

Technical Memorandum

September 01, 2026

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Project Name	Humboldt County Regional Vision Zero Action Plan		
Subject	Injury & Collision Data Analysis Memorandum		

1. Introduction

The Vision Zero strategy of eliminating traffic fatalities and serious injuries is built on the Safe System approach, which applies a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels.

To develop a safer roadway system in Humboldt County, it is important to understand existing conditions. Collision data helps to tell the story about common types of risky roadway conditions and driver behaviors, as well as fatal and severe injury crash locations.

2. Setting

Humboldt County is located along the Pacific coast of Northern California and is comprised of Unincorporated Humboldt County (e.g., Census-Designated Places and Communities), the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad, as well as Native American reservations/tribes.

Within the roadway system, US 101 is a major north-south highway, providing access to Del Norte County to the north and Mendocino County to the south. Also, State Route (SR) 299 and SR 36 are major east-west highways, providing access to Interstate 5 on the east and US 101 on the west. The California Department of Transportation (Caltrans) is the state agency responsible for managing and maintaining these highways.

3. Data Source

The most common source of crash data is police reports, however supplemental datasets can be used to provide missing data, additional context, or another point of view.

For this plan, the comprehensive countywide collision dataset was generated using California Highway Patrol (CHP) California Crash Reporting System (CCRS) data, supplemented with Safe Transportation Research and Education Center (SafeTREC) Transportation Injury Mapping System (TIMS) data. Seven years (2018-2024) of

collision data was collected. This data range ensures the incorporation of five years of data (standard minimum) and allows for the analysis of collisions before, during, and after the COVID-19 pandemic, to determine if changes in roadway travel affected collisions. To create the comprehensive countywide collision dataset, the TIMS collision dates and times were compared to the CCRS collision dates and times, to determine unique collisions within the TIMS data. These unique collisions were then added to the CCRS data to provide a more thorough collision history, creating the CCRS + TIMS dataset. This dataset contains reported collisions on roadways within all jurisdictions in Humboldt County, including Caltrans facilities.

In addition to the CCRS + TIMS dataset, Orleans Volunteer Fire Department (OVFD) data was assessed. The OVFD collision dates were compared to the CCRS + TIMS dataset. Due to limited data availability for the OVFD collisions, collision times were not recorded and could not be compared; therefore, reported collision fatalities and injuries were compared, providing another level of review for unique collisions. Based on those comparisons, it was unclear which collisions were already reported within the CCRS + TIMS dataset. To prevent double counting and to provide a clearer analysis of the collision history on tribal and tribal-related lands, the OVFD collisions were analyzed as a separate dataset.

4. Data Trends

The following sections present the collision data trends for the CCRS + TIMS and OVFD collision datasets.

As noted by the Federal Highway Administration (FHWA)¹, for small and rural jurisdictions, certain traffic safety data may not be available in large enough numbers to use by itself for purposes of improving traffic safety, including the use of fatal collisions alone. As such, for the CCRS + TIMS collision dataset, in consideration of the small and rural jurisdictions in Humboldt County, beyond fatal collisions, all collision types were included. Supplemental or expanded datasets help to provide additional context regarding existing conditions.

4.1 CCRS + TIMS Collision Data

From 2018 to 2024, 12,143 total collisions were reported on all roadways within Humboldt County. These collisions were broken down into categories, such as severity, location, and type, to identify crash trends. The following sections present the findings of these categories.

As shown in **Figure 4.1**, for total collisions, high densities are located within the City of Eureka, the City of Arcata, and along US 101.

¹ FHWA, *Vision Zero Toolkit*, March 2024.

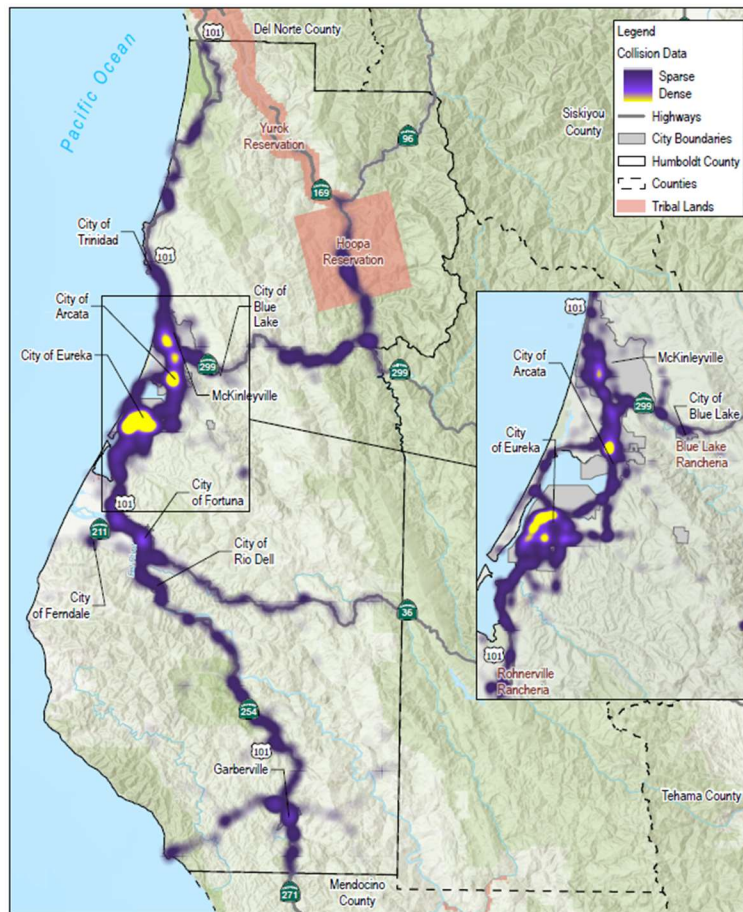


Figure 4.1 CCRS + TIMS Total Collision Densities

4.1.1 Severity

As shown in **Figure 4.2**, of the total collisions, 67% were property damage only (PDO). PDO excludes bodily injury and is limited to property (e.g., cars, fences, trees) involved in the crash. Additionally, 32% were injuries and 1% were fatalities. Injury collisions may result in severe injuries, visible injuries, or reports of pain. However, CCRS data does not differentiate between these levels of injury collisions; therefore, all degrees of injury collisions were reported as “Injury.”

Figure 4.3 presents the total collisions by year and severity. Overall, total collisions generally decreased each year. During the COVID-19 pandemic (2020 to 2021), total collisions decreased in 2020 then increased in 2021.

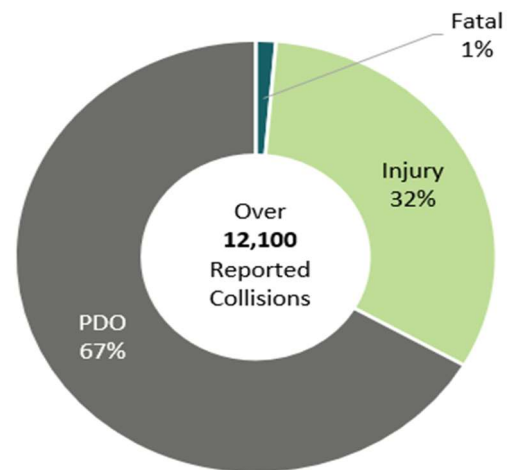


Figure 4.2 CCRS + TIMS Total Collisions by Severity

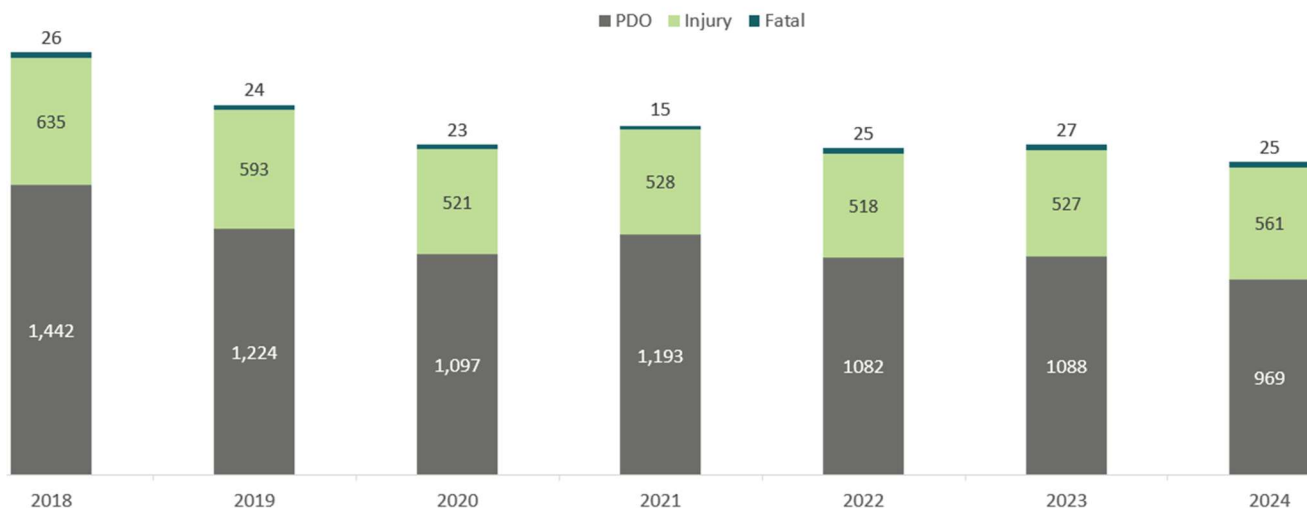


Figure 4.3 CCRS + TMS Total Collisions by Year and Severity

Figure 4.4 presents a summary of collisions by season and severity. Over the seven-year data period, over 3,200 collisions occurred in the Fall (September, October, November), over 2,800 occurred in the Spring (March, April, May), nearly 3,000 occurred in the Summer (June, July, August), and over 3,100 occurred in the Winter (December, January, February).

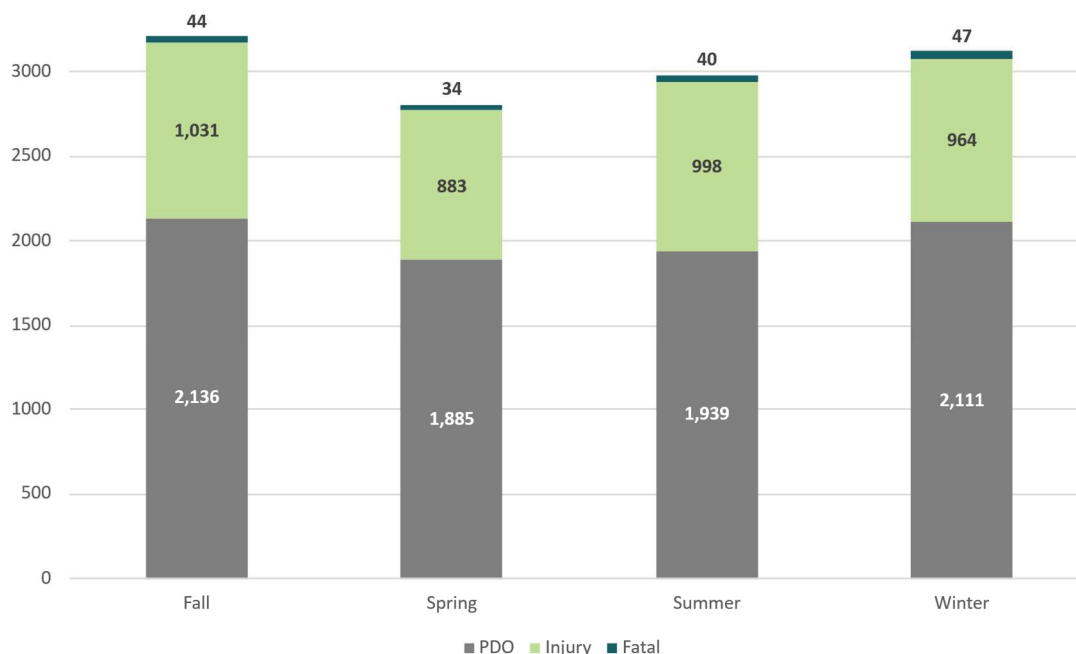


Figure 4.4 CCRS + TIMS Total Collisions by Season and Severity

4.1.1.1 High Severity

Figure 4.5 presents the fatal plus injury (F+I) collisions. Of the total collisions (12,143), over 4,000 are F+I collisions. Of the F+I collisions, 4% were fatal and 96% were injury.

Table 4.1 presents total and F+I collisions by year and severity. F+I collisions were 31% to 34% most years, excluding 2024 (38%).

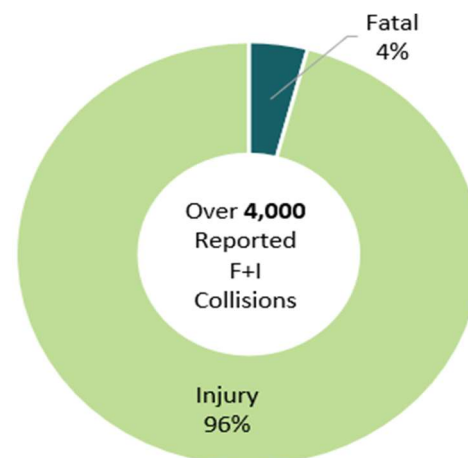


Figure 4.5 CCRS + TIMS F+I Collisions

Table 4.1 CCRS + TIMS Total and F+I Collisions by Year and Severity

Year	Fatal	Injury	PDO	Total	F+I	F+I Ratio
2018	26	635	1,442	2,103	661	31.4%
2019	24	593	1,224	1,841	617	33.5%
2020	23	521	1,097	1,641	544	33.2%
2021	15	528	1,193	1,736	543	31.3%
2022	25	518	1,082	1,625	543	33.4%
2023	27	527	1,088	1,642	554	33.7%
2024	25	561	969	1,555	586	37.7%
Total	165	3,883	8,095	12,143	4,048	-

Figure 4.6 presents the F+I collisions. F+I collision densities are similar to total collision densities shown in **Figure 4.1**.

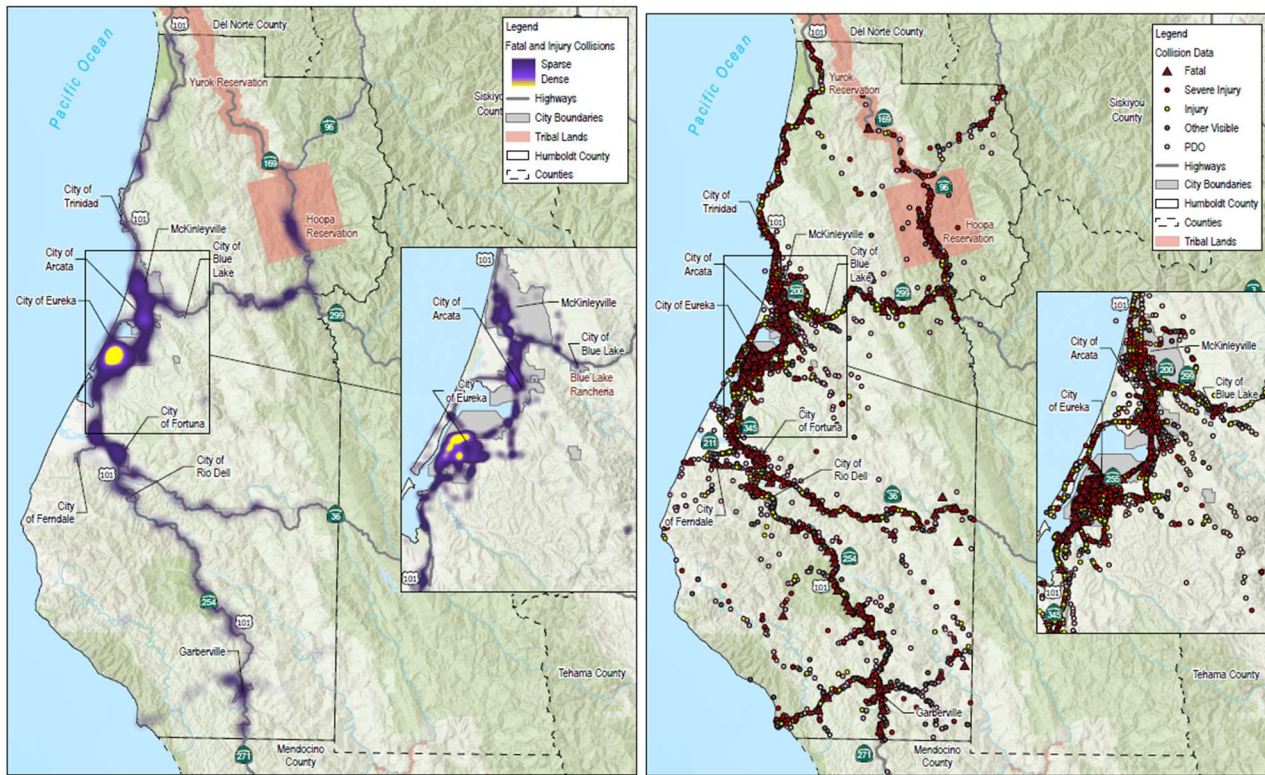


Figure 4.6 CCRS + TIMS F+I Collisions

4.1.2 Jurisdiction

Table 4.2 present the total collisions by jurisdiction. Excluding Unincorporated County, the Cities of Eureka and Arcata had the highest total collisions, with 52% (1,278) and 26% (251) F+I collisions, respectively. Unincorporated County had 29% (2,418) F+I collisions.

Table 4.2 CCRS + TIMS Total Collisions by Jurisdiction

Jurisdiction	Fatal	Injury	PDO	Total	F+I	F+I Ratio
Arcata	10	241	707	958	251	26.2%
Blue Lake	0	1	3	4	1	25.0%
Eureka	25	1,253	1,204	2,482	1,278	51.5%
Ferndale	1	1	21	23	2	8.7%
Fortuna	4	91	207	302	95	31.5%
Rio Dell	0	2	1	3	2	66.7%
Trinidad	0	1	3	4	1	25.0%
Unincorporated	125	2,293	5,949	8,367	2,418	28.9%
Total	165	3,883	8,095	12,143	4,048	-

4.1.3 Facility Type

Figure 4.7 presents the total collisions by facility type and severity. As shown, 36% (4,403) of total collisions occurred at intersections, with 39% (1,703) F+I collisions.

For this analysis, an intersection-related collision is a collision that occurs within 50 feet of the intersection of two roadways or within 150 feet of the intersection of two roadways and resulting in a rear end. A segment-related collision is a collision that is not identified as intersection-related.

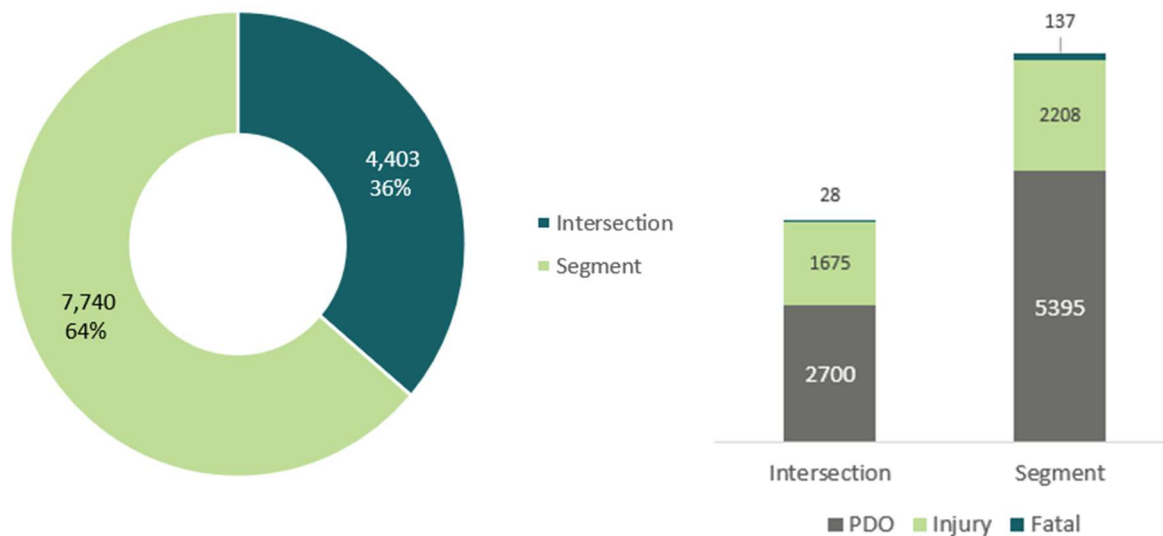


Figure 4.7 CCRS + TIMS Total Collisions by Facility Type and Severity

4.1.4 Collision Type

Figure 4.8 presents the total collisions by collision type. Of the total collisions, “hit object” (40%) was the most common collision type. “Rear end” and “side swipe” were tied for the second most common collision type (14% each), followed by “broadside” (13%).

Figure 4.9 presents F+I collisions by collision type. Similar to **Figure 4.8**, “hit object” (30%) was the most common collision type. The second most common collision type was “broadside” (21%), followed by “rear end” (12%).

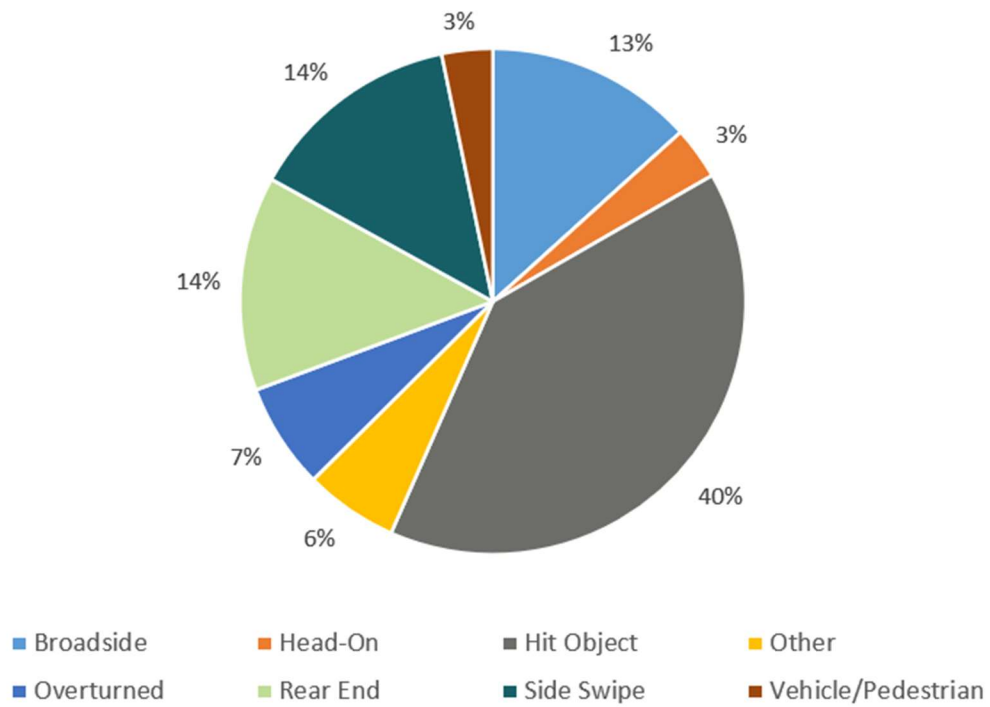


Figure 4.8 CCRS + TIMS Total Collisions by Collision Type

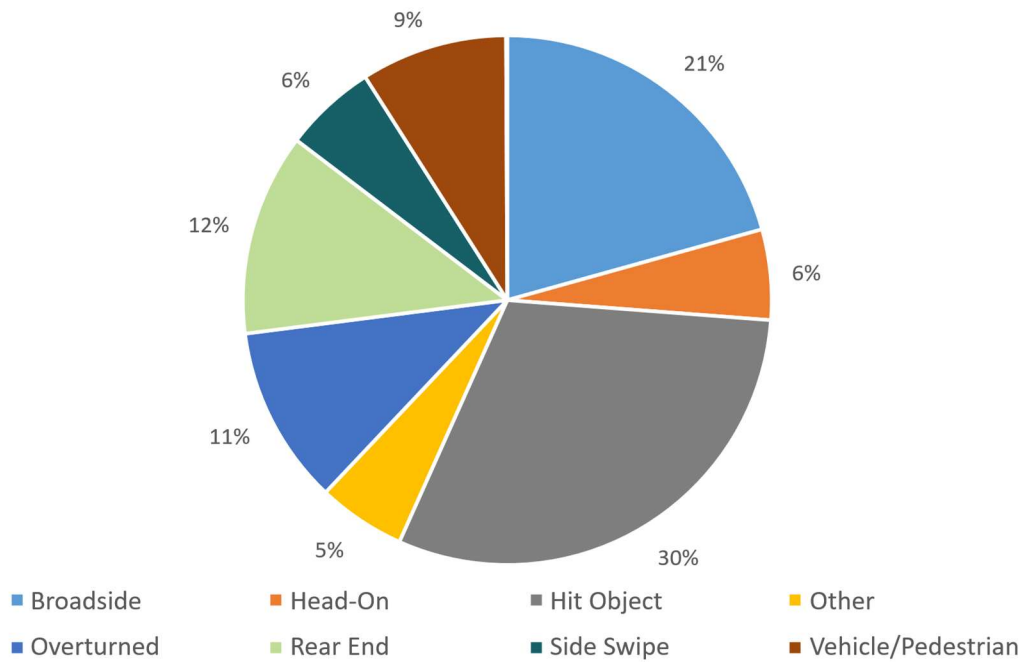


Figure 4.9 CCRS + TIMS Fatal and Injury Collisions by Collision Type

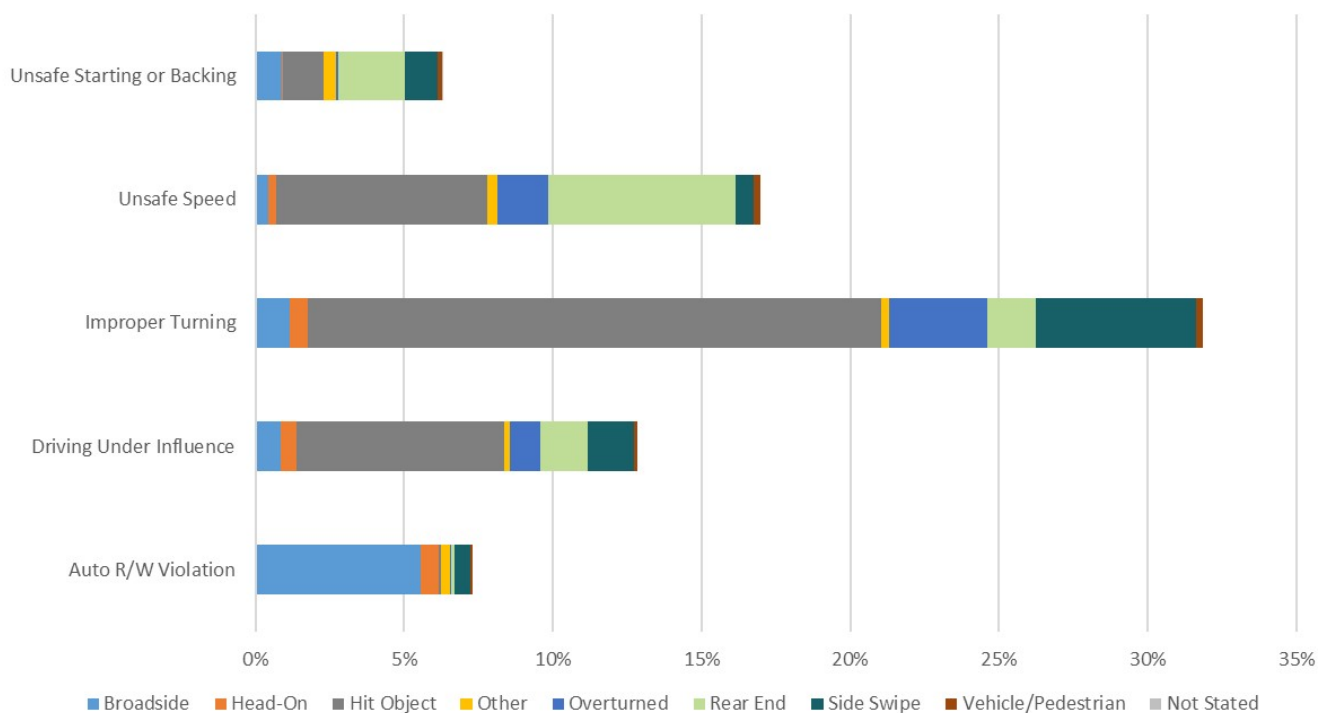
4.1.5 Violation Category

Table 4.3 and **Figure 4.10** present the top five violation categories by collision type. As shown, “improper turning” (31%) was the most common violation category, with “hit object” (19%) being the most common collision type. “Unsafe speed” and “driving under influence” also were common violation categories (16% and 14%, respectively), with “hit object” being the most common collision type (7% each).

Table 4.3 CCRS + TIMS Top 5 Violation Categories by Collision Types

Violation Category	Collision Type								
	Broadside	Head-On	Hit Object	Other	Over-turned	Rear End	Side Swipe	Vehicle/Pedestrian	Not Stated
Auto R/W Violation	6%	1%	<1%	<1%	<1%	<1%	1%	<1%	0%
Driving Under Influence	1%	1%	7%	<1%	1%	2%	2%	<1%	0%
Improper Turning	1%	1%	19%	<1%	3%	2%	5%	<1%	0%
Unsafe Speed	<1%	<1%	7%	<1%	2%	6%	1%	<1%	0%
Unsafe Starting or Backing	1%	<1%	1%	<1%	<1%	2%	1%	<1%	<1%

Figure 4.10 CCRS + TIMS Top 5 Violation Categories by Collision Types



4.1.6 Lighting

Table 4.4 presents the total collisions by lighting condition.

