

**City of Fort Bragg**

# **Local Roadway Safety Plan**

**04/15/2022**

**Draft Report**

**City of Fort Bragg**  
**Local Roadway Safety Plan**

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## **Executive Summary**

The City of Fort Bragg's Local Roadway Safety Plan (LRSP) is a comprehensive plan that creates a framework to systematically identify and analyze traffic safety related issues and recommend projects and countermeasures. The LRSP aims to reduce fatal and severe injury collisions through a prioritized list of improvements that can enhance safety on local roadways.

The LRSP takes a proactive approach to addressing safety needs. It is viewed as a guidance document that can be a source of information and ideas. It can also be a living document, one that is routinely reviewed and updated by City staff and their safety partners to reflect evolving collision trends and community needs and priorities. With the LRSP as a guide, the City will be able to ready to apply for grant funds, such as the federal Highway Safety Improvement Program (HSIP).

### **Chapter 1 – Introduction**

The Introduction presents the project, describes how this report is organized, summaries the vision and goals, the study area for the LRSP, details how the report is organized and introduces the safety partners.

### **Chapter 2 – Existing Planning Efforts**

This chapter summarizes existing City and regional planning documents and projects that are relevant to the LRSP. It ensures that the recommendations of the LRSP are in line with existing goals, objectives, policies, or projects. This chapter summarized the following documents: City of Fort Bragg Costal General Plan (2008), Inland General Plan (2012), Fort Bragg Bicycle Master Plan (2009), 2018 Street Safety Plan, South Main Street Access and Beautification Plan (2011), City of Trails: Trails Feasibility Study (2016), City of Trails: Supplemental Trail Feasibility Studies (2017), City of Fort Bragg FY 2020-2021 Budget, Mill Site Specific Plan (2012), Mendocino County Regional Active Transportation Plan (2017), Mendocino County Safe Routes to School Plan (2014), Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019), and Mendocino Council of Governments 2020 Regional Transportation Improvement Program (2019)

### **Chapter 3 – Collision Data Collection and Analysis**

Collision data was obtained and analyzed for a five-year period from 2015 to 2019 from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) and the University of California at Berkeley SafeTREC's Transportation Injury Mapping Service (TIMS).

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The collision analysis identified general trends of collisions in the City of Fort Bragg. There were a total of 548 collisions reported City-wide from 2015 to 2019. Out of these 470 collisions (86 percent) were property damage only (PDO) collisions, 50 collisions (9 percent) led to complaint of pain injury and 23 collisions (4 percent) led to a visible injury. There were 5 F+SI (fatal and severe injury) collisions, 4 collisions (1 percent) led to a severe injury and 1 collisions led to a fatality.

For fatal and severe injury (F+SI) collisions, 60 percent of collisions involved pedestrian. This calls for evaluating pedestrian conditions along this intersection and also throughout the City at locations with similar characteristics that are potentially unsafe for pedestrians. Improvements at these locations can include reducing pedestrian crossing distances, installing high visibility crosswalks, installing pedestrian refuge/ median islands, and installing bulb outs. The South Main Street Access and Beautification Plan contains similar proposed pedestrian improvements for South Main Street which were identified as high injury corridors. The pedestrian safety improvements identified in this plan may be used to provide the basis for a Highway Safety Improvements (HSIP) grant.

Gateway treatments and roundabouts are also identified in the South Main Street Access and Beautification Plan which can reduce speeds and provide traffic calming benefits to all road users. Automobile right of way, unsafe speed collisions and broadside collisions can be reduced with roundabouts which were also identified as being a main factor in fatal and severe injuries in Fort Bragg.

#### **Chapter 4 - Emphasis Areas**

Emphasis areas are a focus of the LRSP that are identified through the various collision types and factors resulting in fatal and severe injury collisions within the City of Fort Bragg. The nine emphasis areas for Fort Bragg are:

- Intersection Safety
  - a. Collisions within 250 feet of intersections
- Pedestrian Safety
- Improper Turning Collisions
- Route 1 Collisions
- Alley Ways Collisions
- Older Adult (Party at Fault) Collisions

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#### **Chapter 5 – Countermeasure Identification**

Engineering countermeasures were selected for each of the high-risk locations and for the emphasis areas. These were based off of approved countermeasures from the Caltrans Local Roadway Safety Manual (LRSM) used in HSIP grant calls for projects. The intention is to give the City potential countermeasures for each location that can be implemented either in future HSIP calls for projects, or using other funding sources, such as the City’s Capital Improvement Program. Non-engineering countermeasures were also selected using the 4 E’s strategies, and are included with the emphasis areas.

#### **Chapter 6 – Safety Projects**

A set of four safety projects were created for high-risk intersections and roadway segments, using HSIP approved countermeasures. These safety projects are:

Project 1: Systemic Improvements at Unsignalized Intersections

Project 2: Pedestrian Improvements at Unsignalized Intersections

Project 3: Systemic Roadway Segment Improvements

Project 4: Pedestrian and Other Roadway Segment Improvements

Project 5: Pedestrian Set Aside

#### **Chapter 7 – Evaluation and Implementation**

The LRSP is a guidance document that is recommended to be updated every two to five years in coordination with the safety partners. The LRSP document provides engineering, education, enforcement, and emergency medical service related countermeasures that can be implemented throughout the City to reduce fatal and severe injury collisions. After implementing countermeasures, the performance measures for each emphasis area should be evaluated annually. The most important measure of success of the LRSP should be reducing fatal and severe injury collisions throughout the City. If the number of fatal and severe injury collisions does not decrease over time, then the emphasis areas and countermeasures should be re-evaluated.

# 1. Introduction

## What is a LRSP?

The Local Roadway Safety Plan (LRSP) is a localized data-driven traffic safety plan that provides opportunities to address unique highway safety needs and reduce the number of fatal and severe injury collisions. The LRSP creates a framework to systematically identify and analyze traffic safety-related issues, and recommend safety projects and countermeasures. The LRSP facilitates the development of local agency partnerships and collaboration, resulting in the development of a prioritized list of improvements that can qualify for Highway Safety Improvement Program (HSIP) funding.

The LRSP is a proactive approach to addressing safety needs and is viewed as a living document that can be constantly reviewed and revised to reflect evolving trends, and community needs and priorities.

## Vision and Goals of the LRSP

- Goal #1: Systematically identify and analyze roadway safety problems and recommend improvements
- Goal #2: Improve the safety of all road users by using proven effective countermeasures
- Goal #3: Ensure coordination and response of key stakeholders to implement roadway safety improvements within Fort Bragg
- Goal #4: Serve as a resource for staff who continually seek funding for safety improvements
- Goal #5: Recommend how safety improvements can be made in a manner that is fair and equitable for all Fort Bragg residents

## Study Area

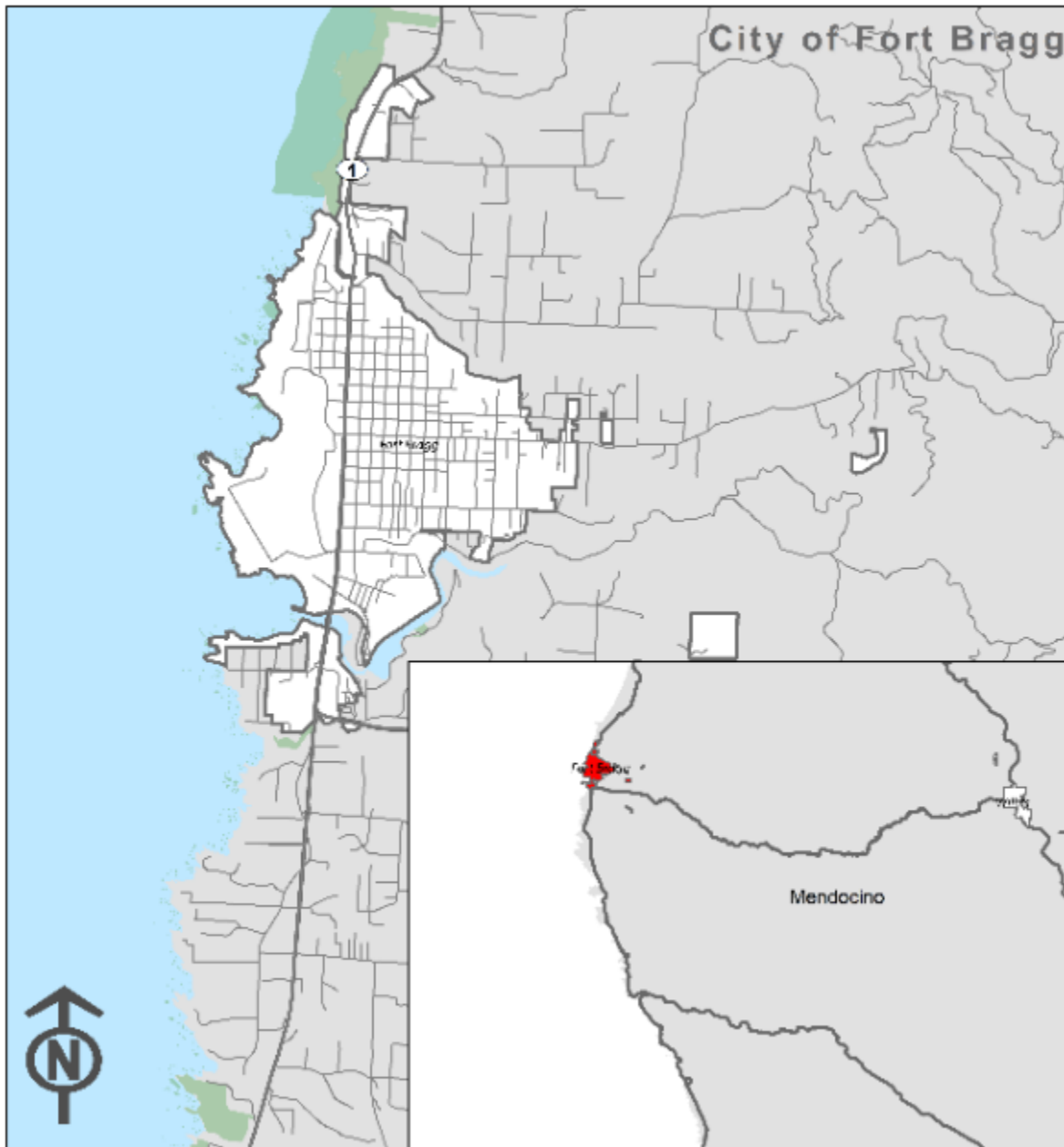
The City of Fort Bragg is located in Mendocino County, California, covering a total area of about 2.931 square miles. It is located on the coast, 24 miles west of the City of Willits at an elevation of 85 feet.

The City's estimated population is 7,302 (ACS 2019 1-year estimate). The City is accessible via CA-1 corridor. **Figure 1** shows the study area.



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Figure 1. Study Area: City of Fort Bragg



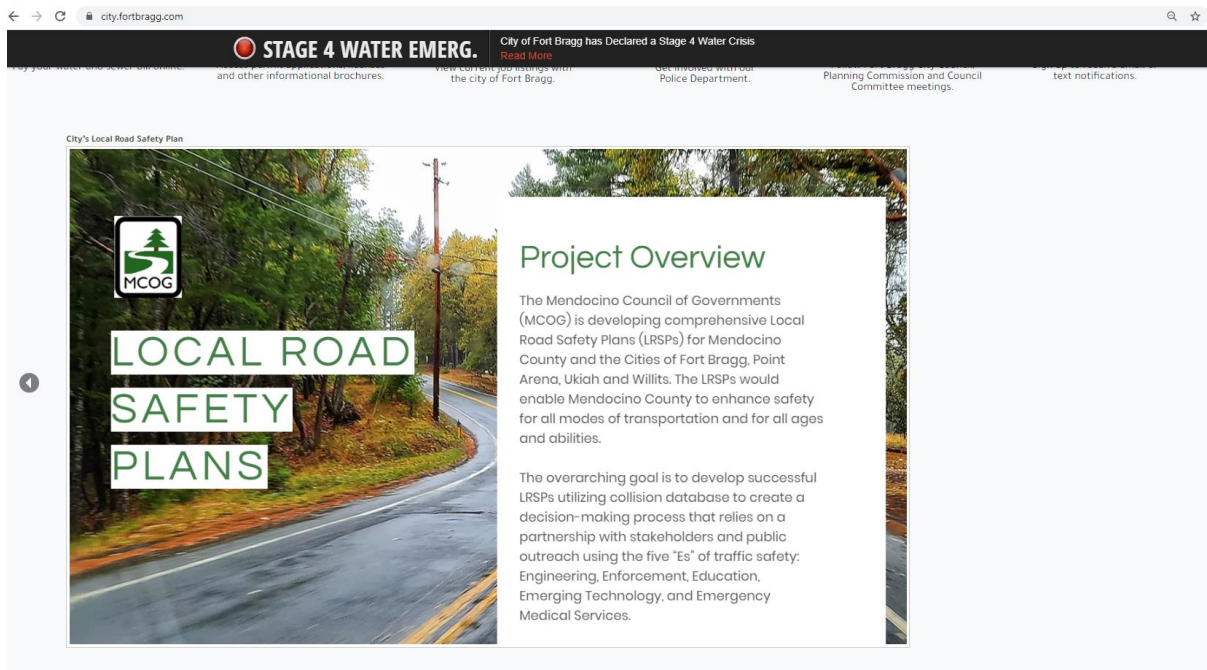
# City of Fort Bragg Local Roadway Safety Plan

## Safety Partners

Safety partners are vital to the development and implementation of an LRSP. For the City of Fort Bragg, these include representatives from Public Works, Fire Department, School District, Mendocino Coast Hospital Ambulance Service, Community Development Department, Police Department, County Supervisor, Walk and Bike Mendocino, CHP, Cal Fire, Mendocino Transit Authority, Mendocino County Sheriff and Caltrans District 1. Two stakeholder meetings among these departments/agencies were conducted to review project goals and findings, and to solicit feedback from the group during the project timeline.

This stakeholder outreach was supplemented by a project website ([mendocinosaferoads.com](http://mendocinosaferoads.com)), with an interactive map input platform. Project related info was also published on the City's website. As part of the Mendocino County Local Road Safety Plan, a public input platform called mapptionaire was published online and advertised on social media to solicit input public comments regarding traffic safety. The mapptionaire tool was open for public comments starting March 5th, 2021 and closed on September 31, 2021. During this period 324 comments were submitted, out of which 21 comments were for the City of Fort Bragg.

Figure 2. City's website and social media posting



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The City of Fort Bragg with the Mendocino Council of Governments (MCOG) is developing a citywide Local Road Safety Plan geared towards improving traffic safety for pedestrians, bicyclists, transit users and drivers. To learn more about the project, please visit the project website.

Participate in a virtual workshop to tell us about your traffic-related safety concerns on the city streets!

Visit <https://www.mendocinosaferoads.com/> for more!

