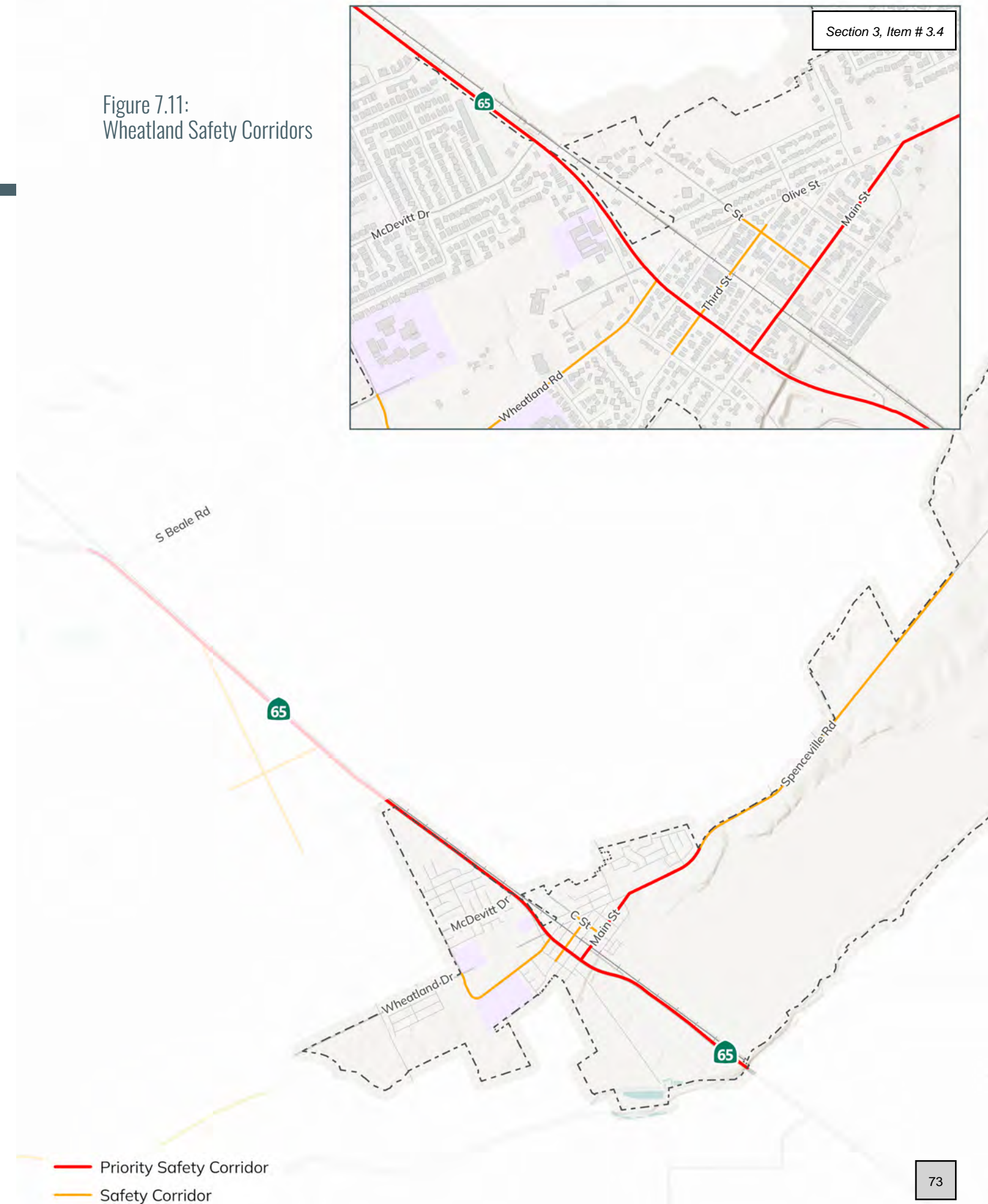
Priority Safety Corridors were identified to provide the list of locations for actionable next steps with additional study. Studies could include recommended engineering safety countermeasures with targeted improvements to address crash history or focused programs identified in the Action Plan chapter.

SR 65/Oakley Lane and SR 65/Dairy Road

Although these two intersections lie outside Wheatland’s city limits, they are included in Wheatland’s safety considerations due to significant safety concerns from Wheatland residents. Improvements at these sites are expected to enhance safety and mobility for the Wheatland community.

- SR 65 & Dairy Road
- SR 65 & Oakley Lane

Figure 7.11: Wheatland Safety Corridors



Community Snapshot

This community snapshot features Veronica, a fictional character created to illustrate the daily transportation challenges faced by a resident in Wheatland. The experiences of this character are based on census data as well as local lived experiences.



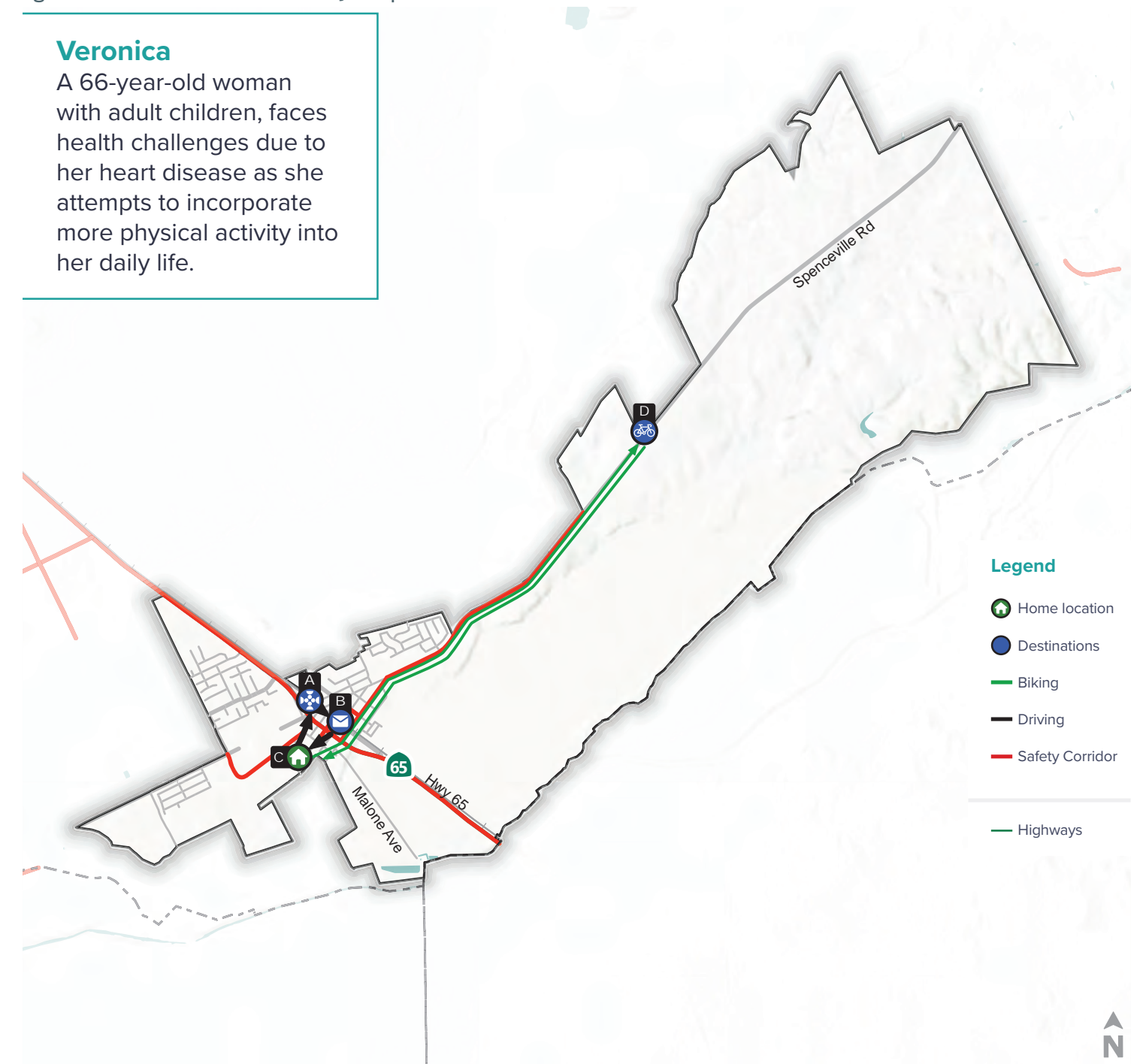
Wheatland is a small city where many destinations are within walking or biking distance. However, infrastructure challenges limit the feasibility and safety of active transportation. Veronica, a 66-year-old resident managing heart disease, is seeking to incorporate more physical activity into her daily routine. While walking and biking offer clear health benefits, she finds the current roadway conditions discouraging and unsafe, particularly due to the railroad tracks and lack of shoulders along Spenceville Road. Addressing these barriers is essential to supporting healthier, more active lifestyles for residents like Veronica. Figure 7.12 outlines the travel mode choices made by Veronica and challenges that come with them.

Although a majority of trips are made by car (75 percent), a significant portion still travel by foot (18 percent). This mode share should be given greater consideration when planning and implementing safety improvements.

Figure 7.12: Wheatland Community Snapshot

Veronica

A 66-year-old woman with adult children, faces health challenges due to her heart disease as she attempts to incorporate more physical activity into her daily life.



A Veronica drives nearly ¾ of a mile to the Wheatland Community Center for a social outing. She would bike but she does not like crossing D Street and the railroad tracks.

B After the Community Center, Veronica swings by the Post Office which is less than 1/5th of a mile away, an easily walkable or bikeable distance.

C Veronica drives the short ½ mile home, once again an easily walkable or bikeable distance.

D For recreation, Veronica goes on a 20-mile bike ride with friends, but during the ride she faces difficulties biking along Camp Beale Highway and struggles crossing D Street at Main Street.

Focus Areas

Six focus areas were identified through a systemic analysis of crash records to represent the most significant patterns behind injury crashes—and especially KSI crashes—in the region. These focus areas are identified with the letters “A” through “F” and each one is applicable to one, several, or all of the communities covered by this RSAP. Following each crash focus area is a set of potential countermeasures that should be considered for implementation to improve safety outcomes.

Appendix D contains a more detailed summary of each countermeasure.

Wheatland’s traffic safety challenges can be understood through a subset of these focus areas:

FOCUS AREA A
Crashes on State Highways Serving as Main Streets

FOCUS AREA B
Right-of-Way Issues at Intersections

FOCUS AREA D
Crashes Involving People Walking and Biking

Some of these focus areas pertain to the crashes just outside Wheatland’s northern city limits, particularly where Oakley Lane and Dairy Road intersect Highway 65. These locations remain significant safety concerns for Wheatland residents.

FOCUS AREA A
Crashes on State Highways Serving as Main Streets

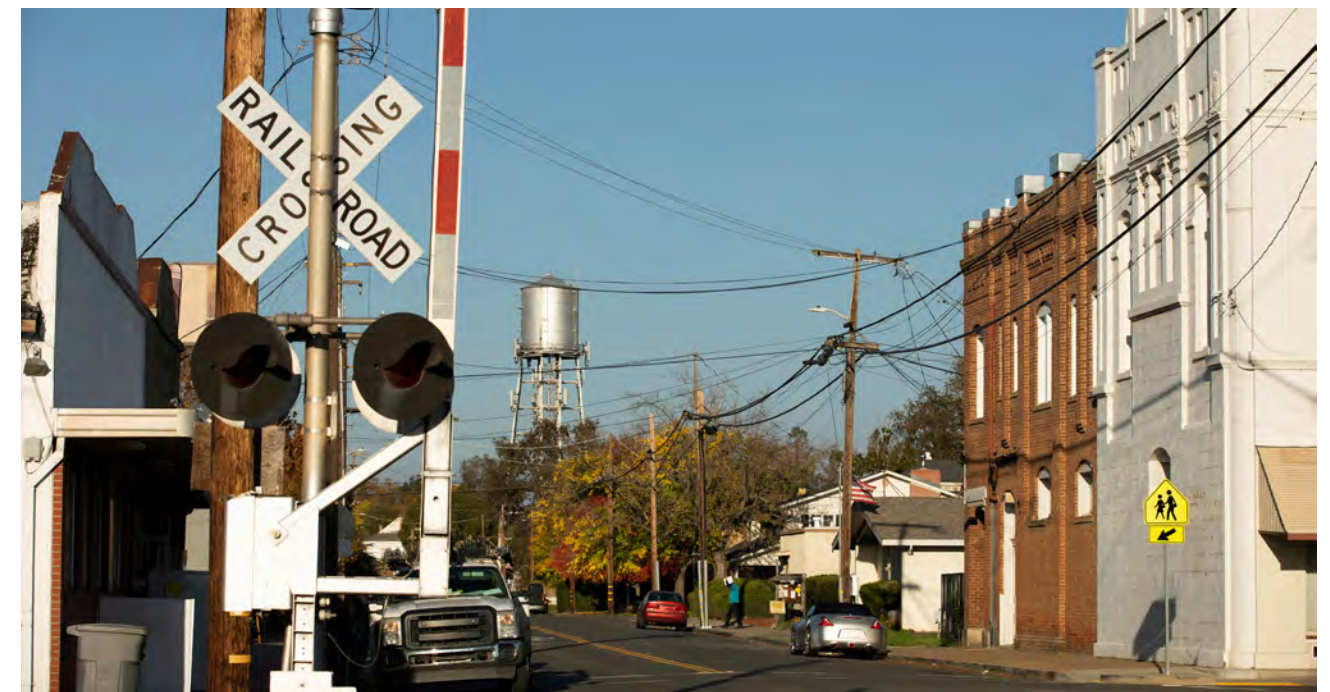


State Route 65 is a north-south corridor that serves as a connector for local traffic as well as those passing through Wheatland to get to other parts of the region. This arterial highway bisects the city and is a road residents must cross to get to destinations from one side of town to the other. Between 2018 and 2023, 33 of 73 crashes within Wheatland occurred along the segment of State Route 65 that serves as a main street.

Crossing SR 65 presents significant challenges for people walking, biking, and driving due to limited and inadequate infrastructure. There are few signalized intersections, so people needing to cross SR 65 at non-signalized intersections

have to contend with the high-speed vehicles with little traffic control. Crosswalks only exist at the two signalized intersections along SR 65 in the downtown core, and sidewalks are narrow and nonexistent at some locations along and around the highway, making it a hostile experience for people traveling on foot. In addition, the railroad tracks adjacent to SR 65 present an uncomfortable crossing experience for pedestrians and bicyclists.

The combination of high-speed traffic and more active downtown environment can worsen the likelihood and severity of conflicts. In particular, crashes were more common in transition zones,



areas near the edge of a town or city where drivers are moving from higher-speed rural or highway environments into lower-speed urban settings.

Most of the crashes in this focus area (26 out of the 33 crashes) occurred in transition zones, with 13 crashes (50 percent) primarily caused by unsafe speed and 18 crashes (69 percent) that resulted in rear end crashes. Clusters of these transition zone crashes occurred between McDevitt Drive and the Dry Creek

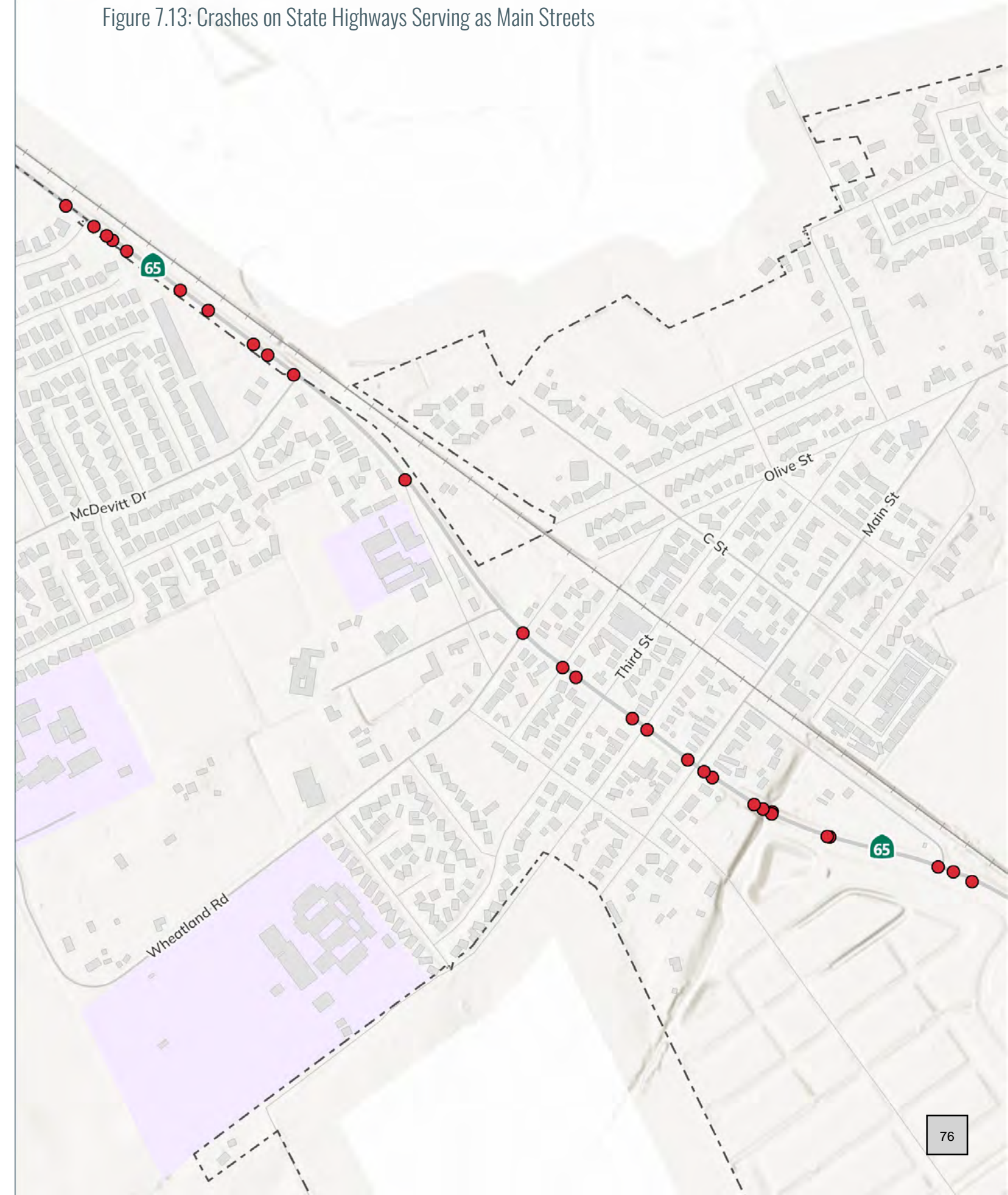
Levee Road on the northern end of the city, and between Main Street and State Street at the southern end.

The following countermeasures can improve safety along highway main streets by slowing vehicle speeds and reducing conflict points between drivers, pedestrians, and bicyclists. Treatments like bike lanes, sidewalks, medians, and lighting enhance visibility and protection for vulnerable users, while speed management and intersection controls help lower the likelihood and severity of crashes.

Potential Countermeasures

- | | | | |
|---|---------------------------------|---|------------------------------------|
|  | Buffered Bike Lanes |  | Separated Bikeways |
|  | All-Way Stop Control |  | Add Sidewalk |
|  | Traffic Signal |  | Roundabout |
|  | Slow Turn Wedge |  | Advance Stop Bar |
|  | Road Diet |  | Raised Median |
|  | Speed Feedback Sign |  | Lane Narrowing |
|  | Street Lighting |  | Speed Limit Reduction |
|  | All-Red Signal Time |  | Flashing Yellow Turn Phase |
|  | Retroreflective Tape on Signals |  | Speed Sensitive Rest in Red Signal |

Figure 7.13: Crashes on State Highways Serving as Main Streets



FOCUS AREA B
Right-of-Way Issues at Intersections

INJURY CRASH STATISTICS

6 (8%)	Total Injury Crashes	0 (0%)	KSI Crashes
---------------	----------------------	---------------	-------------

In Wheatland, right-of-way violations at intersections led to six crashes during the study period, with four of them resulting in broadside crashes. The leading causes were drivers failing to yield to vehicles with the right-of-way when making left turns and neglecting to stop at stop signs.

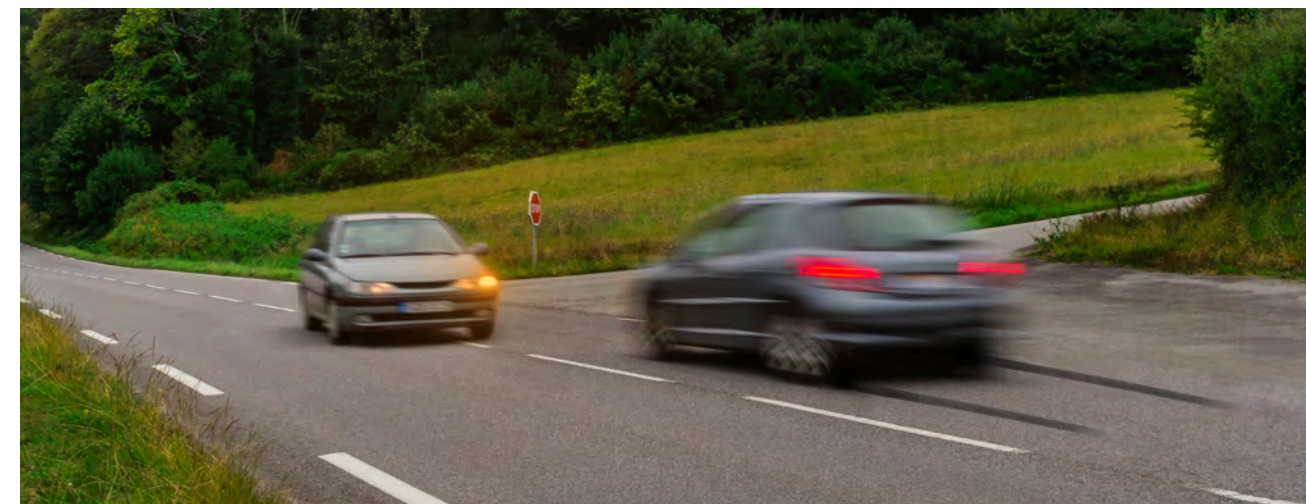
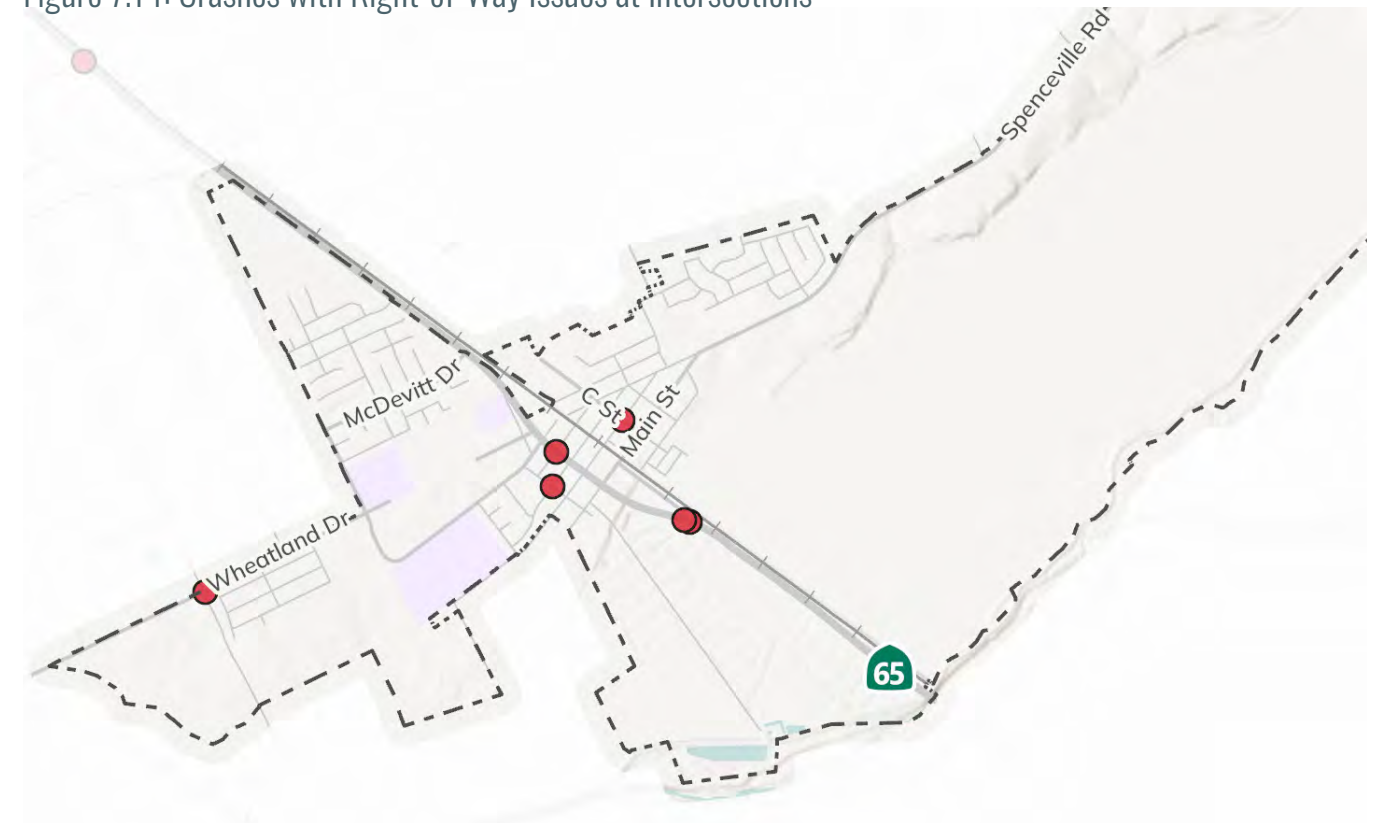
Half of the crashes occurred when at-fault parties from side streets attempted left turns onto the main road, misjudging the time available to complete the maneuver safely; these took place at Wheatland Road & Oakley Lane, State Route 65 & 2nd Street, and SR 65 & State Street intersections. The two crashes that occurred at the E St & 3rd St and C St & 4th Street ensued when at-fault parties proceeded straight through the all-way stop intersections without stopping.

SR 65/Oakley Lane and SR 65/Dairy Road

In addition to the six crashes that occurred within city limits, there were **four** crashes attributed to right-of-way violations where Oakley Lane and Dairy Road intersect SR 65, just outside of the city. Two of them resulted in KSI broadside crashes after the at-fault parties failed to yield when making left turns onto SR 65. Due to the severity of crash outcomes and ongoing community concerns, these locations warrant consideration for targeted safety improvements by the county.

The following countermeasures can reduce crash risks and severity by making intersections more predictable and managing speed. Intersection controls such as roundabouts and protected left turns clarify priority, and treatments such as lane narrowing and intersection tightening further slow vehicles down, reducing impact upon collision.

Figure 7.14: Crashes with Right-of-Way Issues at Intersections



Potential Countermeasures

- | | | | |
|--|-----------------------------------|--|--|
| | Roundabout | | Traffic Signal |
| | Neighborhood Traffic Circle | | Intersection Reconstruction and Tightening |
| | Slow Turn Wedge | | Advance Stop Bar |
| | Centerline Hardening | | Raised Median |
| | Through Bike Lane at Intersection | | Protected Left Turns |
| | Flashing Yellow Turn Phase | | All-Red Signal Time |

FOCUS AREA D
Crashes Involving People Walking and Biking

INJURY CRASH STATISTICS

3 (4%)	Total Crashes	0 (0%)	KSI Crashes
---------------	----------------------	---------------	--------------------

Pedestrians and bicyclists are among the most vulnerable users of our roadways, often navigating environments not designed with their safety in mind. In Wheatland, three crashes occurred that involved a pedestrian or bicyclist.

Two of the incidents occurred along Spenceville Road, a two-lane corridor that is generally unwelcoming to those traveling on foot or by bicycle, with narrow shoulders and few pedestrian facilities. One crash took place at the intersection with McCurry Street, where a pedestrian was struck while attempting to cross the wide side street. The second crash on Spenceville Road involved a bicyclist near Olive Street, who was sideswiped while making a left turn, a maneuver made especially

hazardous by the absence of protected turning space and the speed of surrounding traffic. The third incident occurred at the intersection of Evergreen Drive and Rose Avenue, where a pedestrian was hit by a northbound vehicle while attempting a right turn from the east leg of the intersection.

The following countermeasures help make vulnerable users more visible and provide them with dedicated, protected space: high-visibility crosswalks and signal enhancements such as pedestrian hybrid beacons help pedestrians cross safely by reducing exposure time and improving driver awareness. For bicyclists, buffered bike lanes and separated bikeways create safer conditions for turning and through movements, especially along corridors like Spenceville Road.

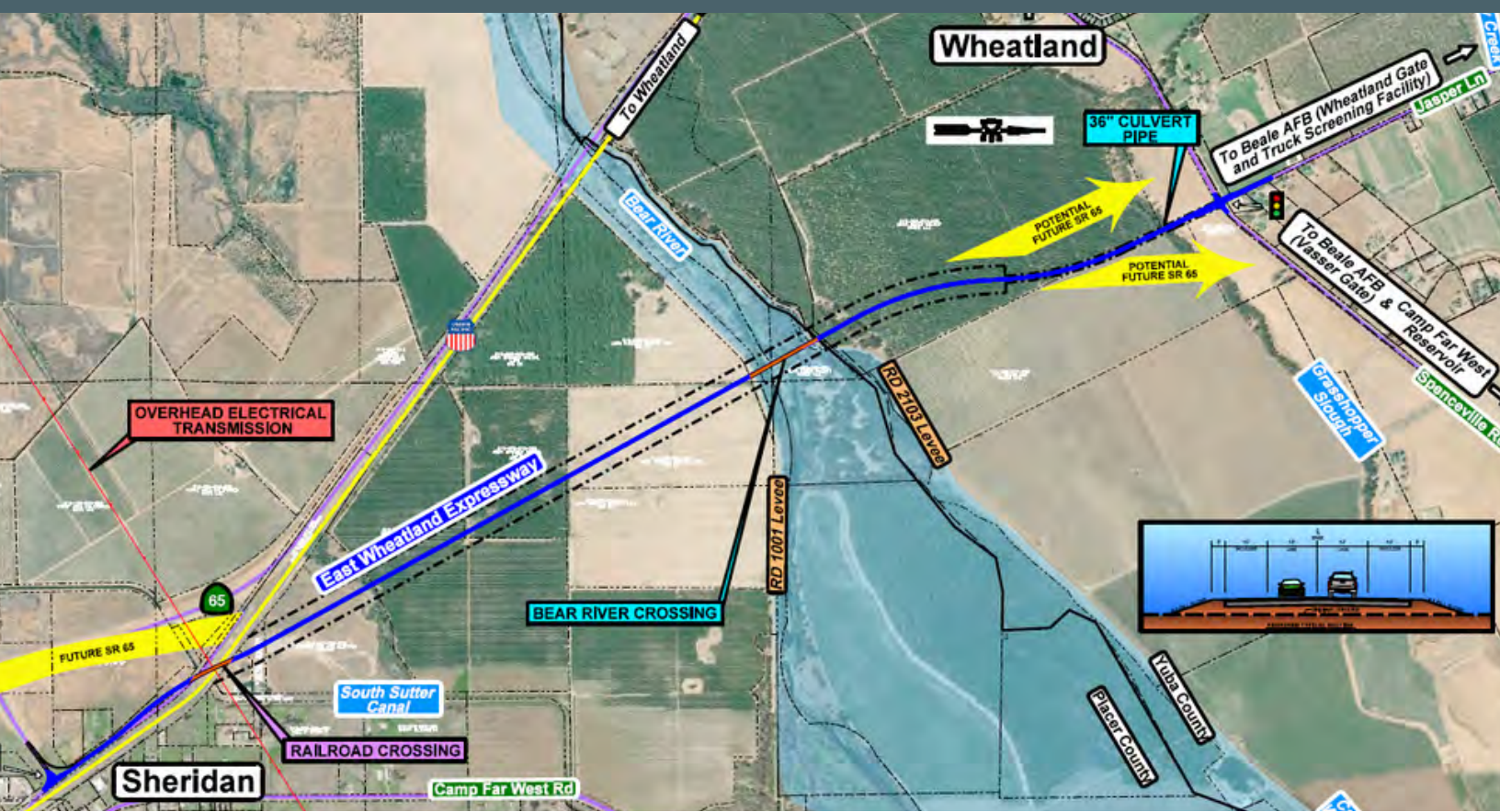
Figure 7.15: Crashes Involving People Walking and Biking



Potential Countermeasures

	Rectangular Rapid Flashing Beacon		Shared-Use Path
	High-Visibility Crosswalk		Separated Bikeway
	Pedestrian Hybrid Beacon		Buffered Bike Lanes
	Leading Pedestrian Interval and Pedestrian Recall		Green Conflict Striping
	Co-Locate Bus Stops and Pedestrian Crossings		Bike Lane
	Curb Extensions		Add Sidewalk

East Wheatland Expressway



The East Wheatland Expressway will be a new roadway that provides an alternative to SR 65 to people wanting to reach local destinations such as Beale Air Force Base, industrial facilities, and Camp Far West. The expressway would split off from SR 65 north of the town of Sheridan, extending north to Spenceville Road

and connecting to Jasper Lane just east of Wheatland. It would require a new bridge over the Bear River. The proposed project would address ongoing issues with traffic congestion on SR 65 through downtown Wheatland, thus likely decreasing collision likelihood in downtown.

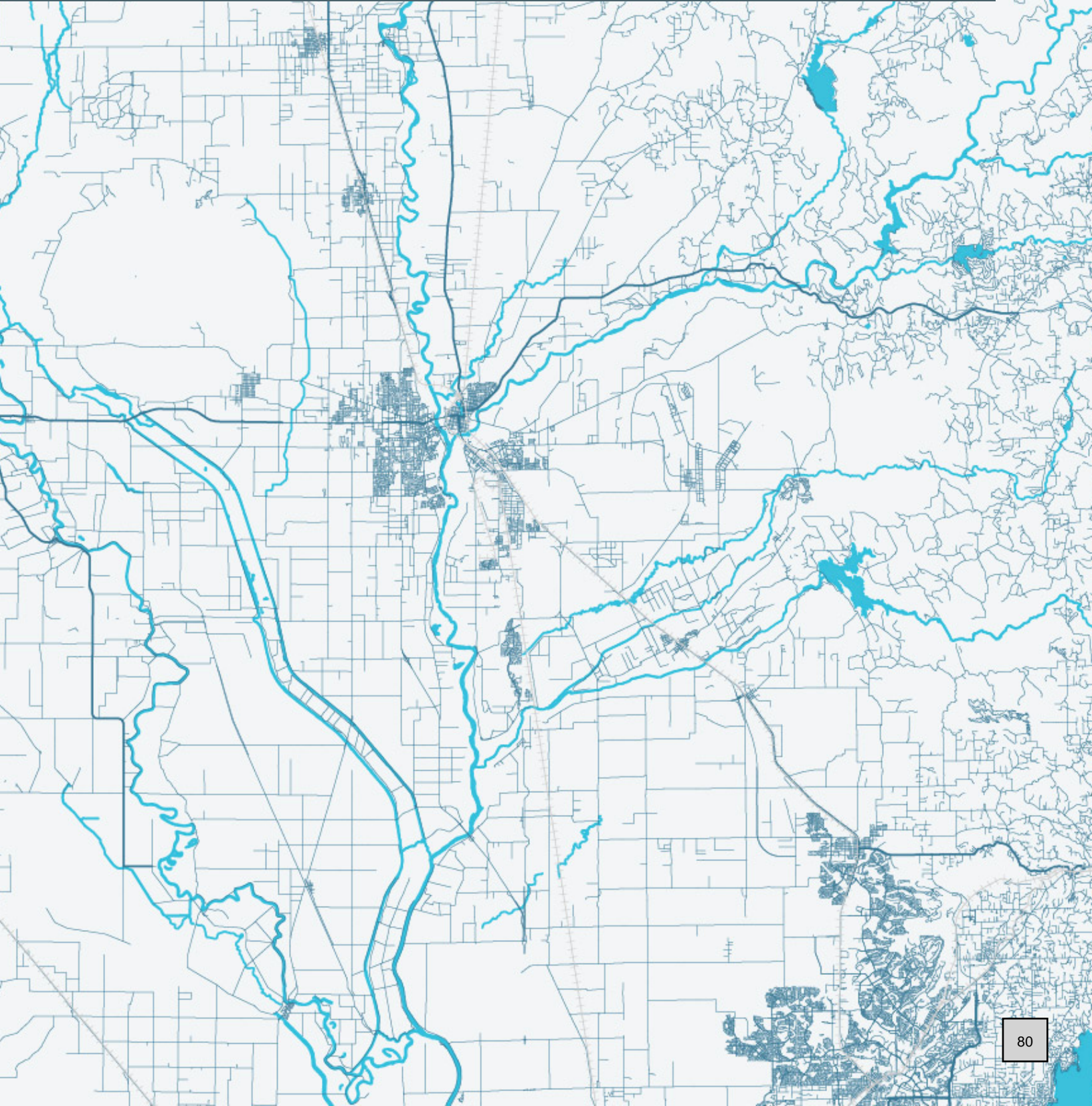
Once completed, the East Wheatland Expressway will divert traffic from State Route 65 through Wheatland. With reduced traffic on SR 65, more safety countermeasures recommended in this plan can be implemented downtown.



Appendix A



Policy Benchmarking & Additional Policy Considerations



Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba County	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation						
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice		
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Yuba County; Yuba-Sutter Region	Current effort with RSAP					x						
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba/Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	Current effort with RSAP						x					
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if county/region is not on track.	Yuba-Sutter Region	"For the success of the LRSP, it is crucial to monitor and evaluate the 4 E's strategies continuously. Monitoring and evaluation help provide accountability, ensure the effectiveness of the countermeasures for each emphasis area, and help make decisions on the need for new strategies. The process would help the County make informed decisions regarding the implementation plan's progress and accordingly, update the goals and objectives of the plan." Current effort with RSAP.	Yuba County LRSP	*Not publicly available	8 - Implementation and Evaluation	80				x			
		Convene and/or participate in an inter-agency committee, task force, implementation group, or working group that is charged with a Safety Action Plan's development, implementation, and monitoring. The group should include a representative from every agency or department that plays a critical role in advancing each Safe System element. It may be desirable to identify a staff coordinator to manage the agency's safety program.	Yuba County; Yuba-Sutter Region	Current effort with RSAP						x					
		Provide training to Yuba/Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Yuba County; Yuba-Sutter Region	Current effort with RSAP						x					
	Meaningful Engagement	Establish an ongoing Safe Routes to Schools program and funding mechanism.	Yuba County; Yuba-Sutter Region; School Districts							x					
		Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Yuba County; Yuba-Sutter Region	Current effort with RSAP						x					
		Establish a website to inform the public about Yuba/Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Yuba County; Yuba-Sutter Region	Yuba County LRSP website established	Yuba County LRSP website	https://www.yubacountysafetyplan.com/								x	
	Data and analysis	Provide public safety materials in common languages spoken by Yuba/Sutter residents whose first language is not English.	Yuba County; Yuba-Sutter Region	Current effort with RSAP						x					
		Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	"The Local Roadway Safety Plan (LRSP) is a localized data-driven traffic safety plan that provides opportunities to address unique roadway safety needs and reduce the number of collisions."	Yuba County LRSP	*Not publicly available	1 - Project Background; 5 - Emphasis Areas	14, 53				x			
		Establish a process for citizens to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Yuba County; Yuba-Sutter Region							x					
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Yuba County; Yuba-Sutter Region	Detailed KSI analysis was done. Current effort with RSAP.	Yuba County LRSP	*Not publicly available	4 - Collision Data and Analysis	33				x			
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Yuba County; Yuba-Sutter Region							x					
	Funding	Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Yuba County; Yuba-Sutter Region							x					
		Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Yuba County; Yuba-Sutter Region	Action CD18.1 - "The traffic impact fees will be used to fund improvements that will be needed in the future as development occurs." The General Plan references a traffic impact fee program, but it did not specify a framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Current effort with RSAP.	Yuba County General Plan	https://cms7files.com	Community Development	77				x			

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba County	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Funding	Funding	Apply for grant programs to fund safety projects.	Yuba County; Yuba-Sutter Region	Funding sources identified in LRSP	Yuba County LRSP	*Not publicly available	8 - Implementation and Evaluation	78				x	
		Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).	Yuba County; Yuba-Sutter Region	"Funding is a critical component of implementing any safety project. While the HSIP program is a common source of funding for safety projects, numerous other funding sources could be pursued for such projects (See Table 22)"	Yuba County LRSP	*Not publicly available	8 - Implementation and Evaluation	77				x	
	Development review	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Yuba County	Action CD 16.2 - "The County will continue to require specific plans to identify funding for transportation facilities needed to serve development within each subject specific plan." The General Plan did not specify safety impact assessments for mitigation.	Yuba County General Plan	https://cms7files.	Community Development	73			x		
	Equity first	Identify underserved communities through data. This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.	Yuba County; Yuba-Sutter Region	"Commit to equity in all aspects of Safe System, including data analysis that acknowledges and addresses reporting biases, project prioritization efforts that promote projects in historically underinvested communities, and implementation strategies that follow data-driven approaches." Current effort with RSAP.	Yuba County LRSP	*Not publicly available	2 - Safety Partners	19				x	
			Yuba County; Yuba-Sutter Region	"Commit to equity in all aspects of Safe System, including data analysis that acknowledges and addresses reporting biases, project prioritization efforts that promote projects in historically underinvested communities, and implementation strategies that follow data-driven approaches." Current effort with RSAP.	Yuba County LRSP	*Not publicly available	2 - Safety Partners	19				x	
			Yuba County; Yuba-Sutter Region	"Commit to equity in all aspects of Safe System, including data analysis that acknowledges and addresses reporting biases, project prioritization efforts that promote projects in historically underinvested communities, and implementation strategies that follow data-driven approaches." Current effort with RSAP.	Yuba County LRSP	*Not publicly available	2 - Safety Partners	19				x	
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Yuba County; Yuba-Sutter Region	LRSP mentions multiple education initiatives and efforts to promote safer road user behavior. Current effort with RSAP.	Yuba County LRSP	*Not publicly available online						x	
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Yuba County; Yuba-Sutter Region						x				
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Yuba County						x				
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Yuba County						x				
Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Yuba County; Yuba-Sutter Region							x				
Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists. Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Yuba County; Yuba-Sutter Region	Goal: A transportation system that is safe for bicycle use, with reduced numbers of bicycle-related collisions	Yuba County Bikeway Master Plan Update	https://cms7files.	Goals, Policies, and Actions	26	x					
		Yuba County; Yuba-Sutter Region	Policies 19.4, 19.5, 19.6, 19.8, 20.7 aim to create networks of safe trails/ped infrastructure and bike paths	Yuba County General Plan	https://cms7files.	Community Development	62, 63					x	

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba County	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safe Roadways	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Yuba County; Yuba-Sutter Region						X					
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Yuba County						X					
	Policies and tradeoffs	Designate functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions - evaluated at a network scale for network-based priorities.	Yuba County; Yuba-Sutter Region	Policy 19.7 - "The County's improvement standards and street classification system will be designed to accommodate the full range of locally available travel modes. Intersection dimensions and turning radii should be minimized in areas where high pedestrian and bicycle activity is expected."	Yuba County General Plan	https://cms7files.com	Community Development	79					X	
		Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.	Yuba County						X					
	Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Yuba County; Yuba-Sutter Region						X					
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Yuba County						X					
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Yuba County						X					
	Fleet Management	Support safer operations of county and commercial vehicles through a transition plan of county's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Yuba County						X					
	Autonomous Vehicle Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Yuba County						X					
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Yuba County	Policy CD19.8 - "The County will seek funding for and, as feasible, install traffic-calming measures, such as planted medians, landscaped planter strips, landscaped traffic circles, and other designs in areas with excessive or high-speed traffic, as appropriate. The County will not support street closures, half closures, or other measures that limit connectivity as a way to calm traffic." Policy 20.2 - "New developments in the Valley Growth Boundary shall arrange roads in an interconnected block pattern, so that local pedestrian, bicycle, and automobile traffic do not have to use Arterials to circulate within the neighborhood." The county also has standard plans & specifications: https://www.yuba.org/departments/community_development/public_works/standard_plans/index.php	Yuba County General Plan	https://cms7files.com	Community Development	79, 81					X	
		Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Yuba County; Yuba-Sutter Region							X				
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Yuba County; Yuba-Sutter Region							X				
		Provide speed management training to staff focused on fatality and serious injury minimization.	Yuba County; Yuba-Sutter Region							X				
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Yuba County; Yuba-Sutter Region						X					
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Yuba County; Yuba-Sutter Region							X				
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Yuba-Sutter Region							X				
		Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.	Yuba County; Yuba-Sutter Region							X				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Marysville	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Marysville; Yuba-Sutter Region	Current effort with RSAP					x					
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba/Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	Vision Zero Statement mentions striving towards eliminating all traffic fatalities and severe injuries.	City of Marysville LRSP	Not available online						x		
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if city is not on track.	Yuba-Sutter Region	Current effort with RSAP						x				
		Convene and/or participate in an inter-agency committee, task force, implementation group, or working group that is charged with a Safety Action Plan's development, implementation, and monitoring. The group should include a representative from every agency or department that plays a critical role in advancing each Safe System element. It may be desirable to identify a staff coordinator to manage the agency's safety program.	Marysville; Yuba-Sutter Region	Current effort with RSAP						x				
		Provide training to Yuba/Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Marysville; Yuba-Sutter Region							x				
		Establish an ongoing Safe Routes to Schools program and funding mechanism.	Marysville; Yuba-Sutter Region; School Districts	No Safe Routes to Schools Program						x				
	Meaningful Engagement	Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Marysville; Yuba-Sutter Region	Current effort with RSAP						x				
		Establish a website to inform the public about Yuba/Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Marysville; Yuba-Sutter Region	Current effort with RSAP						x				
		Provide public safety materials in common languages spoken by Yuba/Sutter residents whose first language is not English.	Marysville; Yuba-Sutter Region	Current effort with RSAP						x				
	Data and analysis	Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	Marysville LRSP Emphasis Area: Making Safety Improvements at the Highest Incident Location	City of Marysville LRSP	Not available online			2				x	
		Establish a process for citizens to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Marysville; Yuba-Sutter Region	Current effort with RSAP						x				
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Marysville; Yuba-Sutter Region	Report identifies and ranks the top collision rate locations within the City, assesses the collision patterns and contributing factors at the highest ranking locations, and recommends countermeasures for those locations.	City of Marysville LRSP	Not available online				3				x
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Marysville; Yuba-Sutter Region	Current effort with RSAP							x			
		Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Marysville; Yuba-Sutter Region								x			
	Funding	Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Marysville; Yuba-Sutter Region	Current effort with RSAP							x			
		Apply for grant programs to fund safety projects.	Marysville; Yuba-Sutter Region	HSIP funding opportunity mentioned.	City of Marysville LRSP	Not available			9				x	
		Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).	Marysville; Yuba-Sutter Region	Current effort with RSAP							x			
	Development review	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Marysville								x			
	Equity first	Identify underserved communities through data. This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.	Marysville; Yuba-Sutter Region	Current effort with RSAP							x			
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.	Marysville; Yuba-Sutter Region	Current effort with RSAP							x			
Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.		Marysville; Yuba-Sutter Region	Current effort with RSAP							x				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Marysville	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Marysville; Yuba-Sutter Region	Educational measures identified in plan.	City of Marysville LRSP	<i>Not available online</i>					X		
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Marysville; Yuba-Sutter Region						X				
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Marysville								X		
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Marysville	"Where possible increase frequency and visual presence of patrol activity in high-speed incident areas."	City of Marysville LRSP	<i>Not available online</i>	11.2	37				X	
	Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Marysville; Yuba-Sutter Region							X			
Safe Roadways	Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists.	Marysville; Yuba-Sutter Region	BP Plan identifies safety countermeasures for bicycle and pedestrian travel.	Marysville Bicycle & Pedestrian Plan	https://www.fraqmd.org/files/486e35bb9/Final+++Marysville-Bicycle-and-Pedestrian-Plan-2016-11-15.pdf						X	
		Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Marysville; Yuba-Sutter Region	Policies and goals were set to improve mobility via bicycle and pedestrian infrastructure.	Marysville Bicycle & Pedestrian Plan	https://www.fraqmd.org/files/486e35bb9/Final+++Marysville-Bicycle-and-Pedestrian-Plan-2016-11-15.pdf						X	
	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Marysville; Yuba-Sutter Region							X			
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Marysville							X			
	Policies and tradeoffs	Designate functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions - evaluated at a network scale for network-based priorities.	Marysville; Yuba-Sutter Region							X			
		Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.	Marysville							X			
Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Marysville; Yuba-Sutter Region							X				
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Marysville							X			
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Marysville							X			
	Fleet Management	Support safer operations of city and commercial vehicles through a transition plan of city's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Marysville							X			
	Autonomous Vehicle Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Marysville							X			
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Marysville	Roadway design measures to manage speed were listed.	City of Marysville LRSP	<i>Not available online</i>	11.2	37				X	
	Enforcement	Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Marysville; Yuba-Sutter Region							X			
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Marysville; Yuba-Sutter Region							X			
		Provide speed management training to staff focused on fatality and serious injury minimization.	Marysville; Yuba-Sutter Region	Action item: Continue to conduct training targeted at responding to speed related collisions.	City of Marysville LRSP	<i>Not available online</i>	11.2	37				X	

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Marysville	Source	Link	Chapter/ Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Marysville; Yuba-Sutter Region						x				
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Marysville; Yuba-Sutter Region						x				
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Yuba-Sutter Region							x			
		Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.	Marysville; Yuba-Sutter Region							x			

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Wheatland	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation						
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice		
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Wheatland; Yuba-Sutter Region	Current effort with RSAP					x						
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	Current effort with RSAP						x					
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if city is not on track.	Yuba-Sutter Region	Current effort with RSAP						x					
		Convene and/or participate in an inter-agency committee, task force, implementation group, or working group that is charged with a Safety Action Plan's development, implementation, and monitoring. The group should include a representative from every agency or department that plays a critical role in advancing each Safe System element. It may be desirable to identify a staff coordinator to manage the agency's safety program.	Wheatland; Yuba-Sutter Region	Current effort with RSAP						x					
		Provide training to Yuba Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Wheatland; Yuba-Sutter Region	Current effort with RSAP						x					
		Establish an ongoing Safe Routes to Schools program and funding mechanism.	Wheatland; Yuba-Sutter Region; School Districts	No current SRTS program.						x					
	Meaningful Engagement	Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Wheatland; Yuba-Sutter Region	Current effort with RSAP						x					
		Establish a website to inform the public about Yuba Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Yuba-Sutter Region	Current effort with RSAP						x					
		Provide public safety materials in common languages spoken by Yuba Sutter residents whose first language is not English.	Wheatland; Yuba-Sutter Region							x					
	Data and analysis	Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	Current effort with RSAP						x					
		Establish a process for citizens to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Wheatland; Yuba-Sutter Region							x					
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Yuba-Sutter Region	Current effort with RSAP						x					
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Wheatland; Yuba-Sutter Region							x					
		Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Wheatland; Yuba-Sutter Region							x					
	Funding	Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Wheatland; Yuba-Sutter Region	Current effort with RSAP						x					
		Apply for grant programs to fund safety projects.	Wheatland; Yuba-Sutter Region							x					
Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).		Wheatland; Yuba-Sutter Region	Related policy: "2.A.10. The City shall give priority to street and highway improvements that increase safety, minimize maintenance costs, and increase the efficiency of the street system"	Wheatland General Plan	https://e4ki3oz9tby.exactdn.com/wp-content/uploads/General-Plan-	Transportation and Circulation Element	2-5		x	?					

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Wheatland	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
	Development review	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Wheatland; Yuba County	Related policy: "2.A.6. The City shall require an analysis of the effects of traffic from proposed major development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others."	Wheatland General Plan	https://e4ki3oz9tby.exactdn.com/wp-content/uploads/General-Plan-Policy-Document-Adopted-7-	Transportation and Circulation Element	2-5	x	?			