Of the total collisions, “daylight” was the most common lighting condition (7,195 collisions or 59%). Combining all dark (e.g., dark – no street lights, dark – street lights, and dark – street lights not functioning) lighting conditions, results in 4,475 collisions or 37%.

Of the F+I collisions, “daylight” was the most common lighting condition (2,610 collisions or 65%). Combining all dark lighting conditions, results in 1,274 F+I collisions or 32%.

Table 4.4 CCRS + TIMS Total Collisions by Lighting

Lighting Condition	Fatal	Injury	PDO	Total	F+I	F+I Ratio
Dark – No Street Lights	46	692	1,971	2,709	738	27.2%
Dark – Street Lights	23	504	1,202	1,729	527	30.5%
Dark – Street Lights Not Functioning	1	8	28	37	9	24.3%
Daylight	85	2,525	4,585	7,195	2,610	36.3%
Dusk-Dawn	10	148	300	458	158	34.5%
Not Stated	0	6	9	15	6	40.0%
Total	165	3,883	8,095	12,143	4,048	-

Table 4.5 presents the total collisions by lighting condition by jurisdiction. In the cities, “daylight” and “dark – street lights” were the two most common lighting conditions. In Unincorporated County, “daylight” and “dark – no street lights” were the two most common lighting conditions.

Of the total collisions by jurisdiction, “daylight” collisions comprise 60% in Unincorporated County, 65% in the City of Eureka, and 55% in the City of Arcata. Of the total collisions by jurisdiction, “dark – street lights” collisions comprise 14% in Unincorporated County, 28% in the City of Eureka, and 30% in the City of Arcata.

Note that this analysis does not take into consideration roadway volumes, which could highlight additional trends (e.g., by jurisdiction). Incorporating roadway volumes may indicate high traffic areas with reduced lighting where collisions may be more common (especially in the cities) and indicate a correlation between these areas and larger numbers of F+I collisions.

Table 4.5 CCRS + TIMS Total Collisions by Lighting by Jurisdiction

Lighting Condition	Arcata	Blue Lake	Eureka	Ferndale	Fortuna	Rio Dell	Trinidad	Unincorporated
Dark – No Street Lights	97	0	78	2	24	1	1	2,506
Dark – Street Lights	284	1	703	7	70	0	2	662
Dark – Street Lights Not Functioning	1	0	2	0	0	0	0	34
Daylight	531	3	1,609	13	192	1	1	4,845
Dusk-Dawn	43	0	82	1	11	1	0	320
Not Stated	2	0	8	0	5	0	0	0
Total	958	4	2,482	23	302	3	4	8,367

4.1.7 Weather

Table 4.6 presents the total collisions by weather condition.

Of the total collisions, “clear” was the most common weather condition (8,082 collisions or 67%). Of the F+I collisions, “clear” was the most common weather condition (2,779 collisions or 69%).

Table 4.6 CCRS + TIMS Total Collisions by Weather

Weather Condition	Fatal	Injury	PDO	Total	F+I
Clear	94	2,685	5,303	8,082	2,779
Cloudy	54	860	2,053	2,967	914
Dusty	0	0	1	1	0
Foggy	0	31	67	98	31
Hailing	0	6	12	18	6
Misty	0	0	1	1	0
Night	0	0	1	1	0
Other	0	7	12	19	7
Raining	17	282	591	890	299
Smoke/Ash	0	0	1	1	0
Smokey	0	0	3	3	0
Snowing	0	7	36	43	7
Wind	0	1	2	3	1
Unknown	0	4	12	16	4
Total	165	3,883	8,095	12,143	4,048

4.1.8 Multimodal

Table 4.7 and **Table 4.8** present pedestrian and bicyclist collisions by severity (i.e., fatal, injury, and PDO) and location, respectively.

Of the 373 pedestrian collisions, 52% (195) occurred within the City of Eureka, 16% (59) occurred within the City of Arcata, and 29% (110) occurred in unincorporated areas.

Of the 231 bicyclist-related collisions, 40% (93) occurred in the City of Eureka, 26% (59) occurred in the City of Arcata, and 29% (67) occurred in unincorporated areas.

Table 4.7 CCRS +TIMS Pedestrian and Bicyclist Collisions by Severity

Collision Type	Fatal	Injury	Total
Pedestrian	42	331	373
Bicyclist	7	224	231

Table 4.8 CCRS +TIMS Pedestrian and Bicyclist Collisions by Location

Collision Type	Arcata	Blue Lake	Eureka	Fortuna	Rio Dell	Unincorporated	Total
Pedestrian	59	1	195	8	0	110	373
Bicyclist	59	0	93	11	1	67	231

Figure 4.11 and **Figure 4.12** show the pedestrian and bicyclist collisions, respectively. As shown in the figures, the locations of pedestrian and bicyclist collisions align with collision hot spots observed in **Figure 4.6**.

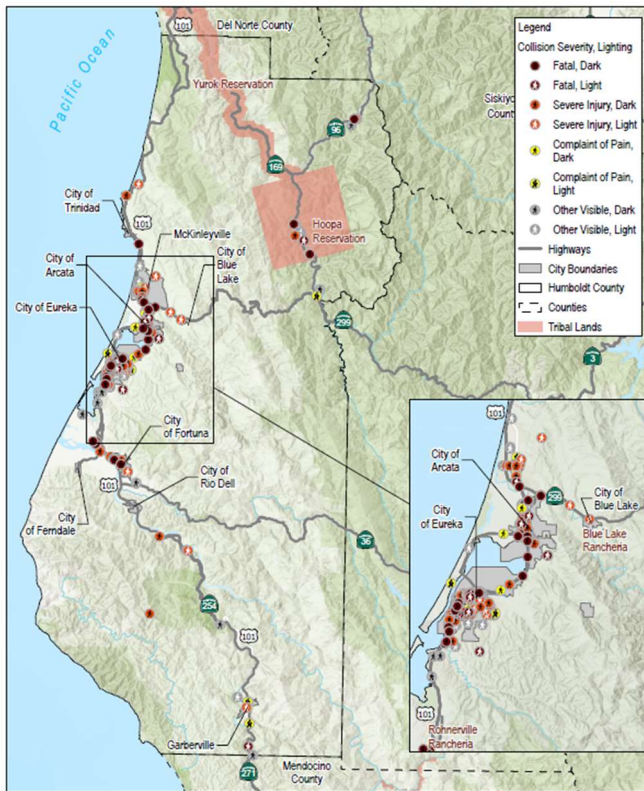


Figure 4.11 CCRS +TIMS Pedestrian Collisions

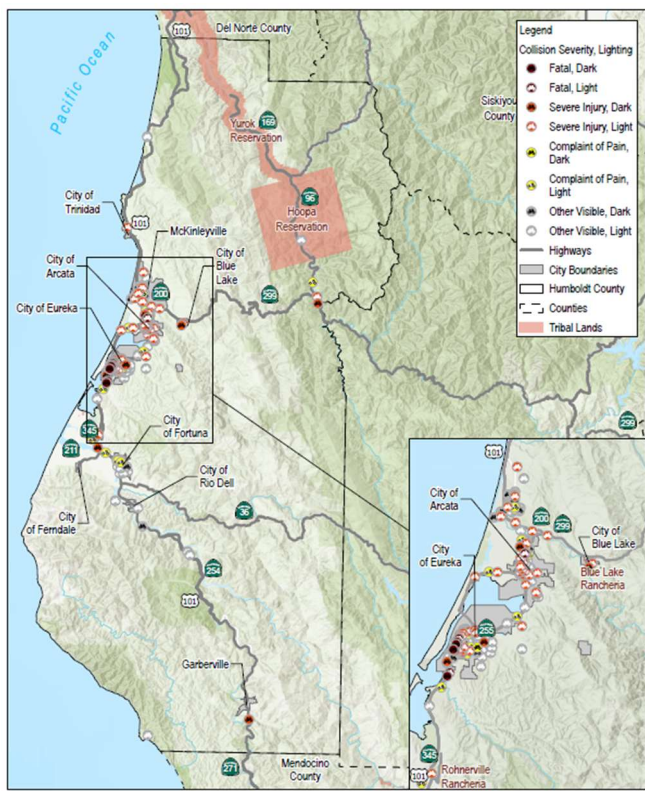


Figure 4.12 CCRS +TIMS Bicyclist Collisions

4.1.8.1 Tribal Lands

Figure 4.14 and **Figure 4.13** show additional details for the pedestrian and bicyclist collisions that occurred on tribal lands. As shown in the figures, on tribal lands, there were three fatal pedestrian-related collisions, with one occurring during the day and two occurring at night, as well as six other pedestrian-related collisions. Also, on tribal lands, there were zero fatal bicyclist-related collisions and one other bicyclist-related collision.

Figure 4.15 shows the pedestrian and bicyclist collision densities on tribal lands.

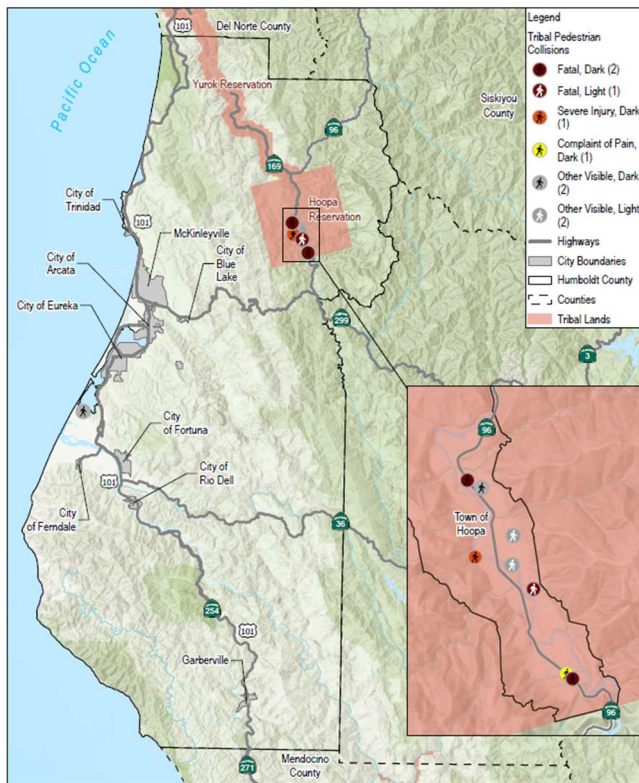


Figure 4.14 CCRS +TIMS Tribal Land Pedestrian Collisions

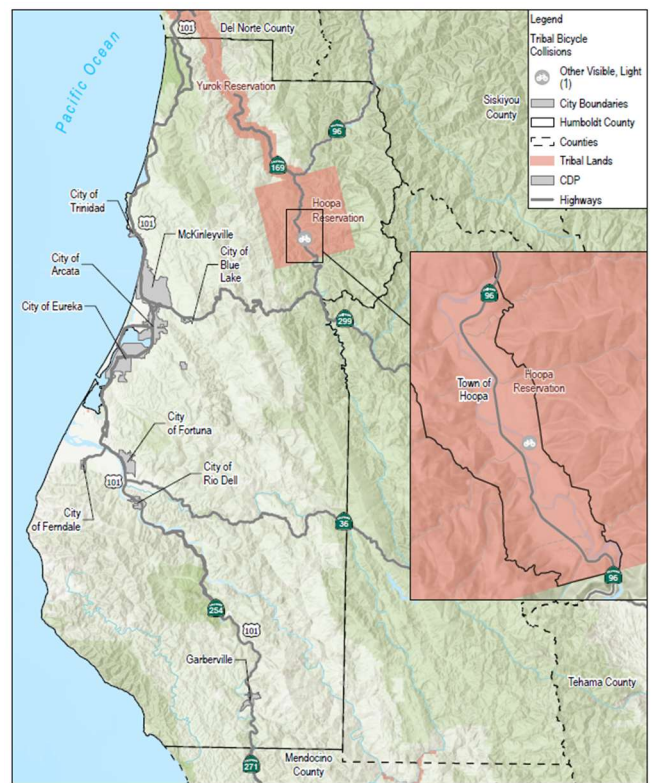


Figure 4.13 CCRS +TIMS Tribal Land Bicyclist Collisions

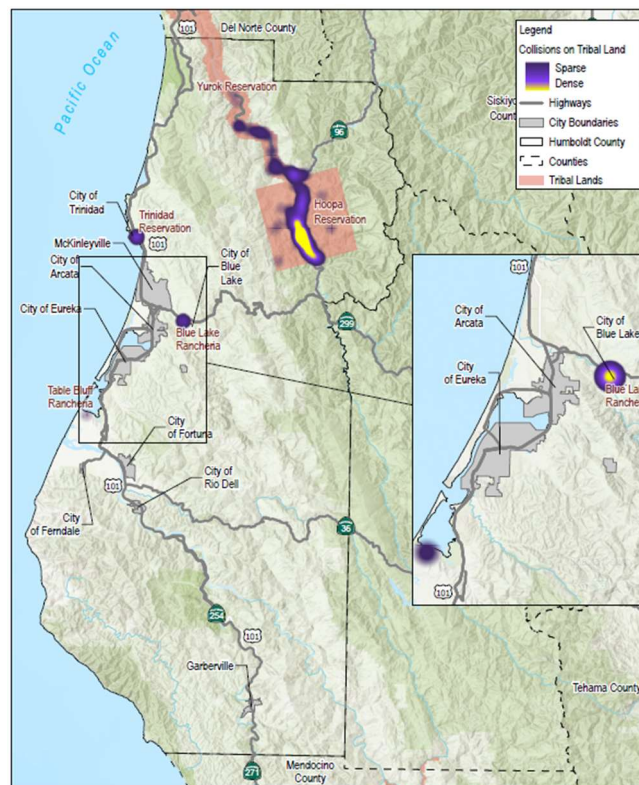


Figure 4.15 CCRS +TIMS Tribal Land Pedestrian and Bicyclist Collision Densities

4.2 OVFD Collision Data

The OVFD has a first-due response area of 198 square miles that extends from 2 miles north of Weitchpec on SR 96, north through Orleans and Somes Bar to Ti Bar in Siskiyou County. The OVFD provided a list of 56 collisions, of which 15 collisions were removed (e.g., collisions with locations outside of Humboldt County or undefinable, as well as one collision occurring in 2025), resulting in 41 collisions for the data analysis.

The data included collision dates, incident types, locations, number of injuries and fatalities, and additional notes to describe the causes of the collisions, what the collisions involved, or the results of the collisions. A preliminary check of the data confirmed a portion of the collisions received from the OVFD were accounted for in the CCRS + TIMS data, and the remaining collisions were collisions that were not previously within publicly available data sources.

Figure 4.16 shows all OVFD collisions reported within the County.

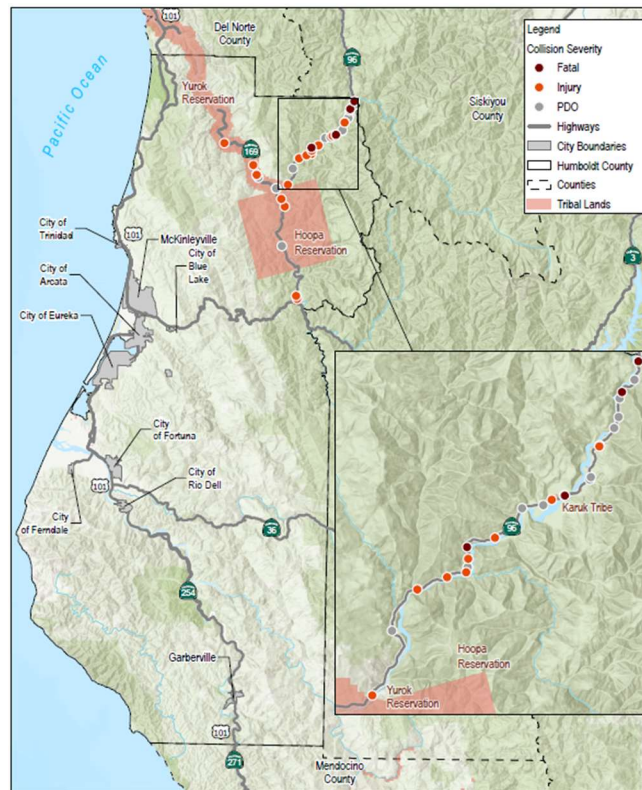


Figure 4.16 OVFD Collisions

4.2.1 Severity

Of the 41 collisions, four collisions resulted in fatalities, 18 resulted in injuries, and 19 collisions resulted in PDO. All four fatal collisions occurred along SR 96, two fatal collisions involved vehicles going over the riverbank, and one fatal collision involved a pedestrian.

Figure 4.17 presents a summary of collisions by year and severity. Over the seven-year data period, the highest number of collisions occurred in 2019 and 2020, with 9 total collisions each year. The highest number of F+I collisions occurred in 2019-2021, with five F+I collisions each year.

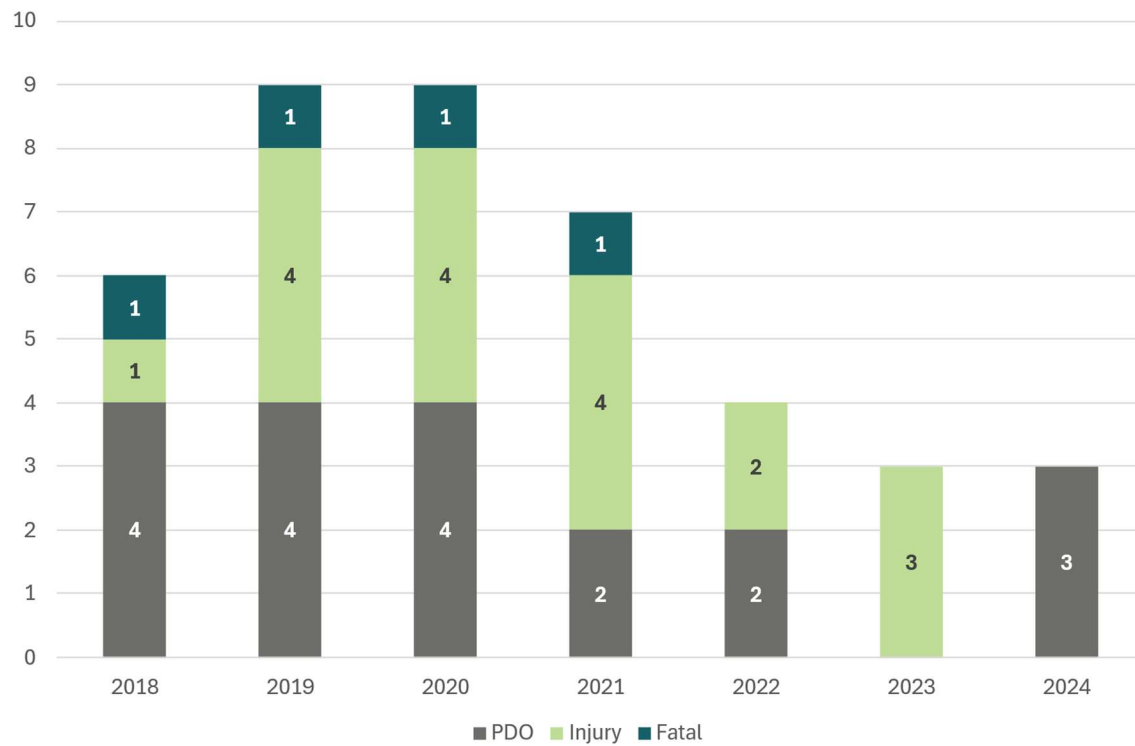


Figure 4.17 OVFD Collisions by Year and Severity

Figure 4.18 presents a summary of collisions by season and severity. Over the seven-year data period, 10 collisions occurred in the Fall (September, October, November), 10 occurred in the Spring (March, April, May), 12 occurred in the Summer (June, July, August), and nine occurred in the Winter (December, January, February).

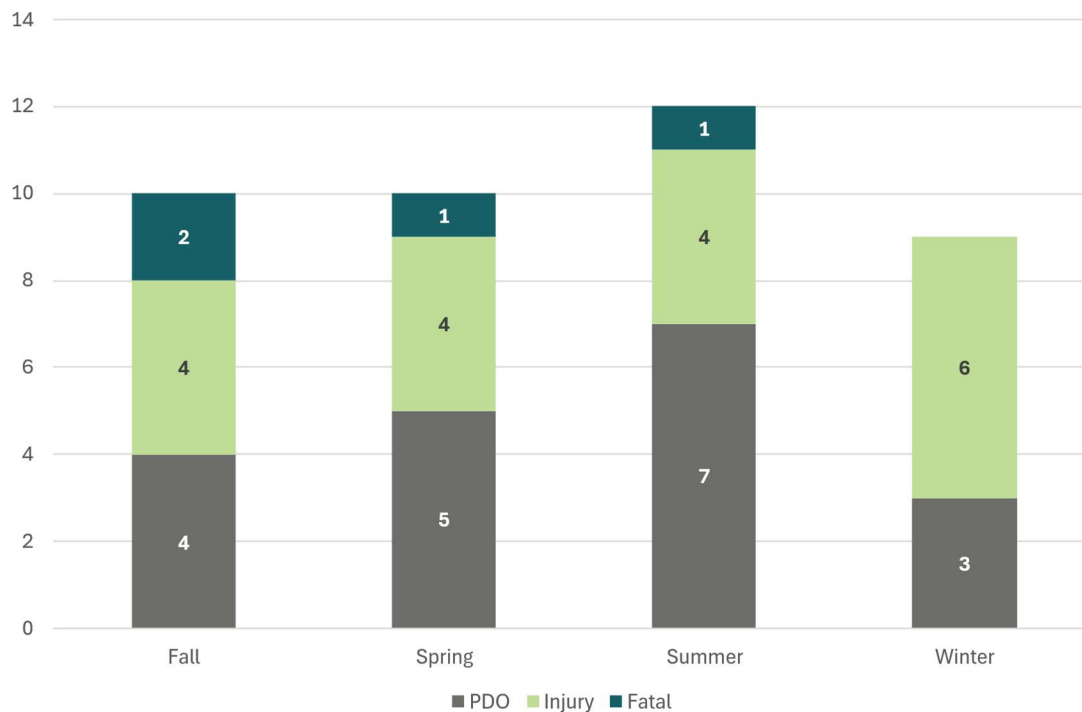


Figure 4.18 OVFD Collisions by Season and Severity

4.2.2 Collision Type

Figure 4.19 presents a summary of collisions by type and severity. The most common collision type was “Vehicle Accident,” with 17 total collisions, including 12 F+I collisions. The second most common collision type was “Over the Bank,” with 11 total collisions, including four F+I collisions.

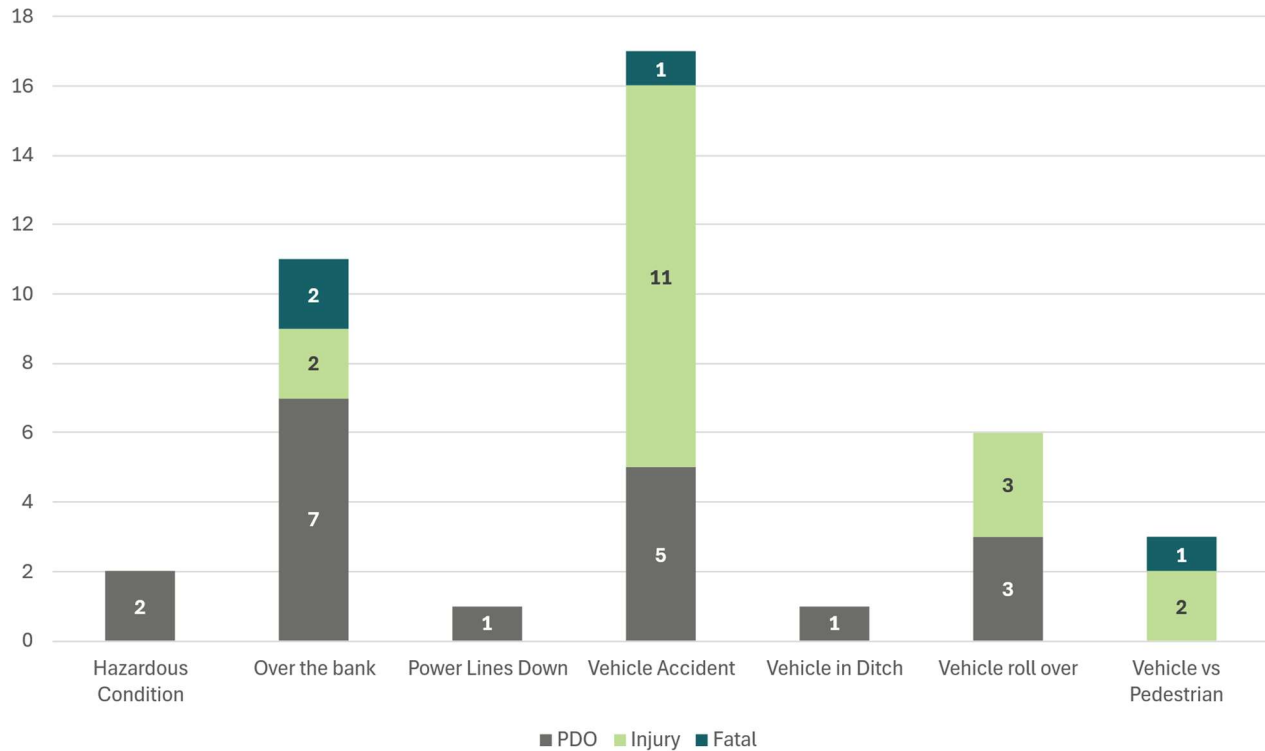


Figure 4.19 OVFD Collisions by Type and Severity

4.2.3 Multimodal

Of the 41 collisions, 7% involved pedestrians. One pedestrian collision resulted in fatality, and two collisions with pedestrians resulted in injuries. All three occurred along SR 96 in the Fall or Winter. Zero collisions involving bicyclists were reported.

4.3 Tribal and Tribal-Related Lands

Collisions on tribal and tribal-related lands generally are presented in Sections 4.1 and 4.2.

The CCRS + TIMS collision dataset presents collisions on tribal lands, mostly in Unincorporated County along SR 96 and SR 169 in the northeastern portion of the County. As shown in **Figure 4.6**, F+I collisions were reported on tribal lands, with a density of F+I collisions occurring along SR 96 in Hoopa. As shown in **Figure 4.13** and **Figure 4.14**, of the F+I collisions, there were three fatal and six injury pedestrian-related collisions.

The OVFD collision dataset presents collisions on tribal-related lands in Unincorporated County along SR 96 and SR 169 in the northeast portion of the County. As detailed in Section 4.2, F+I collisions were reported on tribal-related lands, including four fatal and 18 injury collisions. Of the F+I collisions, there was one fatal pedestrian-related collision, one fatal “vehicle accident” collision, and one fatal “over the bank” collision.

5. Data Hotspots

The following presents the collision data high-injury locations, including hot spots, for the CCRS + TIMS dataset.

To start, high-injury locations were determined by assessing the crash severity type (e.g., PDO, fatal and severe injury, other injury), location type (e.g., roadway, non-signalized intersection, and signalized intersection), and severity ranking (i.e., crash cost and equivalent property damage only (EPDO)) of each collision, consistent with 2024 *Caltrans Local Roadway Safety Manual* values. This methodology ensures that fatal and severe injury collisions receive the highest values. (For example, if a location has one collision that is a PDO collision, the severity ranking is EPDO 1. However, if the one collision is a fatal or severe injury collision, the severity ranking is EPDO 119 (signalized intersection), 165 (roadway), or 191 (non-signalized intersection). For each network (segment) and each intersection, the EPDO of each and all collisions was summed, with EPDO 119 and below categorized as “low severity” and EPDO 120 and above categorized as “high severity.”

Hot spots are “high severity” high-injury locations.

Table 5.1 and **Table 5.2** highlight the top hot spots in the County.

- As shown in **Table 5.1**, the majority of the top hot spot intersections are located in the City of Eureka. For the top hot spot intersections, EPDO ranges from 891 to 573.
- As shown in **Table 5.2**, the majority of the top hot spot networks are located in Unincorporated County, mostly along US 101. Generally, Caltrans facilities have higher traffic volumes, as freeways and highways link the communities in the County. For the top hot spot networks, EPDO ranges from 1254 to 744.

It is anticipated that the top hot spots in the County will be used to identify priority countermeasures, strategies, and projects. Additionally, the top hot spot trends could be used to help identify additional locations with similar geometry, traffic lanes, and terrain.

Table 5.3 and **Table 5.4** highlight the top high-injury locations by jurisdiction. The high-injury locations by jurisdiction also are shown in **Figure 5.1** to **Figure 5.20**.