La Ciudad de Fort Bragg con el Consejo de Gobiernos de Mendocino (MCOG) está desarrollando un Plan de Seguridad Vial Local para toda la ciudad orientado a mejorar la seguridad del tráfico para peatones, ciclistas, usuarios de tránsito y conductores. Para obtener más información sobre el proyecto, visite el sitio web del proyecto.

¡Participe en un taller virtual para contarnos sus preocupaciones de seguridad relacionadas con el tráfico en las calles de la ciudad!

Visite la pagina <https://www.mendocinosaferoads.com/>



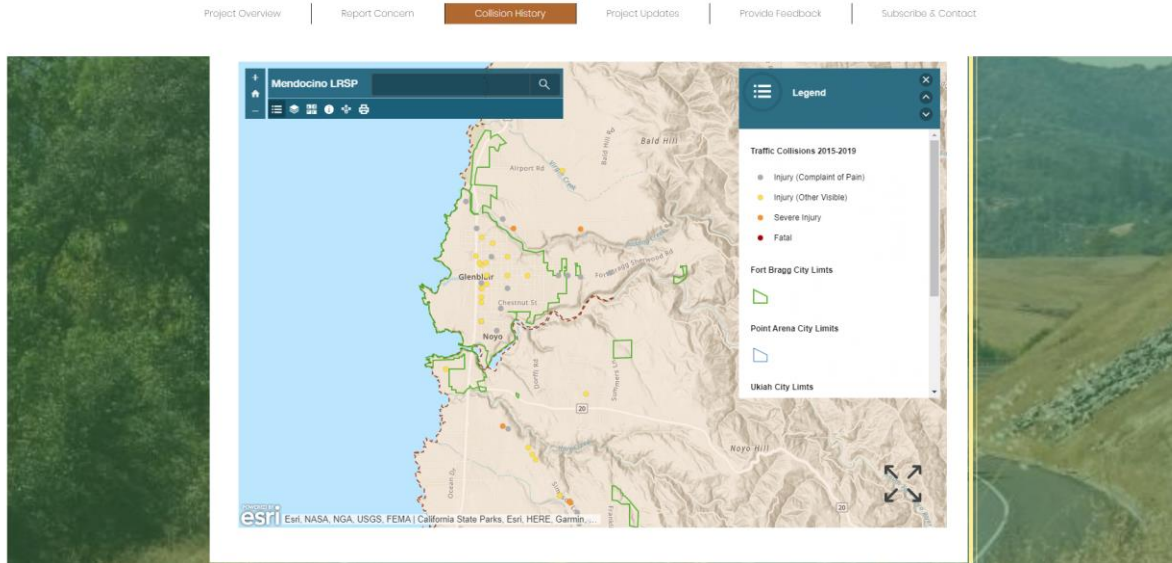
MENDOCINOSAFEROADS.COM

**Mendocino Safe Roads**

The Mendocino Council of Governments (MCOG) is developing co...

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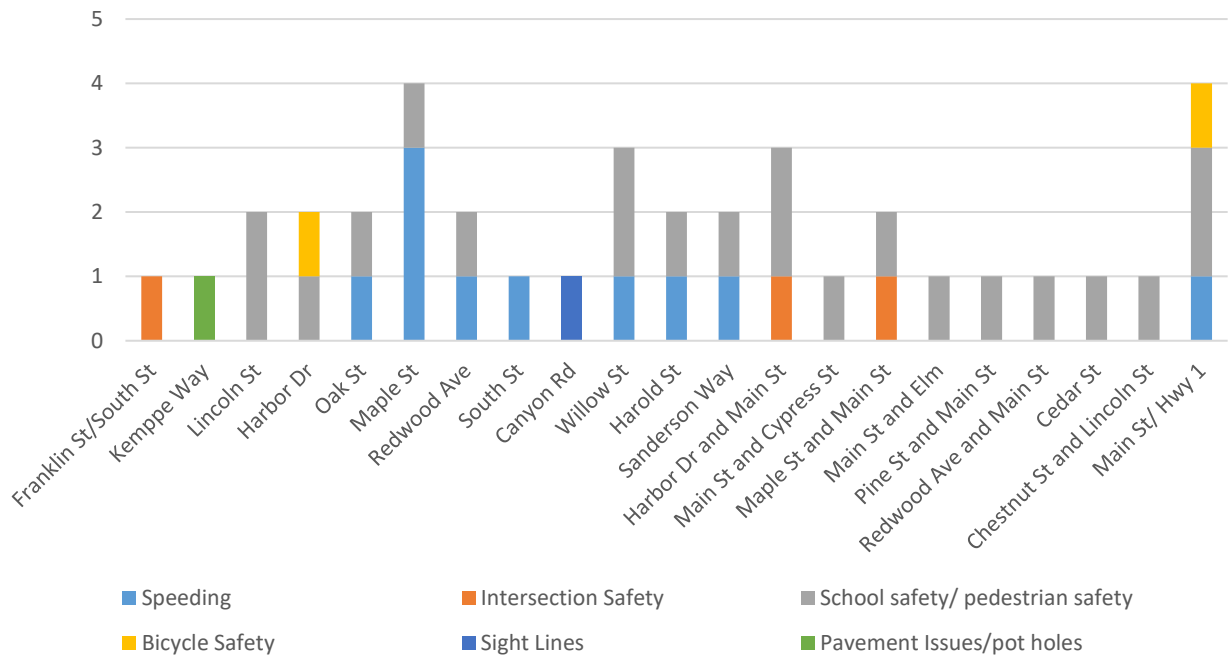
Figure 3. Project Website: [www.mendocinosaferoads.com](http://www.mendocinosaferoads.com)



The most common commented on traffic safety issue pedestrian/school safety, with 14 comments. Main Street/Hwy 1 was the most commented on street with pedestrian safety issues, followed by Willow Street and Lincoln Street. Maple Street was referred to the most as a street with speeding issues, with 3 comments. Other streets were South Street, Redwood Avenue, Willow Street, Oak Street, Harold Street and Sanderson Street.

# City of Fort Bragg Local Roadway Safety Plan

Figure 4. City of Fort Bragg - Public Comments



## 2. Existing Planning Efforts

This chapter summarizes the planning documents, projects underway, and studies reviewed for the City of Fort Bragg Local Road Safety Plan (LRSP) being developed as a part the Mendocino Council of Governments’ LRSPs for local agencies. The purpose of this review is to ensure the LRSP vision, goals, and E’s strategies are aligned with prior planning efforts, planned transportation projects and non-infrastructure programs. The documents reviewed are listed below:

- City of Fort Bragg Coastal General Plan (2008)
- Inland General Plan (2012)
- Fort Bragg Bicycle Master Plan (2009)
- 2018 Street Safety Plan
- South Main Street Access and Beautification Plan (2011)
- City of Trails: Trails Feasibility Study (2016)
- City of Trails: Supplemental Trail Feasibility Studies (2017)
- City of Fort Bragg FY 2020-2021 Budget
- Mill Site Specific Plan (2012)
- Mendocino County Regional Active Transportation Plan (2017)
- Mendocino County Safe Routes to School Plan (2014)
- Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019)
- Mendocino Council of Governments 2020 Regional Transportation Improvement Program (2019)

The following sections include brief descriptions of these documents and how they inform the development of the LRSP. A summary of each document is provided in **Table 1**. A more detailed list of relevant policies and programs is provided in **Appendix A**.

**Table 1 Document Review Summary**

Document	Highlights
<b>City of Fort Bragg Coastal General Plan (2008)</b>	Circulation element of the coastal General Plan details long range plans for the City of Fort Bragg including bicycle, pedestrian, vehicle and transit policies.
<b>Inland General Plan (2012)</b>	This general plan regulates land use for inland properties that are within City limits but not in the Coastal Zone.
<b>Fort Bragg Bicycle Master Plan (2009)</b>	This plan establishes goals and policies, analyzes existing conditions, proposes recommended standards and identifies potential projects for guiding the improvement of the City’s bicycle facilities.

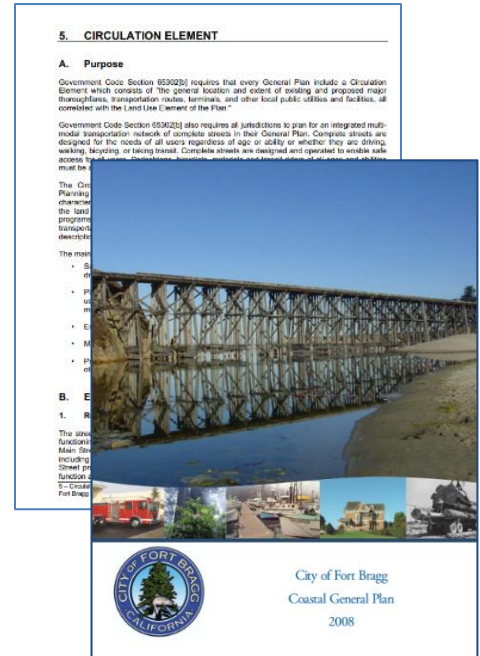
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Document	Highlights
<b>2018 Street Safety Plan</b>	This plan recommends infrastructure improvements that will enhance the safety of pedestrians, bicyclists and motorists on residential neighborhoods and commercial streets in Fort Bragg.
<b>South Main Street Access and Beautification Plan (2011)</b>	This project enhances pedestrian crossings of Highway 1, with curb extensions, high visibility striping, stop bars, pedestrian signage and strategically placed median refuge islands. It also improves safety by reducing vehicle speeds, as well as beautifies the streetscape with trees and landscape strips.
<b>City of Trails: Trails Feasibility Study (2016)</b>	This City of Trails Feasibility Study evaluates three potential new priority trails which could be developed to expand the existing trail network in Fort Bragg.
<b>City of Trails: Supplemental Trail Feasibility Studies (2017)</b>	The City of Trails supplement evaluates engineering and geotechnical challenges associated with implementation of two segments of costal trails.
<b>City of Fort Bragg FY 2020-2021 Budget</b>	The City of Fort Bragg’s fiscal year 2020 – 2021 Budget outlines the funds the city has allocated to various departments and project include street and road maintenance and improvements.
<b>Mill Site Specific Plan (2012)</b>	The Mill Site Specific Plan is a community-based vision for the redevelopment of the old mill site in Fort Bragg.
<b>Mendocino County Regional Active Transportation Plan (2017)</b>	Details bicycle and pedestrian improvements on County significant corridors. Includes many detailed priority bike and pedestrian projects.
<b>Mendocino County Safe Routes to School Plan (2014)</b>	Safe Routes to School (SRTS) is a program with a simple goal: helping more children get to school by walking and bicycling including the schools Westport Village Community School and Three Rivers Learning Center.
<b>Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019)</b>	The project’s goal is to improve sidewalks, paths, and safe crossings in Mendocino County so it’s easier to walk where you need to travel.
<b>Mendocino Council of Governments 2020 Regional Transportation Improvement Program (2019)</b>	The Regional Transportation Improvement Program (RTIP) is a program of highway, local road, transit and active transportation projects that a region plans to fund with State and Federal revenue.

# City of Fort Bragg Local Roadway Safety Plan

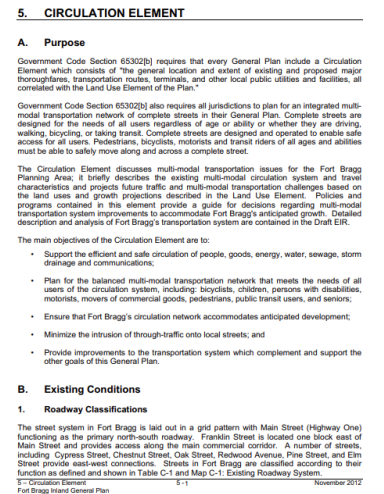
## City of Fort Bragg Coastal General Plan (2008)

The General Plan presents a consolidated framework of decisions for guiding where and how development should occur in Fort Bragg. The Coastal General Plan applied to all projects in the Coastal Zone. Circulation Element discusses transportation issues for the Fort Bragg Planning Area; it briefly describes the existing circulation system and travel characteristics and projects future traffic based on the land uses and growth projections described in the Land Use Element. The Circulation Element ensure that Fort Bragg's circulation network is sufficient to accommodate anticipated development.



## Inland General Plan (2012)

This General Plan regulates land use for inland properties that are in city limits, but not in the Coastal Zone. The policy framework of the Inland General Plan has a long range perspective and is intended to address development concerns for the next ten years (2022). The Circulation Element contains policies for public transit, bicycle facilities, parking and transportation for the mobility impaired, taking into account the relationship between land use and transportation needs of the community.

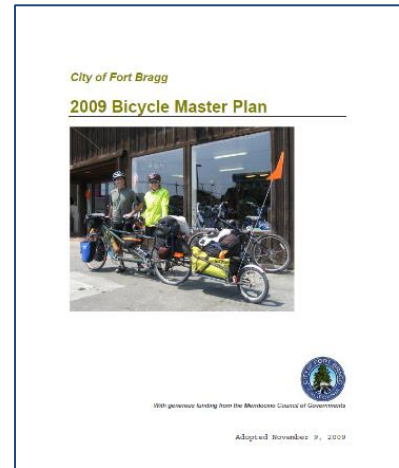




## City of Fort Bragg Local Roadway Safety Plan

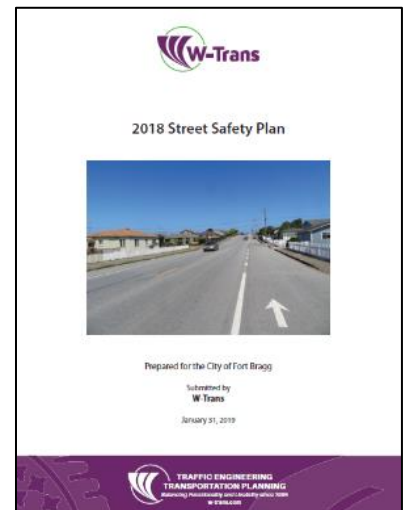
### City of Fort Bragg 2009 Bicycle Master Plan

In 2009, the City adopted a Bicycle Master Plan that incorporated the development of bike paths, bike lanes, and bike routes throughout the City. The City's Bicycle Master Plan builds on the existing Bicycle Circulation Plan. Bicycling is an important transportation option that offers many benefits to the Fort Bragg community. The Bicycle Master Plan was prepared to direct the City's efforts to improve the cycling environment in Fort Bragg.



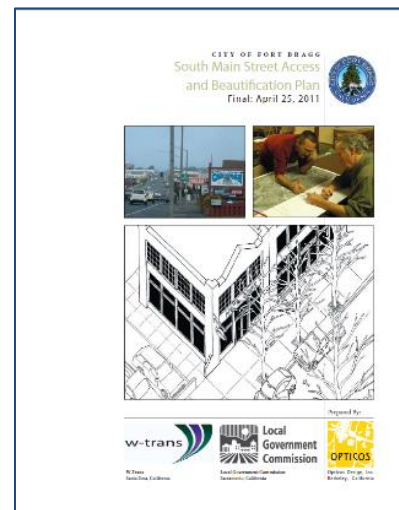
### 2018 Street Safety Plan

The City of Fort Bragg completed a Residential Streets Safety Plan (RSSP) in 2005. The 2018 Street Safety Plan is an expansion and update of the 2011 Residential Streets Safety Plan that also address commercial street safety. The roadways evaluated in this study are Maple Street, Elm Street, Pine Street, Main Street (SR 1), Fir Street and Harold Street. This plan will provide guidance on countermeasures selected for the LRSP.