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Wheatland	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
	Equity first	Identify underserved communities through data. This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.	Wheatland; Yuba-Sutter Region	Current effort with RSAP					x				
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.	Wheatland; Yuba-Sutter Region	Current effort with RSAP					x				
		Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.	Wheatland; Yuba-Sutter Region	Current effort with RSAP					x				
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Wheatland; Yuba-Sutter Region	Current effort with RSAP					x				
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Wheatland; Yuba-Sutter Region						x				
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Wheatland; Yuba County						x				
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Wheatland; Yuba County						x				
Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Wheatland; Yuba County; Yuba-Sutter Region						x					
Safe Roadways	Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists.	Wheatland; Yuba-Sutter Region						x				
		Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Wheatland; Yuba-Sutter Region						x				
	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Wheatland; Yuba-Sutter Region						x				
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Wheatland; Yuba-Sutter Region						x				
	Policies and tradeoffs	Designate functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions - evaluated at a network scale for network-based priorities.	Wheatland; Yuba-Sutter Region						x				
		Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.	Wheatland; Yuba-Sutter Region						x				
Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Wheatland; Yuba-Sutter Region						x					
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Yuba-Sutter Region						x				
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Wheatland; Yuba County						x				
	Fleet Management	Support safer operations of city and commercial vehicles through a transition plan of city's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Wheatland; Yuba County						x				
	Autonomous Vehicle Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Wheatland; Yuba County						x				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Wheatland	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Wheatland; Yuba County	Wheatland has street design criteria, last revised in 2011	https://www.wheatland.ca.gov/wp-content/uploads/Complete-Wheatland-Public-Works-Standards-8-12-2011R.pdf				x					
	Enforcement	Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Wheatland; Yuba County						x					
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Wheatland; Yuba County							x				
		Provide speed management training to staff focused on fatality and serious injury minimization.	Wheatland; Yuba-Sutter Region							x				
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Wheatland; Yuba-Sutter Region							x				
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Wheatland; Yuba County; Yuba-Sutter Region								x			
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Yuba County; Yuba-Sutter Region								x			
Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.		Wheatland; Yuba-Sutter Region								x				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice	Source, Chapter/Section, Page Number	Link	Assessed Level of Commitment/Implementation					
							Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Sutter County; Yuba-Sutter Region	Current effort with RSAP			x					
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba/Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	Current effort with RSAP				x				
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if jurisdiction is not on track.	Yuba-Sutter Region	Current effort with RSAP				x				
		Convene and/or participate in an inter-agency committee, task force, implementation group, or working group that is charged with a Safety Action Plan's development, implementation, and monitoring. The group should include a representative from every agency or department that plays a critical role in advancing each Safe System element. It may be desirable to identify a staff coordinator to manage the agency's safety program.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Provide training to Yuba/Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Establish an ongoing Safe Routes to Schools program and funding mechanism.	Sutter County; Yuba-Sutter Region; School Districts					x				
	Meaningful Engagement	Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Establish a website to inform the public about Yuba/Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Provide public safety materials in common languages spoken by Yuba/Sutter residents whose first language is not English.	Sutter County; Yuba-Sutter Region					x				
	Data and analysis	Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	Current effort with RSAP				x				
		Establish a process for residents to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Sutter County; Yuba-Sutter Region					x				
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Sutter County; Yuba-Sutter Region					x				
	Funding	Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Sutter County; Yuba-Sutter Region					x				
		Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x				
		Apply for grant programs to fund safety projects.	Sutter County; Yuba-Sutter Region					x				
		Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).	Sutter County; Yuba-Sutter Region					x				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice	Source, Chapter/Section, Page Number	Link	Assessed Level of Commitment/Implementation						
							Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice		
Development review	Equity first	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Sutter County	Policy "M 1.2. Consider all transportation improvements as opportunities to enhance safety, access, and mobility for all travelers including people with special needs, recognizing bicycle, pedestrian, and transit modes as integral elements of the transportation system." Implementation: "M 2-E Condition new development to finance and construct appropriate circulation improvements necessary to mitigate a project's transportation impacts including pedestrian and bicycle mobility, safety, and level of service-related impacts. Collect the fair share cost of required circulation improvements through established fees, and/or construction estimates of needed improvements, as appropriate, where construction is not practical at the time of development."	Sutter County General Plan, Chapter 6 pg 9	https://www.suttercounty.org/government/county-departments/development-services/planning-services/general-plan		?					
		Identify underserved communities through data. This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x					
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x					
		Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.	Sutter County; Yuba-Sutter Region	Current effort with RSAP				x					
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Sutter County; Yuba-Sutter Region	Current effort with RSAP									
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Sutter County; Yuba-Sutter Region					x					
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Sutter County										
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Sutter County										
Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Sutter County; Yuba-Sutter Region											
Safe Roadways	Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists.	Sutter County; Yuba-Sutter Region										
		Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Sutter County; Yuba-Sutter Region										
	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Sutter County; Yuba-Sutter Region										
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Sutter County										
	Policies and tradeoffs	Use functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions (evaluated at a network scale for network-based prioritization).	Sutter County; Yuba-Sutter Region										
Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.		Sutter County											
Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Sutter County; Yuba-Sutter Region											

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice	Source, Chapter/Section, Page Number	Link	Assessed Level of Commitment/Implementation				
							Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Sutter County				x				
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Sutter County				x				
	Fleet Management	Support safer operations of county and commercial vehicles through a transition plan of county's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Sutter County					x			
		Autonomous Vehicle Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Sutter County				x			
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Sutter County	Sutter County Improvement Standards last revised in 2010. Could update to focus on speed management.	Sutter County Improvement Standards, Chapter 4: Streets	https://www.suttercounty.org/home/showpublisheddocument/2598/637554856376670000	x				
	Enforcement	Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Sutter County; Yuba-Sutter Region				x				
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Sutter County; Yuba-Sutter Region					x			
		Provide speed management training to staff focused on fatality and serious injury minimization.	Sutter County; Yuba-Sutter Region					x			
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Sutter County; Yuba-Sutter Region				x				
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Sutter County; Yuba-Sutter Region					x			
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Yuba-Sutter Region					x			
		Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.	Sutter County; Yuba-Sutter Region					x			

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba City	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Yuba City; Yuba-Sutter Region	Commitment through City LRSP. <i>Current effort with RSAP.</i>								X		
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	LRSP was finalized in October 2023, and integrates the Safe System Approach concepts into the development of the plan. <i>Also current effort with RSAP.</i>	Yuba City Local Roadway Safety Plan	https://cms3	Ch. 3	18					X	
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if city is not on track.	Yuba-Sutter Region	LRSP identifies what implementation of the plan entails. <i>Also current effort with RSAP.</i>	Yuba City Local Roadway Safety Plan		Ch. 7	102					X	
		Identify a staff coordinator to manage the agency's safety program and convene an inter-agency working group that discusses safety projects and initiatives. The working group includes a representative from every agency or department that plays a critical role in advancing each Safe System element. Actively work to identify and overcome barriers to coordination across departments and agencies.	Yuba City; Yuba-Sutter Region	Stakeholder group was formed to ensure a local perspective was maintained in the LRSP planning effort. LRSP implementation entails identifying a roadway safety champion who is the plan's main advocate and is the city's point of contact for safety efforts. <i>Also current effort with RSAP.</i>	Yuba City Local Roadway Safety Plan		Ch. 3, Ch. 7	20, 94					X	
		Provide training to Yuba Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Yuba City; Yuba-Sutter Region	LRSP encourages outreach and education be done to inform users of safe roadway use. <i>Also current effort with RSAP.</i>	Yuba City Local Roadway Safety Plan								X	
		Establish an ongoing Safe Routes to Schools program and funding mechanism.	Yuba City; Yuba-Sutter Region; School Districts	Safe Routes to School Program implemented.	Yuba City Safe Routes To School Plan	https://cms3.revize.com/revize/yubacity/Document%20Center/Departments/Public%20Works/							X	
	Meaningful Engagement	Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Yuba City; Yuba-Sutter Region	<i>Current effort with RSAP</i>										
		Establish a website to inform the public about Yuba Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Yuba-Sutter Region	<i>Current effort with RSAP</i>								X		
		Provide public safety materials in common languages spoken by Yuba Sutter residents whose first language is not English.	Yuba City; Yuba-Sutter Region									X		
	Data and analysis	Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	LRSP applies a data-driven approach to safety analysis. <i>Also current effort with RSAP.</i>			Ch. 5						X	
		Establish a process for citizens to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Yuba City; Yuba-Sutter Region	LRSP implementation action: "include a safety data reporting option in the 'Report an Issue' section of the My Yuba City mobile app"	Roadway Safety Plan		Ch. 7	94					X	
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Yuba City; Yuba-Sutter Region	<i>Current effort with RSAP</i>									X	
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Yuba City; Yuba-Sutter Region											
		Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Yuba City; Yuba-Sutter Region										X	
	Funding	Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Yuba City; Yuba-Sutter Region	<i>Current effort with RSAP</i>									X	
		Apply for grant programs to fund safety projects.	Yuba City; Yuba-Sutter Region	Yuba City LRSP identifies funding opportunities.	Roadway Safety Plan								X	
		Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).	Yuba City; Yuba-Sutter Region	Circulation Element guiding policy: "Develop a system of sidewalks and bikeways that promote safe walking and bicycle riding for transportation and recreation."	Yuba City General Plan			5-18						X
	Development review	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Yuba City; Sutter County									X		

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba City	Source	Link	Chapter/ Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
	Equity first	Clearly define equity in the safety plan and include equity considerations throughout the emphasis areas and strategies.	Yuba City; Yuba-Sutter Region	Current effort with RSAP					X				
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.	Yuba City; Yuba-Sutter Region	Current effort with RSAP					X				
		Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.	Yuba City; Yuba-Sutter Region	Current effort with RSAP					X				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba City	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Yuba City; Yuba-Sutter Region	LRSP Countermeasure: Establish and enforce communications and outreach supporting enforcement. <i>Also current effort with RSAP.</i>	Yuba City Local Roadway Safety Plan		Ch. 5	74				X		
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Yuba City; Yuba-Sutter Region	Implementation Action: "Rolling out safety projects as pilots presents the opportunity for the City to gather valuable public and stakeholder feedback to make improvements and adjustments before moving on with similar projects."	Yuba City Local Roadway Safety Plan		Ch. 7	96					X	
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Yuba City							X				
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Yuba City	LRSP suggested countermeasures focused on deterrence through enforcement for alcohol and drug-impaired driving.			Ch. 5	74					X	
	Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Yuba City; Yuba-Sutter Region							X				
Safe Roadways	Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists.	Yuba City; Yuba-Sutter Region	1. City of Yuba City General Plan contains policies regarding bicycle safety, and calls out specific projects such as the provision of bicycle paths or lanes on bridges and overpasses 2. Planned installation of over 190 sharrows per Yuba City website	City of Yuba City General Plan; Yuba City website	https://www.yubacity.net/city_hall/departments/parks_recreation/recreation							X	
		Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Yuba City; Yuba-Sutter Region	LRSP makes countermeasure recommendations based on common collision sites and other variables Yuba City also completed a Bicycle Master Plan in 2011.	Yuba City Bicycle Master Plan	https://cms3.revize.com/revize/yubacity/Document%20Cent				X				
	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Yuba City; Yuba-Sutter Region	Yuba City LRSP identified that unsafe speed was a common primary collision factor, and suggested road diets among other proven countermeasures.	Yuba City Local Roadway Safety Plan		Ch. 6	72					X	
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Yuba City							X				
	Policies and tradeoffs	Designate functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions - evaluated at a network scale for network-based priorities.	Yuba City; Yuba-Sutter Region							X				
		Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.	Yuba City							X				
	Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Yuba City; Yuba-Sutter Region							X				
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Yuba-Sutter Region						X					
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Yuba City						X					
	Fleet Management	Support safer operations of city and commercial vehicles through a transition plan of city's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Yuba City							X				
		Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Yuba City						X				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Yuba City	Source	Link	Chapter/ Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Yuba City	LRSP Implementation Action: "Create new standards for typical maintenance that reflect LRSP project goals."	Yuba City Local Roadway Safety Plan		Ch. 7	96				X	
	Enforcement	Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Yuba City; Yuba-Sutter Region						X				
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Yuba City; Yuba-Sutter Region	Is Yuba City doing anything on this front?					X				
		Provide speed management training to staff focused on fatality and serious injury minimization.	Yuba City; Yuba-Sutter Region						X				
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Yuba City; Yuba-Sutter Region						X				
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Yuba City; Yuba-Sutter Region						X				
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Yuba City; Yuba-Sutter Region						X				
Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.		Yuba City; Yuba-Sutter Region						X					

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Live Oak	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation					
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice	
Safety Planning and Culture	Leadership and commitment	Leaders publicly commit to a "Zero" goal for traffic fatalities and serious injuries within a specific timeframe, and exhibit buy-in for the Safe System approach through media, public events, and support for related policies and programs.	Live Oak; Yuba-Sutter Region	Current effort with RSAP					X					
		Develop a safety plan aligned with the Safe System approach that establishes a "Zero" goal for traffic fatalities and serious injuries and identifies concrete actions to help Yuba Sutter achieve zero including designation of lead agency, timeline, and funding. Safety plan should include an assessment of the local challenges that have hindered safety interventions in the past and create a roadmap for addressing them.	Yuba-Sutter Region	Current effort with RSAP						X				
		Establish key safety performance indicators and implement a monitoring process to evaluate progress and intervene if city is not on track.	Yuba-Sutter Region	Current effort with RSAP						X				
		Convene and/or participate in an inter-agency committee, task force, implementation group, or working group that is charged with a Safety Action Plan's development, implementation, and monitoring. The group should include a representative from every agency or department that plays a critical role in advancing each Safe System element. It may be desirable to identify a staff coordinator to manage the agency's safety program.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
		Provide training to Yuba Sutter staff, directors, elected officials, and community stakeholders on the Safe System approach.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
		Establish an ongoing Safe Routes to Schools program and funding mechanism.	Live Oak; Yuba-Sutter Region; School Districts	No current SRTS program.						X				
	Meaningful Engagement	Engage with the public and relevant stakeholders, including the private sector and community groups. Incorporate information received from the engagement and collaboration into the safety plan.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
		Establish a website to inform the public about Yuba Sutter's safety program goals and progress and the effectiveness of implemented safety projects.	Yuba-Sutter Region	Current effort with RSAP						X				
		Provide public safety materials in common languages spoken by Yuba Sutter residents whose first language is not English.	Live Oak; Yuba-Sutter Region							X				
	Data and analysis	Apply a proactive and transparent approach to data-driven safety analysis, including the use of systemic profiles, emphasis areas based on roadway or contextual contributing factors, mode-specific conditions assessments (e.g., bicycle network stress or distance between marked crossings), and equity considerations.	Yuba-Sutter Region	Current effort with RSAP						X				
		Establish a process for citizens to report safety hazards or request safety interventions and a data-driven approach for evaluating the reports/requests.	Live Oak; Yuba-Sutter Region							X				
		Focus network screening and benefit/cost calculations on fatal and serious injuries, instead of all collisions, to identify the core safety issues for human vulnerability.	Yuba-Sutter Region	Current effort with RSAP						X				
		Maintain a GIS inventory and actively work to improve accuracy of crash data and roadway data such as missing sidewalks, bikeways, intersection controls, etc.	Live Oak; Yuba-Sutter Region							X				
		Use innovative data collection and analysis approaches, such as crowdsourcing or video detection data, to identify emphasis areas related to near misses or crashes previously unreported by vulnerable communities.	Live Oak; Yuba-Sutter Region							X				
	Funding	Develop a project evaluation framework that prioritizes funding based on fatal and serious injury crash reduction opportunities, especially for equity populations. Audit the region's Transportation Improvement Program (TIP) for opportunities to enhance safety benefits and remove safety risks of funded projects.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
		Apply for grant programs to fund safety projects.	Live Oak; Yuba-Sutter Region							X				
		Institutionalize safety considerations in all project types to systematically fund projects through operations and maintenance efforts (such as repaving projects).	Live Oak; Yuba-Sutter Region							X				
	Development review	Conduct safety impact assessments of new developments to identify mitigation and cost sharing opportunities.	Live Oak; Sutter County							X				
	Equity first	Identify underserved communities through data. This should include data that identifies underserved communities and/or reflects the impact of crashes on underserved communities, prioritization criteria that consider equity, or a description of meaningful engagement and collaboration with appropriate stakeholders.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.	Live Oak; Yuba-Sutter Region	Current effort with RSAP						X				
Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.		Live Oak; Yuba-Sutter Region	Current effort with RSAP						X					

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Live Oak	Source	Link	Chapter/Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.	Live Oak; Yuba-Sutter Region	Current effort with RSAP					X				
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.	Live Oak; Yuba-Sutter Region					X					
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	Live Oak; Sutter County						X				
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.	Live Oak; Sutter County						X				
	Research	Develop and implement strategies for robust demographic data collection in crash reporting.	Live Oak; Sutter County; Yuba-Sutter Region						X				
Safe Roadways	Collision avoidance	Systemically install proven countermeasures to separate users in space, separate users in time, and increase attentiveness and awareness, such as: protected signal phases, clear zones, and vertical and horizontal separation for pedestrians and bicyclists.	Live Oak; Yuba-Sutter Region						X				
		Complete infrastructure connectivity for pedestrians and bicyclists and make progress toward providing separation where needed based on crash exposure, crash history, characteristics of the roadway, and adjacent land uses associated with higher levels of use.	Live Oak; Yuba-Sutter Region	*Policy CIRC-2.1: The City will seek funding for, and include pedestrian and bicycle improvements in Capital Improvements Planning, as feasible. "	Live Oak 2030 General Plan	https://www.liveoakcity.org/home CIRC /showpublicdocuments	26	X					
	Kinetic energy reduction	Systemically install proven countermeasures to manage motor vehicle speed and collision angles, such as roadside appurtenances, roundabouts, refuge islands, hardened center lines, and road diets.	Live Oak; Yuba-Sutter Region						X				
		Evaluate intersection design and control decisions in the planning or scoping stage for opportunities to better prioritize reducing kinetic energy transfer, following new FHWA guidance.	Live Oak; Yuba-Sutter Region						X				
	Policies and tradeoffs	Designate functional class and modal priority for roadways to pinpoint the most effective safety countermeasures and streamline tradeoff decisions - evaluated at a network scale for network-based priorities.	Live Oak; Yuba-Sutter Region						X				
		Ensure safety for all users is prioritized, and accessibility maintained, during construction and road maintenance projects.	Live Oak; Yuba-Sutter Region						X				
Innovation	Provide infrastructure for smarter roadways and intelligent transportation systems (ITS) in support of data collection and analysis, as well as proactive system management. Consider long-term network priorities and immediate pedestrian and bicyclist safety and mobility needs when citing EV charging stations.	Live Oak; Yuba-Sutter Region						X					
Safe Vehicles	Supportive infrastructure	Enable infrastructure-to-vehicle communication to provide warnings to drivers that support safer driving behavior.	Yuba-Sutter Region						X				
		Provide supportive infrastructure for dynamic curbside management and autonomous vehicles to enable active safety technology.	Live Oak; Sutter County						X				
	Fleet Management	Support safer operations of city and commercial vehicles through a transition plan of city's vehicle fleet to lower-mass and safety feature enhanced vehicles; heavy vehicle route restrictions to avoid high-pedestrian areas; and curbside management programs to limit user conflicts around stopped or loading vehicles.	Live Oak; Sutter County						X				
	Autonomous Vehicle Data	Collect data about the involvement of AVs in crashes for future data analysis, and to inform design and policies.	Live Oak; Sutter County						X				
Safe Speeds	Design and operations	Adopt roadway design standards that are focused on speed management, such as target speed-based design, for residential and arterial roadways. Adjust roadway geometries for context-appropriate speeds.	Live Oak; Sutter County						X				
	Enforcement	Deploy speed safety cameras, with a focus on equitable fee structures. Where not permitted, monitor changes in state legislation that may allow for this in the future.	Live Oak; Sutter County						X				
	Policy and training	Follow speed limit setting methodologies that determine appropriate or target speeds based on land use context, roadway context, and/or modal priority - accounting for the human body's ability to tolerate crash forces rather than the historic behavior of road users. Consider utilizing innovative data sources to systemically assess prevailing versus target speeds and develop a plan to lower speeds in areas with a large discrepancy.	Live Oak; Sutter County						X				
		Provide speed management training to staff focused on fatality and serious injury minimization.	Live Oak; Yuba-Sutter Region						X				

Core Element	Category	Benchmark	Jurisdictional Responsibility	State of Current Practice in Live Oak	Source	Link	Chapter/ Section	Page Number	Assessed Level of Commitment/Implementation				
									Not a Current Practice	Codified in Standard or Policy, but Not in Practice	Codified and Occasional Practice	Codified and Usual Practice	Institutionalized Practice
Post Crash Care	Crash investigation	Employ collision reporting practices that promote complete and accurate data collection and documentation of road user behavior and infrastructure.	Live Oak; Yuba-Sutter Region						X				
		Establish a feedback loop such that key insights from crash investigations are shared with roadway designers and/or influence outreach and education. Consider the creation of an inter-agency rapid response team to immediately investigate the sites of collisions and make recommendations for near-term safety enhancements.	Live Oak; Sutter County; Yuba-Sutter Region						X				
	Partnerships	Share data across agencies and organizations, including first responders and hospitals, to develop a holistic understanding of the safety landscape and improve accuracy.	Sutter County; Yuba-Sutter Region						X				
		Connect with victims' families and the advocacy community to offer support and resources, and encourage partnerships with outreach and education.	Live Oak; Yuba-Sutter Region						X				

Additional Local Policy Considerations

Beyond the policies considered in the Safe System Policy Benchmarking assessment, there are a range of transportation, land use, and housing policies in the Yuba-Sutter region partner agencies' General Plans they may, directly or indirectly, influence roadway safety outcomes. The following goals and policies bolster a Safe System by addressing the built environment or socioeconomic factors that have an impact on roadway safety, such as influencing types and amounts of vehicle travel, thus reducing exposure.

Yuba County 2030 General Plan

RELEVANT CIRCULATION ELEMENT POLICIES:

Policy CD19.6: New developments shall provide attractive streetscapes with street trees and sidewalks, planting strips, transit shelters, benches, and pedestrian-scale lighting, as required by County standards, as well as safe and frequent crosswalks along roadways, particularly in areas expected to have higher pedestrian traffic.

Policy CD19.8: The County will seek funding for and, as feasible, install traffic-calming measures, such as planted medians, landscaped planter strips, landscaped traffic circles, and other designs in areas with excessive or high-speed traffic, as appropriate. The County will not support street closures, half closures, or other measures that limit connectivity as a way to calm traffic.

RELEVANT LAND USE ELEMENT GOALS:

Goal CD1: Provide for efficient valley development patterns

Goal CD2: Promote growth and reinvestment in existing developed unincorporated communities

Goal CD4: Accessible, convenient, and successful community retail, service, and employment centers

Goal CD5: Valley Neighborhoods provide a long-term, high quality of life for the County's existing and future residents

Goal CD6: Provide higher-density housing, neighborhood services, and retail in pedestrian- friendly Neighborhood Centers

Goal CD7: Revitalize Yuba County's Mixed-Use Corridors to better serve existing Valley Neighborhoods

Goal CD8: Promote high-quality neighborhood design that ensures pedestrian comfort and convenience

RELEVANT HOUSING ELEMENT GOALS:

Goal H-1: Provide adequate sites to meet housing needs among all income groups.

Goal H-2: Assist in the provision of affordable housing for extremely low-, very low-, low-, and moderate-income households.

Goal H-3: Remove constraints to the availability and affordability of housing for all income groups.

Goal H-5: Preserve affordable housing.

Goal H-6: Ensure equal housing opportunity for all county residents.

Marysville 2050 General Plan

Draft not available online as of June 2025.

Live Oak 2030 General Plan

RELEVANT CIRCULATION ELEMENT POLICIES:

Policy CIRC-2.1: The City will seek funding for and include pedestrian and bicycle improvements in Capital Improvements Planning, as feasible.

Policy CIRC-2.2: The City and Redevelopment Agency will prioritize transportation investments that better connect neighborhoods to major destinations, with safer and more convenient pedestrian, bicycle, and transit stops and routes.

Policy CIRC-2.4: The City will seek funding for and, as feasible, install traffic-calming measures, such as planted medians, landscaped planter strips, landscaped traffic circles, and other designs in areas with excessive traffic, as appropriate.

Policy CIRC-3.5: In areas with high pedestrian activity, streets should be relatively narrow and curb radii should be designed to promote pedestrian safety and convenience, while also ensuring adequate emergency access.

Sutter County 2030 General Plan

RELEVANT MOBILITY ELEMENT POLICIES:

Policy M 1.2: Consider all transportation improvements as opportunities to enhance safety, access, and mobility for all travelers including people with special needs, recognizing bicycle, pedestrian, and transit modes as integral elements of the transportation system.

Policy M 1.3: Rights-of-Way. Secure adequate right-of-way to allow for the planning, design, and operation of transportation systems that provide safe access for all users.

Policy M 5.1: Prepare a Bicycle and Pedestrian Master Plan that supports implementation of a comprehensive, safe, and convenient system of commuter and recreational routes for pedestrians and cyclists.

RELEVANT LAND USE ELEMENT GOALS:

Goal LU 1: Promote the efficient and sensitive use of lands to protect and enhance Sutter County’s quality of life and meet the needs of existing and future residents and businesses.

Goal LU 4: Facilitate orderly, well-planned, sustainable, and efficient growth that balances aesthetic, considerations.

Goal LU 8: Facilitate well planned large-scale mixed-use residential, industrial, and commercial development, bringing housing and jobs to South Sutter County consistent with the terms of advisory Measure M.

RELEVANT HOUSING ELEMENT GOALS & POLICIES:

Goal H 1: Provide for an adequate supply of new housing to meet the needs of present and future Sutter County residents incorporating a variety of housing types and densities that accommodate all income groups.

Policy H 1.1: Adequate Supply of Land Suitable for Housing. Identify and maintain an adequate supply of residential land with appropriate zoning classifications, land use designations, development standards, infrastructure, and public services to accommodate the County’s fair share of regional housing needs, including housing for extremely low-, very low-, low-, and moderate-income households.

Goal H 2: Facilitate the development of affordable housing to meet the housing needs of lower-income households in the County.

Goal H 3: Remove governmental constraints, address accessibility needs, and provide a regulatory framework to encourage a variety of housing types that accommodate all income groups.

Goal H 4: Provide housing for special needs groups, including persons with disabilities, seniors, farmworkers, persons experiencing homelessness, and extremely low-income households.

Goal H 6: Promote equal housing opportunities and affirmatively further fair housing for all residents of Sutter County.

Wheatland General Plan

RELEVANT CIRCULATION ELEMENT POLICIES:

Policy 2.A.10: The City shall give priority to street and highway improvements that increase safety, minimize maintenance costs, and increase the efficiency of the street system.

Policy 2.A.6: The City shall require an analysis of the effects of traffic from proposed major development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others.

RELEVANT LAND USE ELEMENT GOALS:

Goal 1.B: To provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Wheatland.

Goal 1.C: To provide for new residential development in planned neighborhoods that are designed to promote walking, bicycling, and transit use.

Goal 1.G: To support development of employment uses to meet the present and future needs of Wheatland residents for jobs and to maintain Wheatland’s economic vitality.

Goal 4.A: Provide for the city’s regional share of new housing for all income groups

Goal 4.C: Meet the special housing needs of homeless persons, seniors, large families, disabled persons, and farmworkers.

Yuba City General Plan

RELEVANT CIRCULATION ELEMENT POLICIES:

Policy 5.2-1-7: When constructing or modifying roadways, plan for usage of the roadway space by all users, including motor vehicles, transit vehicles, bicyclists, and pedestrians.

Policy 5.2-1-21: Implement traffic calming measures to slow traffic on local and collector residential streets and prioritize these measures over congestion management. Include roundabouts, traffic circles, and other traffic calming devices among these measures.

Policy 5.4-1-1: Establish a network of on- and off-roadway bicycle routes and encourage their use for commute, recreational, and other trips. Design bike routes with the safety of cyclists as a priority.

Policy 5.4-1-4: Provide bicycle lanes with a minimum width of five feet (six feet along all parkways) on new streets and existing streets whenever they are widened to more than two travel lanes.

Policy 5.4-1-7: Increase bicycle safety by:

- *Sweeping and repairing bicycle lanes and paths on a regular basis;*
- *Ensuring that bikeways are delineated and signed in accordance with Caltrans’ standards, and lighting is provided, where needed;*
- *Providing bicycle paths or lanes on bridges and overpasses;*
- *Ensuring that all new and improved streets have bicycle-safe drainage grates and are free of hazards such as uneven pavement and gravel;*
- *Provide adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways; and*
- *Work with the Yuba City Unified School District to promote classes on bicycle safety in the schools.*

Policy 5.4-1-8: Give bikes equal treatment in terms of provisions for safety and comfort on arterials and collectors as motor vehicles.

Policy 5.4-I-10 Provide for pedestrian-friendly zones in conjunction with the development, redevelopment, and design of mixed-use neighborhood core areas, the Downtown area, schools, parks, and other high use areas by:

- *Providing intersection "bump outs" to reduce walking distances across streets in the Downtown and other high use areas;*
- *Providing pedestrian facilities at all signalized intersections;*
- *Providing landscaping that encourages pedestrian use;*
- *Constructing adequately lit and safe access through subdivision sites.*
- *The following land use policies bolster a Safe System by addressing the built environment or socioeconomic factors that have an impact on roadway safety:*

RELEVANT LAND USE ELEMENT POLICIES:

Policy 3.4-G-1: Maintain a well-defined compact urban form, with a defined urban growth boundary and urban development intensities on land designated for urban uses.

Policy 3.4-G-2: Promote a balanced land use program that increases the ability of people to live and work in the city.

Policy 3.4-G-3: Promote development patterns that maximize residents' accessibility to parks, open space, and shopping areas.

Live Oak 2030 General Plan

RELEVANT CIRCULATION ELEMENT POLICIES:

Policy CIRC-2.1: The City will seek funding for and include pedestrian and bicycle improvements in Capital Improvements Planning, as feasible.

Policy CIRC-2.2: The City and Redevelopment Agency will prioritize transportation investments that better connect neighborhoods to major destinations, with safer and more convenient pedestrian, bicycle, and transit stops and routes.

Policy CIRC-2.4: The City will seek funding for and, as feasible, install traffic-calming measures, such as planted medians, landscaped planter strips, landscaped traffic circles, and other designs in areas with excessive traffic, as appropriate.

Policy CIRC-3.5: In areas with high pedestrian activity, streets should be relatively narrow and curb radii should be designed to promote pedestrian safety and convenience, while also ensuring adequate emergency access.

Federal and State Safety Policies and Guidelines

Federal Policy Considerations

The United States Department of Transportation (US DOT) incorporated the Safe System Approach as part of its most recent *National Roadway Safety Strategy* (NRSS), adopted in January 2022. This NRSS is the first national commitment to the goal of zero fatalities on America’s roadways, and names the Safe System Approach as the way to accomplish that goal. Federal transportation officials have since unveiled a number of policies and programs geared towards the application and implementation of the Safe System Approach at the state and local levels.

Safe Streets and Roads for All

The Safe Streets and Roads for All (SS4A) grant program was established by the Bipartisan Infrastructure Law in 2022, centered around the Department of Transportation’s National Roadway Safety Strategy and its goal of zero deaths and serious injuries on America’s roadways. Over its five-year duration ending in approximately 2026, it will provide \$5 billion in grant funding to develop and implement safety plans and projects.

The SS4A grant program provides funding for local agencies to create Comprehensive Safety Action Plans (CSAPs). It also provides funding to implement safety projects, but only to those agencies that have an adopted CSAP or an equivalent. In order to qualify as a CSAP (and allow an agency to be eligible for implementation planning grant funding), a plan must meet a nine-point criteria as set forth by the Department of Transportation. They include an official commitment and goal to eliminate roadway fatalities and serious injuries; the creation of a standing task force or working group that will lead and monitor the implementation of the plan; data-driven safety analysis; public engagement and inter-governmental collaboration; consideration of equity in the planning process; assessment of current policies and guidelines to identify changes that will better prioritize safety; identification of a comprehensive set of projects and strategies that address safety issues; posting of the plan online along with description of how future progress will be measured; and that the plan would be updated every five years.

Safe System Roadway Design Hierarchy

The *Safe System Roadway Design Hierarchy*, created by the Federal Highway Administration (FHWA) in 2024, provides guidance in contextualizing and assessing infrastructure-based countermeasures and strategies on their alignment with the principles of the Safe System Approach.

The *Hierarchy* classifies countermeasures into four tiers, from most to least aligned with Safe System principles. These tiers are:

1. **Removing severe conflicts**, which can act to eliminate high-risk conditions that involve users with different speeds or moving in different directions sharing space. This tier can include countermeasures that remove potential points of conflicts (for example, removing conflicting turning movements), and those that separate vulnerable users from vehicles in space (for example, protecting people biking through a separated bike lane).
2. **Reducing vehicle speeds**, which reduces the kinetic energy present within systems and thereby reduces the severity of crashes that do occur. As driver behavior, especially when it comes to speed, is highly influenced by roadway features, countermeasures that reduce prevailing speeds can include lane narrowing and features that channelize vehicle traffic such as median islands.
3. **Managing conflicts in time**, which covers instances (such as intersections) where space needs to be shared between different users, but where they can be separated in time. An example is the Leading Pedestrian Interval, which allows people walking to have a “head start” interval at a signalized intersection before conflicting vehicle traffic enters the crosswalk.
4. **Increasing attentiveness and awareness**, which involves alerting users to conflicts and potential risks, can involve such countermeasures as intersection daylighting and warning signage.

Crucially, the *Hierarchy* prioritizes improvements and countermeasures that make physical changes to the system for the whole population as more effective than measures that rely on roadway users and individual decisions. This is consistent with the Safe System Approach’s central premise that humans make mistakes, and that the roadway system should be designed to accommodate them through redundant and proactive interventions.

In addition to presenting this tiered hierarchy as a framework for understanding countermeasures as they relate to the principles of the Safe System Approach, the guidance also presents examples of both common and novel countermeasures that fall under each tier.

Safe System Approach for Speed Management

Speeding continues to be one of the leading causes of collisions across the country, especially those causing fatalities and severe injuries, and the relationship between higher speeds and increased collision severity is well-documented. The FHWA’s 2023 report on the *Safe System Approach for Speed Management* provides targeted recommendations around speed management. The report notes the need for agencies to place safety and the prevention of injury collisions (as opposed to throughput or travel times) as the highest priority when it comes to speed setting on roadways, and highlights the need to change the physical design and context of the roadway beyond merely changing regulatory speed limits in order to achieve target speeds.

The report outlines a five-stage framework to speed management that is consistent with the Safe System Approach. The process begins with establishing a vision and building consensus within the community to manage speeds; the creation of a strategic safety plan, such as a Vision Zero plan or Local Roadway Safety Plan, can serve this purpose. Second, speed data should be collected and analyzed, which can help both guide the rest of the process and provide the backing to build public support. Third, locations for speed management should be prioritized proactively, taking into account both collision and speeding history as

well as contextual factors (such as the presence of vulnerable users or traffic generators like schools and commercial areas). Countermeasures can then be selected for prioritized locations. Finally, ongoing monitoring and evaluation should be conducted to ensure efficacy and allow for flexibility and adjustment. The report also provides real-world case studies of how these principles were applied in practice.

Primer on Safe System Approach for Pedestrians and Bicyclists

The *Primer on Safe System Approach for Pedestrians and Bicyclists*, released by the FHWA in 2021, emphasizes the importance of protecting pedestrians and bicyclists, as vulnerable users, under the Safe System Approach. The Primer details the considerations surrounding pedestrians and bicyclists under each of the five elements of the Safe System Approach – Safe Speeds, Safe Roads, Safe Vehicles, Safe Road Users, and Post-Crash Care. It also provides strategies and actions that can be taken at the Federal, state, and local levels towards implementing the Safe System Approach. Also included is an appendix on benchmarking policies, programs, and practices for Safe System consistency. The benchmarking used for City of Sacramento is based on this benchmarking tool.

Other National Guidance

In addition to policy and guidance from Federal agencies, other national-level documents provide additional guidance towards applying and implementing the Safe System Approach for local agencies.

The Safe Systems Pyramid

The Safe Systems Pyramid is a new framework for traffic safety proposed in a 2023 paper which adapts the Health Impact Pyramid framework into the Safe Systems Pyramid for roadway safety practitioners. Building on established public health practice, the Safe Systems Pyramid illustrates how interventions that have the largest reach and require the least personal effort will be the most impactful.

In addition to identifying the kinetic energy transfer as the cause of injury, the Safe Systems Pyramid also relates energy to exposure. It explains how the many possible safety interventions differ in their effectiveness at reducing risk in the transportation system by prioritizing interventions that reduce exposure to kinetic energy transfer at the system level. Those that require more individual effort, such as driver education programs, have the least impact on improving system-wide safety. Meanwhile, those that change the quality of people’s lives and the built environment in which they travel more broadly, such as affordable housing near transit, zoning reform, traffic calming, and limiting crossing distances at intersections, have the largest impacts on safety.



Source: David Ederer, Rachael Thompson Panik, Nisha Botchwey, and Kari Watkins. The Safe Systems Pyramid: A new framework for traffic safety, <https://doi.org/10.1016/j.trip.2023.100905>. Graphic from Vision Zero Network, <https://visionzeronetwork.org/applying-the-health-impact-pyramid-to-roadway-safety/>

At the top of the Safe System Pyramid is education, which generally correspond to Tier 4 of the Safe System Hierarchy, and encompasses driver education programs and campaigns – for example, asking drivers to slow down and obey the speed limit. As the authors of the paper note, “the need to urge behavioral change is symptomatic of failure to establish contexts in which healthy choices are default actions,” and education programs are thus considered to be most reliant on individual behavior and least effective in producing improvements.

Below education on the Pyramid are active and latent safety measures, which generally correspond to Tier 3 of the Hierarchy. Active safety measures encompass such countermeasures as warning signals and signs, as well as in-vehicle devices such as seatbelts and collision warnings. These safety measures are effective when used, but rely on individual opt-in (for example, for a driver to react to signage or to a collision warning) to function. Latent safety measures encompass countermeasures such as signal timing modifications such as leading pedestrian intervals (LPis) that create redundancy, as well as vehicle features such as lane departure prevention and automated emergency braking. Latent measures are considered more effective than active measures, as they require less individual opt-in, but their efficacy is still limited by the fact that they are applied individually. For example, while automated braking is superior to a warning signal that warns the driver to manually brake, only those who choose and have the means to drive a vehicle with the feature will have access to this technology.

Further down on the pyramid is the built environment level, which corresponds to Tiers 1 and 2 of the Hierarchy, and refers to physical alterations to the roadway that promotes slower speeds, physically separate vulnerable users, and reduce the number of high-risk conflicts. Such interventions can also improve the experience for walking and biking, and reduce the number of vehicle trips by encouraging mode shift. Unlike the higher levels of the pyramid, changes to the environment creates contexts that

encourage safer user behaviors (for example, narrower lanes that induce lower speeds) and are thus less dependent on active user participation and are more effective.

Finally, the socioeconomic factors level lies at the base of the pyramid. Typically, roadway safety interventions do not go beyond the roadway infrastructure, but today's safety outcomes are inexorably linked by socioeconomic factors of the places that our roadways serve. Across the country, communities of color and low-income communities are disproportionately exposed to the most dangerous roadways that feature high speeds, high traffic volumes, and outdated design and safety features. Moreover, many communities across the country also trapped by a lack of viable alternative transportation options as a result of car dependency, a crisis that is likely going to persist as the national phenomenon of the suburbanization of poverty continues. These are overarching socioeconomic factors that dictate urban form and the built environment, which in turn dictate safety outcomes. This category of interventions is often considered outside the traditional purview of transportation professionals, as they must come in the form of policy around land use, zoning, and economics that go beyond (but work in tandem with) transportation policy. However, they also must be considered when attempting to address roadway safety, as these socioeconomic factors form the root causes of roadway safety issues.

The pyramid should be seen as a structure for prioritizing the roadway design and operations tools that will have the most impact for safety while also collaborating outside the safety silo with other agency and community stakeholders to engage in upstream and more wide-ranging root cause topics.

NCHRP 1036: Roadway Cross-Section Reallocation Guide

The National Cooperative Highway Research Program (NCHRP)'s Report 1036, the Roadway Cross-Section Reallocation Guide, was developed in 2023 as a tool for practitioners to use in the development of roadway cross-sections that better assess the tradeoffs that are involved in the allocation of the limited width of a roadway. The guide begins with the premise that roadway space is scarce, and trade-offs are inevitable, and provides guidance for planning roadway cross-sections that center community priorities for that limited space. The guidelines also infuse Safe System considerations by establishing minimum floors for safety standards, such as the provisions of pedestrian and bike facilities and minimum widths for sidewalks and bike lanes. Finally, the guide discusses approaches for community engagement and operational analysis to facilitate the decision-making process consistent with the goals and minimum standards outlined in the guide. The guide also includes a companion Excel spreadsheet that can be used for new roadway and retrofit planning.

California Policy Considerations

The California Department of Transportation (Caltrans), like Federal authorities, has also adopted the Safe System Approach and committed to Vision Zero. Similarly, recently legislation at the State level has supported prioritization and cross-department collaboration consistent with the Safe Systems Pyramid strategies and hierarchy. Several State Senate and Assembly Bills and Caltrans Directors' Policies (DPs) have been essential policy building blocks to support the ongoing Safe System pivot in California.

AB 43

California Assembly Bill (AB) 43 was passed in 2021 to provide additional flexibility to local jurisdictions to set speed limits on their roadways. Specifically, it offers them a means to lower speed limits on additional corridors. Cities now have increasing flexibility to enforce context-sensitive speed limits.

AB 43 features the following five major components, focused on giving local jurisdictions more flexibility in setting speed limits, especially regarding vulnerable road users:

- **Engineering & Traffic Survey (E&TS):** An option to extend enforceable time period
- **Post E&TS:** An agency can elect to retain current or immediately prior speed limit
- **Speed Limit Reduction:** Reduction of additional 5 mph based on several factors, including designation of local "Safety Corridors"
- **Prima Facie Speed Limits:** Options for 15 and 25 mph in certain areas depending on context
- **Business Activity Districts:** Option for 20 or 25 mph

In particular, in this Regional Safety Action Plan, the designation of "Safety Corridors" is applied to roadways where the highest number of serious injury and fatality crashes occur, identifying specific locations or corridor-level segments with high crash occurrences and stratified by mode. AB 43 stipulates that a jurisdiction's set of safety corridors must account for at least 25 percent of all killed or seriously injured (KSI) crashes and must comprise 20 percent of its streets or less.

If a jurisdiction, after completing an engineering and traffic survey, finds that the speed limit on a roadway segment is higher than reasonable or safe, they may declare a default speed limit that has been reduced an additional five miles per hour if that segment is designated as a safety corridor.

DP 36

In Caltrans Director's Policy (DP) 36, made effective in 2022, the agency committed to eliminating fatal and serious injury crashes by the year 2050, and committed to achieving this goal through the application of the Safe System Approach.

DP 37

DP 37, issued in 2021, establishes creating complete streets that support people walking, biking, taking transit, and accessing passenger rail. It recognizes these priorities as a means of advancing state goals in climate and the environment, in public health, and in equity and repairing harm to underserved communities. It also recognizes complete streets as valuable community spaces that can boost economic vitality and resiliency. To these ends, it directs that "all transportation projects funded or overseen by Caltrans will provide comfortable, convenient, and connected complete streets facilities for people walking, biking, and taking transit or passenger rail unless an exception is documented and approved."

Caltrans Intersection Safety and Operations Assessment Process (ISOAP)

What is ISOAP?

The Intersection Safety and Operational Assessment Process (ISOAP) is a performance-based, data-driven framework developed by Caltrans to evaluate and select intersection improvement alternatives. It incorporates the Safe System Approach to improve safety and operations for all road users. ISOAP's purpose is to screen and identify the most viable intersection control and geometric design alternatives, ensuring they fit within the surrounding land use context and available resources. It replaces the prior Intersection Control Evaluation (ICE) process, aiming to reduce severe crashes and support Caltrans' long-term goal of eliminating traffic fatalities and serious injuries.

Note: ISOAP applications can differ between land development and infrastructure projects (e.g., interchanges, corridor improvements) processed through Caltrans' standard project development phases (PID and PA/ED).

Safe System Approach

The Safe System Approach is a safety framework used in ISOAP to reduce fatalities and serious injuries. It accepts that human errors are inevitable and designs road systems to minimize harm.

CORE PRINCIPLES

- Zero Fatalities Goal – Safety is prioritized above all.
- Human Error Is Expected – Roads must be forgiving.
- Human Vulnerability – Designs account for physical limits.
- Shared Responsibility – Safety is a collective effort.
- Redundancy – Multiple safety layers protect users.
- Proactive & Reactive Safety – Prevent crashes and reduce severity.

KEY ELEMENTS

- Safe Road Users – Education and enforcement.
- Safe Vehicles – Crash avoidance technologies.
- Safe Speeds – Lower speeds reduce crash impact.
- Safe Roads – Infrastructure that reduces conflict points.
- Post-Crash Care – Emergency response and trauma care.

In ISOAP, this approach guides intersection design by emphasizing conflict reduction, speed management, and multimodal safety.

When is ISOAP Required?

ISOAP is required if a land development project proposes the following improvements to the State Highway System (SHS):

- Connecting a new public road, private road, or high-volume (average daily traffic volumes of 1,000 or greater) driveway to a state highway or a new interchange to a freeway.
- Changing the type of traffic control, such as from stop-control to signal-control or from a two-way stop to all-way stop.
- Installing a pedestrian hybrid beacon at an intersection.
- Making major physical changes to intersection approaches, including at ramp terminals, such as adding a leg to an intersection or widening to provide an additional through or turn lane.

Note that development projects entitled prior to ISOAP adoption are not exempt from the process, unless an ICE evaluation was previously prepared and approved by Caltrans.

Development projects often propose right-turn in/right-turn out driveways on state highways. ISOAP is not required for these driveways if the driveway approach volume is less than 1,000 vehicles per day.

ISOAP Process Summary

STAGE 1: SCREENING AND INITIAL ASSESSMENT

This stage identifies viable intersection strategies early in the project development process, typically during the Project Initiation Document (PID) phase.

- **Determine ISOAP Applicability:** ISOAP is required for new intersections or major modifications (e.g., traffic control changes, new legs, pedestrian hybrid beacons). Exceptions must be approved by Caltrans HQ.
- **Define Project Outcomes, Place Type, and Design Vehicle**
 - Outcomes may include safety improvements, multimodal access, or traffic calming.
 - Place types (urban, suburban, rural) influence design.
 - Design vehicle selection depends on truck access needs.
- **Pedestrian and Bicycle Assessment:** Evaluate current and future needs using Complete Streets guidance. Consider accessibility, school zones, and senior housing.
- **Right-of-Way and Operational Feasibility:** Use tools like CAP-X and VJust to assess footprint and multimodal capacity. LOS is no longer a primary metric; use Daily Person Hours of Delay (DPHD) or other MOEs.
- **Transit and Freight Assessment:** Ensure intersection accommodates transit stops, queuing, and turning movements for large vehicles.
- **Initial Safety Assessment:** Use tools like SPICE, SSI methodology, and crash modification factors to compare strategies.
- **Eliminate Infeasible Strategies:** Remove options with insurmountable environmental, safety, or cost barriers.
- **Document Findings:** Complete the Stage 1 ISOAP form/documentation. If only one viable strategy remains, it becomes the recommendation. Otherwise, proceed to Stage 2.

STAGE 2: DETAILED ANALYSIS

- **Detailed Safety Analysis:** Use the Highway Safety Manual (HSM) to predict crash frequency/severity and calculate safety-related costs.
- **Detailed Operational Analysis:** Use tools like Synchro, SIDRA, VISSIM, and Highway Capacity Software. Include multimodal data and forecast volumes.
- **Functional Sketches and Performance Checks:** Prepare conceptual layouts showing lanes, pedestrian/bike facilities, and transit stops. Conduct geometric checks (e.g., sight distance, roundabout fastest path).
- **Cost Estimate and Right-of-Way Impacts:** Include construction, maintenance, and crash costs. Consider drainage, utilities, and staging impacts.
- **Performance-Based Analysis Matrix:** Compare strategies using safety, operations, cost, and benefit-cost ratio. Consider equity and Safe System principles.
- **Document Final Recommendation:** Submit the Stage 2 ISOAP form/documentation. The selected strategy may not be the cheapest but must align with safety and community goals.

Appendix B: Community Engagement Materials & Feedback

Community Listening Sessions Summary

Introduction

In close collaboration with local communities, the Yuba-Sutter Regional Safety Action Plan (YSRSAP) was launched with the primary goal of improving roadway safety throughout the region. This comprehensive initiative is designed to evaluate existing transportation conditions and identify critical safety concerns that affect all road users, including pedestrians, bicyclists, motorists, and public transit riders. By thoroughly assessing the locations and causes of traffic-related hazards, the plan seeks to implement targeted interventions that will lead to safer streets, a reduction in traffic-related injuries and fatalities, and an overall improvement in quality of life for residents.



Community Meeting Directional Sign

The development of the YRSAP was made possible through an \$800,000 grant awarded in 2023 to the Yuba County Department of Public Works by the U.S. Department of Transportation. This funding supports a collaborative planning process that includes Yuba County, Sutter County, and the incorporated cities of Marysville, Wheatland, Yuba City, and Live Oak. Central to the planning effort is the commitment to transparency, community involvement, and data-driven decision-making.



Marysville Health & Human Services Center, May 1st

To ensure that the plan reflects the perspectives and needs of those who live and travel within the region, the project team organized a series of public listening sessions. These sessions served as a vital platform for community members to engage directly with the planning process, learn about proposed safety strategies, and provide meaningful input that will shape the final recommendations.

Listening Session Overview

From May 1 through May 14, 2025, the YRSAP project team hosted a total of four in-person community listening sessions across the Yuba-Sutter region. Each session ran from 5:30 to 7:00 p.m. and was strategically scheduled and located to maximize accessibility and encourage participation from a diverse cross-section of residents.



Yuba City Gauche Aquatic Park Meeting Room, May 7th

These listening sessions provided an open and welcoming environment where attendees could learn more about the safety action plan, meet with members of the project team, and voice their observations, concerns, and ideas about local transportation safety. The input gathered during these sessions plays an essential role in shaping the priorities of the plan and ensuring that the solutions developed are responsive to the specific needs of the communities involved.



Live Oak Community Center, May 13th

The sessions took place at the following locations:

- **Thursday, May 1:** Marysville Health & Human Services Building
- **Wednesday, May 7:** Yuba City Gauche Aquatic Park Meeting Room
- **Tuesday, May 13:** Live Oak Community Center
- **Wednesday, May 14:** Wheatland Community Center

Each event was promoted through multiple channels, including flyers, local news outlets, social media, and direct outreach to community groups, with the goal of ensuring broad awareness and encouraging robust attendance.

Event Format and Engagement

Each listening session followed a relaxed, open-house format that encouraged free movement and informal dialogue. Upon arrival, attendees were greeted by project team members and offered complimentary items such as bottled water, bicycle safety accessories, and small treats like candy to create a friendly and inclusive atmosphere.



Wheatland Community Center, May 14th

The venue layout included a series of display boards arranged throughout the room, each highlighting different components of the safety action plan. These exhibits covered a wide range of topics, including key goals of the plan, data on current roadway conditions, maps of high-priority safety areas, and preliminary recommendations for improvement. The visual displays were designed to be easy to understand and accessible to a general audience, encouraging thoughtful discussion and feedback.



Awareness Lawn Sign

Project team members were stationed at each board to answer questions, explain technical details, and engage in one-on-one conversations. This personal interaction helped foster trust and allowed participants to share firsthand experiences and local insights, which are critical to developing solutions that are both effective and community-centered.

Stations and Board Exhibits

The listening sessions featured several themed stations and informational boards, each addressing a unique aspect of the Yuba-Sutter Regional Safety Action Plan. The following section provides a detailed overview of the content presented at these stations.

Information Board:



YUBA-SUTTER REGIONAL SAFETY ACTION PLAN

PLAN DE ACCIÓN DE SEGURIDAD DE YUBA-SUTTER

OUR VISION & GOAL
NUESTRA VISIÓN Y OBJETIVO

Our vision: The Yuba-Sutter Region will have a transportation system where people of all ages and abilities can travel conveniently, reliably, and free from harm.


Our goal: Work collaboratively to eliminate traffic fatalities and serious injuries by 2050.


Nuestra visión: la región de Yuba-Sutter tendrá un sistema de transporte donde personas de todas las edades y habilidades puedan viajar de manera conveniente, confiable y libre de daños.

Nuestro objetivo: trabajar en colaboración para eliminar las muertes por accidentes de tránsito y las lesiones graves para 2050.

GET INVOLVED: TELL US YOUR ROADWAY SAFETY CONCERNS!
¡INVOLUCRATE AHORA: IDENTIFIQUE SUS PREOCUPACIONES DE SEGURIDAD!

Where do you feel it's unsafe to walk, bike, or drive?









¿Dónde cree que no es seguro caminar, andar en bicicleta o conducir?

Scan the QR code to get involved!
¡Escanea el código QR para participar!

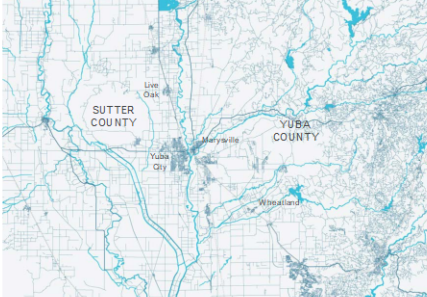




[Project website: https://bit.ly/YSS-safety](https://bit.ly/YSS-safety)

WHAT'S COMING NEXT?
¿QUÉ VIENE A CONTINUACIÓN?


WINTER 2024 2024 INVIerno	SPRING 2025 2025 PRIMAVERA	SUMMER 2025 2025 VERANO
<p>Data Collection & Analysis</p> <ul style="list-style-type: none"> - Review crash data and identify trends - Get input from the community on traffic safety concerns <p>Recopilación y análisis de datos</p> <ul style="list-style-type: none"> - Revisar los datos de accidentes e identificar tendencias - Obtener comentarios de la comunidad sobre preocupaciones de seguridad vial 	<p>Transportation Safety Recommendations</p> <ul style="list-style-type: none"> - Propose traffic safety improvement projects and policies - Identify funding opportunities for traffic safety enhancements <p>Recomendaciones de seguridad en el transporte</p> <ul style="list-style-type: none"> - Proponer proyectos y políticas de mejora de la seguridad vial - Identificar oportunidades de financiación para mejoras en la seguridad del tráfico 	<p>Approve Safety Action Plan</p> <ul style="list-style-type: none"> - Create a prioritized list of traffic safety improvement projects - Draft Regional Safety Action Plan - Get approval from City Councils and County Boards of Supervisors <p>Aprobar el Plan de Acción de Seguridad</p> <ul style="list-style-type: none"> - Crear una lista priorizada de proyectos de mejora de la seguridad del tráfico - Borrador del Plan de acción de seguridad - Obtenga la aprobación de los ayuntamientos y las juntas de supervisores del condado













Plan Voting Board & Feedback:

WHAT SHOULD WE PRIORITIZE? ¿QUÉ DEBEMOS PRIORIZAR?

Put stickers next to the three you most agree with.
Pon pegatinas junto a las tres con las que más estés de acuerdo.



	We should prioritize... <i>Debemos priorizar...</i>	Mark your top three <i>Marca tus tres mejores</i>
	making our streets accessible for everyone <i>hacer que nuestras calles sean accesibles para todos</i>	
	children being able to safely walk or bike to school <i>seguridad para que los niños puedan caminar o ir en bicicleta a la escuela</i>	●
	providing transportation services for the elderly <i>brindar servicios de transporte para personas mayores</i>	
	creating safer and more frequent pedestrian crossings <i>creación de pasos de peatones más seguros y frecuentes</i>	●
	putting sidewalks in places there aren't any now <i>poner aceras en lugares donde ahora no las hay</i>	
	creating more dedicated bicycle facilities <i>creación de más instalaciones dedicadas a las bicicletas</i>	●
	consistent roadway maintenance <i>mantenimiento constante de la carretera</i>	●
	easily and safely moving farm equipment on rural roads <i>mover equipos agrícolas de forma fácil y segura en caminos rurales</i>	
	slowing down cars in neighborhoods and downtown areas <i>reducir la velocidad de los automóviles en los vecindarios y el centro de la ciudad</i>	● ●
	new safety programs (like drunk driving prevention) <i>nuevos programas de seguridad (como prevención de bebida y conducción)</i>	

Marysville Boards & Feedback:

Marysville Safety Corridors

Avenidas de seguridad de Marysville

YUBA-SUITER REGIONAL SAFETY ACTION PLAN

What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. **Las avenidas de seguridad** representadas en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.

The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements.
Las carreteras mostradas en rojo tuvieron la tasa más alta de accidentes graves y están enumeradas a continuación. Coloca una etiqueta junto a la(s) carretera(s) que crees que deberían priorizarse para mejorar de seguridad.

E St from/de 14th St to/a city boundary/Yuba River	
State Route 20/10th St from/ide city boundary/Feather River to/a E St/SR 70	20 ●
3rd Street from/ide J St to/a A St	●
Hall Street from/ide Hall Ct to/a E 17th St	
B Street from/ide city boundary to/a 8th St	● ● ●

Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below.
Según tu experiencia, ¿hay otras avenidas que deberían considerarse para mejorar seguridad? Si es así, háznoslo saber en el espacio de abajo.

Handwritten notes on sticky notes:
 - "SR 20 - should be prioritized for safety improvements"
 - "SR 10 & J St"
 - "SR 20 - should be prioritized for safety improvements"

Roads with the Most Severe Crashes in Marysville, 2018 - 2023
Avenidas con los accidentes más graves en Marysville, 2018 - 2023

Marysville Crashes that Resulted in Injury, 2018 - 2023

YUBA-SUITER REGIONAL SAFETY ACTION PLAN

Injury Crashes by Severity, 2018 - 2023

Total Crashes: 295
KSI Crashes: 39

Year	2018	2019	2020	2021	2022	2023
Total Crashes	54	41	38	43	61	62
KSI Crashes	5	5	4	6	9	10

KSI = Killed or Severely Injured

All Crashes by Mode

- Vehicle: 78%
- Pedestrian: 15%
- Bicycle: 7%

KSI Crashes by Mode

- Vehicle: 62%
- Pedestrian: 26%
- Bicycle: 13%

*Crashes involving people walking and biking disproportionately result in someone dying or getting severely injured.

Reported Causes of Crashes (%)

Cause	All Crashes	KSI Crashes
Unsafe Speed	26	25
Vehicle Right of Way Violation	17	8
Traffic Signal and Signs	14	4
Driving or Bicycling Under the Influence	11	7
Pedestrian Violation	10	6
Wrong Side of Road	10	4
Other	11	21

Leading Crash Types

Crash Type	All	KSI
Broadside	37%	41%
Rear End	21%	10%
Vehicle/Pedestrian	15%	21%
Hit Object	8%	13%

138 (47%) crashes occurred on state highways within the city limits.

Source: Statewide Integrated Traffic Records System, 2018 - 2023

Yuba City Boards & Feedback:

Yuba City Safety Corridors

Avenidas de seguridad de Yuba City

What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. Las avenidas de seguridad representadas en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.

The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements. Las carreteras mostradas en rojo tuvieron la tasa más alta de accidentes graves y están enumeradas a continuación. Coloca una etiqueta junto a la(s) carretera(s) que crees que deberían priorizarse para mejorar de seguridad.

Stabler Lane from/de Colusa Ave/SR 20 to/a Heather Dr	
Almond Street from/de Reeves Ave to/a Church St	
State Route 99 from/de Brancroft Ave to/a Butte House Rd	99
S Walton Avenue from/de Colusa Ave/SR 20 to/a Holly Tree Dr	●
Colusa Ave/State Route 20 from/de Libby Ln to/a Feather River	20

Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below. Según tu experiencia, ¿hay otras avenidas que deberían considerarse para mejorar seguridad? Si es así, háznoslo saber en el espacio de abajo.

- BRIDGE & PULMAS
- EL MAGNETA & FRANKLIN
- All St. Margaret's - Central Walton to Church St - Colusa Ave to Butte - Colusa Ave to Church St - Colusa Ave to Holly Tree - Colusa Ave to State Route 20 - State Route 20 to Feather River
- State Route 20 to Heather Dr - State Route 20 to Church St - State Route 20 to Holly Tree - State Route 20 to Feather River

Roads with the Most Severe Crashes in Yuba City, 2018 - 2023
Avenidas con los accidentes más graves en Yuba City, 2018 - 2023

Yuba City Crashes that Resulted in Injury, 2018 - 2023

Injury Crashes by Severity, 2018 - 2023

Year	2018	2019	2020	2021	2022	2023
Total Crashes	300	298	283	253	223	274
KSI Crashes	18	28	31	23	22	22

KSI = Killed or Severely Injured

All Crashes by Mode

- Vehicle: 87%
- Pedestrian: 7%
- Bicycle: 6%

KSI Crashes by Mode

- Vehicle: 72%
- Pedestrian: 17%
- Bicycle: 1%

Crashes involving people walking and taking disproportionate result or someone dying or getting severely injured.

Top Reported Causes of Crashes (%)

Cause	All Crashes (%)	KSI Crashes (%)
Unsafe Speed	13	23
Vehicle Right-of-Way Violation	15	13
Traffic, Signals and Signs	6	13
Improper Turning	13	11
Driving or Recycling Under the Influence	9	18
Pedestrian Violation	7	11
Other	27	11

Leading Crash Types


Crash Type	All (%)	KSI (%)
Broadside	38%	37%
Rear End	29%	14%
Sideswipe	9%	4%
Head-On	8%	8%
Vehicle/Pedestrian	7%	16%

492 (91%) crashes occurred on state highways.

36% of KSI crashes occurred between 3PM and 7PM.

Source: Statewide Integrated Traffic Records System, 2018 - 2023

Live Oak Boards:





Live Oak Safety Corridors

Avenidas de seguridad de Live Oak

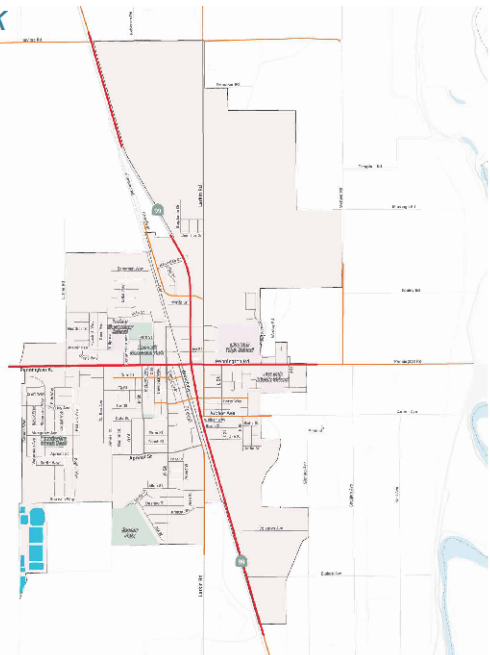
What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. Las avenidas de seguridad representadas en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.


The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements. Las carreteras mostradas en rojo tuvieron la tasa más alta de accidentes graves y están enumeradas a continuación. Coloque una etiqueta junto a la(s) carretera(s) que cree que deberían priorizarse para mejorar de seguridad.

State Route 99 from El Bishop Ave to La Ramada Dr	
State Route 99 from El Nevada St to El Nevada Rd	
Pennington Road from El Live Oak Cemetery to El Simard Ave	

Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below. Según tu experiencia, ¿hay otras avenidas que deberían considerarse para mejorar seguridad? Si es así, háznoslo saber en el espacio de abajo.

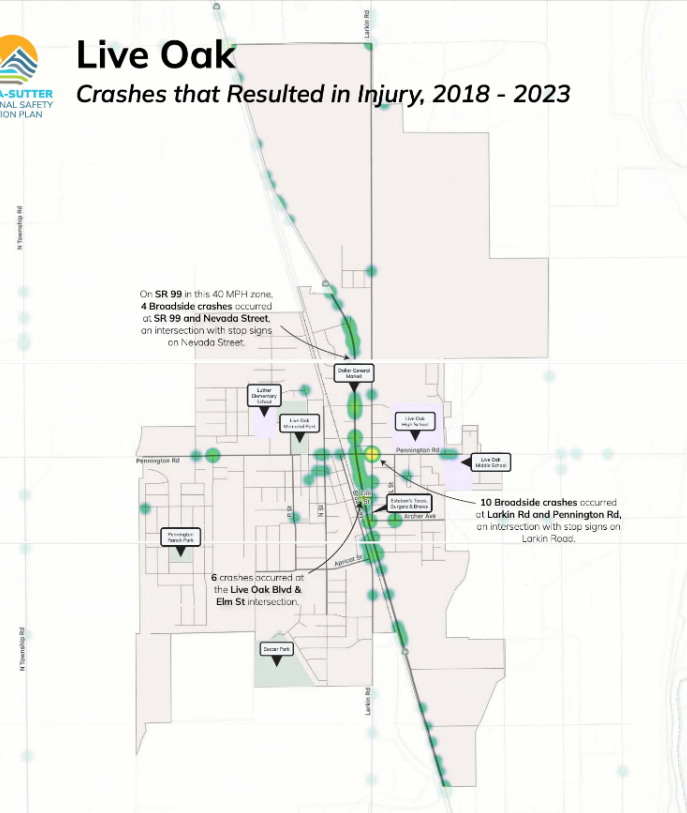


Roads with the Most Severe Crashes in Live Oak, 2018 - 2023
Avenidas con los accidentes más graves en Live Oak, 2018 - 2023.



Live Oak

Crashes that Resulted in Injury, 2018 - 2023



On SR 99 in this 40 MPH zone, 4 Broadside crashes occurred at SR 99 and Nevada Street, an intersection with stop signs on Nevada Street.

10 Broadside crashes occurred at Larkin Rd and Pennington Rd, an intersection with stop signs on Larkin Road.

6 crashes occurred at the Live Oak Blvd & Elm St intersection.

Crashes by Severity & Modes, 2018 - 2023

Year	2018	2019	2020	2021	2022	2023
Vehicle Only	10	12	15	18	20	22
Pedestrian Involved	1	1	1	1	1	1
Wreck Involved	2	3	4	5	6	7
Non-KSI Crash	15	16	18	20	22	24
KSI Crash	2	3	4	5	6	7
KSI = Killed or Severely Injured						

*Crash occurred on SR 99

Construction of SR 99 Corridor enhancements in Live Oak occurred between July 2020 and April 2022. Fewer crashes occurred during construction years, and these were no KSI crashes. Since construction was completed, crashes have increased slightly, but have not returned to pre-construction levels. Additionally, there was one KSI crash in 2022 and one in 2023.