Table 5.1 *Top 10 Hot Spot Intersections in the County*

Intersection	Jurisdiction	EPDO	Total Collisions
4th St / 5th St / US 101	City of Eureka	891	36
4th St / R St	City of Eureka	879	35
Bayside Cutoff Rd / US 101	Unincorporated	806	16
Broadway / W Washington St	City of Eureka	664	14
H St / Henderson St	City of Eureka	638	13
Indianola Cutoff Rd / US 101	Unincorporated	635	25
Broadway / Highland Ave	City of Eureka	629	9
Alliance Rd / Stromberg Ave	City of Arcata	594	9
Broadway / W Hawthorne St	City of Eureka	592	21
Ocean Ave / W Henderson St	City of Eureka	573	3

Table 5.2 *Top 10 Hot Spot Networks in the County*

Street Name	Boundary	Jurisdiction	EPDO	Total Collisions
SR 299	1.1 miles east of Cedar Creek Road to 200 ft east of Willow Creek	Unincorporated	1254	36
SR 96	0.6 miles south of Bull Creek to Mill Creek Road	Unincorporated	1236	43
US 101	Redwood Trails Circle to Old State Highway	Unincorporated	1195	27
Broadway	W Hawthorne St to Vigo St	City of Eureka	1091	27
US 101	L P Mill Rd to Kane Rd	Unincorporated	1075	75
US 101	Hidden Crest Rd to SR 299	City of Arcata	919	49
SR 299	New 3 Creeks Road to M and W Ranch Road	Unincorporated	900	64
SR 255 Bridge	100 ft east of Vance Avenue to Startare Drive	City of Eureka	897	32
US 101	1.6 mile south of Humboldt/Del Norte County Border to 600 ft south of Humboldt/Del Norte County Border	Unincorporated	759	23
US 101	0.6 miles north of Lake Benbow Drive to US 101 Off Ramp toward Redwood Drive	Unincorporated	732	27

Table 5.3 *Top 5 High-Injury Intersections by Jurisdiction*

Intersection	EPDO	Total Collisions
Arcata		
Alliance Rd / Stromberg Ave	594	9
11th St / H St	412	7
17th St / Alliance Rd	395	5
15th St / Alliance Rd / M St	382	2
G St / Samoa Blvd	338	30
Blue Lake		
Blue Lake Blvd / Davis St	192	2
H St / Hatchery Rd / Railroad Ave	191	1
1st Ave / H St	12	2
Blue Lake Blvd / Greenwood Rd	6	6
J St / Second Ave	1	1
Eureka		
4th St / 5th St / US 101	891	36
4th St / R St	879	35
Broadway / W Washington St	664	14
H St / Henderson St	638	13
Broadway / Highland Ave	629	9
Ferndale		
Main St / Shaw Ave	3	3
5th St / Fairview Dr	2	2
*All remaining intersections with collisions had 1 PDO collision		
Fortuna		
Rohnerville Rd / Senestraro Way	382	2
Main St / 6th St	205	5
S Riverwalk Dr / Eel River Rd / Private Dr / S Kenmar Rd	204	4
Rohnerville Rd / Kenmar Rd	202	2
Rohnerville Rd / Redwood Way	192	2
Rio Dell		
Davis St / US 101 Off Ramp / US 101 On Ramp	11	1
Ireland St / Painter St	6	1
Elm St / Wildwood Ave	1	1
Scenic Way / US 101 Off Ramp	1	1
Scenic Way / US 101 On Ramp	1	1
Trinidad		
Highway 101 Under Pass / SR 101 Off Ramp / Trinidad Frontage Rd / Westhaven Dr	1	1

Intersection	EPDO	Total Collisions
Main St / Patricks Point Dr / Trinidad Scenic Dr	1	1
Edwards St / Trinity St	1	1
Unincorporated		
Bayside Cutoff Rd / US 101	806	16
Indianola Cutoff Rd / US 101	635	25
Bear River Dr / Brenard Rd / Singley Rd	430	20
SR 299 / Old Dolly Varden Rd	394	4
Allard Ave / Little Fairfield St	384	4

Note: Yellow highlighted are included in Table 5.1.

Table 5.4 Top 5 High-Injury Networks by Jurisdiction

Street Name	Boundary	EPDO	Total Collisions
Arcata			
US 101	Hidden Crest Rd to SR 299	919	49
US 101	Bayside Cutoff Rd to 700 ft south of S G St	588	41
SR 299	Giuntoli Ln Interchange to N Bank Rd Interchange	515	13
US 101	Samoa Blvd Interchange to S G St Ramps	360	12
US 101	Samoa Blvd Interchange to 700 ft north of 7th St	358	10
Blue Lake			
Hatchery Rd	800 ft south of Taylor Wy to West End Rd	166	2
Railroad Ave	Shamrock Ln to Redwood Ave	165	1
Blue Lake Blvd	400 ft west of Davis St to Davis St	2	2
*All remaining segments with collisions had 1 PDO collision			
Eureka			
Broadway	W Hawthorne St to Vigo St	1091	27
SR 255 Bridge	100 ft east of Vance Avenue to Startare Drive	897	32
US 101	S Broadway St Interchange to Pound Rd Interchange	546	29
Broadway	570 ft north of Sunset Rd to Sunset Rd	402	14
Broadway	Hilfiker Ln to 400 ft south of Hilfiker Ln	355	7
Ferndale			
Washington St	Main St to Blackburn Ct	166	2
Bluff St	Berding St to Craig St	165	1
Main St	Washington St to Shaw Ave	11	1
5th St	Shaw Ave to A St	2	2
Bluff St	Main St to Berding St	2	2
Fortuna			

Street Name	Boundary	EPDO	Total Collisions
US 101	S 3rd St Off-Ramp to 300 ft south of Main St/US 101 merge	352	14
Newburg Rd	Spring St to S Fortuna Blvd	331	3
US 101	0.25 miles north of Kenmar Rd to 0.7 miles north of Kenmar Rd	216	12
US 101	Kenmar Rd Off-Ramp to Kenmar Rd On-Ramp	202	13
US 101	S 3rd St Off-Ramp to S 12th St On-Ramp	177	3
Rio Dell			
US 101 Southbound	Metropolitan Rd to 0.75 miles north of Wildwood Ave	388	20
US 101	Metropolitan Rd to 550 ft south of Metropolitan Rd	186	7
US 101 Northbound	Metropolitan Rd to 0.4 miles north of Wildwood Ave	45	20
US 101	0.2 miles south of Wildwood Ave to 0.25 miles north of Davis St	30	5
US 101	0.35 miles south of Davis St to 0.2 miles north of Redwood Highway Connector	14	4
Trinidad			
US 101	Parker Creek to Luffeholtz Creek	211	17
US 101	650 ft south of Main St/Westhaven Dr to Parker Creek	165	1
US 101	Mill Creek to 650 ft south of Main St/Westhaven Dr	11	1
US 101 On Ramp	Main St/Westhaven Dr to US 101	11	1
US 101 Off Ramp	Lanford Dr to 0.7 miles north of Baker Ranch Rd	6	1
Unincorporated			
SR 299	1.1 miles east of Cedar Creek Road to 200 ft east of Willow Creek	1254	36
SR 96	0.6 miles south of Bull Creek to Mill Creek Road	1236	43
US 101	Redwood Trails Circle to Old State Highway	1195	27
US 101	L P Mill Rd to Kane Rd	1075	75
SR 299	New 3 Creeks Road to M and W Ranch Road	900	64

Note: Yellow highlighted are included in Table 5.2.