### South Main Street Access and Beautification Plan (2011)

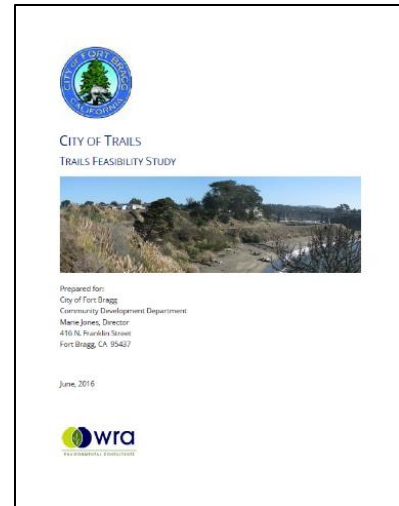
This plan's primary focus is to improve safety, mobility, and access between central Fort Bragg and its southern business, recreational, and residential areas and to improve the aesthetic qualities of the South Main corridor through design recommendations that positively impact the overall urban design of the project area.



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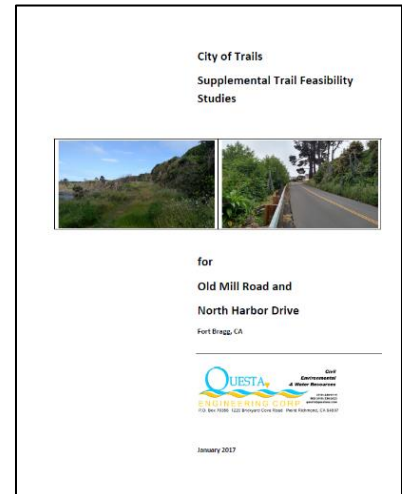
### City of Trails: Trails Feasibility Study (2016)

The City of Trails Feasibility Study evaluates three potential new priority trails which could be developed to expand the existing trail network in Fort Bragg. The purpose of the City of Trails Feasibility Study is to identify trail opportunities that are beneficial and of interest to the community; provide detailed feasibility and development cost information for the selected priority trails; and identify permitting requirements. Trails benefit communities by providing healthy opportunities to walk and ride to daily destinations and recreational activities. The availability of trails can, over time, reduce a community's dependence on cars, total vehicle miles traveled (VMTs) and greenhouse gas emissions. This plan will provide guidance on countermeasures selected for the LRSP.



### City of Trails: Supplemental Trail Feasibility Studies (2017)

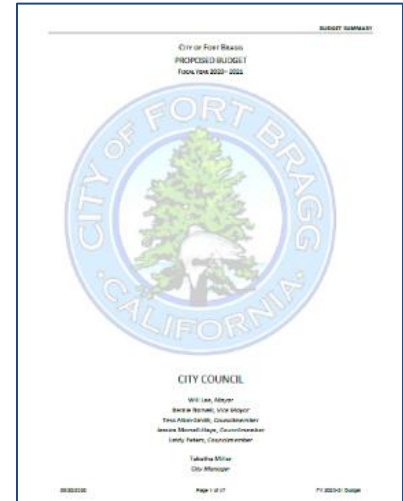
The City of Trails Supplemental Trail Feasibility Study evaluates engineering and geotechnical challenges associated with implementation of two segments of a coastal trail to connect the existing Coastal Trail-South Segment, with Noyo Harbor. This document builds on the City of Trails Feasibility Study, in which the Old Mill Road Multi-use Trail to North Noyo Harbor is described as a priority trail, in addition, this Study also addresses the feasibility of placing either a Class I or II bicycle trail parallel to North Harbor Drive. This plan will provide guidance on countermeasures selected for the LRSP.



## City of Fort Bragg Local Roadway Safety Plan

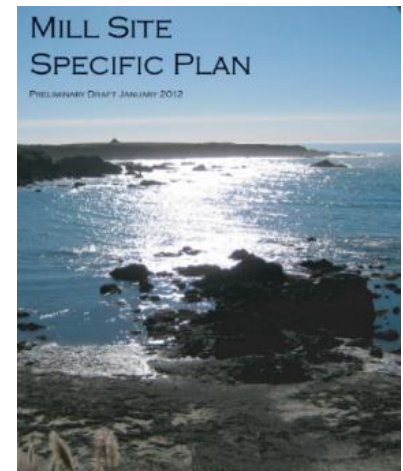
### City of Fort Bragg FY 2020-2021 Budget

The City of Fort Bragg's fiscal year 2020 – 2021 Budget outlines the funds the city has allocated to various departments and project include street and road maintenance and improvements. Street maintenance, along with traffic and safety improvement cost along with their funding sources have been listed under the FY 2021-2025 Capital Improvement Program.



### Mill Site Specific Plan (2012)

The Mill Site Specific Plan is the result of a community-based vision for the redevelopment of the old mill site in Fort Bragg that defines the framework for future redevelopment. The Mill Site Specific Plan Study Area includes the Plan Area and the adjacent 82-acre coastal trail and parkland area to the west. The central elements to the Specific Plan's central vision are the coastline, walkability, public spaces, a central business district extension, opens space and habitat restoration.



### Mendocino County Regional Active Transportation Plan (2017)

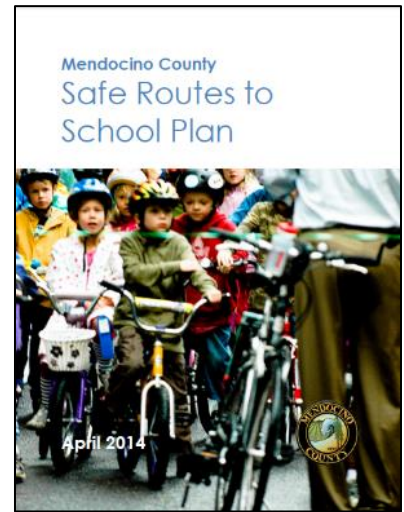
This Plan is intended to identify priority bicycle and pedestrian improvements within all jurisdictions of Mendocino County, which include the Cities of Ukiah, Willits, Fort Bragg and Point Arena and the unincorporated areas of the County of Mendocino.



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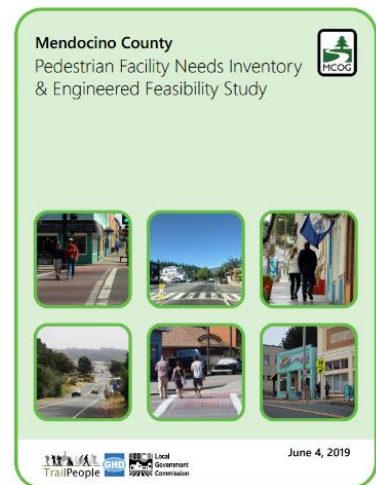
**Mendocino County Safe Routes to School Plan (2014)**

Safe Routes to School (SRTS) is a program with a simple goal: helping more children get to school by walking and bicycling. The plan envisions active kids using safe streets, helped by engaged adults (from teachers to parents, engineers, planners and police officers), surrounded by responsible drivers. The plan is the first area-wide Safe Routes to School plan in Mendocino County, designed to serve schools in the unincorporated areas of the county. The plan includes recommendations for a Safe Routes to School program that will strive to enhance children's health and well-being, ease traffic congestion near the school to improve safety, increase the number of students getting regular physical activity and improve air quality around schools.



**Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019)**

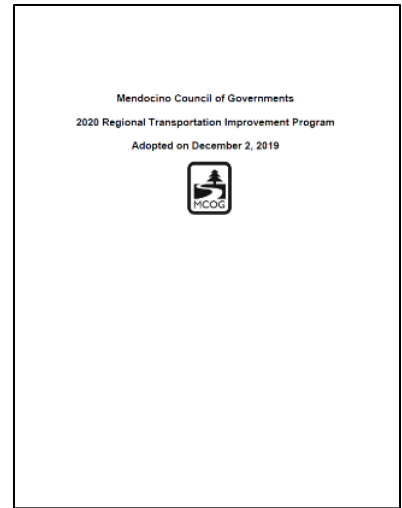
The Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study has a simple goal: to improve sidewalks, paths, and safe crossings in Mendocino County so it's easier to walk where you need to. This study covers all of Mendocino County; a vast amount of territory and many communities from large to tiny. This report describes all the potential pedestrian access improvement projects identified through the review of past studies, the inventory and analysis of existing conditions for pedestrian access, agency staff input, and the public input from workshops, meetings and on-line surveys



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**Mendocino Council of Governments 2020 Regional  
Transportation Improvement Program (2019)**

The Regional Transportation Improvement Program (RTIP) is a program of highway, local road, transit and active transportation projects that a region plans to fund with State and Federal revenue programmed by the California Transportation Commission in the State Transportation Improvement Program (STIP).



### **3. Collision Data Collection and Analysis**

This chapter summarizes the results of a citywide collision analysis for collisions that have occurred in the City of Fort Bragg between January 2015 and December 2019. A five-year city-wide collision data set was retrieved from Transportation Injury Mapping System (TIMS) and Statewide Integrated Traffic Records System (SWITRS).

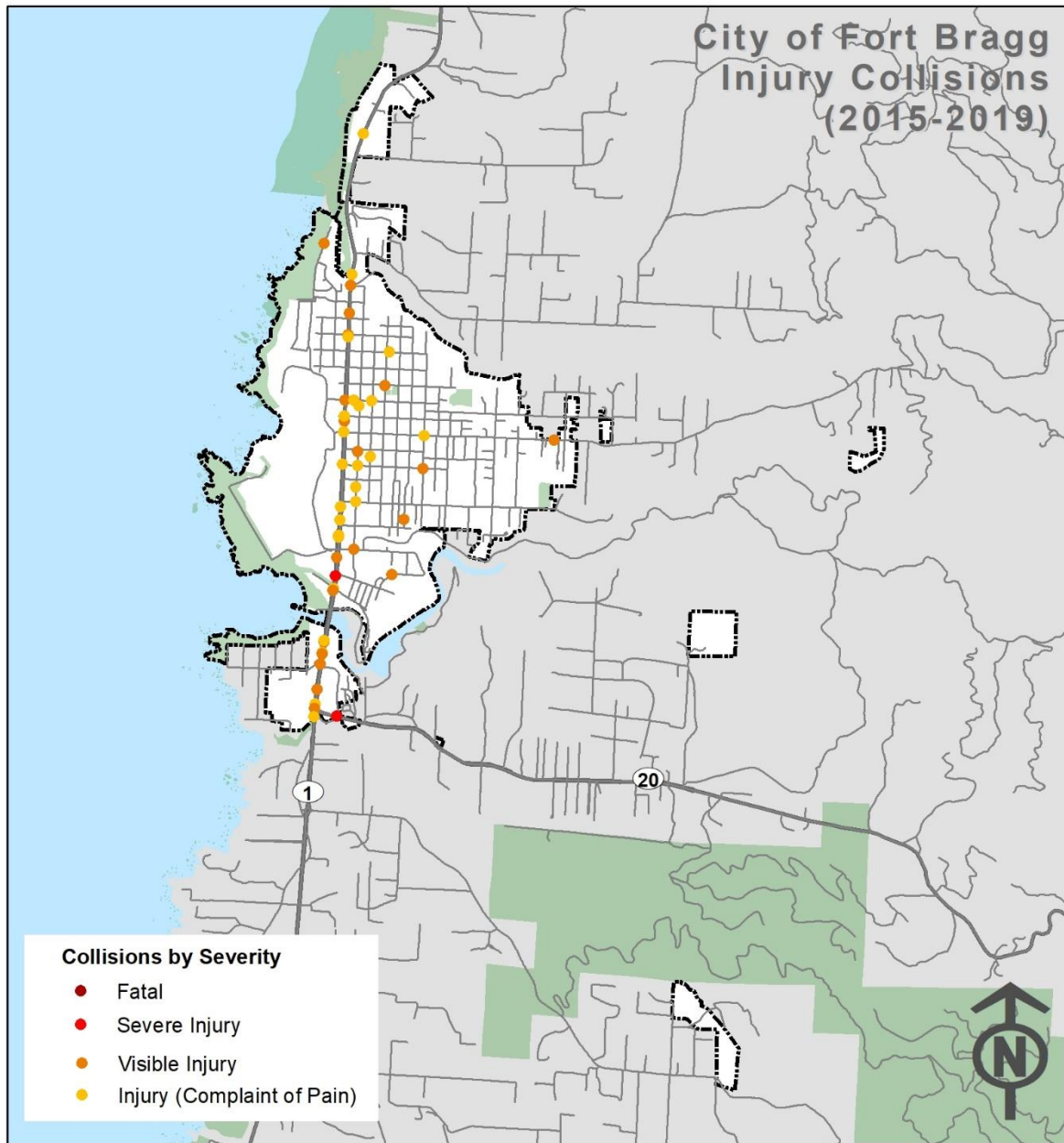
The LRSP focuses on systemically identifying and analyzing traffic safety issues to recommend appropriate safety strategies and improvements. This chapter starts with an analysis of citywide collisions of all severity, including Property Damage Only (PDO) collisions, retrieved from Transportation Injury Mapping System (TIMS) and Statewide Integrated Traffic Records System (SWITRS). Further on, a detailed analysis was conducted for high-injury collisions, including fatal and severe injury (F+SI) collisions that have occurred on Fort Bragg's roadways. After this data was separated, a comprehensive evaluation was conducted based on factors such as collision severity, type of collision, primary collision factor, lighting, weather and time of the day. The following is a brief overview of the sections:

- Demographic and Jurisdiction Information
- Data Collection
- Collision Data Analysis
- Fatal and Severe Injury Collision Analysis
- Geographic Collision Analysis
- High Injury Network
- Summary

Error! Reference source not found. illustrates all the injury collisions that have occurred in Fort Bragg from January 2015 to December 2019.

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Figure 5. All Injury Collisions on Fort Bragg Roadways (2015 – 2019)



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**Demographic and Jurisdiction Characteristics**

This section provides an understanding of the demographics of the City of Fort Bragg and Mendocino County, including characteristics like the population, centerline miles of roadway and commute to work. The data was collected from the United States Census Bureau<sup>1</sup>.

**Population**

According to the 2015 - 2019 American Community Service (ACS) 5-year Estimate data, the population of Fort Bragg is 7,302, which is 8.4 percent of the county population. The population as well as the centerline miles are listed in **Table 2**.