63 (84%) collisions occurred on state highways within the city limits. All 5 KSI crashes occurred on CA-99.

3 crashes occurred on SR 99 in October 2020.

Top Reported Causes of Crashes

VEHICLE RIGHT OF WAY VIOLATION 29 TOTAL CRASHES 2 KSI CRASHES
UNSAFE SPEED 28 TOTAL CRASHES 2 KSI CRASHES
PEDESTRIAN VIOLATION 1 TOTAL CRASHES 1 KSI CRASH

Leading Crash Types

Broadside 46 Total Crashes 3 resulted in KSI crash	
Rear End 35 Total Crashes	
Hit Object 6 Total Crashes 1 resulted in KSI crash	
Vehicle/Pedestrian 5 Total Crashes 1 resulted in KSI crash	

Source: Statewide Integrated Traffic Records System, 2018 - 2023

Wheatland Boards & Feedback:

Wheatland Safety Corridors

Avenidas de seguridad de Wheatland

What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. Las carreteras mostradas en naranja en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.

The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements. Las carreteras mostradas en rojo tuvieron la tasa más alta de accidentes graves y están enumeradas a continuación. Coloca una etiqueta junto a la(s) carretera(s) que crees que deberían priorizarse para mejorar de seguridad.

Spenceville Road from Olive St/Main St to a east of Jasper Ln	
State Route 65 from Brea River to a Dry Creek Levee Rd	65
Main Street from SR 65 to a Spenceville Rd	

Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below.
Según tu experiencia, ¿hay otras avenidas que deberían considerarse para mejorar seguridad? Si es así, háznoslo saber en el espacio de abajo.

Boyle Expressway 65 Bypass (green sticky note)
Dry Creek (yellow sticky note)

Roads with the Most Severe Crashes in Wheatland, 2018 - 2023
Avenidas con los accidentes más graves en Wheatland, 2018 - 2023

Wheatland

Crashes that Resulted in Injury, 2018 - 2023

25 crashes occurred on SR 65 between Dry Creek Levee Rd & Evergreen Dr. 24 of them were rear-end crashes and 23 were related to unsafe speeds.

Most of the crashes on D St / SR 65 between 1st St and the southern city boundary were rear-ends.

There was a concentration of crashes on D St / SR 65 between Main and State St where cars traveling northbound were rear-ended as the posted speed limit drops from 55 MPH to 35 MPH right before the signal at Main St.

Crashes by Severity & Modes, 2018 - 2023

Legend: Vehicles Only, Pedestrian-Involved, Bicycle-Involved, Non KSI Crash, KSI Crash. KSI = Killed or Severely Injured.

Leading Crash Types

Rear End	Broadside	Head-On
45 Total Crashes	7 Total Crashes	7 Total Crashes
1 resulted in a KSI crash	1 resulted in a KSI crash	

Top Reported Causes of Crashes

UNSAFE SPEED 39 Total Crashes, 1 KSI Crash	FOLLOWING TOO CLOSELY 6 Total Crashes, 0 KSI Crashes
IMPROPER TURNING 4 Total Crashes, 1 KSI Crash	VEHICLE RIGHT OF WAY 5 Total Crashes, 0 KSI Crashes

52 (71%) crashes occurred on state highways within city limits.

Source: Statewide Integrated Traffic Records System, 2018 - 2023

Yuba County Boards & Feedback:

Yuba County Safety Corridors

Avenidas de seguridad de Yuba County

What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. **Las avenidas de seguridad** representadas en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.

The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements.
 Los corredores mostrados en rojo tuvieron la tasa más alta de accidentes graves y están enumerados a continuación. Coloque una etiqueta junto a la(s) carretera(s) que cree que deberían priorizarse para mejorar de seguridad.

N Beale Road from/desde Levee Road to Lindhurst Ave	●
Olivehurst Ave from/desde Powerline/Chestnut roundabout to Lindhurst Ave	●
State Route 70 from/desde Marysville boundary/Yuba River to 7th Ave	●
Southbound State Route 65 from/desde SR 70 divide to Olive Ave	●
Plumas Arboga Road from/desde SR 70 to Forty Mile Rd	●

Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below.
 Según tu experiencia, ¿hay otras avenidas que deberían considerarse para más es así, háznoslo saber en el espacio de abajo.

REVISION ROAD SPEED LIMIT 5 to 25MPH

REVISION ROAD SPEED LIMIT 20 to 25MPH

REVISION ROAD SPEED LIMIT 20 to 25MPH

OAKLEY LN & 455

Highway 65 & Oakley Lane

Roads with the Most Severe Crashes in Yuba County, 2018 - 2023
 Avenidas con los accidentes más graves en Yuba County, 2018 - 2023

Yuba County

Crashes that Resulted in Injury, 2018 - 2023

Injury Crashes by Severity, 2018 - 2023

KSI = Killed or Severely Injured

All Crashes by Mode

KSI Crashes by Mode

40% of the crashes on N Beale Rd within Lindhurst and Broadside crashes.

A majority of crashes on SR 70 between Marysville's city limits and SR 65 are Rear-End (44%) and Hit Object (29%) crashes.

A majority of crashes that happened on SR 65 between Rancho Rd and 1st St in Wheatland are Rear-End (52%) and Broadside (24%) crashes.

11 of the 16 crashes that happened on SR 70 near the northern border of Plumas Lake resulted in Hit Objects.

787 (21%) crashes occurred on state highways within county boundaries. 138 (21%) KSI crashes occurred on the data with no street lights present.


Leading Crash Types

Crash Type	All	KSI
Hit Object	25%	30%
Broadside	23%	10%
Rear-End	21%	9%
Overturned	10%	14%
Head-On	7%	14%
Vehicle/Pedestrian	6%	12%

Reported Causes of Crashes (%)

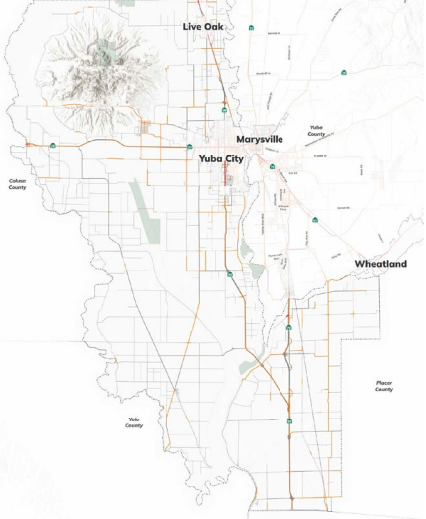
Cause	10-14 Crashes	5-10 Crashes
Unknown Speed	17%	38%
Improper Turning	17%	26%
Vehicle Merge or Wipeout	14%	14%
Change or Wrong Lane or Misaligned	12%	11%
Wrong Side of Road	8%	3%
Procedural Violation	8%	3%
Other	12%	12%

Sutter County Boards & Feedback:



Sutter County Safety Corridors

Avenidas de seguridad de Sutter County



Roads with the Most Severe Crashes in Sutter County, 2018 - 2023
Avenidas con los accidentes más graves en Sutter County, 2018 - 2023


What are Safety Corridors?
¿Qué son las avenidas de seguridad?

Safety corridors, shown on the map in orange, are the roads in the city that had the highest number of crashes that resulted in severe injury or death between 2018 and 2023. *Las avenidas de seguridad representadas en el mapa en color naranja, son las avenidas de la ciudad que registraron el mayor número de accidentes que resultaron en lesiones graves o muertes entre 2018 y 2023.*

The roads shown in red had the highest rate of severe crashes and are listed below. Place a sticker next to the road(s) you think should be prioritized for safety improvements. *Las carreteras mostradas en rojo tuvieron la tasa más alta de accidentes graves y están enumeradas a continuación. Coloca una etiqueta junto a la(s) carretera(s) que crees que deberían priorizarse para mejorar de seguridad.*

Bogue Road and State Route 99 Intersection	99
Berry Road <small>from Berry Ct to Northbound SR 70</small>	
West Catlett Road and SR 99 Intersection	99
Bridge Street <small>from Meridian Rd to 3rd St</small>	
State Route 99 <small>from Franklin Ave to Bogue Rd</small>	99

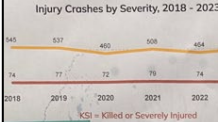
Based on your experience, are there other roads that should be considered for safety improvements? If so, let us know in the space below.
Según tu experiencia, ¿hay otras avenidas que deberían considerarse para mejorar seguridad? Si es así, haznoslo saber en el espacio de abajo.



Sutter County

Crashes that Resulted in Injury, 2018 - 2023

Injury Crashes by Severity, 2018 - 2023



Need to look at Park Road

Top Reported Causes of Crashes (%)

Unsafe Speed	25%
Improper Turning	20%
Vehicle Right of Way Violation	17%
Driving or Bicycling Under the Influence	11%
Traffic Signals and Signs	9%
Wrong Side of Road	4%
Other	11%

65% crashes led to disproportionately greater prevalence of KSI crashes. A majority of them occurred in Yuba City.

Leading Crash Types

Crash Type	Total (%)	KSI (%)
Broadside	30%	24%
Rear End	26%	14%
Hit Object	14%	21%
Sideswipe	8%	0%
Head-On	8%	13%
Overturned	8%	12%

All Crashes by Mode

Vehicle	82%
Pedestrian	5%
Bicycle	3%

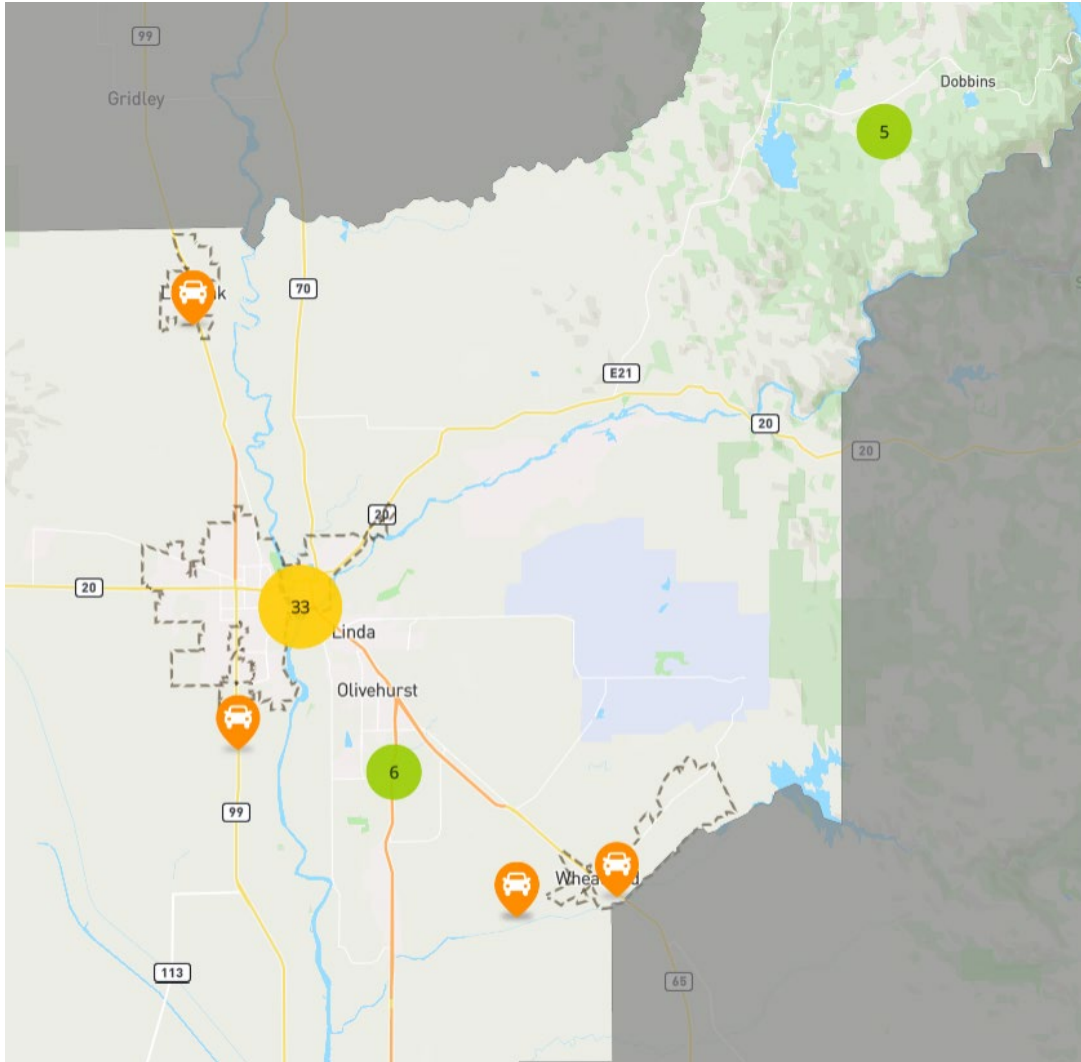
KSI Crashes by Mode

Vehicle	86%
Pedestrian	5%
Bicycle	3%

Crashes involving people walking and biking disproportionately result in someone being or getting severely injured.

Interactive Web Map

SOCIAL PINPOINT



Add Marker

×

Category Required

Select a category ▼

- Select a category
- Biking Safety
- Walking Safety
- Driving Safety

Add Marker

×

Category Required

Biking Safety ▼

Comment on Biking Safety

Comment Required

Do you feel unsafe travelling at this location?
Have you seen a crash or near-miss?

PUBLIC

You have 1,000 characters left

Screen name

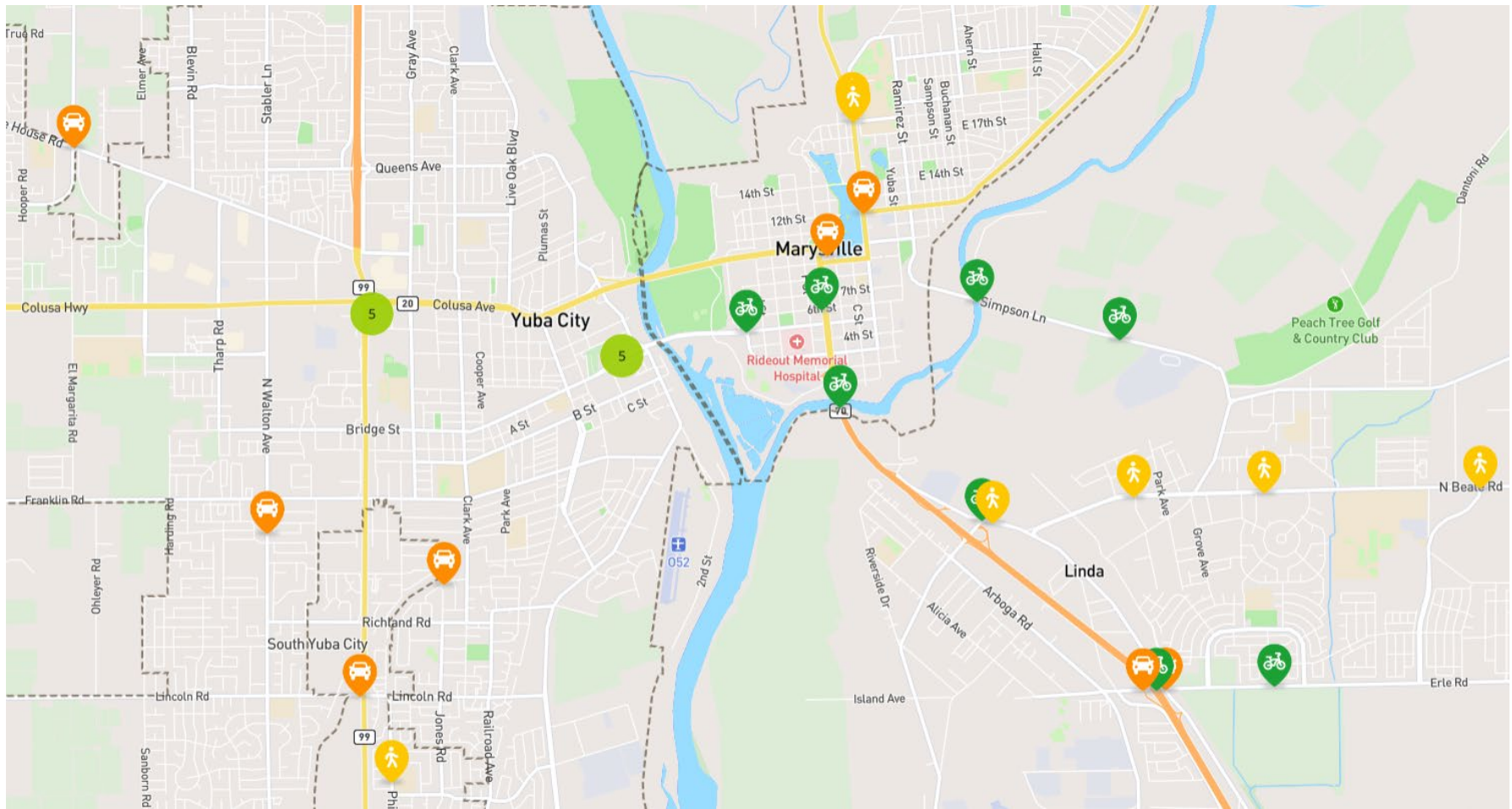
PUBLIC

Email (optional)

PRIVATE

Cancel

Submit



Biking Safety Comments

Nearest Address	Comment	Screen name
1130 North Beale Road, Linda	This entire area is unsafe for bikes and peds. Bike infrastructure is unprotected and poorly delineated. Signal crossings are poorly marked, timed, poor lighting, and poor beg buttons. The traffic is heavy here and there needs to be much more signs, beacons, and protected intersections.	YABA
1800 Erle Road, Linda	Erle Road is unsafe for bicycles and pedestrians due to the 55mph+ speeds and commercial truck traffic traveling at 55mph+. There is no clear recovery zone for the established speed and the bike lane is undesignated and has no clear delineation, protection, or buffer zone.	YABA
1548 Erle Road, Linda	Bicycles traveling between the retail center near Walmart and the Edgewater subdivision along Erle Road face several problems and risks. Erle Road does not have bi-directional bike lanes but instead routes all bike traffic along the north side of the road. The speed limit on Erle Rd is 55+ mph and a designated commercial truck route. The bike lane has no delineation as a bike lane, no safety features such as barriers or buffers. It is actually a shoulder all the way to the Erle Rd overcrossing where it ends. Vehicles use the shoulder as a turn lane onto Lindhurst Avenue northbound. Coming Southbound from Lindhurst, cyclists must share the left turn lane with motorists to go eastbound on Erle Rd from the overcrossing. This keeps cyclists going with the flow of traffic but there are no bicycle delineations, markings, designated areas, or guidance to help motorists understand the road is shared.	YABA
1012 5th Street, Marysville	Bicycles traveling in both directions are forced onto the sidewalk here. This is unsafe for several reasons due to lack of markings, signs, space, and speed differentials. Eastbound cyclists are dumped into J Street going the wrong way off of a sidewalk into right turning southbound traffic, which results in collisions between right turning vehicles and eastbound bicycles.	YABA
468 Bridge Street, Yuba City	Eastbound and westbound traffic at Plumas St are traveling at a higher rate of speed than the 85th percentile because of the perceived speed of the facility over the 5th Street bridge. There have been KSI's at this intersection to include a serious (SI) of a minor child who was walking her bicycle. There is no traffic calming coming off the bridge.	YABA
248 Bridge Street, Yuba City	I was eastbound (against traffic) on my bike because this is the only bike lane connecting to an eastbound crossing of the 5th St bridge. At this curve I was nearly hit head-on by a Yuba City Fire Engine that was driving over the limit line in the bicycle lane. Had I not been paying attention and not moved to the curb I would have been (probably) fatally hit. The driver was not paying attention. The fire engine was not speeding or driving to an emergency. It was simply in the bike lane. There are no barriers for this bike lane but there should be.	
635 Sutter Street, Yuba City	Southbound Sutter St after coming off of the 5th Street Bridge is an unsafe merge into traffic without a bicycle lane on Sutter Street.	YABA

Nearest Address	Comment	Screen name
641 Sutter Street, Yuba City	This intersection is an unsafe cluster/diversion for cyclists after being routed off the bridge. Cyclists changing direction to northbound from an westbound crossing are forced to cross traffic on the wrong side, against the flow of vehicle traffic where there is no designated bike lane northbound on Sutter Street. To continue westbound, cyclists must transition to an unprotected bike lane on 5th street that ends at Shasta Street.	
639 Sutter Street, Yuba City	5th Street Bridge forces bicycles off of 5th Street and relegates them to one side of the bridge for both directions without a safe protected way to continue on 5th Street even though there is a designated bike lane.	YABA
1112 Simpson Lane, Linda	Simpson Lane overcrossing is the only "local (county)" connecting road to Marysville from Linda and the residential areas south of the Yuba River. The only other crossing is at E Street Bridge where Caltrans has provided no safe route. Simpson Lane is a high speed (55 mph +) two-lane commercial truck route facility with inadequate clear recovery, zero traffic controls, zero designated bike or ped facility, and zero lighting or passive speed control signs. This facility is dangerous for all users, especially bicycle and pedestrians trying to access Marysville services.	YABA
505 6th Street, Marysville	6th Street between Yuba Street and J Street is a designated bicycle boulevard. The entire road is shared with bicycles. There are not enough signs and sharrows telling motorists to slow down and to share this road.	YABA
California Highway 70, Linda	There is no designated bicycle lane into Marysville from Linda/Olivehurst. SR70 crossing is completely deficient in bike/ped facilities. Many many bike/ped crossings per day, including motorized wheelchairs within 1-2 feet proximity of high speed semi truck and vehicle traffic on one side and a 30" high rail barrier over the side of the bridge. No lighting, no connectivity for bike/ped/rolling users. No ADA, no signs, no beacons, no safety barriers. Bridge walkway is only 38" wide.	YABA
1277 Simpson Lane, Linda	Very unsafe due to high speed truck and vehicle traffic 60mph and no barrier protection in the clear recovery zone which serves as unofficial bike and ped lane, no lighting, no signs, no delineation, no beacons or traffic calming, no ped crossings, and highway speeds in very close proximity to bicycle traffic. Simpson Lane is the only river crossing into Marysville beside the State Highway at E Street. I ride Simpson Lane and have had several very close calls.	zerovmt
1222 Colusa Avenue, Yuba City	No hay suficiente espacio en las calles principales para bicicletas, hace falta un carril especifico para ciclistas.	Lisa

Walking Safety Comments

Nearest Address	Comment	Screen name
1526 McGowan Parkway, Arboga	I propose to build a sidewalk to be able to walk from the gas station to the Mac Gowan park so people who needs to take the public bus at the bus station can walk safely.	Walking safely
Arboga Road, Olivehurst	Speed Limit on Arboga Rd between McGowan Pkwy and Ella Ave is currently 55 mph. There is a stop sign at McGowan and a stop sign at Ella. There are six crosswalks and four left turn options in this stretch of road. Speed limit is excessive (but may have been appropriate in the past before housing developments were built). Many drivers seem to drive about 45 mph. Suggestion: reduce speed limit to 45 mph.	Michael Scully-Linder
1148 North Beale Road, Linda	Bike and Peds are at risk in this entire area. Poor lighting, poor signalized intersections, poor delineated markings, lack of signage and beaconized crossings, etc. Very high risk area.	YABA
1830 B Street, Marysville	There have been KSI's here involving students due to the amount and high speeds of state highway traffic. There are not enough traffic calming measures in the school zone. Caltrans Binny Junction project build alternative did not adequately address the KSI's and preventative measures. Caltrans proposes to increase the speed limit to 45mph here.	YABA
12913 Rices Crossing Road, Oregon House	I propose to build a sidewalk to be able to walk from the gas station to the Mac Gowan park so people who needs to take the public bus at the bus station can walk safely.	Walking safely
13857 Phoenix Ave, Oregon House	Concerning the section of Rices Crossing Road south of Rices Texas Hill Road: There is no pedestrian lane, nor space for pedestrians, on this section. Could there be better signage to warn drivers, and/or post a speed limit?	Rodney Carter
9872 Texas Hill Road, Oregon House	Need an oval walking track so the community has some where safe to walk. We have the space - 5 acres of community space available	Margaret Fowler
1429 Phillips Road, Yuba City	This is a public K-10 school it needs a well established walking path	Margaret Fowler
1830 B Street, Marysville	Crosswalk for children in front of elementary	Bshackle
1222 Colusa Avenue, Yuba City	Marysville Charter kids cross this intersection of a busy highway to go to the center across the street to use as a gym since their school does not have one. I worry how fast people drive on this highway that a kid may get hit. Is there anyway we can make this safer for kids who cross multiple times a day.	Sal
1830 North Beale Road, Linda	The neighborhood is not well lit at all. Very unsafe for walks in the evening. In addition there has been several car break in as well as thefts and with proper lighting some of these crimes would not occur as lighting would be a deterrent.	E.McKnight
1500 North Beale Road, Linda	A flashing beacon here will really help getting vehicles to stop and allow me to cross and get to nearby stores across the street.	JG

Nearest Address	Comment	Screen name
2371 North Beale Road, Marysville	I feel a flashing beacon here will help me and others cross N. Beale Rd from the apartments and other homes to the nearby plaza.	Resident X
3120 Forty Mile Road, Wheatland	The intersection of N. Beale Rd and Goldfields Pkwy is really dark. I feel unsafe walking when its dark out. I would like to suggest lighting at the intersection and along N. Beale Rd.	Resident X
1526 Mcgowan Parkway, Arboga	I have often seen pedestrians walking on the east side of Forty Mile Rd when there is a concert at the Toyota Amphitheatre. To avoid parking at the Amphitheatre, concert-goers will park at the Hard Rock Cafe and walk. After the concert seems really unsafe considering the lack of lighting.	Mr. W

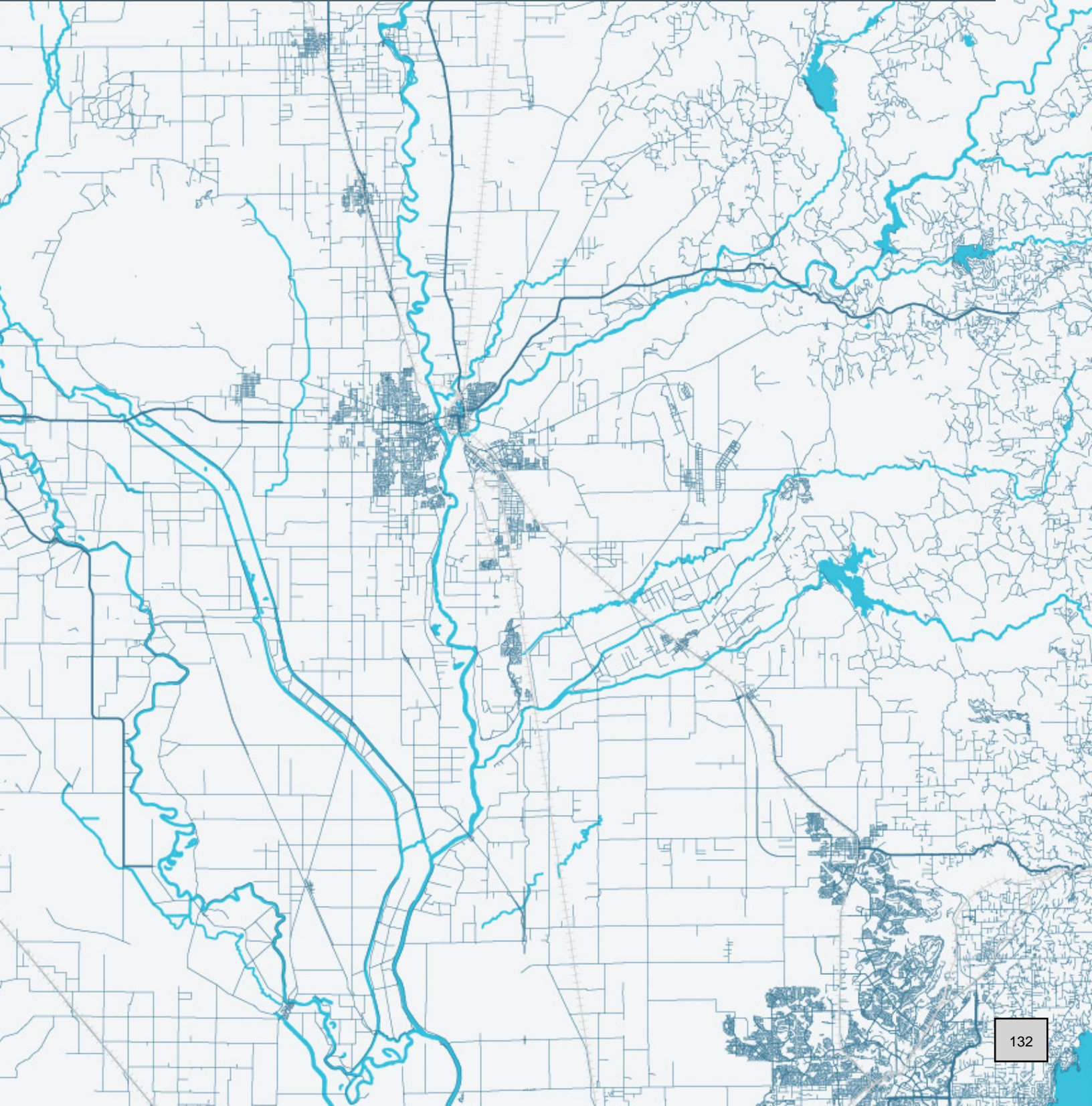
Walking Safety Comments

Nearest Address	Comment	Screen name
9201c Larkin Road, Live Oak, California 95953, United States	Cars often drive dangerously beyond the 35 speed limit here, especially when coming northbound into Live Oak on Larkin. There is a speed limit change from 55 to 35mph a little before the River Valley nursing home, but most are going over 55 and continue to go that speed past the nursing home. There is a lot of traffic coming in and out of the nursing home parking lot and speeding on Larkin makes this area very dangerous. I have also seen wreckless speeders crash into the backs of cars that have slowed down or stopped on the road waiting to turn into the homes on Larkin. There are a couple of speed change warning signs and a radar warning, but it seems nobody cares. Maybe a slight speed bump and flashing lights could help?	
1764 Tierra Buena Road, Yuba City	Drivers do a rolling stop or at times not stop at all.	
California Highway 65, Wheatland	The bottlenecked traffic that has to get through Wheatland is a safety concern. All of the new homes/apartments =more traffic. In the event of an emergency there is NO way to safely get out. There's not even passing lanes. Stop being greedy and find a way to re-route the 65 or add lanes.	A concerned Wheatland citizen
126 12th Street, Marysville	There is heavy traffic congestion in this area between 07:20 am - 07:45 am. Typically, most people turning left onto B ST, from 12th ST, also need to quickly merge for the upcoming turn on 9th ST. There are merging issues and this contributes to the growing traffic on B ST.	Brittney
3986 Wheatland Road, Wheatland	Big dip in the road. This has gotten worse and worse over the last couple years. Even traveling at posted speed limit this dip is cause for concern. Please look into repairing it.	Darren
985 Hillcrest Avenue, Yuba City	Yuba City Hwy 20 at Shasta St intersection, median divide the visibility is extremely poor and very low height.	Jo
1222 Colusa Avenue, Yuba City	Queens Ave overpass, 2 stoplights cause bottleneck traffic during peak commute hours. This endangers traffic on northbound West Onstott Rd and also the kids E-Learning access On Queens Ave	Jo
425 9th Street, Marysville	Speed bumps need reflective because they are hard to see	Mark Hubble
13623 Rices Crossing Road, Oregon House	There have been several crashes at the intersection of Marysville Road and Rices Crossing Road, some fatal. I was involved in one of them. Visibility is poor on both approaches to the intersection. The traffic can be heavy. Some drivers approach the intersection at speeds in excess of 55 miles per hour. The speed limit isn't posted there, so drivers can assume it is still 55 miles per hour, as it is on both approaches to the intersection. A few seconds of inattention can therefore result in a violent collision at the intersection. Such collisions have occurred a number of times.	Henry Knapp
231 South Walton Avenue, Yuba City	There needs to be a turn lane here. Traffic backs up excessively when drivers try to make a left turn into the Berkshire neighborhood. Often times its a full stop in traffic nearly causing collisions.	Anonymous

Nearest Address	Comment	Screen name
1289 Lincoln Road, Yuba City	Left turn lane is not long enough. Cars often miss the signal due to access to the turn lane being blocked. This has resulted in cars using the oncoming traffic lane as a way to bypass traffic that is going straight. I have seen collisions happen here because of this.	Anonymous
Pasado Road, Olivehurst	Need to add traffic lights, its almost impossible to turn left on Erle Rd. due to ongoing traffic..	
Plumas Arboga Road, Arboga	So many accidents at this intersection. Needs a light or lighted stop signs immediately	
3992 Wheatland Road, Wheatland	Seems like a pipe or culvert is broke and the road has settled. Big drop in the road that has continually gotten worse.	Ashley Ferreira
1649 Broadway Road, Arboga	Trying to navigate through this area during school drop offs & pickup times. The road gets blocked in several directions. Many local residents can not even leave their homes during school hours.	carrway
12510 Rices Crossing Road, Oregon House	"Rices Crossing is narrow in places, and people have run off the side of the road. The biggest concern, however, is emergency egress in case of a wildfire. As a Director of the Dobbins/Oregon House Fire Protection District, I anticipate that emergency egress issues will severely impact the ability of the Fire district to respond to an emergency. See this link for a compilation of letters sent to Yuba County about Rices Crossing Road: https://foothillwatercoalition.org/records/links/24-12-30_wf_letters.html	Charles Sharp
1222 Colusa Avenue, Yuba City	Hay demaciados carros en esta pequeña ciudad. Deberia haber mas transporte publico	Hilda
1548 Erle Road, Linda	North bound cars here often make their own lane to make a right turn on to Erle Rd. New striping is necessary also see a lot of kids on bikes on the road on Lindhurst Ave	Private
1222 Colusa Avenue, Yuba City	Recorrer la pequeña ciudad de Yuba es todo un reto y toma demaciado tiempo. Hay demaciados semaforos, las glorietas creo pueden ser mejor opcion para las calles principales en vez de tanta luz. De igual manera en zonas residenciales puede funcionar mejor Stop signs y detectores de velocidad en diferentes zonas.	Lisa
1311 Oswald Road, Yuba City	I have seen many many crash's and also have been a victim of a crash right in the section of the road. People travel way to fast and many have been killed her due to traffic accidents. They're should be a light here.	
1991 Mcgowan Parkway, Olivehurst	Crash happened on December 25, 2024. unknown cause however it was a two car collision. This is a four way stop intersection and can sometimes be challenging when school ends for the day and traffic piles up with kids walking home after school.	Olivehurst Resident



Appendix C Safety Corridor Background & Technical Methodology



Appendix C: Safety Corridor Background and Technical Methodology

This section discusses the methodology used for the identification of safety corridors, the roads that had the highest number and risk of crashes resulting in severe injury or death.

Policy Background: Assembly Bill 43

Assembly Bill (AB) 43 is state traffic safety legislation aimed at reducing road fatalities by giving local governments more flexibility in setting speed limits. AB 43 enables cities to consider pedestrian and cyclist safety, school zones, and accident history when setting speed limits. If a jurisdiction, after completing an engineering and traffic survey, finds that the speed limit on a roadway segment is higher than reasonable or safe, they may declare a default speed limit that has been reduced an additional five miles per hour if that segment is designated as a safety corridor. A safety corridor is a roadway segment within an overall roadway network where the highest number of serious injury and fatality crashes occur.

The Safety Corridor Definition Requirements from the California Traffic Control Devices Committee (CTCDC) proposes the following factors to influence collision weighting:

- Crash severity
- Crash mode
- Disadvantaged Community status
- Vulnerable populations: Seniors (age 65+) and youth (under age 15)
- School proximity (within 0.25 miles)

Additionally, the AB 43 legislation language states that “a local authority shall not deem more than one-fifth of their streets as Safety Corridors.” Safety Corridors should account for at least 25% of KSI collisions. While the Safety Corridors definition can now be used for identifying AB 43 posted speed reduction locations, the State will likely expand use of this definition to additional safety-related programs, policies, and funding sources.

More information is available here: <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ctcdc/ctcdc-agenda-item-21-16-020223-ally.pdf>

Safety Corridors Data

Collision Data

The Safety Corridor/High-Injury Network was developed using the 6-year collision dataset for 2018–2023 from the SWITRS database. This dataset only included injury collisions (i.e. excluding Property Damage Only collisions, where an injury was not reported) and included collisions on surface streets, state facilities, at freeway ramp intersections, and on freeways.

Contextual Data

In addition to collision data, the Safety Corridor methodology used the following contextual datasets:

- Yuba County and Sutter County centerline files merged
- USDOT Equitable Transportation Community (ETC)
- Transit stops locations
- Big data representing observed vehicle speed, aggregated to the segment level, from Wejo

Collision Severity Weighting

Collision weights are derived based on 2022 California Local Road Safety Manual (LRSM) crash costs for each collision severity. This method is similar to the Highway Safety Manual (HSM) Equivalent Property Damage Only (EPDO) weighting method but uses the “Complaint of Pain” severity level as its baseline, because Property Damage Only (PDO) collisions are not included in the Safety Corridor Network.

Cost assumptions from the 2022 Caltrans LRSM are based on costs included in the HSM First Edition, with costs adjusted to 2022 dollars. The HSM uses “comprehensive” or “societal” crash costs to associate costs with each crash severity level. Comprehensive costs include both economic costs and monetized pain and suffering costs. Economic costs are monetary costs associated with emergency services deployment, medical services, productivity loss due to victim injury, insurance and legal costs, costs as a result of congestion impacts as a result of the collision, and property damage costs. Monetized pain and suffering costs are an assumption of the costs associated with lost quality-of-life (or Quality-Adjusted Life Years [QALY]), accounting for reductions in life expectancy and quality of life changes as a result of a crash.

For this analysis, the square root of the cost assumption was used to lower the collision severity weight to give more weight to the contextual factors.

This methodology uses **all injury collisions** in Safety Corridor development (as opposed to KSI only).

Table 1: Collision Weights

Severity	Crash Cost	Weight
Fatal and Severe Injury (KSI)	\$2,363,666.67*	5.1
Evident Injury – Other Visible	\$159,900	1.4
Possible Injury – Complaint of Pain	\$90,900	1

*The fatal and severe injury (KSI) collision cost is an average of the location type costs (signalized intersections, non-signalized intersections, roadway).

**Rounded to nearest whole number.

Safety Corridors Development Methodology

Risk Factor Methodology

This methodology uses a systemic safety analysis methodology to build a network of Safety Corridors that incorporates a proactive approach, rather than relying only on collision history to identify priority locations. Known roadway and contextual risk factors were also scored for both segment and intersection locations, regardless of that location’s history of injury collisions. Risk factors are based on recommendations within one or more of the following resources:

- *Prioritization of Highway Safety Manual (HSM) Data Variables Using Random Forest Algorithm*, TRB, 2014
- *Systemic Pedestrian Safety Analysis*, NCHRP, 2018
- *Guide for Quantitative Approaches to Systemic Safety Analysis*, NCHRP, 2020
- *Recommendations for California Statewide Guidance: High Injury Networks*, California Strategic Highway Safety Plan Bicycle and Pedestrian Challenge Area, 2021

Location factors were applied to the segment or intersection, rather than the collision. Under this option, the cumulative score for a single collision can range from 1 to 11.1. The cumulative score for a single intersection or segment, independent of collisions, can range from 0 to 18. Cumulative scores for collisions and locations were summed when collisions are aggregated to segments and intersections (see following section for more detail). A segment with all location-based risk factors and no injury collision history would score a total of 15. **Table 2** presents the variables and their associated scores.

Associating Collisions to Corridors

The following section outlines the major steps of the methodology for associating collisions with roadway segments and intersections.

- 1) **Associating Collisions to Roadway Segments:** Collisions were associated to roadway segments using a 45-foot roadway segment buffer. Collisions within 45’ of multiple roadway segments (e.g. at an intersection) were assigned to each segment and were double counted.
- 2) **Calculate Safety Corridor Index:** A score for each roadway and/or intersection (known as the Safety Corridor Index) was calculated by aggregating the weighted collision and risk factor sums, which was joined to the network in the previous step.
- 3) **Corridor Building:** The top 90th percentile scoring segments were identified and connected to form the network of Safety Corridors. Quarter-mile segments are dissolved together based on proximity. If the distance between 95th percentile scoring segments is a half mile or less and segments have the same roadway name, they were connected. Additionally, if the distance between a 90th percentile scoring segment and the end of the roadway is a half mile or less, the segment was be extended to the end of the roadway. Safety corridors were 0.5 miles and longer as a result of this process.
- 4) **Corridor Check and Refinement:** Verify that the Safety Corridor accurately incorporates the 95th percentile scoring segment gap threshold into the final Safety Corridors.

Table 2: Safety Corridors Scoring

Variable	Value	Score
<i>Collision Factors</i>		
<i>Collision Severity (factors are mutually exclusive)* – applied to collision</i>		
Fatal and Severe Injury (KSI)	0 or 1	5.1
Evident Injury – Other Visible	0 or 1	1.4
Possible Injury – Complaint of Pain	0 or 1	1
<i>Additional Factors (factors not mutually exclusive) – applied to collision</i>		
Mode: involves bicyclist or pedestrian	0 or 1	3
Vulnerable population: Injury and fatality victims age 65+ or 17 and under	0 or 1	3
<i>Contextual Factors</i>		
<i>Location Factors (factors not mutually exclusive) – applied to segment</i>		
USDOT Equitable Transportation Community (ETC) Disadvantaged Communities Index Percentile Rank	0 th to 65 th	0
	65 th to 80 th	1
	>80 th percentile	2
Within 1,000’ of a school (public or private)	0 or 1	2
Presence of transit stop (within 500’)	0 or 1	2
<i>Roadway Risk Factors (factors not mutually exclusive) – applied to segment</i>		
High ADT (segments with 30,000+ ADT)**	0 – 9,000	0
	9,001 – 14,999	1
	15,000 – 29,999	2
	+30,000	3
Observed Speeds***	0 – 20 MPH	0
	20 – 30 MPH	1
	30 – 40 MPH	2
	>40 MPH	3
<i>Roadway Classification Multiplier for Roadway Risk Factors****</i>		
Roadway Classification Multiplier	Local	2
	Collector	1.5
	Arterial	1
	Expressway	1

*Scores based on square root of ratios of crash cost.
 ** Data source: SACSIM Model Volumes
 ***Data source: 2022 Wejo connected vehicle data
 ****Multiply the combined score of the volume and speed roadway risk factors by its roadway classification. This is used to identify discrepancies or differences between roadway classifications/design and the actual volume or speed of the facility.
 *****All roadways with no ADT were assigned ADT based on local expertise and roadway engineering judgment.



Appendix D Safety Countermeasure Toolbox



This appendix presents a toolbox of safety countermeasures that can be deployed to address crash trends and the systemic factors behind them. Systemic improvements, both engineering and programmatic/non-engineering related, were identified for implementation.

What Are Engineering Countermeasures?

Engineering countermeasures are physical, infrastructure-based improvements that can be made to roadways to reduce likelihood of crashes.

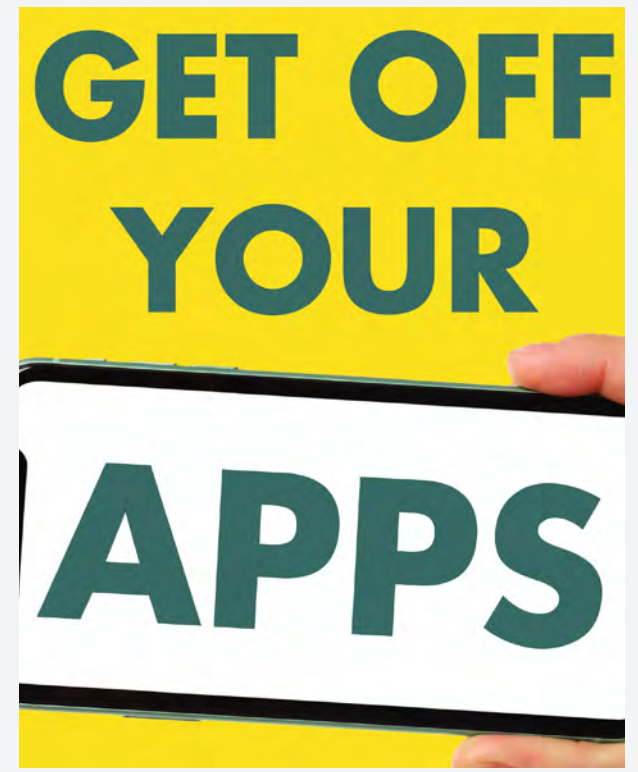
Example: Rectangular Rapid Flashing Beacon



What Are Programmatic/Non-engineering Countermeasures?

Programmatic/Non-engineering countermeasures introduce education, enforcement, and other policy instruments as means of encouraging safer roadways through user behavior, and they can be used to tackle traffic safety problems such as alcohol and drug impaired driving, distracted driving, speeding, and pedestrian and bicyclist safety.

Example: OTS Go Safely California campaign resources



Engineering Countermeasures

The purpose of this Engineering Countermeasure Toolbox is to establish a shared understanding of key strategies available to address roadway safety issues in the Yuba-Sutter Region that align with the Safe System Approach. The Toolbox describes a variety of countermeasures and how they can be applied to improve safety. It also includes general information about each tool's application, typical placement contexts, estimated costs, and tiers within the FHWA Safety System Hierarchy.

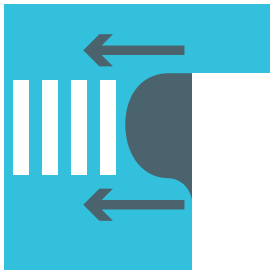
The countermeasure toolbox includes:

Countermeasure description
Countermeasure type

Countermeasure title

Curb Extensions

PEDESTRIAN FACILITIES

Countermeasure icon


Description

Curb extensions are sidewalk widenings at corners or crosswalks that make it safer and easier for people to cross the street. They shorten the distance pedestrians have to walk and improve visibility between drivers and people crossing—especially when parked cars might block the view. Paint and plastic curb extensions are a quick and low-cost way to try out this safety feature before making it permanent.

Federal Highway Administration (FHWA) proven countermeasure

FHWA PROVEN COUNTERMEASURE

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context to implement countermeasure

Context **Urban**

Local Roadway Safety Manual ID

LRSM ID **NS21PB**

Cost to implement countermeasure

Cost **\$\$**

Low-Cost / Quick-Build Alternative Available

FHWA Safe System Roadway Design Hierarchy that that helps identify and prioritize strategies to reduce traffic-related injuries and fatalities



Appendix D: Countermeasure Toolbox

Engineering Countermeasure Toolbox List

A. Bikeways

- Bicycle Crossing (Solid Green Paint)
- Bicycle Ramp
- Bicycle Signal/Exclusive Bike Phase
- Bicycles May Use Full Lane Sign
- Bike Box
- Bike Detection
- Bike Lane
- Bike-Friendly Grate
- Buffered Bike Lane
- Door Zone Markings
- Extend Green Time For Bikes
- Floating Transit Island or Bus Boarding Island
- Green Conflict Striping
- Mixing Zone
- Separated Bikeway
- Shared-Use Path
- Through Bike Lane at Intersection
- Two-Stage Turn Queue Bike Box

B. Pedestrian Facilities

- Add Sidewalk
- Audible Push Button Upgrade
- Co-Locate Bus Stops and Pedestrian Crossings
- Curb Extensions
- Extend Time Push Button
- High-Visibility Crosswalk
- Install/Upgrade Pedestrian Crossing at Uncontrolled Locations (Signs and Markings Only)
- Landscape Buffer
- Leading Pedestrian Interval and Pedestrian Recall
- Pedestrian Countdown Timer
- Pedestrian Detection
- Pedestrian Hybrid Beacon
- Rectangular Rapid Flashing Beacon
- Remove Crossing Prohibition
- Restripe Crosswalk
- Upgrade Curb Ramp
- Widen Sidewalk

C. Intersections & Roadways

- All-Way Stop Control
- Centerline Hardening
- Close Slip Lane
- Directional Median Openings to Restrict Left Turns
- Guardrail
- Improved Pavement Friction
- Intersection Lighting
- Intersection Reconstruction and Tightening
- Lane Narrowing
- Median Barrier
- Median Guardrail
- Neighborhood Traffic Circle
- Partial Closure/Diverter
- Protected Intersection
- Raised Crosswalk
- Raised Intersection
- Raised Median
- Reduced Left-Turn Conflict Intersection
- Refuge Island
- Road Diet
- Roundabout
- Rumble Strips
- Safety Edge
- Slow Turn Wedge
- Speed Hump or Speed Table
- Splitter Island
- Straighten Crosswalk
- Superelevation at Horizontal Curve Locations
- Traffic Signal
- Widen/Pave Shoulder

D. Signals

- Advanced Dilemma Zone Detection
- All-Red Signal Time
- Extend Pedestrian Crossing Time
- Flashing Yellow Turn Phase
- Pedestrian Scramble
- Prohibit Left Turn
- Prohibit Right-Turn-on-Red
- Prohibit Turns During Pedestrian Phase (Blank-out Signs)
- Protected Left Turns
- Retroreflective Tape on Signals
- Separate Right-Turn Phasing
- Shorten Cycle Length
- Signal Interconnectivity and Coordination / Green Wave
- Speed Sensitive Rest in Red Signal
- Supplemental Signal Heads
- Upgrade Signal Head

E. Signing & Striping

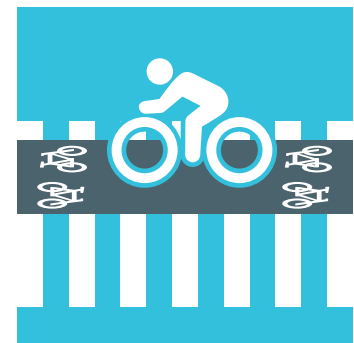
- Advance Stop Bar
- Chevron Signs on Horizontal Curves
- Curve Advance Warning Sign
- Flashing Beacon as Advance Warning
- LED-Enhanced Sign
- Painted Centerline and Raised Pavement Markers at Curves on Residential Streets
- Speed Feedback Sign
- Speed Legends on Pavement at Neighborhood Entries
- Striping Through Intersection
- Time-Based Turn Restriction
- Upgrade Intersection Pavement Markings
- Upgrade Signs with Fluorescent Sheeting
- Upgrade Striping
- Upgrade to Larger Warning Signs
- Wayfinding
- Yield Markings
- Yield To Pedestrians Sign

F. Others

- Back-In Angled Parking
- Driveway Consolidation
- Street Lighting
- Clear Zone
- Curbside Management
- Far-Side Bus Stop
- Delineators, Reflectors, and/or Object Markers
- Impact Attenuators
- Speed Limit Reduction
- Relocate Hazardous Utility Poles
- Remove Obstructions For Sightlines
- Upgrade Lighting to LED
- Red Light Camera
- Traffic Camera/Closed Circuit TV Camera



Bicycle Crossing (Dashed Green Paint) BIKEWAYS



Description
Dashed green paint across an intersection that signifies the bicycle crossing. Increases the visibility of bicyclists' anticipated path of travel.

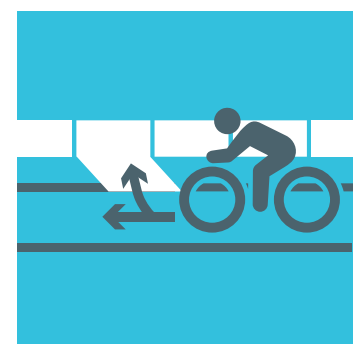
FHWA PROVEN COUNTERMEASURE

Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bicycle Ramp BIKEWAYS

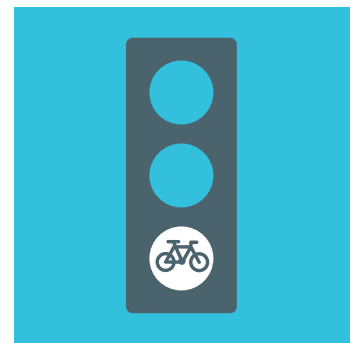


Description
A ramp, typically at intersections, that connects on-street bike lanes to a shared-use path or sidewalk-level separated bikeway.

Context Urban/Rural
LRSM ID N/A
Cost \$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bicycle Signal/Exclusive Bike Phase BIKEWAYS



Description
A traffic signal that directs bicycle traffic across an intersection. Separates bicycle movements in time from conflicting motor vehicle, transit, or pedestrian movements. Most applicable for separated bikeway facilities or shared-use paths.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bicycles May Use Full Lane Sign BIKEWAYS



Description
A sign placed on roadways categorized as bike routes to indicate that bicyclists may occupy the full travel lane. Intended to encourage motorists to slow and yield to bicyclists until it is safe to pass. Also encourages bicyclists not to ride within the door zone if on-street parking is present.

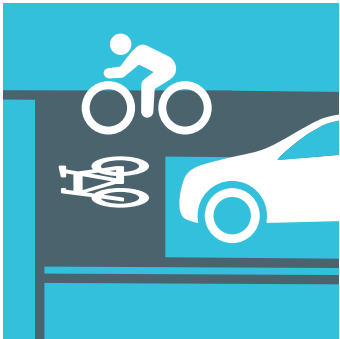
FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bike Box **BIKEWAYS**



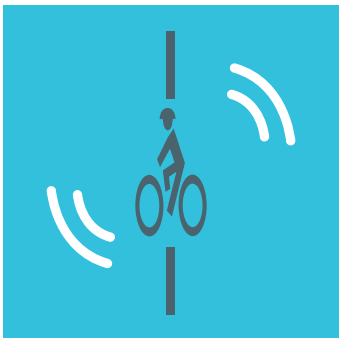
Description
 A bike box is a designated area (often painted green) between the crosswalk and vehicle stop bar at a signalized intersection where bicyclists can wait during a red signal phase. The bike box places bicyclists in a location where they are more visible to motorists and is typically used to facilitate left turn movements.

FHWA PROVEN COUNTERMEASURE

Context Urban
LRSM ID S20PB
Cost \$
Low-Cost / Quick-Build Alternative Available

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bike Detection **BIKEWAYS**



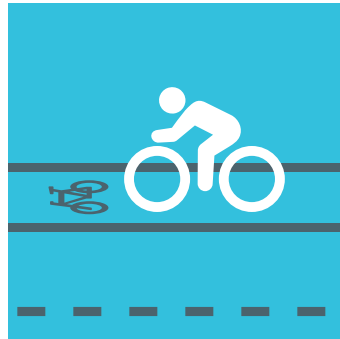
Description
 Bike detection is technology used at signalized intersections—in the form of push buttons, in-pavement loops, or video/infrared cameras—to initiate a green light for bicyclists and reduce delay for bicycle travel. Discourages bicyclists from running red lights and increases the convenience of bicycling.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$\$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bike Lane **BIKEWAYS**



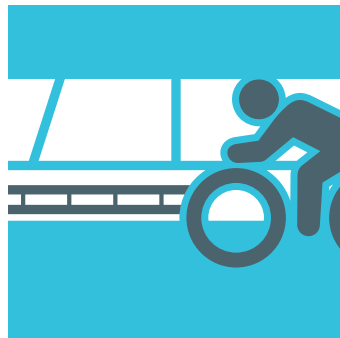
Description
 Bike lanes designate an exclusive space for bicyclists using pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID R32PB
Cost \$\$
Low-Cost / Quick-Build Alternative Available

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Bike-Friendly Grate **BIKEWAYS**



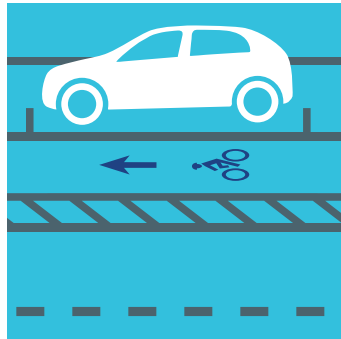
Description
 Bike-friendly grates are drainage inlets that have transverse or gridded grates to prevent bike tires from falling through the grate and causing a crash.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$\$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Buffered Bike Lane BIKEWAYS



Description

Buffered bike lanes have a designated painted buffer space, creating additional horizontal distance from the adjacent motor vehicle travel lane and/or parking lane. Buffers provide greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane.



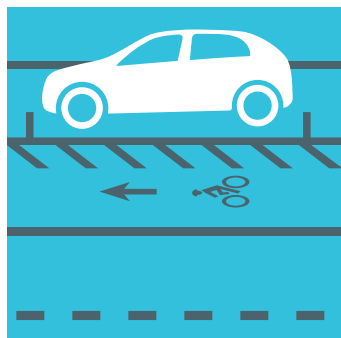
Safe System Hierarchy

Context Urban/Rural
LRSM ID R32PB
Cost \$\$

*Low-Cost / Quick-Build
 Alternative Available*

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Door Zone Markings BIKEWAYS



Description

These pavement markings denote the door zone of parked vehicles, to raise awareness for both bicyclists and motorists of the conflict area—in which an open car door could obstruct the path of a passing bicyclist.

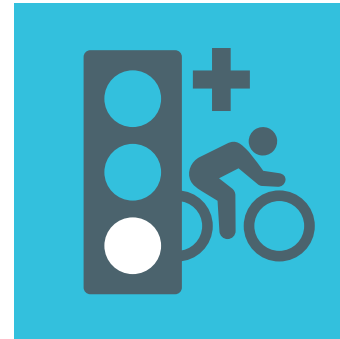
Safe System Hierarchy

Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Extend Green Time For Bikes BIKEWAYS



Description

A longer green phase when bicyclists are present provides additional time for bicyclists to clear the intersection. It can occur automatically in the signal phasing, or be prompted with bicycle detection. Topography should be considered in clearance time.

Safe System Hierarchy

Context Urban/Rural
LRSM ID S03
Cost \$

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Floating Transit Island or Bus Boarding Island BIKEWAYS



Description

Transit/boarding islands allow bicycles to pass between the sidewalk and transit boarding area, thereby avoiding bus-bike conflicts at the transit stop. Can be used in combination with a bike lane, buffered bike lane, or separated bikeway. The treatment can also reduce vehicle speeds, as the island itself visually narrows the roadway and can have a traffic calming effect with in-lane bus stops.

Safe System Hierarchy

Context Urban
LRSM ID N/A
Cost \$\$

*Low-Cost / Quick-Build
 Alternative Available*

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Green Conflict Striping BIKEWAYS



Description
 Conflict striping is green pavement markings in a dashed pattern that extend across bike lanes, specifically when approaching an intersection and/or going through an intersection or major driveway. Improves awareness bicycle-car conflict points.

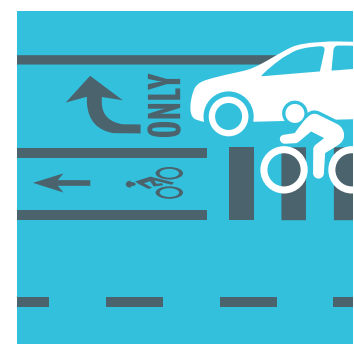


Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Mixing Zone BIKEWAYS



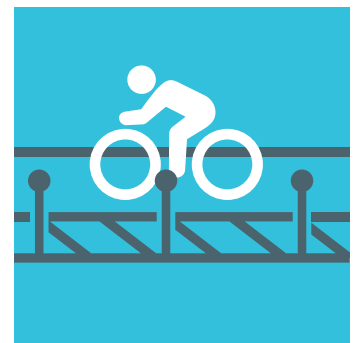
Description
 A mixing zone is a designated area in an intersection where bicyclists and motorists share the same space, often due to a bike lane transitioning into a shared lane. Lane markings increase awareness for bicyclists and motorists, indicating the intended shared lane.

Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Separated Bikeway BIKEWAYS



Description
 A separated bikeway, also called protected bike lanes or cycletrack, provides dedicated street space for bicyclists, typically adjacent to outer vehicle travel lanes, with physical separation from vehicle traffic, designated lane markings and signage. Physical separation may consist of plastic posts, parked vehicles, raised median, or a curb (if the separated bike lane is raised to sidewalk level). The separation reduces the risk of severe conflicts between bicycles and vehicles on the road, and also reduces conflicts between people biking and walking as compared to a shared-use path.



Context Urban/Rural
LRSM ID R33PB
Cost \$\$\$

*Low-Cost / Quick-Build
 Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Shared-Use Path BIKEWAYS



Description
 Shared-use paths or trails are off-street facilities that provide exclusive use for nonmotorized travel, including bicyclists and pedestrians. They can be located alongside a roadway (referred to as a Side Path), or exist in a separate right-of-way.

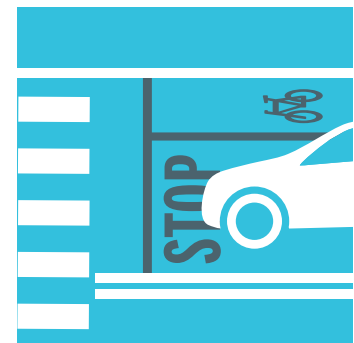


Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

*Low-Cost / Quick-Build
 Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Through Bike Lane at Intersection BIKEWAYS



Description
A through bike lane is a striping layout for intersections with a dedicated right-turn pocket, designed to allow for space for bicyclists to travel to the left side of right-turning vehicles.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Two-Stage Turn Queue Bike Box BIKEWAYS



Description
This type of bike box is a designated area painted on the ground on the far side of an intersection. It provides bicyclists with a way to make a left turn at a multi-lane signalized intersection from a bike lane or separated bikeway on the far right side of the roadway. In this way, bicyclists are given the option of not having to mix with left-turning vehicles.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Add Sidewalk PEDESTRIAN FACILITIES



Description
Sidewalks provide a separated facility for pedestrians, that follows along the roadway but is outside of the traveled way or shoulder.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID R34PB
Cost \$\$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Audible Push Button Upgrade PEDESTRIAN FACILITIES



Description
Pedestrian push buttons at crosswalks must follow accessibility standards set by the Americans with Disabilities Act (ADA) and the Public Rights of Way Accessibility Guidelines (PROWAG). These buttons should be easy to both see and reach for all pedestrians, including those using wheelchairs or with limited mobility. To support people who are blind or have low vision, accessible pedestrian signals (APS) include features like audible tones, speech messages, and vibrating arrows that indicate when it's safe to cross. These features help make crossing streets safer and more inclusive for everyone

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Co-Locate Bus Stops and Pedestrian Crossings PEDESTRIAN FACILITIES



Description

Bus stops should be placed near safe pedestrian crossings so that people using transit can easily and safely cross the street. When crossings are well-designed and close to bus stops, it makes travel more convenient and reduces the risk of crashes involving pedestrians.

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Curb Extensions PEDESTRIAN FACILITIES



Description

Curb extensions are sidewalk widenings at corners or crosswalks that make it safer and easier for people to cross the street. They shorten the distance pedestrians have to walk and improve visibility between drivers and people crossing—especially when parked cars might block the view. Paint and plastic curb extensions are a quick and low-cost way to try out this safety feature before making it permanent.



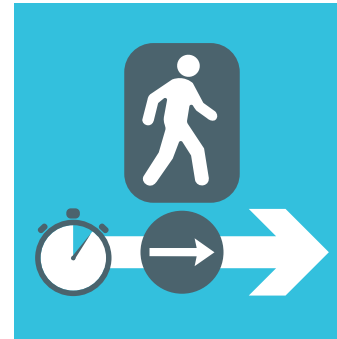
Context Urban
LRSM ID NS21PB
Cost \$\$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Extend Time Push Button PEDESTRIAN FACILITIES



Description

Some crosswalks have a special push button that lets people request extra time to cross the street. This is especially helpful for older adults or anyone who may need a bit more time. These buttons are often placed near places like senior centers, medical offices, or assisted living communities.

Context Urban
LRSM ID N/A
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

High-Visibility Crosswalk PEDESTRIAN FACILITIES



Description

High-visibility crosswalks use bold, striped patterns—often called “ladder markings”—made from durable, reflective materials like thermoplastic instead of traffic paint. These markings make crosswalks easier for drivers to see, especially at night or in bad weather, and serve as a clear signal that pedestrians may be present crossing the street.



Context Urban/Rural
LRSM ID S18/NS20
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Appendix D: Countermeasure Toolbox

Install/Upgrade Pedestrian Crossing at Uncontrolled Locations (Signs and Markings Only)

PEDESTRIAN FACILITIES



Description

Marked pedestrian crossings at intersections or along streets give people a clear, designated place to cross. This helps reduce the risk of crashes by making it more likely that drivers will expect and see pedestrians. Features like crosswalk striping and signs alert drivers to slow down and watch for people crossing.



Context Urban/Rural
LRSM ID R35PB
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Landscape Buffer

PEDESTRIAN FACILITIES



Description

Adding a landscaped buffer between the road, sidewalks, and/or bikeways creates more space between drivers and people walking or biking. This separation not only makes everyone feel safer, but it also encourages drivers to slow down, which helps reduce the severity of crashes.

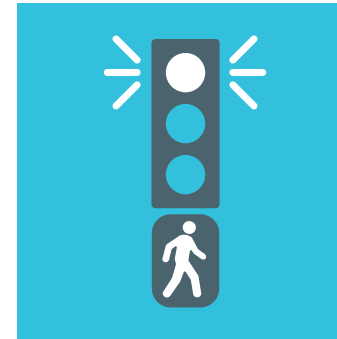
Context Urban/Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Leading Pedestrian Interval and Pedestrian Recall

PEDESTRIAN FACILITIES



Description

At busy intersections with lots of turning vehicles and pedestrian activity, a leading pedestrian interval (LPI) gives people walking a 3–7 second head start to begin crossing before cars get a green light. This helps pedestrians become more visible in the crosswalk. Pedestrian recall automatically activates the walk signal during every light cycle so pedestrians don't have to press a button to get a walk signal.



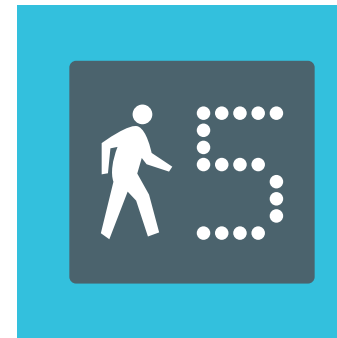
Context Urban
LRSM ID S21PB
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Pedestrian Countdown Timer

PEDESTRIAN FACILITIES



Description

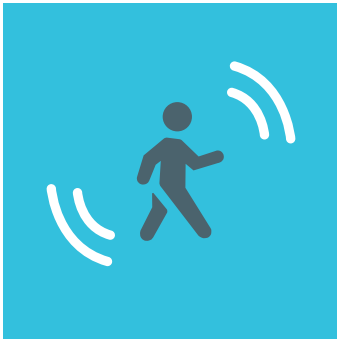
Countdown pedestrian signals show how many seconds are left to finish crossing the street. These timers help people walking make safer decisions about when to cross. These timers are now required on all new traffic signals that include signalized pedestrian crossings.

Context Urban
LRSM ID S17PB
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Pedestrian Detection PEDESTRIAN FACILITIES



Description
 These sensors can detect when a person is at an intersection waiting to cross, then automatically trigger the “WALK” signal without the person needing to press a button. This helps reduce unsafe crossings and ensures that pedestrians get enough time to cross the street safely.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$\$

Pedestrian Hybrid Beacon PEDESTRIAN FACILITIES



Description
 A Pedestrian Hybrid Beacon (PHB) is a special type of crossing signal used on roadways with higher volumes and speeds at mid-block crosswalks or unsignalized intersections. It stays off (dark) until a person presses a button or is detected waiting to cross. Then, it lights up with a sequence of yellow and red lights to alert drivers to stop and let the pedestrian cross safely.

FHWA PROVEN COUNTERMEASURE

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID NS23PB
Cost \$\$\$

Rectangular Rapid Flashing Beacon PEDESTRIAN FACILITIES



Description
 A Rectangular Rapid Flashing Beacon (RRFB) is a special flashing light that pedestrians can activate when they want to cross the street. It’s paired with signs to alert drivers that someone is crossing. The bright, flashing lights make the crosswalk more visible and remind drivers to yield to people walking.

FHWA PROVEN COUNTERMEASURE

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID NS22PB
Cost \$\$

Remove Crossing Prohibition PEDESTRIAN FACILITIES



Description
 Removing crossing restrictions and adding marked crosswalks makes it easier and safer for people to cross the street. Instead of forcing pedestrians to take longer, less direct routes—or cross during unsafe traffic movements—this approach provides clear, designated places to cross.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Restripe Crosswalk PEDESTRIAN FACILITIES



Description

Crosswalks need to be repainted regularly to stay visible to drivers and pedestrians. Over time, markings can fade due to weather and traffic. When repainting, using high-visibility designs—like ladder markings—can make crosswalks easier to see and help improve safety for everyone.



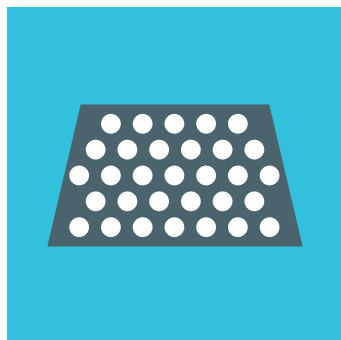
Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Upgrade Curb Ramp PEDESTRIAN FACILITIES



Description

Tactile warning surfaces and properly designed curb ramps are essential for helping people who are blind, have low vision, or are using a mobility device safely navigate street crossings. Curb ramps must meet national standards like the Public Rights-of-Way Accessibility Guidelines (PROWAG) and follow local design rules to ensure they are safe and accessible for everyone.

Context Urban/Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Widen Sidewalk PEDESTRIAN FACILITIES



Description

Widening sidewalks creates more comfortable and safer spaces for people walking, especially in busy areas. It also provides enough room for people using wheelchairs or other mobility devices. By giving pedestrians more space, it reduces the chance that they'll need to walk in the street, which helps prevent crashes with vehicles.



Context Urban/Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

All-Way Stop Control INTERSECTIONS & ROADWAYS



Description

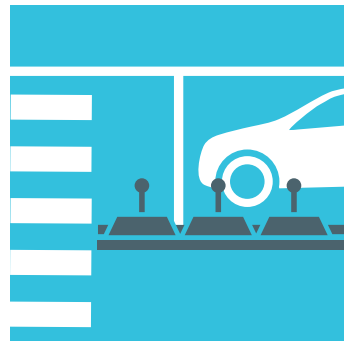
An all-way stop-controlled intersection requires all vehicles to stop before crossing an intersection. This reduces the risk of severe conflicts by eliminating high speed movements through an intersection. The MUTCD (Manual on Uniform Traffic Control Devices) includes information on when and how to implement "All-Way" Or "Multi-Way" stop control intersections.

Context Urban/Rural
LRSM ID N/A
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Centerline Hardening INTERSECTIONS & ROADWAYS



Description

Centerline hardening involves placing plastic bollards and/or rubber curbs along a roadway's centerline. When used at intersections, they can be effective at requiring motorists to make left-turn movements at angles closer to 90-degrees, thereby slowing vehicle turning speeds and improving motorists' visibility of the crosswalks. When used along a roadway segment, they can be effective access control preventing undesirable left-turns and/or U-turns between intersections.

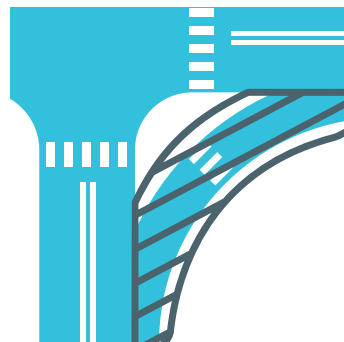
Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Close Slip Lane INTERSECTIONS & ROADWAYS



Description

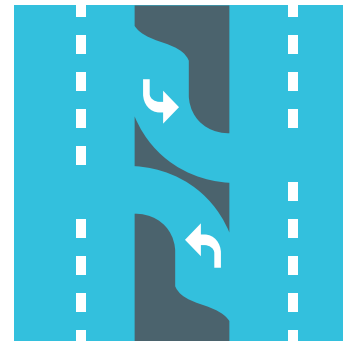
A close slip lane modifies the corner of an intersection to remove the sweeping right turn lane for vehicles. This results in shorter crossings for pedestrians, reduced speed for turning vehicles, and better sight lines.

Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Directional Median Openings to Restrict Left Turns INTERSECTIONS & ROADWAYS



Description

A directional median opening restricts specific turning movements, such as allowing a left-turn from a major street but not from a minor street. This improves safety by reducing the number of conflict points.

Context Urban/Rural
LRSM ID N/A
Cost \$\$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Guardrail INTERSECTIONS & ROADWAYS



Description

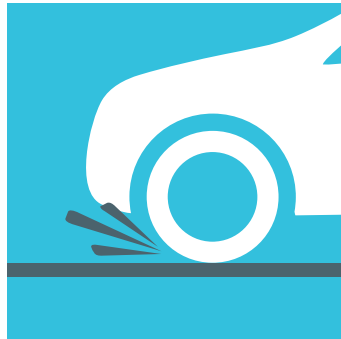
A guardrail redirects a vehicle away from embankment slopes or fixed objects and dissipates the energy of an errant vehicle. Guardrails are installed to reduce the severity of lane departure crashes when the crash severity of striking the guardrail is less severe than going down an embankment.

Context Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Improved Pavement Friction INTERSECTIONS & ROADWAYS



Description

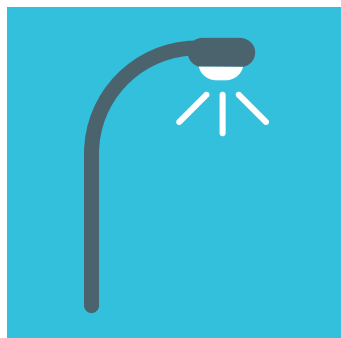
High-friction surface treatments improve a vehicle's ability to stay on the roadway, as well as to stop over a shorter distance. These treatments can be used to help address roadway departure crashes and/or crashes on approaches to unsignalized intersections.

Context Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Intersection Lighting INTERSECTIONS & ROADWAYS



Description

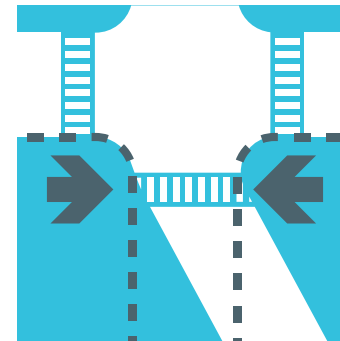
Extra lighting at intersections and crosswalks makes it easier for drivers to see people walking, biking, or driving—especially at night or in dim conditions. However, it's important to design the lighting carefully. If it creates glare or lights up pedestrians from behind, it can actually make them harder for drivers to see.

Context Urban/Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Intersection Reconstruction and Tightening INTERSECTIONS & ROADWAYS



Description

Skewed intersections have a greater likelihood of collisions due to restricted sight lines and high speed turn movements. "Squaring up" the intersection as close to 90 degrees as possible helps reduce the likelihood of collisions. The process requires intersection reconstruction and approach realignment to provide better visibility for all road users. It also reduces high speed turns, reduces length exposure for vehicles and/or bikes passing through the intersection, and reduces pedestrian crossing length.

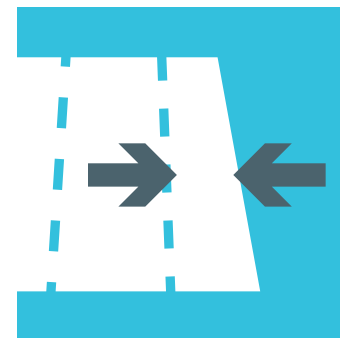
Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

Low-Cost / Quick-Build Alternative Available

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Lane Narrowing INTERSECTIONS & ROADWAYS



Description

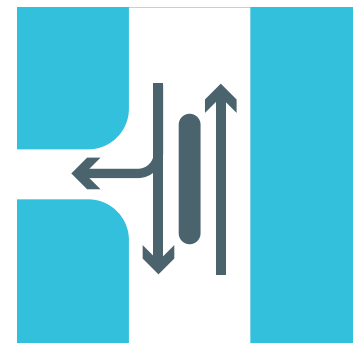
Lane narrowing reduces the width of the marked vehicle lanes to encourage motorists to travel at slower speeds. Lane narrowing can also help reallocate existing roadway space to other road users.

Context Urban
LRSM ID N/A
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Median Barrier **INTERSECTIONS & ROADWAYS**



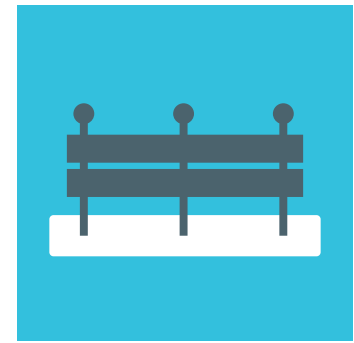
Description
 A median barrier in the center of the roadway physically separates opposing vehicular traffic. Median barriers can also help control access to and from side streets and driveways, reducing the number of conflict points.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Rural
LRSM ID N/A
Cost \$\$\$
Low-Cost / Quick-Build Alternative Available

Median Guardrail **INTERSECTIONS & ROADWAYS**



Description
 Median guardrails are safety concrete barriers placed in the middle of roadways. While they might not stop all crashes caused by vehicles leaving the roadway, they can help prevent those crashes from turning into dangerous head-on collisions by keeping vehicles from crossing into oncoming traffic.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Rural
LRSM ID N/A
Cost \$\$

Neighborhood Traffic Circle **INTERSECTIONS & ROADWAYS**



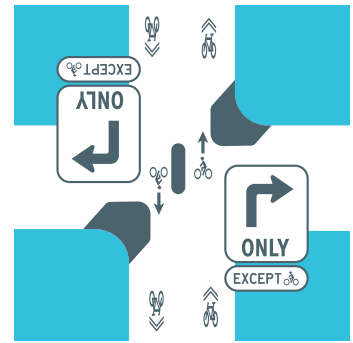
Description
 Neighborhood traffic circles are similar to roundabouts, but are stop-controlled on some or all approaches. Typically, they supplement existing stop-controlled intersections with a circular island in the center that is designed to slow traffic and reduce conflict points (such as conflicting left-turn movements).

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Partial Closure/Diverter **INTERSECTIONS & ROADWAYS**



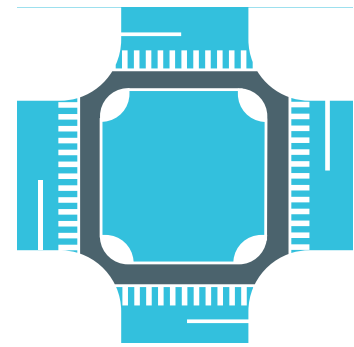
Description
 A partial closure or diverter restricts vehicle through movements, while still allowing bicyclists and pedestrians to proceed through an intersection in all directions.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Protected Intersection **INTERSECTIONS & ROADWAYS**



Description
Protected intersections use corner islands, curb extensions, and colored paint to delineate bicycle and pedestrian movements, and physically separate bicycles from pedestrians and moving vehicles. The delineations/separations reduce the likelihood of conflicts, reduce driving speeds and shorten crossing distances for pedestrians.

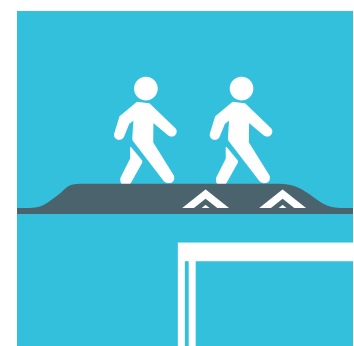


Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

*Low-Cost / Quick-Build
Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Raised Crosswalk **INTERSECTIONS & ROADWAYS**



Description
A raised pedestrian crosswalk is elevated above the road, either by a few inches, or at sidewalk level. This type of crosswalk increases pedestrian visibility and slows motorists.

Context Urban/Rural
LRSM ID N/A
Cost \$\$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Raised Intersection **INTERSECTIONS & ROADWAYS**



Description
A raised intersection brings vehicles up to the sidewalk level. This serves as a traffic calming measure by slowing drivers and increasing awareness of the pedestrian activity.

Context Urban
LRSM ID N/A
Cost \$\$\$

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Raised Median **INTERSECTIONS & ROADWAYS**



Description
Raised medians are curbed sections in the center of the roadway that create physical separation between opposing vehicular traffic. They can also help control access to and from side streets and driveways, reducing conflict points.

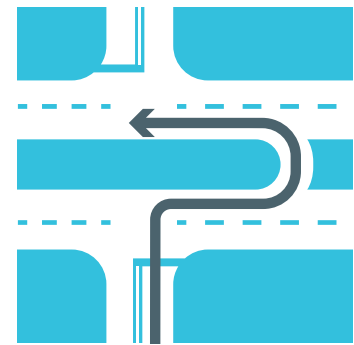


Context Urban/Rural
LRSM ID N/A
Cost \$\$

*Low-Cost / Quick-Build
Alternative Available*

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Reduced Left-Turn Conflict Intersection INTERSECTIONS & ROADWAYS



Description
 These are geometric designs that alter how left-turn movements occur. They can simplify decisions and minimize the potential for left-turn related crashes. Two designs that rely on U-turns to complete certain left-turn movements are known as the restricted crossing U-turn (RCUT) and the median U-turn (MUT) intersections. Both designs require some out-of-direction travel for vehicles.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

Refuge Island INTERSECTIONS & ROADWAYS



Description
 A refuge island is a raised, curbed median in the center of the roadway that provides a place for pedestrians to wait until there is a gap in traffic to finish crossing the intersection. This reduces pedestrians' exposure to traffic by allowing them to cross the intersection in multiple stages. Pedestrian refuge areas constructed from paint and plastic may be implemented as part of a low-cost/quick build project.

FHWA PROVEN COUNTERMEASURE

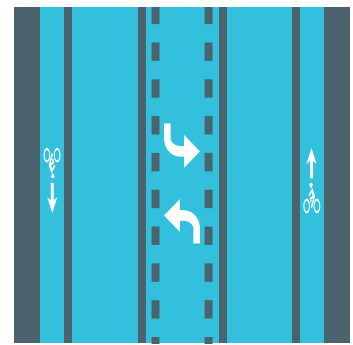
Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID NS19PB
Cost \$\$

Low-Cost / Quick-Build Alternative Available

Road Diet INTERSECTIONS & ROADWAYS



Description
 A road diet reconfigures roadway space originally dedicated to vehicle travel lanes and creates room for bicycle facilities, wider sidewalks, and/or center turn lanes. This reduces vehicle speeds and creates designated space for all road users.

FHWA PROVEN COUNTERMEASURE

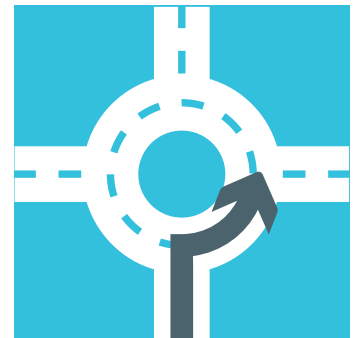
Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID R14
Cost \$\$

Low-Cost / Quick-Build Alternative Available

Roundabout INTERSECTIONS & ROADWAYS



Description
 A roundabout is a circular intersection where traffic flows in one direction around a central island, and vehicles must yield at entrance lanes. Unlike conventional intersections, roundabouts eliminate severe conflicts from crossing and left-turn movements. The design of a roundabout forces drivers to slow down, which narrows the range of vehicle speeds and reduces the severity of crashes. Additionally, pedestrians only need to cross one direction of traffic at a time, minimizing their exposure to vehicles.

FHWA PROVEN COUNTERMEASURE

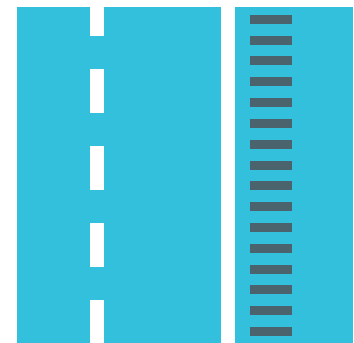
Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID S16/NS04
Cost \$\$\$

Low-Cost / Quick-Build Alternative Available

Rumble Strips **INTERSECTIONS & ROADWAYS**



Description
 Rumble strips are grooves added to the roadway surface that produce noise and vibrations inside a vehicle, alerting drivers when they cross the centerline or edge line. Helps drivers stay in their lane, especially if they are distracted or drowsy. Also warns drivers of lane boundaries in poor visibility conditions like rain, fog, snow, or dust.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Rural
LRSID R30/R31
Cost \$

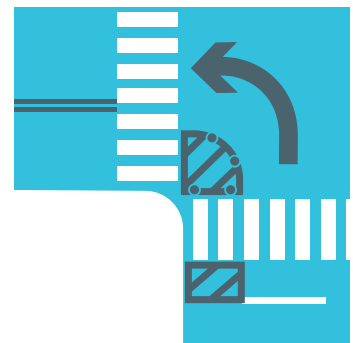
Safety Edge **INTERSECTIONS & ROADWAYS**



Description
 A safety edge slopes the shoulder pavement edge at a 30-35 degree angle, making it easier for drivers to reenter the roadway after leaving the paved roadway. It's designed to reduce the severity of crashes when a vehicle veers off the road and encounters a pavement-shoulder drop-off. This treatment can be incorporated as a standard practice in overlay or resurfacing projects.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Rural
LRSID N/A
Cost \$

Slow Turn Wedge **INTERSECTIONS & ROADWAYS**



Description
 A slow turn wedge uses paint and delineators to extend the curb at intersections. This helps slow turns by restricting the turning radii of turning vehicles, expanding the field of vision for drivers, and increasing the visibility of pedestrians.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban
LRSID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

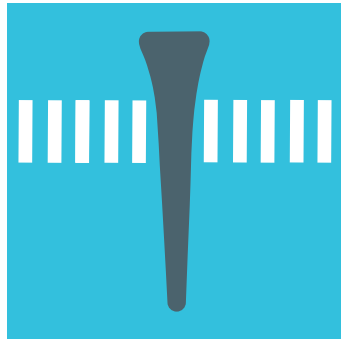
Speed Hump or Speed Table **INTERSECTIONS & ROADWAYS**



Description
 A speed hump or speed table is a raised area of pavement designed to slow down vehicles. Typically, speed humps and speed tables are wider and less abrupt than speed bumps, providing a gentler way to reduce vehicle speeds in residential areas or near schools. They help improve safety by encouraging drivers to maintain lower speeds.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban
LRSID N/A
Cost \$

Splitter Island INTERSECTIONS & ROADWAYS



Description

A splitter island is a raised area that separates the two directions of travel on the minor street approach at an unsignalized intersection or roundabout. It helps channelize traffic in opposing directions and improves the visibility of the intersection for approaching drivers. Additionally, it provides a refuge for pedestrians crossing the street.

Context Urban/Rural
LRSM ID N/A
Cost \$\$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Straighten Crosswalk INTERSECTIONS & ROADWAYS



Description

Straightening crosswalks improves sight lines, making pedestrians more visible to oncoming drivers. It can also shorten the crossing distance, reducing the time pedestrians need to cross an intersection.

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Superelevation at Horizontal Curve Locations INTERSECTIONS & ROADWAYS



Description

Superelevation is the banking, or angling, of pavement on the approach to and through a horizontal curve, designed to help drivers negotiate the curve by counteracting lateral forces. However, this design can also inadvertently encourage higher speeds. When selecting appropriate superelevation, consider the target or desired speed for the roadway and relevant design guidance.

Context Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Traffic Signal INTERSECTIONS & ROADWAYS



Description

Traffic signals at intersections manage traffic flow by assigning right-of-way to different movements at specific times. For instance, protected left-turn signal phasing is more effective at preventing severe left-turn collisions compared to permitted left-turn signal phasing. Additionally, traffic signals significantly enhance safety for pedestrians crossing large intersections.

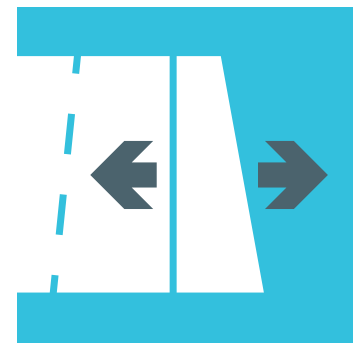


Context Urban/Rural
LRSM ID N/A
Cost \$\$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

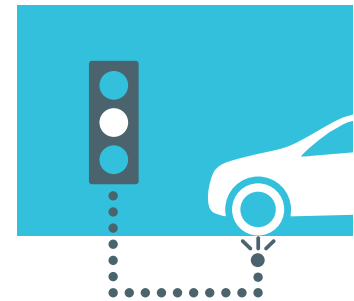
Widen/Pave Shoulder **INTERSECTIONS & ROADWAYS**



Description
 Widened and paved shoulders create space for pedestrians and bicyclists, allow drivers to safely recover from lane departures, and provide room for inoperable vehicles to pull out of the travel lane. Adding a paved shoulder to an existing road can help reduce run-off-road crashes. This improvement is beneficial for high-risk rural roads without paved shoulders.

Context	Rural	<input checked="" type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$\$	<input type="checkbox"/> Tier 3 Manage Conflicts in Time
		<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

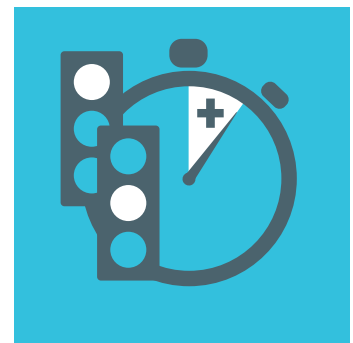
Advanced Dilemma Zone Detection **SIGNALS**



Description
 The Advanced Dilemma-Zone Detection system helps make intersections safer by adjusting when the yellow light turns on. It detects where cars are and how fast they're going. Then, the signal controller decides whether to activate or delay the yellow light. This helps drivers avoid the tricky situation where they're not sure if they should stop or keep going when the light changes. The goal is to reduce broadside collisions at signalized intersections.

Context	Urban/Rural	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
		<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

All-Red Signal Time **SIGNALS**



Description
 Including a phase of all-red signals gives drivers and bicyclists a few extra seconds to safely get through an intersection before other traffic is allowed to move. This added time at the end of a signal phase helps reduce the risk of collisions, especially for people who are already in the intersection when the light changes.

Context	Urban/Rural	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
	<i>Low-Cost / Quick-Build Alternative Available</i>	<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

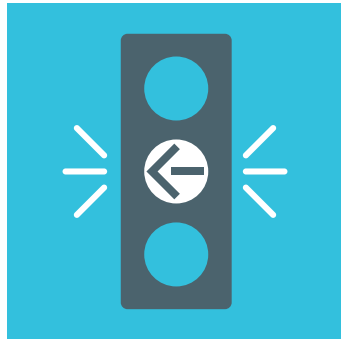
Extend Pedestrian Crossing Time **SIGNALS**



Description
 Extending the pedestrian walk signal time beyond the minimum required by national guidelines gives people more time to cross the street. This is especially helpful for vulnerable groups, like children, older adults, and people with disabilities, who may need extra time to cross safely.

Context	Urban	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
	<i>Low-Cost / Quick-Build Alternative Available</i>	<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

Flashing Yellow Turn Phase SIGNALS



Description

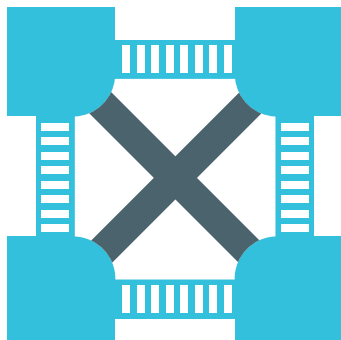
A flashing yellow turn arrow tells drivers they can make a permissive turn. They must wait for a clear gap in oncoming traffic before turning. This signal is used only when no pedestrians are crossing. When pedestrians are present, the signal should use a protected-only turn phase, where turning vehicles must wait for a green arrow to ensure pedestrian safety.

Context Urban
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Pedestrian Scramble SIGNALS



Description

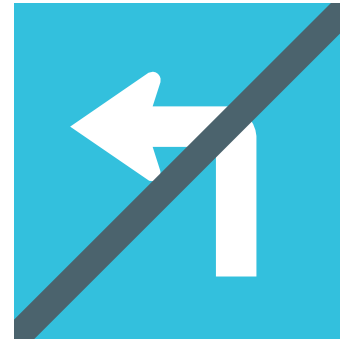
A pedestrian “WALK” phase, called a pedestrian scramble or all-way walk, stops all vehicle traffic at an intersection. This gives pedestrians the chance to cross in any direction, including diagonally, all at once. It removes conflicts by completely separating turning cars from crossing pedestrians in time. It can be especially effective in busy areas with lots of foot traffic.

Context Urban
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Prohibit Left Turn SIGNALS



Description

Left turns may be restricted at certain intersections to improve safety. This is especially important where turning vehicles might conflict with pedestrians in the crosswalk or where there's heavy oncoming traffic. These restrictions can be enforced using signs or raised center medians that physically prevent the turn.

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Prohibit Right-Turn-on-Red SIGNALS



Description

Prohibiting right turns on red should be considered at locations with unusual layouts, such as skewed intersections, or where there are pedestrian scrambles or leading pedestrian intervals (LPIs). Preventing right turns on red in these situations can reduce the risk of crashes between turning vehicles and pedestrians, as well as crashes with vehicles traveling through the intersection from the cross street.

Context Urban/Rural
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

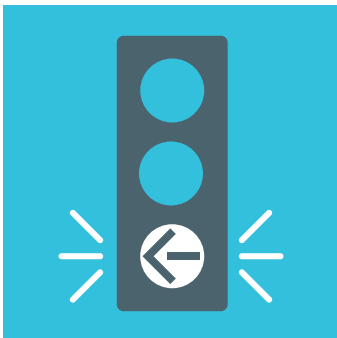
Prohibit Turns During Pedestrian Phase (Blank-out Signs) SIGNALS



Description
Prohibiting left and right turns while pedestrians are crossing helps prevent conflicts between turning vehicles and people in the crosswalk. These turn restrictions are often shown using special electronic signs, called blank-out signs, which light up only when the restriction is active.

Context	Urban	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
		<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

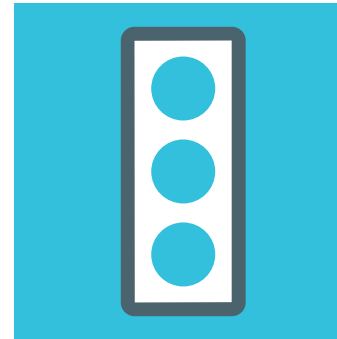
Protected Left Turns SIGNALS



Description
Adding protected left-turn phases at intersections reduces broadside crashes and pedestrian crashes. These signals give drivers a dedicated green arrow so they don't have to wait for a gap in oncoming traffic, or worry about people crossing the street at the same time.

Context	Urban/Rural	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
		<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

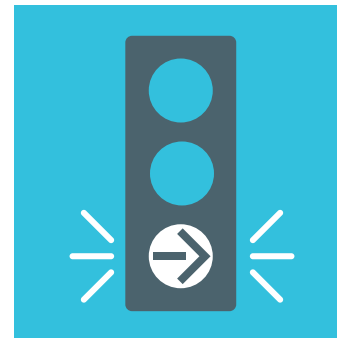
Retroreflective Tape on Signals SIGNALS



Description
Retroreflective borders are bright, reflective outlines added around traffic signals to make them easier to see—especially for older drivers or those with color vision difficulties. These borders help drivers quickly recognize which light is on. They're also useful during power outages, because they reflect headlights and make the signal visible even when it's not working.

Context	Urban/Rural	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$	<input type="checkbox"/> Tier 3 Manage Conflicts in Time
	<i>Low-Cost / Quick-Build Alternative Available</i>	<input checked="" type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

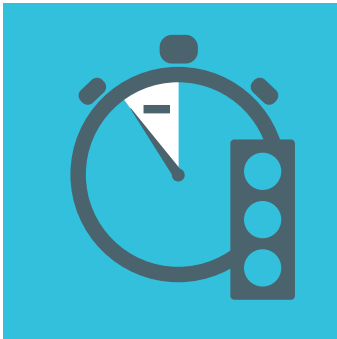
Separate Right-Turn Phasing SIGNALS



Description
A green arrow for right turns phase helps prevent conflicts with pedestrians and bicyclists who may be crossing the street on the right side of the intersection.

Context	Urban	<input type="checkbox"/> Tier 1 Remove Severe Conflicts
LRSM ID	N/A	<input type="checkbox"/> Tier 2 Reduce Vehicle Speeds
Cost	\$\$\$	<input checked="" type="checkbox"/> Tier 3 Manage Conflicts in Time
		<input type="checkbox"/> Tier 4 Increase Attentiveness and Awareness

Shorten Cycle Length SIGNALS



Description

The traffic signal cycle length—how long it takes to go through all the green, yellow, and red lights—can greatly affect how easy and pleasant it is to walk, bike, drive, or take transit. When signals stay red for too long, especially at several intersections in a row, it can make even short trips feel slow and frustrating. Shorter signal cycles, ideally between 60 and 90 seconds, are better for urban areas because they help keep people moving and make streets more welcoming for everyone.

Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Signal Interconnectivity and Coordination / Green Wave SIGNALS



Description

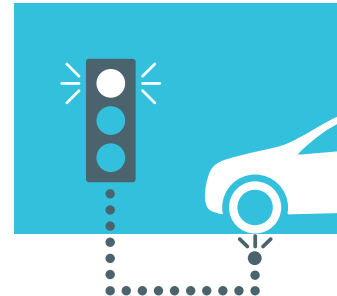
Improving how traffic signals are timed can make streets safer. One approach is called a “green wave,” where signals are coordinated to let people driving and people on bikes move smoothly through several intersections without stopping at a set desired speed, typically lower than the speed limit and in line with typical bicycle travel speeds. The slow green wave can be accompanied by signs that alert the drivers and help slow down cars, which can reduce the risk of severe collisions.

Context Urban
LRSM ID S03
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Speed Sensitive Rest in Red Signal SIGNALS



Description

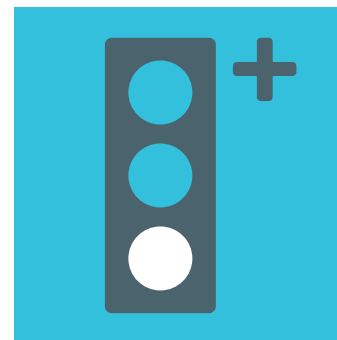
At certain times—like late at night—some traffic signals stay red until a vehicle approaches. These signals are designed to reward drivers who follow the speed limit. If a car is going too fast, the light stays red until the driver comes to a stop. But if the car is going at or below the speed limit, the light turns green before the car arrives, allowing it to pass through smoothly. This encourages safe driving and can be combined with electronic speed signs that warn drivers if they’re going too fast.

Context Urban/Rural
LRSM ID R26
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Supplemental Signal Heads SIGNALS



Description

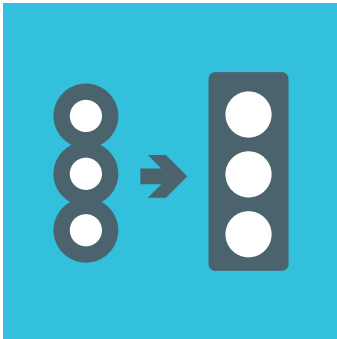
Supplemental signal heads are extra traffic lights placed in addition to the main signal. They help drivers see the signal more clearly, especially when the intersection is hard to see—like when it’s hidden behind vertical curve or around a horizontal curve.

Context Urban/Rural
LRSM ID S02
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

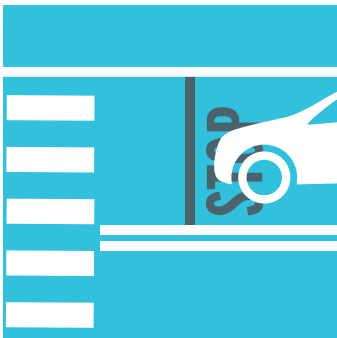
Upgrade Signal Head SIGNALS



Description
 Upgrading signal heads means replacing smaller 8-inch traffic lights with larger 12-inch ones, as recommended by California's MUTCD. The larger signal heads are easier for drivers to see, especially from a distance. This helps drivers notice intersections sooner and respond more safely to traffic signals.

- Context** Urban/Rural
- LRSM ID** S02
- Cost** \$
- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Advance Stop Bar SIGNING & STRIPING



Description
 An advanced stop bar is a transverse pavement marking placed upstream of a crosswalk to indicate the required vehicle stop location. It minimizes crosswalk encroachment and can be widened or set further back at locations with frequent violations.

- Context** Urban/Rural
- LRSM ID** S20PB
- Cost** \$
- Low-Cost / Quick-Build Alternative Available*
- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Chevron Signs on Horizontal Curves SIGNING & STRIPING



Description
 Post-mounted chevrons are traffic signs placed along curves to provide continuous visual guidance. They enhance curve visibility, alert drivers to the change in alignment, and help maintain proper lane tracking through the curve.

- Context** Rural
- LRSM ID** R23
- Cost** \$
- Low-Cost / Quick-Build Alternative Available*
- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

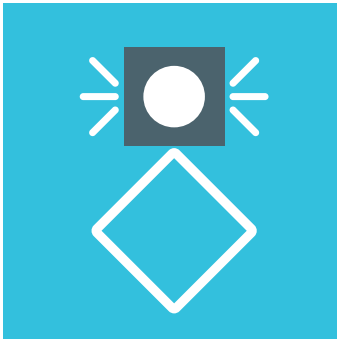
Curve Advance Warning Sign SIGNING & STRIPING



Description
 A curve advance warning sign alerts drivers to an upcoming horizontal curve and may include an advisory speed plaque. It provides advance notice to reduce speed and improve curve navigation. For enhanced effectiveness, it is often paired with chevrons, delineators, or flashing beacons to increase driver awareness and guidance through the curve.

- Context** Rural
- LRSM ID** R24
- Cost** \$
- Low-Cost / Quick-Build Alternative Available*
- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness

Flashing Beacon as Advance Warning SIGNING & STRIPING



Description

A flashing beacon is a blinking light paired with signage used as advanced warning to alert drivers to an upcoming intersection or crosswalk. This tool increases driver awareness and provides additional time to slow down or yield to pedestrians, enhancing safety at conflict points.

Context Rural
LRSM ID S10
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

LED-Enhanced Sign SIGNING & STRIPING



Description

An LED-enhanced sign integrates flashing or steady LED lights into the sign's border or message to improve visibility. These signs are especially effective at locations with limited sight distance or a history of driver non-compliance, such as at STOP signs. The enhanced visibility helps draw driver attention and improve compliance with traffic control devices.

Context Urban or Rural
LRSM ID NS08
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Painted Centerline and Raised Pavement Markers at Curves on Residential Streets SIGNING & STRIPING



Description

Installing a centerline with raised pavement markers on curves along residential streets enhances lane guidance and helps reduce the risk of head-on collisions. The tactile and visual feedback from the markers improves driver awareness, especially at night or in low-visibility conditions.

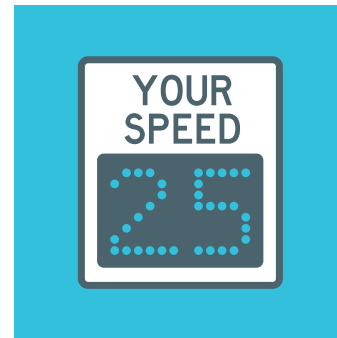
Context Urban
LRSM ID N/A
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Speed Feedback Sign SIGNING & STRIPING



Description

A speed feedback sign displays a driver's current speed alongside the posted speed limit, encouraging voluntary speed reduction. It serves as a real-time visual cue to promote speed awareness and compliance, particularly in areas with speeding concerns.

FHWA PROVEN COUNTERMEASURE

Context Urban/Rural
LRSM ID N/A
Cost \$

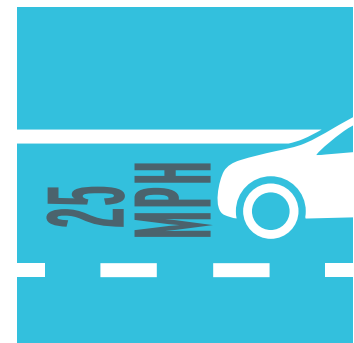
*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Appendix D: Countermeasure Toolbox

Speed Legends on Pavement at Neighborhood Entries **SIGNING & STRIPING**



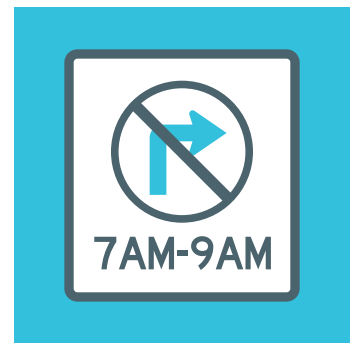
Description
Speed legends are numerals painted directly on the roadway surface to indicate the posted speed limit. Typically placed near speed limit signs, they reinforce speed awareness and improve compliance, especially at transitions to slower streets.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Time-Based Turn Restriction **SIGNING & STRIPING**



Description
Restricts left turns or right turns during certain time periods when there may be increased potential for conflict (e.g., peak periods, school hours).

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Striping Through Intersection **SIGNING & STRIPING**



Description
Clear pavement markings within complex intersections help guide motorists through lane assignments and turning movements. This treatment is especially effective at locations where lane designations are unclear due to horizontal offsets or multiple turning lanes.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Upgrade Intersection Pavement Markings **SIGNING & STRIPING**



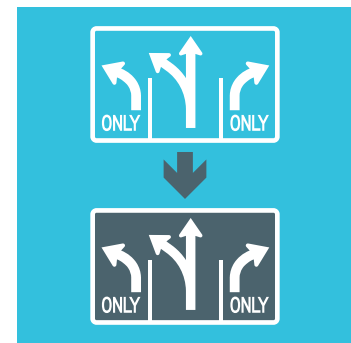
Description
Upgrading intersection pavement markings, such as stop ahead markings, centerlines, and stop bars, improves visibility for drivers approaching and entering intersections.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Upgrade Signs with Fluorescent Sheeting SIGNING & STRIPING



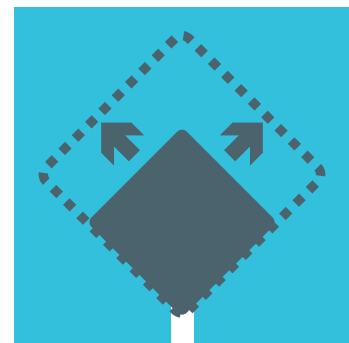
Description
 Upgrading signs with fluorescent sheeting enhances nighttime visibility by reflecting headlight beams more effectively, making warnings clearer for drivers.

Context Urban/Rural
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Upgrade to Larger Warning Signs SIGNING & STRIPING



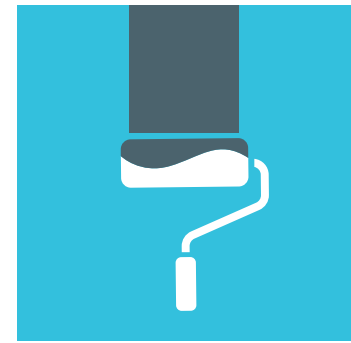
Description
 Upgrading to larger warning signs improves visibility and makes information easier to read—especially for older drivers.

Context Urban/Rural
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Upgrade Striping SIGNING & STRIPING



Description
 Restriping lanes with reflective materials such as thermoplastic and pavement markers improves visibility and helps clarify lane assignments, especially where lane configurations change.

Context Urban/Rural
LRSM ID N/A
Cost \$
Low-Cost / Quick-Build Alternative Available

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Wayfinding SIGNING & STRIPING



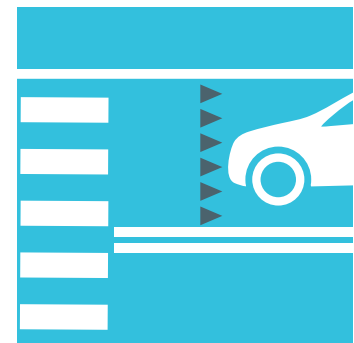
Description
 A network of directional signs highlighting nearby destinations and pedestrian or bicycle facilities can reduce erratic driving and guide users away from crossings with poor visibility or limited safety features.

Context Urban/Rural
LRSM ID N/A
Cost \$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Yield Markings SIGNING & STRIPING



Description
Yield lines, also known as shark's teeth, are pavement markings placed 20 to 50 feet before multi-lane pedestrian crossings. They improve pedestrian visibility and help reduce the risk of multiple-threat crashes, where one vehicle stops for a pedestrian but another in an adjacent lane does not.

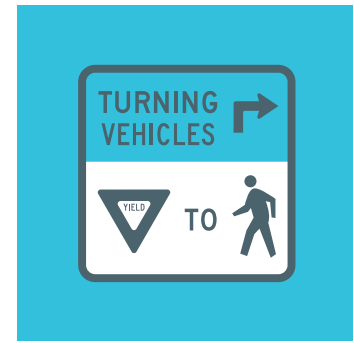
Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$

Low-Cost / Quick-Build Alternative Available

Yield To Pedestrians Sign SIGNING & STRIPING



Description
"Yield Here to Pedestrians" signs alert drivers to pedestrian crossings and are required when advance yield lines are used. Additional smaller, flexible, warning signs can also be placed on the roadway centerline to enhance visibility.

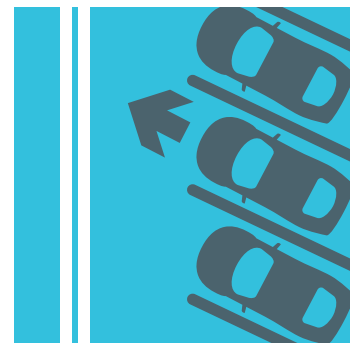
Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$

Low-Cost / Quick-Build Alternative Available

Back-In Angled Parking OTHER



Description
Back-in angled parking requires motorists to reverse into an angled on-street parking spot and drive forward when exiting. This method increases the visibility of passing bicyclists and vehicles when exiting a spot. Additionally, it allows trunk unloading to occur on the curb rather than in the street, reducing exposure.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Urban/Rural
LRSM ID N/A
Cost \$

Low-Cost / Quick-Build Alternative Available

Clear Zone OTHER



Description
A clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway. The width of the clear zone is informed by roadway context, desired vehicle speeds, and agency design standards.

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Context Rural
LRSM ID N/A
Cost \$\$

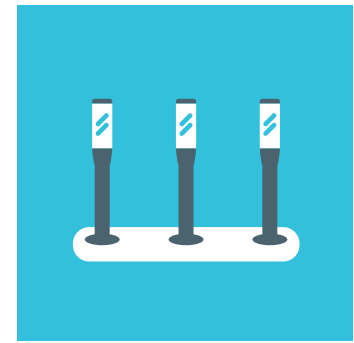
Curbside Management OTHER



Description
 Curbside management helps prioritize and align different uses of the space along curbs that would otherwise be in conflict with one another. This includes the location of bus stops, bicycle infrastructure, space for freight deliveries, passenger pick-ups/drop-offs, green stormwater infrastructure, public spaces, and parking spaces.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban
LRSM ID N/A
Cost \$

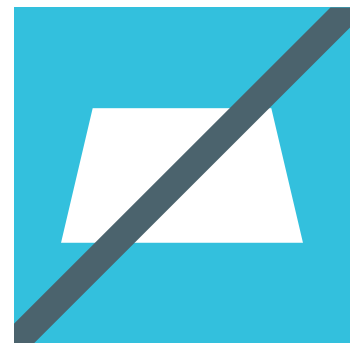
Delineators, Reflectors, and/or Object Markers OTHER



Description
 Delineators, reflectors, and object markers are visual cues installed in a roadway, intended to warn drivers of an approaching curve or fixed object that cannot easily be removed. They are generally less costly than signage.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Rural
LRSM ID N/A
Cost \$
- Low-Cost / Quick-Build Alternative Available*

Driveway Consolidation OTHER



Description
 Consolidating driveways reduces conflict points between vehicles entering/exiting the roadway and pedestrians, bicyclists, and vehicles traveling along the roadway. Particular attention should be considered to driveways within 250 feet of intersections.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban/Rural
LRSM ID N/A
Cost \$\$

Far-Side Bus Stop OTHER



Description
 Far-side bus stops are placed just after an intersection, so the bus crosses the street before picking up or dropping off passengers. This setup helps in a few ways: it keeps traffic moving more smoothly, makes it easier for pedestrians to be seen by drivers when crossing the street, and can help buses stay on schedule. It also encourages people to cross behind the bus, which is usually safer.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban/Rural
LRSM ID N/A
Cost \$

Impact Attenuators OTHER



Description

Impact attenuators are safety devices placed on roads to help stop or slow down vehicles that accidentally leave their lane. Instead of crashing into something hard like a concrete wall or a bridge pillar, the vehicle hits the attenuator, which absorbs the impact and reduces the damage. These devices are often used in places where it's not possible to remove the dangerous object, so they act as a protective crash cushion.

Context Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Red Light Camera OTHER



Description

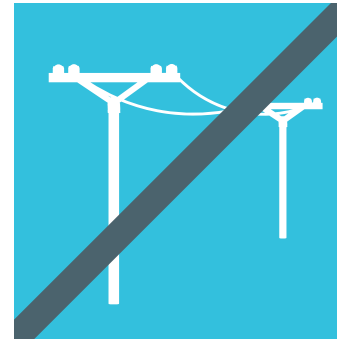
Red light cameras help enforce traffic laws by taking a photo of any vehicle that drives through an intersection after the light has turned red. These cameras work automatically, and the photos they take are used by authorities to issue tickets to drivers who run red lights.

Context Urban
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Relocate Hazardous Utility Poles OTHER



Description

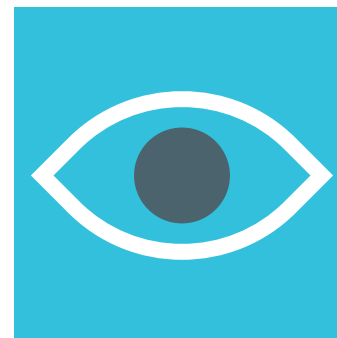
Removing utility poles from the roadside can help reduce the risk of serious crashes. If it's not possible to remove the poles completely, it can still help to move them farther away from the road's edge, or away from outside of curves where vehicles may be more likely to depart the roadway.

Context Rural
LRSM ID N/A
Cost \$\$

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

Remove Obstructions For Sightlines OTHER



Description

Removing visual obstacles near intersections helps drivers and pedestrians see each other more easily. This might include painting red curbs to stop cars from parking too close to corners (a practice known as "daylighting"), trimming overgrown trees or bushes, or moving signs or other objects that may block the view.

Context Urban/Rural
LRSM ID NS11
Cost \$

*Low-Cost / Quick-Build
 Alternative Available*

Safe System Hierarchy

- Tier 1 Remove Severe Conflicts
- Tier 2 Reduce Vehicle Speeds
- Tier 3 Manage Conflicts in Time
- Tier 4 Increase Attentiveness and Awareness

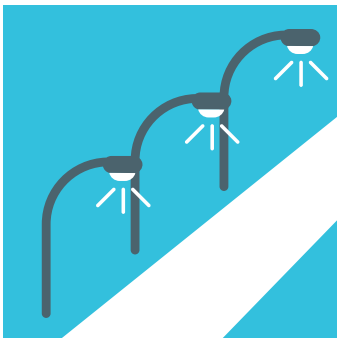
Speed Limit Reduction OTHER



Description
 Lower speeds help reduce the risk and severity of crashes. New industry standards for speed limits consider factors like roadway characteristics, adjacent land use context, as well as the presence of people walking and biking.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban/Rural
LRSM ID N/A
Cost \$

Street Lighting OTHER



Description
 Adding street lighting helps drivers see better at night or in low-light conditions, and makes it easier to spot other people, vehicles, or objects on the road.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban
LRSM ID R01
Cost \$\$

Upgrade Lighting to LED OTHER



Description
 LED street lights are brighter and more efficient than olderr high-pressure sodium lights. Upgrading street lights improves visibility—especially at crosswalks—by providing better color contrast and lighting a wider area. As a result, it becomes easier for drivers to see people walking.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban
LRSM ID N/A
Cost \$\$

Traffic Camera/Closed Circuit TV Camera OTHER



Description
 Real-time traffic cameras enable live monitoring and integration with law enforcement and emergency service systems for faster rescue and investigation.

- Safe System Hierarchy**
- Tier 1 Remove Severe Conflicts
 - Tier 2 Reduce Vehicle Speeds
 - Tier 3 Manage Conflicts in Time
 - Tier 4 Increase Attentiveness and Awareness
- Context** Urban/Rural
LRSM ID N/A
Cost \$\$

Appendix D: Countermeasure Toolbox

Rail Crossing Engineering Countermeasures

The Yuba-Sutter region is traversed by several active and historical rail lines, primarily operated by Union Pacific Railroad. These lines run through key communities such as Marysville, Wheatland, Yuba City, Olivehurst, and Plumas Lake. These communities and others experience safety concerns related to railroad crossings with local roads, particularly in rural locations with less safety infrastructure. The following countermeasure suggestions could separate users in time and/or enhance awareness of these sensitive crossings.

Uncontrolled Railroad Crossings

For uncontrolled railroad crossings, consider these countermeasures:

Install Active Warning Systems

Automatic gates and flashing lights are proven to significantly reduce crash frequency at crossings by alerting drivers and preventing crossing when trains approach.

Pavement markings and advanced warning

Advance pavement markings and signage improve driver awareness.

Relocate/clear roadside features

Remove or relocate roadside hazards near crossings to improve sight lines.

Consider grade separation

Where feasible, build overpasses or underpasses.

Controlled Railroad Crossings

For controlled railroad crossings, consider these countermeasures:

Install gates

Consistent with engineering requirements, install gates and ensure functionality of warning systems.

Improve lighting and pavement markings

Use brighter, reflective pavement markings and lighting to enhance nighttime visibility.

Preemption of Traffic Signals

Integrate railroad crossing signals with adjacent traffic signals to clear queues before a train arrives.

Pedestrian Gates or Swing Gates

In areas with higher foot traffic, install pedestrian gates prior to railroad crossing to prevent pedestrians from entering the track area during train approaches.