Figure 5.1 High-Injury Networks: Arcata



Figure 5.2 High-Injury Intersections: Arcata

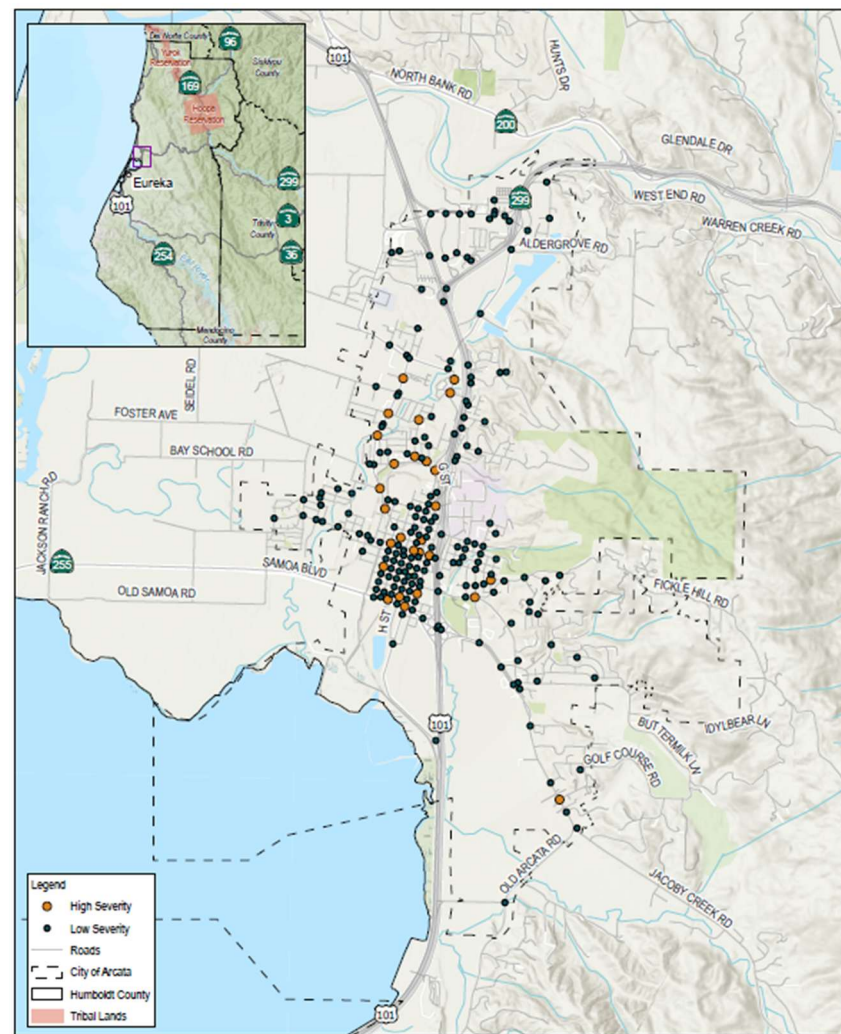


Figure 5.3 High-Injury Networks: Blue Lake

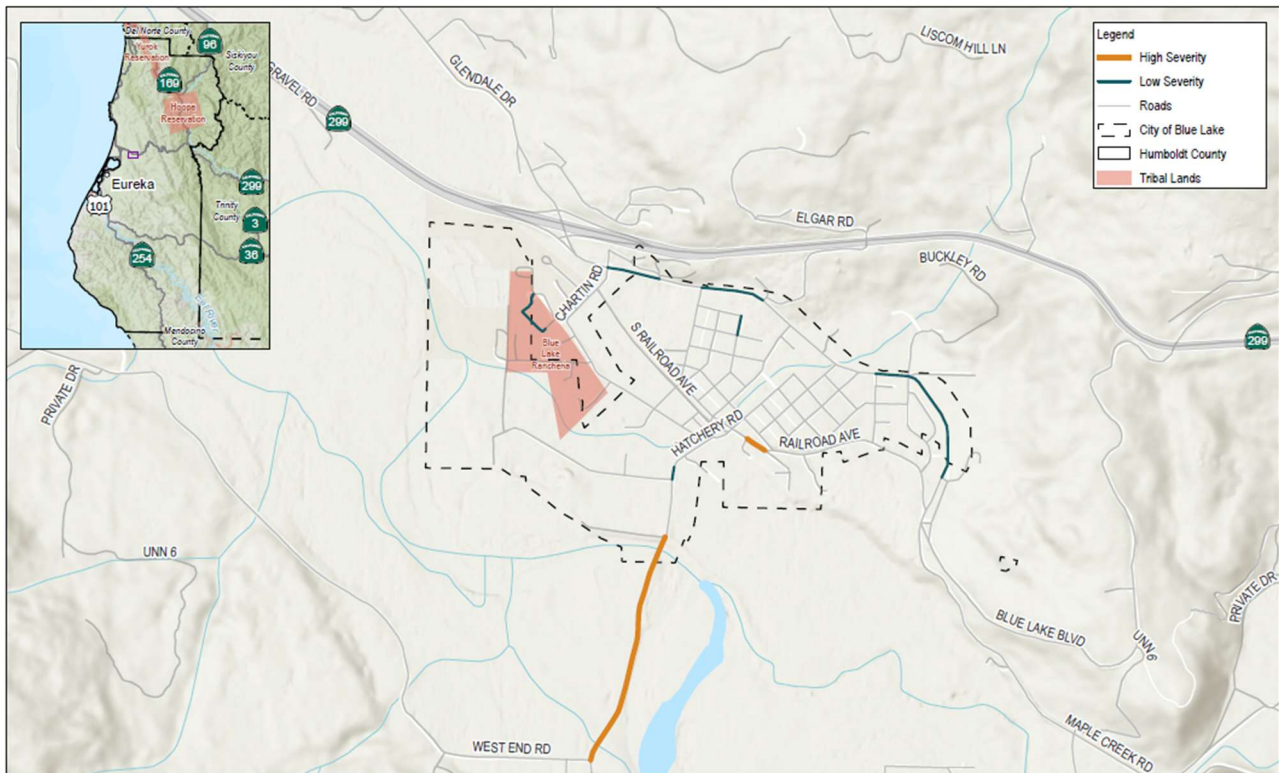


Figure 5.4 High-Injury Intersections: Blue Lake

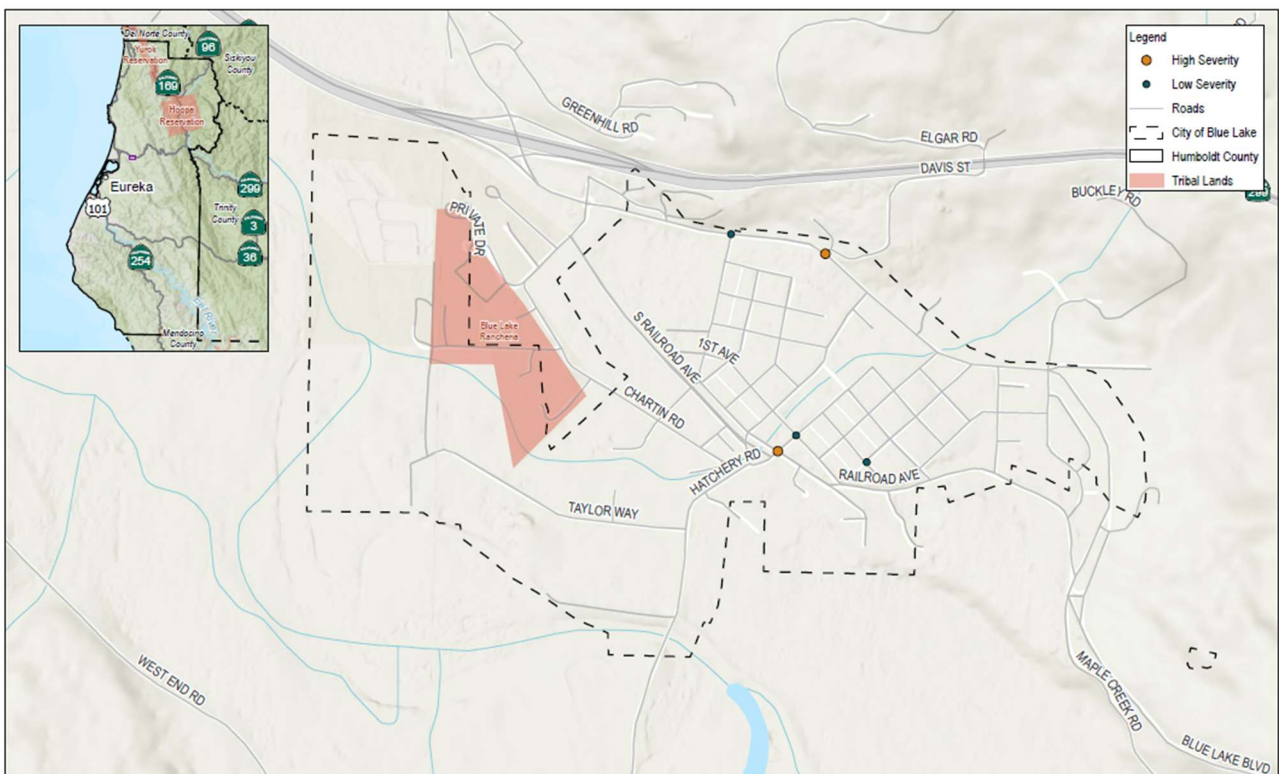


Figure 5.5 High-Injury Networks: Eureka

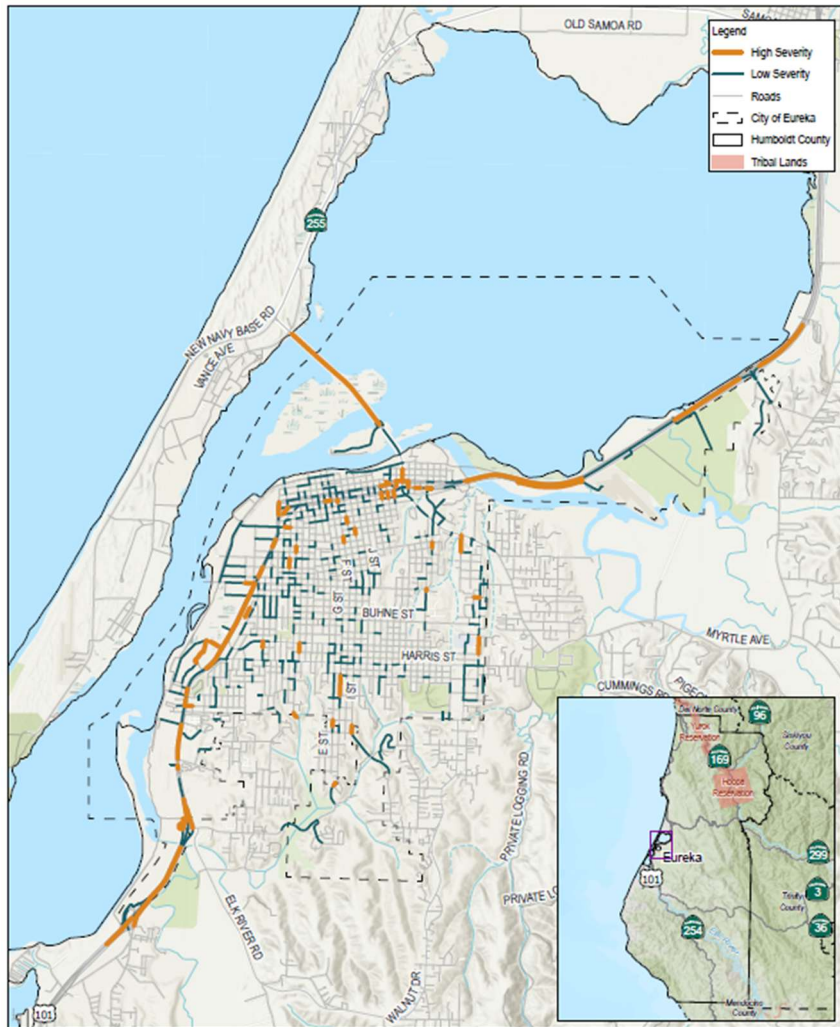


Figure 5.6 High-Injury Intersections: Eureka

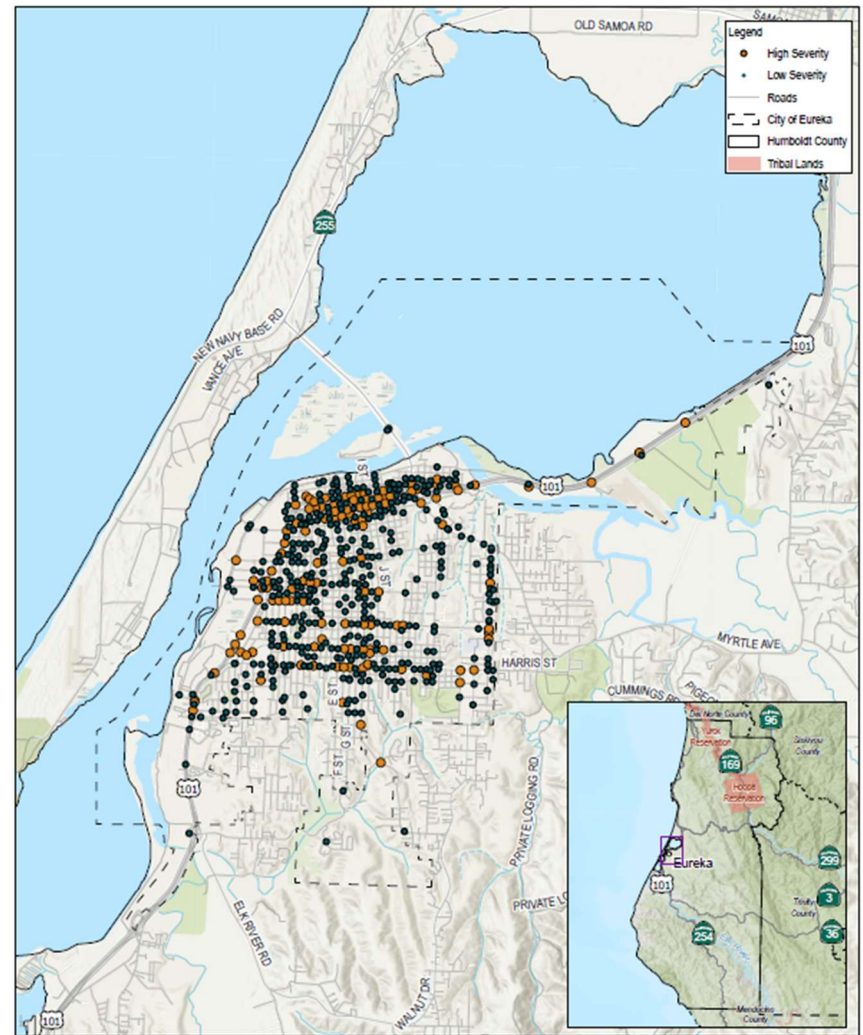


Figure 5.7 High-Injury Networks: Ferndale

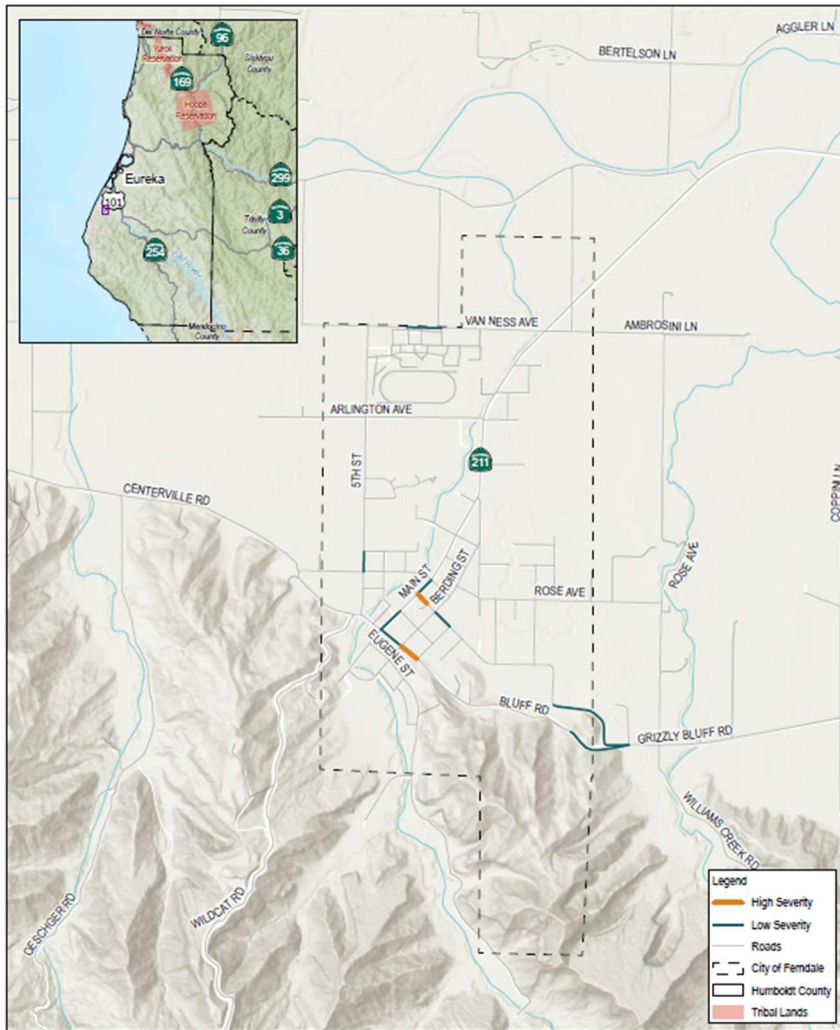


Figure 5.8 High-Injury Intersections: Ferndale

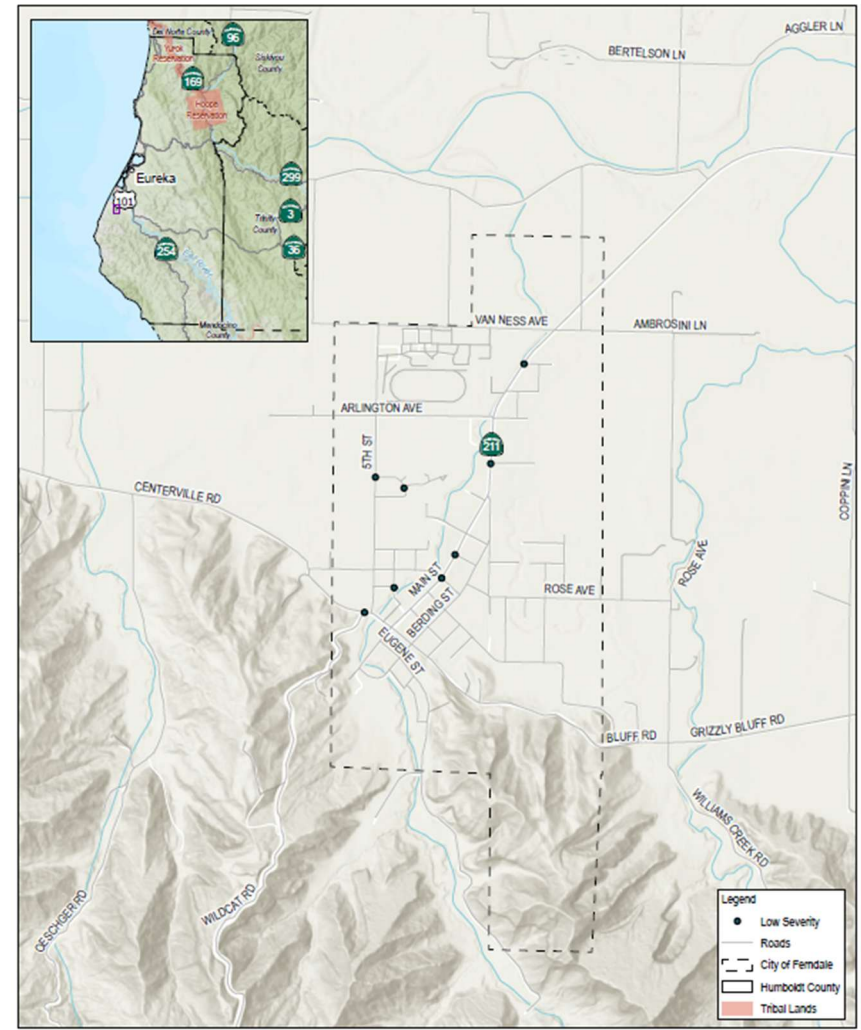


Figure 5.9 High-Injury Networks: Fortuna

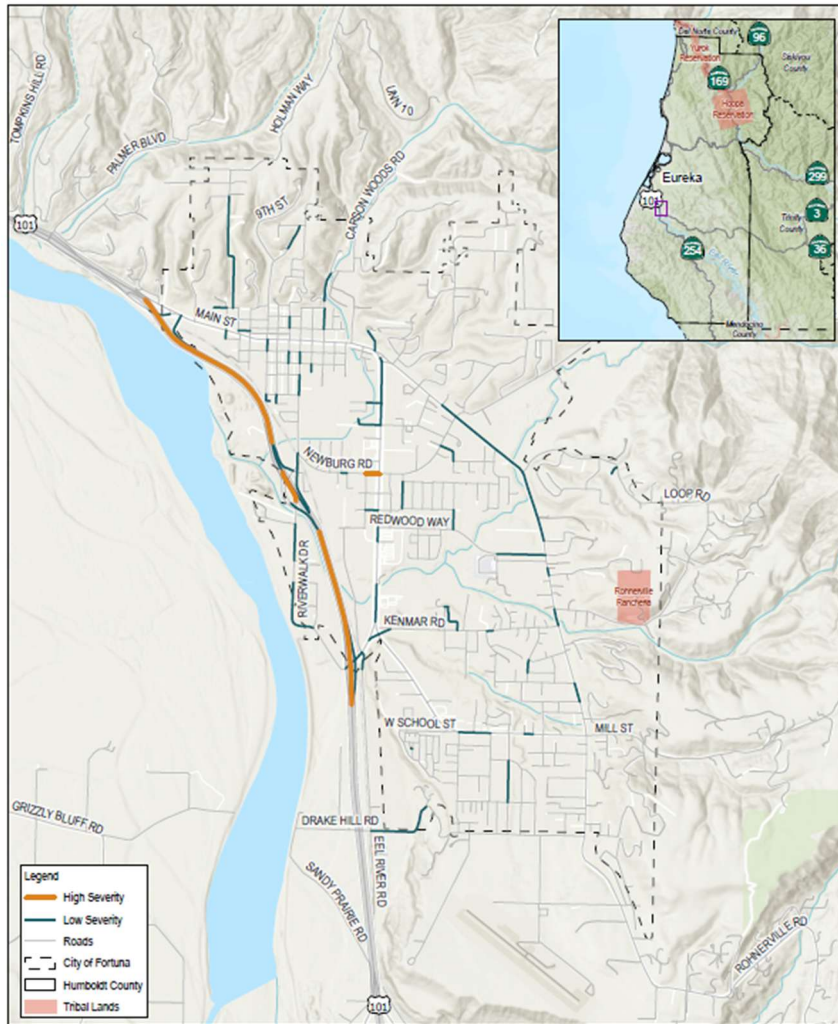


Figure 5.10 High-Injury Intersections: Fortuna

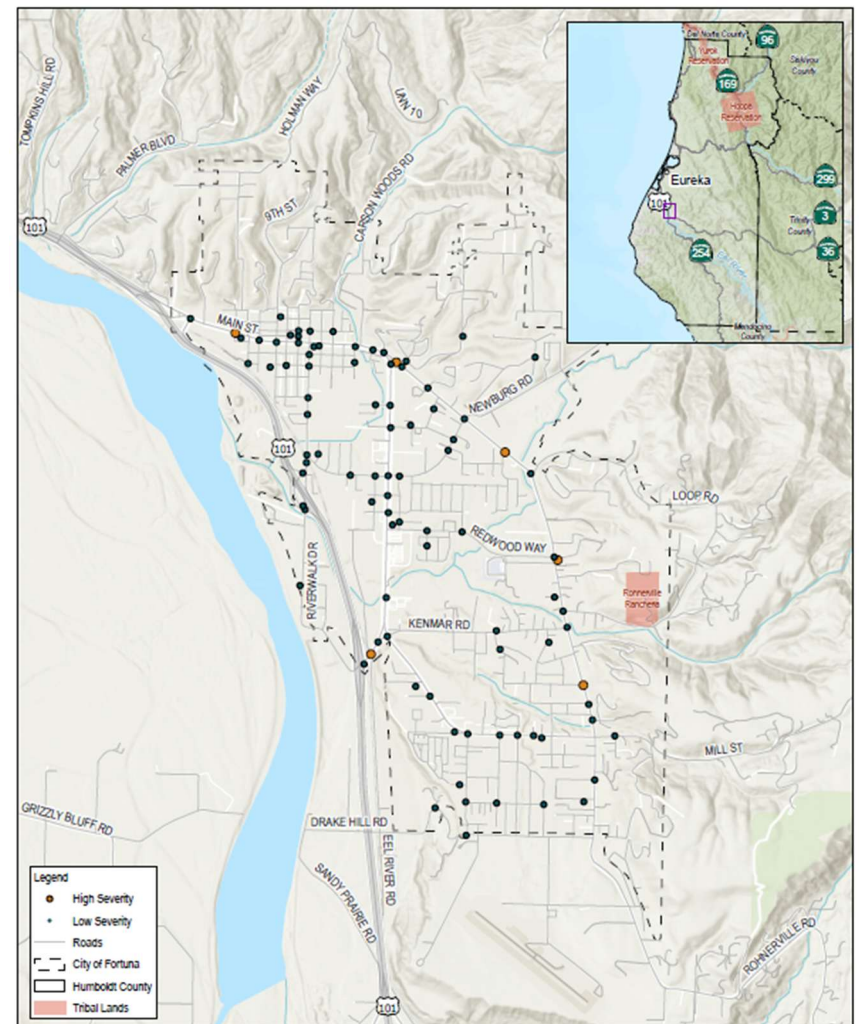


Figure 5.11 High-Injury Networks: Rio Dell



Figure 5.12 High-Injury Intersections: Rio Dell

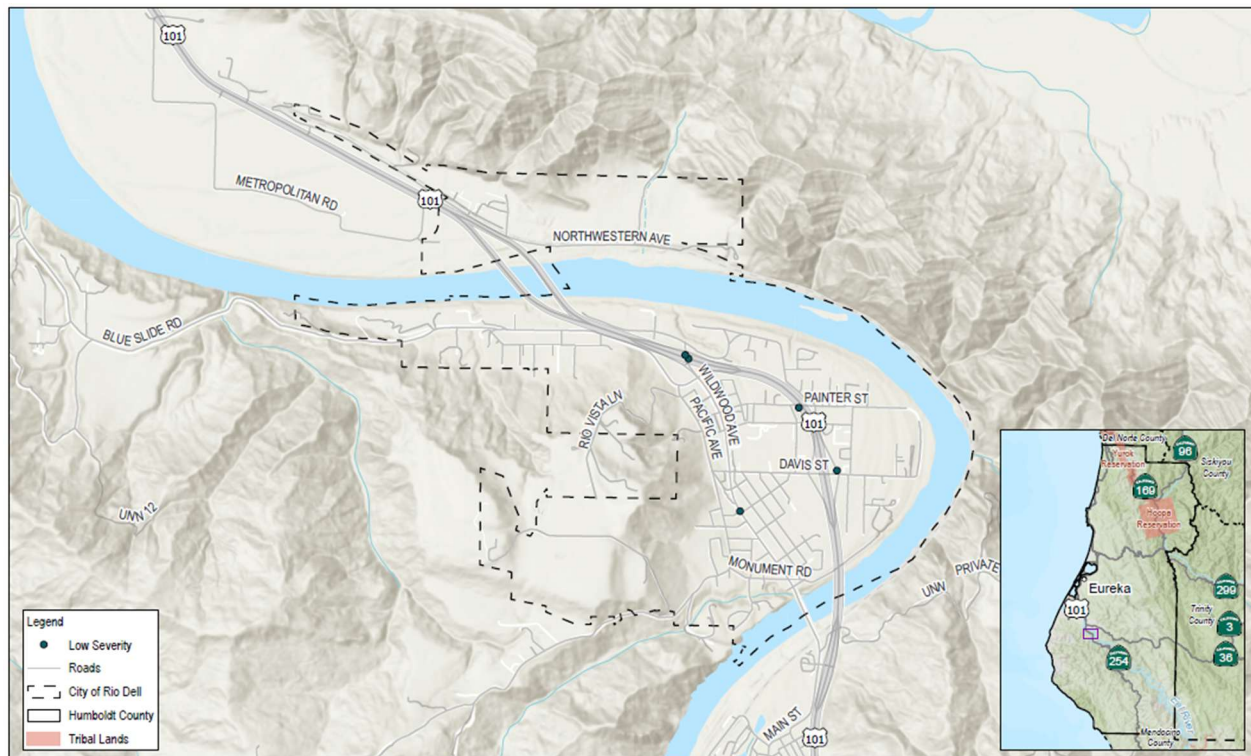


Figure 5.13 High-Injury Networks: Trinidad

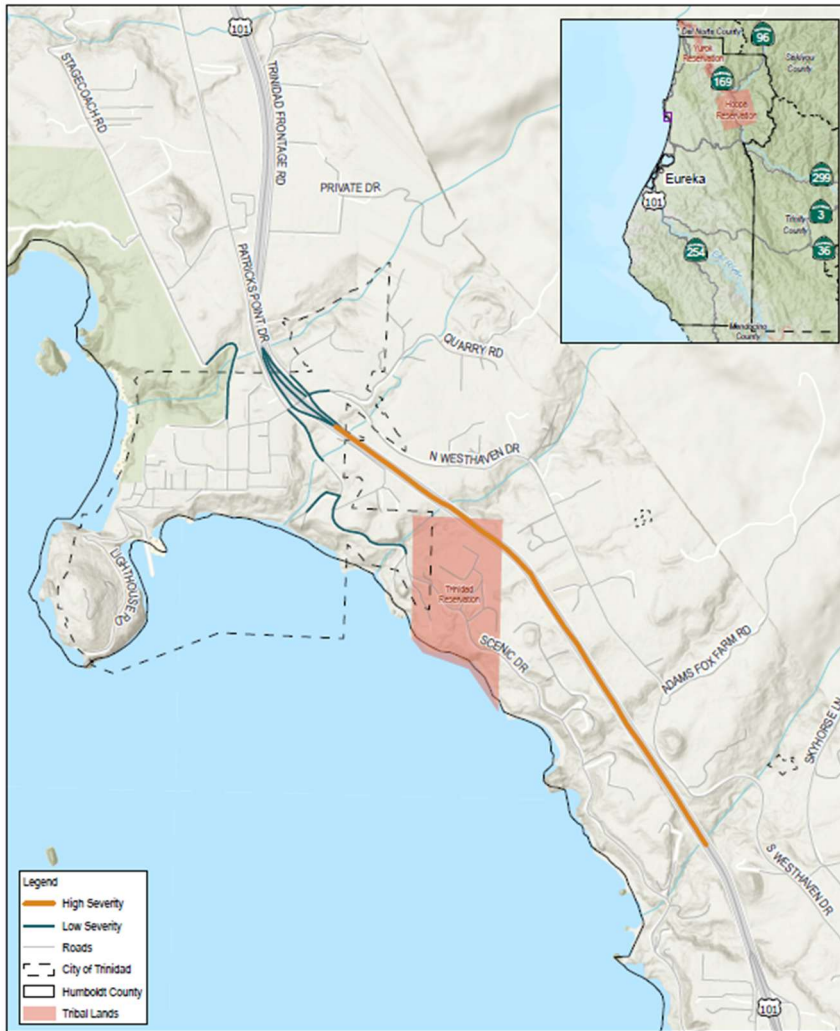


Figure 5.14 High-Injury Networks: Trinidad

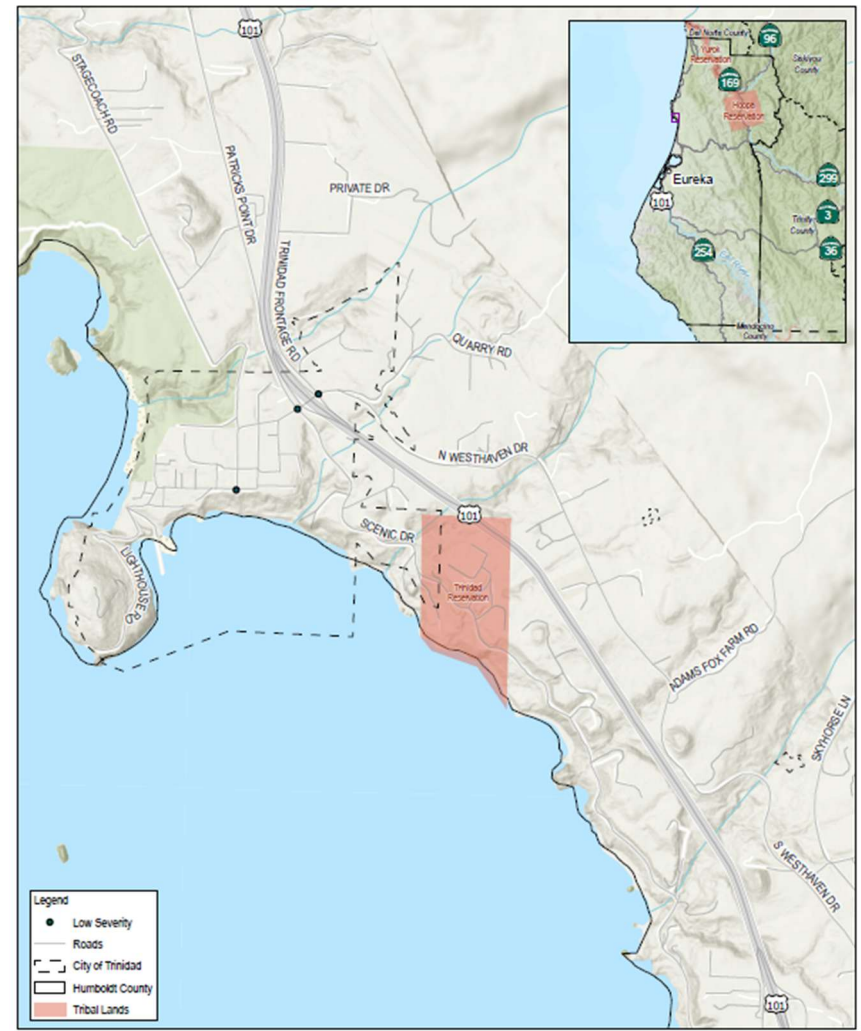


Figure 5.15 High-Injury Networks: Unincorporated

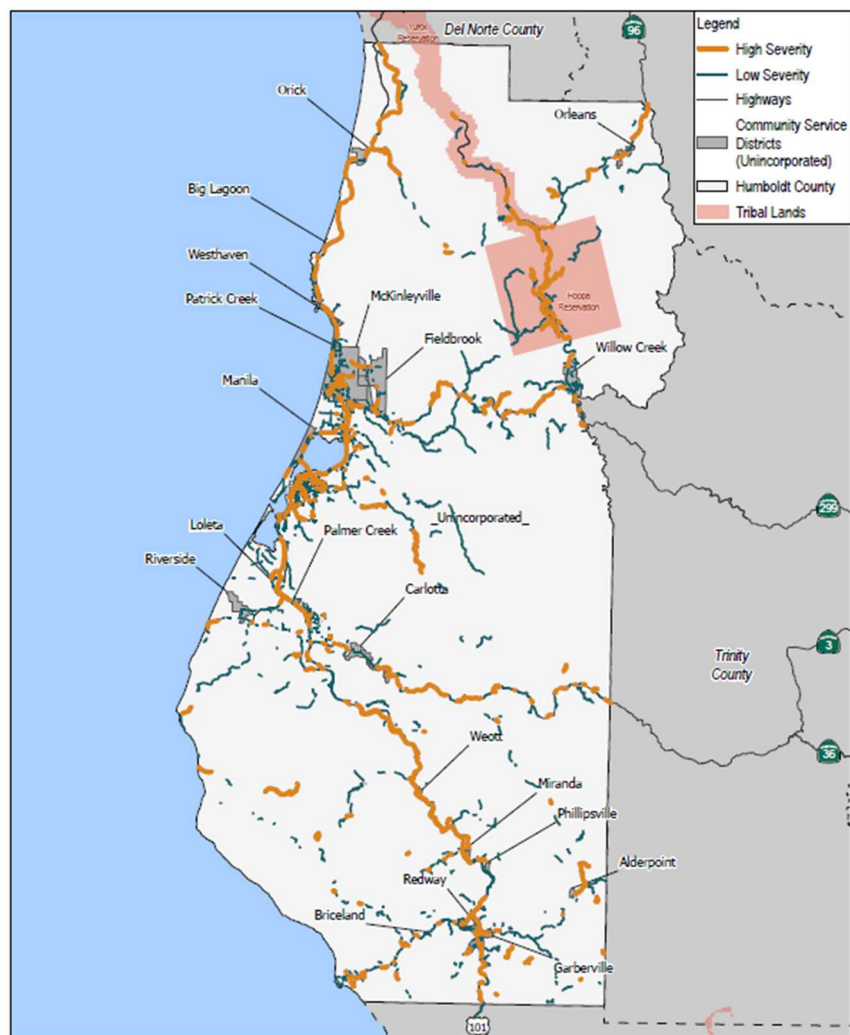


Figure 5.16 High-Injury Intersections: Unincorporated

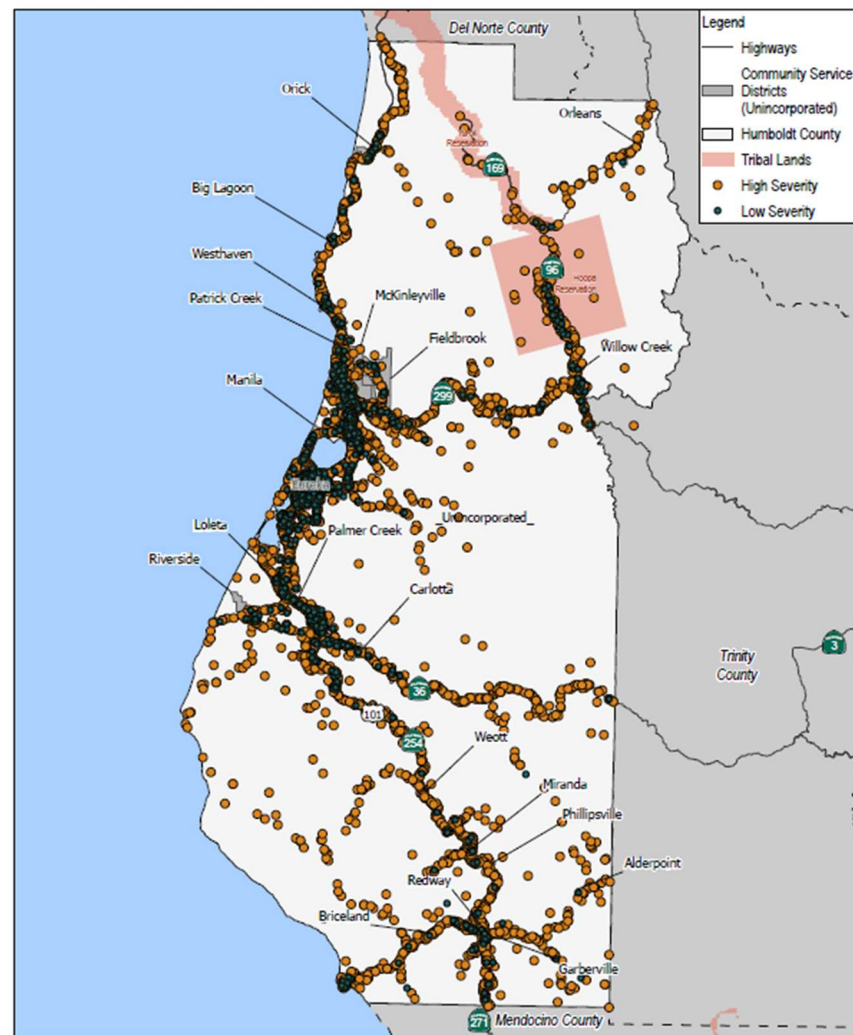


Figure 5.17 High-Injury Networks: Garberville (Unincorporated)

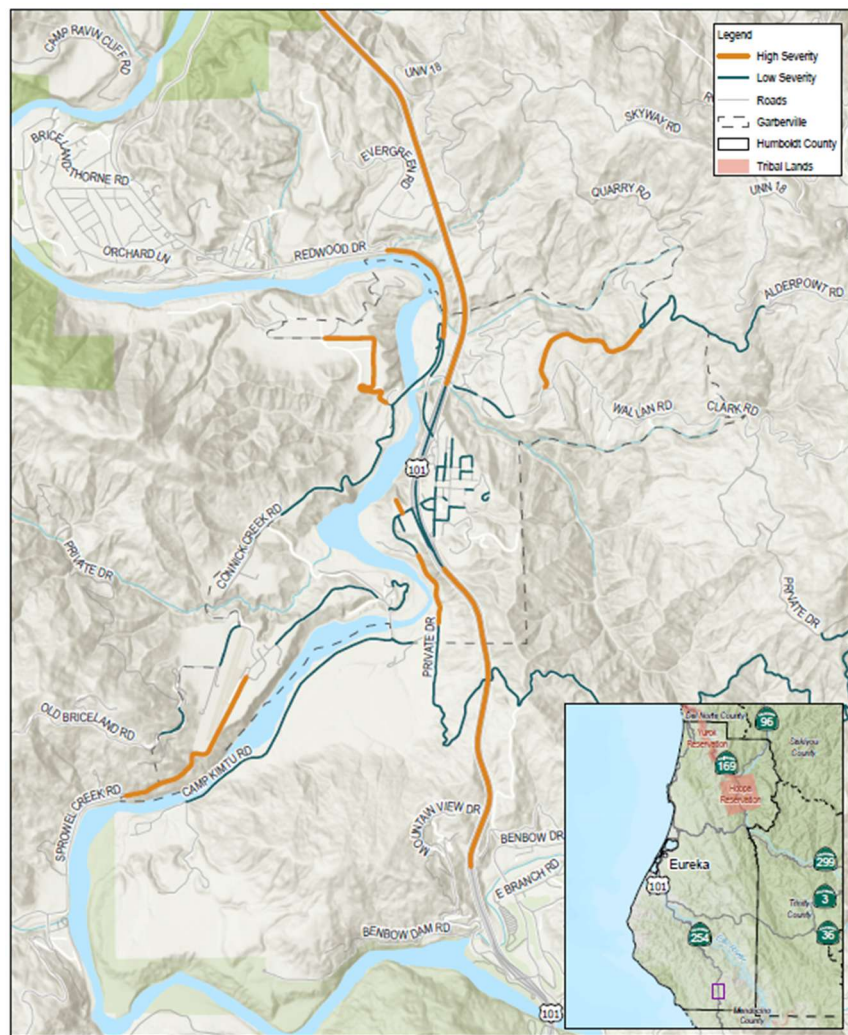


Figure 5.18 High-Injury Intersections: Garberville (Unincorporated)

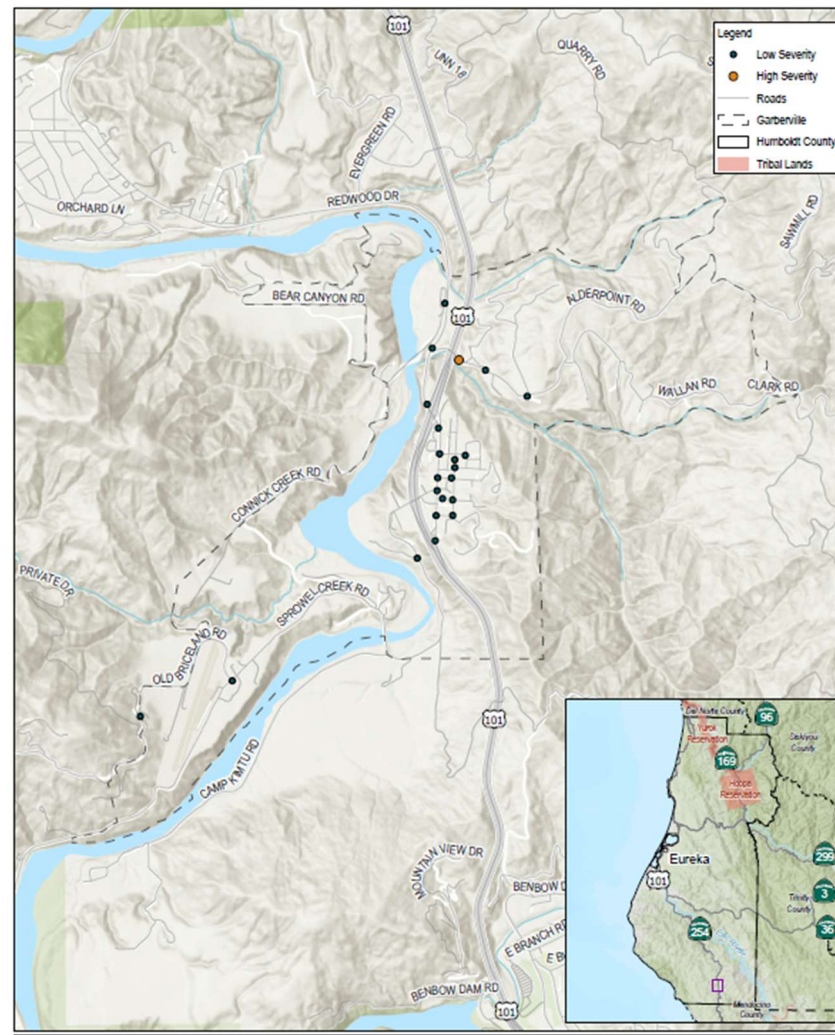


Figure 5.19 High-Injury Networks: McKinleyville (Unincorporated)

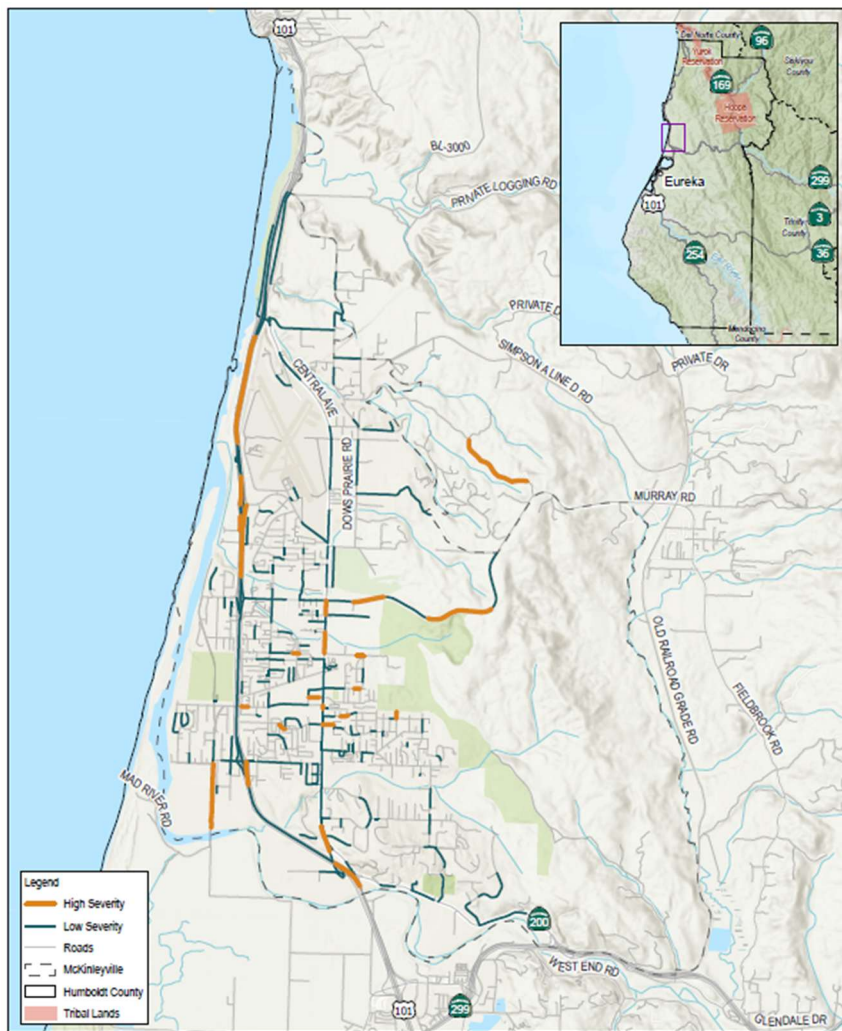
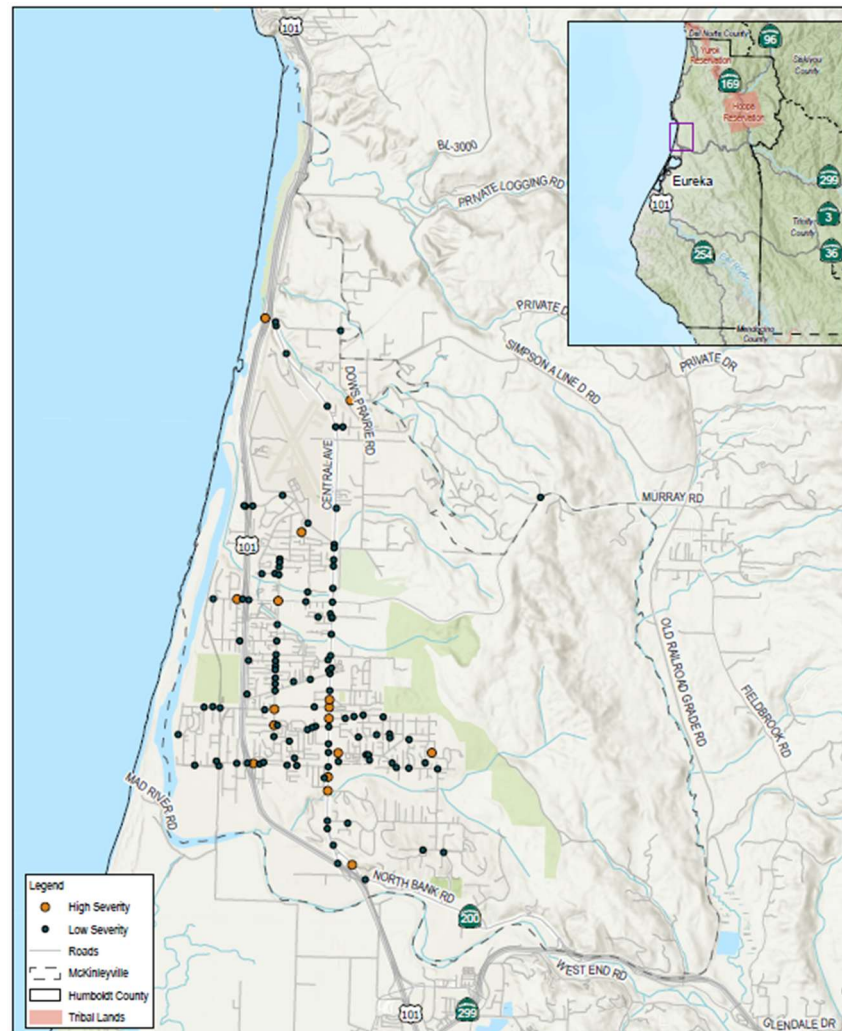


Figure 5.20 High-Injury Intersections: McKinleyville (Unincorporated)

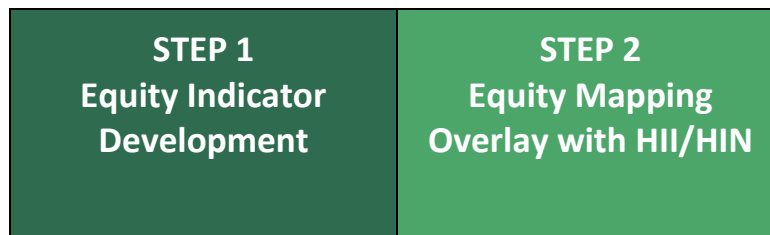


EQUITY ANALYSIS SUMMARY

1. Analytical Framework and Data Sets Used

The equity analysis is structured as two-stage sequential GIS process:

- (1) Equity Indicator Development-Map Development
- (2) Overlay onto the HIN/HII Network,



Stage 1: Equity Indicator Development,

Equity Mapping

This stage represents the analytical heart of the equity analysis and the most significant contribution to understanding *who* is bearing the burden of traffic violence in Humboldt County.

Development of the Composite Equity Indicator

A foundational element of Humboldt County's Vision Zero equity analysis is the construction of a single, unified measure of transportation vulnerability - the Composite Equity Indicator -calculated for every individual census block across the county. The census block was selected as the unit of analysis because it represents the finest level of geographic resolution at which reliable demographic and socioeconomic data is publicly available through the U.S. Census Bureau's American Community Survey (ACS). This granular spatial unit ensures that localized pockets of disadvantage nested within larger, more heterogeneous census tracts are not obscured by aggregation - a particularly important consideration in Humboldt County, where significant variation in community conditions can exist across short geographic distances, from the urban cores of Eureka and Arcata to the rural communities of the Eel River Valley, the Lost Coast, and the county's tribal lands.