**Table 2. Fort Bragg and Mendocino Population and Centerline Miles**

	Population	Percent of County Population	Centerline Miles	Percent of County Centerline Miles
<b>Point Arena</b>	421	0.5%	2.3	0.2%
<b>Willits</b>	4,893	5.6%	20.5	1.8%
<b>Fort Bragg</b>	7,302	8.4%	28.1	2.5%
<b>Ukiah</b>	15,943	18.4%	58.9	5.3%
<b>Unincorporated</b>	58,190	67.1%	1,009.9	90.2%
<b>Total</b>	86,749		1,119.7	

**Commute to Work**

In the City of Fort Bragg, approximately 78 percent of residents travel by cars or vans to work, out of which 64 percent drive alone and 14 percent carpool. About 14 percent of residents walk to work and 1 percent of residents take transit. The different modes of transportation used to commute to work for the City are shown in **Table 3**.

**Table 3. City of Fort Bragg Commute to Work Census Data**

Commute to Work	Fort Bragg	Commute to Work	Fort Bragg
<b>Drive alone</b>	64%	Bicycle	0%
<b>Carpool</b>	14%	Work from Home	8%
<b>Public Transportation</b>	1%	Other	0%
<b>Walked</b>	14%		

**Jurisdiction Rankings**

Between 2015 and 2019, Mendocino County had 112 fatal traffic collisions, with 2 occurring in Fort Bragg, with a traffic fatality rate per 100,000 population of 25.82 for the County as a whole, and 5.28 for Fort Bragg. These rates are less than the California average and the country

<sup>1</sup> United States Census Bureau. (2021). 2015-2019 American Community Service ACS 5-year Estimate <https://data.census.gov>



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average with 8.95 and 10.28, respectively. **Table 4** shows the comparison of traffic fatality rates and population.

**Table 4. Jurisdiction Ranking**

Jurisdiction	Fatal Traffic Collisions (2015-2019)	Population	5 year Fatality Rate per 100,000
<b>Fort Bragg</b>	2	7,302	5.48
<b>Mendocino County</b>	112*	86,749	25.82
<b>California</b>	17,684	39,512,223	8.95
<b>United States</b>	168,742	328,239,523	10.28
<b>*Note: These numbers include all state route collisions fatalities</b>			
<b>Source: TIMS, Census, NHTSA</b>			

### Office of Traffic Safety Rankings

Additional information on collisions in the City of Fort Bragg is provided by the California Office of Traffic Safety (OTS). OTS is designated by the Governor to receive federal traffic safety funds for coordinating California's highway safety programs. OTS rankings from 2018, the latest available year, indicate that the City of Fort Bragg ranks in the top, meaning higher collisions rates in alcohol involved collisions (3 out of 75 similarly sized cities), pedestrian collisions (15 out of 75 similarly sized cities) and speed related collisions (16 out of 75 similarly sized cities). These rankings take into account fatal and injury crashes per population and per vehicle miles traveled (VMT). Overall Fort Bragg ranks 46 out 102 similarly sized cities in California in fatal and injury collisions. **Table 5** provides a summary of the 2018 rankings<sup>2</sup>.

**Table 5. Office of Traffic Safety Ratings 2018**

OTS 2018 Ranking	Fort Bragg	OTS 2018 Ranking	Fort Bragg	OTS 2018 Ranking	Fort Bragg
<b>Total Fatality and Injury</b>	13/75	Pedestrian	15/75	Speed Related	16/75
<b>Alcohol Involved</b>	3/75	Bicycle	36/75	Nighttime	28/75

<sup>2</sup> California Office of Traffic Safety. (2018). Office of Traffic Safety Rankings 2018. [https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv-wpcf-year=2018&wpv-wpcf-city\\_county=Fort+Bragg&wpv\\_filter\\_submit=Submit](https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv-wpcf-year=2018&wpv-wpcf-city_county=Fort+Bragg&wpv_filter_submit=Submit)

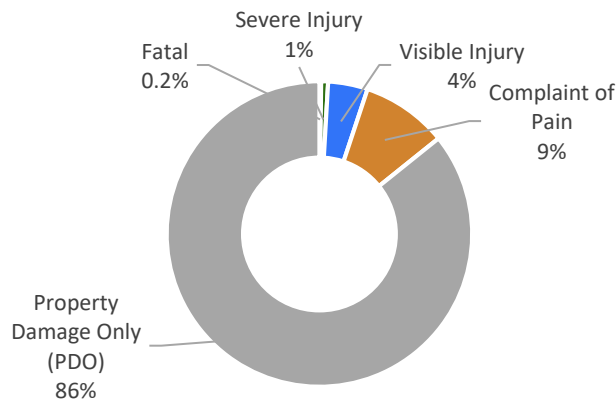
## Collision Data Collection

Collision data helps understand different factors that might be influencing collision patterns and various factors leading to collisions in a given area. For the purpose of this analysis, a five-year jurisdiction-wide collision data, from 2015 to 2019 was retrieved from Transportation Injury Mapping System (TIMS) and Statewide Integrated Traffic Records System (SWITRS)<sup>3</sup>. State route roadways in Fort Bragg were included in this analysis. The collision data was analyzed and plotted in ArcMap to identify high-risk intersections and roadways segments.

## Collision Data Analysis

There were a total of 548 collisions reported City-wide from 2015 to 2019. Out of these 470 collisions (86 percent) were property damage only (PDO) collisions, 50 collisions (9 percent) led to complaint of pain injury and 23 collisions (4 percent) led to a visible injury. There were 5 F+SI (fatal and severe injury) collisions, 4 collisions (1 percent) led to a severe injury and 1 collisions led to a fatality. **Figure 6** illustrates the classification of all collisions based on severity.

**Figure 6. Collisions by Severity (2015-2019)**



The analysis first includes a comparative evaluation between all collisions and F+SI collisions, based on various factors including but not limited to the collision trend, primary collision factor, collision type,

facility type, motor vehicle involved with, weather, lighting, and time of the day. Further on, a comprehensive analysis is conducted for only F+SI collisions. F+SI collisions cause the most damage to those affected, infrastructure and the aftermath of these collisions lead to great expenses for jurisdiction administration. The LRSP process thus focuses on these collision locations to proactively identify and counter their respective safety issues.

<sup>3</sup> California Highway Patrol. (2021). Statewide Integrated Traffic Records System. <https://www.chp.ca.gov/programs-services/services-information/switrs-internet-statewide-integrated-traffic-records-system>

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The collision data was segregated by facility type, i.e. based on collisions occurring on intersections and roadway segments. For the purposes of the analysis, a collision was said to have occurred at an intersection if it occurred within 250 feet of it. The reported collisions categorized by facility type and collision severity are presented in **Table 6**.

**Table 6. Collisions by Severity and Facility Type**

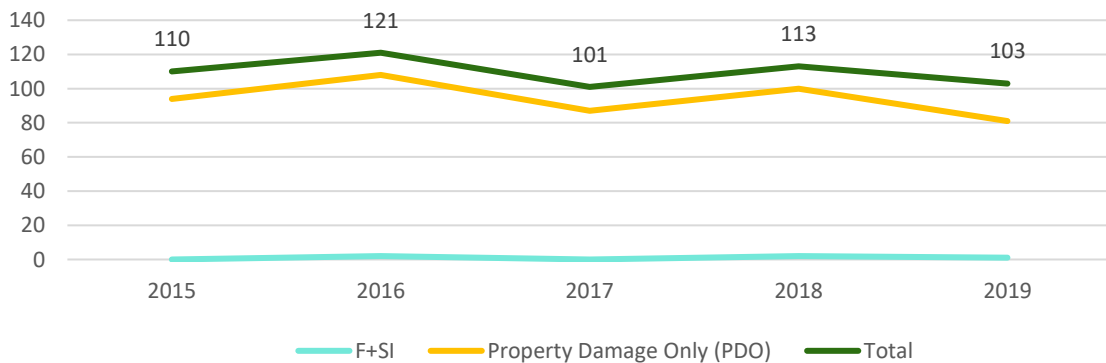
Collision Severity	Roadway Segment	Intersection	Total
<b>Fatal</b>	0	1	1
<b>Severe Injury</b>	0	4	4
<b>Visible Injury</b>	7	16	23
<b>Complaint of Pain</b>	5	45	50
<b>Property Damage Only (PDO)</b>	43	427	470
Total	<b>55</b>	<b>493</b>	<b>548</b>

**Preliminary Analysis**

**Collision Severity by Year**

For all collisions, the number of collisions decreased from 2015 to 2019. The highest number of collisions (121 collisions) were observed in 2016 and the lowest number of collisions (101) were observed in 2017. A total of 5 F+SI collisions occurred in the City of Fort Bragg during the study period. No F+SI collisions occurred in 2015 and 2017. Overall, F+SI collisions were observed to rise from 2017 to 2019, with the highest number of F+SI collisions (2 collisions) occurring in the years 2016 and 2018. **Figure 7** the five-year collision trend for all collisions, F+SI collisions and also PDO collisions.

**Figure 7. Five Year Collision Trend**

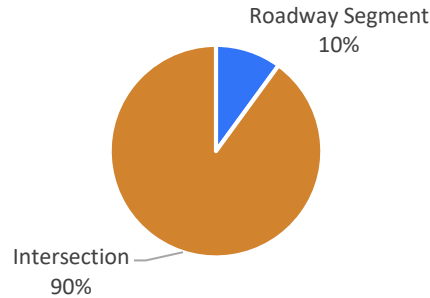


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**Intersection vs. Roadway Collisions**

When evaluating roadways vs intersections, it was observed that the majority of collisions occurred at intersections. In the City of Fort Bragg, 90% of all collisions (493 collisions) occurred at intersections whereas 10% (55 collisions) occurred on roadway segments. This classification by facility type can be observed in **Figure 8**.

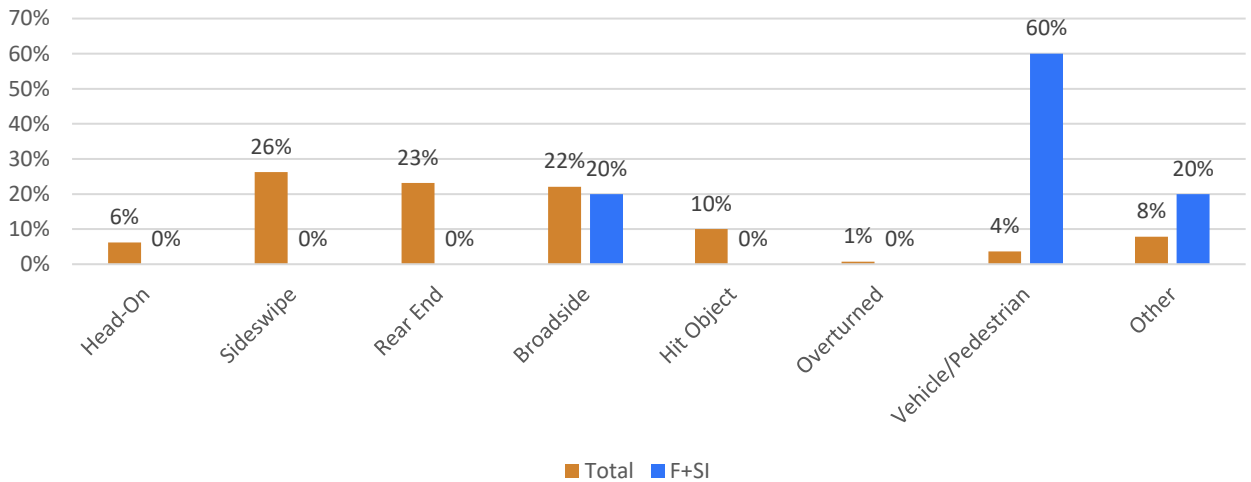
**Figure 8. Intersection vs. Roadway Collisions - All Collisions**



**Collision Type**

Considering collisions of all severity the most commonly occurring collision type was sideswipe collisions (26 percent) and rear end collisions (23 percent). The collision type for F+SI collisions are noticeably different. For F+SI collisions, the most commonly occurring collision type was vehicle/pedestrian collisions (60 percent) and the second most common was broadside collisions (20%). **Figure 9** illustrates the collision type for all collisions as well as F+SI collisions.

**Figure 9. Collision Type – All Collisions vs. F+SI Collisions**

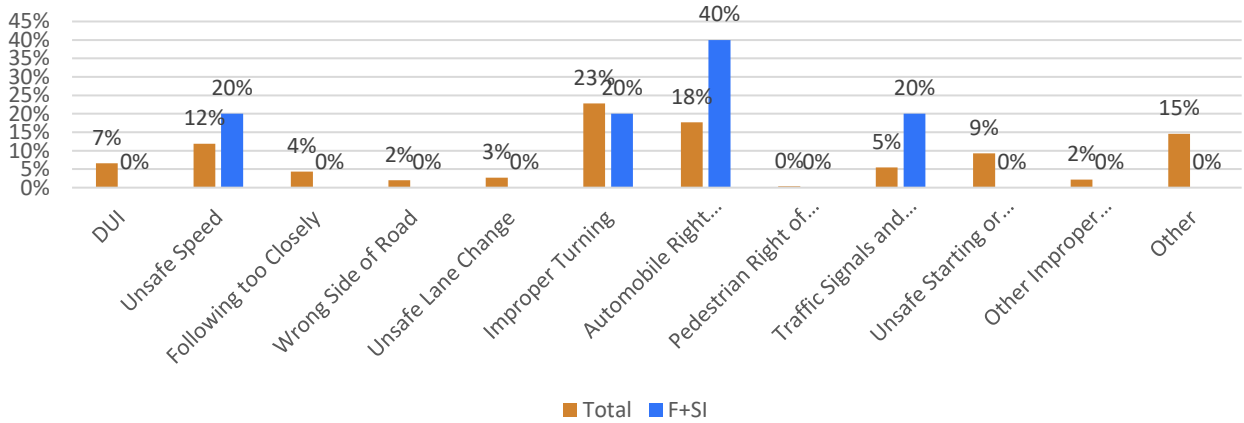


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**Violation Category**

Considering collisions of all severity, the most common violation category was observed to be improper turning (23 percent) and automobile right of way (18 percent). For F+SI collisions, automobile right of way (40 percent) was also observed to be the main violation categories. **Figure 10** illustrates the violation category for all collisions and F+SI collisions.

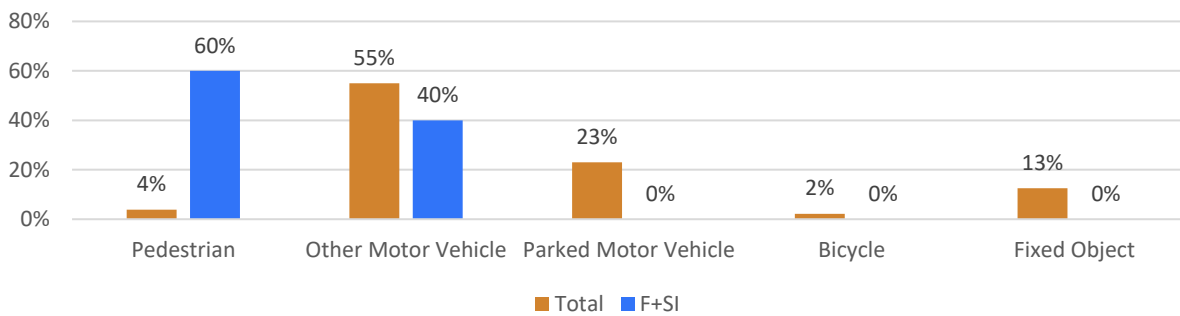
**Figure 10. Violation Category: All Collisions vs. F+SI Collisions**



**Motor Vehicle Involved With**

Considering all collisions, 55 percent of the collisions are motor vehicle involved with another motor vehicle. The remaining collisions include motor vehicle involved with parked vehicles (23 percent) and motor vehicle involved with fixed object (13 percent). The trends for F+SI collisions are noticeably different. For F+SI collisions, 60 percent of the collisions involved a pedestrian and 40 percent involved another vehicle, indicating these collision types are more likely to result in a fatal or severe collision. **Figure 11** illustrates the percentage for all collisions as well as F+SI collisions.