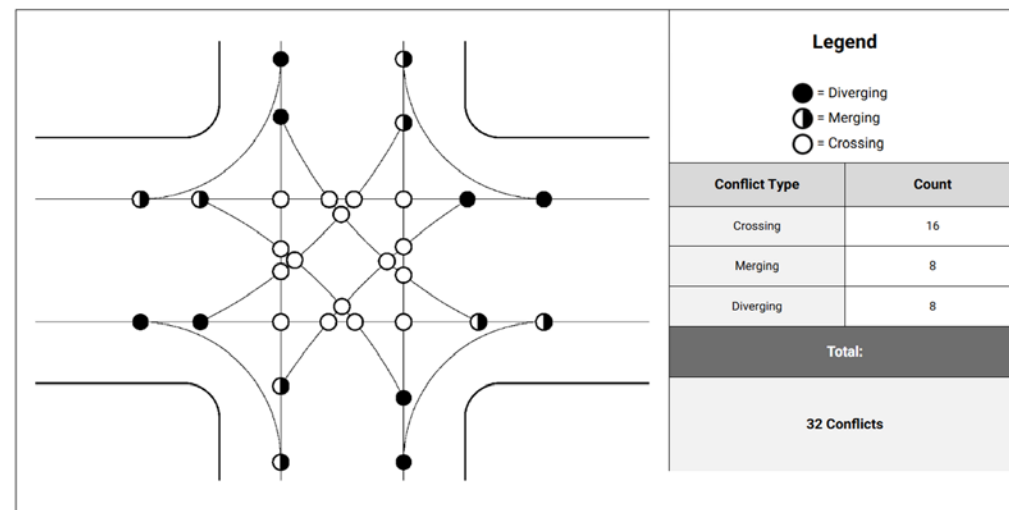
Roundabout Countermeasure

Roundabouts have been increasing in popularity in the U.S. for decades due to their safety and operational benefits. Several concerns and benefits of roundabouts are provided below.

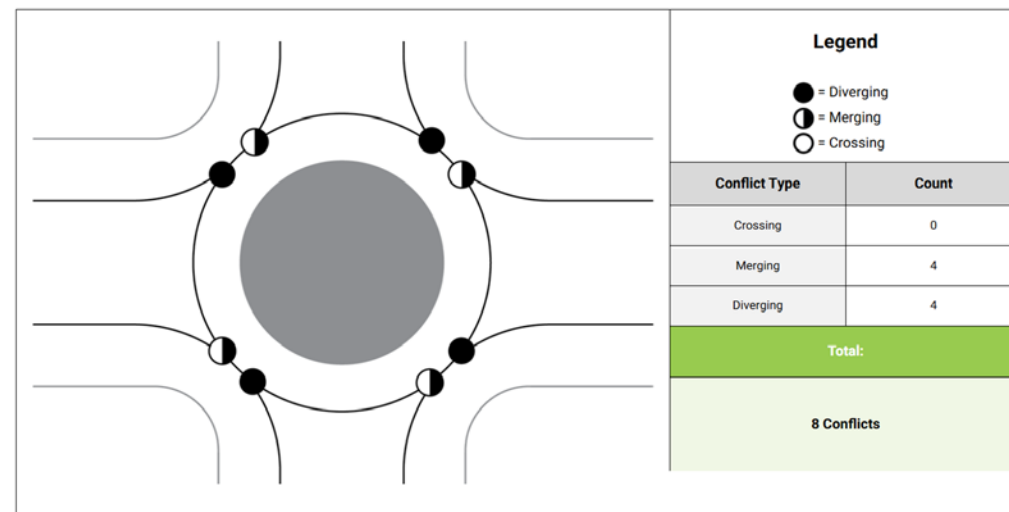
Safety

Roundabouts reduce the number of intersection crossing conflict points compared to typical intersections, reducing the likelihood of crashes, as shown below. By creating a curved movement in the intersection, roundabouts slow down the speed of vehicles, which lessens both the likelihood and severity of crashes when they do occur. Additionally, the types of crashes that occur in a roundabout (e.g., sideswipes) are typically less severe than those of typical intersections (e.g., broadside/T-bone crashes) because the different crash angles reduce the kinetic energy involved in a crash.

Conventional Intersection: Conflict Points



Roundabout: Conflict Points



Source: Virginia Department of Transportation

Operations and Costs

Although roundabouts have higher upfront costs compared to traffic signals, they are cheaper to maintain over their usable lifetime. Unlike traffic signals, which create stop-and-go traffic patterns, roundabouts allow continuous movement, reducing congestion, delay, and idling time.

In rural areas, where visibility and road conditions can be compromised by nearby canals and agricultural activity, roundabouts can help manage traffic more predictably and safely than stop signs or signals.

Driver Familiarity

U.S. drivers are typically accustomed to traditional traffic signals so the transition to roundabouts may initially cause confusion. However, experiences from around California show that adaptation can be quick given proper education and roundabout design. Once drivers adapt, roundabouts can significantly reduce delays and improve traffic flow.

Space Constraints

If available right-of-way is limited, traffic signals do typically require less space than roundabouts. However, compact roundabout designs tailored to fit tighter intersections can be implemented and still provide safety benefits compared to traditional signals.

In rural areas in Yuba and Sutter County, a common concern is the ability of roundabouts to accommodate heavy vehicles like semi-trucks, farm tractors, and trailers. However, modern roundabout designs can include truck aprons and a wider turning radius to allow such vehicles to pass through at manageable speeds with minor issues.

Space Constraints

If available right-of-way is limited, traffic signals do typically require less space than roundabouts. However, compact roundabout designs tailored to fit tighter intersections can be implemented and still provide safety benefits compared to traditional signals.

In rural areas in Yuba and Sutter County, a common concern is the ability of roundabouts to accommodate heavy vehicles like semi-trucks, farm tractors, and trailers. However, modern roundabout designs can include truck aprons and a wider turning radius to allow such vehicles to pass through at manageable speeds with minor issues.

Trucks in Roundabout



Space Constraints

Busy intersections near schools, parks, and shopping centers raise concerns about pedestrian and cyclist safety in roundabouts. Roundabouts have been shown to reduce crash likelihood and severity for people walking and biking by slowing vehicle speeds and reducing conflict points. Features like splitter islands and clearly marked crosswalks allow pedestrians to cross one direction of traffic at a time, reducing exposure and improving visibility. Cyclists benefit from lower vehicle speeds and the option to either merge with traffic or use designated bike paths around the roundabout.

Programmatic Countermeasures

Programmatic countermeasures include education, enforcement, and other strategies that influence crash likelihood and severity. *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 11th Edition*, published by the National Highway Traffic Safety Administration (NHTSA) in 2023, served as a resource for the programmatic countermeasures presented in this section. Below is the effectiveness ratings based on NHTSA.

- ★★★★★ **Demonstrated to be effective** by several high-quality evaluations with consistent results
- ★★★★☆ **Demonstrated to be effective in certain situations**
- ★★★☆☆ **Likely to be effective** based on balance of evidence from high-quality evaluations or other sources
- ★★☆☆☆ **Effectiveness still undetermined** as different methods of implementation produce different results
- ★☆☆☆☆ **Limited or no high-quality evaluation evidence**

Public Health Partnerships on DUI Prevention

Description
Prevention and education policies focus on mobilizing and educating the community and intervening before driving under the influence takes place. According to NHTSA research, alcohol problem assessment and treatment programs, as well as alcohol intervention in settings such as a doctor's office, are highly effective strategies for improving safety outcomes. Health departments could partner with partner agency police and sheriff departments to share information and conduct screenings.

Resources
Behavior Change Campaigns to Improve Traffic Safety Toolkit
Countermeasures that Work, 11th Edition

★★★★★ **Cost: Varies**

Crash History-Based Enforcement

Description
Called an Enforcement Priorities Mandate, use crash history and emphasis area corridors to direct enforcement efforts, with a focus on driving under the influence, distracted driving, and dangerous driving. This may require additional funding for California Highway Patrol, County Sheriff, and Local Police Departments.

Resources
Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit (AAA Foundation, <https://aaaafoundation.org/evidence-based-behavior-change-campaigns-to-improve-traffic-safety-toolkit/>)
Countermeasures that Work, 11th Edition

Effectiveness and cost information is not available for this countermeasure

Education & Public Awareness Campaigns Targeted at Speeding, Driving Under the Influence, and Increasing Awareness of People Walking and Biking

Description
Coordinating with public communications staff/public information officers from each jurisdiction to use existing social media accounts (e.g. Facebook, NextDoor, Twitter, etc.) can help establish an ongoing public education campaign focused on safe and responsible driving, discouraging drinking and driving, and increasing awareness of pedestrians and bicyclists. Campaigns could also involve collaborating with local radio station to disseminate safety messages in English, Spanish, and Punjabi.

Continue existing safety education campaign targeting safe speeds. This could include yard signs, wall boards/posters along high-injury corridors and neighborhoods, ads on bus exteriors, radio ads, etc. Safe Speeds is also applicable to those who bike and scooter. Potential partners include local Health Departments, community-based organizations like Blue Zones, local media outlets, and OTS Go Safely California Campaign.

Resources
The OTS Go Safely California campaign has free resources for local agencies to use in implementing public awareness campaigns.

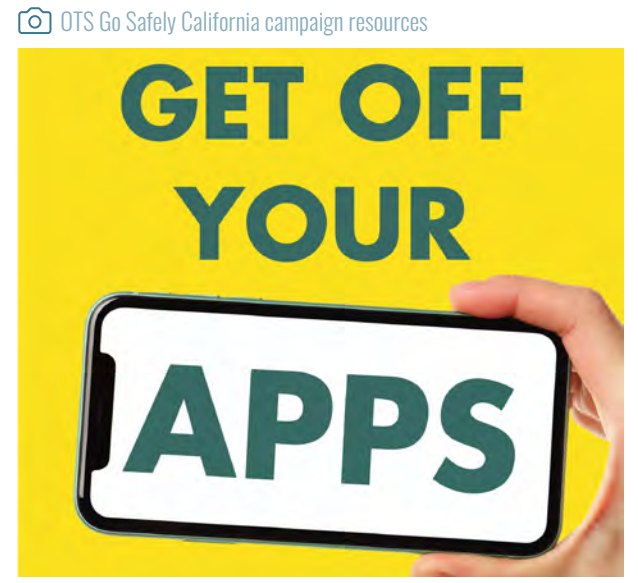
★★★☆☆ **Cost: \$\$\$**

Pair Education with Engineering Countermeasures

Description
Educational materials can be used to teach people how to use new and unfamiliar safety countermeasures, such as roundabouts or protected bikeways. These materials can consist of informational signs or demonstration videos, and should be presented in multiple languages, including English, Spanish, and Punjabi. The California Office of Traffic (OTS) has grants to support these educational campaigns.

Resources
City of Sacramento Bicycling videos: The City of Sacramento has used demonstration videos to engage residents in bicycling safety procedures. The videos feature a series of safety improvements such as protected bike lanes, bike boxes, and bike signals, and inform residents how to use these new roadway features, both as a bicyclist and a driver.

Effectiveness and cost information is not available for this countermeasure



Appendix D: Countermeasure Toolbox

High-Visibility Enforcement for DUI

Description
Deterrence policies, such as high visibility enforcement, focus on raising the actual and perceived risk of high-risk behaviors. County sheriffs and local police departments should implement high visibility enforcement for DUIs to deter and increase awareness of the risks of this behavior.

High visibility enforcement for driving under the influence, such as publicized sobriety checkpoints and saturation patrols, has been found to be effective to improve safety outcomes. Officers can focus their efforts along corridors with a history of speeding-related crashes since they must observe driving behavior on the road.

Integrated enforcement would include coordination with Public Awareness Campaigns. For example, widespread dissemination of multi-lingual educational messaging and promotion of safe rides home opportunities in advance of major DUI enforcement efforts.

Resources
Massachusetts Saving Lives – Enforcement Strategies, <https://solutions.edc.org/solutions/prevention-solutions>

This program combines community engagement events, high-visibility enforcement including sobriety checkpoints, and media communication to discourage DUI.

★ ★ ★ ★ ☆ Cost: \$\$

High-Visibility Enforcement for Other Key Issues

Description
In the High-Visibility enforcement model, law enforcement targets high-crash or high-violation locations for enhanced enforcement, and publicizes the enforcement widely to maximize general deterrence of key issues including speeding, cell phone use, and lack of yielding at pedestrian crossings. If done well, such a campaign should be perceived as fair, as drivers are being put on notice that the enforcement is occurring, and that it is being done to improve safety. The objective is to convince the driving public that speeding is likely to be detected and therefore not worth the risk of receiving fines, points, or other punishment. Enforcement actions for violations should be consistent with local and State statutes, and taken in the interest of preventing traffic crashes.

Effective communications and outreach have long been deemed an essential part of successful enforcement programs. Key objectives of these communications are to provide information about the program and expected safety benefits, to incorporate public input, and to increase community support.

★ ★ ★ ★ ☆ Cost: \$\$\$

Safe Ride Home Program

Description
Develop partnerships between the partner agencies' public works and police departments, Transportation Network Company (TNC) operators, and local businesses to offer promotional codes for free or discounted rides home from establishments or events throughout the reservation to reduce the potential for DUI, drowsy driving, or distracted driving. This program could be especially important during weekends, holidays, and other special events.

Resources
Portland Bureau of Transportation Safe Ride Home Program, <https://www.portlandoregon.gov/transportation/76611>

PBOT partnered with the Portland Police Bureau, TriMet, Old Town Hospitality Group, and Portland cab companies Radio Cab, Broadway Cab, New Rose City Cab and United Independent Cab, as well as transportation network companies Lyft and Uber to provide promo codes for discounted rides. The program is funded by a 50-cent fee charged for every taxi and TNC ride in Portland.

★ ★ ★ ☆ ☆ Cost: \$\$

Safe Route to School Program

Description
Safe Routes to School (SRTS) programs aim to create safer, more accessible options for children to walk and bike to school. Per the US Department of Transportation, 10% to 14% of all car trips during the morning rush hour nationwide are for school-related traffic, emphasizing the need for safer travel environments. Beyond safety, encouraging active travel supports healthier lifestyles and can contribute to better student well-being and academic performance.

SRTS programs achieve these outcomes through a combination of infrastructure and programmatic strategies. Infrastructure improvements, such as sidewalks, crosswalks, and traffic calming, reduce collision risk and make walking and biking more comfortable. Complementary education, enforcement, and encouragement activities promote safe travel behaviors and build community support.

Resources
Countermeasures that Work, 11th Edition Yuba City Safe Routes to School Plan
FHWA Safe Routes to School Online Guide, <http://guide.saferoutesinfo.org/>

★ ★ ★ ☆ ☆ Cost: \$\$

Appendix D: Countermeasure Toolbox



Speed Limit Modification

Description

California Assembly Bill (AB) 43 was passed in 2021 to provide a means to lower speed limits on corridors that meet certain criteria. AB 43 focused on giving local jurisdictions more flexibility in setting speed limits, especially regarding vulnerable road users:

- Speed Limit Reduction: Reduction of additional 5 mph based on several factors, including designation of Safety Corridors, as described in Chapter 3
- Prima Facie Speed Limits: Options for 15 and 25 mph in certain areas such as school zones depending on context
- Business Activity Districts: Option for 20 or 25 mph speed limits



Cost: \$



Automated Enforcement

Description

Automated enforcement, such as red-light cameras or speed cameras, target the specific drivers who are behaving dangerously. Such enforcement is already allowed in all of or at least in several cities in California. Automated speed detection devices can identify speeding violations and provide citations. Such enforcement is currently allowed on a pilot basis in six cities in California and may be allowed to be implemented in all cities in the future.

A strictly data-driven approach to automated enforcement might place red-light or speed cameras in locations with the highest number of crashes. However, given that many low-income neighborhoods have historically received fewer infrastructure investments, which often results in a higher rate of crashes, this approach could lead to a disproportionate burden of enforcement. Therefore, automated enforcement should be implemented evenly across a jurisdiction at problem locations.



Cost: Varies



CITY COUNCIL MEETING STAFF REPORT

Meeting Date: February 10, 2026

SUBJECT: Authorization to Execute Agreement with HdL Coren & Cone for Property Tax Management and Information Services

PREPARED BY: Susan Mahoney, Finance Director

RECOMMENDATION:

Staff recommends the City Council direct staff to enter into an agreement with HdL Coren & Cone (HdLCC) for property tax management and information services.

DISCUSSION:

Property tax revenue is 46% of the City’s General Fund revenue. Yuba County is responsible for assessing, collecting, and distributing property taxes to cities, counties, special districts, and school districts (collectively called “revenue districts”) within the County. Distribution is based on a complex formula established by the State. Yuba County contracts with Megabyte Systems to compute the amount to distribute to the revenue districts. All parcels in the County are assigned to a Tax Rate Area (TRA). A TRA is a geographic area within the County with a unique combination of revenue districts.

In 2013, the City annexed land areas known as Hop Farm, Johnson Rancho, and Nichols Grove. The annexation agreement with Yuba County includes the following tax sharing agreements:

- Property tax increment in those areas will be shared 50/50 with the County. *Tax increment is the increase in property tax revenue above the amount collected (base amount) on the date of the agreement.*
- Sales tax generated in those areas will be shared 87.5% City and 12.5% County.

I have contacted the Yuba County Auditor-Controller to determine if the tax sharing agreements have been applied to the TRA’s assigned to the annexed areas. He has assured me that the tax sharing agreements have been forwarded to Megabyte Systems but cannot provide assurance the agreements have been applied.

HdLCC has the experience and expertise to monitor all the City’s property tax revenue including the tax increment on the annexed land. In addition to recovering misallocated property tax revenue, HdLCC will provide the City with information regarding market trends, budget forecasting, and individual parcel data. The attached proposal includes their full scope of services.

FISCAL IMPACT:

The annual fee for this service is \$6,810 plus 25% of any tax revenues recovered. The annual fee is adjusted annually by the California Consumer Price Index. The fee will be paid out of the General Fund.

ATTACHMENTS:

- A. HdL Coren & Cone Proposal for Property Tax Management and Information Services

City of Wheatland

PROPOSAL FOR PROPERTY TAX MANAGEMENT AND INFORMATION SERVICES

December 10, 2025

HdL Coren & Cone

SUBMITTED BY

HdL Coren & Cone
120 S. State College Blvd., Ste 200
Brea, CA 92821
hdlcompanies.com

CONTACT

Paula Cone
T: 714.879.5000
E: pcone@hdlccpropertytax.com

TABLE OF CONTENTS

I. LETTER OF TRANSMITTAL.....03

II. QUALIFICATIONS.....04

III. KEY PERSONNEL06

IV. REFERENCES.....08

V. SCOPE OF SERVICES09

VI. FEES.....14

VII. SAMPLE REPORT PACKAGE.....15

I LETTER OF TRANSMITTAL

December 10, 2025

City of Wheatland
Susan Mahoney, Finance Director
111 "C" Street
Wheatland, CA 95692

Dear Ms. Mahoney

Thank you for your interest in our Property Tax Services. In response, enclosed is our firm's proposal to provide property tax management, audit and information services for the City of Wheatland.

Founded in 1992, HdL Coren & Cone (HdLCC) developed the first computer software in California for tracking county, city and special district property tax revenues. HdLCC was the first in the State to go beyond using parcel data for allocation audits by developing specialized reports and models to assist government agencies by using the data for parcel administration, focused economic development strategies and revenue projections. The staff consists of 14 highly qualified analysts, auditors and information systems technology professionals.

HdLCC currently provides ongoing services to over 280 California agencies. The Company maintains annual property tax records for Yuba County back to 1999. HdLCC's experienced team has worked with a number of key county staff and is thoroughly familiar with county property tax procedures in California.

Specific advantages that HdLCC has for performance of the services being sought by the City of Wheatland include:

- HdLCC maintains property tax data for 44 California counties, including all agencies within those counties. The size of the database plus a sophisticated computer system uniquely qualifies HdLCC to provide the most comprehensive property tax analysis available in California.
- All HdLCC staff works from our centrally located headquarters in Brea, California. The decision to operate out of a single location allows the Company to minimize overhead costs and thereby lower service fees, maximize coordination of client services, protect the Company's substantial databases and allows for immediate response to requests for information or assistance.

We look forward to reviewing this proposal with you in greater detail and demonstrating how our services and software products can benefit the City of Wheatland.

Sincerely,



Paula Cone, President
HdL Coren & Cone

II QUALIFICATIONS

A. Company History and Qualifications

HdL Coren & Cone (HdLCC) was founded in 1992 and developed California’s first computerized property tax management program. In addition, the firm provides clients with parcel tax administration and successor agency consulting. HdLCC is a California “C” Corporation which has been serving cities and special districts for over 30 years. All HdLCC staff work from our centrally located headquarters in Brea, California. The decision to operate out of a single location allows the company to minimize overhead costs and thereby lower service fees, maximize coordination of client services, protect the company’s substantial databases and allows for immediate response to requests for information or assistance.

HdL Coren & Cone



HdLCC provides property tax management services to over 270 California public agencies. The company consists of a team of seasoned professionals with decades of experience in every aspect of local government including finance, management, auditing, economic development, redevelopment and legislative advocacy. This ensures prompt and knowledgeable response to inquiries and provides for relevant and timely information on issues impacting the City’s property tax.

HdLCC maintains property tax data from 44 California counties, including all cities and successor agency project areas in those counties. Our data resources include 15-30 years of historical data in most counties and the company maintains more than twenty years of annual property tax records for Yuba County.

Property taxes in California have evolved into an extremely complex system that requires experience and expertise to fully monitor. There are two broad categories of property (real and personal), three tax rolls (secured, unsecured and state assessed), and numerous peculiarities such as possessory interest and the distribution of tax revenue from private aircraft. The revenues generated by the property tax system need to be distributed to a myriad of taxing entities including cities, counties, schools, special districts and successor agencies. The company’s extensive property tax information systems allow us to perform tax audits and provide information and analysis from a city’s property tax data to city staff quickly and accurately.

The firm’s staff have performed thousands of secured and unsecured property tax audits for client agencies over the past twenty-five years and recovered millions of dollars in misallocated property tax revenue. Our management team and staff pride themselves on being highly responsive to client needs and cordial in our contacts with county staff. This philosophy has served our clients and the company well. This is evident by the fact that 65% of our property tax audit and information services clients have been using our services for more than 10 years and 55% of our clients have been under contract for more than 15 years.

HdLCC is a Corporate Partner of the League of California Cities and California State Association of Counties and works extensively with the State Association of County Auditors, California Society of Municipal Finance Officers (CSMFO) anticipation and planning of programs to strengthen local government revenues, and monitoring of legislative actions which impact local governments.



California State Association of County Auditors

II QUALIFICATIONS

B. The HdLCC Advantage

The **HdLCC Advantage** includes:

Exceptional Personnel: HdLCC’s service team is comprised of individuals with extensive experience in property tax assessment, administration, auditing, economic development and financial management. All the firms’ key personnel have worked in or with public agencies and thoroughly understand their challenges and needs. This ensures prompt and knowledgeable response to inquiries and provides for relevant and timely information.

HdLCC employs a staff of three full-time information technology professionals with expertise in applications development, network design and maintenance, database management and technical support. These staff members continually work on developing and enhancing the firm’s technological capabilities.

Comprehensive Audits: HdLCC’s audit team has developed specialized databases and audit techniques and is thoroughly familiar with the County of Yuba. This familiarity, and excellent working relationships with County departments, will allow Wheatland to recover misallocated property tax revenue in a timely manner.

Accurate Forecasting: HdLCC has developed a comprehensive, detail-oriented forecast tool that includes the major components necessary for crafting an accurate budget forecast for property tax revenue. The forecasts provided include a 1-year and 5-year forecast and allow for interaction by staff with data entry points for developing a more precise estimate. Our base estimates are within 1-2% of actual receipts for more than 85% of our clients.

Insightful Reports and Timely Services: HdLCC’s analysis is performed in context with the surrounding region to better inform our clients of the real estate trends we are seeing and the similarities and differences with other agencies for comparative purposes. The service includes a custom newsletter that can be shared with Council, staff and the community.

Easy-to-Use Software: HdLCC will provide Wheatland’s staff with access to the firm’s web-based property tax software which affords city staff a user-friendly tool for parcel look-up and will display parcel ownership, valuation, sales and building/land characteristic information and links with the County GIS maps.



III KEY PERSONNEL

HdLCC staff consists of 14 highly qualified analysts, auditors and information systems technology professionals. Below is a current listing of our key staff:



Paula Cone - President

After spending 24 years in municipal government in finance and city management, Mrs. Cone completed the development of the first cost-effective and accurate program for identifying, monitoring, auditing and correcting property tax misallocations. In addition, HdLCC provides real estate trending information that has become integral to cities and special districts understanding the impact of changes within their jurisdictions and that translation to revenues received. HdL Coren & Cone provides property tax management, audit and analytical services to more than 270 cities and special districts in 44 counties in California. She oversees the day-to-day operation in the company's property tax management, client support, budget forecast projections and client interface. Ms. Cone earned her Bachelor's degree from California State University at Long Beach. She is former Parks and Recreation Director and Assistant City Manager of the City of Lawndale.



David Schey – Vice President

David has over 30 years of experience with HdLCC since joining the firm in 1994. His prior experience includes service as Planning Director, Community Development Director and Deputy Director of Redevelopment as well as having provided development and consulting services to municipal clients. As a principal with HdLCC, David has provided client services in connection with tax allocation bonds; property tax and tax increment issues; tax sharing calculation; and analysis of legislative actions. David has spoken at numerous conferences and seminars sponsored by the California Redevelopment Association and the League of California Cities. In addition to his professional work in connection with local government, David served for over six years as a member and chairman of both the Planning Commission and Parks and Recreation Commission. Education: Bachelor of Arts, University of California; Los Angeles, California; Bachelor of Arts, California State University; Long Beach, California; Master of Public Administration, University of Southern California; Los Angeles, California.



Nichole Cone – Vice President

Nichole has over 20 years of property tax analytical and processing experience, and specializes in understanding the data received from Assessor & Auditor, used for secured and unsecured parcel audits, and property tax analysis. Ms. Cone joined HdLCC in 1992. She oversees the acquisition and processing of county assessor and auditor controller data into HdLCC's database. Preparation and production of property tax reports and client data sets are also under Ms. Cone's direction. She oversees the staff responsible for the HdLCC Comprehensive Annual Financial Report product and fields many of the general day to day client inquires. Ms. Cone was instrumental in our system redesign which closely mirrors the systems used by counties. Education: Bachelor of Arts, Loyola Marymount University, Los Angeles, California.

III KEY PERSONNEL



Darren Hernandez – Principal

Darren joined HdL Coren & Cone as a Principal in January 2021 following a long career in public service. Prior to joining HdLCC, he served with the City of Santa Clarita for seventeen years, first as Director of Administrative Services and subsequently as Deputy City Manager. Among the projects Darren coordinated for Santa Clarita, some include the creation of a citywide Open Space Preservation District; creation of the Santa Clarita Public Library; creation of a citywide Landscape Maintenance District; and coordination of sixteen annexations of unincorporated territory including negotiation of property tax transfer agreements between the city and Los Angeles County. He also served as a member of the Oversight Board of the Successor Agency. Education: Bachelor of Arts, State University of New York at New Paltz, he studied public finance as a graduate student at the Maxwell School of Citizenship and Public Affairs at Syracuse University.



Joel Hermann – IT Director

In addition to Mr. Hermann supervising and directing our IT staff, and oversight of the HdLCC network and client web application, he designs, implements, and maintains several of HdLCC's data entry, processing and mining applications. He and his staff also administer City and Special District direct assessments processing for placement on the annual tax roll. He works closely with client City and Special District staff and provides technical support for our client applications. Joel studied Computer Science at the University of California – Riverside, and Data Science at Western Governors University.

HdLCC Property Tax Services

HdLCC currently provides property tax services in 44 counties, to over 270 cities and special districts.

Town of Loomis – Client Since 2025

Project Description: Property tax management, audit, and information services

Contact: Ted Williams, Finance Director, 916.824.1512

Email: twilliams@loomis.ca.gov

City of Rocklin – Client Since 2005

Project Description: Property tax management, audit, and information services

Contact: Daniel Choe, Deputy Director of Administrative Services, 916.625.5565

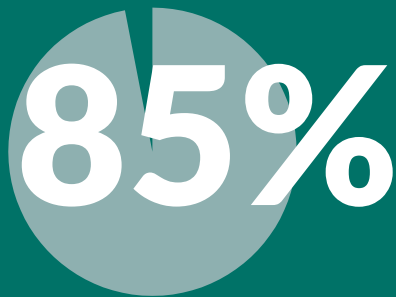
Email: Daniel.Choe@rocklin.ca.us

City of Yuba City – Client Since 1998

Project Description: Property tax management, audit, and information services

Contact: Diona Pope, Finance Director, 530.822.4615

Email: dpope@yubacity.net



HdLCC’s budget estimates are within 1.5% of actual receipts for more than 85% of our clients.

A. Property Tax Services

Using HdLCC's custom software, a data set of all parcels in the City or Agency will be established. This data is prepared from the Yuba County Lien Date Rolls that is purchased annually in July. HdLCC updates the original County roll with any transfers in ownership, which have occurred between the lien date and the current month and updates the ownership information (name and mailing address), date of transfer, sale price, and document (deed) number monthly.

1. Audit Method and Approach

To achieve the highest audit and recovery results, HdLCC employs the following audit techniques and programs:

a. Identification and Correction of Errors

HdLCC has the technology, methodology and trained staff to analyze all secured parcels and unsecured assessments within the City to identify costly errors resulting in the misallocation of property taxes.

The company has the ability to audit the secured and unsecured property tax rolls two ways, first reviewing the entire county to find parcels miscoded to other jurisdictions; and second, reviewing the parcels within the city, county or agency to ensure that each is coded to the appropriate taxing entity. To date, we have recovered in excess of \$100 million in net revenue for our client agencies in 44 counties statewide. Our advanced technology, accuracy and track record have placed us in a unique position to be hired by cities to find additional revenues after audits have been performed by prior consultants. In addition, by filing audit results with the County Assessor in a timely manner, we can assure that the repetitive errors from previous years will not continue.

Upon approval of the contract, the company will perform an analysis of the Assessor Rolls to identify all parcels on both the secured and unsecured tax rolls and verify that parcel assessed valuations and the resulting taxes are correctly allocated to the City. This analysis is accomplished through the use of specialized computer software, assessor maps, city GIS maps, city records, other pertinent documents, and field investigations. The review will include the lien date secured and unsecured data for the current tax year as well as historical data back for a total of two (2) tax years and be performed no less than every other year.

b. Reports and Analytical Services

HdLCC furnishes a variety of reports detailing property and revenue trends for the entire city and for custom defined geographic areas. These reports can be used for budgeting purposes, planning, economic development and public information. Among the reports available are top 25, 50, 100-property owner/taxpayer listings, multiple ownership properties, non-owner occupied parcels, identification of property ownership transfers for tracking of reassessments. We also provide the City with quarterly reports of successful, pending and historical assessment appeals.

HdL Coren & Cone will reconcile the annual Auditor/Controller Assessed Valuations Report and will furnish a breakdown of assessed values within the City.

The identification of escaping revenue through the use of property tax data sets has been a targeted focus for HdLCC during the past 30 years. With the reduction of tax revenues through legislated Educational Revenue Augmentation Fund (ERAF), cities, counties, agencies and special districts have been focusing on ways to increase the limited resources already stretched thin.

V

SCOPE OF SERVICES

The company will provide the following reports based on the current year lien date rolls and will provide the reports annually, quarterly or monthly as appropriate: Reports are also available from prior years if requested.

- A five-year history of the values within the City, and custom (city defined) geographic areas;
- A listing of the largest value changes, positive and negative between tax years;
- An annual parcel listing of properties with parcel number changes between tax years identifying parcel splits and combines;
- A listing of the major property owners for the City including the combined assessed values of their property and property use code designation;
- A listing and summary of property transfers which occurred since the lien date ordered by month;
- A listing of parcels that have not changed ownership since the enactment of Proposition 13;
- A comparison of property within the City by county use-code designation;
- A multiple year comparison of growth by use code designation over a 5-year period;
- A listing by parcel of new construction activity to identify non-residential parcels with new construction activity and to provide reports for use in the City's preparation of Proposition 4 and 111 State Appropriation Limit calculations;
- Calculate an estimate of property tax revenue anticipated to be received for the current fiscal year by the City based upon the initial information provided by the County and subject to modification. This estimate shall not be used to secure the indebtedness of the City.
- Analyses based on geo areas designated by the City to include assessed valuations and square footage computations for use in economic analysis and community development planning.
- Tracking of Proposition 8 reductions and restorations
- Median sale price data for current year and prior years for comparison
- Five-year budget projections for the city general fund, Successor Agency, special districts, and Vehicle License Fee in Lieu revenues. This report is interactive for tax modeling.
- Newsletter summary for public and elected distribution.

c. Information Provided Quarterly or Monthly

- A listing of property transfers that have occurred since the last report will be available through the software provided and updated on a monthly basis. This data will include the new owner/seller of the property, new mailing address if not the situs address, the date of sale, the sale price when verified, document number, and transaction type.
- The average and median single family sale price report is sent to all clients quarterly and includes the same data for all client agencies within the same County.

d. Property Tax Application and Database

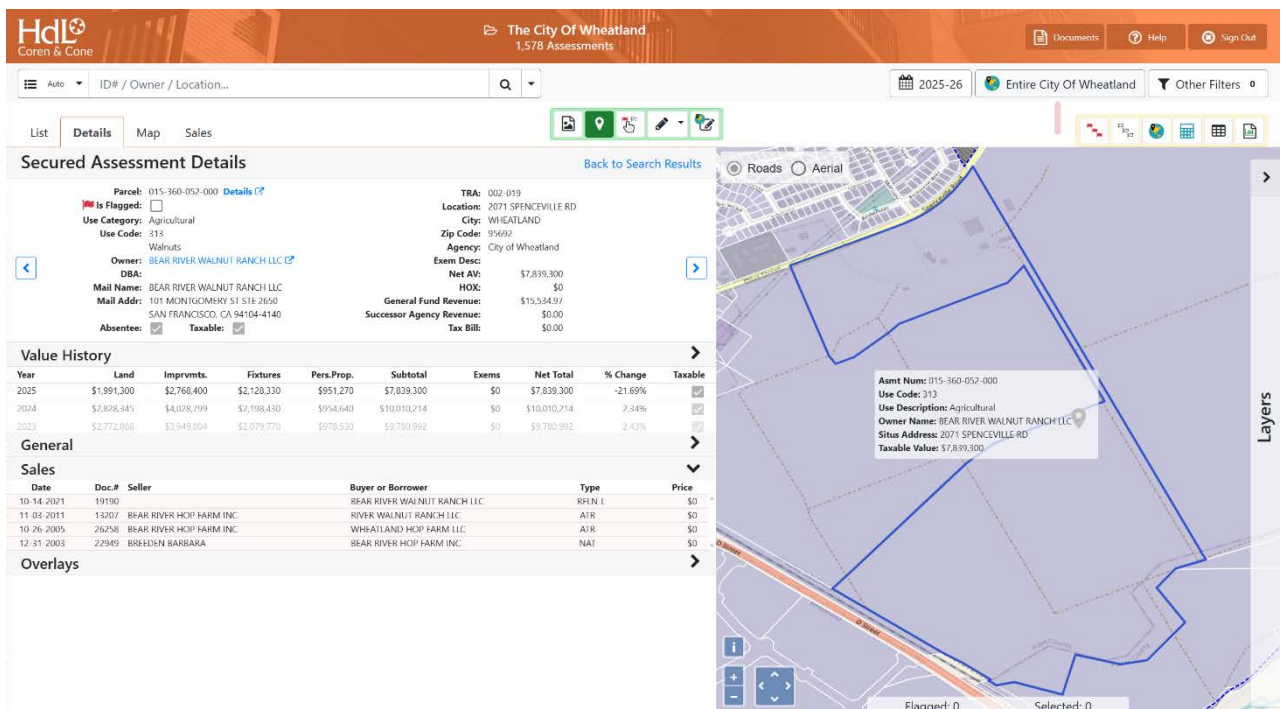
HdLCC provides a web-based software application to clients as a user-friendly tool to access the City’s property tax data. HdLCC provides updates to the data portion of the product on a monthly basis to reflect changes in ownership, updated appeals filings, and deed recordings.

As modifications and enhancements are made to the program, clients receive the enhanced version of the software at no additional cost.

Training will be provided to city staff within the first two months after the execution of the agreement for property tax management and audit services and is available annually for new staff members or staff requiring a refresher course. If additional training sessions are required, the fees in the compensation section under hourly fees will be charged.

The help manual available within the program is easy to navigate and user friendly. HdLCC staff is available Monday through Friday, 8 a.m. to 5 p.m. to answer questions and assist staff on the use of the software. Assistance is available either by phone or via email.

The City will be granted a site license for the application, providing no limit to the number of users. HdLCC will not charge an annual maintenance fee for the software program. Periodically, as the program changes and product enhancements are developed, upgrades or new releases of the software are issued at no additional cost to the client.



V SCOPE OF SERVICES

e. Proposed Work Plan/Staffing Schedule

The methodology that the company follows in identifying, correcting and recovering property tax errors includes the following:

Task I	Establishment of County Data Set
Task II	Identify and Correct Errors
Task III	Prepare Reports
Task IV	Ongoing Analysis

During the term of the contract, we serve as the resource staff to the City on questions relating to property tax. This includes being "on-call" to assist with any property tax issues. On-going consultation would include, but not be limited to inquiries resolved through use of the City data base. All requests for information based upon the County's property tax data sets are provided without additional costs. Special reports, additional research, or requests requiring additional computer programming may entail some additional costs. Attendance at City meetings will be billed at our hourly rates. Optional services will only be provided upon written notice to proceed by the City.

Timeline for Property Tax Analysis and Audit Services

- County assessment rolls are purchased annually in July.
- The property data program will be available for access via the internet within 30 days of the execution of the agreement. Parcel data will be updated monthly to include the most current ownership information due to parcel transfers.
- The first secured audit will be performed and submitted to the Assessor no later than 60 days from the date of the contract. Future audits will be performed no less than once every two years and submitted no later than March 1st.
- The unsecured audits for the City will be completed and submitted to the County Assessor for corrective action within 120 days of receipt of county rolls. The City will receive file copies of submittals simultaneous with submissions to the County Assessor.
- Data collection from the county assessor's and auditor controller's offices for reports is performed in August and September each year and preliminary reports will be delivered to the City prior to the end of January annually.
- The final tax ratio percentages are available from the auditor controller's office annually in February/March. Final reports will be prepared and delivered prior to the end of April annually.

f. Legislative Updates

HdLCC monitors and reports on issues related to property tax and coordinates with City Staff in connection with passed and potential property tax legislation and regulations.

V SCOPE OF SERVICES

g. Consultation

Annual reports presented by a principal or associate of the firm to any City staff member interested in the detailed analysis including property tax revenue estimates performed by HdLCC of the City's annual property assessed values released by the assessor. Since property data is not confidential, these reports can be shared with staff. Understanding the budget implications of the data released in late summer and presented in late Fall is timely for mid-year budget reviews.

HdLCC also serves as the City's property tax staff for consultation and questions related to budgeting, revenue collection, the mechanics of property tax allocation and potential changes in the legislation that may impact local agencies. Training is provided free of charge on the use of the web-based software which is updated monthly with ownership changes and appeal information where available.

A. Property Tax Services

Based on the number of parcels within Wheatland (1,456), our standard fixed fee (the “Base Fixed Fee”) for property tax services is **\$1,702.50 per quarter**, (\$6,810 per year). The Base Fixed Fee shall be adjusted annually by the California Consumer Price Index (CCPI) California All Urban Consumers index for all items as determined by the California Department of Industrial Relations as measured from February to February.

In addition to the Base Fixed Fee, we will receive a contingent fee of 25% of net tax revenues recovered for the City through the audits we perform. Net tax revenues mean the taxes received by the City through our audit efforts.

B. Additional Services

Work that is requested by the City that is beyond the scope of services in this proposal shall be charged on a time and material basis. No work shall be performed without prior written approval by the City. Fees for these services are as follows:

	Hourly Rate
Partner	\$250
Principal	\$225
Programmer	\$200
Associate	\$175
Senior Analyst	\$125
Analyst	\$90
Administrative	\$70



Historical Reports.

- Assessed Value History
- Sales Value History

Growth Comparisons.

- Top 40 Secured Value Changes
- Use Category Summary
- Growth by Use Category
- Property Tax Dollar Breakdown
- Proposition 8 Recapture History
- Top Ten Property Taxpayers

Reports for Revenue Projections.

- Property Tax Revenue Summary
- 5 Year Budget Estimate

**THE CITY OF WHEATLAND
2015/16 TO 2019/20 ASSESSED VALUES**



**Percent Change
City County**

2.8%		4.2%
6.0%		4.6%
4.6%		5.0%
4.8%		6.2%
4.1%		6.6%
11.9%		7.1%
7.7%		7.0%
5.1%		7.0%
9.7%		-19.4%
1.0%		1.9%
9.9%		2.9%
18.9%		10.1%
6.7%		8.1%
68.1%		6.5%
6.8%		5.9%
3.8%		2.9%



City County

4.1%		4.4%
9.7%		6.1%
6.9%		6.2%
5.2%		7.0%
3.9%		4.0%
7.2%		6.0%
6.9%		6.2%
5.3%		7.5%

Data Source: Yuba County Assessor 2015/16 To 2019/20 Combined Tax Rolls

This report is not to be used in support of debt issuance or continuing disclosure statements without the written consent of HdL, Coren & Cone

2019/20 TOP 40 NET TAXABLE SECURED VALUE CHANGES

Parcel	Use Category	Owner	Situs	Current Net Taxable Value	Net Taxable Value Change	Value Change from Prior Year
015-360-052-000	Agricultural	Bear River Walnut Ranch Llc	2071 Spenceville Rd	\$2,889,420	+\$4,403,228	+98%
015-640-009-000	Commercial	Plunkett Real Estate Properties Llc	1928 Hwy 65	\$1,535,100	+\$1,005,100	+190%
015-630-073-000	Commercial	Sierra Central Credit Union	503 Mcdevitt Dr	\$541,890	+\$292,941	+118%
015-714-004-000	Residential	Ramirez Perez Jose Santos And Diera Ram	111 Hudson Ct	\$270,000	+\$202,328	+299%
015-323-002-000	Residential	Walsh Pamela J And Christopher T Joint Tru	704 Main St	\$265,200	+\$180,122	+212%
015-770-050-000	Residential	Thatcher Ron Martell	806 Rich Pl	\$313,000	+\$177,406	+161%
015-360-029-000	Agricultural	Akt Wheatland Ranch Llc	2343 Spenceville Rd	\$1,155,257	+\$163,422	+16%
015-651-007-000	Residential	Ross Michael	701 Winton Pl	\$262,000	+\$156,032	+147%
015-711-007-000	Residential	Abe Henry; Abe Genises	771 Hudson Way	\$306,000	+\$155,375	+104%
015-770-028-000	Residential	Vidot Michael A; Vidot Angela M	806 Rich Pl	\$331,500	+\$154,991	+88%
015-703-002-000	Residential	Heathcock Billie F	721 Johnson St	\$301,920	+\$152,898	+103%
015-770-027-000	Residential	Sawicki Jeffrey; Accinelli Katherine M	805 Rich Pl	\$320,000	+\$150,632	+89%
015-511-010-000	Residential	Gaither Casey S Et Al Joint Trust	315 G St	\$275,000	+\$150,417	+121%
015-322-001-000	Residential	Mcgary Daniel Lawrence	411 E St	\$275,000	+\$148,760	+118%
015-780-012-000	Residential	Rose Joshua Daniel And Brianne Joint Trus	718 Spruce Ave	\$311,100	+\$145,520	+88%
015-242-006-000	Residential	Bradley Starr Kayla; Starr Andrew R	404 Mesa St	\$275,000	+\$145,497	+146%
015-192-007-000	Residential	Hiner Joseph H Iii	110 Main St	\$216,500	+\$141,890	+190%
015-243-011-000	Residential	Tilton Douglas W And Fang Yirun Joint Tru	401 4Th St	\$203,600	+\$141,625	+87%
015-630-008-000	Residential	Hamilton Thomas A; Marsh Peggy Joint	505 Hamon St	\$325,380	+\$139,399	+75%
015-232-008-000	Residential	Rule Robert Scott And Prinz-Rule Cindy Ga	314 Main St	\$230,000	+\$138,895	+73%
015-201-005-000	Residential	Bugayong Leann	209 Mesa St	\$275,000	+\$127,025	+118%
015-291-008-000	Residential	Bob Cody And Gabreal T Joint Trust	514 4Th St	\$276,020	+\$126,020	+97%
015-242-010-000	Residential	Newton Simon L	201 C St	\$210,000	+\$121,357	+137%
015-412-006-000	Residential	Mary Housing California 63 Lp	515 Redwood Ave	\$119,218	+\$119,218	+9,999%
015-760-044-000	Residential	Mermini Regina Et Al Joint Trust	617 Rose Ave	\$330,000	+\$119,163	+57%
015-202-004-000	Residential	Central Valley Capital Iv Lp	207 Olive St	\$154,020	+\$118,535	+334%
015-243-039-000	Residential	Brown Cody Matthew And Deborah Ann Cp	401 3Rd St	\$250,000	+\$115,789	+86%
015-683-007-000	Residential	Andersen Christopher Erik And Megan K Cp	124 Johnson Ct	\$339,660	+\$112,391	+49%
015-222-007-000	Residential	Pearson Kevin Chris	311 Olive St	\$205,000	+\$111,189	+119%
015-284-012-000	Residential	Freeman Virgil Jason And Olegario Teresita	310 3Rd St	\$233,070	+\$109,717	+89%
015-204-005-000	Residential	Cairnes Ricky D And Kimberly A Cp	214 4Th St	\$233,580	+\$108,638	+87%
015-304-016-000	Residential	Garcia Heriberto Pureco	603 3Rd St	\$210,000	+\$108,149	+106%
015-271-012-000	Residential	Orteza Art Ventura And Maria Daisa Joint Tr	221 D St	\$299,500	+\$107,078	+56%
015-731-008-000	Residential	Brackens John L Jr And Mary K Cp	811 Kempton Ct	\$310,000	+\$106,938	+53%
015-734-009-000	Residential	Hart Gregory P	310 Griffith Way	\$183,013	-\$121,987	-40%
015-731-003-000	Residential	Parker Kimberly	809 Mcdevitt Dr	\$146,166	-\$133,838	-48%
015-360-030-000	Agricultural	Akt Wheatland Ranch Llc		\$3,479,761	-\$167,279	-5%
015-770-061-000	Residential	Hollowell Diane	709 Harding Pl	\$86,644	-\$203,356	-70%
015-360-038-000	Agricultural	Akt Wheatland Ranch Llc	2493 Spenceville Rd	\$2,647,689	-\$316,097	-11%
015-360-053-000	Agricultural	Bear River Walnut Ranch Llc	2009 Spenceville Rd	\$6,954,092	-\$2,619,449	-27%

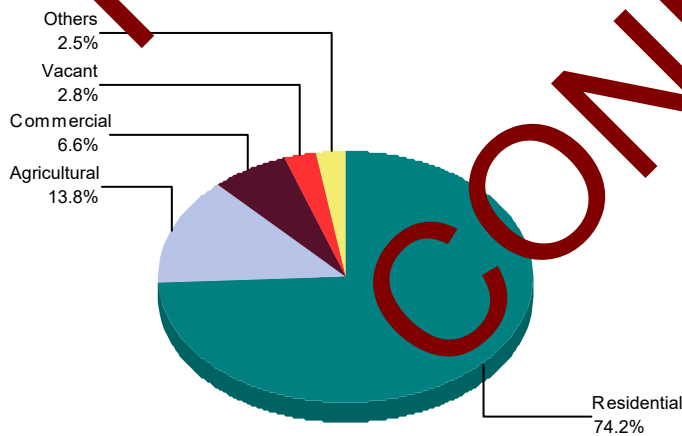
Data Source: Yuba County Assessor 2018/19 And 2019/20 Secured Tax Rolls

This report is not to be used in support of debt issuance or continuing disclosure statements without the written consent of HdL, Coren & Cone

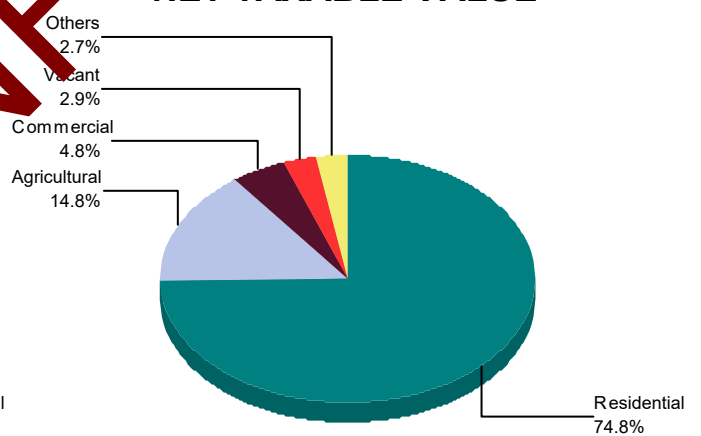
BASIC PROPERTY VALUE TABLE

Category	Parcels	Assessed Value	Net Taxable Value
Residential	1,106	\$233,106,512 (74.2%)	\$220,112,986 (74.8%)
Commercial	50	\$20,794,833 (6.6%)	\$14,149,770 (4.8%)
Industrial	5	\$1,063,051 (0.3%)	\$1,063,051 (0.4%)
Agricultural	29	\$43,485,464 (13.8%)	\$43,485,611 (14.8%)
Govt. Owned	14	\$14,088 (0.0%)	\$5,212 (0.0%)
Vacant	124	\$8,762,851 (2.8%)	\$8,427,100 (2.9%)
Exempt	35	\$0 (0.0%)	\$0 (0.0%)
SBE Nonunitary	[1]	\$7 (0.0%)	\$7 (0.0%)
Cross Reference	[38]	\$952,553 (0.3%)	\$952,553 (0.3%)
Unsecured	[81]	\$5,963,925 (1.9%)	\$5,955,131 (2.0%)
TOTALS	1,363	\$314,145,600	\$294,151,501

ASSESSED VALUE



NET TAXABLE VALUE



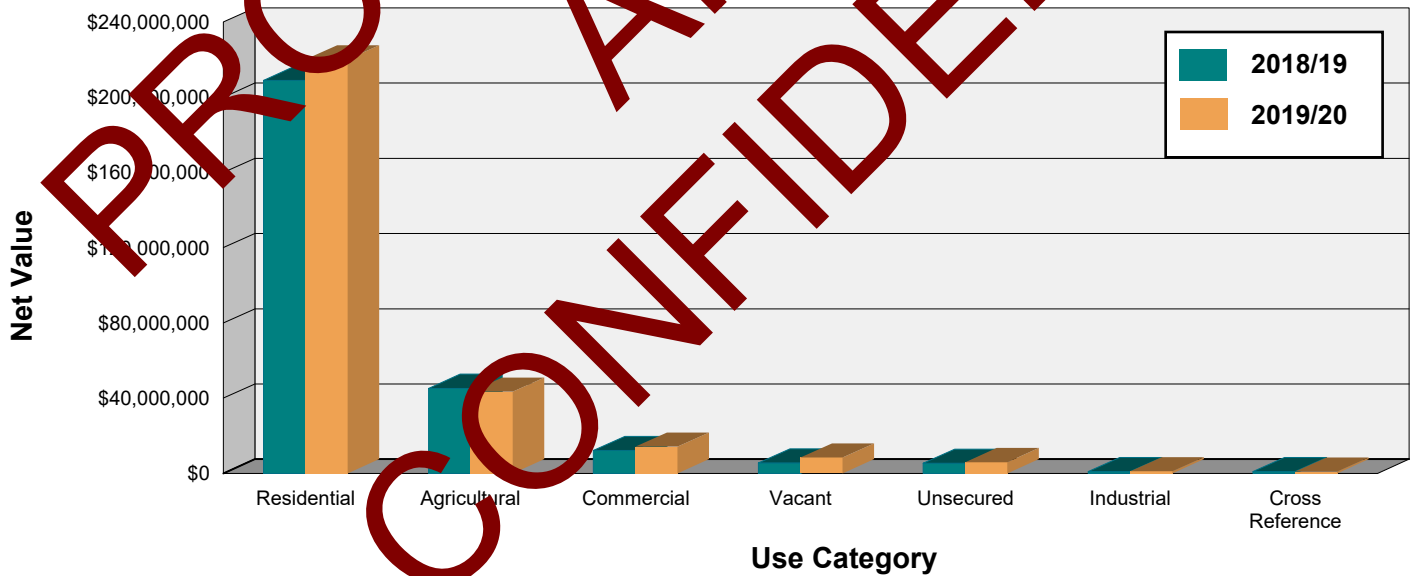
2019/20 GROWTH BY USE CATEGORY

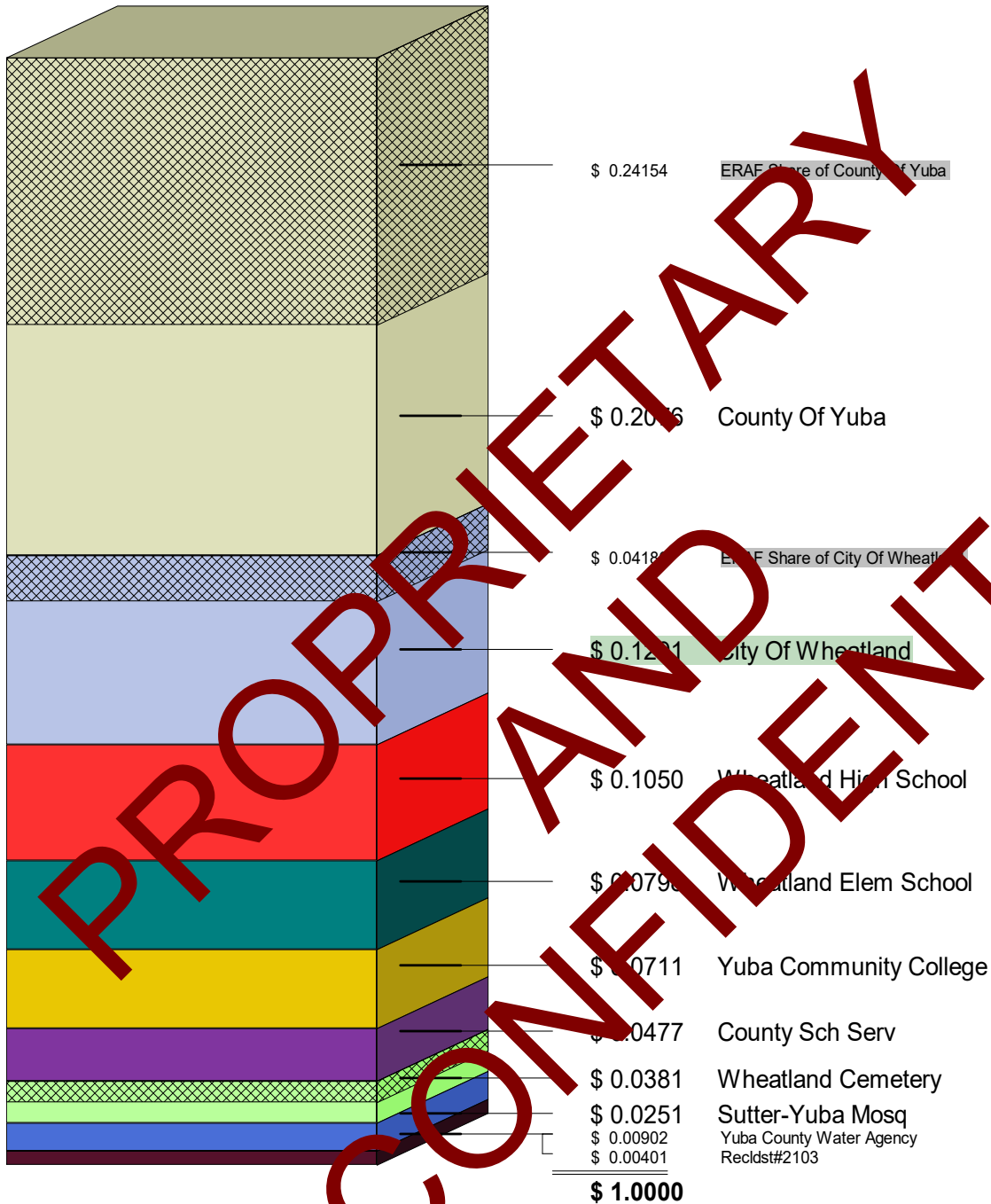
2018/19 to 2019/20 Value Growth by Use Category

Category	2018/19 Net Taxable Value		2019/20 Net Taxable Value		\$ Change	% Change
Residential	1,106	\$209,002,077	1,106	\$220,112,986 (5.8%)	\$11,110,909	5.3%
Agricultural	30	\$45,220,477	29	\$43,485,611 (14.8%)	-\$1,734,866	-3.8%
Commercial	49	\$12,109,886	50	\$14,149,770 (4.8%)	\$2,039,884	16.8%
Vacant	51	\$5,560,874	124	\$8,427,100 (2.9%)	\$2,866,226	51.5%
Unsecured	[74]	\$5,420,303	[81]	\$5,955,131 (2.0%)	\$534,828	9.9%
Industrial	5	\$982,560	5	\$1,063,051 (0.4%)	\$80,491	8.2%
Cross Reference	[38]	\$932,238	[38]	\$952,553 (0.3%)	\$20,315	2.2%
Govt. Owned	14	\$5,187	14	\$5,292 (0.0%)	\$104	2.0%
SBE Nonunitary	[1]	\$7	[1]	\$7 (0.0%)	\$0	0.0%
Exempt	35	\$0	35	\$0 (0.0%)	\$0	0.0%
TOTALS	1,290	\$279,273,610	1,363	\$294,151,501 (100.0%)	\$14,877,891	5.3%

Numbers in blue are parcel/assessment counts

Assessed Value by Major Use Category





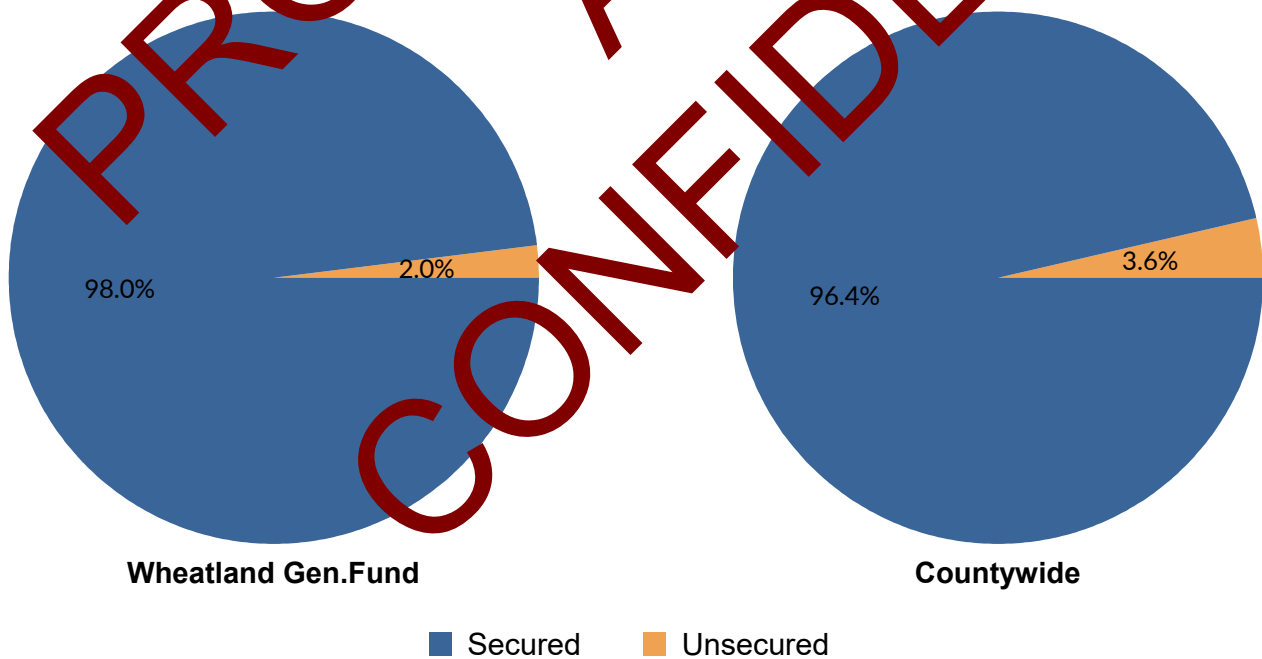
PROPRIETARY
CONFIDENTIAL

Wheatland General Fund

1% Revenue Split
Unsecured: 3.6%; Secured: 96.4%

	<u>Total</u>	<u>Insecured</u>	<u>Secured</u>
Tax Revenue Calculation @ 1% (includes shifts)	\$416,985	\$15,164	\$401,821
Unitary Revenue	\$13,043		\$13,043
ESTIMATED 1% REVENUE ALLOCATION	\$430,028	\$15,164	\$414,864
Less Admin Fee	-\$26,506		
VLF AA Allocation	\$38,666		

Secured & Unsecured 1% Revenue Proportion

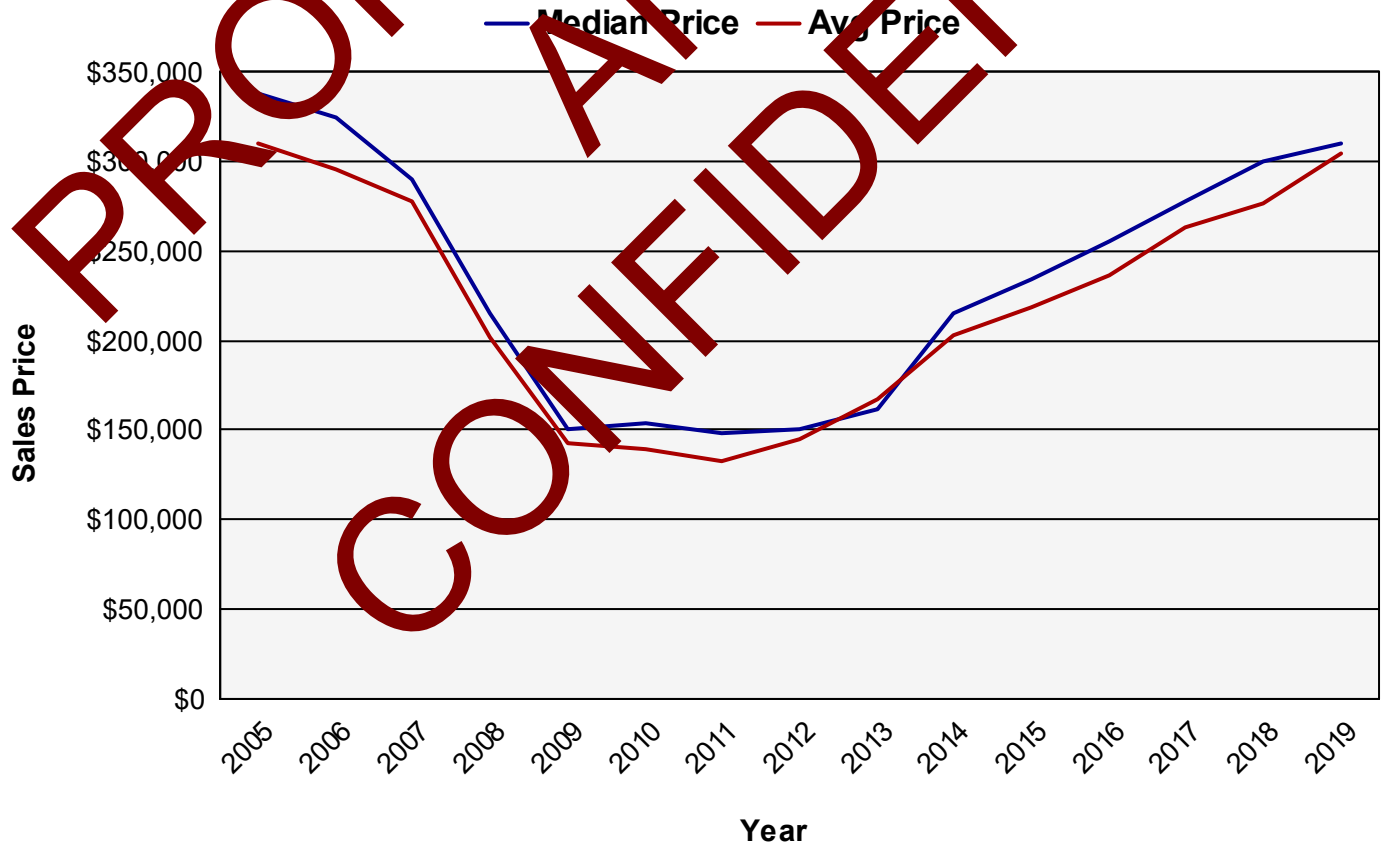


Notes: ◦ Participates in Teeter Plan
 ◦ Revenue split is estimated from countywide roll revenue proportion.
 ◦ Homeowner exemption revenue is included in this revenue model.
 ◦ Tax increment revenue from pass-throughs or residual distributions are not included. Also not included are many pooled revenue adjustments, including county administrative fees, supplemental allocations, redemptions for delinquent payments in Non-Teeter cities, tax payer refunds due to successful appeals, and roll corrections.