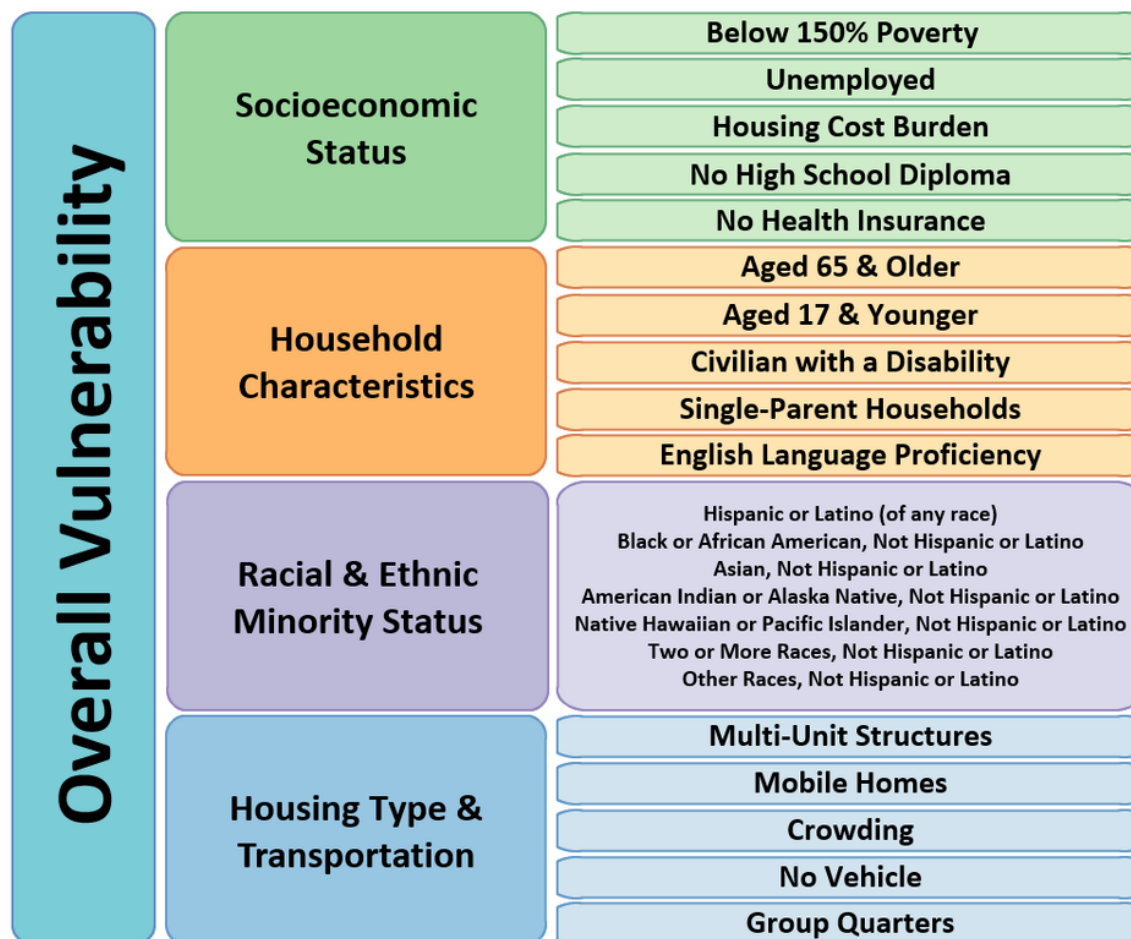
The Composite Equity Indicator is expressed as a continuous normalized score on a scale of 0 to 1, where lower values denote greater transportation disadvantage and equity need, and higher values reflect census blocks where residents are less socially vulnerable and better served by the transportation network. This consistent, county-relative scoring scale ensures that every census block in Humboldt County can be meaningfully ranked, compared, and mapped against all others - producing an immediately interpretable spatial portrait of where transportation vulnerability is most concentrated and where Vision Zero investment will therefore deliver the greatest combined benefit for safety and equity. To support cartographic visualization- where it is conventional for darker or more intense shading to represent greater need - the SVI Score is inverted prior to final composite integration, a step described in detail in the calculation methodology that follows.

The Composite Equity Indicator is built from three equally weighted primary components, each of which captures a distinct and independently important dimension of the transportation disadvantage experienced by Humboldt County residents:

- **Social Vulnerability Index (SVI Score)** - reflecting *who* the community is, through a multi-domain assessment of socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation conditions at the census block level.
- **Access to Services Score** - reflecting *what* residents can reach, through a walkshed-based proximity and connectivity analysis measuring the degree to which census blocks are within safe walking distance of essential services including healthcare and emergency facilities, pharmacy and grocery stores, and schools.
- **Mobility Score** -reflecting *how* residents can move, through a walkshed-based assessment of the quality, safety, and connectivity of active transportation and public transit infrastructure available to residents, including bicycle routes, trail networks, and GTFS-defined transit stops.

Component 1: Social Vulnerability Index (SVI)

The Social Vulnerability Index draws upon a comprehensive suite of demographic and socioeconomic variables sourced primarily from the U.S. Census Bureau's American Community Survey (ACS). For each census block in Humboldt County, the SVI aggregates data across **four major thematic domains**, each capturing a distinct and critical dimension of community vulnerability. Together, these four domains contribute to an **Overall Vulnerability Score** that reflects the compounding nature of disadvantage experienced at the local level.



Component 2: Access to Services

The Access to Services Score quantifies walkable connectivity between residential census blocks and essential service destinations using network-based walkshed analysis in GIS. Rather than straight-line distance, walksheds are calculated along the actual pedestrian network — accounting for the presence of sidewalks, crosswalks, and pedestrian paths — to define the geographic area realistically reachable from each service location within a defined distance threshold. Census blocks falling outside all relevant walksheds are identified as access gaps. The Access to Services Score for each census block is then computed as a composite of its walkshed coverage across the following essential service categories:

Healthcare Facilities

The healthcare walkshed analysis maps service area coverage across hospitals, urgent care centers, primary care and specialty clinics, community health centers, FQHCs, behavioral health facilities, and dental clinics. Census blocks are assessed for proximity to

the nearest facility using context-sensitive distance thresholds that distinguish between urban and rural settings. Blocks falling outside walkshed coverage receive higher priority scores, with additional weight applied where gaps coincide with high SVI scores — particularly on the Socioeconomic Status domain — and HIN/HII designations.

Emergency Services

The emergency services walkshed analysis identifies census blocks and road segments that fall outside standard fire station and EMS response time thresholds. These coverage gaps are overlaid with SVI data and the HIN/HII Network, with higher priority scores assigned to segments where delayed emergency response coincides with existing crash risk and community vulnerability

Schools

The school walkshed analysis generates pedestrian network-based service areas for all K–12 public schools, charter schools, and early childhood education centers to define the geographic area from which students could realistically walk or bike to school. Census blocks falling outside school walksheds receive higher priority scores, with additional weight applied where gaps coincide with high concentrations of school-age children and zero-vehicle households from the SVI Household Characteristics and Housing Type and Transportation domains, and where corridors are confirmed on the HIN/HII Network.

Grocery and Pharmacy Stores

The grocery and pharmacy walkshed analysis maps pedestrian network service areas around supermarkets, independent grocery stores, farmers markets, and pharmacies to identify census blocks lacking walkable access to food and medication. Blocks falling outside walkshed coverage receive higher priority scores, with additional weight applied where gaps coincide with high SVI scores on the Socioeconomic Status domain — particularly high poverty rates and zero-vehicle households — and where the road segments connecting residents to the nearest available services are confirmed on the HIN/HII Network.

Composite Access to Services Score

For each census block, the walkshed coverage results across all four service categories - healthcare, emergency services, schools, and grocery and pharmacy stores - are aggregated into a single **Access to Services Score**. This score reflects the overall degree to which a census block's residents are within safe, walkable reach of the essential services that define daily community life. Census blocks with low Access to Services Scores are those where residents are cut off from multiple service types simultaneously -communities

where the road network, in its current condition, is failing to support the basic mobility needs of Humboldt County's most vulnerable residents.

The Access to Services Score is then combined with the Overall SVI Vulnerability Score to produce the composite **Equity Indicator** for each census block. The combined score ensures that the equity analysis reflects both *who* the community is -captured through the four SVI domains -and *how well* the transportation system serves them - captured through the walkshed-based access analysis. Together, these two dimensions provide the most complete and actionable picture of where Vision Zero investments are most urgently needed.

Component 3: Mobility Analysis

The Mobility Analysis evaluates the quality and extent of transportation infrastructure available to residents traveling by foot, bicycle, or public transit using the same network-based walkshed methodology applied in the Access to Services analysis. For each census block across Humboldt County, the analysis is structured around two primary layers — the transit network and the bicycle network — each assessed through its own walkshed methodology and cross-referenced with SVI domain data to identify where mobility deficits compound existing social vulnerability.

Transit Stop Accessibility and Walkshed Analysis

The transit walkshed analysis generates pedestrian network-based service areas at quarter mile and half-mile thresholds from every active transit stop across Humboldt County's public transportation network, calculated along the actual pedestrian network rather than straight-line distance to account for the presence of sidewalks, crosswalks, ADA-compliant curb ramps, and pedestrian signalization. Census blocks falling outside these walksheds receive higher priority scores, with additional weight applied where gaps coincide with high SVI scores on zero-vehicle households, poverty, disability, elderly residents, and limited English proficiency. Further weight is applied where the primary pedestrian routes connecting residents to the nearest transit stop are confirmed on the HIN/HII Network.

Bicycle Network Accessibility and Walkshed Analysis

The bicycle network walkshed analysis generates cycling service areas from each census block using the designated bicycle network — including protected bike lanes, separated multi-use paths, shared-use trails, marked bike lanes, and paved shoulders — to identify blocks with and without meaningful access to cycling infrastructure. Connectivity is then assessed between residential census blocks and essential service destinations identified in the Access to Services analysis. Blocks lacking bicycle network access to any essential

service destination receive higher priority scores, with additional weight applied where gaps coincide with high SVI scores and corridors confirmed on the HIN/HII Network.

Composite Mobility Score

Transit walkshed coverage and bicycle network walkshed results are aggregated into a single Mobility Score for each census block, reflecting the overall quality and safety of the transportation network for residents traveling by foot, bike, or transit.

Integration of Access to Services and Mobility into the Composite Equity Indicator

The Access to Services Score and Mobility Score are integrated with the Overall SVI Vulnerability Score — derived from the four SVI domains of Socioeconomic Status, Household Characteristics, Racial and Ethnic Minority Status, and Housing Type and Transportation — into a single Composite Equity Indicator for each census block. The resulting Equity Maps form the basis for the equity overlay onto the High Injury Network, identifying where Humboldt County's most dangerous roads coincide with the highest composite vulnerability scores.

2. Developing the Composite Equity Indicator

Integration of Social Vulnerability, Access to Services, and Mobility Scores

Overview

The Social Vulnerability Index Score, the Access to Services Score, and the Mobility Score each illuminate a distinct and critically important dimension of the disadvantage experienced by Humboldt County residents. Taken individually, each score tells a meaningful but incomplete story. The SVI Score reveals *who* is most vulnerable — the demographic and socioeconomic characteristics of communities that compound their risk of traffic injury and limit their capacity to absorb its consequences. The Access to Services Score reveals *where* the transportation network fails to connect residents to the essential destinations that sustain daily life — identifying communities that are geographically or infrastructurally cut off from healthcare, emergency services, schools, and food and pharmacy resources. The Mobility Score reveals *how* the transportation network performs for those who depend on it most — assessing the quality, safety, and connectivity of the bicycle and transit infrastructure available to residents who cannot or do not travel by private automobile.

No single score, on its own, is sufficient to identify the full depth of transportation vulnerability in Humboldt County. A community may score highly on the SVI — reflecting

significant poverty, racial minority status, or disability — but be reasonably well-served by transit infrastructure and located within walkable access of essential services. Conversely, a community may carry a relatively moderate social vulnerability score but face severe mobility and access deficits due to the rural geography, dispersed settlement patterns, and disconnected road network that characterize much of Humboldt County's unincorporated areas. It is the **convergence and compounding** of vulnerability across all three dimensions — social, access, and mobility — that most reliably and powerfully identifies the communities where Vision Zero investment is most urgently needed and where it will deliver the greatest combined benefit for both traffic safety and transportation equity.

The **Composite Equity Indicator** is therefore constructed by integrating all three scores into a single, unified measure of transportation vulnerability at the census block level — a measure that simultaneously reflects who the community is, how well the transportation network serves their access needs, and how safely and completely they can move through it. The Composite Equity Indicator for all the cities and county wide was constructed by integrating three analytically distinct but spatially interdependent dimensions: **Social Vulnerability (SVI)**, **Access to Amenities/Services**, and **Active Transportation Mobility**. Each dimension was operationalized through normalized sub-component scores derived from disaggregated feature-level data, then synthesized into a unified Equity Score ranging from **0.0 (low equity/high vulnerability)** to **1.0 (high equity/low vulnerability)**, as illustrated in the Eureka HII + HIN + Equity composite map.

Score Structure: A Nested Averaging Methodology

The Composite Equity Indicator is computed through a **nested equal-averaging methodology** that unfolds across five sequential steps. The structure is deliberately designed so that each of the three primary components — social vulnerability, access to services, and mobility — contributes **equally to the final composite score**, and that each primary component is derived from an equal average of its three constituent sub-indicators. This nested equal-weighting architecture ensures that the composite indicator is balanced and transparent at every level of the calculation, and that no single variable, service category, or infrastructure type can unduly dominate the overall equity picture of any individual census block.

Step 1 — Access to Services Score

The first intermediate score to be computed is the **Access to Services Score**, which is derived as the simple equal average of three walk-shed based service access sub-indicators:

Access to Services Score = (Health & Emergency + Pharmacy & Grocery + Schools) ÷ 3

Each of the three sub-indicators is produced through the walkshed proximity and connectivity analysis described in the preceding section — reflecting both the geographic distance from a census block to the nearest facility of each service type and the quality and safety of the pedestrian network connecting residents to it. The three sub-indicators are:

- **Health & Emergency SVI:** Captures proximity and pedestrian network connectivity to hospitals, clinics, urgent care centers, and emergency medical service facilities.
- **Pharmacy & Grocery SVI:** Captures proximity and pedestrian network connectivity to pharmacies, grocery stores, and other food access points — essential daily destinations for residents without vehicle access.
- **Schools SVI:** Captures proximity and pedestrian network connectivity to K–12 schools and early childhood education centers, reflecting the safety of school travel environments for children and youth.

The equal averaging of these three sub-indicators ensures that the Access to Services Score rewards comprehensive walkable connectivity across all essential service types — a census block must demonstrate broad connectivity deficits across healthcare, food access, *and* education to score highly, rather than being penalized for distance from a single service type while being well-connected to others.

Step 2 — Mobility Score

The second intermediate score is the **Mobility Score**, computed as the simple equal average of three walkshed-based mobility infrastructure sub-indicators:

Mobility Score = (Bike Route + GTFS Transit Stops) ÷ 3

The three sub-indicators reflect the availability, connectivity, and network quality of active transportation and public transit infrastructure accessible to residents of each census block:

- **Bike Route SVI:** Measures the extent and connectivity of the bicycle route network accessible within a cycling walkshed from the census block — reflecting the degree to which residents can safely travel by bike to essential destinations.
- **GTFS Transit Stops SVI:** Measures pedestrian network-based walkshed access to public transit stops as defined by the General Transit Feed Specification (GTFS) data for Humboldt County's transit providers — reflecting the realistic walkable catchment area of each stop accounting for the presence or absence of sidewalk and crossing infrastructure.

As with the Access to Services Score, the equal averaging of the three mobility sub-indicators ensures that the Mobility Score reflects a holistic picture of active transportation and transit accessibility rather than being driven by a single infrastructure mode.

Step 3 — Composite Equity Score

With both intermediate scores computed, the **Composite Equity Score** is calculated as the simple equal average of the three primary component scores:

$$\text{Composite Equity Score} = (\text{SVI Score} + \text{Access to Services Score} + \text{Mobility Score}) \div 3$$

This equal one-third weighting is the defining methodological choice of the composite indicator. It reflects a deliberate analytical and equity policy judgment that the three dimensions of transportation vulnerability — *who* the community is, *what* services they can access, and *how* they can move — are of equal and independent importance in characterizing the overall equity priority of a census block. The SVI Score captures the depth of social disadvantage; the Access to Services Score captures the degree to which the transportation network connects residents to essential destinations; and the Mobility Score captures the quality and completeness of the active and transit infrastructure available to those who must rely on it. Each dimension is necessary; none is individually sufficient.

The resulting Composite Equity Score ranges from 0 to 1 across all census blocks in Humboldt County. Higher scores reflect greater overall transportation vulnerability — a convergence of social disadvantage, service access deficits, and mobility infrastructure gaps. Lower scores reflect census blocks where residents are less socially vulnerable and better served by the transportation network across all three dimensions.

Step 4 — SVI Reversed

The Social Vulnerability Index Score, as originally computed from the four SVI domains, is directionally oriented so that **higher values indicate greater social vulnerability** — meaning a census block with a high SVI Score contains a higher concentration of socially disadvantaged residents across dimensions of poverty, race and ethnicity, household characteristics, and housing and transportation conditions. However, for the Composite Equity Indicator to function consistently — where a **higher composite score reflects fewer equity issues and better overall service and amenity conditions** — it is necessary to align the directionality of the SVI component with that of the Access to Services Score and Mobility Score before integration.

To achieve this directional consistency, the SVI Score is inverted to produce an **SVI Reversed** value:

SVI Reversed = 1 – SVI Score

This reversal reorients the SVI so that:

- A **high SVI Reversed value** corresponds to a census block with **lower social vulnerability** — a community that is comparatively less disadvantaged across the four SVI domains, with fewer residents experiencing poverty, disability, racial marginalization, or housing and transportation insecurity.
- A **low SVI Reversed value** corresponds to a census block with **higher social vulnerability** — a community experiencing significant and compounding disadvantage across multiple SVI dimensions, and therefore facing greater equity need.

This inversion ensures that all three components feeding into the Composite Equity Score — the SVI Reversed value, the Access to Services Score, and the Mobility Score — are oriented in the same direction: **higher values consistently reflect better conditions and fewer equity issues, while lower values consistently reflect worse conditions and greater equity need**. Without this reversal, the SVI and the two service and mobility scores would pull in opposite directions within the composite, producing a meaningless and uninterpretable result.

The practical consequence of this directionality is critical for map interpretation: for example—the census blocks shaded in the **deepest and darkest tones** on the Eureka Equity Map — those with the **lowest Composite Equity Scores** — are the communities experiencing the greatest convergence of social vulnerability, service access deficits, and mobility infrastructure gaps. These are the communities that Vision Zero must prioritize. When these low-scoring census blocks are found to coincide spatially with the highest-rated HIN corridors, they identify the most urgent and equity-critical safety intervention locations in Humboldt County — places where the transportation network is simultaneously most dangerous and least adequate for the residents who depend on it most.

Step 5 — Composite Equity Score (SVI Reversed)

A parallel composite is computed using the SVI Reversed value in place of the standard SVI Score, for use in mapping and analysis contexts where the inverted SVI orientation is required:

$$\text{Equity Score (SVI Reversed)} = (\text{SVI Reversed} + \text{Access to Services Score} + \text{Mobility Score}) \div 3$$

This parallel score maintains the same equal one-third weighting structure as the primary Composite Equity Score and is used in conjunction with it for specific cartographic and comparative analytical purposes within the Vision Zero GIS platform.

Interpreting the Composite: The Significance of Convergence

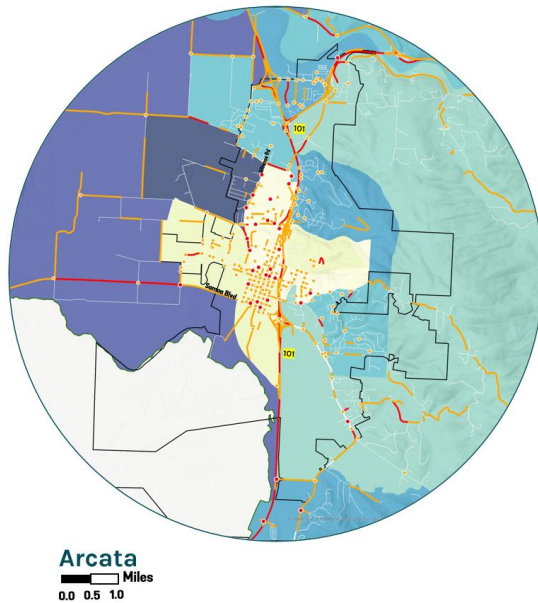
A defining feature of the Composite Equity Indicator — and the central reason for its multi-component, nested-averaging design — is its capacity to surface and communicate the **compounding nature of transportation vulnerability**. The census blocks that score highest on the composite are not simply those that perform poorly on one dimension of disadvantage in isolation; they are the communities where social vulnerability, service access deficits, and mobility infrastructure gaps all converge simultaneously and reinforce one another.

The three worked examples above illustrate this dynamic compounding clearly. FID 2's composite score is driven almost entirely by its high SVI — in the absence of meaningful access and mobility deficits, the composite remains moderate despite significant social vulnerability. FID 5's composite reflects the additive effect of moderate deficits across all three dimensions, which is nonextreme, but collectively meaningful. FID 18's composite reflects the full compounding effect: high scores across every dimension produce a composite that is substantially higher than any single component score alone would be justified, because each dimension of disadvantage amplifies the others.

It is precisely this convergence — visible in the composite but invisible in any single-dimension analysis — that the equity overlay onto the High Injury Network is designed to reveal. When the Composite Equity Indicator is spatially intersected with the HIN/HII Network in GIS, the resulting Equity Priority Corridors represent not merely the overlap of a safety problem and an equity problem, but the identification of a single, integrated systemic failure in which Humboldt County's transportation network is simultaneously most dangerous, least accessible, and most inadequate for the residents who have no choice but to depend on it every day.

3. Community Analysis Findings

Arcata



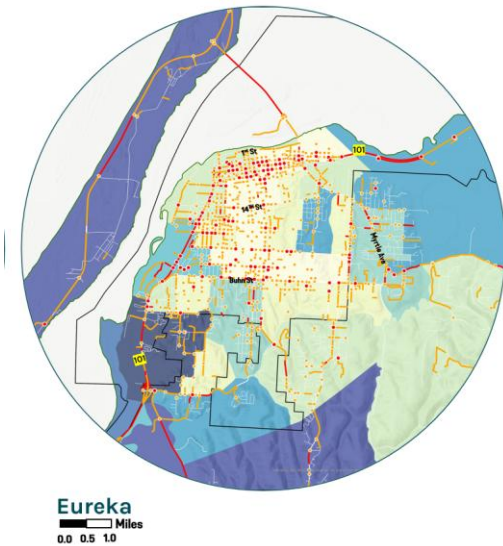
The Arcata map reveals a clear vulnerability divide. The western and northwestern portions of the city appear in the deepest navy tones, while central and eastern Arcata reflect comparatively lower vulnerability.

Downtown and Western Arcata sits at the transition zone between these vulnerability levels, where a notable cluster of red high-injury intersections is concentrated. Residents in the western tracts must travel through this high-injury zone to access downtown jobs, services, and transit, making it a mobility barrier for the city's most vulnerable residents.

Alliance Road shows a red high-injury segment in an area of elevated vulnerability and limited infrastructure. This corridor demands targeted safety investment including traffic calming, crosswalk improvements, and lighting.

US-101 reinforces the equity divide, functioning as both a physical barrier for vulnerable residents and as a high-injury corridor. Safe crossings across the freeway represent an equity priority alongside individual corridor improvements.

Eureka



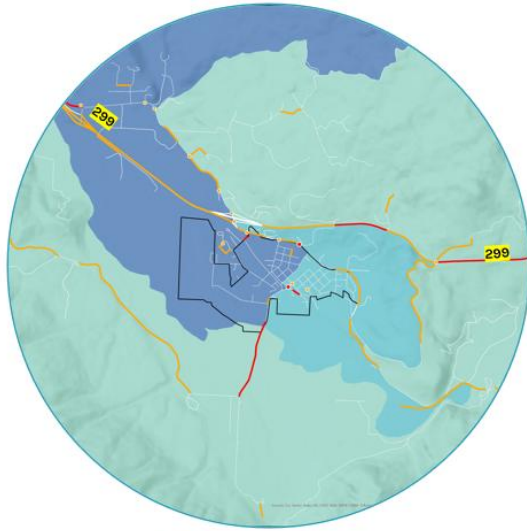
Eureka presents the most concentrated and severe equity overlap in the county.

Deep navy tones cover western Eureka, the downtown area, and the Samoa Boulevard/Manila corridor, while the map simultaneously displays the densest field of red high-injury intersections in the entire county.

In Downtown and Western Eureka the dual burden can be seen most clearly. Dozens of high-injury intersections fall directly within the darkest SVI census tracts, in a community with concentrated poverty, disability, limited English proficiency, and low vehicle access. Residents here are among the most transit- and walking-dependent in the county, but they navigate streets that have produced the highest injury outcomes in Humboldt County.

Samoa Boulevard and Manila have equally urgent concerns. Manila is a physically isolated peninsula community accessible primarily through Samoa Boulevard, with a red high-injury segment through census tracts shaded among the deepest navy tones in the region. Residents without vehicle access who walk or bike this corridor face the compounding risks of high crash rates, limited route alternatives, and extended emergency response times. Direct community engagement with Manila residents is essential alongside infrastructure investment.

Blue Lake



Blue Lake

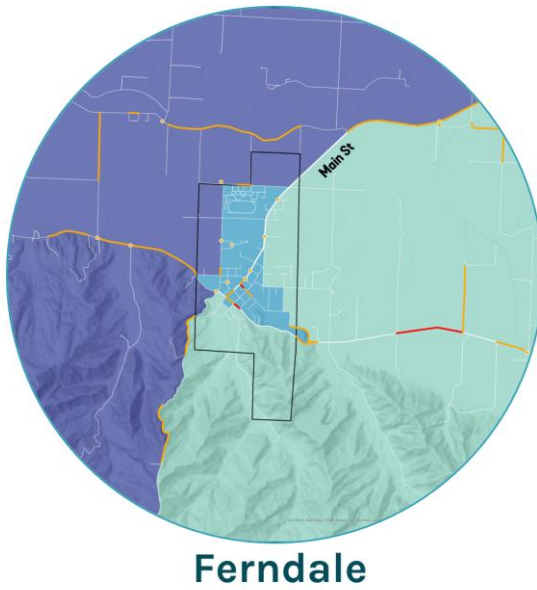
Equity Concern: Small Tribal Community with High-Injury State Highway Exposure

The census tracts to the west and northwest of the town center appear in the deepest navy tones on the map, indicating elevated social vulnerability in the area surrounding this small, geographically isolated community.

A red high-injury segment runs through and south of the Blue Lake town center on SR-299, the community's primary connection to Arcata and the broader county. A secondary red segment extends southward from the town, and orange lower-injury segments are present along SR-299.

Blue Lake's faces the outsized safety burden of a high-injury state highway as the primary entry and exit point, combined with the deep vulnerability of surrounding census tracts. Residents, including members of the Blue Lake Rancheria, who walk or cycle along or across SR-299 do so in conditions that have already produced serious crash outcomes, with limited infrastructure alternatives. Planning interventions should prioritize safe crossings of SR-299, pedestrian and cyclist connectivity within the town grid, and coordination with Caltrans District 1 and the Blue Lake Rancheria to address the state highway corridor through a tribal and community equity lens.

Ferndale



Ferndale

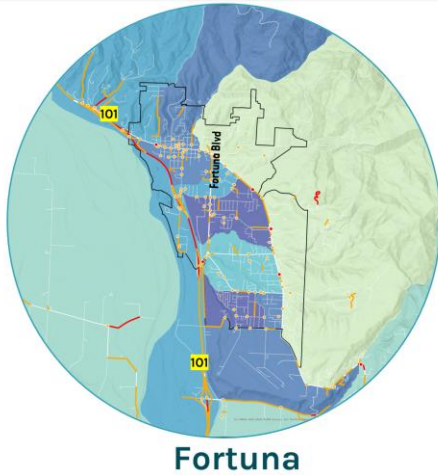
Equity Concern: Small Agricultural Community Surrounded by Deep Vulnerability

The rural census tracts surrounding the town to the north, west, and northwest appear in deep navy tones, indicating high social vulnerability in the broader agricultural and rural community that depends on Ferndale as its primary service center.

Within the town, a cluster of red high-injury intersections is concentrated in the southern portion of the downtown grid. A red high-injury segment is also visible to the east of the town boundary, along a rural connector road in the surrounding network that residents rely on to reach Ferndale's services.

Rural agricultural workers and low-income residents from surrounding areas who travel into Ferndale by foot, bicycle, or vehicle are navigating an entry corridor and intersection cluster that has produced documented injury outcomes, with few alternative routes available.

Fortuna



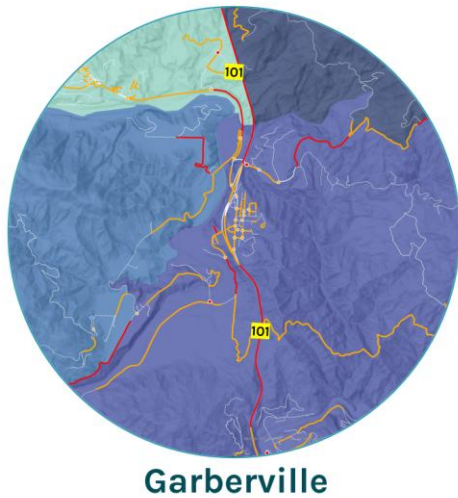
Equity Concern: Primary Commercial Corridor Cutting Through the City's Most Vulnerable Tracts

The highest social vulnerability is concentrated along Fortuna Boulevard, the city's primary commercial and mobility spine. Against this backdrop, a red high-injury segment runs the length of Fortuna Boulevard, accompanied by a cluster of red high-injury intersections distributed along the corridor. This alignment between the high-injury corridor and the darkest census tracts suggests that Fortuna's most socially vulnerable residents are living alongside and navigating the city's most dangerous roadway daily.