**Figure 11. Motor Vehicle Involved with: All Collisions vs. F+SI Collisions**

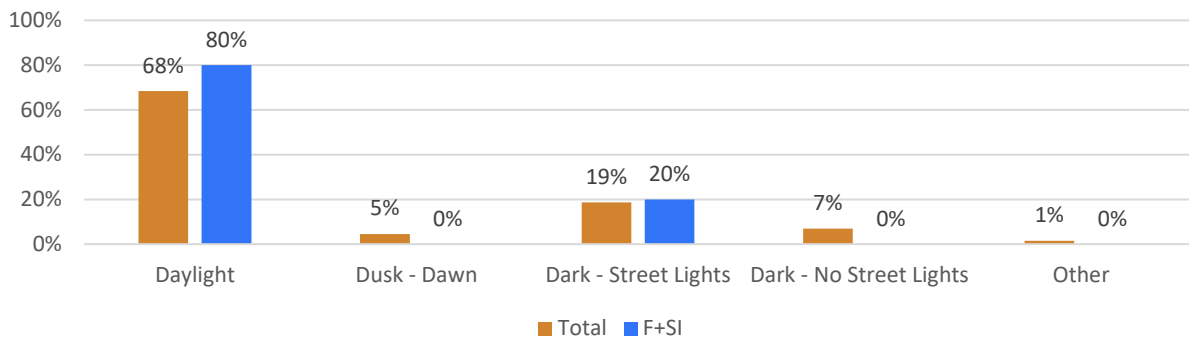


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### Lighting

For collisions of all severity, 68 percent of collisions have occurred in daylight and 19 percent of collisions have occurred in the dark on streets with street lights. For F+SI collisions, 80 percent of collisions have occurred in daylight and 20 percent of collisions occurred in the dark on streets with street lights. **Figure 12** illustrates the lighting condition for all collisions and F+SI collisions.

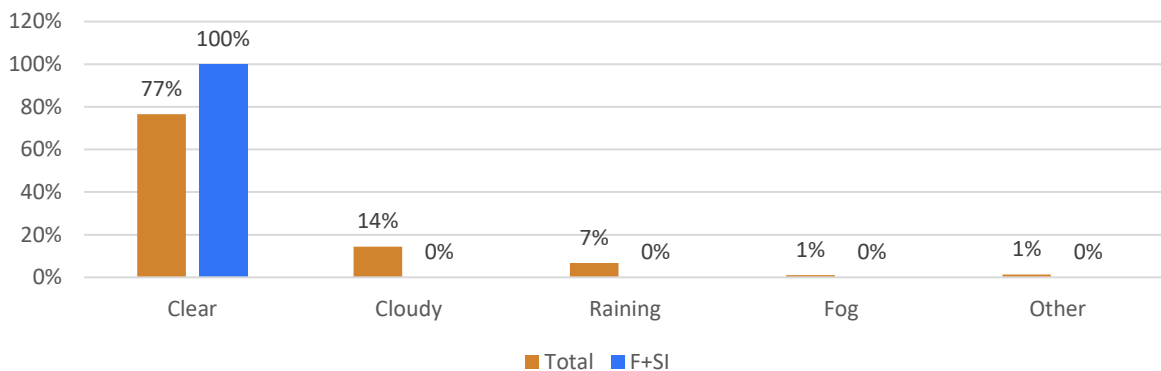
**Figure 12. Lighting Conditions: All Collisions vs. F+SI Collisions**



### Weather

For all collisions, 77 percent of the collisions have occurred during clear weather conditions and 14 percent collisions have observed to occur during cloudy weather conditions. For F+SI collisions, 100 percent of the collisions have occurred during clear weather conditions. **Figure 13** illustrates the percentage distribution of weather conditions during occurrence of collisions of all severity as well as F+SI collisions.

**Figure 13. Weather Conditions: All Collisions vs. F+SI Collisions**



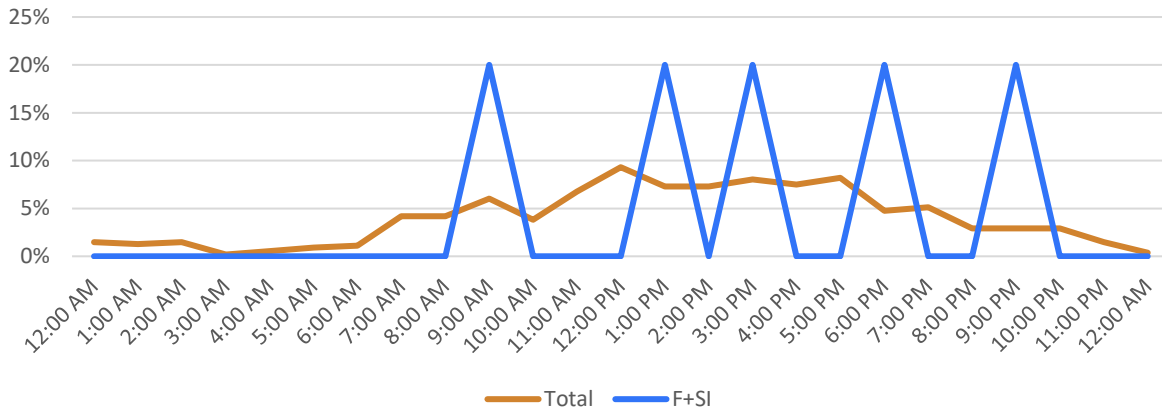
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### Time of the Day

For collisions of all severity, maximum number of collisions have occurred between 12:00 p.m. to 1:00 p.m. (9 percent) and the minimum number of collisions have occurred between 3:00 a.m. to 6:00 a.m. (0 percent). For all F+SI collisions, the collisions occurred throughout the day. **Figure 14** illustrates the percentage of collisions occurring during the day for all severity collisions as well as F+SI collisions.

Figure 14. Time of the Day: All Collisions vs. F+SI Collisions



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**Fatal and Severe Injury Collision Analysis**

The detailed collision analysis is effective for identifying high-risk locations by evaluating collisions that have led to a fatality or a severe injury. Collisions have been further analyzed taking into account the following collision attributes:

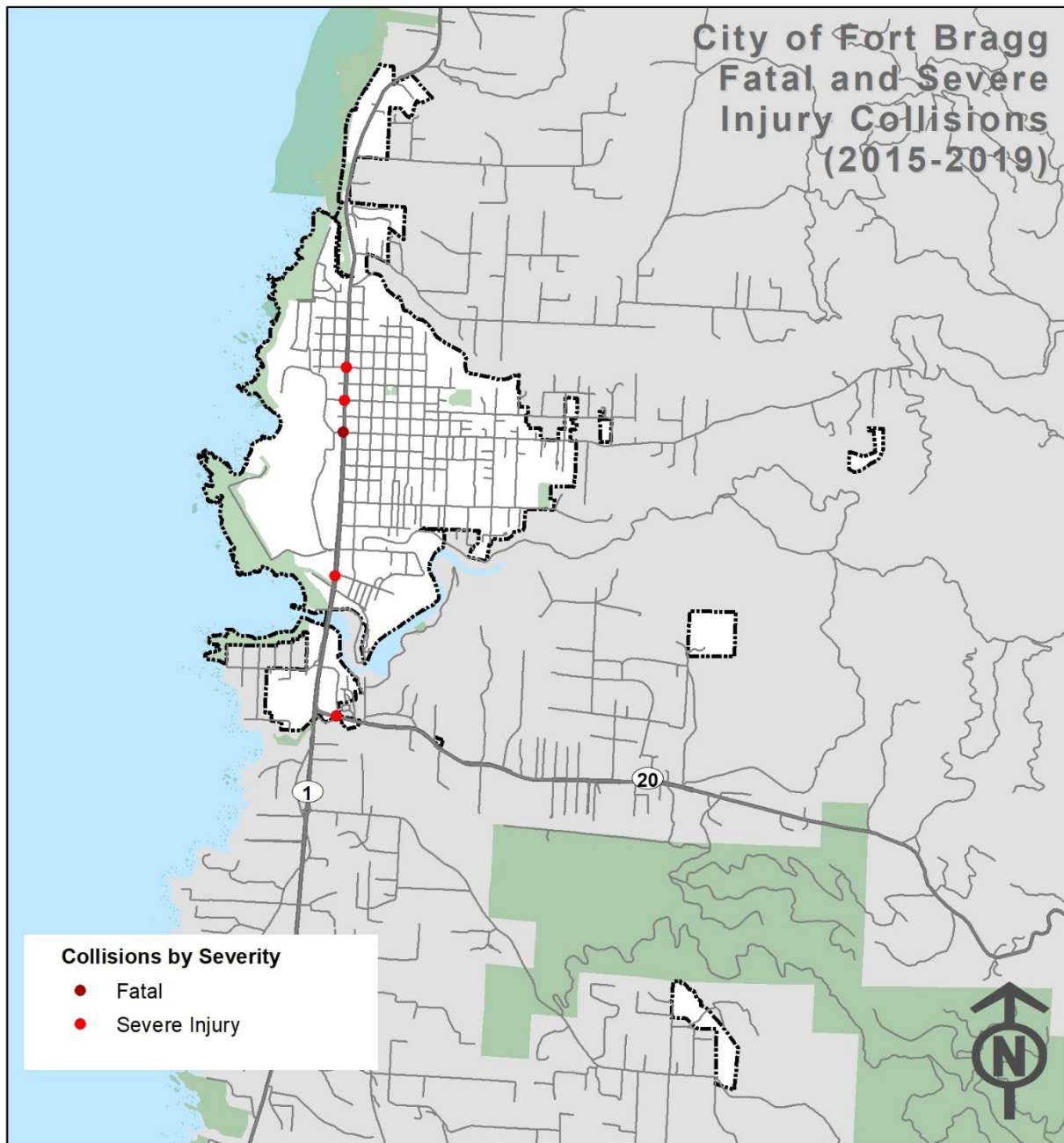
- Location
- Violation Category
- Collision Type vs. Violation Category
- Collision Type vs. Motor Vehicle Involved With
- Motor Vehicle Involved With vs. Violation Category
- Collision Type vs. Lighting Conditions
- Collision Types vs. Time of Day
- Gender vs. Age

**Figure 15** illustrates all the location of the fatal and severe injury collisions that have occurred in the City from 1/1/2015 to 12/31/2019.



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Figure 15. Fort Bragg F+SI Collisions (2015-2019)

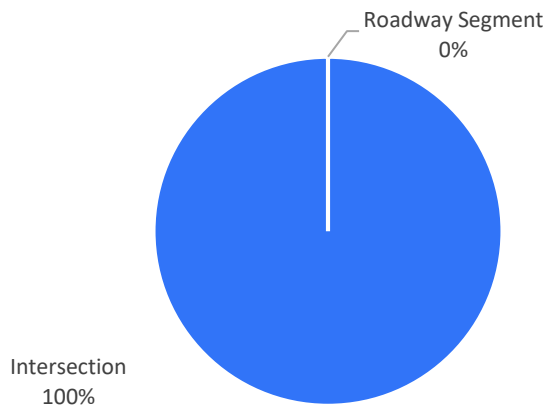


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### Facility Type

Of the total 5 F+SI collisions that occurred in Fort Bragg, 5 collisions (100 percent) occurred at intersections (within 250 feet of an intersection) and none occurred on roadway segment or at mid-block locations. This distribution is illustrated in **Figure 16**.

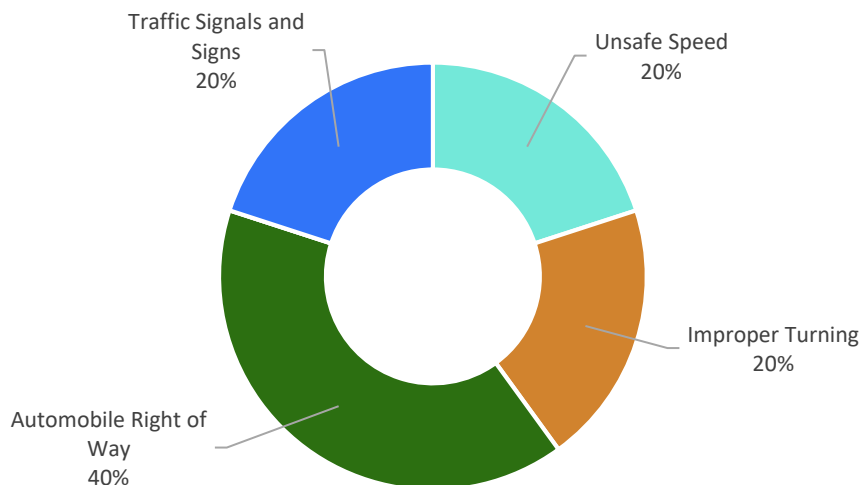
Figure 16. F+SI Collisions: Roadway Segments and Intersections



### Violation Category

For F+SI collisions, automobile right of way (40 percent) was observed to be major violation categories. **Figure 17** illustrates the violation category for F+SI collisions.

Figure 17. F+SI Collisions: Violation Category

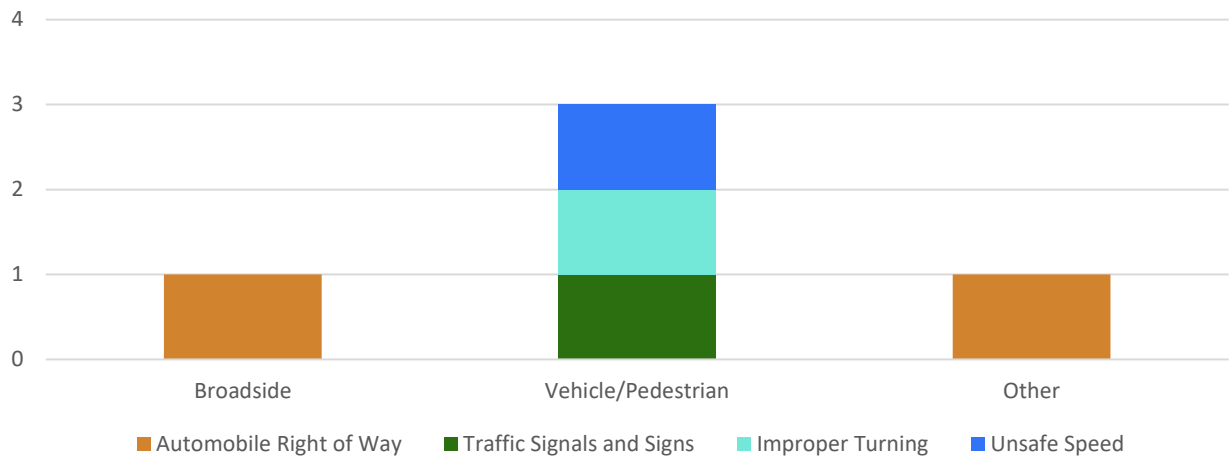


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**Collision Type and Violation Category**

For all collisions that led to a fatality or severe injury, the most common violation types were automobile right of way. **Figure 18** illustrates the type of collision as well as the violation category for F+SI collisions.