THE CITY OF WHEATLAND
SALES VALUE HISTORY

Single Family Residential Full Value Sales (01/01/2005 - 12/31/2019)

Year	Full Value Sales	Average Price	Median Price	Median % Change
2005	104	\$309,541	\$337,500	
2006	58	\$295,562	\$324,500	-3.85%
2007	38	\$277,763	\$290,250	-10.55%
2008	52	\$202,221	\$215,000	-25.93%
2009	53	\$142,377	\$150,000	-30.23%
2010	64	\$149,469	\$153,500	2.33%
2011	64	\$133,156	\$148,000	-3.58%
2012	63	\$144,975	\$150,000	1.35%
2013	58	\$166,957	\$161,500	7.67%
2014	65	\$207,615	\$215,000	33.13%
2015	82	\$18,232	\$234,250	8.95%
2016	59	\$236,683	\$255,500	9.07%
2017	75	\$263,066	\$278,000	8.41%
2018	79	\$276,375	\$300,000	7.91%
2019	75	\$304,396	\$310,000	3.33%



* Multiparcel and trust transfers, quitclaim deeds, timeshares, and partial sales are excluded from this analysis.

Data Source: Yuba County Recorder

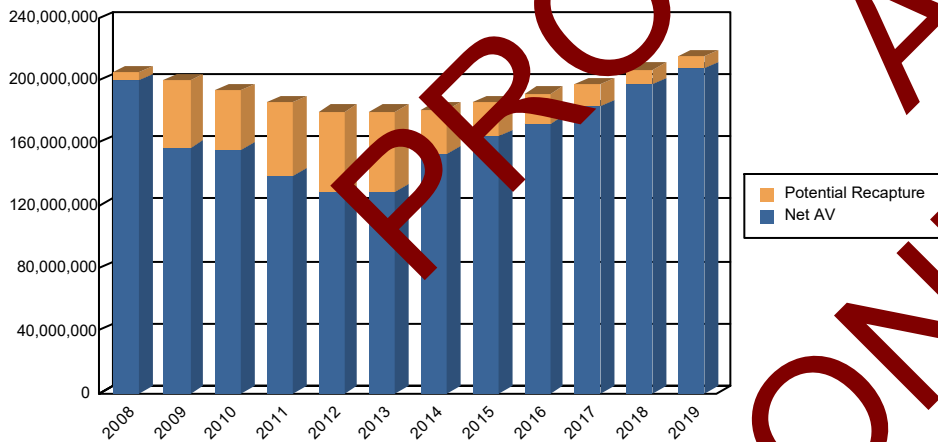
This report is not to be used in support of debt issuance or continuing disclosure statements without the written consent of HdL, Coren & Cone

PROP 8 POTENTIAL RECAPTURE HISTORY

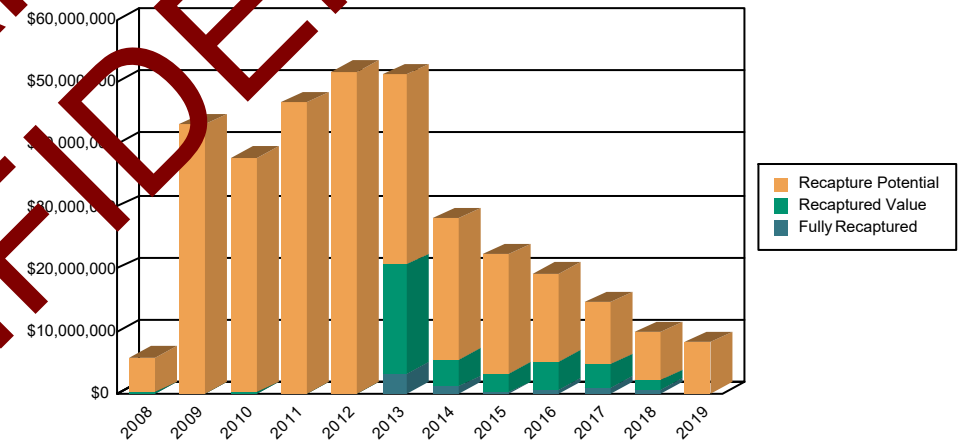
Single Family Residential Parcels - Compiled Using Parcels Supplied by County

Roll Year	Prop 8 Parcel Count	Real Value of Prop 8 Parcels	Inflation Adjusted Peak Taxable Values	Potential Recapture	% of All Parcels	Prop 8 Parcels that have fully recaptured	Increase in Real AV Due to full Recaptures	Prop 8 Parcels that have Recaptured Value	Increase in Real AV Due to Recaptures
2008	53	12,097,000	17,818,452	5,721,452	5.3%	0	0	3	138,000
2009	446	88,376,000	131,121,328	42,745,328	4.2%	1	0	3	9,200
2010	408	81,422,700	118,970,053	37,547,353	40.5%	0	0	1	80,000
2011	433	73,978,700	120,434,254	46,455,554	43.0%	1	2,000	1	2,000
2012	470	72,167,700	123,746,341	51,578,641	46.6%	1	6,500	3	15,100
2013	447	68,187,300	119,315,013	51,127,713	44.4%	90	3,206,443	416	20,706,818
2014	338	69,633,675	97,676,299	28,042,624	33.6%	41	1,057,803	258	5,442,803
2015	274	61,335,625	83,603,966	22,268,341	27.2%	14	178,839	207	3,088,856
2016	246	57,785,625	77,032,013	19,246,388	24.5%	35	674,553	215	5,121,453
2017	199	51,465,125	66,017,853	14,552,728	19.8%	42	99,839	182	4,656,639
2018	142	41,003,500	50,710,354	9,706,854	14.1%	27	530,192	106	2,016,692
2019	106	31,905,000	40,014,935	8,109,931	10.5%				

Totals for Single Family Residential Parcels



Prop 8 History



The report identifies parcels that were granted a value reduction and possess value recapture potential per Proposition 8. The reductions were based on market conditions at the time of assessor review. This calculation is derived from historical transfers of ownership, Assessor applied Proposition 8 reductions and trends in the marketplace relative to median and average home sales and is an estimate of the impact of current adjustments to the assessment roll as of the 2020-21 lien date.

The Inflation Adjusted Peak Value is defined as a parcel's highest value after its most recent sale. If a parcel is assessed for a lower value after its most recent sale, then the sales price becomes the peak value. Peak values are inflated annually according to Proposition 13. Prop 8 Parcels that have recaptured value include both parcels that have been fully recaptured as well as parcels that have only recaptured a portion of the Inflation Adjusted Peak Values. Proposition 8 potential value recapture is shown in the Potential Recapture Column and assumes no future sales transactions. Sale of Proposition 8 parcels resets base value and removes the parcel from the Proposition 8 list.



THE CITY OF WHEATLAND

2019/20 TOP TEN PROPERTY TAXPAYERS

Top Property Owners Based On Net Values

Owner	Secured			Unsecured			Combined		Primary Use & Primary Agency
	Parcels	Value	% of Net AV	Parcels	Value	% of Net AV	Value	% of Net AV	
1) BEAR RIVER WALNUT RANCH LLC	8	\$20,634,849	7.16%				\$20,634,849	7.02%	Agricultural City of Wheatland
2) AKT WHEATLAND RANCH LLC	10	\$13,169,737	4.57%				\$13,169,737	4.48%	Agricultural City of Wheatland
3) DALE INVESTMENTS LLC	75	\$3,739,449	1.30%				\$3,739,449	1.27%	Vacant City of Wheatland
4) BVPR LP	1	\$2,848,300	0.99%				\$2,848,300	0.97%	Agricultural City of Wheatland
5) FRANK DEAN AND FRANCES J WEBB TRUSTEES	1	\$2,839,447	0.99%				\$2,839,447	0.97%	Residential City of Wheatland
6) RAJ KUMAR AND NAMARTA SHARMA	1	\$2,816,832	0.98%				\$2,816,832	0.96%	Agricultural City of Wheatland
7) SETTLERS VILLAGE CENTER LLC	1	\$2,483,050	0.86%				\$2,483,050	0.84%	Commercial City of Wheatland
8) LOUIE ANDREW VISMARA SUC TRUSTEE ETAL	1	\$2,478,600	0.86%				\$2,478,600	0.84%	Agricultural City of Wheatland
9) LEWIS INVESTMENT COMPANY LLC	11	\$2,447,770	0.85%				\$2,447,770	0.83%	Vacant City of Wheatland
10) PARADISE PETRO INC	1	\$1,918,931	0.67%				\$1,918,931	0.65%	Commercial City of Wheatland
Top Ten Total	130	\$55,376,965	19.22%	0	\$0	0.00%	\$55,376,965	18.83%	
City Total		\$38,196,376			\$5,955,131		\$294,151,501		

PROPRITARY AND CONFIDENTIAL

General Fund	2021-22	2022-23	2023-24	2024-25	2025-26
General Fund and BY Values	\$4,772,184,638	\$4,953,111,627	\$5,166,690,117	\$5,364,957,827	\$5,574,230,520
Real Property Value (Incl. Prop 8 parcels)	\$4,399,916,128	\$4,580,843,117	\$4,794,421,607	\$4,992,689,317	\$5,201,962,010
CPI of Non Prop 8 Parcels (2021-22 @ 1.036%)	\$41,474,603	87,967,562	89,820,941	94,405,645	99,259,552
Transfer of Ownership Assessed Val. Change	\$102,491,176	109,321,878	94,047,855	100,829,077	108,546,472
Est. SFR Prop 8 Adj Based on Recent Price	\$36,961,210	\$21,294,085	\$14,398,913	\$14,037,961	\$13,239,780
Estimated Real Property Value	\$4,580,843,117	\$4,794,421,607	\$4,992,689,317	\$5,201,962,010	\$5,423,007,815
Base Year Values	\$311,277,285	\$311,277,285	\$311,277,285	\$311,277,285	\$311,277,285
Secured Personal Property Value (see notes)	\$6,085,824	\$6,085,824	\$6,085,824	\$6,085,824	\$6,085,824
Unsecured Personal Property Value (see notes)	\$54,905,401	\$54,905,401	\$54,905,401	\$54,905,401	\$54,905,401
Nonunitary Utility Value (0.0% growth)	\$0	\$0	\$0	\$0	\$0
Enter Completed New Construction					
Estimated Net Taxable Value	\$4,953,111,627	\$5,166,690,117	\$5,364,957,827	\$5,574,230,520	\$5,795,276,325
Estimated Total Percent Change	3.79%	3.31%	3.84%	3.90%	3.97%
Revenue Calculations					
Net Taxable Value Tax @ 1%	\$49,531,116	\$51,666,901	\$53,649,578	\$55,742,305	\$57,952,763
City Share of 1% Tax @ 13.37525%	\$6,624,911	\$6,910,578	\$7,175,766	\$7,455,673	\$7,751,328
Aircraft Value Tax @ 1%	85,104	85,104	85,104	85,104	85,104
City Share of Aircraft Tax @ 35.3%	\$28,368	\$28,368	\$28,368	\$28,368	\$28,368
Net GF Estimate	\$6,653,279	\$6,938,946	\$7,204,134	\$7,484,041	\$7,779,695
Taxable Value Revenue Categories					
Secured Revenue	6,432,789	6,710,171	6,967,669	7,239,459	7,526,539
Unsecured Revenue	192,122	200,407	208,097	216,215	224,788
Aircraft Revenue	\$28,368	\$28,368	\$28,368	\$28,368	\$28,368
Rev from Taxable Val *	\$6,653,279	\$6,938,946	\$7,204,134	\$7,484,041	\$7,779,695
Unitary Revenue (Budgeted Flat)	\$249,424	\$249,424	\$249,424	\$249,424	\$249,424
Admin Fee (Not Deducted Above)	-80,038	-83,364	-86,451	-89,710	-93,153
Enter Supplemental Apportionment Estimate					
Enter Delinquent Apportionment Estimate					

PROPOSED
COMMITTEE

2021-22 Through 2025-26 General Fund/VLF Revenue Estimate Based on 2021 Values and Estimated Changes

VLFAA	2021-22	2022-23	2023-24	2024-25	2025-26
Citywide Net Taxable Value	\$6,462,022,172	\$6,707,536,649	\$7,000,377,717	\$7,291,298,914	\$7,599,306,697
Real Property Value (Incl. Prop 8 parcels)	\$6,334,552,617	\$6,580,067,094	\$6,872,908,162	\$7,163,829,359	\$7,471,837,142
CPI of Non Prop 8 Parcels (2021-22 @ 1.036%)	\$60,347,141	\$120,744,118	\$129,743,756	\$136,329,144	\$143,303,547
Transfer of Ownership Assessed Val Change	\$136,337,282	\$144,978,559	\$142,884,638	\$153,813,543	\$164,725,816
Est. SFR Prop 8 Adj Based on Recent SFR Pr	\$48,830,054	\$27,627,991	\$18,292,803	\$17,865,125	\$16,963,837
Estimated Real Property Value	\$6,580,067,094	\$6,872,908,162	\$7,163,829,359	\$7,471,837,142	\$7,796,830,341
Secured Personal Property Value (see notes)	\$8,107,762	\$8,107,762	\$8,107,762	\$8,107,762	\$8,107,762
Unsecured Personal Property Value (see notes)	\$118,001,796	\$118,001,796	\$118,001,796	\$118,001,796	\$118,001,796
Nonunitary Utility Value (0.0% growth)	\$1,359,997	\$1,359,997	\$1,359,997	\$1,359,997	\$1,359,997
Enter Completed New Construction					
Estimated Net Taxable Value	\$6,707,536,649	\$7,000,377,717	\$7,291,298,914	\$7,599,306,697	\$7,924,299,896
Estimated Total Percent Change	3.80%	4.37%	4.11%	4.22%	4.28%
Base Value of VLFAA	\$8,331,344	\$7,609,935	\$7,942,489	\$8,272,897	\$8,622,013
Estimated Change to VLFAA	\$278,591	\$332,554	\$330,498	\$349,116	\$369,022
VLFAA Estimate	\$7,609,935	\$7,942,489	\$8,272,897	\$8,622,013	\$8,991,035

PROPOSED
 CONFIDENTIAL

NOTES:

- **The revenue projection assumes 100% payment of taxes. Delinquency is not considered in the projection; however, rates of between 1% and 2.5% are typical.**
- CPI of Non-Prop 8 Parcels is calculated at the following rates: 2021-22 @ 1.036%; 2022-23 @ 2.000%; 2023-24 @ 0.000%; 2024-25 @ 2.000%; 2025-26 @ 2.000%;
- Estimated Assessor Prop 8 Adjustments: Prop 8 reductions in value are TEMPORARY reductions applied by the assessor that recognize the fact that the current market value of a property has fallen below its (Prop 13) assessed value. For 2021-22 and later, properties with prior Prop 8 reductions are not included in the CPI increase. They are projected to adjust with median sale prices, with increases possible up to the inflation-adjusted Prop 13 value, or further reductions possible if median sale prices decline further.
- The Prop 8 adjustment in 2021-22 uses general fund 2020 median single-family residence price change (9.1%) to estimate whether properties will enter Prop 8 reduced status or recapture previous reductions. Subsequent Prop 8 adjustments are based on median SFR home price changes projected as follows: 2022-23: 6.0%; 2023-24: 5.2%; 2024-25: 5.6%; 2025-26: 6.0%
- General Fund Transfer of Ownership Assessed Value Change: For 2021-22, the projected increase from known 2020 transfers within the non-Successor Agency areas of City use to estimate value growth, with possible adjustments for Prop 8 appeals activity on transferred parcels. For this scenario, the estimated growth from transfers in 2022-23 matches the percentage of real value in 2021-22. For years 2023-24 and later, growth is based on the historical average rate of real property growth due to properties that have transferred ownership. Value growth from transfers is estimated as the following percentages of prior year real property value: 2021-22 @ 2.3%; 2022-23 @ 2.2%; 2023-24 @ 1.9%; 2024-25 @ 2.0%; 2025-26 @ 2.2%;
- VLFAA Transfer of Ownership Assessed Value Change: For 2021-22, the projected increase from known 2020 transfers used to estimate value growth, with adjustments for possible Prop 8 appeals activity on transferred parcels. For this scenario, the estimated growth from transfers in 2022-23 matches the percentage of real value in 2021-22. For years 2023-24 and later, growth is based on the historical average rate of real property growth due to properties that have transferred ownership. Value growth from transfers is estimated as the following percentages of prior year real property value: 2021-22 @ 2.2%; 2022-23 @ 2.2%; 2023-24 @ 2.1%; 2024-25 @ 2.2%; 2025-26 @ 2.2%;
- Base Year Values Entry: With the dissolution of redevelopment, base year values are unlikely to change and are budgeted flat.
- Secured personal property and unsecured values are projected to grow at the following rates 2021-22 @ 0.0%; 2022-23 @ 0.0%; 2023-24 @ 0.0%; 2024-25 @ 0.0%; 2025-26 @ 0.0%; . Unsecured escaped assessments may be included in the unsecured values. The value of escaped assessments is generally inconsistent and varies from year to year.
- Completed new construction entry: This data entry point allows for the inclusion of new construction projects completed annually. Due to processing delays we suggest that a time frame of November - October be selected. (e.g. Nov. 2019 - Oct. 2020 for the 2021-22 FY). If completed new construction has resulted in a sale of the property it is likely that the new value will appear in the value increase due to transfers of ownership entry and therefore should not be also included in the completed new construction value.
- Pooled Revenue Sources include supplemental allocations, federal grants for delinquent payments in non-Teeter cities, tax pay refunds due to successful appeals, roll corrections and other adjustments applied after the release of the roll. The forecasting of these revenues should be conservative.
- General Fund Revenue Estimate does not include any available voter approved debt service revenue.

Prepared on 10/7/25 Using Sales Through 12/31/2024

This report is not to be used in support of debt issuance or continuing disclosure statements without the written consent of HdL Coren & Cone



CITY COUNCIL MEETING STAFF REPORT

Meeting Date: February 10, 2026

SUBJECT: Resolution Directing Preparation of the Engineer’s Report for the Wheatland-Premier Grove Landscaping and Lighting District

PREPARED BY: Susan Mahoney, Finance Director

RECOMMENDATION:

Staff recommends adoption of the attached resolution directing the preparation of the Engineer’s Report for the Wheatland-Premier Grove Landscaping and Lighting District (the “District”).

DISCUSSION:

The Landscaping and Lighting Act of 1972 establishes the authority and process for a government agency to create and maintain Landscaping and Lighting Districts. The Wheatland-Premier Grove Landscaping and Lighting District provides funding for the following three benefit zones:

	Benefit Zone	Services Provided
Zone 1	Wheatland Ranch subdivision	Landscaping, irrigation, streetlights, detention basin, park
Zone 2	Premier Grove subdivision	Streetlights
Zone 3	Park Place subdivision	Landscaping, irrigation, streetlights, drainage area, park

Each year a budget is established to determine the cost of providing the services and to determine the proportional amount to assess benefiting parcels within the District. This is a three-step process.

Step 1 – Pass a resolution directing the preparation of the Annual Engineer’s Report. The Report establishes a budget for the services funded by the fiscal year 2026-27 assessments and the method of assessment apportionment to parcels within each zone.

Step 2 – Pass a resolution of intention to continue the assessment, preliminary approval of the Engineer’s Report and provide notice of a Public Hearing.

Step 3 – Pass a resolution approving the Engineer’s Report and ordering the levy of the assessment for fiscal year 2026-27.

The attached Resolution directs the preparation of the Engineer’s Report for fiscal year 2026-27 and completes Step 1 of the assessment process. The City contracts with SCI Consulting Group for the preparation of the Engineer’s Report.

FISCAL IMPACT:

The cost of preparing the Engineer’s Report is paid for by the District.

ATTACHMENTS:

- A. Resolution

Attachment 'A'

RESOLUTION NO. 26-__

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHEATLAND DIRECTING THE PREPARATION OF THE ANNUAL ENGINEER’S REPORT FOR THE CONTINUATION OF THE WHEATLAND-PREMIER GROVE LANDSCAPING AND LIGHTING DISTRICT FOR FISCAL YEAR 2026-27

WHEREAS, The Wheatland-Premier Grove Landscaping and Lighting District (the “District”) was approved by property owners pursuant to a mailed ballot election conducted in accordance with Article XIID of the California Constitution; and

WHEREAS, The City Council hereby proposes to continue to levy annual assessments for the Wheatland-Premier Grove District and to levy and collect assessments against the parcels of land within such District to pay for the costs and expenses of the improvements and maintenance described below, for the fiscal year commencing July 1, 2026 and ending June 30, 2027, pursuant to the Landscaping and Lighting Act of 1972, Part 2 of Division 15 of the California Streets and Highways Code, and as provided by Article XIID of the California Constitution; and

WHEREAS, The purpose of the District is for the installation, maintenance, and servicing of public improvements, as described below; and

WHEREAS, Within the District, the existing and proposed improvements to be undertaken may be briefly described as follows: the installation, maintenance and servicing of public facilities, including but not limited to, landscaping, sprinkler systems, park grounds, park facilities, landscape corridors, ground cover, shrubs and trees, street frontages, drainage systems, lighting, fencing, entry monuments, other landscaping facilities, graffiti removal and repainting, and labor, materials, supplies, utilities, detention basins, and equipment, as applicable, for property owned or maintained by the City of Wheatland. Installation means the construction of recreational improvements, including, but not limited to, land preparation, such as grading, leveling, cutting and filling, sod, landscaping, irrigation systems, sidewalks and drainage, lights, and detention basins. Maintenance means the furnishing of services and material for the ordinary and usual maintenance, operation, and servicing of said improvements, including repair, removal, or replacement of all or part of any improvement; providing for the life, growth, health and beauty of landscaping; and cleaning, sandblasting and painting of walls and other improvements to remove or cover graffiti. Servicing means the furnishing of electric current or energy for the operation of lighting for any improvements, water for irrigation for any landscaping, and for the maintenance of any other improvements; and

WHEREAS, SCI Consulting Group is hereby designated as Engineer of Work for purposes of these proceedings and is hereby ordered to prepare an Engineer’s Report in accordance with

Article 4 of Chapter 1 of the Act and Article XIID of the California Constitution. Upon completion, the Engineer shall file the Engineer’s Report with the City Clerk for submission to the Council; and

WHEREAS, This Resolution shall take effect immediately upon its adoption.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Wheatland that the foregoing resolution was adopted by the City Council of the City of Wheatland at a regular meeting held on the 10th day of February 2026 by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

The foregoing resolution is hereby approved.

Robert Coe, Mayor

ATTEST:

Josie Camacho, City Clerk



CITY COUNCIL MEETING STAFF REPORT

Meeting Date: February 10, 2026

SUBJECT: Annual Review of City of Wheatland’s Investment Policy

PREPARED BY: Susan Mahoney, Finance Director

RECOMMENDATION:

Council by motion adopt a Resolution updating the City of Wheatland Investment Policy.

DISCUSSION:

The City’s investment policy is reviewed annually by the Finance Director. Any updates to the policy are brought to Council for approval. The policy was last updated in August 2018. The City’s investment policy must follow the requirements set forth under State Government Code, Sections 53600 et seq, which specifies allowable investments for cities. A city may place additional restrictions on their allowable investments. The chart below shows the investments allowed by the State and those allowed under the City’s existing investment policy.

ALLOWABLE INVESTMENTS UNDER STATE LAW	MAXIMUM MATURITY	MAXIMUM % OF PORTFOLIO	COUNCIL AUTHORIZED INVESTMENTS
Local Agency Bonds	5 years	None	
U.S. Treasury Obligations	5 years	None	✓
State and Local Agency Obligations	5 years	None	
U.S. Agency Obligations	5 years	None	✓
Bankers’ Acceptances	180 days	40%	✓
Commercial Paper – Pooled Funds	397 days	25%	
Commercial Paper – Non-Pooled Funds	397 days	25%	✓
Negotiable Certificates of Deposit	5 years	30%	✓
Non-negotiable Certificates of Deposit	5 years	20%	✓
Placement Service Deposits	5 years	30%	
Repurchase Agreements	1 year	None	
Reverse Repurchase Agreements	92 days	20%	
Medium Term Notes	5 years	30%	
Mutual Funds/Money Market Mutual Funds	N/A	20%	✓
Collateralized Bank Deposits	5 years	None	✓
Mortgage Pass-Through Securities	5 years	20%	
County and JPA Pooled Investment Funds	N/A	None	✓
Local Agency Investment Fund (LAIF)	N/A	None	✓
Supranational Obligations	5 years	30%	

The attached updated City of Wheatland Investment Policy includes a change initiated by the California Debt and Investment Advisory Commission (CDIAC). CDIAC serves as the State’s clearinghouse for public debt issuance information. For 2026, CDIAC has updated their local agency investment guidelines to include SB 595 legislation. SB 595 allows a local agency to invest public funds in commercial paper that has a maturity of 397 days or less, revised from 270 days or less. Commercial paper are securities issued by large corporations to obtain funds to meet short term obligations.

FISCAL IMPACT:

There is no direct fiscal impact from the adoption of the attached resolution.

ATTACHMENTS:

- A. Resolution w/Exhibit

Attachment 'A'

RESOLUTION NO. 26-__

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHEATLAND APPROVING THE
UPDATED CITY OF WHEATLAND INVESTMENT POLICY**

WHEREAS, the State of California Government Code Section 53600 defines the authorized investments for the investment of surplus funds of local agencies including Cities; and

WHEREAS, the City of Wheatland has defined investment goals and policies through the "City of Wheatland Investment Policy" that was last updated and adopted through resolution 22-18 on August 28, 2018; and

WHEREAS, the previously adopted Investment Police provides for an annual review by the Finance Director and requires that any changes to the policy be approved by the City Council.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Wheatland as follows:

1. **Exhibit 'A'** attached hereto is hereby adopted as the updated City of Wheatland Investment Policy.

The foregoing resolution was adopted by the City Council of the City of Wheatland at a regular meeting held on the 10th day of February 2026, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

The foregoing resolution is hereby approved.

Robert Coe, Mayor

ATTEST:

Josie Camacho, City Clerk

Exhibit 'A'

**City of Wheatland, California
Investment Policy
Adopted February 10, 2026**

I. INTRODUCTION

The City of Wheatland was incorporated in 1874 and is located in the northeastern edge of California's vast Sacramento Valley. The City operates under a Council-Manager form of government and provides municipal services that include public safety, public works, parks and recreation, water, wastewater, and community development. The City Council consists of five members with the position of Mayor and Vice Mayor chosen by the Council. The Council serves as the policy board for the City.

The City of Wheatland has a fiduciary responsibility to maximize the productive use of assets entrusted to its care and to invest and manage those public funds wisely and prudently with the overriding objectives to preserve principal and provide sufficient liquidity while seeking a market-rate of return. The purpose of this investment policy is to identify various policies and procedures that will foster a prudent and systematic investment program designed to seek the City of Wheatland's objectives of safety, liquidity, and yield through a diversified investment portfolio. This policy also serves to organize and formalize the City's investment-related activities, while complying with all applicable statutes governing the investment of public funds.

II. OBJECTIVES

The City's overall investment program shall be designed and managed with a degree of professionalism worthy of the public trust. The overriding objectives in order of priority shall be:

Safety. Safety of principal is the foremost objective of the investment program. Investments will be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio.

Liquidity. The investment portfolio will remain sufficiently liquid to meet all operating requirements that may be reasonably anticipated.

Yield. Yield should become a consideration only after the basic requirement of safety and liquidity have been met. The investment portfolio will be designed with the objective of attaining a market rate of return throughout budgetary and economic cycles, taking into account the investment risk constraints for safety and liquidity needs.

III. SCOPE

This investment policy covers all funds and investment activities under the direct authority of the City, as set forth in the State Government Code, Sections 53600 *et seq.*, with the following exceptions:

- Retirement Plans offered to City Employees including the 457 Deferred Compensation Plan and the 401(a) Defined Contribution Plan are excluded because the Plans are administered by a third-party administrator and held in trust for the exclusive benefit of participants and are not assets of the City.
- Proceeds of debt issuance shall be invested in accordance with the City's general investment philosophy as set forth in this policy; however, such proceeds are to be invested pursuant to the permitted investment provisions of their specific bond indentures.
- Any other funds specifically exempted by the City Council.

IV. POOLING OF FUNDS

Except for cash in certain restricted and special funds, the City will consolidate cash and reserve balances from all funds to maximize investment earnings and to increase efficiencies with regard to investment pricing, safekeeping, and administration.

Investment income shall accrue solely to the General Fund except where required by law, or other binding agreement, in which case interest shall accrue to other funds based upon the fund's proportionate ratio of balances to total pooled cash. Investment income shall be credited quarterly.

V. DELEGATION OF AUTHORITY

Authority to manage the City's investment program is derived from California Government Code Sections 53600 *et seq.* The City Council is responsible for the policy level management of City funds, including the adoption and review of this investment policy. The day-to-day management of idle cash and investment transactions is the responsibility of the Finance Director/City Treasurer. As authorized in Government Code Section 53607, the City Council delegates the authority to invest funds of the City to the Finance Director/City Treasurer and/or any duly appointed Deputy Treasurer. The City Treasurer and any duly appointed Deputy City Treasurer shall make all investment decisions and transactions in accordance with State law and this investment policy. The Finance Director/City Treasurer has designated the City Manager as Deputy City Treasurer for the purpose of carrying out investment transactions at such times as the Finance Director/City Treasurer is unavailable.

The City shall strive to maintain the level of investment of all idle funds as near 100 percent as possible through daily and projected cash flow determinations. The City's cash management system should monitor and forecast revenues and expenditures, thus insuring the investment of monies to the fullest extent possible. The Finance Director will be responsible for all transactions undertaken and will establish a system of procedures and controls to regulate the activities of subordinate employees. Such procedures will include explicit delegation of authority to persons responsible for investment transactions. No person may engage in an investment transaction except as provided under the terms of this policy and procedures determined by the Finance Director to be consistent with this policy.

VI. PRUDENCE

Pursuant to California Government Code Section 53600.3, all persons authorized to make investment decisions on behalf of the City are trustees and therefore fiduciaries subject to the Prudent Investor Standard:

"...all governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds pursuant to this chapter are trustees and therefore fiduciaries subject to the prudent investor standard. When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of the City, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the City. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law."

VII. ETHICS AND CONFLICTS OF INTEREST

Employees and officials involved in the investment process shall at all times comply with each of the following:

- Recognize that the process is subject to public review
- Act as a custodian of the public trust
- Recognize that their professional duties, loyalties, and responsibility are solely to the City
- Submit to the City statements of economic interest under the Political Reform Act (Government Code section 81000 et seq.)
- Not engage in any activity or have any interest that could interfere with unbiased involvement in the investment process (e.g., by impairing their ability to make impartial investment decisions).

VIII. INTERNAL CONTROLS

The Finance Director is responsible for establishing and maintaining an internal control structure designed to ensure that the assets of the entity are protected from loss, theft, or misuse. The internal control structure shall be designed to provide reasonable assurance that these objectives are met. The concept of reasonable assurance recognizes that (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the valuation of costs and benefits requires estimates and judgments by management.

Criteria for selecting investments in priority order: Safety, Liquidity and Yield.

1. Safety of principal: The safety and risk associated with an investment refers to the potential loss of principal, interest, or a combination of these amounts. The City only utilizes investments that are considered very safe. Safety of principal shall be the foremost objective of this investment policy. Investments shall be made with the aim of avoiding capital losses due to issuer default; broker-dealer default; or market value erosion. Principal shall be preserved by mitigating:

- a. Credit Risk, the risk of loss due to the failure of the issuer of the security, shall be mitigated by investing in only the highest quality securities; by diversifying investments; and by pre-qualifying broker-dealers and public depositories; and
- b. Market Risk, the risk of loss due to a decline in bond prices because of rising market interest rates, shall be mitigated by structuring the portfolios so that issues mature concurrently with the City's anticipated cash requirements, thereby eliminating the need to sell securities prematurely on the open market.

2. Liquidity: This refers to the ability to convert an investment to cash at any moment in time with a minimal chance of losing some portion of principal or interest. An adequate percentage of the City's portfolio shall be maintained in investments that can be converted to cash if necessary to meet disbursement requirements without loss of principal or without incurring penalties.

3. Yield or Return on Investments: This is the potential dollar earnings an investment can provide and sometimes is described as the "rate of return". Yield is a consideration in investment decisions only after the requirements of safety and liquidity have been met.

Quotes: Investing decisions shall be made only upon the receipt of at least three quotes from different sources for investments that meet the current investment need. When purchasing new issue Securities of the U.S. Government and its Agencies, quotes from different brokers are not required.

Maturity of investments: The number of investments with long-term maturities (maturities greater than a year) is to be based on the estimated cash flow needs of the City to assure that liquidity needs are maintained. Maximum maturities are as specified in Government Code Section 53601 and are currently 5 years remaining to maturity at the time of purchase. Maturities exceeding this

maximum require authorization by the City Council prior to purchase.

Safekeeping: To protect against potential losses due to failure of individual securities dealers, and to enhance access to securities, interest payments and maturity proceeds, all cash and securities in the City's portfolio shall be held in safekeeping in the City's name by a third-party custodian, acting as agent for the City under the terms of a custody agreement executed by the bank and the City. All investment transactions will require a safekeeping receipt or acknowledgment generated from the trade. The custodian shall provide a monthly report to the City listing all securities held in safekeeping with current market data and other information. The Finance Director shall implement procedures to review and reconcile the custodian statements on regular basis. The only exceptions to the foregoing shall be depository accounts and securities purchases made with (i) local government investment pools; (ii) time certificates of deposit, and (iii) money mutual funds since the purchased securities are not deliverable.

Diversification: The purpose of having diversification of investments is to reduce the overall portfolio risks. The portfolio should consist of a mix of various types of securities, issuers, and maturities.

IX. AUTHORIZED TYPES OF INVESTMENTS AND LIMITATIONS

The State of California Government Code Section 53600 et seq. defines the investments allowed for city funds. The City further limits authorized investments to the following:

1. Collateralized Deposits with financial institutions will be collateralized with pledged securities provided that the following criteria is met:
 - The maximum maturity does not exceed five years
2. United States Treasuries and other government obligations for which the full faith and credit of the United States are pledged for payment of principal and interest. There is no percentage limitation of the portfolio that can be invested in this category provided that the following criteria is met:
 - The maximum maturity is five years
3. Federal Agencies or United States Government-Sponsored Enterprise obligations, participations, or other instruments, including those issued by or fully guaranteed as to principal and interest by federal agencies or United States government-sponsored enterprises. Examples of these securities include but are not limited to: Government National Mortgage Association, Federal National Mortgage Association, Federal Land Bank and Federal Farm Credit Banks and TVA bonds. There is no percentage limitation on the portfolio that can be invested in this category, provided the following criteria is met:
 - No more than 25% of the portfolio may be invested in any Agency/GSE issuer
 - The maximum maturity does not exceed five years
4. State of California Local Agency Investment Fund (LAIF), the City may invest up to the maximum amount per legal entity that is permitted by California Law.
5. Local Government Investment Pools (LGIP)
 - Other LGIPs are permitted provided that the City Council takes a separate action to authorize the LGIP and it is added to this policy
6. Non-Negotiable Certificates of Deposit in state or federally chartered banks, savings & loans, or credit unions, provided that the following criteria is met:
 - The amount per institution is limited to the maximum covered by the Federal Deposit Insurance Corporation or the National Credit Union Administration
 - No more than 20% of the portfolio will be invested in a combination of federally insured and

- collateralized time deposits
 - The maximum maturity does not exceed five years
7. Non-Negotiable Certificates of Deposit in state or federally chartered banks, savings & loans, or credit unions *in excess of* insured amounts which are fully collateralized with securities in accordance with California law, provided that the following criteria is met:
- No more than 20% of the portfolio will be invested in a combination of federally insured and collateralized time deposits
 - The maximum maturity does not exceed five years
8. Negotiable Certificates of Deposit (certificates that can be sold in the secondary market), provided that the following criteria is met:
- The amount of the certificate insured up to the FDIC limit does not require any credit ratings
 - For any amount above the FDIC insured limit they must be issued by institutions which have short-term debt obligations are rated “A-1” or higher by at least one NRSRO; or long-term obligations are rated in the “A” category or higher by at least one NRSRO
 - No more than 30% of the total portfolio may be invested in negotiable certificates
 - No more than 5% of the portfolio may be invested in any issuer
 - The maximum maturity does not exceed five years
9. Mutual Funds and Money Market Mutual Funds that are registered with the Securities and Exchange Commission under the Investment Company Act of 1940, provided that the following criteria is met:
- Attained the highest ranking or the highest letter and numerical rating provided by not less than two NRSROs; or
 - Have retained an investment adviser registered or exempt from registration with the Securities and Exchange Commission with not less than five years’ experience investing in the securities and obligations authorized by California Government Code Section 53601 and with assets under management in excess of \$500 million
 - No more than 20% of the total portfolio may be invested in these securities
10. Bankers’ Acceptances, provided that the following criteria is met:
- They are issued by institutions which have short-term debt obligations rated “A-1” or higher by at least one NRSRO; or long-term debt obligations which are rated in the “A” category or higher by at least one NRSRO
 - No more than 40% of the portfolio may be invested in Bankers’ Acceptances
 - No more than 5% of the portfolio may be invested in any issuer
 - The maximum maturity does not exceed 180 days
11. Commercial Paper, provided that the following criteria is met:
- The issuer is a corporation organized and operating in the United States with assets in excess of \$500 million
 - The securities are rated “A-1” or higher by at least one NRSRO
 - They are issued by corporations having long-term obligations rated in the “A” category or its equivalent or higher, if the issuer has long-term ratings, by at least one NRSRO
 - Has program-wide credit enhancements which may include, but not limited to, overcollateralization, letters of credit, or a surety bond
 - No more than 25% of the portfolio may be invested in Commercial Paper
 - No more than 5% of the portfolio may be invested in any issuer
 - The maximum maturity does not exceed ~~270~~ 397 days

X. **PORTFOLIO MANAGEMENT STRATEGY**

The intent at the time of purchasing investments is that they are to be held until maturity. However, during the life of the investment, if market opportunities allow an investment to be sold at a gain while providing an acceptable yield on the reinvestment of the funds, then an investment may be sold and a new investment made prior to the maturity of the original investment.

XI. MAXIMUM MATURITY

The City will maintain a cash flow analysis to project the City's need for money. All money not required for immediate use will be invested to the greatest extent possible.

The City will not invest in securities maturing more than five years from the date of trade settlement, unless the City Council has by resolution granted authority to make such an investment at least three months prior to that investment.

XII. QUARTERLY REPORTING

City staff shall provide the City Council with quarterly investment reports that provide a clear picture of the status of the current investment portfolio, and which are in accordance with Government Code Section 53646 (b). The quarterly report shall include the following:

1. A listing of individual securities held at the end of the reporting period.
2. Yield to maturity of all investments listed.
3. Coupon, discount, or earnings rate.
4. Par value, Amortized Book Value and Market Value.
5. A list of cash amounts in each City accounting fund that equals the total amount that the City has invested.
6. Monthly transactions for the period in accordance with California Government Code Section 53607
7. A statement of compliance with investment policy, including a schedule of any transactions or holdings which do not comply with this policy or with the California Government Code, including a justification for their presence in the portfolio and a timetable for resolution
8. A statement regarding whether the portfolio will allow the City to have adequate funds to meet its cash flow requirements for the next six months

XIII. INVESTMENT POLICY ADOPTION AND REVIEW

The City of Wheatland's investment policy shall be adopted by resolution of the City of Wheatland's City Council. The policy shall be reviewed annually by the Finance Director/City Treasurer who will make recommendations to the City Council regarding any changes needed to address consistency with the overall objectives of preservation of principal, liquidity and return, and its relevance to current law and financial and economic trends. The Wheatland City Council must approve any modifications made thereto.

Reviewed with no modifications, April 11, 2023.
Reviewed with no modifications, March 26, 2024.
Reviewed with no modifications, February 25, 2025.



City Council Meeting Staff Report

Meeting Date: February 10, 2026

SUBJECT: Update on Wheatland Aquatic Center Funding

PREPARED BY: Bill Zenoni, City Manager

RECOMMENDATION:

Staff recommends that the Wheatland City Council review the information presented and provide direction to staff on next steps.

DISCUSSION:

The Wheatland City Council, on July 9, 2019, adopted Resolution No. 25-19 accepting a gift of \$1.0 million from David Creps to be used for maintaining and operating a community swimming pool within the City of Wheatland. The City executed an agreement with Mr. Creps which provided that the donated funds would be deposited into a separate interest-bearing fund and would be used to maintain and operate a community swimming pool and to operate an aquatic program at the swimming pool which was to be constructed within the City of Wheatland. The agreement further stipulated that the swimming pool would be constructed and begin operation within seven years of the July 2019 agreement (by July 2026), or the \$1 million gift plus any earned interest would be returned to the David Creps Revocable Trust.

On October 27, 2020, the City Council approved an agreement with the Melton Design Group for architectural and grant support services for the City’s recreation facility projects. At that time, it was anticipated that the swimming pool project could be eligible for State Proposition 68 grant funding. The Melton Design Group completed the *Wheatland Aquatic Center Feasibility Report* (copy attached), which was accepted by the City Council on September 28, 2021. That report recommended that the City pursue a phased project that would start with the construction of a single pool designed to allow for recreational use, competitive swimming, diving and water polo to be constructed on a 2.8 acre parcel of land provided by the Wheatland School District under a long-term \$1 per year lease agreement. The estimated 2021 cost of that phase of the project was \$4.4 million. Subsequent potential phases of the project identified in the Melton Design Group Report included the addition of a shallow childrens and warm-up pool and a beach-entry recreational pool with play equipment and a recreational slide at an additional cost of approximately \$6.7 million, for a long-term total project cost of \$11.1 million (in 2021 dollars).

For the initial \$4.4 million phase of the project, the anticipated sources of funding included:

- \$3 million Proposition 68 Rural Recreation and Tourism Program Grant.
- \$1 million Creps donation (assuming an amendment to the original agreement was approved to allow the use of the donated funds for pool construction rather than pool operations).
- \$350,000 long-term deferred loan from Yuba Water Agency.

The City submitted an application to the State Department of Parks and Recreation for the Prop 68 grant, and was notified in 2022 that the City was not awarded grant funding. The reason provided was that the number of applications exceeded the grant funding available.

Since that time, staff has been exploring potential funding opportunities for this project. However, there have been no federal or state grant programs offered for an aquatic center which haven't required a significant (50%) matching contribution.

In addition to the significant cost of constructing a municipal swimming pool, there are ongoing costs to operate and maintain the facility. The Wheatland Aquatic Center Feasibility Report also identified the annual cost of operating and maintaining the pool at \$310,000 (operational 4 months per year) to \$650,000 (operating 12 months per year). It was estimated that approximately 40 percent of the annual operating costs might be recovered from user fees, with the remaining costs to be funded from other sources. These cost estimates have not been updated since 2021.

The City Council last received an update on the status of the aquatic center funding in January 2024. At that time, staff identified no available grant funding. There was discussion about a possible capital funding campaign to generate donations from local and business donors. However, the chance of generating the large amount of capital required for this project is questionable.

With the July 2026 deadline fast approaching, the Pool Ad Hoc Committee (Mayor Coe and Councilmember Teter) met on January 14, 2026 to discuss the next steps related to the donated funding. As it does not appear that the City will be able to generate the necessary funding to construct and operate an aquatic center, direction from the City Council is requested. Specifically, in accordance with the terms of Mr. Creps donation agreement, the \$1 million donation along with interest earned on those funds (\$155,953 as of December 31, 2025) would be returned to the David Creps Revocable Trust.

FISCAL IMPACT:

This is an information item only. There is no fiscal impact at this time

ATTACHMENTS:

- 1. Resolution No. 25-19
- 2. Agreement Between City of Wheatland and David Creps
- 3. Wheatland Aquatic Center Feasibility Report

RESOLUTION NO. 25-19

ACCEPTING A GIFT FOR OPERATION AND MAINTENANCE OF A COMMUNITY SWIMMING POOL IN THE CITY OF WHEATLAND

WHEREAS Mr. David Creps wishes to make a generous gift of \$1,000,000 (one million dollars) to the City of Wheatland for purposes of maintaining and operating a community swimming pool; and

WHEREAS the City Council wishes to accept the gift; and

WHEREAS, the attached agreement (Exhibit 1) has been developed by both parties to state clearly the purpose of the gift and the conditions regarding acceptance of the gift; and

WHEREAS, the City Council must formally accept the gift and provide staff direction regarding acceptance of the gift.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Wheatland hereby:

1. Accepts the gift, with great appreciation; and
2. Approves the attached agreement regarding disposition of the gift and directs the Mayor to sign the agreement; and
3. Determines that the acceptance of the gift does not trigger environmental review under the California Environmental Quality Act (CEQA) because this is merely a financial transaction; and
4. Directs the Finance Director to establish a Fiduciary Fund titled Community Pool Operations and Maintenance; and
5. Directs the Finance Director to accept the gift and deposit the funds immediately in the City of Wheatland's state Local Agency Investment Fund (LAIF) account and record the gift in the Community Pool Operations and Maintenance Fund; and
6. Directs the Finance Director to place, within a reasonable time period, all funds in the Community Pool Operations and Maintenance Fund into investment accounts separate from LAIF and specifically for the fund.

PASSED AND ADOPTED by the City Council of City of Wheatland, State of California this 9th day of July 2019, by the following vote:

AYES: Coe, West, Henderson, Pendergraph

NOES:

ABSTAIN:

ABSENT: McIntosh



Joseph Henderson, Mayor

**AGREEMENT BETWEEN THE CITY OF WHEATLAND
AND DAVID CREPS
REGARDING DONATION WITH CONDITIONS
TO OPERATE AND MAINTAIN COMMUNITY SWIMMING POOL**

This Agreement ("Agreement") is made and entered into this 3 the day of July, 2019, by and between the City of Wheatland, a municipal corporation ("City") and David Creps, an individual ("Mr. Creps"), who agree as follows:

1. **Donation.** Mr. Creps will donate to the City, and the City agrees to accept \$1,000,000.00. This gift is subject to the following conditions:
 - a. The City will place the \$1,000,000.00 into a separate fund, which fund, including the principal and interest or other investment earnings, shall be used by the City to maintain and operate a community swimming pool in the City, and operate an aquatic recreational program for the swimming pool.
 - b. This pool will be constructed and will begin operations within seven (7) years of the Effective Date of this Agreement, or the \$1,000,000.00 plus any earnings thereon, less any losses from investments, will be returned by the City to the David Creps Revocable Trust u/t/d 5/10/05, as amended.
2. **Term.** This Agreement shall remain in effect for twenty-five (25) years after its Effective Date, unless sooner terminated as provided by the termination provision below.
3. **Termination.** This Agreement may be terminated prior to its expiration date in any one of the following ways:
 - a. By Mr. Creps or his successor in interest, if, in violation of Section 1.a., the City uses the Donation for an unauthorized purpose or the City fails to use the Donation for its stated purpose, and the City fails to correct the breach after being given 30 days' notice of the demand for correction.
 - b. By Mr. Creps or his successor in interest, pursuant to Section 1.b., upon giving the City not less than 30 days prior written notice of termination.
 - c. By the City, if the City Council has determined that circumstances preclude the City from using the Donation for the purposes set forth in Section 1.a, thereby frustrating or rendering impossible the objectives of this Agreement.
 - d. Twenty-five (25) years after the Effective Date of this Agreement, the Agreement shall terminate automatically, and the restrictions on the use of any amount remaining in the fund will expire, and the City may use any remaining funds for any valid City purpose.

e. If the Agreement is terminated under Section 3.a, 3.b., or 3.c., the City will return within 60 days, the amount of the fund, including all income earned by the fund, unless the Parties have agreed otherwise in writing. When returning the funds, the City will not be liable for any diminution in value due to market conditions.

4. **Entire Agreement.** The Parties intend this writing to be the sole, final, complete, exclusive, and integrated expression and statement of the terms of their contract concerning the subject matter addressed in the Agreement. This Agreement supersedes all prior oral or written negotiations, representations, contracts or other documents that may be related to the subject matter of this Agreement, except those other documents that may be expressly referenced in this Agreement.

5. **Notices.** An annual statement of the status of the funds shall be mailed to the following individuals within 60 days after each calendar year, showing the status of the account at the end of the said calendar year. Any notice to be given to Mr. Creps shall be sufficiently served if given to him personally or if deposited in the United States Mail, regular pre-paid mail, addressed as follows:

David Creps
P.O. Box 152
Wheatland, CA 95692

Irene Creps
883 Urbano Drive
San Francisco, CA 94127

Guth & Changaris, APLC
474 Century Park Drive,
Suite 300
Yuba City, CA 95991

Any notice to be given to the City shall be addressed to the City Manager and delivered or mailed to the City Clerk at City Hall.

6. **Successors and Assigns.** This Agreement shall bind, and inure to the benefit of, the successors, assigns, heirs and legal representatives of the Parties.

7. **Amendments.** This Agreement may be amended only by a subsequent writing approved and signed by both Parties. Any amendment by City must be approved by the City Council at a noticed public meeting. Individual City Council members do not have the authority, express or implied, to amend, modify, waive, extend or in any way alter this Agreement.

8. **Waiver.** The waiver at any time by either party of its rights with respect to a default or other matter arising in connection with this Agreement shall not be deemed a waiver with respect to any subsequent default or matter.

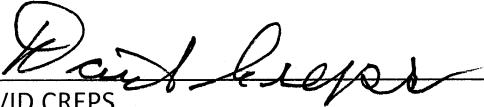
9. **Construction and Interpretation.** The Parties agree and acknowledge that this Agreement has been arrived at through negotiation and that each party has had a full and fair opportunity to revise the terms of this Agreement. Consequently, the normal rule of construction that any ambiguities are to be resolved against the drafting party will not apply in construing or interpreting this Agreement.

10. **Partial Invalidity.** If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall nevertheless continue in full force without being impaired or invalidated in any way.

- 11. **Governing Law and Venue.** Except as otherwise required by law, this Agreement shall be interpreted, governed by, and construed under the laws of the State of California. The County of Yuba will be venue for any state court jurisdiction and the Eastern District of California will be venue for any federal court litigation concerning the enforcement or construction of this Agreement.

- 12. **Attorney's Fees.** If any litigation is commenced between the parties to this Agreement or their personal representatives concerning any matter relating to this Agreement, the party or parties prevailing in such litigation shall be entitled, in addition to such other relief as may be granted, to a reasonable sum for their attorney's fees. This sum shall be determined by the Court in such litigation or in a separate action brought for that purpose.

DATED: July 9, 2019


DAVID CREPS

DATED: _____, 2019

CITY OF WHEATLAND



City of Wheatland

WHEATLAND AQUATIC CENTER FEASIBILITY STUDY

Prepared by

MELTON DESIGN GROUP, Inc. / Arch Pac

Sept. 23, 2021



MELTONDESIGNGROUP, Inc.

LANDSCAPE ARCHITECTS & PLANNERS
CHICO | SACRAMENTO
MELTONDG.COM (530) 899-1616

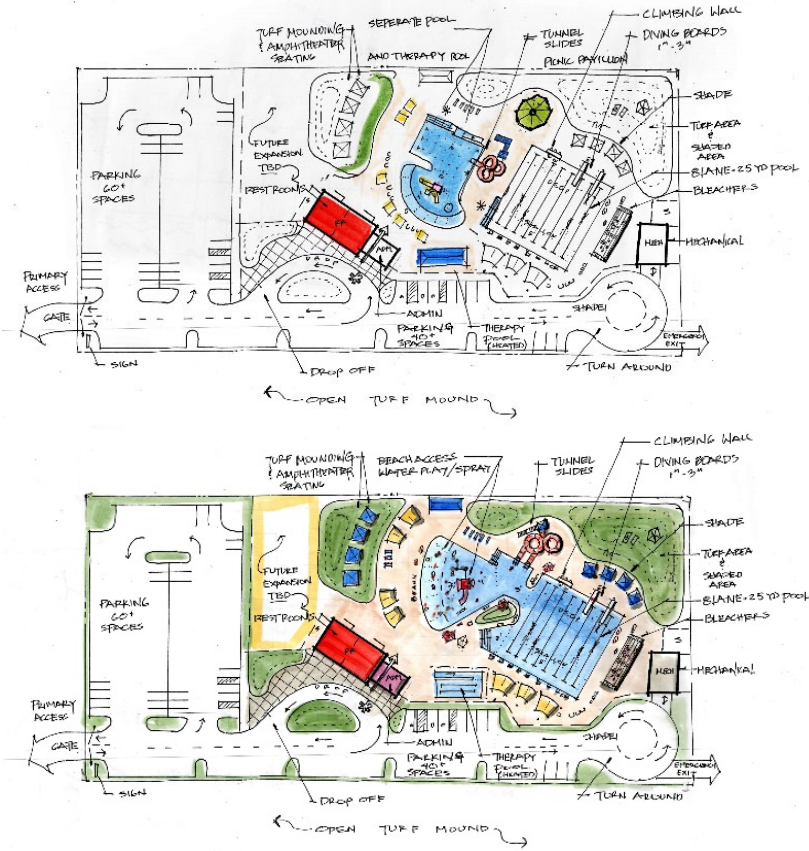


ARCH PAC
AQUATICS



Table of Contents

- 1. INTRODUCTION and SUMMARY
- 2. PROJECT LOCATION and SITE ANALYSIS
- 3. NEEDS ASSESSMENT and PUBLIC OUTREACH
- 4. MARKET STUDY
- 5. CONCEPT DESIGN and PROJECT COST
 - ❖ LIFE CYCLE COST ANALYSIS
- 6. OPERATING ANALYSIS
- 7. APPENDIX





City of Wheatland Aquatic Center Feasibility Study

WHEATLAND AQUATIC FACILITY INTRODUCTION and SUMMARY

INTRODUCTION

The City of Wheatland is a growing community and understands that with growth comes the need for amenities for its people. This aquatic complex project has been active for years in the community with both the City, the schools and the public. One driving force in the project is a donation of one million dollars that by a private trust to the City for the ongoing maintenance of a pool facility. This donation twilight after 7 years which leaves us 5 years, so with that and the upcoming State Proposition 68 - Rural Recreation and Tourism Program (RRT), the City has the opportunity to develop Phase 1 of an aquatic center. This fits nicely into the grant intent and on a piece of property between Wheatland Elementary, Bear River Middle School and Wheatland Union High School. In the vicinity of Wheatland, there are several pools. Yuba City has Gauche Aquatic Park (GAP), which is the most developed with amenities and serves the most people in the surrounding area. Olivehurst, Nicholas, Sutter, Lincoln and Live Oak provide nearby smaller pools.