US-101 to the west also shows a red high-injury segment, and a cluster of intersections is visible at the southern US-101 interchange. A smaller red segment is also visible to the east within the city boundary.

Fortuna Boulevard's role as both the primary commercial corridor and the county's clearest example of a high-injury arterial running directly through a high-SVI community makes it a countywide equity priority. Residents with limited vehicle access are most dependent on this corridor for daily mobility and most exposed to its documented crash risk.

Garberville



Equity Concern: Rural Southern County Community Bearing Disproportionate Highway Crash Risk

Garberville has one of the most challenging equity patterns in the county. The vast majority of the map is covered in deep navy and medium-blue tones, indicating that the entire surrounding rural area reflects high social vulnerability. Garberville sits at the center of one of the county's deepest and broadly vulnerable rural communities.

Against this backdrop, red high-injury segments run prominently along US-101 both north and south of the town center, confirming that the primary corridor connecting Garberville to the rest of the county is also a sustained high-injury corridor. A notable red high-injury segment is also visible on a local road to the west of the town. Orange low-injury segments extend outward along US-101 and connecting rural roads in multiple directions, reinforcing that crash activity is widespread across the corridor network and not confined to isolated locations.

Within the town center, a small cluster of red high-injury intersections and orange low-injury intersections is visible, reflecting the concentration of crash activity where local circulation meets the US-101 corridor. For a community of this size and isolation, even a small number of high-injury intersections represents a significant burden. Residents have no meaningful alternative routes and emergency medical response times in this southern, mountainous portion of the county are among the longest in Humboldt. Garberville's risk is dispersed across a long corridor serving a deeply vulnerable population with no alternatives.

McKinleyville



McKinleyville

Equity Concern: Unincorporated Suburban Community with Crash Risk Concentrated Near Its Most Vulnerable Tracts

McKinleyville presents a nuanced equity pattern across a relatively large unincorporated suburban footprint. Darker navy and medium-blue tones are concentrated in the southern and southeastern portions of the community, as well as along the western coastal edge, indicating that social vulnerability is highest at the periphery of the community rather than in its core. The central and northern areas display medium teal tones reflecting moderate vulnerability, while the overall picture confirms that a meaningful share of McKinleyville's population faces compounding social disadvantage.

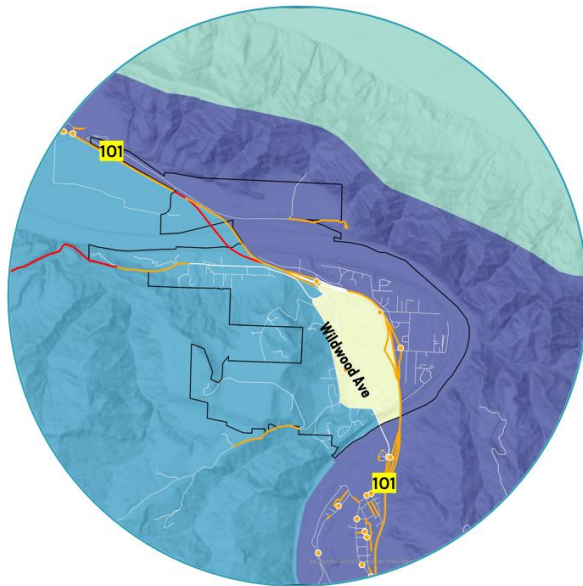
Against this backdrop, red high-injury segments are distributed across several key corridors. A red segment is visible along Central Avenue, McKinleyville's primary commercial spine, through the transition zone between moderate and higher vulnerability tracts. A red high-injury segment also appears near US-101 at the northern entry point, where freeway access intersects with the broader community street network. Additional shorter red segments are scattered through the southern grid, closer to the darker-toned tracts, confirming that crash risk is not isolated to a single corridor but reflects a distributed pattern across the network.

Red high-injury intersections are spread broadly throughout the McKinleyville grid, indicating that the community's primary north-south and east-west connectors are generating serious crash outcomes at multiple locations.

The unincorporated status of McKinleyville adds an important structural dimension to this equity concern. Without a city government to advocate for and deliver safety

improvements, residents with fewer resources face an additional institutional barrier to receiving the infrastructure investment that documented crash patterns demand.

Rio Dell



Rio Dell

Equity Concern: Small City with High-Injury Highway Entry Points Surrounded by Deep Vulnerability

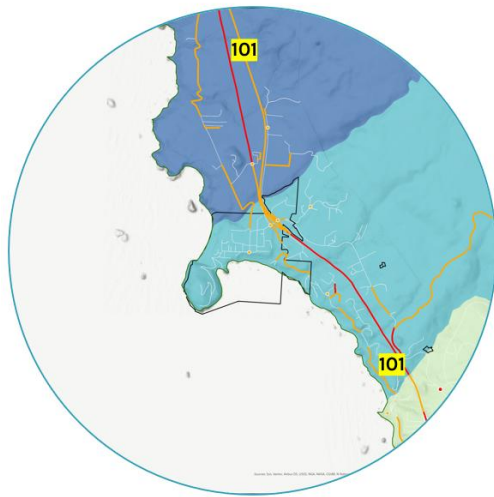
The northern and eastern census tracts in Rio Dell appear in deep navy tones, reflecting high social vulnerability in the surrounding rural areas that depend on it as a local service center. The town itself sits within medium blue tones indicating moderate vulnerability, while the Wildwood Avenue corridor stands out in a notably light cream tone, reflecting comparatively low vulnerability within the heart of the local street network.

Red high-injury segments are concentrated at and near the northern US-101 entry point into Rio Dell, where residents from the surrounding deep-navy rural tracts enter the community -confirming that the most vulnerable populations are navigating the highest-risk infrastructure at the point of entry. A red segment also extends westward from this interchange, indicating localized crash risk penetrating beyond the highway itself.

The presence of crash activity at both the northern and southern interchange areas suggests that Rio Dell's connections to US-101, its only meaningful regional access points, are systemically underperforming on safety, effectively bookending the community with crash risk at both entry and exit.

For a small, geographically constrained city like Rio Dell, the concentration of high-injury conditions at highway access points carries outsized equity significance. Residents without vehicle access have extremely limited alternatives, and the surrounding deep-navy rural tracts reflect a population that is already among the county's most socially vulnerable.

Trinidad



Trinidad

Equity Concern: Small Coastal Community with a High-Injury Highway Corridor Traversing Moderately Vulnerable Tracts

Trinidad presents a relatively contained but meaningful equity pattern for one of the county's smallest incorporated cities. The census tracts to the north and northeast of the town center appear in medium-to-deep blue tones, indicating moderate-to-elevated social vulnerability in the area approaching Trinidad along US-101 from the north. The town boundary itself sits within a medium teal tract, while the coastal and western areas transition to lighter tones reflecting lower vulnerability. The southeastern tracts along the lower US-101 corridor shift toward light teal and cream, indicating comparatively lower vulnerability in that direction.

The dominant equity finding in Trinidad is the prominent red high-injury segment running the full length of US-101 through the map frame, entering from the north through the moderately vulnerable, blue-toned tracts, passing directly through the town center, and continuing southward through the lighter southeastern tracts. This extended high-injury corridor confirms that US-101, Trinidad's only meaningful

connection to the broader county in either direction, is generating serious crash outcomes across the full length of its passage through and near the community. Orange low-injury segments parallel and extend beyond the red segment along US-101, reinforcing that crash activity along this corridor is both severe and widespread in distribution.

Within the town center, a small cluster of orange low-injury intersections and segments is visible at the point where local streets intersect with the US-101 corridor, indicating that the interface between the highway and Trinidad's local circulation network is also generating crash activity, even if at lower severity levels than the highway itself. A single red high-injury intersection dot is visible to the southeast, along the lower US-101 alignment near the southern town boundary.

For a community as small and geographically isolated as Trinidad, the presence of an extended high-injury segment along that single corridor carries equity significance beyond what crash counts alone suggest. Residents, visitors accessing the town on foot or bicycle, and individuals from the moderately vulnerable northern tracts traveling through this corridor have no meaningful alternative routing, making safety conditions on US-101 a major equity concern.

4. Summary and Significance

Humboldt County's GIS-based Equity Analysis represents a rigorous, multi-dimensional, and community-informed approach to ensuring that Vision Zero is more than a technical traffic safety program — it is a commitment to transportation justice. By building the equity analysis around a census-block-level Equity Indicator that combines Social Vulnerability Index and Access to Services scores; by enriching that indicator with demographic, access, and mobility analysis layers informed by community input; and by directly overlaying the resulting Equity Maps onto the High Injury Network to identify where traffic danger and community vulnerability converge most acutely, the analysis provides a powerful spatial framework for directing Vision Zero investments where they are most needed and where they will do the most good.

The equity overlay of the HIN/HII Network is the analytical centerpiece of this process — the moment where the geography of traffic violence and the geography of social disadvantage are brought together into a single, integrated picture of inequity that demands an equitable response. The subsequent Impact Assessment ensures that this picture translates into action: that proposed improvements are evaluated not only for their collision reduction effectiveness, but for their capacity to reduce disparities, advance

inclusion, and deliver the promise of safe mobility to every resident of Humboldt County — regardless of where they live, how they travel, or who they are.

Technical Memorandum

September 01, 2026

To	Tengteng Wang, SmithGroup	Contact No.	530.338.3187
Copy to	Todd Tregenza, GHD Shelby Nadin, GHD Amanda Hight, GHD	Email	Melissa.estrada@ghd.com
From	Melissa Estrada, GHD	Project No.	12663082
Project Name	Humboldt County Regional Vision Zero Action Plan		
Subject	Priority Countermeasures, Strategies, and Projects Memorandum		

1. Introduction

To create a safer transportation network, the U.S. Department of Transportation (USDOT) has adopted the Safe System Approach to guide the assessment of roadways and intersections and the subsequent development of collision countermeasures in the pursuit of zero fatalities and severe injuries in the future. The Safe System Approach is a cornerstone of the USDOT National Roadway Safety Strategy and is centered around understanding both human behavior and human vulnerabilities to develop mitigations for high-severity collision locations.¹ Additionally, through the Strategic Highway Safety Plan (SHSP), the 4 E's of safety (Engineering, Education, Enforcement, and Emergency Medical Services) are emphasized to guide safety projects toward developing countermeasures and strategies for reducing collisions².

Building on the *Injury & Collision Data Analysis Memorandum*, this memorandum presents the engineering countermeasures identified for the priority (high severity) locations. Additionally, engineering countermeasures that mitigate on a systemic basis, while also addressing the priority locations, are presented.

In addition to these engineering strategies, non-engineering strategies (i.e., programs and policies) are presented that mitigate on a systemic basis, as well as at priority locations.

A key feature that distinguishes this Vision Zero Action Plan (VZAP) from prior Local Road Safety Plans (LRSPs) is the inclusion of all jurisdictional agencies in Humboldt County, including the California Department of Transportation (Caltrans). As documented in this memorandum, the Humboldt County Regional VZAP includes multiple Caltrans facilities, including priority locations, which have been coordinated and confirmed with Caltrans.

¹ "What is a Safe System Approach", U.S. Department of Transportation, January 14, 2025, [What Is a Safe System Approach? | US Department of Transportation](#)

² "About the State Strategic Highway Safety Plan (SHSP)", FHWA, September 19, 2022, <https://highways.dot.gov/safety/hsip/shsp/about>

2. Priority Locations

2.1 Guidance

The *Federal Highway Administration (FHWA) California High Injury Network and Planning for Zero Safety Data Case Study*³ states Vision Zero is a data-driven approach that, in the development of engineering countermeasures and policies to improve existing facilities, acknowledges human errors that lead to collisions. Within the Vision Zero methodology, a High Injury Network (HIN) is a data-driven, strategic method for identifying locations with high collision severities, which indicates facilities that provide opportunities for reducing fatal and severe injuries within the transportation network.

The *Caltrans Local Roadway Safety Manual (LRSM)*⁴ recommends ranking locations with higher severity as higher focus. The *Highway Safety Manual* ranks relative severity by Equivalent Property Damage Only (EPDO).

2.2 Methodology

As detailed in the *Injury & Collision Data Analysis Memorandum*, consistent with the *Caltrans LRSM* ranking and prioritization, high-injury locations were determined by assessing the following for each collision: crash severity type (e.g., property damage only, F+SI, other injury), location type (e.g., roadway, non-signalized intersection, and signalized intersection), and severity ranking (i.e., crash cost and EPDO). This methodology ensures that F+SI collisions receive the highest values, to distinguish the high-severity locations. For each network and each intersection, the EPDO of each and all collisions was summed, with EPDO 119 and below categorized as “low severity” and EPDO 120 and above categorized as “high severity.” Hot spots are “high severity” high-injury locations, which comprise the HIN.

2.3 Priority Locations

As listed in the *Injury & Collision Data Analysis Memorandum*, the top 10 hot spot intersections (Table 4.1 of the memo) and the top 10 hot spot networks (Table 4.2 of the memo) were shared with stakeholders (e.g., County of Humboldt and Caltrans) for input and consensus (as the priority locations). Stakeholders identified plans, projects, and improvements that would address certain hot spots, as well as other modifications, resulting in slight revisions and updates. For the top 10 hot spot intersections, four intersections were removed (recent/planned Caltrans safety projects), one intersection was revised (broken into two intersections), and three intersections were added (next highest EPDO). For the top 10 hot spot networks, no networks were revised.

The final list of priority locations selected for countermeasure and strategy analysis is presented in **Table 2.1** and **Table 2.2**.

³ “California High Injury Network and Planning for Zero Safety Data Case Study FHWA-SA-22-007”, FHWA, October 20, 2022,

<https://highways.dot.gov/safety/data-analysis-tools/california-high-injury-network-and-planning-zero-safety-data-case-study>

⁴ “Local Roadway Safety Manual, A Manual for California’s Local Road Owners”, Caltrans, Version 1.7, April 18, 2024, <https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/hsip/2024/lrsm2024-v2.pdf>

Table 2.1 *Priority Intersections*

Intersection	Control Type	Jurisdiction	Facility Owner
4th St / R St	Signalized	City of Eureka	Caltrans
Alliance Rd / Stromberg Ave	Unsignalized	City of Arcata	City of Arcata
Ocean Ave / W Henderson St	Unsignalized	City of Eureka	City of Eureka
Broadway / W Washington St	Signalized	City of Eureka	Caltrans
H St / Henderson St	Signalized	City of Eureka	City of Eureka
US 101 SB Off Ramp / Singley Rd	Unsignalized	Unincorporated	Caltrans
G St / Samoa Blvd	Signalized	City of Arcata	Caltrans
H St / Harris St	Signalized	City of Eureka	City of Eureka
5th St / H St	Signalized	City of Eureka	Caltrans
4th St / H St	Signalized	City of Eureka	Caltrans

Table 2.2 *Priority Segments*

Street Name	Street Limits	Jurisdiction	Facility Owner
Broadway	W Hawthorne St to Vigo St	City of Eureka	Caltrans
SR 96	0.6 miles south of Bull Creek to Mill Creek Road	Unincorporated	Caltrans
SR 299	1.1 miles east of Cedar Creek Road to 200 ft east of Willow Creek	Unincorporated	Caltrans
US 101	L P Mill Rd to Kane Rd	Unincorporated	Caltrans
SR 299	New 3 Creeks Road to M and W Ranch Road	Unincorporated	Caltrans
SR 255 Bridge	100 ft east of Vance Avenue to Startare Drive	City of Eureka	Caltrans
US 101	Redwood Trails Circle to Old State Highway	Unincorporated	Caltrans
US 101	1.6 mile south of Humboldt/Del Norte County Border to 600 ft south of Humboldt/Del Norte County Border	Unincorporated	Caltrans
US 101	Hidden Creek Rd to SR 299	City of Arcata	Caltrans
US 101	0.6 miles north of Lake Benbow Drive to US 101 Redwood Drive Off Ramp	Unincorporated	Caltrans

3. Identified Strategies

The Safe System Approach considers both human behavior and human vulnerabilities to develop mitigations for high-severity collision locations. In accordance with this approach, both engineering countermeasures and non-engineering strategies were assessed in the pursuit of reducing collisions, as described below.

3.1 Engineering Countermeasures

3.1.1 Priority Locations

For each priority location, based on location characteristics (e.g., collision characteristics and existing condition observations), engineering countermeasures were developed. The majority of the countermeasures are from the *Caltrans LRSM*.

The *Caltrans LRSM* provides an easy-to-use and comprehensive framework for identifying locations with roadway safety issues and the appropriate countermeasures. Initially, the *Caltrans LRSM* (Version 1.0) was developed to support the Caltrans Highway Safety Improvement (HSIP) funding program. The *Caltrans LRSM* has since been updated to incorporate feedback and lessons learned, while maintaining a focus on HSIP funding opportunity and eligibility. The *Caltrans LRSM* includes details for each countermeasure, including where to use, why it works, general qualities (time, cost and effectiveness), crash type(s) addressed, crash reduction factor, and specific values for use in Caltrans HSIP calls-for-projects.

3.1.1.1 Countermeasures

For each priority location, the characteristics are summarized in **Table 3.1** and **Table 3.2**.

- For the priority intersections, the top collision type is “broadside” and the top violation category is “traffic signals and signs.”
- For the priority segments, the top collision type is “hit object” and the top violation category is “unsafe speed.”

For each priority location, the recommend countermeasures are listed in **Table 3.3** and **Table 3.4**.

- For eight priority segments, Countermeasure R26 (Install Dynamic/Variable Speed Warning Signs) is recommended to reduce collisions due to unsafe speeds. Example signage (**Figure 3.1**) currently is in place at one priority segment (US 101, L P Mill Road to Kane Road). As Caltrans is already in the process of implementing signage for unsafe conditions, such as sharp curves, this recommendation may build off this process. Additionally, multiple collisions occurred in construction zones, indicating a need for better signage for warning drivers approaching construction zones along the roadway and increased enforcement of reduced speed zones.
- For two priority segments (i.e., Caltrans facilities), speed study is recommended to reduce collisions due to unsafe speeds. Speed study is not a listed countermeasure in the *Caltrans LRSM*. Assembly Bill 43 may allow new flexibility to lower speed limits without a speed study.



Figure 3.1 Dynamic / Variable Speed Warning Signage

For each recommended countermeasure, the associated Crash Reduction Factor (CRF) and Crash Modification Factor (CMF) are listed in **Table 3.3** and **Table 3.4**. CMFs and CRFs describe the safety impact of the countermeasures, with CMF being a multiplicative factor applied to predict crashes after a countermeasure and CRF expressing the same effect as a percentage reduction (CMFs below 1.0 indicate fewer crashes; CRFs convert that into an intuitive percent decrease).

The *Caltrans LRSM* includes countermeasures with proven CRFs and notes the following:

Selecting an appropriate countermeasure and corresponding CMF is similar to choosing the right tool for a job. In some cases, a countermeasure and CMF may not be perfect but will still work well enough to get the job done by providing a reasonable estimation of the countermeasure's effect. In other cases, using an improper countermeasure or CMF may do more harm than good. Applying a CMF that does not fit a specific situation may give a false sense of the countermeasure's safety effectiveness and may result in an increased safety problem.

For each priority location, multiple countermeasures are recommended to increase the safety impact/effectiveness.

3.1.1.2 Costs and Funding

For each priority location, overall benefit and cost details are provided in **Table 3.5** and **Table 3.6**. In addition to Caltrans HSIP, other funding opportunities include the USDOT Safe Streets for All (SS4A) Program, the Caltrans Active Transportation Program (ATP) (e.g., Safe Routes to School), and the California Office of Traffic Safety (OTS) Program.

Table 3.1 Characteristics: Priority Intersections

Intersection (Jurisdiction)	Facility Owner	Control	Collision Characteristics											
			Relative Severity (EPDO)	Total Crashes	Top Type of Collision (Number of Collisions)	Top Violation Category (Number of Collisions)	Fatal + Severe Injury	Pedestrian Collision	Bicycle Collision	Involv. w/Fixed Object	% at Night	% Wet Roadway	DUI	Dark with No Streetlights
4th St / R St (Eureka)	Caltrans	Signalized	608	27	Broadside (13)	Traffic Signals and Signs (9)	4	2	0	3	19%	19%	0	0
Alliance Rd / Stromberg Ave (Arcata)	City of Arcata	Unsignalized	594	9	Broadside (2), Rear End (2), Hit Object (2), Veh/Ped (2)	Improper Turning (3)	3	2	1	2	33%	22%	0	1
Ocean Ave / W Henderson St (Eureka)	City of Eureka	Unsignalized	573	3	Other-Bicycle (2)	Other Hazardous Movement (3)	3	1	2	0	67%	0%	0	0
Broadway / W Washington St (Eureka)	Caltrans	Signalized	451	14	Broadside (3), Rear End (3)	Unsafe Speed (4)	3	1	2	2	36%	21%	3	0
H St / Henderson St (Eureka)	City of Eureka	Signalized	424	12	Broadside (9)	Traffic Signals and Signs (9)	3	1	0	0	25%	8%	0	0
US 101 SB Off Ramp / Singley Rd (Unincorporated)	Caltrans	Unsignalized	395	5	Broadside (4)	Auto R/W Violation (4)	2	0	1	0	20%	0%	0	1
G St / Samoa Blvd (Arcata)	Caltrans	Signalized	337	29	Broadside (8)	Auto R/W Violation (8)	2	2	0	4	41%	21%	3	0
H St / Harris St (Eureka)	City of Eureka	Signalized	323	15	Broadside (12)	Traffic Signals and Signs (11)	2	1	0	1	40%	33%	1	0
5th St / H St (Eureka)	Caltrans	Signalized	277	9	Broadside (4)	Traffic Signals and Signs (4)	2	2	0	1	44%	0%	1	0
4th St / H St (Eureka)	Caltrans	Signalized	262	4	Sideswipe (2), Veh/Ped (2)	Improper Turning (1), Other Hazardous Movement (1), Unsafe Lane Change (1), Unsafe Speed (1)	2	2	0	0	50%	25%	0	0

Table 3.2 Characteristics: Priority Segments

Segment (Jurisdiction)	Facility Owner	Collision Characteristics											
		Relative Severity (EPDO)	Total Crashes	Top Type of Collision (Number of Collisions)	Top Violation Category (Number of Collisions)	Fatal + Severe Injury	Pedestrian Collision	Bicycle Collision	% Involv. w/Fixed Object	% at Night	% Wet Roadway	DUI	Dark with No Streetlights
Broadway St, W Hawthorne St to Vigo St (Eureka)	Caltrans	1088	24	Rear End (10)	Unsafe Speed (8)	7	3	1	13%	33%	8%	4	1
SR 96, 0.6 mi s/o Bull Creek to Mill Creek Rd (Unincorporated)	Caltrans	1071	42	Hit Object (28)	Improper Turning (26)	7	0	0	64%	36%	17%	4	14
SR 299, 1.1 mi e/o Cedar Creek Rd to 200 ft e/o Willow Creek Rd (Unincorporated)	Caltrans	912	32	Hit Object (16)	Unsafe Speed (12)	7	0	0	56%	25%	50%	3	5
US 101, L P Mill Rd to Kane Rd (Unincorporated)	Caltrans	899	73	Hit Object (56)	Improper Turning (38)	6	0	0	78%	41%	55%	12	26
SR 299, New 3 Creeks Rd to M and W Ranch Rd (Unincorporated)	Caltrans	899	63	Hit Object (38)	Unsafe Speed (31)	5	0	0	68%	25%	76%	4	14
SR 255 Bridge, 100 ft e/o Vance Ave to Startare Dr (Eureka)	Caltrans	890	30	Hit Object (11)	Unsafe Speed (13)	5	0	0	27%	43%	20%	2	8
US 101, Redwood Trails Cir to Old State Hwy (Unincorporated)	Caltrans	859	24	Hit Object (11)	Other/Animal (8)	5	0	0	42%	71%	50%	3	15
US 101, 1.6 mile s/o Humboldt/Del Norte County Border to 600 feet s/o border (Unincorporated)	Caltrans	755	19	Hit Object (11)	Unsafe Speed (9)	4	0	0	68%	26%	68%	3	5
US 101, Hidden Creek Rd to SR 299 (Arcata)	Caltrans	753	47	Hit Object (28)	Other/Animal (15)	4	0	1	40%	55%	15%	6	17
US 101, 0.6 mi n/o Lake Benbow Dr to US 101 Redwood Dr Off Ramp (Unincorporated)	Caltrans	736	25	Hit Object (12)	Other/Animal (11)	4	0	0	44%	64%	28%	3	12

Table 3.3 Recommended Countermeasures: Priority Intersections

Intersection (Jurisdiction)	Control	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
4th St / R St (Eureka)	Signalized	608	27	Broadside (13)	SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was the most common collision type. Adding / increasing all red time is recommended.
					SI06	30%	0.70	90%	Provide protected left turn phase (left turn lane already exists)	Broadside collisions are a result of the permissive left turn phase.
Alliance Rd / Stromberg Ave (Arcata)	Unsignalized	594	9	Broadside (2), Rear End (2), Hit Object (2), Veh/Ped (2)	NS01NT	40%	0.60	90%	Add intersection lighting (NS.I.)	There is one cobra head on one approach, but there is no lighting within the intersection. Three collisions occurred at night (two vehicle / pedestrian). Both vehicle/pedestrian collisions resulted in severe injuries.
					NS02	50%	0.50	90%	Convert to all-way STOP control (from 2-way or Yield control)*	The intersection is two-way stop-controlled (TWSC) with free movements for the northbound and southbound approaches. Both vehicle / pedestrian collisions were due to northbound vehicles crossing the paths of pedestrians in the crosswalks (eastbound). Google Streetview imagery (2024) indicates vehicles making northbound left turns might be entering the intersection with unsafe speeds (tire marks). Improper turning (resulting in hit-objects) and unsafe speeds were reported. An engineering study will need to be done to implement the countermeasure.
					NS11	30%	0.70	90%	Install flashing beacons as advance warning (NS.I.)	The intersection is a TWSC with free movements for the northbound and southbound approaches. Nearby intersections along Stormberg Avenue are TWSC. The nearest all-way stop-controlled (AWSC) intersection is approximately 0.4 miles to the south. Flashing beacons are recommended to be installed along Alliance Road leading up to the intersection to warn for potential crossing traffic.
					NS25PB	55%	0.45	90%	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	Pedestrian signals are recommended for the mitigation of pedestrian collisions in lieu of an AWSC.

* Intersection must meet CA MUTCD warrants to implement countermeasure

Table 3.3 Recommended Countermeasures: Priority Intersections (Continued)

Intersection (Jurisdiction)	Control	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
Ocean Ave / W Henderson St (Eureka)	Unsignalized	573	3	Other-Bicycle (2)	NS01NT	40%	0.60	90%	Add intersection lighting (NS.I.)	There is no lighting nearby and within the intersection. One vehicle/pedestrian and one vehicle / bicyclist collision occurred at night. Both collisions resulted in severe injuries.
					NS22PB	25%	0.75	90%	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	The intersection is located between a shopping center and a residential community. There are no marked crossings.
					-	-	-	-	Bicycle track	Both bicyclists were travelling in the wrong direction (eastbound). Henderson Street is a one-way (westbound) street. A two-way bicycle track along Henderson will provide better access. An alternative to a bicycle track along Henderson Street is to look for an alternative east-west corridor to propose a two-way cycle track. Looking into policies that can provide better east-west access is recommended.
Broadway / W Washington St (Eureka)	Signalized	451	14	Broadside (3), Rear End (3)	SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was one of the most common collision types. Adding / increasing all red time is recommended. Drivers seem to be running the red to make it through the intersection within the cycle.
					SI01NT	40%	0.60	90%	Add intersection lighting (S.I.)	There are cobra head lights on only two corners of the intersection.
					SI07	30%	0.70	90%	Convert signal to mast arm (from pedestal-mounted)	Signals along Washington Street are pedestal mounted and somewhat hard to see. Converting would reduce broadside collisions from that direction.
H St / Henderson St (Eureka)	Signalized	424	12	Broadside (9)	SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was the most common collision type. Adding / increasing all red time is recommended. Drivers seem to be running the red to make it through the intersection within the cycle.
					SI01NT	40%	0.60	90%	Add intersection lighting (S.I.)	There is one cobra head light at the intersection.

Table 3.3 Recommended Countermeasures: Priority Intersections (Continued)

Intersection (Jurisdiction)	Control	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
US 101 SB Off Ramp / Singley Rd (Unincorporated)	Unsignalized	395	5	Broadside (4)	NS08	15%	0.85	90%	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	There is no signage indicating an intersection (US-101 off-ramp) is located on the other side of the blind corner.
					NS11	30%	0.70	90%	Install flashing beacons as advance warning (NS.I.)	There is no signage indicating an intersection (US-101 off-ramp) is located on the other side of the blind corner.
					NS12	20%	0.80	90%	Install transverse rumble strips on approaches	Transverse rumble strips can be used in combination with advance warning signs to provide auditory and tactile indications for drivers to be attentive.
G St / Samoa Blvd (Arcata)	Signalized	337	29	Broadside (8)	SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was the most common collision type. Adding / increasing all red time is recommended. Drivers seem to be running the red to make it through the intersection within the cycle.
					SI06	30%	0.70	90%	Provide protected left turn phase (left turn lane already exists)	Broadside collisions are occurring as a result of the permissive left turn phase. A protected left turn phase for both left turns on Samoa Boulevard is recommended.
H St / Harris St (Eureka)	Signalized	323	15	Broadside (12)	SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was the most common collision type. Adding / increasing all red time is recommended. Drivers seem to be running the red to make it through the intersection within the cycle.
					SI01NT	40%	0.60	90%	Add intersection lighting (S.I.)	There are cobra head lights on only two corners of the intersection. 40% of collisions occurred at night / low light conditions.