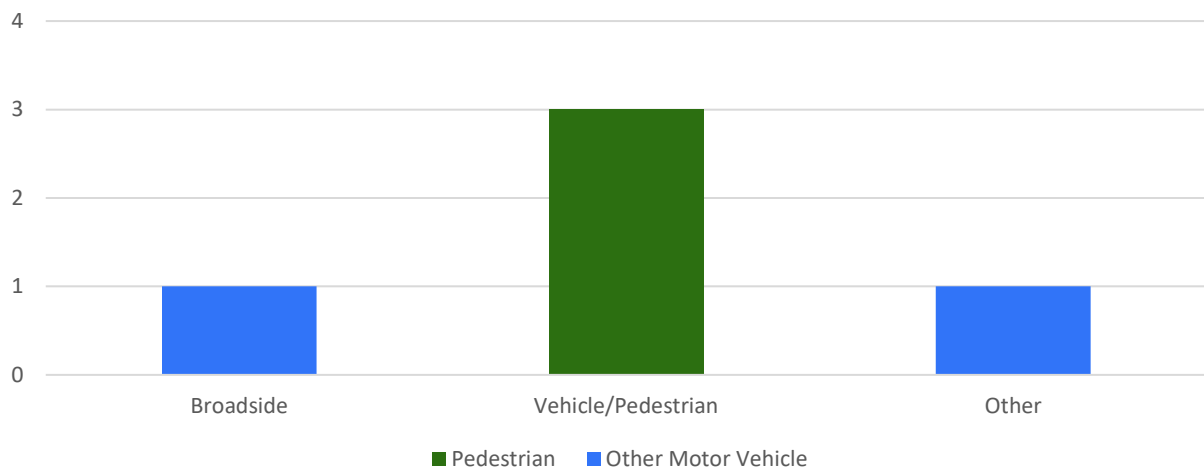
**Figure 18. F+SI Collisions: Collision Type Vs Violation Category (2015-2019)**



**Collision Type and Motor Vehicle Involved With**

For all F+SI collisions, the most common collision types were vehicle/pedestrian collisions and broadside collisions that occurred between two motor vehicles. **Figure 19** illustrates the type of collision as well as the motor vehicle involved with for F+SI collisions.

**Figure 19. F+SI Collisions: Type and Motor Vehicle Involved with**

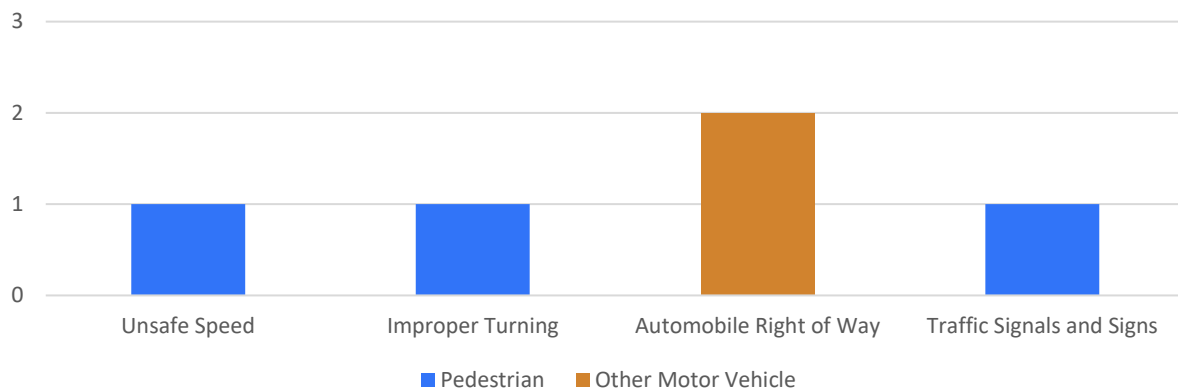


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**Motor Vehicle Involved with and Violation Category**

For all collisions that led to a fatality or severe injury, the collision violation category of collisions that led to the highest amount of collisions was automobile right of way collisions. The results, with violation category and motor vehicle involved with, are shown in **Figure 20**.

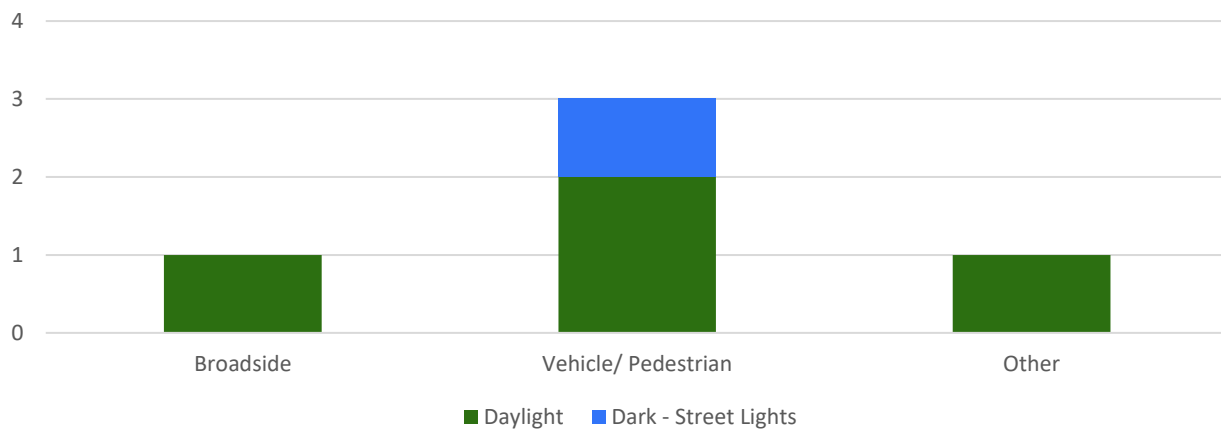
**Figure 20. F+SI Collisions: Motor Vehicle Involved with vs Violation Category**



**Collision Type and Lighting Conditions**

For all F+SI collisions, 4 collisions occurred in the daylight. The only collisions that occurred in the dark was a vehicle/pedestrian collision. **Figure 21** illustrates the lighting condition and the collision type as observed for F+SI collisions.

**Figure 21. F+SI Collisions: Collision Type Vs Lighting Conditions**

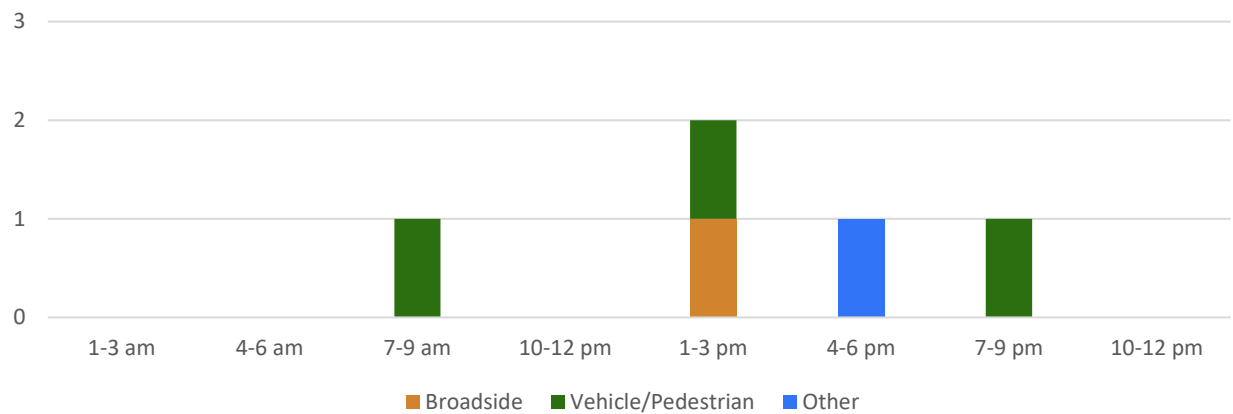


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### Collision Type and Time of the Day

For all the F+SI collisions, the most common collision type was vehicle pedestrian collisions, which occurred throughout the day. The only broadside collision occurred during the afternoon. **Figure 22** illustrates the collision type by the time of the day for all F+SI collisions.

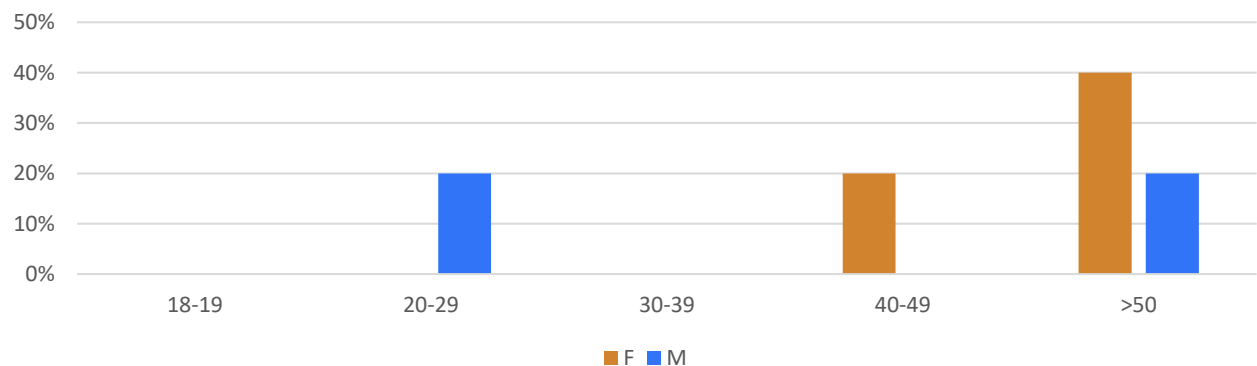
Figure 22. F+SI Collisions: Collisions Type vs Time of the Day



### Gender vs. Age

For F+SI collisions, the sex of the party at fault was slightly more likely to be female than male (60 percent of F+SI collisions vs 40 percent). The party at fault for F+SI collisions are also more likely to be older, with the majority age 40 or older (80 percent). **Figure 23** illustrates the sex and age of the party at fault for F+SI collisions.

Figure 23. F+SI Collisions: Age vs Sex



## Geographic Collision Analysis

This section describes a detailed geographic collision analysis performed for injury collisions occurring at roadway segments and intersections in the City of Fort Bragg. The above collision analysis was used to identify four main collision factors that highlight the top collision trends in the City of Fort Bragg. These four collision factors were identified to be vehicle pedestrian collisions, automobile right of way violation collisions, unsafe speed collisions and broadside collisions.

### Vehicle/Pedestrian Collisions

For F+SI collisions in the City of Fort Bragg, 60 percent of collisions were pedestrian involved collisions, compared to just 4 percent for collisions of all severity, meaning pedestrian collisions are more likely to result in a fatal or severe injury. **Figure 24** shows the distribution of pedestrian collisions throughout the City of Fort Bragg between 2015 and 2019. Redwood Avenue, Highway 1, Franklin Street and Harold Street have a higher concentration of pedestrian collisions, compared to other roads in Fort Bragg. The Office of Traffic Safety ranked Fort Bragg 15<sup>th</sup> out of 75 similarly sized cities with high levels of pedestrian collisions (one being the highest, or worst)<sup>4</sup>.

### Automobile Right of Way Collisions

For F+SI collisions in the City of Fort Bragg, 40 percent of collisions were automobile right of way collisions compared to 18 percent of collisions of all severity, meaning automobile right of way collisions are more likely to result in a fatal or severe injury. **Figure 25** shows the distribution of automobile right of way collisions throughout Fort Bragg between 2015 and 2019. South Main Street, East Bush Street, East Laurel Street, East Oak Street and Highway 20 have a higher concentration of automobile right of way collisions, compared to other Fort Bragg roads.

### Unsafe Speed Collisions

For F+SI collisions in the City of Fort Bragg, 20 percent of collisions were unsafe speed collisions compared to 12 percent of collisions of all severity, meaning unsafe speed collisions are more likely to result in a fatal or severe injury. **Figure 26** shows the distribution of unsafe speed collisions throughout Fort Bragg between 2015 and 2019. South Main Street, West Oak Street, East Fir Street and South Harold Street have a higher concentration of unsafe speed collisions, compared to other Fort Bragg roads. The Office of Traffic Safety ranked Fort Bragg 16<sup>th</sup> out of 75

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<sup>4</sup> California Office of Traffic Safety. (2018). Office of Traffic Safety Rankings 2018. [https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv-wpcf-year=2018&wpv-wpcf-city\\_county=Fort+Bragg&wpv\\_filter\\_submit=Submit](https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv-wpcf-year=2018&wpv-wpcf-city_county=Fort+Bragg&wpv_filter_submit=Submit)

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similarly sized cities with high levels of speed related collisions (one being the highest, or worst)<sup>2</sup>.