This document will layout the design of a pool complex on the Wheatland Elementary School District property; a full aquatic design with phases, cost estimates and probable operating costs and revenue generation for the complex. The City will assess this study to determine whether they want to apply for the upcoming grant in November of 2021.

APPROACH - The report will include the following elements:

- Project Location and Site Analysis
- Needs Assessment and Public Outreach
- Market Study
- Conceptual Design and Costs
- Operating Analysis

PROJECT LOCATION and SITE ANALYSIS

The project site is on Wheatland Elementary School District property and is located east of Wheatland Ranch Road, west of Highway 65 and between the elementary and middle schools. The site itself will connect the schools to the pool areas and take up approximately one half of an acre. It currently is a flat, non-irrigated turf field that is primarily used for recreational soccer. Vehicle access is through the Bear River parking lot and pedestrian access will be from both schools and the subdivision to the north of the site. Pedestrian access from WUHS currently does not exist and this access will be assessed as part of the project study. Utilities are available at the Bear River School site and from Wheatland Ranch Road. Overall, the site offers a great space that is centrally located and is being offered at the right price.

NEEDS ASSESSMENT and PUBLIC OUTREACH

Currently, there are pools in several of the communities around Wheatland. Most are aged, small and in need of refurbishing, with the exception of Yuba City's Gauche Facility, which has many of the pool amenities that make up a good aquatic complex. The Wheatland Community has a need to provide swimming lessons, free play and a competitive pool for both the schools and the public. Multiple public outreach meetings have occurred and the wants and needs of the community were captured and documented in the conceptual plans.



City of Wheatland Aquatic Center Feasibility Study

Primarily, the community wants a competitive pool where they can hold swim meets, play water polo, dive and have fun. They want to be able to teach the youth how to swim while providing recreation and a fun environment. In addition to the swimming aspect, the City sees the opportunity to use this pool site as a gathering space for our children, for six months in spring, summer and fall. The years to follow the build out will see an increase in population to the tune of approximately a 53% increase. This is a reasonable expectation given the housing developments that are already planned for coming years, plus we've already seen examples of rapid growth in neighboring Plumas Lake and Lincoln.

MARKET STUDY

The service area of the project was studied to assess and examine all the current pool markets and demographics of the proposed project site, along with creating an inventory of the existing pool systems and programs that are provided by other communities that might compete with the proposed project. We found that there are many smaller and older pools that provide minimal services and one large pool that has all the services, but a higher cost, and is 15 miles to the north. We have found that schools in the area need places to swim and compete. There are other organizations such as the Wheatland Fire Authority, First 5 Organization and Yuba Water Agency that can support the pool and bring swim lessons to the masses. There is a need for a pool that upgrades the community and fulfills the desire for a larger competitive recreation/lap pool to teach and train our youth and adults.

The current growth and development in the community and region, and the support of local agencies, demonstrates the ability to support and operate a pool financially and cover future lifecycle costs. There is a need for and support for high quality pools, event space, passive recreation and quality competition water sports.

CONCEPT DESIGN and PROJECT COST

The pool concept captures the community's needs; we listened to pool users... from kids to moms and dads, from schools to swimming and diving clubs. We also considered future users that are moving to the area. We coordinated with both the WESD and WUHSD to discuss the property use, pool and site design, encroachments, fences and access. The One Pool Option includes the 8-lane, 25-yard pool with diving board, size and depth allowing for water polo, shallow area for lessons and additional recreation area incorporating an obstacle course, rope swing, basketball and 1 meter diving board. Phase 2 of the pool incorporates the shallow childrens'/warm up pool for kids lessons and a smaller basketball hoop. Phase 3 includes a beach-entry recreating pool incorporating play equipment and a recreational slide to fulfill the needs of the community. Phase 1 was designed to provide the lowest cost pool version with enough elements to make it fun and cost appropriate, without compromising the configuration of the pool for future uses like water polo.

Estimates ranged from \$4.35 million for the one pool option to \$5.1 million for two, and to almost \$11 million for full build-out. In addition to the pools, an administrative building and bath house was proposed to provide pool management and a secure restroom, changing room and shower structure. A second building was a half indoor/half outdoor mechanical building. The funding of the project will need to relate to the State Grant. To do so, we will need to be green, sustainable, promote health and wellness and invite tourism to the community.



City of Wheatland Aquatic Center Feasibility Study

OPERATING ANALYSIS

The project design was studied in relation to operating costs and revenue generation. The City had been gifted \$1 million in 2019 and there is a 7-year sunset on that gift. With the desire for the pools to be big enough for swim meets and water polo, there is an increase in operating costs for such a large pool, specifically in respect to utilities and lifeguard needs, among other things. With the additional consideration of a heated pool, we are looking at options for keeping the pool open 4, 5, 6 or 12 months out of the year. Being open less than a full year reduces the operating costs in regard to heating and lifeguards but limits the revenue generating season. The start and end months of the pool operation and the quantity of lifeguards will be a key discussion of the operating budget.

RECOMMENDATIONS

1. The City proceed with the ONE-POOL OPTION. This pool allows for current operations with the ability to grow as the community grows.
2. Start with being open for a 5-month season to establish the management of the pool and maximize the Cost-Revenue ratio, with the option to stretch it out to 6 or 7 months, as the population grows and users increase.
3. Proceed with a project that is to be designed and built with operations costs in mind. This means including things like a pool cover that's easy to apply/remove, using LED lighting and using equipment sized appropriately for ease of operation and cost efficiency, for example a variable frequency drive (VFD) pump, which reduced electrical use considerably.
4. The City should incorporate a SOLAR ARRAY PROGRAM that will offset electrical costs and in the future incorporate electrical heaters to heat the pool instead of the natural gas heaters.



City of Wheatland
Aquatic Center Feasibility Study

WHEATLAND AQUATIC FACILITY LOCATION and SITE ANALYSIS

The purpose of this Site Analysis is to clarify why the site was chosen, what the conditions are and what will need to be done for the project to be constructed at this site. The WSD provided the 3.18 acre site between Bear River Middle School and Wheatland Elementary School. The High School is also very close, only a few blocks away, and could provide PE classes throughout the spring and fall. The location allows for a full-size pool complex, leaving the District with plenty of room to establish more multi-use fields, track, fitness, etc., as requested. This is the only site available to the City that is large enough to allow for the future growth of Phase 2 and Phase 3. WSD is willing to participate in the process; the access through school property is being worked out with the School District. The site's proximity to the schools, though, as well as being close to the town center and Highway 45, and easy access to utilities, makes this a prime location for the Aquatic Facility. It's also well suited for the Proposition 68 grant, as the aforementioned proximities help fulfill a basic goal of the grant - to aid in reducing greenhouse gases by reducing travel distances/times.

EVALUATION

SITE CRITERIA EVALUATED	RATING 1-5 / 5 highest / Weight		
1. Central Location to Key Users - Schools and Community	15	5	3
2. Access to All Needed Utilities	20	4	5
3. Ease of Access for Vehicles, Bicycles and Pedestrians	9	3	3
4. Acquisition Cost	15	5	3
5. Zoning compliance	5	5	1
6. Shared Uses and Costs	9	3	3
7. Access to Parking	15	5	3
8. Neighborhood Rejections or Concerns	12	4	3
9. Safety of Neighborhood	15	5	3
10. Site Readiness	8	4	2
11. Geological Advantages	12	4	3
12. Citizen and Public Perception	10	5	2
TOTAL POINTS AVAILABLE - 170	TOTAL:	145	

At 85 percent of the available points, this rating shows that the site is highly desirable and it is recommended to move forward.

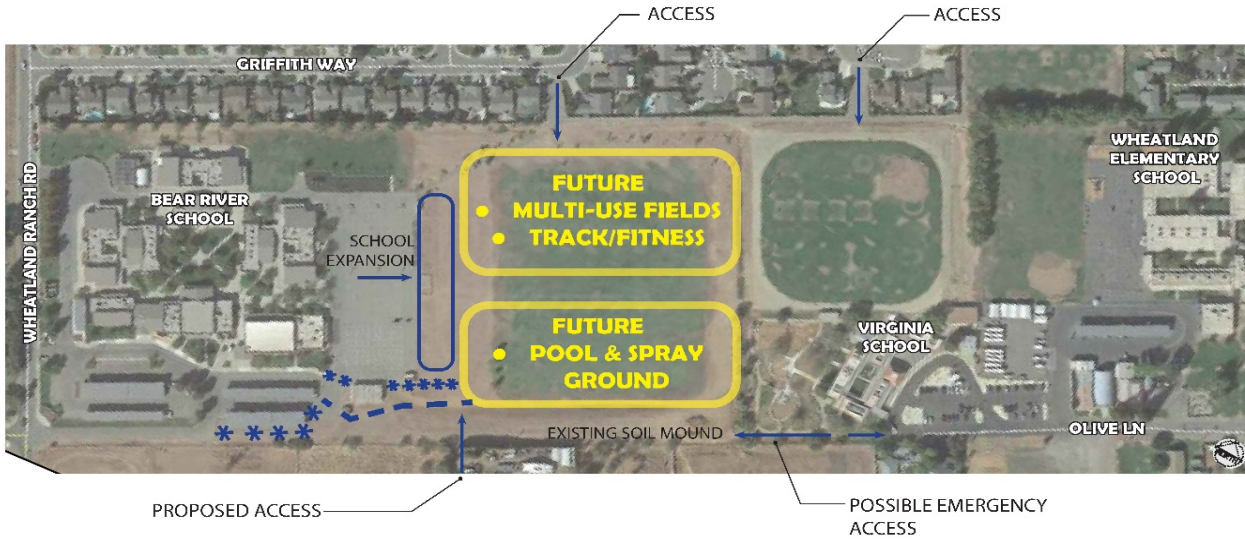
The elements that are scoring low can be modified during site design and construction with minimal cost.

One key element of the site is that we allow for the future use of additional recreation for the school fields.

It is integral to the grant that this pool provides significant physical activity for local and regional users.



City of Wheatland Aquatic Center Feasibility Study





WHEATLAND AQUATIC FACILITY NEEDS ASSESSMENT and PUBLIC OUTREACH

The City of Wheatland community currently travels for their swimming. As previously stated, the Gauche Aquatic Park (GAP) in Yuba City is the prime choice with the most amenities, providing a lap pool, recreation and slides. The E. Nicholas and Olivehurst Public Utility District (OPUD) pools are preferred by many for easy access, lower cost and good for the little ones. After studying all the potential pools and going through the outreach process, a similar pool to the GAP was specified, but with a smaller, more connected feel and additional recreation elements. This will make the Wheatland pool unique to the area and useful for competitive and functional training and recreation. Potential users are the schools, swim clubs and general public from Wheatland and surrounding communities.

Understanding the importance of engaging the public when considering major projects, we fine-tuned and confirmed our concept design for the facility through four public input workshops, both in-person and virtual. We also had a final design review in front of both School Districts and the Wheatland City Council. The design also takes into consideration the National Recreation and Parks Association standards, which recommends approximately 15-25 SF of water surface area per person to accommodate 5% of the local population. With a population estimated to reach 5,791 in 5-10 years, the recommended water surface area would be 7,239 SF. This level of use is met by the proposed Two-Pool Option. With the proposed One-Pool Option, the need would be met once a second pool is constructed during Phase 2.

OUTREACH WORKSHOPS

For each Workshop, the design team presented all aspects of the project to the attendees, so that they could indicate which elements and options they most wanted to see in their ideal aquatic facility. These workshop results helped focus the design of the Aquatic Center on what matters most to the community. Our goals in the design were based on providing all types of water play, swimming lessons and competitive opportunities for all ages, while training for water safety, fitness and fun.

GOALS and OBJECTIVES

1. Educate the community and stakeholders on what is available to them.
2. Convey the advantages of the proposed project location to the community.
3. Provide examples of similar area pools and pools that offer new ideas and elements.
4. Develop a spatial relationship of pools to spectators, access, security and safety.
5. Create a pool concept that provides water for multiple uses and ages.
6. Develop community pride and excellence in water sports while providing benefits.
7. Comply with Proposition 68 requirements regarding Public Outreach.

FINDINGS: COMMUNITY PRIORITIES

1. A competitive pool for learning and competing within many disciplines.
2. Water play and recreation.
3. Water fitness and instruction for water safety.
4. Parent comfort, providing shade and visibility of pools and open recreation areas.
5. Affordable use of the facility and all its features.
6. Themed play with fun features and sprays for daily summer entertainment.



City of Wheatland Aquatic Center Feasibility Study

Workshop #1

The first Workshop was offered in-person and via Facebook Live on April 17, 2021. The meeting took place in the parking lot of Bear River Middle School adjacent to the site. This brainstorming session introduced the project to the community and presented a variety of pool types and sizes. We had photos of all the existing pools in surrounding communities. Element Boards provided visual displays for many of the options being discussed and helped participants understand what their Aquatic Center could look like and offer.

Attendance: Approximately nine (9) people were in attendance. All participants were adults, neighbors, contractors and relatives of the donor.

Discussion: The participants engaged in discussions regarding the site, access, parking, effect on neighbors to the north. There was also a discussion regarding the operation of the site and how it would be maintained. The site discussion brought up access from all the schools and how close it is for everyone. We need to get permission for high school kids to cross church property for ease of access during school. Secondly, attendees discussed the parking and were pleased to see many parking spaces to prevent cars parking in the neighborhood. Jim Goodwin, City Manager, stated that a Trust Fund donated \$1 million to the City and it would fund operational costs. The donor was the Creps Family, and the one condition of the Trust is that we build the park within seven (7) years. Additionally, a local pool contractor present at the meeting expressed his interest in helping design the mechanics of the pool and highlighting the opportunities that are available to us.

Boards Demonstrated the Following:

1. All pools in the area
2. Site plan showing the surrounding area and access options to the proposed pool site
3. Possible pool and recreational designs
4. Final boards that asked for top five elements
 - a. Lap pool for competitions and lessons
 - b. Recreational spray pool with a theme
 - c. Picnic and viewing area to all pools along with reservations and shade
 - d. Support building with restroom, shower, changing room
 - e. Unique water play elements in the pool

Workshop #2

The second Workshop was a virtual event hosted on April 20, 2021. This second brainstorming session allowed another opportunity for the community to evaluate and provide input on a variety of pool types, sizes and elements.

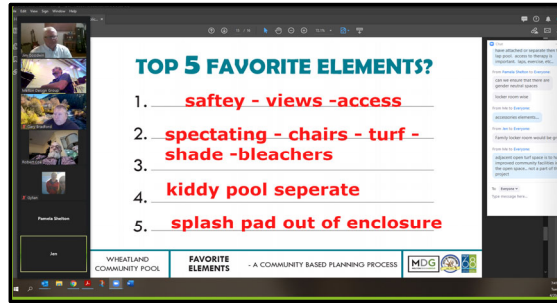
Attendance: Approximately seven (7) people were in attendance.

Discussion: Element Boards again provided visual displays for options being discussed. The discussion focused more on the **scheduling and programming**. People wanted to understand what would be offered; that it would start small and then grow into a healthy swim program. Separate **therapy pools** were discussed; however, we mentioned that they would just be warm pools and an actual therapist would not be provided. Individuals could do their own exercises in the pool but we could not call it a therapy pool due to insurance requirements. Other items discussed included safety, bleacher spectating, shade areas for watching, a separate kiddy pool and a splash pad, possibly outside in a non-paid area.



City of Wheatland Aquatic Center Feasibility Study

Attendees stressed that we need large grass areas for swim meets with shade elements, as well as BBQs and tables for people to gather at the meet. Gender neutral spaces, restrooms and dressing areas were requested, along with family changing areas. The prevailing preferred pool was Sutter Pool, as it's easy to get to and the price is right. The GAP spray area is well liked, as well as its slides and play area. Our site can accommodate a smaller slide and we could do a splash area by itself in town to deal with the recreation and summer heat. A beach-entry pool with sprays and themed play were preferred.

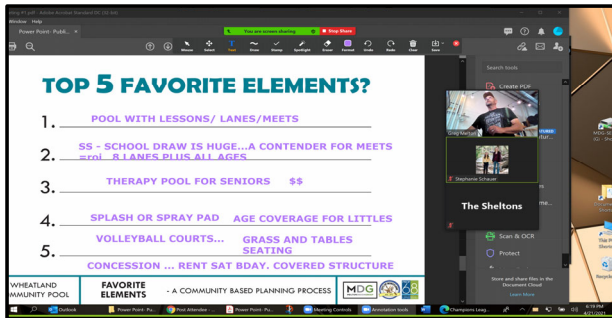


Workshop #3

The Workshop #3 was another virtual event. It took place on April 21, 2021.

Attendance: Approximately seven (7) people were in attendance consisting of a young family, aquatic committee members including a representative from the high school swim team, council members and a senior swimmer.

Discussion: For this third Workshop, the goal was to focus on elements and design suggestions that came from feedback from the first two Workshops. A large, 8-lane lap pool was discussed. With a pool that size, Wheatland schools can have swim meets and be time-efficient with the eight (8) lanes. As the City grows, the draw for meets will grow and the pool will be able to handle the additional demands. Diving and water polo were also requested for the schools. To qualify as a nationally certified pool to host meets, the competition pool needs official automatic touch pads for keeping and recording stops and times for the racers. Recreation space around the pool would also be needed with shade and rentals. Attendees discussed grass play and seating areas for spike ball and volleyball as well.





City of Wheatland Aquatic Center Feasibility Study

Workshop #4 Little League Baseball and Girls Softball

Workshop #4 on May 15, 2021, was back to in-person and hosted at the park. The emphasis was on prioritization of park elements from a list that was created during the prior 'focus' Workshop (#3). The goal for the 50+ attendees was to take the narrowed down list and highlight which items and configuration were the priority and preferred for the community's ideal Aquatic Center.

Attendance: 50+ Park users of all ages

Discussion: Attendees were presented with two plans showing a full design of the complex. Both designs had the same elements but were layed out with different configurations, pools together and pools separate. They were asked to put red and green dots on what option they preferred. The community liked the pools separated so kids not qualified to be in a deeper pool could be in the shallow pool and spectators can be between the pools and keep an eye on their kids. Additionally, the two pools add the benefit of operating the pools separately. One variable would be price to operate two pools vs. one pool and the additional cost of construction. Photos show the wide range of age and engagement we experienced. Planning commissioners and little league kids were also involved. After selections were made, several of the participants mentioned the balance of having the right pools and accessories and making sure the design is layed out so that all the lifeguards, spectators and parents can see the pools and keep track of children. There was a consensus on having two separate pools for functionality, which was Option B.



City Council Presentation

On June 8, 2021, the Wheatland City Council was presented with a conceptual design that incorporated what was learned from the four Outreach Workshops. They were given a packet showing the site, the elements and what the public wanted.

The Council had several ideas/concerns:

1. They liked the whole complex design with pools separate or together, but with all the amenities to make it very multi-use and a good return on investment.
2. The Council was concerned about where dollars were coming from to build the project. Options: \$3 million from the grant, \$2.5 million from other funds, possible preliminary impact fees from development and other donations. The Council requested a project version be designed to be as close to equal to the grant funds as possible, even it meant having only one pool.
3. What is the annual maintenance and operation budget? Can we afford the option we have on the plan? The 6-month plan keeps the pool(s) open for 6 months of the year with a deficit. Donations from local pool advocates and the Creps Trust maintenance fund could reduce that. Reviewing 5-month and 4-month plans was discussed to see what it takes to get into the black.
4. It is important to build what the City can afford. Everyone liked the design and long-term planning "but we can't overdo it" (ie. opt for an initial project that's beyond the City's ability to build and maintain it). As we look at 5-10 year growth in the community, it's clear this should be a 'phased' project. Keep it simple and affordable in Phase 1 without compromising the possibilities for future Phases. The Council directed that a smaller pool be researched with less up-front costs and possibly less months of operation to meet the budget available.



City of Wheatland Aquatic Center Feasibility Study

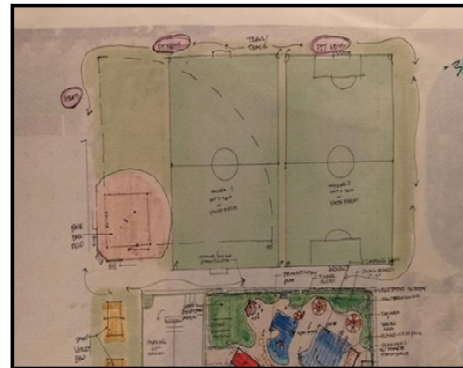
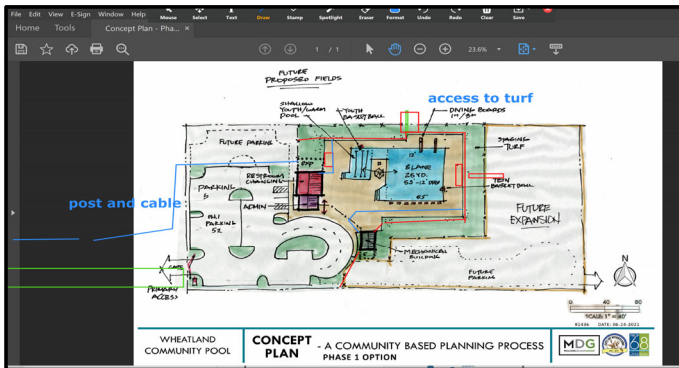
Wheatland School District (WSD)

A virtual meeting was held with the WSD.

Attendance: Three (3) people were in attendance and Craig Guensler represented the District.

Discussion: Several several items regarding the site were discussed.

1. Property Use: The District provided information that would provide the field property on the south end for the Aquatic Complex at no cost to the City. It was important to show that the remaining fields provided enough space to have future fields, volleyball and soccer play. Access along Olive Street was discussed and the District Manager expressed the concern of Virginia School and the access adjacent to their property. Past discussions have been had regarding the easement on Olive Street and at this time the project does not need the access, but was exploring it for additional accessibility. At this point, the project does not need access from Olive Street and is not planning any access through Virginia School.
2. Vehicular Access to the Pool: The WSD thought the access drive through the Bear River site parking drive could work for pool access if the school was fenced along the north edge of that access and pedestrian access from the schools to the pool was provided.
3. Pedestrian Access: Potentially an easement to allow easy access for the high school to the new pool through Church or Private properties. Fields, security and access onto school grounds during school was a important discussion.



Wheatland Union High School District (WUHS)

On May 12, 2021 we held a virtual meeting with the District Superintendent, Nicole Newman, and the new Athletic Director.

Discussion: The needs of the high school in regard to the pool and how the school would be able to contribute to the maintenance fees for their use was discussed. They were enthusiastic but needed to get an understanding of operations and how much time they needed to run their competitive swimming program, water polo and diving. These would be brand new programs so Athletic Director pointed out the need to gauge the student interest level. They were also asked to determine if there would be physical education classes that would come to the pool from the high school.



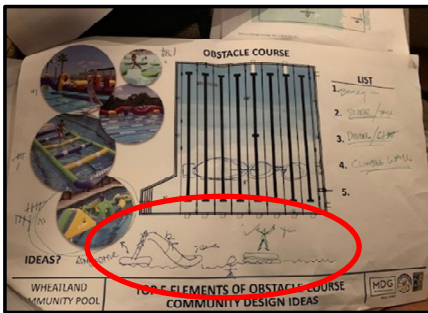
City of Wheatland Aquatic Center Feasibility Study

Wheatland National Night Out - Wheatland Police Department

On August 3, 2021, the Wheatland Police Department and the law enforcement agencies in Yuba and Sutter Counties hosted its annual festival.

Attendance: Approximately 29 people participated in our demonstration at the event. Participants were a wide range of moms and dads, kids and school teachers, that were excited about the kids learning to swim, as Wheatland has the Sacramento River close by. Several seniors were there with family and liked the play elements that can be added, like the climbing wall and the rope swing. The event was very family driven with a strong community engagement.

Discussed: Phase 1 and the full build-out of the project were presented with concepts that incorporated all the input from the previous outreach Workshops and Meetings. The participants were shown site designs, enlargements and elements the public requested. POOL and OBSTACLE COURSE: Additionally, we focused on the design of an obstacle course that would be placed in the water. We took a poll on which course was preferred and the circled sketch in the photo below (drawn by a teen at the event) represents the type of course they liked. Several kids and parents engaged in the selection and drew pictures of the combinations of the course they would prefer. The obstacle course was something they had seen on TV and would love to be able to play on and have the water to fall into. DIVING: A diving instructor from the neighboring high school discussed using 1-meter boards primarily, as 3-meter boards are less common. Two women that currently do water aerobics added their input on how a standard 4' pool works great for them. They mentioned that they would only do water aerobics in the warmer months, May-September. The public also asked about cost of use and mentioned that they would consider paying for summer memberships.





City of Wheatland
Aquatic Center Feasibility Study

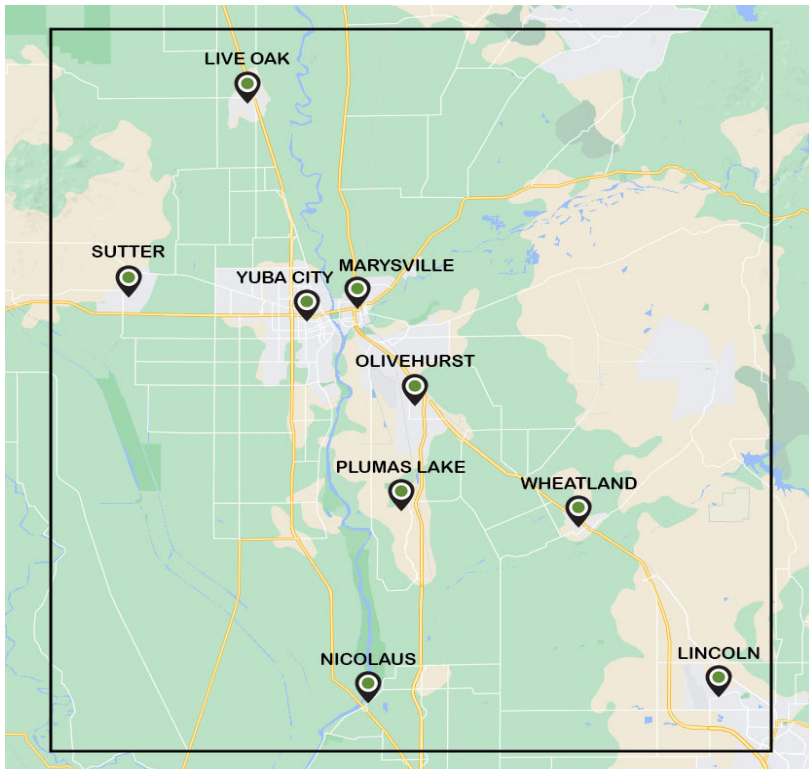
WHEATLAND AQUATIC FACILITY MARKET STUDY

This Market Study establishes what is available in the surrounding areas for similar types of aquatic centers and communities with typical usage and fee schedules for their current operation. To accomplish this, we looked at the demographics of Wheatland and surrounding areas, evaluated other available aquatic venues and used this information to predict revenue potential, possible fees and programs and options to aid with determining the feasibility of the project.

AREA DEMOGRAPHICS

Geographic Area of Consideration

The area examined for demographics consisted of an approximate 10-15 mile radius around Wheatland. We would expect this to be a viable service area for the Aquatic Center and we understand that the draw to Wheatland's facility will come from these areas, while it's also possible that we would lose users to the same facilities. With the growth of our community, a centrally located public facility would thrive and the proposed project can continue to grow with it.





City of Wheatland
Aquatic Center Feasibility Study

Population by Age (2019 Data per CensusReporter.org)

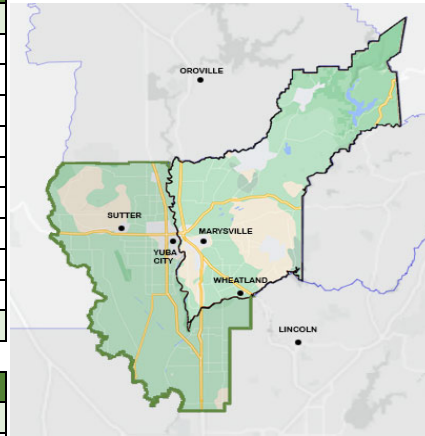
YUBA CITY METRO AREA			
Age	% of Pop	Error Margin	Population
0-9	16.20%	±1.1%	28,364
10-19	12.90%	±1.2%	22,670
20-29	14.60%	±1.2%	25,592
30-39	12.70%	±1%	22,241
40-49	11.3%†	±1.1%	19,764
50-59	10.80%	±0.9%	18,916
60-69	11.70%	±1.1%	20,608
70-79	6.7%†	±0.8%	11,779
80+	3.3%†	±0.6%	5,705
TOTAL			175,639

WHEATLAND			
Age	% of Pop	Error Margin	Population
0-9	9.6%†	±2.7%	367
10-19	12.3%†	±3.7%	470
20-29	15.3%†	±4.6%	581
30-39	10.8%†	±3.2%	410
40-49	14.9%†	±4.1%	568
50-59	17%†	±4.3%	648
60-69	9.4%†	±3.3%	357
70-79	7.1%†	±2.7%	270
80+	3.7%†	±1.5%	139
TOTAL			3,810

WHEATLAND 10-YEAR GROWTH PROJECTIONS			
Years	1% Growth per mo.	Growth per Development Projections	Population Total
1	38	0	3,848
2	38	420	4,307
3	43	144	4,494
4	45	450	4,989
5	50	48	5,086
6	51	0	5,137
7	51	0	5,189
8	52	0	5,241
9	52	0	5,293
10	53	500	5,846
TOTAL at end Year 20 with only 1% growth			6550
TOTAL at end Year 30 with only 1% growth			7349
TOTAL at end Year 40 with only 1% growth			8246

* This Table reflects ~53% growth by end of first 10 years

Green Outline = Sutter Co/Black Outline = Yuba Co
"Yuba City Metro Area" encompasses both Cos.





City of Wheatland
Aquatic Center Feasibility Study

YUBA CITY			
Age	% of Pop	Error Margin	Population
0-9	11.8%†	±2.2%	7,924
10-19	13.5%†	±2.2%	9,010
20-29	15.3%†	±2.3%	10,222
30-39	11.7%†	±1.8%	7,840
40-49	12.3%†	±2.2%	8,217
50-59	11.1%†	±1.5%	7,433
60-69	12.6%†	±1.9%	8,448
70-79	7.3%†	±1.3%	4,884
80+	4.5%†	±1.1%	3,031
TOTAL			67,009

OLIVEHURST			
Age	% of Pop	Error Margin	Population
0-9	16%†	±2.2%	2,159
10-19	11.9%†	±2.3%	1,605
20-29	16.6%†	±2.1%	2,231
30-39	15.2%†	±2.1%	2,051
40-49	11.2%†	±1.7%	1,502
50-59	12%†	±1.7%	1,618
60-69	10.2%†	±1.6%	1,373
70-79	4.8%†	±1.1%	652
80+	2%†	±0.7%	273
TOTAL			13,464

PLUMAS LAKE			
Age	% of Pop	Error Margin	Population
0-9	20.40%	±2.7%	1,543
10-19	17.60%	±3.2%	1,330
20-29	12.50%	±2.9%	950
30-39	15.50%	±2.2%	1,172
40-49	15.2	±2.3%	1,153
50-59	9.10%	±1.8%	689
60-69	6.90%	±2.1%	524
70-79	1.80%	±1.2%	133
80+	1%	±0.7%	79
TOTAL			7,573

SUTTER			
Age	% of Pop	Error Margin	Population
0-9	10.10%	±3.8%	302
10-19	16.60%	±4.2%	500
20-29	16.90%	±4.1%	509
30-39	5.10%	±2.3%	154
40-49	17.9	±3.7%	539
50-59	12.90%	±3.5%	388
60-69	10.50%	±3.1%	316
70-79	7.30%	±2.7%	220
80+	3%	±1.3%	77
TOTAL			3,005



City of Wheatland
Aquatic Center Feasibility Study

MARYSVILLE			
Age	% of Pop	Error Margin	Population
0-9	13.6% [†]	±2.5%	1,672
10-19	12.3% [†]	±3%	1,512
20-29	18.6% [†]	±2.9%	2,288
30-39	16.7% [†]	±3%	2,055
40-49	8.2% [†]	±1.9%	1,009
50-59	13.2% [†]	±2.2%	1,629
60-69	10% [†]	±1.9%	1,232
70-79	4.3% [†]	±1.3%	527
80+	3.3% [†]	±1.1%	403
TOTAL			12,327

LINCOLN			
Age	% of Pop	Error Margin	Population
0-9	13.20%	±1.1%	6,262
10-19	10.70%	±1%	5,053
20-29	9.2% [†]	±0.9%	4,370
30-39	12.40%	±0.9%	5,864
40-49	12.10%	±0.9%	5,740
50-59	9.80%	±0.9%	4,651
60-69	12.70%	±0.9%	6,008
70-79	13.30%	±0.9%	6,303
80+	6.60%	±0.7%	3,137
TOTAL			47,388

LIVE OAK			
Age	% of Pop	Error Margin	Population
0-9	16.5% [†]	±2.7%	1,430
10-19	18.2% [†]	±2.6%	1,578
20-29	13.2% [†]	±2.6%	1,141
30-39	12.6% [†]	±2.5%	1,089
40-49	11.8% [†]	±2.1%	1,026
50-59	12.6% [†]	±2.2%	1,095
60-69	8% [†]	±1.6%	694
70-79	4.1% [†]	±1.2%	357
80+	3.1% [†]	±0.9%	269
TOTAL			8,679



City of Wheatland
Aquatic Center Feasibility Study

Economics - Median Income (2019 Data per CensusReporter.org)

YUBA CITY METRO AREA			
Household Income	% of Pop	Error Margin	Households
Under \$50K	40.2%†	±4.6%	24,060
\$50K - \$100K	31.3%†	±3.9%	18,739
\$100K - \$200K	22.2%†	±2.9%	13,311
Over \$200K	6.3%†	±1.5%	3,756
TOTAL			59,866

Median Household Income: \$61,307

Per Capita Income: \$28,757

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Yuba City: As of 2021Q1, total employment for the City of Yuba City, CA was 22,427 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 7.5%.

The average worker earned \$48,199 annually, an increase of 9.9% over the preceding four quarters.

WHEATLAND			
Household Income	% of Pop	Error Margin	Households
Under \$50K	25.2%†	±8.1%	354
\$50K - \$100K	42.4%†	±10.9%	597
\$100K - \$200K	25.8%†	±8.3%	363
Over \$200K	6.6%†	±4.2%	93
TOTAL			1,407

Median Household Income: \$75,066

Per Capita Income: \$34,653

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Wheatland: As of 2021Q1, total employment for the City of Wheatland, CA was 787 (based on a four-quarter moving average). Over the year ending 2021Q1, employment increased 4%.

The average worker earned \$54,259 annually, an increase of 8.4% over the preceding four quarters.

Wheatland Sphere (95674, 95681, 95692, 95903, 95961): As of 2021Q1, total employment for the City of Wheatland Sphere of influence, CA was 6,871 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 2.7% in the region.

The average worker earned \$50,482 annually, an increase of 6.8% over the preceding four quarters.

YUBA CITY			
Household Income	% of Pop	Error Margin	Households
Under \$50K	41.8%†	±7.3%	10,194
\$50K - \$100K	28.1%†	±5.7%	6,853
\$100K - \$200K	24.6%†	±5.3%	5,996
Over \$200K	5.5%†	±2.1%	1,350
TOTAL			24,393

Median Household Income: \$61,773

Per Capita Income: \$30,262

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Yuba City: As of 2021Q1, total employment for the City of Yuba City, CA was 22,427 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 7.5%.

The average worker earned \$48,199 annually, an increase of 9.9% over the preceding four quarters.



City of Wheatland
Aquatic Center Feasibility Study

OLIVEHURST			
Household Income	% of Pop	Error Margin	Households
Under \$50K	51%†	±7%	2,223
\$50K - \$100K	28.3%†	±4.9%	1,233
\$100K - \$200K	19%†	±4.8%	827
Over \$200K	1.8%†	±1.3%	80
TOTAL			4,363

Median Household Income: \$48,598

Per Capita Income: \$21,272

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Olivehurst: As of 2021Q1, total employment for the Olivehurst CDP, CA was 2,077 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 3%.

The average worker earned \$53,763 annually, an increase of 8.8% over the preceding four quarters.

PLUMAS LAKE			
Household Income	% of Pop	Error Margin	Households
Under \$50K	18.9%†	±6.5%	419
\$50K - \$100K	27.3%†	±7%	604
\$100K - \$200K	46.1%†	±9%	1019
Over \$200K	7.7%†	±3.1%	170
TOTAL			2,212

Median Household Income: \$101,995

Per Capita Income: \$31,875

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Plumas Lake: As of 2021Q1, total employment for the Plumas Lake CDP, CA was 386 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 6.6%.

The average worker earned \$52,604 annually, an increase of 8.7% over the preceding four quarters.

SUTTER			
Household Income	% of Pop	Error Margin	Households
Under \$50K	32.5%†	±10.5%	354
\$50K - \$100K	38.5%†	±10.5%	419
\$100K - \$200K	25.6%†	±8.1%	279
Over \$200K	3.4%†	±2.7%	37
TOTAL			1,089

Median Household Income: \$69,034

Per Capita Income: \$28,542

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Sutter: As of 2021Q1, total employment for the Sutter CDP, CA was 816 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 4.2%.

The average worker earned \$46,589 annually, an increase of 9.9% over the preceding four quarters.



City of Wheatland
Aquatic Center Feasibility Study

MARYSVILLE			
Household Income	% of Pop	Error Margin	Households
Under \$50K	53.4%†	±7.5%	2,539
\$50K - \$100K	31.7%†	±6.6%	1,506
\$100K - \$200K	14.1%†	±4%	669
Over \$200K	0.9%†	±1.1%	42
TOTAL			4,756

Median Household Income: \$44,839

Per Capita Income: \$22,891

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Marysville: As of 2021Q1, total employment for the City of Marysville, CA was 8,033 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 6.2%.

The average worker earned \$58,838 annually, an increase of 6.3% over the preceding four quarters.

LINCOLN			
Household Income	% of Pop	Error Margin	Households
Under \$50K	27%	±2.4%	4,787
\$50K - \$100K	29.60%	±2.2%	5,249
\$100K - \$200K	32.50%	±2.2%	5,750
Over \$200K	10.9%†	±1.2%	1,934
TOTAL			17,720

Median Household Income: \$88,734

Per Capita Income: \$41,451

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Lincoln: As of 2021Q1, total employment for the City of Lincoln, CA was 8,684 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 1.5%.

The average worker earned \$64,519 annually, an increase of 12.3% over the preceding four quarters.

LIVE OAK			
Household Income	% of Pop	Error Margin	Households
Under \$50K	47.1%†	±8.2%	1,156
\$50K - \$100K	29.9%†	±5.9%	733
\$100K - \$200K	20.1%†	±4.8%	494
Over \$200K	2.9%†	±1.8%	72
TOTAL			2,455

Median Household Income: \$54,792

Per Capita Income: \$22,495

EMPLOYMENT/WAGE TRENDS: (per Yuba-Sutter Economic Development Corporation)

Live Oak: As of 2021Q1, total employment for Live Oak, CA was 2,659 (based on a four-quarter moving average). Over the year ending 2021Q1, employment declined 2.2%.

The average worker earned \$38,902 annually, an increase of 11% over the preceding four quarters.



City of Wheatland
Aquatic Center Feasibility Study

Ethnicity (2019 Data per CensusReporter.org)

YUBA CITY METRO AREA			
Race	% of Pop	Error Margin	Population
White	48.90%	±0.1%	85,897
Hispanic	30.70%	±0%	53,831
Black	2.5%†	±0.5%	4,354
Native	0.5%†	±0.3%	898
Asian	11.20%	±1%	19,691
Islander	0.5%†	±0.3%	829
Other	0.1%†	±0.1%	131
Two+	5.7%†	±1.1%	10,008
TOTAL			175,639

WHEATLAND			
Race	% of Pop	Error Margin	Population
White	73.40%	±5.7%	2,797
Hispanic	16.2%†	±4.2%	617
Black	0.2%†	±0.2%	6
Native	0.9%†	±1%	36
Asian	1.9%†	±1.5%	71
Islander	1.3%†	±1.7%	50
Other	0%	±0%	0
Two+	6.1%†	±3.2%	233
TOTAL			3,810

YUBA CITY			
Race	% of Pop	Error Margin	Population
White	42.50%	±1.1%	28,260
Hispanic	29.80%	±1%	19,833
Black	2.1%†	±0.3%	1,397
Native	0.6%†	±0.2%	423
Asian	19.30%	±1%	12,810
Islander	0.4%†	±0.1%	287
Other	0.2%†	±0.2%	141
Two+	5.1%†	±0.9%	3,365
TOTAL			66,516

OLIVEHURST			
Race	% of Pop	Error Margin	Population
White	47.40%	±4.3%	6,381
Hispanic	38.7%†	±4.7%	5,209
Black	1.9%†	±1.4%	251
Native	1%†	±0.6%	140
Asian	6.5%†	±2.8%	872
Islander	0.3%†	±0.3%	44
Other	0%†	±0.1%	4
Two+	4.2%†	±1.5%	563
TOTAL			13,464



City of Wheatland
Aquatic Center Feasibility Study

PLUMAS LAKE			
Race	% of Pop	Error Margin	Population
White	57.30%	±4.3%	4,342
Hispanic	21.40%	±1.5%	1624
Black	4%	±1.4%	299
Native	0.60%	±0.6%	47
Asian	8.20%	±2.8%	620
Islander	0.20%	±0.3%	13
Other	0%†	±0.1%	0
Two+	8.30%	±4.7%	628
TOTAL			7,573

SUTTER			
Race	% of Pop	Error Margin	Population
White	73.70%	±6.2%	2,215
Hispanic	14.9%†	±3.9%	449
Black	0.00%	±0%	0
Native	2%†	±1.6%	61
Asian	3.9%†	±5.4%	116
Islander	0.00%	±0%	0
Other	0.00%	±0%	0
Two+	5.5%†	±3.7%	164
TOTAL			3,005

MARYSVILLE			
Race	% of Pop	Error Margin	Population
White	62.1%†	±6.4%	7,654
Hispanic	29.6%†	±6.6%	3,648
Black	2.1%†	±1.2%	256
Native	0.4%†	±0.4%	45
Asian	1.5%†	±0.8%	188
Islander	0.00%	±0%	0
Other	0.2%†	±0.2%	22
Two+	4.2%†	±2.3%	514
TOTAL			12,327

LINCOLN			
Race	% of Pop	Error Margin	Population
White	67.80%	±2.3%	32,129
Hispanic	21.1%†	±2.2%	10,011
Black	1.6%†	±0.6%	748
Native	0.1%†	±0.1%	48
Asian	6.5%†	±0.9%	3,086
Islander	0.2%†	±0.2%	111
Other	0.2%†	±0.2%	97
Two+	2.4%†	±0.7%	1,158
TOTAL			47,388



City of Wheatland
Aquatic Center Feasibility Study

LIVE OAK			
Race	% of Pop	Error Margin	Population
White	37.8%†	±5.5%	3,283
Hispanic	50.7%†	±5.2%	4,403
Black	2%†	±2.1%	176
Native	0.5%†	±0.4%	42
Asian	5.8%†	±2.8%	502
Islander	0.1%†	±0.1%	8
Other	0.1%†	±0.2%	7
Two+	3%†	±1.7%	258
TOTAL			8,679

Education (2019 Data per CensusReporter.org)

YUBA CITY METRO AREA			
Education	% of Pop	Error Margin	Population
No degree	19.8%†	±2.5%	22,547
High school	24.20%	±2.1%	27,515
Some college	36.40%	±2.9%	41,324
Bachelor's	12.7%†	±1.7%	14,406
Post-grad	6.90%	±1.1%	7,874
TOTAL			113,666

WHEATLAND			
Education	% of Pop	Error Margin	Population
No degree	14.5%†	±5.4%	391
High school	25%†	±5.4%	674
Some college	42.1%†	±6.8%	1,132
Bachelor's	11.7%†	±4.3%	315
Post-grad	6.7%†	±3.4%	180
TOTAL			2,692

YUBA CITY			
Education	% of Pop	Error Margin	Population
No degree	22.5%†	±4.5%	10,100
High school	21%†	±3.2%	9,396
Some college	34%†	±4.2%	15,218
Bachelor's	12.7%†	±2.6%	5,684
Post-grad	9.80%	±2.4%	4,402
TOTAL			44,800

OLIVEHURST			
Education	% of Pop	Error Margin	Population
No degree	26.1%†	±4.1%	2,268
High school	28.8%†	±3.5%	2,502
Some college	36.4%†	±4%	3,159
Bachelor's	7.2%†	±2.2%	625
Post-grad	1.5%†	±0.9%	133
TOTAL			8,687



City of Wheatland
Aquatic Center Feasibility Study

PLUMAS LAKE			
Education	% of Pop	Error Margin	Population
No degree	8.2%†	±3.7%	346
High school	16.00%	±3.9%	677
Some college	50.70%	±5.1%	2,152
Bachelor's	16.50%	±4%	698
Post-grad	8.7%†	±3%	371
TOTAL			4,244

SUTTER			
Education	% of Pop	Error Margin	Population
No degree	9.8%†	±2.5%	197
High school	36.30%	±2.1%	734
Some college	41.50%	±2.9%	838
Bachelor's	8.9%†	±1.7%	180
Post-grad	3.6%†	±1.1%	72
TOTAL			2,021

MARYSVILLE			
Education	% of Pop	Error Margin	Population
No degree	16.2%†	±3.3%	1,322
High school	24.3%†	±4%	1,982
Some college	45.7%†	±5.6%	3,724
Bachelor's	9.7%†	±2.5%	793
Post-grad	3.9%†	±1.5%	321
TOTAL			8,142

LINCOLN			
Education	% of Pop	Error Margin	Population
No degree	7.2%†	±1.1%	2,455
High school	20.40%	±1.6%	6,928
Some college	38.10%	±1.9%	12,951
Bachelor's	21.70%	±1.3%	7,382
Post-grad	12.5%†	±1%	4,246
TOTAL			33,962

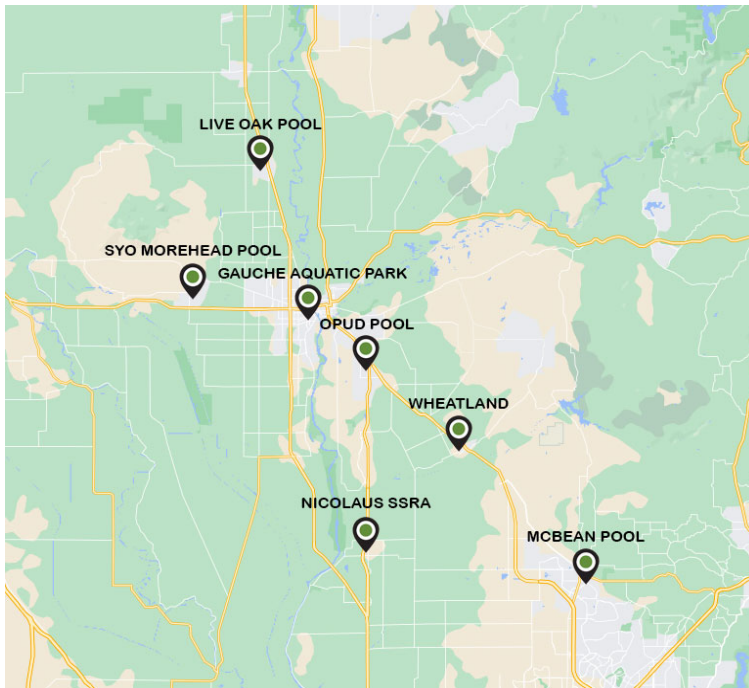
LIVE OAK			
Education	% of Pop	Error Margin	Population
No degree	31.4%†	±4.9%	1,570
High school	22.3%†	±3.4%	1,114
Some college	34.8%†	±4.5%	1,742
Bachelor's	8%†	±2.5%	400
Post-grad	3.5%†	±1.5%	175
TOTAL			5,001



City of Wheatland
Aquatic Center Feasibility Study

OTHER AREA FACILITIES

The availability of other similar water-based facilities plays into both the Needs Assessment and the Market for attendees. The following is a narrow list of just the other public aquatic facilities within an approximate 10-15 mile radius of Wheatland. This does not account for all private pools, nor any residential pools, that may also exist in that same area.



AQUATIC FACILITY FEE COMPARISON					
Facility (mos open)	Location	Daily Fee (Adult/Child)	Avg Indiv Season Pass	Avg Family Season Pass	Avg Lessons (Adult/Child)
McBean Pool (6 months)	Lincoln	\$5.00/\$3.00	\$63.00	\$120.00	\$80.00
OPUD Pool (2 months)	Olivehurst	\$5.00/\$4.00	\$105.00	\$210.00	varies
Gauche Aquatic Park (GAP) (12 months)	Yuba City	\$5.50	n/a	n/a	\$60.00
SSRA Small Pool & Adult Lap Pool (3 months)	E. Nicolaus	Small Pool: \$3.00/\$1.00 Lap Pool: \$5.00	\$75 for 25 uses	n/a	\$60.00
SYO Morehead Cmnty Pool (3 months)	Sutter	Lap Swim \$5	\$100 (\$140 Lap Season)	\$200.00	\$70.00
Live Oak Cmnty Pool (3 months)	Live Oak	\$1.00/\$0.5 (night)	\$45.00	n/a	\$50.00/\$40.00

>> OPUD Season Passes were calculated using the "Monthly" rate x 3 months



City of Wheatland
Aquatic Center Feasibility Study

AQUATIC FACILITY REVENUE COMPARISON						
Facility (staff count)	Location	Monthly Avg Daily Pass Sales	Avg Indiv. Season Pass Sales	Monthly Avg Family Season Pass Sales	Monthly Avg Lessons Sales	Monthly Avg Events Revenue
McBean Pool (~20 Staff)	Lincoln	100/day Rec Swimming	600/6-mo; 150 swim team/4-mo	33 (\$120) 4-person passes/6-mo	133	n/a
OPUD Pool (*)	Olivehurst	1,835 (all per mo, incl open, lessons, aerobics)	1,650 (~90% in groups)	n/a	88	not allowed per grant
Gauche Aquatic Park (GAP) (1 F/T, 8-10 P/T year-round; 50+ P/T summer)	Yuba City	~11,558	7,783 (Season Passes & 10-visit Passes)	n/a	1,220/summer	~\$1,563 for Annual Polar Bear Plunge
SSRA (5 lifeguards)	Nicolaus	~670			~37 kids	n/a
SYO Morehead Cmnty Pool (*) #	Sutter					
Live Oak Cmnty Pool (~18 lifeguards/ 1 admin)	Live Oak	3,200			~75	

(*) Staffing levels not provided by facility
Unable to reach anyone to obtain attendance statistics

Facility Information

McBean Pool 61 McBean Park Drive, Lincoln, 916-434-3230
Outdoor 7-lane Pool
<http://www.lincolncalifornia.gov/city-hall/departments-divisions/parks-recreation/mcbean-memorial-pool>

Olivehurst 1966 9th Avenue, Olivehurst, 530-743-8132

Public Utility Dist. Pool

Outdoor L-shaped Pool
<https://www.opud.org/swimming-pool-10th-avenue>

Gauche 421 Center Street, Yuba City, 530-822-4655

Aquatic Park

Outdoor 10-Lap 25x25-Yard Competitive Pool
Wading Pool with Sprayground
25-Foot Water Slide
https://www.yubacity.net/city_hall/departments/parks_recreation/g_a_p_-_gauche_aquatic_park

South Sutter 2408 Palm Street, E. Nicolaus, 530-656-2631

Rec. Area Pool

Outdoor 25x14-Yard Primary Pool
Outdoor 14x4.5-Yard Secondary Pool
<https://www.ssrapi.com/>



City of Wheatland Aquatic Center Feasibility Study

Moorehead Cmnty Pool Sutter Youth Organization (SYO)
7740 Butte House Road, Sutter, 530-673-9002
<https://www.sutteryouth.org/resources-1>

Live Oak Cmnty Pool Pennington Road & P Street, Live Oak, 530-695-2112
Outdoor 5-Lane Pool
Baby Pool
<https://www.liveoakcity.org/departments/parks-recreation/parks-facilities>

WHAT OTHER COMMUNITY POOL MIGHT THEY BE USING?



BEALE AFB POOL
6 Lane / 25 Yd. / Kiddie Pool



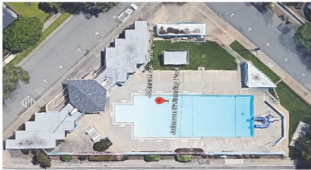
SUTTER POOL
6 Lane / 25 Yd.