Table 3.3 Recommended Countermeasures: Priority Intersections (Continued)

Intersection (Jurisdiction)	Control	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
5th St / H St (Eureka)	Signalized	277	9	Broadside (4)	SI01NT	40%	0.60	90%	Add intersection lighting (S.I.)	There are cobra head lights on only two corners of the intersection. 44% of collisions occurred at night / low light conditions.
					SI03	15%	0.85	50%	Improve signal timing (coordination, phases, red, yellow, or operation)	Broadside was the most common collision type. Adding / increasing all red time is recommended. Drivers seem to be running the red to make it through the intersection within the cycle.
4th St / H St (Eureka)	Signalized	262	4	Sideswipe (2), Veh/Ped (2)	SI01NT	40%	0.60	90%	Add intersection lighting (S.I.)	There are cobra head lights on only two corners of the intersection. Half of the collisions occurred at night / low light conditions.

Table 3.4 Recommended Countermeasures: Priority Segments

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
Broadway St, W Hawthorne St to Vigo St (Eureka)	1088	24	Rear End (10)	-	-	-	-	Parking study	Multiple collisions were due to parked vehicles along the side of the road. By reducing on-street parking, conflicts between merging vehicles and flowing traffic will be reduced. This will also improve sight distance from business driveways along Broadway.
				-	-	-	-	Speed study	Unsafe speed was the top violation category along the segment. Reducing speeds will help reduce rear ends and provide better gaps for vehicles utilizing the two-way left-turn lane, further reducing broadside collisions and collision severity.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	This will be used to prompt drivers to reduce their speed. Unsafe speed was the most common violation category.

Table 3.4 Recommended Countermeasures: Priority Segments (Continued)

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
SR 96, 0.6 mi s/o Bull Creek to Mill Creek Rd (Unincorporated)	1071	42	Hit Object (28)	R25	30%	0.70	90%	Install curve advance warning signs (flashing beacon)	There were a lot of hit object and sideswipe collisions in the tight curves where advance warning signs might warn drivers to reduce their speeds before entering the curves. A study may be performed to determine locations where flashing beacon signs would be the most beneficial. At locations where there are already signs, evaluate if a beacon should be added. Beacons are recommended to provide additional visibility in low light / nighttime conditions.
				-	-	-	-	Limit trucks along roadway	Multiple collisions occurred at common narrow roadway locations where trucks were striking objects (embankments, guardrails, etc.).
	1071	42	Hit Object (28)	-	-	-	-	Speed study	The current speed limit is 55-mph. However, multiple collisions have occurred due to speeds that were unsafe for conditions at those times. Lowering the speed limit and installing reduced speed limit signs are recommended.
				R31	15%	0.85	90%	Install edgeline rumble strips/stripes	Multiple collisions were due to sleepy / fatigued drivers. There are no shoulders, so drivers are running off the road. Edgeline rumble strips will help keep drivers within the lanes.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	This will be used to prompt drivers to reduce their speeds. Improper turning is commonly due to unsafe speeds for current conditions. Improper turning was the most common violation category.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Placing object markers / reflectors on guardrails, walls, and any objects that extend into the roadway is recommended. The roadways are narrow along curves and beside objects near the roadway. There is no clear recovery zone near the roadway, so drivers are hitting objects close to the roadway.

Table 3.4 Recommended Countermeasures: Priority Segments (Continued)

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
SR 299, 1.1 mi e/o Cedar Creek Rd to 200 ft e/o Willow Creek Rd (Unincorporated)	912	32	Hit Object (16)	-	-	-	-	Sign audit	There are some signs posted for advance warning of curves, but there may be additional locations where advance warning may be useful for warning drivers to reduce their speeds before entering curves. The audit may identify signage that needs to be replaced to improve visibility.
				R22	15%	0.85	90%	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	This can be used as needed as per the results of the sign audit.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Placing object markers / reflectors on guardrails, walls, and any objects that extend into the roadway is recommended. There are portions of the roadway without shoulders.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	This will be used to prompt drivers to reduce their speeds. Unsafe speed was the most common violation category.
US 101, L P Mill Rd to Kane Rd (Unincorporated)	899	73	Hit Object (56)	R31	15%	0.85	90%	Install edgeline rumble strips/strips	There is a centerline rumble strip, but there are none along the shoulders. There are segments with narrow shoulders.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Placing object markers / reflectors on guardrails, walls, and any objects that extend into the roadway is recommended. The roadways are narrow along curves and beside objects near the roadway. There is no clear recovery zone near the roadway, so drivers are hitting objects close to the roadway.
				-	-	-	-	Sign audit	There is currently a lot of signage that may need to be updated.

Table 3.4 Recommended Countermeasures: Priority Segments (Continued)

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	CRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
SR 299, New 3 Creeks Rd to M and W Ranch Rd (Unincorporated)	899	63	Hit Object (38)	R31	15%	0.85	90%	Install edgeline rumble strips/stripes	There is a centerline rumble strip, but there are none along the shoulders. There are segments with narrow shoulders. There were 22 run off the road collisions, and rumble strips may be used to help prevent more in the future.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Placing object markers / reflectors on guardrails, walls, and any objects that extend into the roadway is recommended. The roadways are narrow along curves and beside objects near the roadway. There is no clear recovery zone near the roadway, so drivers are hitting objects close to the roadway.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	This will be used to prompt drivers to reduce their speeds. Unsafe speed was the most common violation category.
SR 255 Bridge, 100 ft e/o Vance Ave to Startare Dr (Eureka)	890	30	Hit Object (11)	R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Hit object collisions were the most common collision type. Placing reflectors on guardrails, fences, posts, etc. is recommended.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	Installing speed feedback signs to notify drivers of speeds unsafe for conditions is recommended.
				R01NT	35%	0.65	90%	Add segment lighting	43% of collisions occurred at night. This is recommended for the non-bridge portions of the roadway unless dark sky policies and wildlife area restrictions do not permit.

Table 3.4 Recommended Countermeasures: Priority Segments (Continued)

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	GRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
US 101, Redwood Trails Cir to Old State Hwy (Unincorporated)	859	24	Hit Object (11)	R39AL	80%	0.20	90%	Install animal fencing	Animal collisions were the top violation category. Guiding animals into designated locations to cross will help drivers know when to expect animals on the roadway.
				R31	15%	0.85	90%	Install edgeline rumble strips/stripes	Six run off the road collisions occurred on the segment. Edgeline rumble strips are recommended to help drivers maintain course in their lane.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	Six run off the road collisions occurred on the segment. Speed warning signs are recommended to help drivers maintain safe speeds for roadway conditions.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Hit object collisions were the most common collision type. Placing reflectors on guardrails, terrain extending into the roadway, posts, etc. is recommended.
US 101, 1.6 mile s/o Humboldt/Del Norte County Border to 600 feet s/o border (Unincorporated)	755	19	Hit Object (11)	R26	30%	0.70	90%	Install dynamic/variable speed warning signs	Unsafe speed was the top violation category along the segment. Reducing speeds will help reduce hit object collisions and collision severity.
				R27	15%	0.85	90%	Install delineators, reflectors and/or object markers	Hit object collisions were the most common collision type. Placing reflectors on guardrails, terrain extending into the roadway, posts, etc. is recommended.
				R25	30%	0.70	90%	Install curve advance warning signs (flashing beacon)	Six collisions resulted in vehicles running off the road due to improper turning and unsafe speeds. There are signs indicating curves in the roadway at the southern end of the segment but none at the middle / northern end. There are back-to-back curves along the segment. A study may be performed to determine locations where flashing beacon signs would be the most beneficial. At locations where there are already signs, evaluate if a beacon should be added. Beacons are recommended to provide additional visibility in low light / nighttime conditions.

Table 3.4 Recommended Countermeasures: Priority Segments (Continued)

Segment (Jurisdiction)	Relative Severity (EPDO)	Total Crashes	Top Type of Collision	Countermeasure Number	GRF	CMF	HSIP Funding Eligibility	Recommended Countermeasures	Reasoning
US 101, Hidden Creek Rd to SR 299 (Arcata)	753	47	Hit Object (28)	R39AL	80%	0.20	90%	Install animal fencing	10 collisions involved animals. Guiding animals into designated locations to cross will help drivers know when to expect animals on the roadway.
				R01NT	35%	0.65	90%	Add segment lighting	55% of collisions occurred at night / low light conditions. Lighting is located at the northern end, but there is no lighting along the middle and at the end of the segment.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	Unsafe speed was reported for 13 collisions. Installing speed feedback signs to notify drivers of speeds unsafe for conditions is recommended.
				R31	15%	0.85	90%	Install edgeline rumble strips/stripes	10 collisions involved vehicles running off the roadway. Edgeline rumble strips are located on portions of the roadway. Installing rumble strips for the remaining locations to ensure they are included along the entire segment is recommended.
US 101, 0.6 mi n/o Lake Benbow Dr to US 101 Redwood Dr Off Ramp (Unincorporated)	736	25	Hit Object (12)	R39AL	80%	0.20	90%	Install animal fencing	11 collisions involved animals. Guiding animals into designated locations to cross will help drivers know when to expect animals on the roadway.
				R25	30%	0.70	90%	Install curve advance warning signs (flashing beacon)	There are back-to-back curves without signage indicating the roadway curves along the segment. 10 collisions involved improper turning. A study may be performed to determine locations where flashing beacon signs would be the most beneficial. At locations where there are already signs, evaluate if a beacon should be added. Beacons are recommended to provide additional visibility in low light / nighttime conditions.
				R26	30%	0.70	90%	Install dynamic/variable speed warning signs	10 collisions involved improper turning, and three collisions were reported involving unsafe speeds. Both factors are closely related, and speed warning signs will help drivers maintain safe speeds for roadway conditions to avoid unsafe turns on curving roadway segments.

Table 3.5 Costs: Priority Intersections

Intersection (Jurisdiction)	Recommended Countermeasures	Countermeasure B/C Ratio	Preliminary B/C Ratio	Expected Benefit	Total Expected Benefit	Estimated Countermeasure Cost	Preliminary Estimated Project Cost*	HSIP Funding Reimbursement Ratio
4th St / R St (Eureka)	Improve signal timing (coordination, phases, red, yellow, or operation)	33.1	115.2	\$2,151,262	\$11,234,365	\$65,000	\$97,500	50%
	Provide protected left turn phase (left turn lane already exists)	908.3		\$9,083,103		\$10,000		90%
Alliance Rd / Stromberg Ave (Arcata)	Add intersection lighting (NS.I.)	133.9	73.9	\$9,376,143	\$43,464,517	\$70,000	\$588,250	90%
	Convert to all-way STOP control (from 2-way or Yield control) *	425.7		\$8,513,586		\$20,000		90%
	Install flashing beacons as advance warning (NS.I.)	503.0		\$6,286,956		\$12,500		90%
	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	55.1		\$19,287,832		\$350,000		90%
Ocean Ave / W Henderson St (Eureka)	Add intersection lighting (NS.I.)	157.2	124.3	\$11,001,972	\$16,159,147	\$70,000	\$130,000	90%
	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	171.9		\$5,157,175		\$30,000		90%
Broadway / W Washington St (Eureka)	Improve signal timing (coordination, phases, red, yellow, or operation)	31.2	45.3	\$2,026,351	\$13,240,428	\$65,000	\$292,500	50%
	Add intersection lighting (S.I.)	38.0		\$2,658,376		\$70,000		90%
	Convert signal to mast arm (from pedestal-mounted)	95.1		\$8,555,701		\$90,000		90%
H St / Henderson St (Eureka)	Improve signal timing (coordination, phases, red, yellow, or operation)	34.1	32.5	\$2,214,587	\$5,698,079	\$65,000	\$175,500	50%
	Add intersection lighting (S.I.)	49.8		\$3,483,492		\$70,000		90%
US 101 SB Off Ramp / Singley Rd (Unincorporated)	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	110.3	109.0	\$882,497	\$3,824,154	\$8,000	\$35,100	90%
	Install flashing beacons as advance warning (NS.I.)	141.2		\$1,764,994		\$12,500		90%
	Install transverse rumble strips on approaches	181.0		\$1,176,663		\$6,500		90%
G St / Samoa Blvd (Arcata)	Improve signal timing (coordination, phases, red, yellow, or operation)	21.0	71.3	\$1,367,011	\$7,138,832	\$65,000	\$100,100	50%
	Provide protected left turn phase (left turn lane already exists)	481.0		\$5,771,821		\$12,000		90%
H St / Harris St (Eureka)	Improve signal timing (coordination, phases, red, yellow, or operation)	16.6	12.1	\$1,080,901	\$2,127,261	\$65,000	\$175,500	50%
	Add intersection lighting (S.I.)	14.9		\$1,046,360		\$70,000		90%
5th St / H St (Eureka)	Add intersection lighting (S.I.)	2.3	9.4	\$162,800	\$1,647,201	\$70,000	\$175,500	90%
	Improve signal timing (coordination, phases, red, yellow, or operation)	22.8		\$1,484,401		\$65,000		50%
4th St / H St (Eureka)	Add intersection lighting (S.I.)	89.7	69.0	\$6,280,000	\$6,280,000	\$70,000	\$91,00	90%

Table 3.6 Costs: Priority Segments

Segment (Jurisdiction)	Recommended Countermeasures	Countermeasure B/C Ratio	Preliminary B/C Ratio	Expected Benefit	Total Expected Benefit	Estimated Countermeasure Cost	Estimated Project Cost*	HSIP Funding Reimbursement Ratio
Broadway St, W Hawthorne St to Vigo St (Eureka)	Install dynamic/variable speed warning signs	492.1	378.5	\$9,841,808	\$9,841,808	\$20,000	\$26,000	90%
SR 96, 0.6 mi s/o Bull Creek to Mill Creek Rd (Unincorporated)	Install curve advance warning signs (flashing beacon)	177.4	89.0	\$8,871,808	\$26,615,424	\$50,000	\$299,000	90%
	Install edgeline rumble strips/stripes	59.1		\$4,435,904		\$75,000		90%
	Install dynamic/variable speed warning signs	147.9		\$8,871,808		\$60,000		90%
	Install delineators, reflectors and/or object markers	98.6		\$4,435,904		\$45,000		90%
SR 299, 1.1 mi e/o Cedar Creek Rd to 200 ft e/o Willow Creek Rd (Unincorporated)	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	64.7	64.2	\$3,235,564	\$12,942,259	\$50,000	\$201,500	90%
	Install delineators, reflectors and/or object markers	71.9		\$3,235,565		\$45,000		90%
	Install dynamic/variable speed warning signs	107.9		\$6,471,130		\$60,000		90%
US 101, L P Mill Rd to Kane Rd (Unincorporated)	Install edgeline rumble strips/stripes	44.1	42.4	\$3,304,880	\$6,609,760	\$75,000	\$156,000	90%
	Install delineators, reflectors and/or object markers	73.4		\$3,304,880		\$45,000		90%
SR 299, New 3 Creeks Rd to M and W Ranch Rd (Unincorporated)	Install edgeline rumble strips/stripes	48.6	64.6	\$3,887,030	\$15,548,119	\$80,000	\$240,500	90%
	Install delineators, reflectors and/or object markers	86.4		\$3,887,030		\$45,000		90%
	Install dynamic/variable speed warning signs	129.6		\$7,774,059		\$60,000		90%
SR 255 Bridge, 100 ft e/o Vance Ave to Startare Dr (Eureka)	Install delineators, reflectors and/or object markers	95.1	94.5	\$4,281,661	\$26,408,225	\$45,000	\$279,500	90%
	Install dynamic/variable speed warning signs	428.2		\$8,563,321		\$20,000		90%
	Add segment lighting	90.4		\$13,563,243		\$150,000		90%
US 101, Redwood Trails Cir to Old State Hwy (Unincorporated)	Install animal fencing	1.1	14.2	\$229,680	\$7,015,368	\$200,000	\$494,000	90%
	Install edgeline rumble strips/stripes	23.1		\$1,733,131		\$75,000		90%
	Install dynamic/variable speed warning signs	57.8		\$3,466,261		\$60,000		90%
	Install delineators, reflectors and/or object markers	35.3		\$1,586,296		\$45,000		90%

Table 3.6 Costs: Priority Segments (Continued)

Segment (Jurisdiction)	Recommended Countermeasures	Countermeasure B/C Ratio	Preliminary B/C Ratio	Expected Benefit	Total Expected Benefit	Estimated Countermeasure Cost	Estimated Project Cost*	HSIP Funding Reimbursement Ratio
US 101, 1.6 mile s/o Humboldt/Del Norte County Border to 600 feet s/o border (Unincorporated)	Install dynamic/variable speed warning signs	102.6	76.4	\$6,156,520	\$15,391,300	\$60,000	\$201,500	90%
	Install delineators, reflectors and/or object markers	68.4		\$3,078,260		\$45,000		90%
	Install curve advance warning signs (flashing beacon)	123.1		\$6,156,520		\$50,000		90%
US 101, Hidden Creek Rd to SR 299 (Arcata)	Install animal fencing	1.5	30.6	\$293,600	\$23,244,035	\$200,000	\$760,500	90%
	Add segment lighting	45.9		\$11,483,158		\$250,000		90%
	Install dynamic/variable speed warning signs	131.8		\$7,908,467		\$60,000		90%
	Install edgeline rumble strips/stripes	47.5		\$3,558,810		\$75,000		90%
US 101, 0.6 mi n/o Lake Benbow Dr to US 101 Redwood Dr Off Ramp (Unincorporated)	Install animal fencing	3.6	27.1	\$717,192	\$10,907,530	\$200,000	\$403,000	90%
	Install curve advance warning signs (flashing beacon)	101.9		\$5,095,169		\$50,000		90%
	Install dynamic/variable speed warning signs	84.9		\$5,095,169		\$60,000		90%

Notes:

* Includes 30% contingency.

3.1.2 Systemic

When selecting countermeasures for roadway safety planning, a reactive approach focuses on locations with recent crashes and crash concentrations, often targeting hot spot locations. However, the reactive approach omits locations that may lack crash concentrations but experience similar features as the hot spot locations.

The *Caltrans LRSM* encourages a proactive approach, utilizing both hot spot location improvements and systemic improvements. A comprehensive approach incorporates human behavior issues as well.

The recommended countermeasures that can be applied systemically throughout the county are presented in **Table 3.7**. In this table, priority location and countywide collision findings are referenced to support the countermeasures.

Table 3.7 Recommended Countermeasures: Systemic

Location	Countermeasure	Reasoning
Segment	Edgeline rumble strips	For priority segments, run off the road collisions were noted. This countermeasure will help to reduce collision potential. ⁵
	Speed survey	For priority segments, collisions with unsafe speeds were common. This countermeasure will help to reduce collision potential.
Signalized Intersections	Signal timing - Include red time	For priority intersections, broadside collisions at signalized intersections were common. Many were the result of traffic signals, signs, and auto right-of-way violations. This countermeasure will clear the intersection and reduce conflicts for the following green cycle, especially at Caltrans intersections that are part of high-traffic volume Caltrans corridors.
	Lighting – All marked crossings	For priority intersections, pedestrian collisions in dark conditions were noted. This countermeasure will increase pedestrian visibility at night, especially at Caltrans intersections that are part of high-traffic volume Caltrans corridors.
	Signal timing - Leading pedestrian interval	Countywide, pedestrian collisions were noted. Also, priority intersections mostly are in urban areas. This countermeasure will allow pedestrians to cross the street several seconds before parallel vehicles get a green light, allowing pedestrians to travel farther into the intersection where they are more visible to drivers and bicyclists. This will be most beneficial in Downtown Eureka, where there are the most pedestrian collisions. This may be applicable to other locations as needed, especially at Caltrans intersections that are part of high-traffic volume Caltrans corridors.
Unsignalized Intersections	High visibility crosswalks	Countywide, pedestrian collisions were noted. Also, priority intersections mostly are in urban areas. This countermeasure provides a high visual contrast and patterns that are visible to both the driver and the pedestrian from further away (compared to conventional crosswalks).

⁵ The *Caltrans LRSM* notes, "Shoulder and edge line milled rumble strips/stripes should be used on roads with a history of roadway departure crashes. It is recommended that rumble strips/stripes be applied systematically along an entire route instead of only at spot locations."

3.2 Non-Engineering Strategies

A comprehensive approach to selecting countermeasures recognizes that not all safety issues can be addressed through infrastructure improvements. This VZAP goes beyond engineering countermeasures and includes non-engineering strategies, including programs and policies.

3.2.1 Programs

The recommended programs developed to reduce collision potential in the county are presented in **Table 3.8**.

Table 3.8 *Recommended Programs*

Program	Reasoning
Inclement Weather Education	For priority locations, collisions occurring during inclement weather conditions and resulting in fatal and severe injuries were noted. Undesirable weather conditions may reduce drivers' ability to see roadway hazards, leading to collisions with objects and other roadway users. To promote driver awareness, an Inclement Weather Education program is recommended.
Alcohol and Drug Awareness	For priority locations and countywide, collisions involving alcohol and drug use were noted. Impairment due to the influence of alcohol and/or drugs reduces drivers' ability to react to roadway hazards and other roadway users. To promote driver awareness, an Alcohol and Drug Awareness program is recommended.
Sign Audit	For priority locations, deficient signage was noted. The 2024 <i>Humboldt County Local Road Safety Plan</i> , limited to County of Humboldt jurisdiction/facilities, recommended a sign audit program as a systemic countermeasure based on county collision data from 2018 to 2022. Continuation and expansion of the Sign Audit program (for all jurisdictional agencies in the county), whereby jurisdictional agencies identify and replace deficient signage (e.g., during maintenance or for new projects), is recommended.
Share the Road Awareness	Countywide, pedestrian and bicycle collisions were noted. The transportation network is used by both motorized and non-motorized users. To reduce collision potential and promote driver understanding of the vulnerabilities and rights of non-motorized users on the road, a Share the Road Awareness program is recommended.

3.2.1.1 Inclement Weather Education

From 2018 through 2024, for the 20 priority locations, over 20 percent of collisions occurred during inclement weather conditions (raining, foggy, misty, snowing), 10 percent of which resulted in fatal or severe injuries.

Inclement weather conditions may reduce driver's ability to see hazards on the roadway and react in time. To promote driver awareness of the impacts of weather conditions, an inclement weather education program is proposed.

3.2.1.2 Alcohol and Drug Awareness

From 2018 through 2024, for the 20 priority locations, 10 percent of collisions involved roadway users under the influence, 25 percent of which resulted in fatal or severe injuries.

From 2018 through 2024, countywide, 21 percent of collisions involved roadway users under the influence. Additionally, of all the countywide fatal and severe injuries, 27 percent involved roadway users under the influence.

To promote a safer environment for all roadway users, an alcohol awareness education program is proposed.

3.2.1.3 Sign Audit

Signage provides roadway users with advance warning and guidance needed for the safe and efficient operation of roadways and other transportation facilities. Signage degrades with sunlight, weather, and environmental damage. Replacing worn out signage and maintaining proper retroreflectivity has demonstrated safety benefits.

The *Caltrans LRSM* notes, “When considering any type of federally funded sign upgrade project, California local agencies are encouraged to consider ‘Roadway Safety Signing Audit (RSSA) and Upgrade Projects’.” The county does not currently have a program for sign audit. A RSSA would be beneficial in identifying sign deficiencies and needs.

3.2.1.4 Share the Road Awareness

Non-motorized roadway users are often difficult for drivers to see, leading to collisions when their travel paths overlap. To promote driver awareness of non-motorized users’ presence on the roadway, their needs and vulnerabilities, and relevant traffic laws, a “Share the Road Awareness” program is recommended.

3.2.2 Policies

The recommended policies developed to reduce collision potential in the county are presented in **Table 3.9**.

Table 3.9 Recommended Policies

Policy	Reasoning
Evaluate Habitat Connectivity and Wildlife Corridor Crossings	Multiple priority location collisions (i.e., along US 101) involved “hit object” collision type, with “other/animal” violation category. Parallel roadway safety planning and wildlife corridor crossing planning efforts, as well as long-term infrastructure, may be needed.
Expand and Connect Bicycle Networks	Within the City of Eureka, there are many one-way streets. One priority location collision (i.e., at Henderson St) included “other-bicycle” collision type, with “other hazardous movement” violation category. Bicyclists appear to be traveling against traffic on one-way streets. An expanded and connected bicycle network is needed.
Evaluate Truck Routes	Multiple priority location collisions (i.e., along SR 96) involved “hit object” collision type, including with fixed object. SR 96 is very narrow and curvy. Policy modifications and/or long-term infrastructure may be needed.

3.2.2.1 Evaluate Habitat Connectivity and Wildlife Corridor Crossings

Animal collisions accounted for over 7 percent of the priority segment collisions. This could indicate a need to evaluate habitat connectivity and wildlife corridors, including infrastructure opportunities for safe wildlife crossings.

3.2.2.2 Evaluate Bicycle Network Facilities and Connectivity

The City of Eureka actively promotes multimodal transportation and has proposed bicycle facility upgrades through the city’s Complete and Green Streets Policy, Bike Plan, and General Plan. To reduce multimodal collisions within the city and promote a wider, integrated bicycle network, a bicycle facility network connectivity policy may be implemented to address the disconnect of facilities along one-way roadway facilities and gaps between segments that could form a long-range corridor / route through the city.

3.2.2.3 Evaluate Truck Routes

Some Caltrans corridor segments analyzed within the segment priority list were truck routes with histories of trucks colliding with objects along and adjacent to the roadway. Particularly, over a quarter of collisions along the State Route (SR) 96 segment from 0.6 miles south of Bull Creek to Mill Creek Road involved trucks colliding with guardrails and embankments adjacent to the roadway as a result of improper turning or other hazardous movements. A closer inspection of the roadway segment using Google aerial imagery and Streetview indicated multiple sharp, blind curves along the roadway, approximately 8 ft wide lanes in some areas, and portions without shoulders beside embankments and rockfaces. **Figure 3.2** presents a location along the SR 96 segment with a blind curve, no shoulders, narrow lanes, and a rockface adjacent to the roadway.



Figure 3.2 *Blind Curve Along SR 96*

The Caltrans District 1 *Truck Networks on California State Highways*⁶ map (presented in **Figure 3.3**) indicates the SR 96 segment described above is a truck route allowing 65 ft California Legal trucks to operate on the 55-mph facility. The SR 96 facility is the only connection to SR 169 that leads further into the Hoopa Valley Reservation and northeast to serve communities such as Orleans and Happy Camp (Siskiyou County). The collision data indicates the segment (and other similar Caltrans corridor segments) pose a safety issue for roadway users. Therefore, it is recommended Caltrans assess trucking infrastructure through the county to work toward providing infrastructure improvements along critical truck routes.

⁶ "Truck Networks on California State Highways, District 1", Caltrans, February 24, 2023, <https://dot.ca.gov/programs/traffic-operations/legal-truck-access/truck-network-map>

It is acknowledged that the segment is located within the Hoopa Valley Reservation. Therefore, discussions between Caltrans and the Hoopa Valley Tribe will be required to implement roadway improvements within tribal lands.

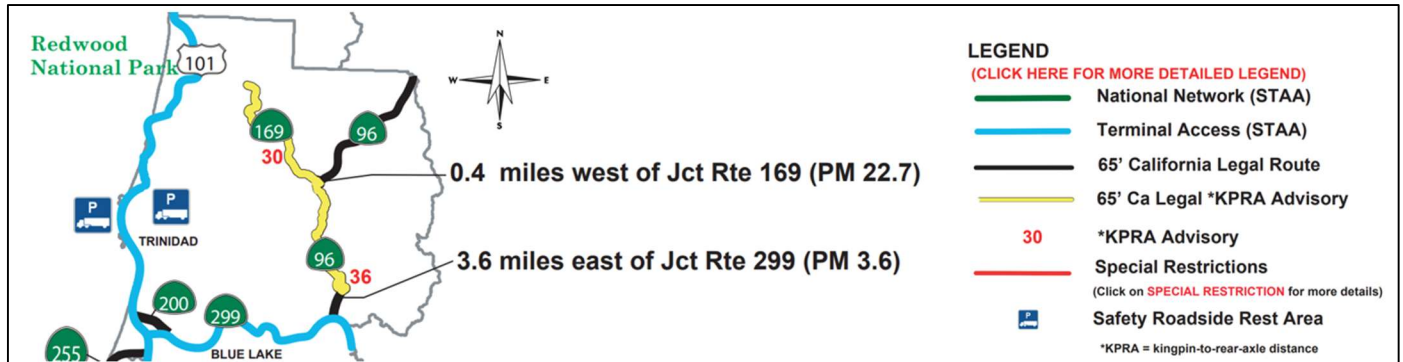


Figure 3.3 Caltrans District 1 Truck Networks on California State Highways⁶

4. Next Steps

The next step is jurisdictional agency review of and concurrence on the recommended engineering countermeasures and non-engineering strategies. Following concurrence, the countermeasures and non-engineering strategies can be integrated into the final VZAP.

Appendix D

Vision Zero Community and Tribal Engagement Plan

Background

The Humboldt County Association of Governments (HCAOG) desires to develop a Humboldt County Regional Vision Zero Action Plan aimed at reducing and eliminating serious injuries and fatal crashes affecting all roadway users. Vision Zero is different from traditional approaches that it uses a multidisciplinary systems approach that brings together designers, policy makers, public health leaders and individual users to create actionable plans that increase safe, healthy, equitable mobility for all. To create a regional Vision Zero Action Plan, data will be collected and analyzed to understand trends and prioritize opportunities to design roads and policies that recognizes that people make mistakes and encourage safe individual behaviors that follow the rules of the road.

Community and tribal engagement are an essential part of the Action Plan to help identify areas where improvements can be made and build sustainable leadership, collaboration and accountability. Public engagement will focus on reaching traditionally underserved groups and encouraging their participation in the development of the Action Plan. The SmithGroup Team, along with their subcontractor Redwood Community Action Agency, will convene a broad stakeholder group (in addition to the project steering committee) that seeks to include representation from diverse community-based organizations.