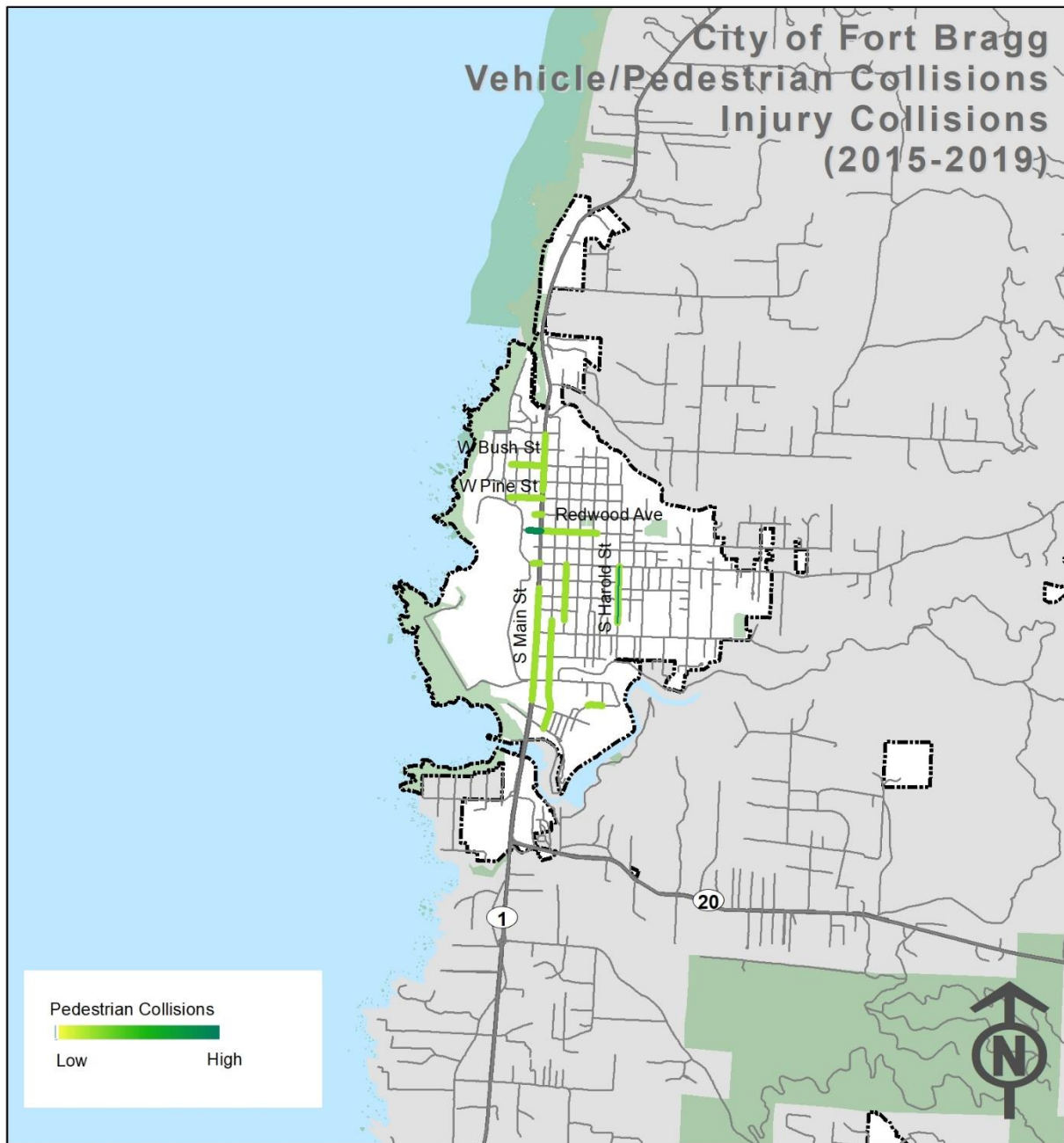
#### **Broadside Collisions**

For F+SI collisions in the City of Fort Bragg, 20 percent of collisions were broadside collisions.

**Figure 27** shows the distribution of broadside collisions throughout Fort Bragg between 2015 and 2019. Main Street, Laurel Street, Oak Street and Maple Street have a higher concentration of broadside collisions, compared to other Fort Bragg roads.

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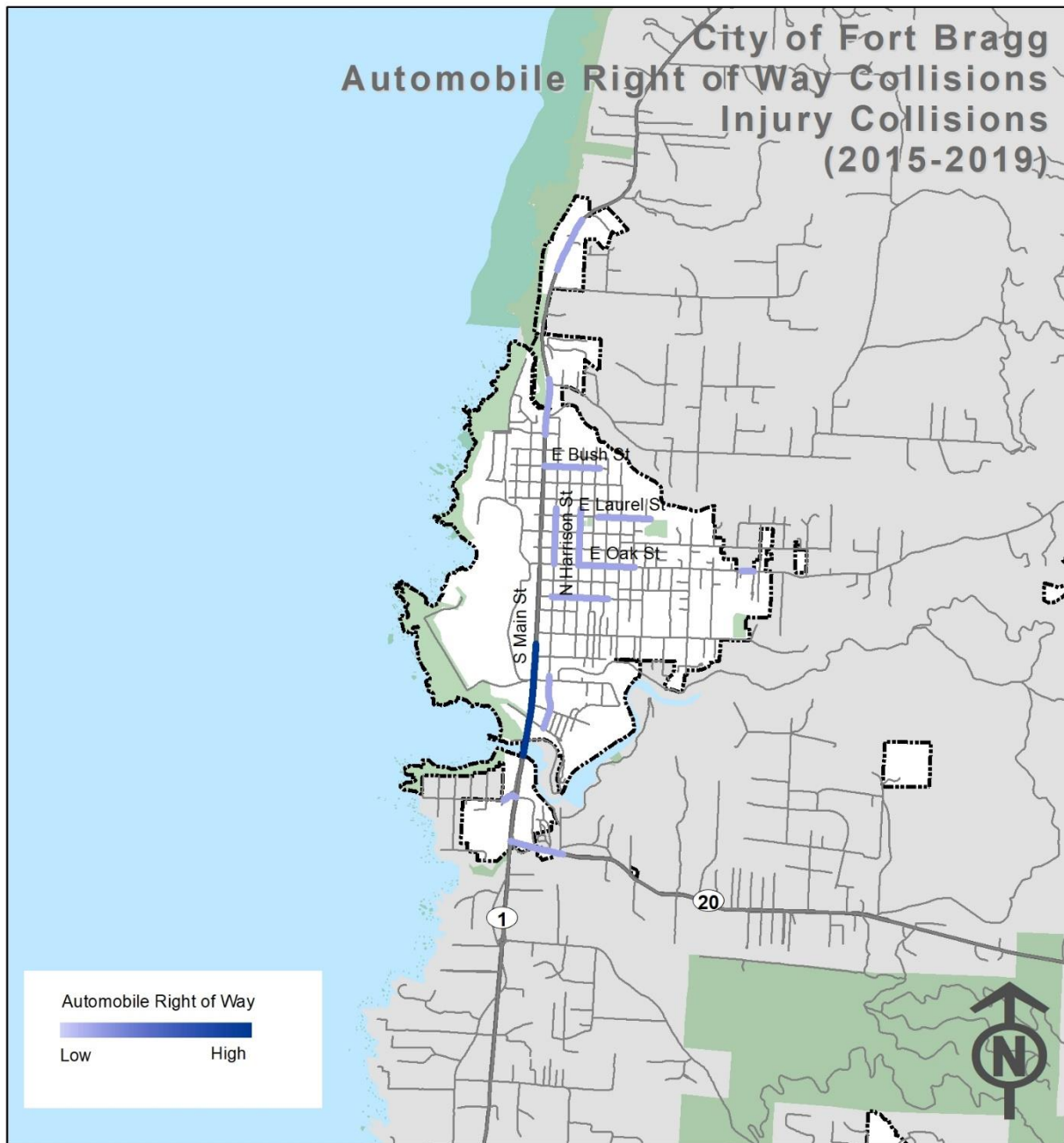
Figure 24. Vehicle/Pedestrian Collisions





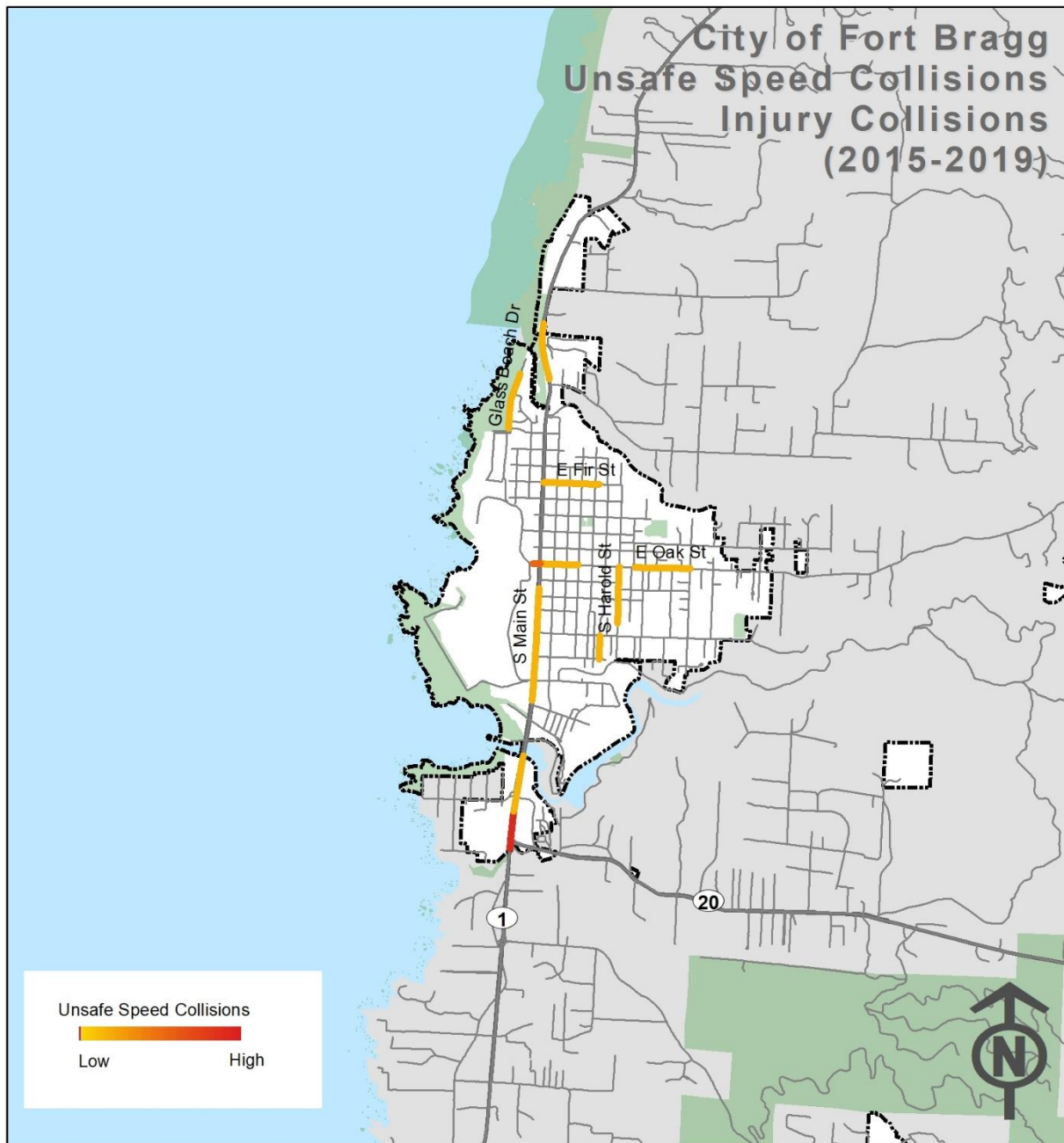
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Figure 25. Automobile Right of Way Collisions



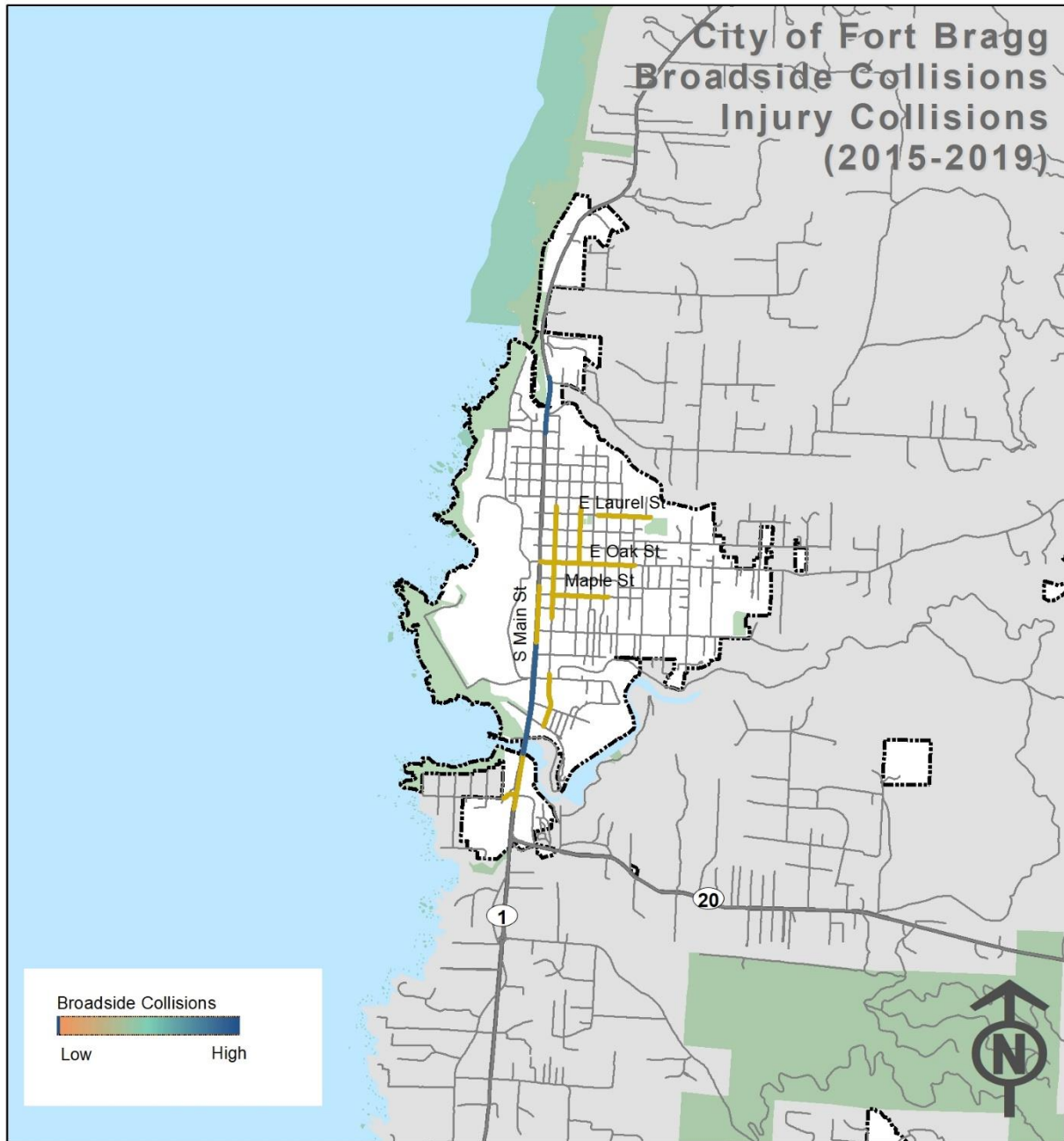
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Figure 26. Unsafe Speed Collisions



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Figure 27. Broadside Collisions



## Collision Severity Weight

A collision severity weight was used to identify the high severity collision network, using the Equivalent Property Damage Only (EPDO) method. The EPDO method accounts for both the severity and frequency of collisions by converting each collision to an equivalent number of property damage only (PDO) collisions. The EPDO method assigns a crash cost and score to each collision according to the severity of the crash weighted by the comprehensive crash cost. These EPDO scores are calculated using a simplified version of the comprehensive crash costs per HSIP Cycle 10 application. The weights used in the analysis are shown below in **Table 7**.