LIVE OAK POOL
5 Lane / Slides



GAUCHE AQUATIC PARK, YUBA CITY
10 Lane / 25 Yd. / Slides / Play / Kiddie Pool



JOHNSON SWIMMING POOL



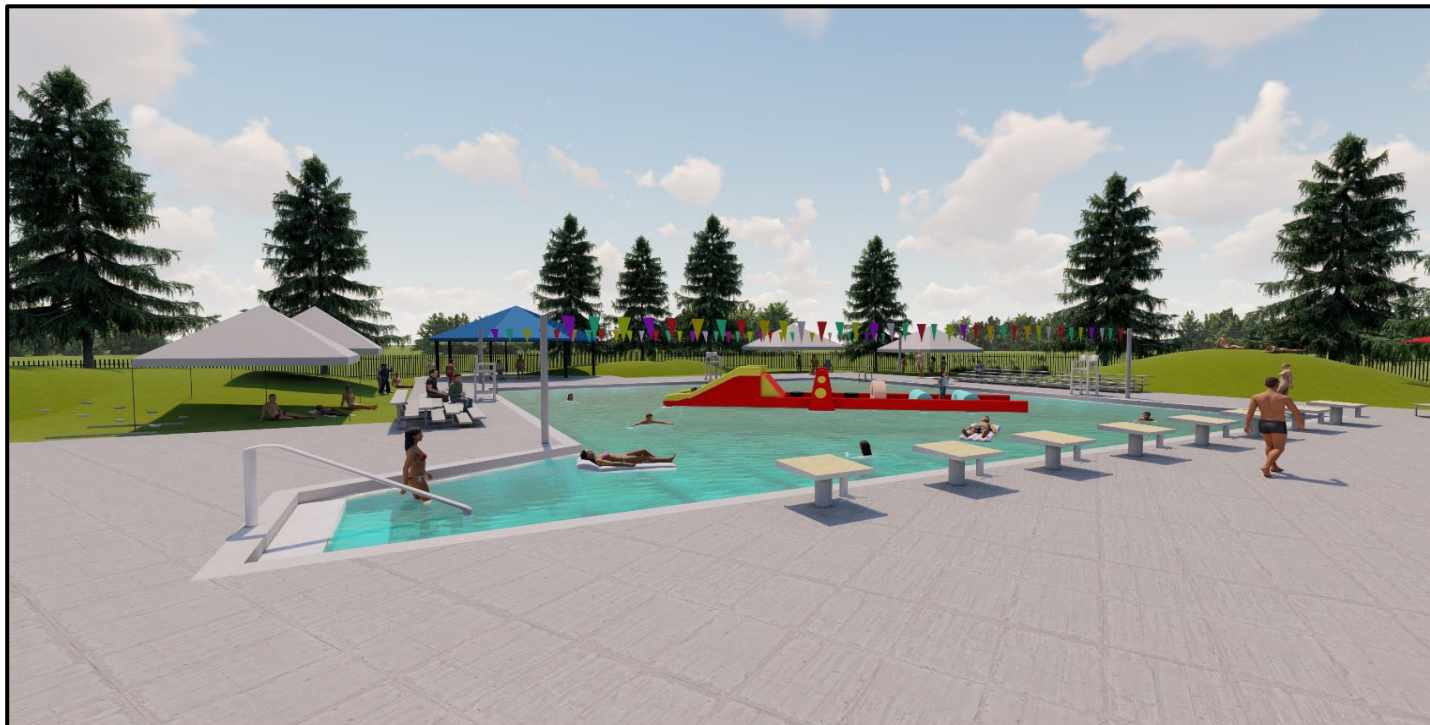
E NICOLAUS POOL
25 Yd. / Diving / Lap



LINCOLN SWIMMING POOL
6 Lane / Diving



OPUD POOL, OLIVEHURST
5 Lane / 25 Yd. / Diving





PROJECT COST

	<u>Pool Data:</u>	<u>8LBY25Y</u>	<u>Kid / Warm-up</u>
Perimeter: (Linear Feet)		321	
Area: (Square Footage)		5,630	1,450

ONE POOL OPTION

	PHASE ONE				PHASE TWO			
	AREA/ QTY	UNIT	UNIT PRICE	PHASE ONE COST	AREA/ QTY	UNIT	UNIT PRICE	PHASE TWO COST
SITWORK:								
Excavation & Grading on Site	1,800	CY	\$35	\$63,000	1000	CY	\$35	\$35,000
Road Access To Site Parking from closest parking	6,400	SF	\$9	\$57,600		SF	\$9	\$0
Parking, driveway, turn around on site	31,600	SF	\$9	\$284,400	26,000	SF	\$9	\$234,000
ADA access parking and signage	1	LS	\$7,500	\$7,500	0	LS	\$7,500	\$0
Entry Vehicle Gate	1	LS	\$4,200	\$4,200	0	LS	\$4,200	\$0
Landscape Trees / irrigation	18	EA	\$200	\$3,600	20	EA	\$200	\$4,000
Turf renovation around pool (seed)	17,800	SF	\$1.25	\$22,250	8000	SF	\$1.25	\$10,000
Landscape in parking	4,800	SF	\$2.00	\$9,600	6000	SF	\$2.00	\$12,000
Irrigation in parking	5,880	SF	\$2.25	\$13,230	3000	SF	\$2.25	\$6,750
Irrigation retrofit of Turf grass within fence	17,800	SF	\$1.75	\$31,150	8000	SF	\$1.75	\$14,000
Decomposed Granite	800	SF	\$4	\$3,200	0	SF	\$4	\$0
Signage	1	LS	\$7,500	\$7,500	0	LS	\$7,500	\$0
Sports Lights - LED on 50'-0" poles / sleeves	1	EA	\$35,000	\$35,000	3	EA	\$35,000	\$105,000
Fence & Gates - chain link	840	LF	\$150	\$126,000	0	LF	\$150	\$0
Fence to School	360	LF	\$95	\$34,200	0	LF	\$95	\$0
Extend Utilities to Site (elect, sewer, water)	1	LS	\$50,000	\$50,000	0	LS	\$50,000	\$0
Accessible gates / hardware & signs	2	GATE	\$6,000	\$12,000	0	EA	\$6,000	\$0
RPBFP	1	EA	\$5,000	\$5,000	0	EA	\$5,000	\$0
Bleachers (Tip & Rolls)	1	EA	\$6,000	\$6,000	1	EA	\$6,000	\$6,000
SUBTOTAL SITWORK				\$775,430				\$426,750.00
BUILDING:								
Pool Bath House (portable)	1,200	SF	\$350	\$420,000	0	SF	\$350	\$0
Mechanical building - chemical storage / storage	400	SF	\$260	\$104,000	0	LS	\$0	\$0
Mechanical building - fenced enclosure / mechanical	800	SF	\$100	\$80,000	0	LS	\$0	\$0
Bleacher cover	0	EA	\$2,000	\$0	2	EA	\$2,000	\$4,000
Amphitheater	0	LS	\$275,000	\$0	1	LS	\$275,000	\$275,000
Picnic Shelter	1	EA	\$60,000	\$60,000	2	EA	\$60,000	\$120,000
Pool Deck with Storm Drain System	10,078	SF	\$18	\$181,404	13,200	SF	\$18	\$237,600
Bonding & Grounding	1	LS	\$2,000	\$2,000	0	LS	\$2,000	\$0



SUBTOTAL BUILDING				\$847,404		\$636,600		
POOLS:								
Competitive Pool	5,630	SF	\$240	\$1,351,200	0	SF	\$240	\$0
Kid pool / access	0	SF	\$240	\$0	1,430	SF	\$240	\$343,200
Pool Chemical Stor. & Safety Equip (acid & chlorine)	1	EA	\$6,000	\$6,000	1	EA	\$6,000	\$6,000
Recreation pool / beach entry	0	EA	\$240	\$0	3,400	SF	\$240	\$816,000
Fun Spray Ground - Nozzles	0	EA	\$10,000	\$0	10	EA	\$18,000	\$180,000
Play Structure and Plumbing	0	LS	\$145,000	\$0	1	LS	\$145,000	\$145,000
LED Underwater lights	4	EA	\$1,750	\$7,000	10	EA	\$1,750	\$17,500
Automated Vacuum & Maintenance Equipment	1	LS	\$20,000	\$20,000	0	LS	\$20,000	\$0
Pool Covers with Reels (both pools)	5,630	SF	\$3	\$16,890	1,430	SF	\$3	\$4,290
Starting Blocks	8	EA	\$3,500	\$28,000	2	EA	\$3,500	\$7,000
Climbing Wall	0	LS	\$45,000	\$0	1	LS	\$45,000	\$45,000
Basketball basket	2	EA	\$500	\$1,000	0	EA	\$500	\$0
Security Lighting	1	LS	\$30,000	\$30,000	1	LS	\$15,000	\$15,000
Slide Structure	0	LS	\$180,000	\$0	1	LS	\$180,000	\$180,000
Obstacle Course (Aflex Inflatables-Buccaneer Assault)	1	LS	\$11,000	\$11,000	1	LS	\$11,000	\$11,000
Rope Swing	1	LS	\$10,000	\$10,000	0	LS	\$10,000	\$0
Water Polo Goals (pairs)	0	EA	\$6,000	\$0	2	EA	\$6,000	\$12,000
SUBTOTAL POOLS				\$1,481,090		\$1,781,990		
SUMMARY OF COSTS:								
SITE WORK				\$775,430		\$426,750		
BUILDING				\$847,404		\$636,600		
POOLS				\$1,481,090		\$1,781,990		
TOTAL HARD COSTS				\$3,103,924		\$2,845,340		
CONTINGENCY	6.50%			\$201,755	10.00%	\$284,534		
CONTRACTOR OVERHEAD	12.00%			\$396,681	12.00%	\$375,585		
CONTRACTOR PROFIT	8.00%			\$264,454	8.00%	\$280,437		
A/E FEE AND PERMITTING (By City)	7.50%			\$277,677	7.00%	\$245,382		
BONDS & INSURANCE	2.75%			\$109,087	2.75%	\$104,112		
PHASED TOTAL:				\$4,353,579		\$4,135,390		
GRAND TOTAL				\$8,488,969				



TWO POOL OPTION

	PHASE ONE				PHASE TWO			
	AREA/ QTY	UNIT	UNIT PRICE	PHASE ONE COST	AREA/ QTY	UNIT	UNIT PRICE	PHASE TWO COST
SITEWORK:								
Excavation & Grading on Site	2,500	CY	\$35	\$87,500	1000	CY	\$35	\$35,000
Road Access To Site Parking from closest parking	6,400	SF	\$9	\$57,600		SF	\$9	\$0
Parking, driveway, turn around on site	31,600	SF	\$9	\$284,400	26,000	SF	\$9	\$234,000
ADA access parking and signage	1	LS	\$7,500	\$7,500	0	LS	\$7,500	\$0
Entry Vehicle Gate	1	LS	\$4,200	\$4,200	0	LS	\$4,200	\$0
Landscape trees / irrigation	18	EA	\$400	\$7,200	20	EA	\$400	\$8,000
Turf renovation around pool (seed)	8,100	SF	\$1.25	\$10,125	8000	SF	\$1.25	\$10,000
Landscape in parking	5,880	SF	\$1.50	\$8,820	6000	SF	\$1.50	\$9,000
Irrigation in parking	5,880	SF	\$2.25	\$13,230	3000	SF	\$2.25	\$6,750
Irrigation retrofit of Turf grass within fence	8,100	SF	\$1.75	\$14,175	8000	SF	\$1.75	\$14,000
Decomposed Granite	800	SF	\$4	\$3,200	0	SF	\$4	\$0
Signage	1	LS	\$7,500	\$7,500	0	LS	\$7,500	\$0
Sports Lights - LED on 50'-0" poles / sleeves	0	EA	\$35,000	\$0	2	EA	\$35,000	\$70,000
Fence & Gates - chain link	840	LF	\$150	\$126,000	750	LF	\$150	\$112,500
Fence to School	360	LF	\$95	\$34,200	0	LF	\$95	\$0
Extend Utilities to Site (elect, sewer, water)	1	LS	\$50,000	\$50,000	0	LS	\$75,000	\$0
Accessible gates / hardware & signs	2	GATE	\$6,000	\$12,000	0	GATE	\$6,000	\$0
RPBFP	1	EA	\$5,000	\$5,000	0	EA	\$5,000	\$0
Bleachers (Tip & Rolls)	1	EA	\$6,000	\$6,000	1	EA	\$6,000	\$6,000
SUBTOTAL SITEWORK				\$738,650				\$505,250
BUILDING:								
Pool Bath House	1,200	SF	\$450	\$540,000	0	SF	\$450	\$0
Mechanical building - chemical storage / storage	400	SF	\$375	\$150,000	0	LS	\$0	\$0
Mechanical building - fenced enclosure / mechanical	800	SF	\$150	\$120,000	0	LS	\$65,000	\$0
Bleacher cover	0	EA	\$2,000	\$0	4	EA	\$2,000	\$8,000
Amphitheater	0	LS	\$275,000	\$0	\$1	LS	\$275,000	\$275,000
Picnic Shelter	0	EA	\$60,000	\$0	2	EA	\$60,000	\$120,000
Pool Deck with Storm Drain System	13,700	SF	\$18	\$246,600	8,500	SF	\$18	\$153,000
Bonding & Grounding	1	LS	\$2,000	\$2,000	0	LS	\$2,000	\$0
SUBTOTAL BUILDING				\$1,058,600				\$556,000
POOLS:								
Competitive Pool	5,630	SF	\$240	\$1,351,200	0	SF	\$240	\$0
Kid pool / access	1,450	SF	\$200	\$290,000	3,400	SF	\$200	\$680,000
Pool Chemical Storage & Safety Equip (acid & chlorine)	1	EA	\$6,000	\$6,000	1	EA	\$6,000	\$6,000
Recreation pool / beach entry	0	EA	\$220	\$0	3,000	SF	\$220	\$660,000
Fun Spray Ground Nozzles	0	EA	\$18,000	\$0	10	EA	\$18,000	\$180,000



Play Structure and Plumbing	0	LS	\$160,000	\$0	1	LS	\$160,000	\$160,000
LED Underwater lights	0	EA	\$1,750	\$0	14	EA	\$1,750	\$24,500
Automated Vacuum & Maintenance Equipment	1	LS	\$20,000	\$20,000	0	LS	\$20,000	\$0
Pool Covers with Reels (both pools)	7,500	SF	\$3	\$22,500	0	SF	\$3	\$0
Starting Blocks	8	EA	\$3,500	\$28,000	2	EA	\$3,500	\$7,000
Climbing Wall	0	LS	\$45,000	\$0	1	LS	\$45,000	\$45,000
Basketball basket	2	EA	\$500	\$1,000	2	EA	\$500	\$1,000
Security Lighting	1	LS	\$30,000	\$30,000	0	LS	\$30,000	\$0
Slide Structure	0	LS	\$180,000	\$0	1	LS	\$180,000	\$180,000
Obstacle Course (Aflex Inflatables-Buccaneer Assault)	1	LS	\$11,000	\$11,000	1	LS	\$11,000	\$11,000
Rope Swing	1	LS	\$10,000	\$10,000	0	LS	\$10,000	\$0
Water Polo Goals (pairs)	0	EA	\$6,000	\$0	2	EA	\$6,000	\$12,000
SUBTOTAL POOLS				\$1,769,700				\$1,966,500
SUMMARY OF COSTS:								
SITWORK				\$738,650				\$505,250
BUILDING				\$1,058,600				\$556,000
POOLS				\$1,769,700				\$1,966,500
TOTAL HARD COSTS				\$3,566,950				\$3,027,750
CONTINGENCY	8.00%			\$285,356	10.00%			\$302,775
CONTRACTOR OVERHEAD	12.00%			\$462,277	12.00%			\$399,663
CONTRACTOR PROFIT	8.00%			\$345,167	8.00%			\$298,415
A/E FEE AND PERMITTING	6.00%			\$258,875	7.00%			\$261,113
BONDS & INSURANCE	2.75%			\$128,143	2.75%			\$110,787
PHASED TOTAL:				\$5,046,767				\$4,400,503
GRAND TOTAL				\$9,447,270				



WHEATLAND AQUATIC FACILITY LIFE CYCLE COST ANALYSIS

This life cycle cost analysis is based on a full pool build out and includes all pools, pumps and internal pool surfaces but not external play equipment or attached elements. It includes operations for 12 months of the year.

LIFE CYCLE COST ESTIMATE FOR: WHEATLAND. POOL																						
11-Jun-2021																						
ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20	TOTAL	
OPERATIONS	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$310,933.42	\$6,218,668.40	
FROM OPERATIONS SPREADSHEET																					\$6,218,668.40	
TYPICAL PLANNED REPLACEMENT ITEMS (LIFE CYCLE COST):																						
POOL RECIRCULATION PUMP IMPELLORS							\$20,000.00							\$20,000.00							\$12,000.00	\$52,000.00
METERING PUMPS					\$8,000.00					\$8,000.00					\$8,000.00					\$8,000.00		\$24,000.00
SENSORS ON AUTOMATED CONTROL		\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$19,000.00
FILTER SAND												\$1,500.00										\$1,500.00
HEATER MAINTENANCE & CLEAN	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$80,000.00
REPLACE HEAT EXCHANGER						\$20,000.00													\$20,000.00			\$40,000.00
REPLACE HEATERS											\$180,000.00											\$180,000.00
GENERAL REPAIRS	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$400,000.00
REPLASTER, RETILE & DOWN TIME										\$225,000.00												\$225,000.00
TOTAL TO MAINTAIN	\$24,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$33,000.00	\$45,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$258,000.00	\$25,000.00	\$206,500.00	\$25,000.00	\$25,000.00	\$33,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$53,000.00	\$37,000.00	\$1,021,500.00
Average yearly budget - plaster/tile	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$11,250.00	\$225,000.00
Anticipated monthly budget - Plaster/tile	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50	\$937.50
TOTAL BUDGETED PLANNED LIFE CYCLE REPLACEMENT FOR 20 YEAR HORIZON																						\$1,021,500.00



WHEATLAND AQUATIC FACILITY OPERATING ANALYSIS

The purpose of this operating analysis is to project the probable cost to operate the new Aquatic Center and possible revenue options to be gained from its operation. We will look at anticipated or expected hours of operation, staffing, fees, programming, scheduling priorities, etc. The City and community goals and objectives are the foundation for this study and data. We looked at future growth of the community and saw that estimated growth can be counted on for future revenue towards the pool. The Marketing Study shows the growth of the community based on a 10-year span of known development and that alone raised the population considerably and with that the amount of users increased and additional monies became available based on just increase in population.

RECOMMENDATIONS and OPTIONS

It is our recommendation that the City attempt to be open as many months as possible in the high use months, which are the summer months of June, July and August. Working both in front of and after the summer allows the pool to be open in April and May in the spring and September and October in the fall. It is clear that operating costs go up drastically when attempting to heat the pools in these edge months but it also allows the pool to be open longer allowing for more income. It is common that pools will shut down once the weather gets cold to save on high heating costs. Once the City has operated the pool for a few seasons, it will be clear what the most efficient cutoff date is in the spring and fall. As populations grow and teams get larger, numbers of users grow, and we can then consider at **year 10** if it is profitable to open up in April and/or October.

For this study we see that the 5-month operating season is the best option for opening the pool. As operations are later completely understood, the City can look at stretching to a 6-month open season.

For the grant we are pursuing, it is optimal to be open as much as possible and charge as little as possible. In this case, we will have to settle for a few less points in that section of the grant, as we need to charge \$5 per user.

The following options will demonstrate the costs for operating 4, 5, 6 and 12 months. Each has additional expenses and increased profits but it becomes clear what is the best option at this early stage of the project and how to meet the grant requirement of operating for 30 years.

ESTIMATED OPERATING COSTS

MAJOR EXPENSES

STAFF

Staffing related costs like wages, taxes, benefits, etc. represent 50-53% of the operating cost of the Facility. Good staff will improve user experiences and thereby increase revenue.

UTILITIES

For aquatic centers like the one planned for Wheatland, utilities are the second largest expense and are often 20-25% of the total operating cost. The design will employ energy efficiency in the design, along with solar use, to minimize the cost of electricity, gas, water and sewer, wherever possible. The City's standard utility rates were used to predict the cost of the new facility. It is important to keep costs down, have the City negotiate a rate with the Natural Gas provider and always put the pull covers on the pool.



City of Wheatland Aquatic Center Feasibility Study

MATERIALS and SUPPLIES

Supplies needed to operate and maintain the facility include things like pool maintenance supplies, office cleaning supplies, breakroom/restroom products, administrative office supplies, etc.

REPAIRS and MAINTENANCE

Repairing damaged parts due to use, accidents or vandalism; cleaning up graffiti; regular replacement of mechanical parts as well as unexpected parts wear; regular cleaning of filters; etc.

This is a large expense for any project of this nature. This study assumes that facility operations personnel will be able to perform many of the services. It also assumes that the City will employ Pool Maintenance staff, trained in the operation of pools and pool building systems.

Maintenance and repairs costs should be lower for the first year when systems and equipment are new and under warranty, so any costs associated with this section are more reflective of the expected costs for Years 2 and 3 and unexpected damage during Year 1.

MARKETING and PROMOTIONS

The City will want to entice and drive users to the new facility to increase revenue. Promoting events, party packages, the facility itself, will be necessary. This would include advertising, brochures, pamphlets, event materials, signage, etc.

BUILDING and MAINTENANCE RESERVE

It's advisable to set aside money into a reserve account. One percent of the project construction cost is recommended. This would cover major repairs and parts replacements in the future. See the Life Cycle Cost Analysis for details of maintenance and deferred cost that will occur over the lifetime of the pool.



City of Wheatland
Aquatic Center Feasibility Study

PHASE 1 OPERATING COSTS BROKEN DOWN

Pool chemical and utility operating costs have been calculated for different day uses from 12 months to 4 months. These alternatives allow you to see the costs at the different days of operation. The reductions are based on reducing the heating of the pool for the months shown but keeping all the other chemicals and utilities operating year round.

COST BASE ASSUMPTIONS:

1. These costs do not include maintenance and operation labor costs
2. 51" annual evaporation in Wheatland, CA
3. Total electrical operation is 18 hours per day
4. Back Wash will occur weekly
5. Natural gas at 1.5 cost per therm / 35 F degree air temperature / 5 mph wind and 80 degree water
6. 100% use of pool covers and City to negotiate price with natural gas supplier
7. Use of regenerative filters
8. Chemicals to be purchased in bulk and super chlorination to occur twice annually and maintain 1.1 to 1.5 ppm at a ph of 7.2-7.4

OPERATING COSTS - OPTION 1: One-Pool Option				
UTILITY COSTS DETAIL	4-MO	5-MO	6-MO	12-MO
Electricity	\$27,714	\$27,714	\$27,714	\$27,714
Natural Gas	\$4,985	\$14,815	\$29,550	\$157,200
Water/Sewer	\$816	\$995	\$1,173	\$2,247
UTILITY COSTS TOTAL	\$33,515	\$43,524	\$58,438	\$187,160

ANNUAL ESTIMATED OPERATING COSTS	LOW	MID-LOW	MID-HIGH	HIGH
Full-Time Staff (\$70,000 annual + payroll taxes)	\$85,400	\$85,400	\$85,400	\$85,400
Part-Time Staff (avg 12 Lifeguards/20 hrs per wk/\$15 per hr) (includes employer paid payroll taxes)	\$74,880	\$93,600	\$112,320	\$224,640
Administrative Benefits/Overhead	\$20,000	\$20,000	\$20,000	\$20,000
Staff Uniforms, Training and Background Checks (Ellis and Assoc. vs Red Cross Training)	\$20,000	\$20,000	\$20,000	\$20,000
Marketing	\$2,500	\$2,500	\$2,500	\$2,500
Communication and Technical Services	\$3,000	\$3,000	\$3,000	\$3,000
Supplies: Building and Administrative	\$6,000	\$6,000	\$6,000	\$6,000
Repair and Maintenance (Staff & non-Chemical Materials)	\$15,000	\$15,000	\$15,000	\$15,000
Pool Chemicals	\$18,639	\$18,639	\$18,639	\$18,639
(*)Utilities	\$33,515	\$43,524	\$58,438	\$187,160
Insurances, Legal	\$3,000	\$3,000	\$3,000	\$3,000
Contingency	\$9,730	\$12,165	\$14,600	\$29,200
Loan Payments (\$350,000 deferred for first 10 years)	\$0	\$0	\$0	\$0
OPERATING EXPENSE TOTAL	\$291,664	\$322,828	\$358,897	\$614,539
**Building and Maintenance Reserve Fund (6%)	\$17,500	\$19,370	\$21,534	\$36,872
TOTAL OPERATING EXPENSE with BUILDING RESERVE	\$309,164	\$342,198	\$380,431	\$651,412
(*) Solar Deduction if Citywide Array, deduct \$27,714				



City of Wheatland
Aquatic Center Feasibility Study

OPERATING COSTS - OPTION 2: Two-Pool Option				
UTILITY COSTS DETAIL	4-MO	5-MO	6-MO	12-MO
Electricity	\$31,425	\$31,425	\$31,425	\$31,425
Natural Gas	\$6,001	\$17,864	\$35,647	\$189,715
Water/Sewer	\$884	\$1,080	\$1,276	\$2,453
UTILITY COSTS TOTAL	\$38,310	\$50,369	\$68,348	\$223,593

ANNUAL ESTIMATED OPERATING COSTS	LOW	MID-LOW	MID-HIGH	HIGH
Full-Time Staff (\$70,000 annual + payroll taxes w/ half salary expensed to pool)	\$85,400	\$85,400	\$85,400	\$85,400
Part-Time Staff (avg 12 Lifeguards/20 hrs per wk/\$15 per hr) (includes employer paid payroll taxes)	\$74,880	\$93,600	\$112,320	\$224,640
Administrative Benefits/Overhead	\$20,000	\$20,000	\$20,000	\$20,000
Staff Uniforms, Training and Background Checks (Ellis and Assoc. vs RC Training)	\$20,000	\$20,000	\$20,000	\$20,000
Marketing	\$2,500	\$2,500	\$2,500	\$2,500
Communication and Technical Services	\$3,000	\$3,000	\$3,000	\$3,000
Supplies: Building and Administrative	\$6,000	\$6,000	\$6,000	\$6,000
Repair and Maintenance (Staff & non-Chemical Materials)	\$15,000	\$15,000	\$15,000	\$15,000
Pool Chemicals	\$22,500	\$22,500	\$22,500	\$22,500
(*)Utilities	\$38,310	\$50,369	\$68,348	\$223,593
Insurances, Legal	\$3,000	\$3,000	\$3,000	\$3,000
Contingency	\$9,730	\$12,165	\$14,600	\$29,200
Loan Payments (\$1.5 million @ 2.25% for 40 years)	\$56,775	\$56,775	\$56,775	\$56,775
OPERATING EXPENSE TOTAL	\$357,095	\$390,309	\$429,443	\$711,608
Building and Maintenance Reserve Fund (6%)	\$21,426	\$23,419	\$25,767	\$42,696
TOTAL OPERATING EXPENSE with BUILDING RESERVE	\$378,521	\$413,728	\$455,210	\$754,304
(*) Solar Deduction if Citywide Array, deduct \$31,425				



City of Wheatland
Aquatic Center Feasibility Study

PROJECTED REVENUE SOURCES

Everything associated with pricing should be reflective of the market tolerances, commensurate with the amenities at the facility and considering the revenue needed to operate the Center. Fee structures, events, etc. should be established and marketed to reach the largest and broadest range of visitors in order to offset expenses.

PROPOSED FEES	DAILY ADMISSION	SUMMER (30-USE) PASS	ANNUAL (unlimited) PASS
Child (2-6)	\$3	\$48	\$80
Youth (7-18)	\$3	\$72	\$120
Adult (18-67)	\$5	\$120	\$200
Senior (65+)	\$4	\$96	\$160
Family (4)	\$14	\$336	\$550

FACILITY USE REVENUE POTENTIAL	LOW	HIGH	MONTHLY USERS AVG	AVG MO INCOME
(*)Individuals - Prime Season (Jun-Aug)	\$3	\$5	2250	\$9,000
(^)Individuals - Off-Season	\$3	\$5	700	\$2,800
Lessons	\$60	\$85	85	\$6,163
(*)Memberships (ie Season Passes)	\$80	\$200	17	\$2,338
Classes, Camps, Activities	\$60	\$85	7	\$508
Rentals, Parties, Field Trips (2-hour Sessions)	\$350	\$750	6	\$3,300
#(*)High School Swim Team use (50 users - 5 days/week)	\$3	\$4	1083	\$3,791
#(*)High School Diving Team use (6 users - 5 days/week)	\$3	\$4	130	\$455
#(*)High School Water Polo use (40 users - 5 days/week)	\$3	\$4	866	\$3,031
Public Events	\$500	\$500	2	\$1,000
#(*)Swim Club Rental (teens) (60 users - 3 days/week)	\$3	\$4	780	\$2,730
#Swim Club Rental (adults) (30 users - 5 days/week)	\$3	\$4	650	\$2,275
#(*)Swim Club Rental (youth) (60 users - 3 days/week)	\$3	\$4	780	\$2,730
Competitive Club/HS Meets (1/month)	\$1,000	\$1,000	3	\$3,000
MONTHLY REVENUE THAT'S COLLECTED ANY MONTH THE FACILITY IS OPEN - TOTAL:				\$13,245
MONTHLY REVENUE THAT'S COLLECTED IN SUMMER MONTHS ONLY - TOTAL:				\$27,075
MONTHLY REVENUE THAT'S COLLECTED IN NON-SUMMER MONTHS ONLY - TOTAL:				\$2,800

Given a special group rate per individual

(*) Revenue collected during 3 summer months only

(^) Revenue collected during any month other than Jun, Jul or Aug

Projected user numbers assume users from Wheatland plus a percentage of users from surrounding area

Revenue - Annual (open 4 months)	\$137,004
Revenue - Annual (open 5 months)	\$153,049
Revenue - Annual (open 6 months)	\$169,094
Revenue - Annual (open 12 months)	\$265,364



City of Wheatland Aquatic Center Feasibility Study

FEES and PROGRAMS PER PHASE

Core programs to be offered at the Wheatland Aquatic Center with completion of Phase 1 will include recreational swimming day and night; competitive swimming for all ages; swim club organizations; lessons and classes on swimming and water related elements, such as lifeguard training and Fire and Police swift water training; water aerobics; masters swimming and High School sports such as swimming, water polo and diving. Additional elements for recreations enjoyment include the pool obstacle course, basketball hoops and rope swing. Open turf and group picnic areas and shades around the pool can be used by individuals and also reserved by groups for special events.

Additional activities can be added once Phase 2 is completed and the childrens'/warm up pool is added. This pool will add more lessons, more youth recreation swimming, fitness and aerobic classes, Red Cross training, etc.

The City will want to maximize summer revenue with swim lessons, extended season passes, summer swim programs and daily admissions. Phase 3 will bring the dedicated recreation pool with zero elevation beach entry and a large, themed play structure and water play nozzles. If the City opts for the 5- or 6-month operating season with the heated pool, they can also market off-summer swimming activities into April-May and September-October, when other surrounding facilities are closed.

Fee suggestions are based on an evaluation of rates currently being charged at more that six (6) similar facilities in the region and are within community tolerances. (See the Market Study section showing the comparative rates from other regional facilities.) As you will see with the 10-year projections, we anticipate increased use fees due to inflation along with an expected increase in the number of users. Additional funds will allow the City to consider being open for additional months throughout the year, which contributes more toward the larger of the maintenance costs such as re-plastering and heater replacement at year 12-15.

EXAMPLE SCHEDULE SHOWING REVENUE POTENTIAL:

** Grid layout of schedules included in the Appendix*

** All sessions to have a 10-15 break between sessions for lifeguards*

PROGRAM USE - SUMMER SCHEDULE

	<u>USE TIMES</u>
1. Open Recreation Swim Day Swim times (Sat/Sun - all (Mon - Fri all afternoon sessions plus evening on Friday)	11am - 2pm / 3pm - 6pm / 3 hr sessions 3pm – 6pm / 7pm-9pm
2. Open Recreation Swim Night swim (Sat/Sun - all sessions) (Evening on Friday)	6pm - 9pm
3. Swim Classes – early training (Mon - Sat)	7am - 11am / 2pm - 3pm / 45 min sessions
4. Open Lap Pool / Water Aerobics / Masters (Mon - Fri)	6am - 8am / 11am - 1pm / 5pm - 9pm / 45 min sessions
5. Swim Team (Mon - Sat)	6am - 11am

PROGRAM USE - SPRING / FALL SCHEDULE

	<u>USE TIMES</u>
1. Highschool Swim Teams (Mon – Fri)	6am - 7am
2. Open Lap Pool / Water Aerobics / Masters (Sat/Sun - all sessions) (Mon - Fri all day sessions plus evening on Friday)	6am - 8am / 11am - 1pm / 5pm - 9pm / 1 hr sessions
3. High School PE classes (Mon - Fri) TBD	8am - 11:30am / 45 min sessions
4. High School Dive Team (Mon - Fri) TBD	2pm - 3pm or 3pm - 4pm / 45 min sessions



City of Wheatland
Aquatic Center Feasibility Study

- 5. Swim Classes - Training Lessons (Mon - Fri) 8am - 11am / 4pm - 6pm / 45 min sessions
- 6. Swim Classes - Training Lessons (Sat) 8am - 11am / 4pm - 6pm / 45 min sessions
- 7. Swim Meets TBD 7am - 3pm (Times TBD)

OTHER FUNDING SOURCES	MONTHLY	ANNUAL	OTHER
First 5 Grant		\$17,500	
Yuba Water Agency (YWA) (10 yrs + two 10-yr extensions)		\$65,000	
Wheatland Fire Authority		\$5,000	
City of Wheatland General Fund (cover Overhead + Addtnl)		\$52,000	
Community Facilities District (CFD) (145 lots)		\$50,000	
OTHER FUNDING SOURCES TOTAL	\$0	\$189,500	\$0

RECOVERING COSTS: Cost vs Revenue

In order to plan for the potential lows and highs of recovering costs, we've broken it down into the best, worst and average case scenarios. The initial years after opening are likely to be the 'best', as excitement for a new activity center is at a peak and some expenses like repairs and maintenance are low while everything is new. It's also assumed that the City will do a higher level of marketing for the new Center than they will as the years progress. However, dollar output from the City is also likely higher during initial years because supplies have to be initially purchased and reserves built-up, along with the aforementioned marketing push. Anything that can increase revenue and decrease operating costs and start-up costs, will increase the "cost recovery" pace for the City.

OTHER POTENTIAL FUNDING SOURCES

There are other as-yet untapped sources for funding of capital and operating costs in the region. Two areas that have been successful in surrounding communities are the medical or medical support fields. Some potential organizations to approach are:

- City of Yuba City Department of Public Works
- Local Hospitals - Adventist Health, Marysville
- First - 5 Organizations
- Yuba Area Health Department - Mitigation dollars

COST vs REVENUE COMPARISON - OPTION 1: One-Pool Option			
ANNUAL OPERATING COST vs REVENUE POTENTIAL	REVENUE	EXPENSE	TOTAL
Revenue - Annual (open 4 months)	\$137,004		
Revenue - Annual (open 5 months)	\$153,049		
Revenue - Annual (open 6 months)	\$169,094		
Revenue - Annual (open 12 months)	\$265,364		
Expenses - Annual (open 4 months)		\$309,164	
Expenses - Annual (open 5 months)		\$342,198	
Expenses - Annual (open 6 months)		\$380,431	
Expenses - Annual (open 12 months)		\$651,412	
Revenue - Annual From Other Sources	\$189,500		
NET TOTAL IF OPEN FOR 4 MONTHS (recovery rate 106%)			\$17,340
NET TOTAL IF OPEN FOR 5 MONTHS (recovery rate 102%)			\$351
NET TOTAL IF OPEN FOR 6 MONTHS (recovery rate 98%)			(\$21,837)
NET TOTAL IF OPEN FOR 12 MONTHS (recovery rate 77%)			(\$196,548)



City of Wheatland
Aquatic Center Feasibility Study

COST vs REVENUE COMPARISON - OPTION 2: Two-Pool Option			
ANNUAL OPERATING COST vs REVENUE POTENTIAL	REVENUE	EXPENSE	TOTAL
Revenue - Annual (open 4 months)	\$137,004		
Revenue - Annual (open 5 months)	\$153,049		
Revenue - Annual (open 6 months)	\$169,094		
Revenue - Annual (open 12 months)	\$265,364		
Expenses - Annual (open 4 months)		\$378,521	
Expenses - Annual (open 5 months)		\$413,728	
Expenses - Annual (open 6 months)		\$455,210	
Expenses - Annual (open 12 months)		\$754,304	
Revenue - Annual From Other Sources	\$189,500		
NET TOTAL IF OPEN FOR 4 MONTHS (recovery rate 87%)			(\$52,017)
NET TOTAL IF OPEN FOR 5 MONTHS (recovery rate 85%)			(\$71,179)
NET TOTAL IF OPEN FOR 6 MONTHS (recovery rate 82%)			(\$96,616)
NET TOTAL IF OPEN FOR 12 MONTHS (recovery rate 66%)			(\$299,440)

10-YEAR COST vs REVENUE COMPARISON - OPTION 1: One-Pool Option			
YEAR 10 PROJECTED COST vs REVENUE (*selective 53%	REVENUE	EXPENSE	TOTAL
Projected Revenue - Annual (open 4 months)	\$353,556		
Projected Revenue - Annual (open 5 months)	\$395,767		
Projected Revenue - Annual (open 6 months)	\$437,979		
Projected Revenue - Annual (open 12 months)	\$691,251		
Projected Expenses - Annual (open 4 months)		\$426,446	
Projected Expenses - Annual (open 5 months)		\$551,604	
Projected Expenses - Annual (open 6 months)		\$614,492	
Projected Expenses - Annual (open 12 months)		\$1,000,754	
Revenue - Annual From Other Sources (open 4 months)	\$258,698		
Revenue - Annual From Other Sources (open 5 months)	\$297,497		
Revenue - Annual From Other Sources (open 6 months)	\$316,993		
Revenue - Annual From Other Sources (open 12 months)	\$436,734		
NET TOTAL IF OPEN FOR 4 MONTHS			\$185,808
NET TOTAL IF OPEN FOR 5 MONTHS			\$141,660
NET TOTAL IF OPEN FOR 6 MONTHS			\$140,480
NET TOTAL IF OPEN FOR 12 MONTHS			\$127,231

ASSUMPTIONS FOR 10-YEAR PROJECTIONS:

- * Need for 18 Lifeguards
- * Percent of User Growth selectively mirrors the projected Wheatland population growth of 53% shown in the Market Study
- * Fee increases are annual 1-2% for inflation.
- * Utilities were increased 30%, which is lowest increase expected for electricity or natural gas per revel-energy.com and
- * Administrative Benefits/Overhead was increased 5% annually due to regular increases in insurance rates
- * \$17,857 was added to Expenses for interest on a YWA loan (\$350,000 at 3% interest for 30 years)
- * YWA Annual Pledge reduces by 20% at 10 years (and 20 years)
- * CFD Annual Pledge at 10 years will equal 31% of Operating Cost (which is dependent on # of open months)



City of Wheatland
Aquatic Center Feasibility Study

10-YEAR COST vs REVENUE COMPARISON - OPTION 2: Two-Pool Option			
YEAR 10 PROJECTED COST vs REVENUE (at 53% growth)	REVENUE	EXPENSE	TOTAL
Projected Revenue - Annual (open 4 months)	\$353,556		
Projected Revenue - Annual (open 5 months)	\$395,767		
Projected Revenue - Annual (open 6 months)	\$437,979		
Projected Revenue - Annual (open 12 months)	\$691,251		
Projected Expenses - Annual (open 4 months)		\$437,047	
Projected Expenses - Annual (open 5 months)		\$565,003	
Projected Expenses - Annual (open 6 months)		\$632,076	
Projected Expenses - Annual (open 12 months)		\$1,054,540	
Revenue - Annual From Other Sources (open 4 months)	\$258,698		
Revenue - Annual From Other Sources (open 5 months)	\$297,497		
Revenue - Annual From Other Sources (open 6 months)	\$316,993		
Revenue - Annual From Other Sources (open 12 months)	\$436,734		
NET TOTAL IF OPEN FOR 4 MONTHS			\$175,207
NET TOTAL IF OPEN FOR 5 MONTHS			\$128,261
NET TOTAL IF OPEN FOR 6 MONTHS			\$122,896
NET TOTAL IF OPEN FOR 12 MONTHS			\$73,445

ASSUMPTIONS FOR 10-YEAR PROJECTIONS:

- * Need for 18 Lifeguards
- * Percent of User Growth selectively mirrors the projected Wheatland population growth of 53% shown in the Market Study
- * Fee increases are annual 1-2% for inflation.
- * Utilities were increased 30% from current, which is lowest increase expected for electricity or natural gas per revel-
- * Administrative Benefits/Overhead was increased 5% annually due to regular increases in insurance rates
- * \$17,857 was added to Expenses for interest on a YWA loan (\$350,000 at 3% interest for 30 years)
- * YWA Annual Pledge reduces by 20% at 10 years (and 20 years)
- * CFD Annual Pledge at 10 years will equal 31% of Operating Cost (which is dependent on # of open months)



City of Wheatland Aquatic Center Feasibility Study

IMPROVING ON COST RECOVERY OPTIONS

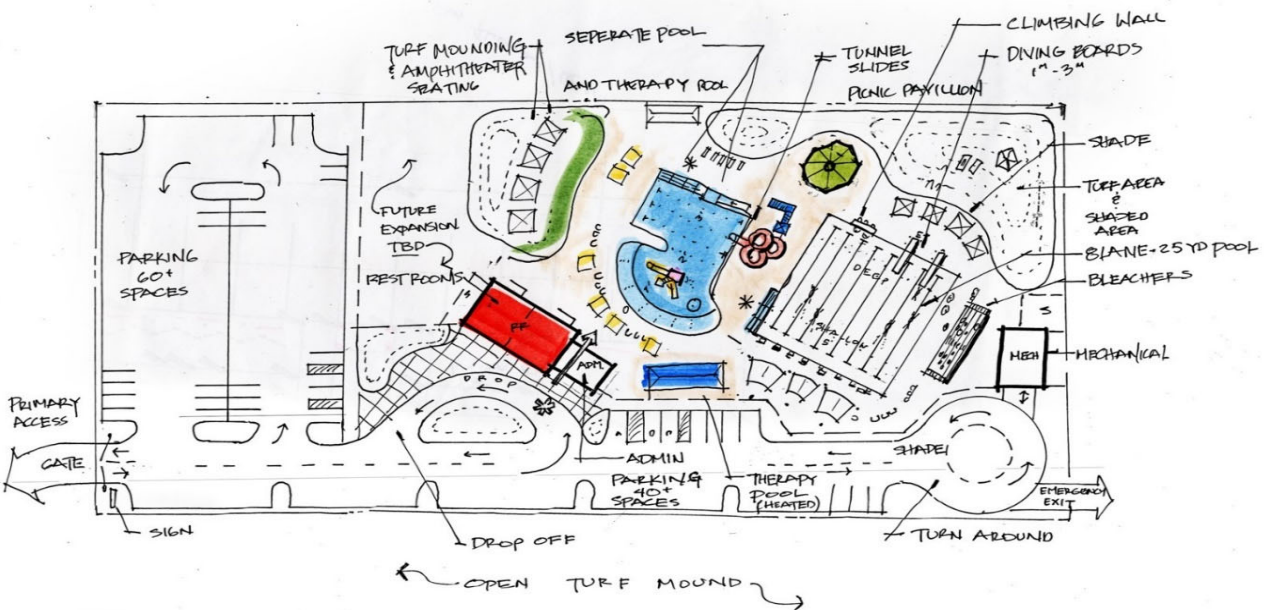
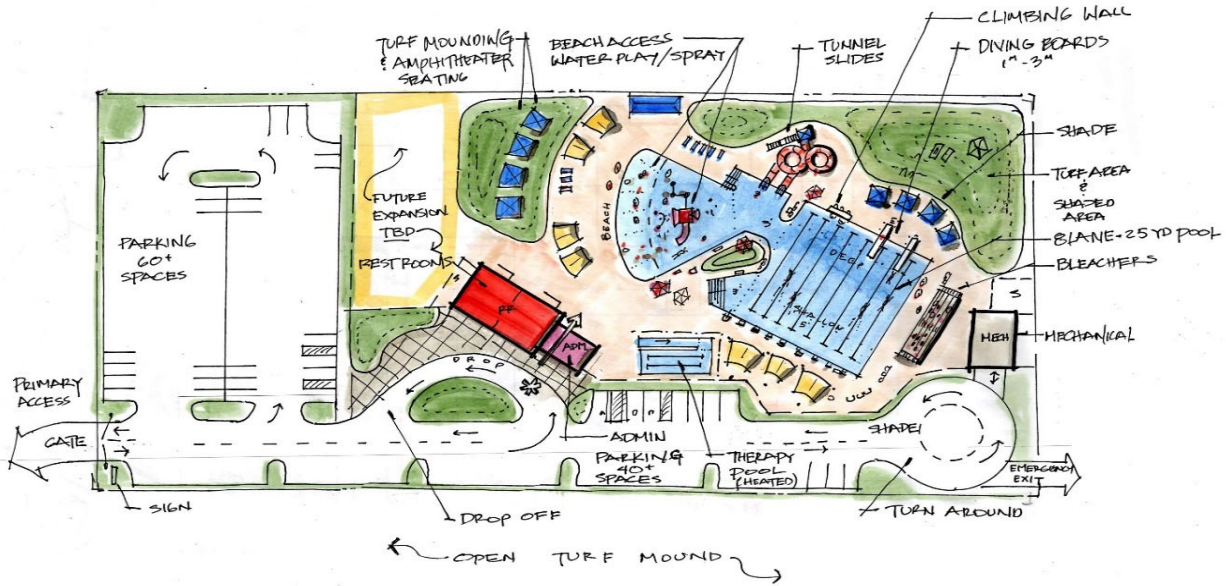
MORE OPPORTUNITIES TO IMPROVE COST RECOVERY
Review fees and increase appropriately
Schedule operations for options less than 12 months
Turn off the pool heater during lesser months
Solar Power Deductions
Add additional team programs
* <i>Synchronized Swimming</i>
Develop niche water exercise program
Purchase inflatables for competition pool to use during recreation swim time
Increase special event offerings
Establish training programs for athletes
* <i>Triathlons</i>
Install lights to increase programming time
Pursue partnerships
* <i>Financial partnerships</i>
* <i>Shared services partnerships</i>
Concession Stand



City of Wheatland Aquatic Center Feasibility Study

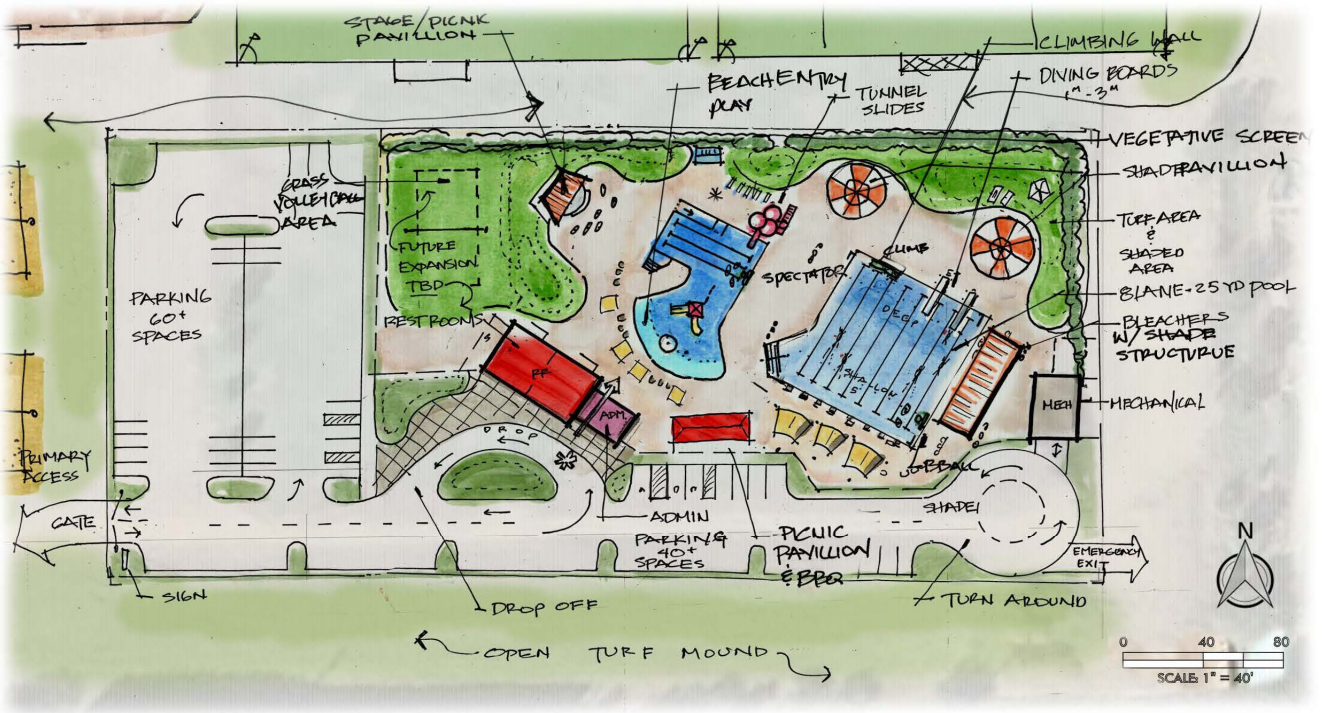
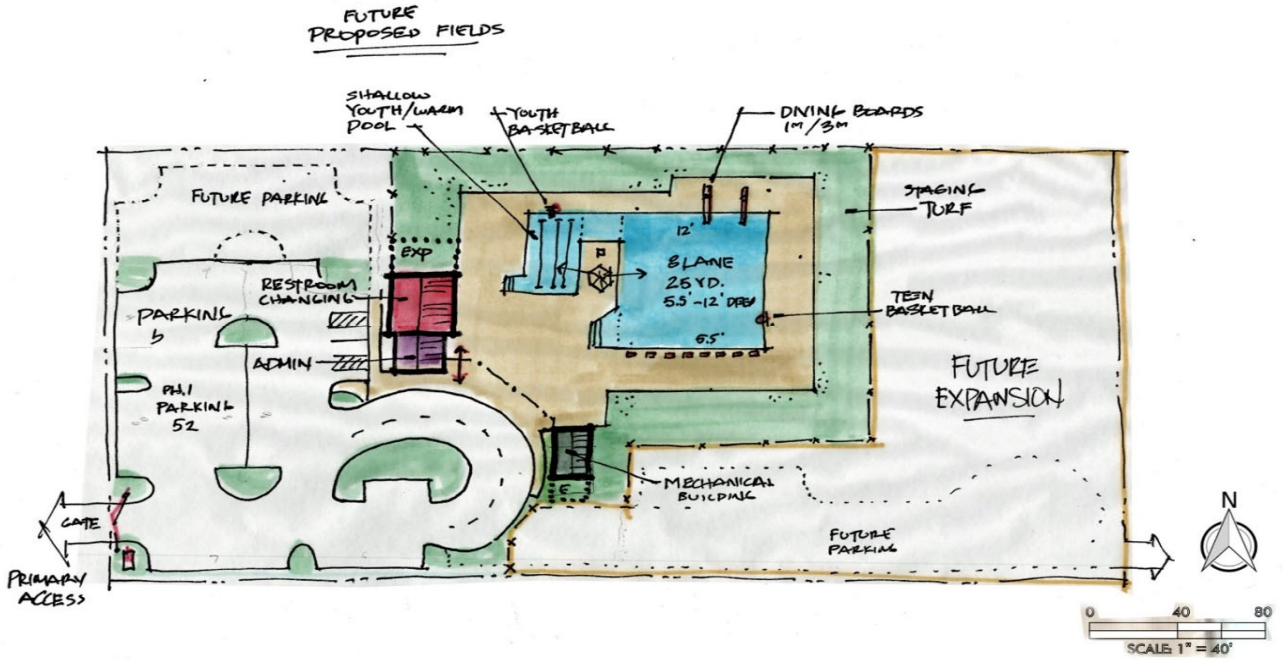
WHEATLAND AQUATIC FACILITY APPENDIX

You can follow the path of the various conceptual design options that led to the final design of the Wheatland Aquatic Center.



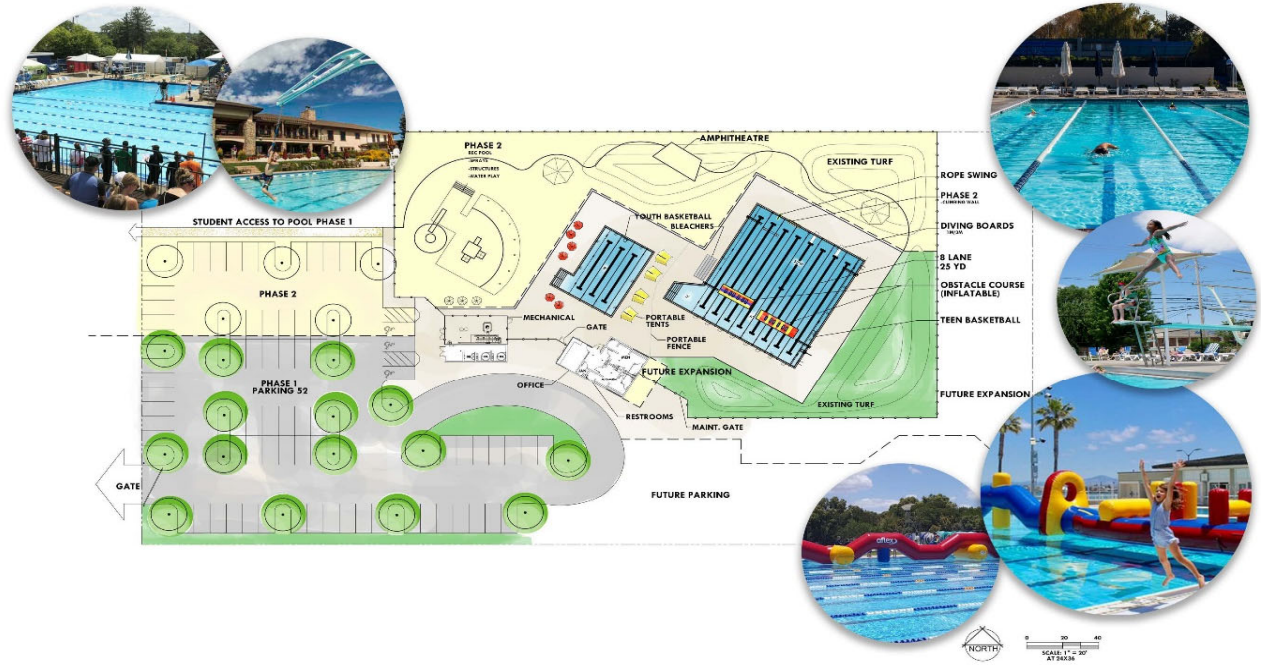


City of Wheatland Aquatic Center Feasibility Study





City of Wheatland Aquatic Center Feasibility Study



WHEATLAND
COMMUNITY POOL

CONCEPT - A COMMUNITY BASED PLANNING PROCESS
PLAN PHASE 1





EXAMPLE SCHEDULE SHOWING REVENUE POTENTIAL

PROGRAM USE - SUMMER SCHEDULE (Mon-Fri)	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	
Open Recreation Swim Day (Mon-Fri) 3 hr sessions						11 am- 2 pm				3-6 pm				7-9 pm		
Open Recreation Night Swim (Fri) 3 hr sessions													6-9 pm			
Swim Classes - Early Training (Mon-Fri) 45 min sessions		7-11 am							2-3 pm							
Open Lap Pool/Water Aerobics/Masters (Mon-Fri) 45 min sessions	6-8 am					11 am-1 pm						5-9 pm				
Swim Team (Mon-Fri)	6-11 am															
PROGRAM USE - SUMMER SCHEDULE (Sat-Sun)																
Open Recreation Swim Day (Sat/Sun) 3 hr sessions						11 am- 2 pm				3-6 pm						
* 1 hr lunch break for lifeguards																
Open Recreation Night Swim (Sat/Sun) 3 hr sessions													6-9 pm			
* 1 hr lunch break for lifeguards																
Swim Classes-Early Training (Sat) 45 min sessions		7-11 am							2-3 pm							
Swim Team (Sat)	6-11 am															
PROGRAM USE - SPRING / FALL SCHEDULE (Mon-Fri)																
High School Swim Teams (Mon-Fri) 1 hr sessions	6-7 am															
Open Lap Pool/Water Aerobics/Masters (Mon-Fri) 1 hr sessions	6-8 am					11 am-1 pm						5-9 pm				
High School PE Classes (Mon-Fri) 45 min sessions			8-11:30 am													
High School Dive Team (Mon-Fri) 45 min sessions									2-3pm or 3-4pm							
Swim Classes/Training Lessons (Mon-Fri) 45 min sessions			8-11 am								4-6 pm					
Swim Meets (Times TBD)		7 am-3 pm														
PROGRAM USE - SPRING / FALL SCHEDULE (Sat-Sun)																
Open Lap Pool/Water Aerobics/Masters (Sat/Sun) 1 hr sessions	6-8 am					11 am-1 pm						5-9 pm				
Swim Classes/Training Lessons (Sat) 45 min sessions			8-11 am								4-6 pm					
Swim Meets (Times TBD)		7 am-3 pm														
* All sessions to have a 15 min break between for lifeguards																



ONE-MONTH SNAPSHOT ALTERATION OF ORIGINAL UTILITY CALCULATIONS TO REFLECT ADJUSTED POOL SFs

(Original Utilities Assessment shown on next page)

Overall Assumptions:

Original Large Pool SF of 5231 SF should have been 5700 SF (=1.09%)
 Original Small Pool SF of 3873 SF should have been 1600 SF (=-.41%)

ELECTRICITY	Orig #s	Corrected #s -	
		2 pool option	1 pool option
equip-lg pool	\$ 114.00	\$ 124.26	\$ 124.26
equip-sm pool	\$ 86.00	\$ 35.26	\$ -
kwh-lg pool	12529.94	13657.63	13657.63
kwh-sm pool	4176.65	1712.43	0
cost/hour	\$ 0.16	\$ 0.16	0.16
MO TOTALS	\$ 2,873	\$ 2,619	\$ 2,309
ANNUAL TOTALS	\$ 34,477	\$ 31,425	\$ 27,714

Electrical Assumptions:

Monthly KWh for large pool if 5231 SF is 12529.94 (as noted in Arch*Pac Aquatics original Op Cost Analysis)
 Monthly KWh for small pool if 3873 SF is 4176.65 (as noted in Arch*Pac Aquatics original Op Cost Analysis)
 Cost per hr is \$0.16
 That original monthly \$\$ calculation using monthly total KWh (16706.58) at \$0.16/KWh was totalled incorrectly (should have been \$2673, not \$2004)
 Pumps run 18 hrs/day (as noted in Arch*Pac Aquatics original Op Cost Analysis)

NATURAL GAS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ANNUAL TOTALS
Orig Amt 2 pools	\$ 39,474.00	\$ 39,474.00	\$ 31,579.00	\$ 23,684.00	\$ 7,895.00	\$ -	\$ -	\$ -	\$ 15,790.00	\$ 23,684.00	\$ 31,579.00	\$ 39,474.00	\$ 252,873.00
Corrected Amt 2 pools	\$ 29,625.50	\$ 29,625.50	\$ 23,704.25	\$ 17,783.00	\$ 5,941.25	\$ 20.00	\$ 20.00	\$ 20.00	\$ 11,862.50	\$ 17,783.00	\$ 23,704.25	\$ 29,625.50	\$ 189,714.75 2 pools
Corrected Amt 1 pool	\$ 24,545.20	\$ 24,545.20	\$ 19,640.03	\$ 14,734.87	\$ 4,925.16	\$ 20.00	\$ 20.00	\$ 20.00	\$ 9,830.33	\$ 14,734.87	\$ 19,640.03	\$ 24,545.20	\$ 157,200.88 1 pool

Natural Gas Assumptions:

There is a \$20 monthly service charge for Natural Gas (per ArchPac analysis)

CHEMICALS	Orig Amt 2 pools	Corrected Amt 2 pools	Corrected Amt 1 pool
MO TOTAL	\$ 2,500.00	\$ 1,875.00	\$ 1,553.25
ANNUAL TOTALS	\$ 30,000.00	\$ 22,500.00	\$ 18,639.00



<u>WATER</u>	Orig Amt 2 pools	Corrected Amt 2 pools	Corrected Amt 1 pool
Gallons/Pools as Monthly Amt (326,776 total original)	27231	20423.25	16918.62
Bkwsh Gallons/Mo for orig 2 Pools	23989	17991.75	14904.37
Total Gallons conv to CF	6848.11	5136.09	4254.73
Cost per CF = \$.0195)	\$ 133.54	\$ 100.15	\$ 82.97
Meter Charge	\$ 95.92	\$ 95.92	\$ 95.92
TOTALS	\$ 229.46	\$ 196.07	\$ 178.89

Calculation amounts:

% of original merged numbers that was for the larger pool at orig SF = 57%
 % of original merged numbers that was for the smaller pool at orig SF = 43%



ORIGINAL UTILITIES ASSESSMENT (Prior to Pool Size Adjustment)

WHEATLAND AQUATIC CENTER														10-Jun-2021
Facility Operation Cost														Page 1 of 1
25yd by 8 lane Pool Data:		Perimeter	290 Lineal Feet	Area:	5,231 Square Feet <th>Volume:</th> <td>254,332 Gallons <th>Turnover:</th> <td>706 gpm <th>301 Lineal Feet</th> <td>3,873 Square Feet <th>72,444 Gallons</th> <th>202 gpm</th> <th>760 734 1600</th> </td></td></td>	Volume:	254,332 Gallons <th>Turnover:</th> <td>706 gpm <th>301 Lineal Feet</th> <td>3,873 Square Feet <th>72,444 Gallons</th> <th>202 gpm</th> <th>760 734 1600</th> </td></td>	Turnover:	706 gpm <th>301 Lineal Feet</th> <td>3,873 Square Feet <th>72,444 Gallons</th> <th>202 gpm</th> <th>760 734 1600</th> </td>	301 Lineal Feet	3,873 Square Feet <th>72,444 Gallons</th> <th>202 gpm</th> <th>760 734 1600</th>	72,444 Gallons	202 gpm	760 734 1600
		Winter				Spring		Summer			Fall		Dec	Total:
ELECTRICITY:		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total:
1-ph	Misc. Equipment	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$2,400.00
3-ph	8 lane Circ Pump 15 BHP	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	12,529.94	KWh
3-ph	Warm-up Circ Pump 5 BHP	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	4,176.65	KWh
Total KWH		16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	16,706.58	
Cost per Hr.:		\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	\$0.160	
Subtotal Cost:		\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$2,004.79	\$24,057.48
Cost:		assume pumps run 18 hrs day (off from 11:00PM 4:00AM) - see pump efficiency calculations below,												\$26,457.48
NATURAL GAS:		5,231	3,000,000 BTU, T-delta = 35 degrees F, wind at 5 mph.				3,873	2,100,000 BTU, T-delta = 35 degrees F, wind at 5 mph.			(100,000 BTU =1-Therm)		5,100,000 BTU	
Pool Heater: BTU/month		25,500.00	25,500.00	20,400.00	15,300.00	5,100.00	0.00	0.00	0.00	10,200.00	15,300.00	20,400.00	25,500.00	
Cost per Therm:		1.548	1.548	1.548	1.548	1.548	1.548	1.548	1.548	1.548	1.548	1.548	1.548	
Subtotal Cost:		\$39,474.00	\$39,474.00	\$31,579.20	\$23,684.40	\$7,894.80	\$0.00	\$0.00	\$0.00	\$15,789.60	\$23,684.40	\$31,579.20	\$39,474.00	\$252,633.60
Service Fee:		\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$240.00
Cost:		assume pool covers are utilized - winter time run approx 5 hrs daily and District has negotiated bulk price on natural gas												\$252,873.60
CHEMICALS:		Cost/Gallon												
Gal	Chlorine	\$1.75	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	\$21,000.00
Gal	Acid 15%	\$2.50	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	\$9,000.00
Cost:		assume purchase in bulk with super chlorination twice annually												\$30,000.00
WATER:		Volume of pools 326,776 Gallons, Area of pools = 9,104 FT2 (8-lane pool backwash = 4,344 gals) (warm-up pool backwash = 1,244 gals)												
Backwash per month:		21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	21,152.00	
Evap: 1/2" mo		2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	2,837.00	
Total Gallons Per Month		23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	23,989.00	287,868.00
Meter charge 2" dia		\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$95.92	\$1,151.04
Total Gallons Year														614,644.00
CF of water per Year														82,171.66
Cost per CF:														\$0.01950
Cost:		assume use of regenerative filter with 40 TDH and 800 gallon backwash												\$1,602.35
TOTAL COST TO MAINTAIN AND OPERATE 50M POOL ANNUALLY:														\$310,933.42
PUMP ANALYSIS:		8L by 25 yd		GPM	Head	factor	HP	EFFICIENCY						
HRS Filter	HORSEPOWER	15	706	60	3,960.00	15.00	77.55%							
	Watt conversion	0.7460												
	Hours/month	10,742	540.00	5,800,896.00	5,800.90	KWh	69,610.75	\$0.180	\$12,529.94	assume use of HRS filter with 60 TDH				
PUMP ANALYSIS:		Warm-up & Play Pool		GPM	Head	factor	HP	EFFICIENCY						
HRS Filter	HORSEPOWER	5	202	60	3,960.00	5.00	75.57%							
	Watt conversion	0.7460												
	Hours/month	3,581	540.00	1,933,632.00	1,933.63	KWh	23,203.58	\$0.180	\$4,176.65	assume use of HRS filter with 60 TDH				