Community Engagement Goals

1. Ensure that a diversity of community members understand the principles and goals of Vision Zero and how it is different than traditional approaches to increasing public safety
2. Present the latest roadway safety data and national/local trends to inform and empower community members.
3. Encourage community members to share their lived experience and help to shape Vision Zero actions and strategies.
4. Increase a sense of shared responsibility among all road users and build a stronger base of support for future infrastructure projects.
5. Support a successful Vision Zero Education Campaign.

Key Messages

- **Vision Zero is different from traditional projects** in that it uses a multidisciplinary systems approach that brings together designers, policy makers, public health leaders, and individual users to create actionable plans that increase safe, healthy, equitable mobility for all. Instead of planning for perfect human behavior, Vision Zero integrates

human failing in its approach and aims to prevent fatal and severe crashes rather than preventing collisions.

- **Data will be collected and analyzed to understand trends and prioritize opportunities** to design roads and policies that recognize that people make mistakes and encourage safe individual behaviors that follow the rules of the road.
- **Input from traditionally underserved groups and vulnerable populations is key to creating an effective action plan.** By sharing their lived experiences, they can help identify priority areas for safety improvements.
- **The Safe Systems Approach** recognizes that no loss of life is acceptable or inevitable. Humans make mistakes, and road systems should be designed to factor in human error and vulnerability. It is a proactive approach to eliminating fatalities and injuries, rather than a reactive one.
- **Adopting a Vision Zero plan** will significantly increase Humboldt County's competitiveness for funding to implement road safety improvements and system change strategies. Developing a Vision Zero plan signals a strong commitment from city and county leadership to address traffic fatalities proactively and competitive grant programs will look for a Vision Zero plan. This will show that Humboldt County is a dedicated and forward-thinking community ready for change. Vision Zero will equip Humboldt with the tools we need to be competitive for funding to implement these needed improvements.

Target Audiences

- Project Task force
 - Those who did not attend the first Task Force Mtg:
 - Public Health- Peach Green: has been contacted
 - HCOE: Contacted Superintendent and am waiting response
 - Cal Fire
 - Peggy Martinez: ADA specialist, can provide input regarding accessibility
- Safe Routes to School Task Force
- Tribal Communities
 - Bear River Band of Rohnerville Rancheria
 - Big Lagoon Rancheria
 - Blue Lake Rancheria
 - Hoopa Valley Tribe
 - Karuk Tribe
 - Trinidad Rancheria
 - Wiyot Tribe
 - Yurok Tribe

- CBO's:
 - including but not limited to:
 - Promotores,
 - Latino Outdoors,
 - Black Humboldt,
 - Queer Humboldt
 - Two Feathers youth groups
 - Latinonet
 - HAPI Humboldt Asians & Pacific Islanders in Solidarity
 - Humboldt Housing and Homelessness Coalition
 - Jefferson Community Center
 - Manila Moves
 - Uplift Eureka
 - CUNA Community United of North America
 - DELAC District English Learner Advisory Committee
 - Changing Tides Family Services
 - Humboldt Bicyclists
 - Humboldt Trails Council
 - PCSD, MCSD and other Community Districts in Humboldt
 - 350 Humboldt
 - TCIL Tri-County Independent Living
 - ADRC The North Coast Aging Disability Resource Connection
 - Area 1 Agency on Aging.

Strategies for Engaging CBOs

Focus meetings with small groups to target hard to reach/ groups typically left out:

- Small virtual meetings with each focus group. Could be one-on-one phone conversations if that works best for CBO.
- Provide an overview of the project including goals and key messages. Share survey and ask what their main areas of concerns are.
- RCAA & SmithGroup will co-lead small virtual meetings. RCAA will lead one-on-one conversations. RCAA will coordinate with CBO's and schedule meetings.
- SmithGroup will analyze crash data to determine what populations in Humboldt experience the most traffic violence. This will inform which groups to prioritize. This equity analysis will show who is getting hit the most, where they are located and our outreach will help determine why they are getting hit.

- Spanish speaking community
 - Latino Outdoors; CUNA; Promotores; DELAC
- Houseless community
 - Uplift Eureka; Humboldt Housing & Homeless Coalition
- Family Resource Centers:
 - Jefferson Community Center; Changing Tides; Manila Community Resource Center (Esther Hutton)
- Senior community
 - Area one on Aging (Maggie Craft)
- Southern Humboldt
 - Southern Humboldt Chamber of Commerce; Garberville Rotary

Strategies for Engaging Tribal Communities

RCAA and SmithGroup will co-lead outreach efforts. RCAA will coordinate with Tribes and will schedule meetings. All Tribal groups on the Northern California Tribal Court Coalition (NCTCC) will be invited to half hour virtual meeting blocks in groups of two. Meetings provide a short intro with project goals and key messages and will focus on understanding each community's main areas of concern. NCTCC members include:

- Bear River Band of Rohnerville Rancheria
- Hoopa Valley Tribe
- Karuk Tribe
- Tolowa Dee-ni' Nation
- Yurok Tribe
 - Other groups that should be engaged that are not a part of NCTCC
 - Blue Lake Rancheria
 - Big Lagoon Rancheria
 - Trinidad Rancheria
 - Table Bluff Rancheria/ Wiyot Tribe
 - RCAA will present project goals and key messages to the Wiyot Tribal Council meeting in August or September

Tabling at Community Events

RCAA will lead tabling events. RCAA will share project goals, key messages, share surveys, and encourage participants to engage with the outreach boards. RCAA will take notes during conversations to ensure input is captured.

- Annie and Mary Days- Sunday August 3

- Sovereign Days- Friday August 8
- North Country Fair Sunday September 21
- Potential Farmers Market (Arcata) or other Community Event in October in coordination with SmithGroup

Other Strategies and Activities

- Initiate Community Engagement
 - Develop and Promote the Survey
 - Flash Survey- set up meeting to understand if cost and scope fits into project goals.
- One-on-one interviews with additional stakeholders as needed, if budget and capacity allow.
 - These interviews will provide input on challenges and solutions with regard to moving safely throughout the community. These will be structured to hear from citizens about their needs and where they are struggling in relation to getting to their everyday destinations safely.
- PTF Meetings
 - Next meeting scheduled for late August
 - Preliminary Analysis Findings
 - Demonstration Project Selection
 - Invite Tribal Representatives
- SmithGroup Visit planned for October 2025
 - Open House/ Interactive Community Workshop
 - Location: Jefferson Community Center
 - Share Analysis Findings and host interactive stations to gather additional road safety information and input
 - Agency Workshops/ PTF Meetings
 - Share Analysis Findings
 - Coordinate Demonstration Project Implementation
- Pop-up demonstrations
 - Pop-up activities to begin October 2025. Some or all may be postponed until Spring 2026, depending on schedules and deadlines
 - RCAA will lead pop-up demonstrations with support from Smith Group
 - The popups will be a hands-on visual demonstration of what types of fixes are possible to address the concerns heard during the listening sessions. Outreach efforts will also include local community-based advocacy group, the Coalition for Responsible Transportation Priorities (CRTP), promoting StreetStory, a UC

Berkeley SafeTrec tool that people can use to document near misses or other safety hazards. CRTP will encourage the ongoing use of StreetStory as a citizen empowerment and storytelling tool

- Other ideas:
 - Press Release
 - Mailer

Appendix E

Community Engagement Summary

Annie & Marie Day

Blue Lake, Ca

07/03/2025



Common themes included a desire for improved public transportation, with suggestions for more educational resources for children, longer bus hours, and additional stops. Residents expressed concerns about tourist navigation challenges due to the area's unique roads, the need for bike lanes on specific routes, and better accessibility features such as crosswalks. There was support for increased safety measures, including traffic surveys during peak times and rewards for safe driving. Participants were enthusiastic about enhancing transportation safety and accessibility in Humboldt County.

Sovereign Days

08/08/25

Hoopa Ca

Hoopa, Weitchpec, and surrounding areas face significant road safety issues. Multiple deaths of Tribal members have occurred over the years when pedestrians walking from Hoopa along the highway to Weitchpec have been hit by cars. Tribal members indicated that unsafe conditions are due to poor road maintenance, insufficient infrastructure for pedestrians and cyclists, poor lighting, limited guard rails, and aggressive driving. There is a shared sentiment that Hoopa feels like a wild place and therefore people don't respect the rules of the road. Key concerns include unpaved emergency evacuation routes that could become impassable during crises. Narrow and unsafe roads like Tish Tang and Salmon River Road, which lack guardrails and sidewalks, along with high-speed traffic near schools, lead to frequent crashes and loss of pets. Residents have reported speeding vehicles, inadequate signage, and poorly lit areas contributing to road rage and pedestrian injuries. Essential infrastructure improvements such as crosswalks, bike lanes, and better lighting are urgently needed to enhance safety for both drivers and pedestrians, particularly in heavily trafficked areas. The lack of safe pedestrian routes on the residential roads leading into town creates a hazardous environment, further exacerbated by aggressive driving behaviors. Residents have attributed many accidents, road rage incidents, and aggressive driving behaviors to ongoing construction delays.

Arcata Friday Night Market

9/26/25

Arcata Plaza, Ca

The event highlighted several safety concerns related to road use, particularly for pedestrians and cyclists. Key issues included dangerous traffic conditions on Broadway and near the courthouse in Eureka, along with hazardous crosswalks, especially at LK Wood and Sunset. Confusion regarding bike paths, with unclear right-of-way signage and misleading stop signs, was also a concern. Participants pointed to inadequate infrastructure, such as poor road conditions and a lack of safe pedestrian facilities. Additionally, the local public transportation system was criticized for infrequent service and limited coverage. Arcata residents have repeatedly called for a walkable, pedestrian-centric town that protects non-motorized transportation. There were strong calls for improved road safety measures and better public transportation to ensure the safety of all community members.

California Native American Days

Bear River Rancheria Tish Non-Community Center.

9/13/25

Key points included poorly maintained crosswalks, poor lighting, dangerous intersections, and high-speed areas near schools and community hubs. Attendees emphasized the need for improved infrastructure, such as better sidewalks, maintained curbs, and reliable public transportation, particularly for areas like Table Bluff. Safe Routes to School are needed, as well as connectivity to recreation events and stores. A desire for increased awareness and preparation for the anticipated influx of tourists due to the upcoming Great Redwood Trail was expressed. The feedback indicated a demand for enhanced roadway safety and transportation resources that were tailored to the Loleta, Table Bluff, and Bear River area.

Humboldt County Safe Routes to School Task Force

10/15/25

Arcata/ Sunnybrae/ Union Charter:

The SRTS Task Force discussed issues facing Union Charter, Arcata/Sunnybrae, and McKinleyville schools and concerns regarding traffic safety and accessibility for students. Prevalent issues include conflicts during drop-off times, speeding, missing sidewalks, and other pedestrian issues. Suggested improvements include 15 mph zones near schools, enhanced signage, wider bike lanes, protected pedestrian paths, and traffic calming measures like speed bumps. Residents emphasized the need for a safe route from Sunnybrae to downtown Arcata, which currently lacks sufficient connectivity for pedestrians and cyclists. Concerns were raised about planned developments, such as the Cal Poly parking lot project, and potential impacts on pedestrian safety and traffic. In McKinleyville, the issue of electric scooters has emerged as a major safety concern. Morris Elementary School had to implement a ban on scooters after several accidents were reported, highlighting the dangers associated with young students operating motorized vehicles. The principal partnered with the California Highway Patrol to educate families on the laws and safety measures regarding

scooters, which has reportedly been effective. This situation raises broader questions about similar issues at other schools in Humboldt County and suggests a need for an educational campaign.

North Country Fair

09/20/25

Arcata, CA

Concerns included unsafe arterials, speeding, and poor pedestrian infrastructure at intersections along Samoa Bouvard. Suggestions included a roundabout, traffic calming measures, and enhanced pedestrian infrastructure. Transit recommendations included connecting Arcata bus routes and introducing a recreational track scooter service or a separated walking path on Samoa peninsula.

Manila Community Resource Center

Residents on the Peninsula are concerned about limited and unsafe crossings and speeding on Highway 255 that prevents students from walking to school at Redwood Coast Montessori. Community members support traffic calming measures on Peninsula Drive, such as more speed humps and safe crossing improvements. Lack of public transportation on the peninsula is a problem, especially for low-income families, and especially those at the Phyllis Rex Townhomes who lack grocery stores and resources. Safety on Highway 255 is a recurring theme, with suggestions to lower the speed limit from 55 to 45 mph due to frequent speeding and dangerous driving conditions in wetter months. This especially applies to intersections like Dean/255/Pacific-Peninsula Drive, which have a troubling history of collisions and fatalities.

TRI County Living

Key themes included lack of reliable transportation and access to the Highway Transportation Authority (HTA) and the Dial-A-Ride service. Key issues identified included discrepancies in arrival times, insufficient bus stops for southbound routes, and limited scheduling options, particularly on weekends. Low-income housing communities lack access to transportation altogether, complicating residents' ability to reach essential services, including medical appointments. Transportation is especially challenging for the disabled community where transportation options are limited or difficult to access. Tri County suggested ways to improve outreach for the disabled community, including the importance of bringing a disabled perspective to transportation planning and hiring a disabled advocate to facilitate meetings.

District English Learner Advisory Committee (DELAC)

Lucy Salazar, representing District English Learner Advisory Committee (DELAC), emphasized the safety concerns for children biking in high-speed zones and the lack of bike lanes and designated bike storage in residential areas. Suggested community engagement strategies include partnerships with local organizations to create events that cater to diverse groups, including unhoused individuals, youth in foster care, and people with disabilities.

Creative Inclusions

Peggie Martinez of Creative Inclusions emphasized the importance of accessibility in the built environment, particularly in relation to pedestrian safety and visibility for individuals with different disabilities. She

proposed educational campaigns to raise awareness of these issues and advocated for improved crosswalk infrastructure, such as audible signals and high-contrast markings. The need for participatory engagement with the disabled community was underscored, aiming to create inclusive solutions that ensure equitable transportation and safety for all residents.

Appendix F

Community Education Campaign

One of the critical strategies for changing road safety outcomes through behavior is the Community Education Campaign. These campaigns should be multi-faceted and provide a wide range of ways for community members to get involved. Including:

- A strong website to direct traffic, clarify the message, and provide additional background, FAQs, and opportunities for engagement
- Surveys as an entry point for involvement, easy to promote at tabling events and community gatherings
- Door-to-door flyering and one-on-one conversations, particularly effective in small rural communities
- Using a mix of media, including radio messages, social media, and imagery from local artists.
- Listening to communities to find the best way to increase participation, whether by providing food, childcare, or choosing event locations
- Identifying key community leaders and co-create an effective outreach strategy.

Successful campaigns require strategic planning, clear messaging, and active engagement with local communities. Campaign messages should be simple, use stories and testimonials to make the message relatable, and include a call to action to encourage participation. Partnering with other organizations and empowering local leaders or champions (schoolteachers, parents, and daily walkers) can be a great way to strengthen the message. This section expands these ideas to provide everything needed to develop a robust and impactful Vision Zero aligned Community Outreach Campaign.

Developing Regional Vision Zero Branding

Creating a cohesive regional Vision Zero brand across Humboldt County is an important component of the Educational Campaign because it makes safety messages recognizable, relevant and actionable. Consistent branding helps residents quickly recognize Vision Zero campaigns, which creates a shared identity of road safety culture across Humboldt County. It communicates a commitment to road safety initiatives across the region and reinforces that safety is a collective responsibility, part of a sustained, coordinated commitment and partnership across cities, schools, non-profits, transit agencies, and advocacy groups. Regional branding provides continuity across jurisdictions and campaigns while giving residents a visual and emotional connection to the region's commitment to eliminating traffic deaths and serious injuries.

Branding Identity

A cohesive regional branding identity includes consistent Humboldt County Vision Zero logos, color schemes, fonts, messaging, and taglines that resonate with the community. Humboldt County Vision Zero branding can be used by each jurisdiction for various local educational campaign efforts that are specific to individual communities while connecting to the broader Vision Zero goal of eliminating traffic fatalities and serious injuries from Humboldt County. Repeated exposure to consistent messaging helps the public understand that different regional campaigns are part of a larger safety strategy, which builds local recognition and a culture of safety. A well-articulated brand can strengthen the impact of multiple campaigns, because consistency reinforces safety messages and will more likely be remembered.

Vision Zero Messaging

- **Messaging must be human centric, empathetic,** and highlight the key message that traffic violence is a preventable public health problem and is not inevitable.
 - Refer to traffic incidents as “crashes or collisions” rather than accidents. Accidents imply that a crash is a random, unavoidable act of God or stroke of fate. A crash recognizes that traffic accidents are predictable and preventable.
 - Vision Zero campaigns are about creating a culture of safety and shared identity of collectivism by making dangerous road behaviors (like speeding and aggressive driving) socially unacceptable. Messaging should center themes around replacing individual rights to drive fast and unsafe with a collective responsibility to take care of one another and protect our most vulnerable community members.
- **Center a Safe Systems Approach:** Crashes will happen, but they do not have to end in fatalities
 - Make safety prevention be the central message; while human error cannot be avoided, serious injury can. Crashes will happen because humans always make errors, but they do not have to end in fatalities
 - “Slowing down protects our neighbors, children, and pets”
- **Avoid Passive Blame:** emphasize people, safety, and shared responsibility rather than blame. Specifically, messaging should never blame vulnerable road users and those who are typically road violence victims (pedestrians, cyclists, disabled community member, etc.). Avoid language that shields drivers from responsibility but do not explicitly blame drivers. Messaging should emphasize a collective effort to protect the entire community.
- **Center storytelling and diverse representation** to increase engagement, especially for those who experience the most road violence: houseless, disabled, and communities of color

Framing Messaging to Change Behavior

Campaign messages work better to change behavior when they do more than communicate danger. They need to make the safer behavior feel personally relevant, socially supported, achievable, and worthwhile. Significant academic social science across psychology, public health, conservation, and transportation planning has been devoted to understanding how to change human behavior through educational messaging. Here are some evidence-based suggestions for framing educational messaging in Vision Zero campaigns:

- **Perceived Surveillance** can change behavior and reduce speed. When drivers are aware they are entering a community that is being watched over, they will reduce driving speeds. Indicating to drivers that speeding will be detected can shape behavior even more than telling drivers that speeding is dangerous.
- **Social Norms (Leveraging Peer Pressure)** Drivers believe in the perceived norm that everyone speeds, and therefore their own speeding behavior is justified. Research shows that reframing the social norm around speeding can be effective. Messages that shift focus from traffic law compliance to human vulnerability (pedestrians, cyclists, road workers) trigger empathy, which overrides the impulse to hurry.
- **Positive Framing.** Research shows that extreme language describing the dangers of speeding or reckless driving is often ineffective in changing behavior. It is more effective to focus messaging on positive outcomes or by what can be gained by a behavior change, than fear tactics. Focus communication on protecting loved ones, enjoying the drive, or arriving safely.

Tagline suggestions:

"Neighbors are watching. Slow down and get there safely"

"We are watching you speed. Please slow down"

"Most people drive through at 15mph. Be a good neighbor, protect our cats"

"Our community drives slowly. Protect our children and pets"

"Your friends trust you to get them home safe"

"Life is valuable. Please drive safe"

Branding Guidelines

- Use clean, consistent legible fonts for clear messaging. Font suggestions include Ariel Regular and Poppins regular and medium (semi-bold, bold & extra bold).
- Use plain, direct, and consistent language; avoid technical terminology and jargon
- Ensure logos maintain high contrast with dark text on light backgrounds
- Use established Humboldt County Vision Zero Action Plan color palettes, icons and logos
- Accessibility: ensure messaging follows federal and state accessibility laws. Use legible fonts, maintain appropriate font scale & contrast, provide accessible versions of printed and digital materials, do not rely on color alone to communicate, etc.



Visibility: Campaign Concepts & Engagement Strategies

Increase visibility by incorporating the branding into all outreach materials, social media profiles, and public communications. However, standalone campaigns rarely change driver behavior on their own, and work best when paired with policy changes, high-visibility enforcement, and built infrastructure projects. Some ideas to maximize visibility and impact include:

- Branding-aligned merch to be distributed at safety events like bike rodeos, walk audits, road safety presentations, speakers and workshops
- Conduct outreach during infrastructure construction utilizing posters with QR codes to a survey, banners, tables with interactive posters
- Table at community events including Farmer's markets, cultural events (Salmon Festival, Wiyot Days), Holiday events (Eureka Fourth of July Celebrations), community events (Loleta Community Celebration Day), Bike Month celebrations
- Interagency Coordination: Partnering with other organizations and local leaders with similar goals is a good way to amplify messages. Work with local organizations already working on road safety

projects to expand outreach including nonprofits (Jefferson Community Center, Peninsula Community Collaborative PCC Peninsula Moves, The Eureka Bike Kitchen, Uplift Eureka, Humboldt Housing and Homeless Coalition, Tri County Independent Living, Centro Del Pueblo, Coalition for Responsible Transportation Priorities CRTP, City Councils, Humboldt Transit Authority (HTA), Caltrans, Chamber of Commerce, Rotary Groups, Humboldt County Safe Routes to School Task Force (SRTS)

- Partner with schools to promote campaigns. Encourage students to make safety signs, develop messages, record radio spots, plan and implement a campaign-coordinated Walk/ Bike to School Day while teaching lessons on pedestrian and cyclist safety
- Consider hosting a regional road safety project update workshop bringing together all the current road safety planning and implement projects where community members can be informed at once and learn about the educational campaign
- Work with a Community Champion to expand outreach network and gain local knowledge. Identify key community leaders and co-create an effective outreach strategy in partnership with the community.
- Door-to-door flyering and one-on-one conversations can be key in small rural areas. Listen to communities to find the best way to increase participation, whether by providing food, childcare, or choosing event locations.

Proximity, Timing of messaging can be key to behavioral changes. The effectiveness of a campaign is heavily influenced by when and where the message is received. While television, news and social media may be good additions to a campaign, research shows that messages received while people are driving or while carrying out a behavior are the most impactful. The most effective messaging is delivered via dynamic roadside VMS signs, speed radar signs, banners near a new improvement, radio, student's hand painted school zone sign, etc.

Vision Zero Reframing of Previous Educational Road Safety Campaigns in Humboldt and California

Past Humboldt Campaigns:

- Go Slow, Watch the Road
- Heads Up Eureka
- I Give 3 Feet for Safety
- I Drive 45 in Manila
- Go Slow in School Zones
- Share the Road- Arrive Alive
- Safer 4th and 5th Streets

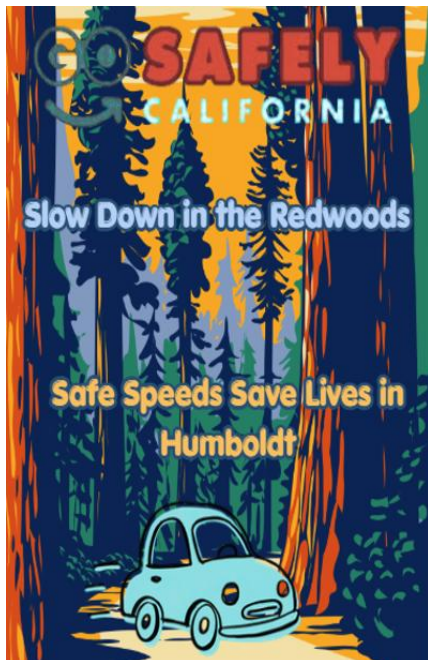
California Campaigns:

- Go Safely California

Vision Zero Examples:

- Go Slow, Watch the Road to Save Lives
- Go Slow, your Neighbors are Watching
- Go Slow, Protect our community
- Heads Up Eureka: Pay Attention for Zero Deaths

- Heads Up Eureka: Protect our Kids
- I Give 3 Feet for Safety, Because No Death is Acceptable
- I Give 3 Feet for Zero Deaths
- I Drive 45 in Manila for Zero Deaths on the Peninsula
- I Drive 45 in Manila to Protect our Kids and Cats
- Go Slow in School Zones- 15 Miles or Less for Zero Deaths
- Share the Road, So Everyone Arrives Alive
- Safer 4th and 5th Streets: A Vision for Zero Deaths on 4th and 5th Streets
- Go Safely California, Drive Slow in the Redwoods, for Zero Traffic Deaths in Humboldt
- Go Safely California, take it Easy in Humboldt
- We Take it Easy in Humboldt



Educational Materials

- **Flyers:** Create one informational flyer that highlights key safety messages and trips for different road users (drivers, pedestrians, cyclists)
- **Posters, Banners and Yard Signs:** Design one eye-catching poster, banner, and yard sign or equivalent following the Vision Zero brand guidelines and revised Go Slow, Watch the Road Campaign
- **Infographics:** Develop infographics that visually convey important safety statistics and information for press and social media
- **Survey:** Develop a survey as a good entry level of involvement and promote during tabling events, workshops, gatherings, and flyers attached near construction.
- **Campaign Project Webpage or StoryMap:** An online Project website or Esri StoryMap local High-Injury Network (HIN) corridors, active and past safety projects, and link to Street Story (a free online community engagement platform created by UC Berkeley's Safe Transportation Research and Education Center ([SafeTREC](#)) to collect local feedback on transportation safety). Websites can direct

traffic, clarify the message, and provide additional background, FAQs, and opportunities for engagement including event calendars.

- **Radio Scripts** in partnership with teachers and students
- **Social Media posts & ads**
- **Tabling Engagement:** Interactive maps and boards, reflective gear and sticker prizes with campaign slogan

Developing a Press Toolkit

- **Press Releases:** Prepare press release to announce campaign initiatives, events and milestones
- **Media Kits:** Create media kits that include background information, key messages, pre written social media posts and infographics ready to use during an event, safety awareness weeks, or during infrastructure construction
- [Humboldt County Vision Zero Media List 2026](#)
- **Training for Public Information Officers and other information networks:** Provide guidance for Public Information Officers (PIOs) and other key community leaders on how to effectively communicate Vision Zero messages to the media. PIOs are communication professionals who serve as primary media spokespersons. They typically work for government agencies, police departments, public health organizations, and sometimes consultants and nonprofits.

Humboldt County Public Information Officers (PIOs):

- Arcata: City of Arcata, Communications Specialist & Public Information Officer: Cati Gallard
- Eureka: City Clerk: Pamela Powell, Eureka Police Department: Laura Montagna
- Trinidad: City of Trinidad, City Clerk: Gabriel Adams
- Fortuna: City of Fortuna, City Manager: Amy Nilsen, City Clerk: Siana Emmons
- Ferndale: City Manager: Kristene Hall, City Clerk: Brenda Taylor
- Garberville: California Highway Patrol (CHP), Humboldt County Sheriff's Office, Humboldt County Administrative Officer, Elishia Hayes

Communication Leaders

- **High School Students:** Provide training on defensive driving; safe vehicle training, including phone distraction while providing campaign communication training
Elementary & Middle Schools: Provide pedestrian & bicycle education, collaborate with students on campaign, Walk to School Day with campaign materials
PE teachers, parents: Provide outline for how to implement Bike Rodeo in coordination with campaign
Community Champion: identify and train a local champion to be the voice of the campaign, mobilize their community, and help plan events, lead walk audits

Training Protocols

- **Vision Zero Language:** Train the use of "crash," "collision," or in all press releases, social media posts, and educational materials and eliminate "accident"
- **Human Centric Perspective:** Train communication leaders to describe human actions rather than attributing crashes solely to the inanimate object (Use: "a driver struck a pedestrian" instead of "a car struck a pedestrian" or "a pedestrian was involved in a collision").
- **Avoid Victim-Blaming:** Train officers limit victim details in initial media releases such as what clothing a pedestrian was wearing or whether a cyclist had a helmet unless directly relevant to an

active criminal investigation. Including these details, shifts focus onto victim responsibility rather than roadway conditions, speeding or another factor.

- **Safe System Approach:** Train for communication that links a crash to Safe System Approach solutions (such as street design, speed management, or policies) rather than focusing solely on individual faults.
- **Crisis Communications:** Equip PIOs with key messaging prompt cards for high-profile crashes involving a fatality or severe injury that expresses empathy while redirecting the focus toward safety initiatives and the educational campaign
- Refer to **Vision Zero Messaging** for all communication training guidance

Implementation Timeline: 3-Year Road Safety Campaign \$20,000 Budget over 3 years

Year 1 \$10,000: Develop and deploy

- Identify safety challenges/concerns to base campaign, develop messaging, target community
- Develop & mobilize media toolkits to communication networks
- Table community events
- Design and purchase merch and educational materials
- Recruit local champions
- Reach out to other local agencies, identify where interagency collaboration can occur, and where multiple projects can align. Example: Food for People “Move to End Hunger” event
- Plan street events: bike rodeos, pop-up demonstrations, walk audits
- Identify communication networks and strategize effective, coordinated outreach/ media release
- Plan campaign outreach with school administration and staff to collaborate campaigns with Walk to School Day, Ruby Bridges Day, Bike Month, assembly and other events. Meet with teachers to identify strategies to get students involved
- Work with Cal Poly students to identify additional campaign strategies
- Hire local artists to develop campaign images. Budget for a competitive application process that pays artists to develop application designs

Year 2: \$6,000: Direct Engagement

- Implement street events: pop-up demonstrations, bike rodeos, walk audits
- Give away campaign merch: reflective gear, safety lights during events, workshops, schools
- Implement campaign outreach with school events and assembly presentations: Walk to School Day, Ruby Bridges Day, Bike Month
- Implement coordinated campaign and road safety project workshops, presentations, speakers, etc. in collaboration with other agencies leading planning, implementation or education-based projects
- Coordinate and train PIOs, local champions, communication leaders

Year 3: \$4,000: Scale and Sustain

- Continue engagement at outreach events and workshops, and communication with PIOs and community leaders
- Work with community champions to identify additional strategies
- Plan and implement a final celebration event with clear strategy for how the campaign will continue
- Work with local schools, College of the Redwoods Cal Poly Humboldt to implement a plan for continuing the campaign message