**Table 7. EPDO Score used in HSIP Cycle 10**

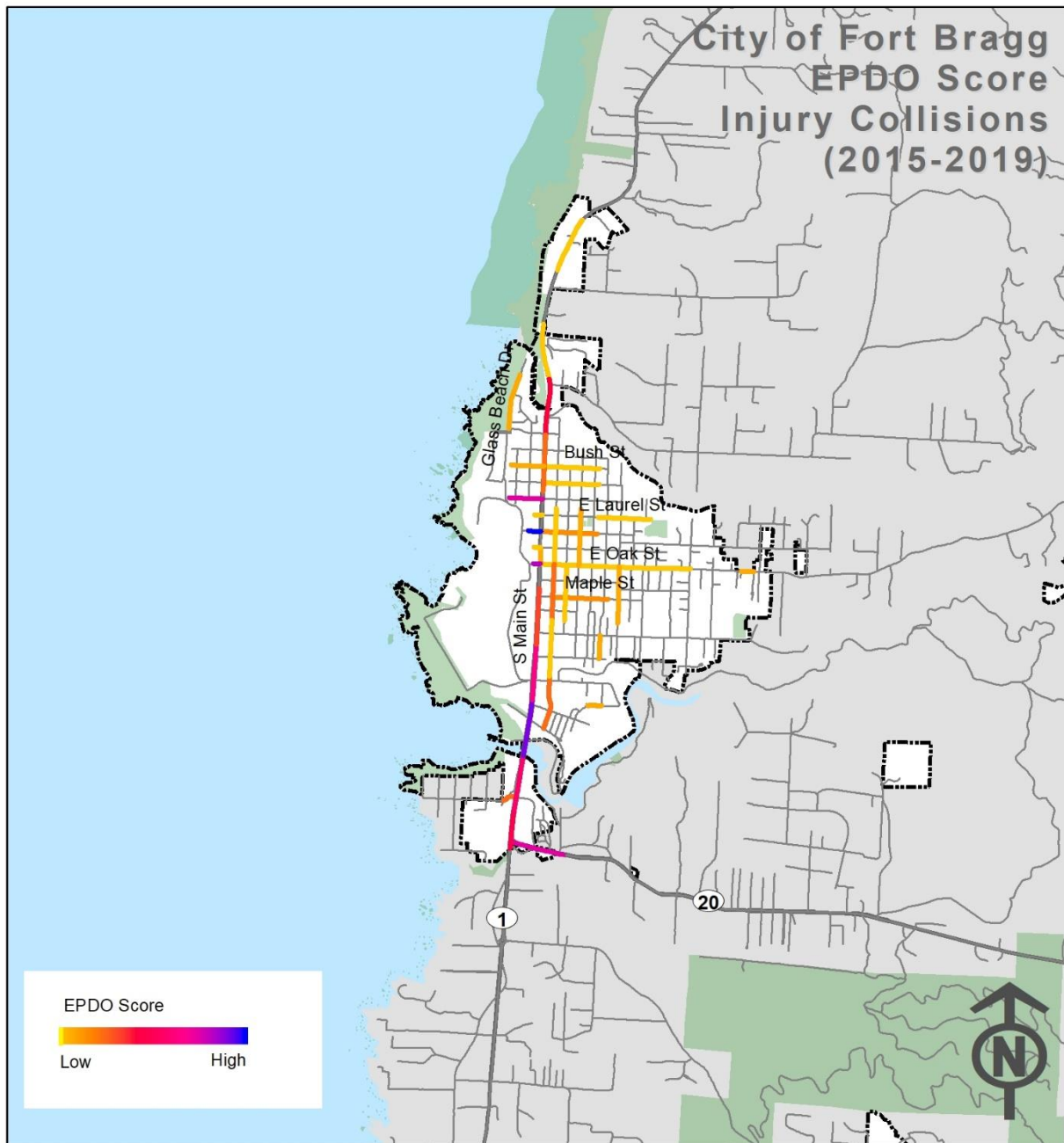
Collision Severity	EPDO Score
Fatal and Severe Injury Combined	165*
Visible Injury	11
Possible Injury	6
PDO	1

\*This is the score used in HSIP Cycle 10 for collisions on roadway segments, to simplify the analysis this study uses the same score for all F+SI collisions regardless of location

The EPDO scores for all collisions can then be aggregated in a variety of ways to identify collision patterns, such as location hot-spots. The weighted collisions for the City of Fort Bragg were geolocated onto Fort Bragg’s road network. **Figure 28** shows the location and geographic concentration of collisions by their EPDO score.

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Figure 28. Fort Bragg EPDO Score



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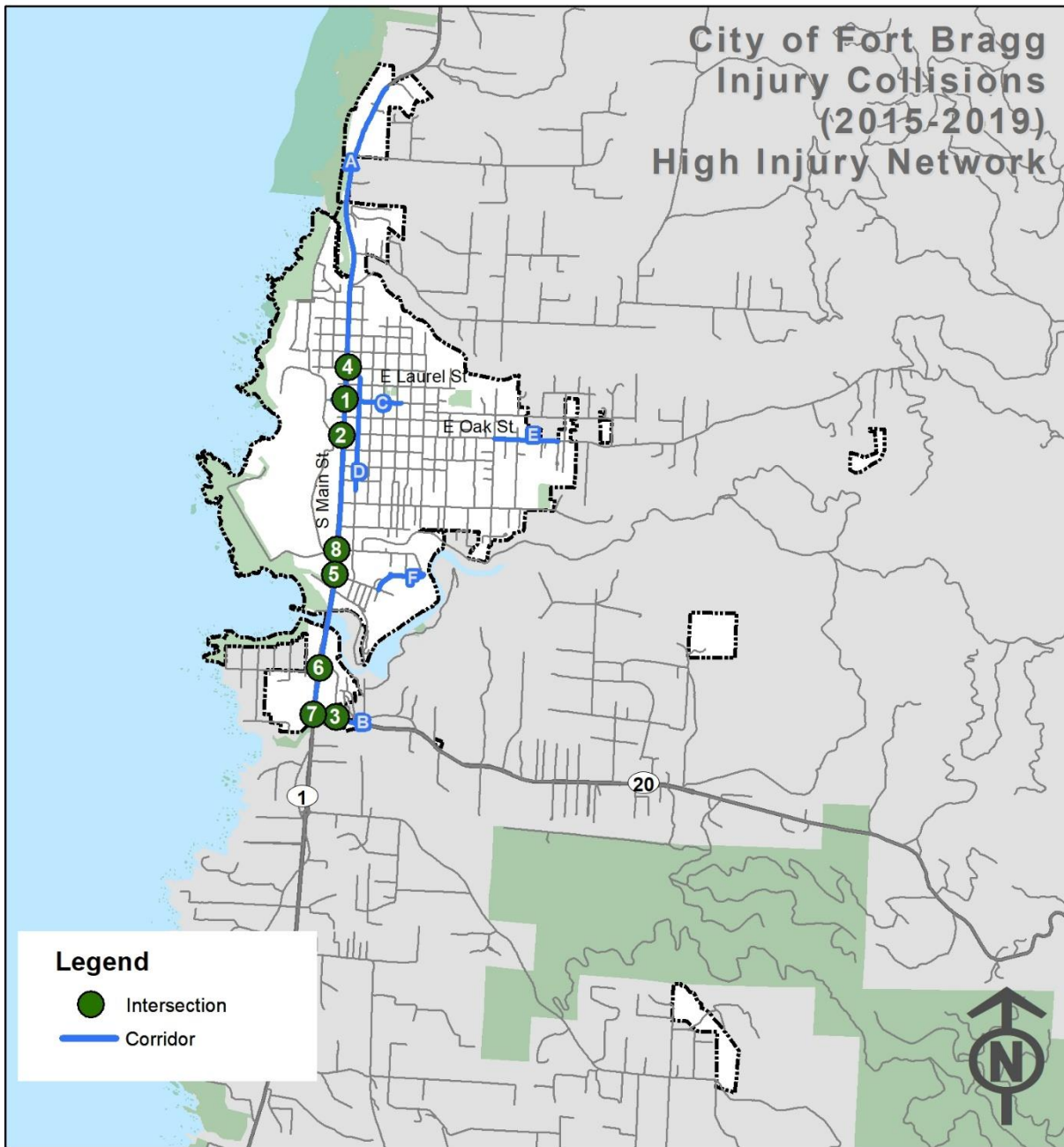
### High-Injury Locations

Following the detailed collision analysis in Section 4 and 5 the next step was to identify the high-risk roadway segments and intersections in the City of Fort Bragg. The methodology for scoring the high injury locations is the same method used in the severity weight section. **Figure 29** shows the top 6 high-collision corridors, and top 8 high-collision intersections. This high collision network has a total of 49 injury collisions with 5 F+SI collisions, which represents 62 percent of injury collisions and 100 percent of F+SI collisions in Fort Bragg on about 2 percent of Fort Bragg's roadway network.

For the identification of the high collision network, intersections include collisions that occurred within 250 feet of it and roadways include all collisions that occurred along the roadway except for collisions that occurred occur directly at an intersection, or collisions that occurred at a distance of 0 feet as listed in the statewide integrated traffic records system (SWITRS).

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Figure 29. City of Fort Bragg High Injury Network



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**High Injury Intersections**

A total of eight intersections were identified as high injury intersections. There were a total of 5 F+SI collisions that occurred at these intersections. The intersection of Redwood Avenue and South Main Street/Route 1 has the highest EPDO score.

**Table 8** lists the collision rate of the top 8 identified high-collision intersections along with their collision total and the number of F+SI collisions.

**Table 8. High Injury Intersections**

ID	Intersection	Total	F+SI	Vehicle /Ped	Auto R/W	Unsafe Speed	Broad-side	EPDO Score
1	Redwood Ave and Route 1/S Main St	5	1	4	0	0	0	171
2	Oak St and Route 1/S Main St	2	1	1	0	2	0	165
3	Boat Yard Dr and Route 20	1	1	0	1	0	0	165
4	Pine St and Route 1/ S Main St	1	1	1	0	0	0	165
5	South St and Route 1/S Main St	1	1	0	1	0	1	165
6	Boat Yard Drive and Route 1/ S Main St	3	0	0	1	0	1	28
7	Route 1 and Route 20	3	0	0	0	3	0	23
8	Cypress St and Route 1/ S Main St	3	0	1	0	0	1	18



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**High Injury Corridors**

Six corridors were identified as high injury corridors. There were a total 2 F+SI collisions on these corridors. The corridor with the highest number of F+SI collisions is Main Street/Route 1 and Fort Bragg-Willits Road/Highway 20 with 1 F+SI collision each.

**Table 9** lists the collision rate of the top 6 identified high-collision corridors along with the number of F+SI collisions and total collisions.

**Table 9. High Injury Corridors**

ID	Corridors	Total	F+SI	Vehicle/ Ped	Auto R/W	Unsafe Speed	Broadside	Length (miles)	EPDO Score
A	Main St/Route 1: Jane Ln to Highway 20/ Fort Bragg Willits Rd	29	1	2	5	6	6	3.6	383
B	Highway 20/ Fort Bragg Willits Rd: Route 1 to South Harbor Dr	1	1	0	1	0	0	0.1	165
C	Redwood Ave: West Terminus to North Whipple St	5	0	4	0	0	0	0.3	35
D	Franklin St: Laurel St to E Chestnut St	3	0	0	0	0	2	0.6	23
E	Fort Bragg Sherwood Rd: California Way to Dana St	1	0	0	1	0	0	0.2	11
F	River Dr/ Kemppe Way: South St to Cypress St	1	0	1	0	0	0	0.3	11

## **4. Emphasis Areas**

Emphasis areas are focus areas for the local roadway safety plan that are identified through the comprehensive collision analysis of the identified high injury locations within the City of Fort Bragg. Emphasis areas help in identifying appropriate safety strategies and countermeasures with the greatest potential to reduce collisions occurring at these high injury locations. In addition, traffic safety related concerns were heard at a Stakeholder's Meeting conducted for this plan on June 17<sup>th</sup>, 2021.

This chapter summarizes the top 6 emphasis areas identified for the City of Fort Bragg. These emphasis areas were derived from the consolidated high injury collision database (**Appendix B**) where top injury factors were identified by combining the data manually. Along with findings from the data analysis, stakeholder input was also considered while identifying emphasis areas specific to the City of Fort Bragg.

The following are the identified emphasis areas –

- Intersection safety
- Collisions within 250 feet of intersections
- Pedestrian safety
- Improper Turning Collisions
- Route 1 Collisions
- Alley Ways Collisions
- Older Adult Party at Fault Collisions

### **The Four E's OF Traffic Safety**

LRSP utilizes a comprehensive approach to safety incorporating "4 E's of traffic safety":

**E**ngineering, **E**nforcement, **E**ducation and **E**mergency Medical Services (EMS). This approach recognizes that not all locations can be addressed solely by infrastructure improvements.

Incorporating the 4 E's of traffic safety is often required to ensure successful implementation of significant safety improvements and reduce the severity and frequency of collisions throughout a jurisdiction.

Some of the common violation types that may require a comprehensive approach are speeding, failure-to-yield to pedestrians, red light running, aggressive driving, failure to wear safety belts, distracted driving, and driving while impaired. When locations are identified as having these types of violations, coordination with the appropriate law enforcement agencies is needed to

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arrange visible targeted enforcement to reduce the potential for future driving violations and related crashes and injuries.

To improve safety, education efforts can also be used to supplement enforcement. Additionally, education efforts can supplement enforcement to improve the efficiency of each. Education can also be employed in the short-term to address high crash locations until the recommended infrastructure project can be implemented, addressed under Engineering improvements and countermeasures. Similarly, Emergency Medical Services entails strategies around supporting organizations that provide rapid response and care when responding to collisions causing injury, by stabilizing victims and transporting them to facilities

**Existing Traffic Safety Efforts in the City of Fort Bragg**

The City of Fort Bragg has already implemented safety strategies corresponding to the 4 E’s of traffic safety. The strategies detailed in this chapter can supplement these existing programs and concentrate them on high injury collision locations and crash types. These initiatives are summarized in the following table:

**Table 10. Existing Programs Summary**

<b>Document/ Program</b>	<b>Description</b>	<b>E’s Addressed</b>
<b>2018 Street Safety Plan</b>	This plan recommends infrastructure improvements that will enhance the safety of pedestrians, bicyclists and motorists on residential neighborhoods and commercial streets in Fort Bragg.	Engineering
<b>South Main Street Access and Beautification Plan (2011)</b>	This project enhances pedestrian crossings of Highway 1, with curb extensions, high visibility striping, stop bars, pedestrian signage and strategically placed median refuge islands. It also improves safety by reducing vehicle speeds, as well as beautifies the streetscape with trees and landscape strips.	Engineering
<b>City of Trails: Trails Feasibility Study (2016)</b>	This City of Trails Feasibility Study evaluates three potential new priority trails which could be developed to expand the existing trail network in Fort Bragg.	Engineering
<b>Mendocino County Safe Routes to School Plan (2014)</b>	In addition to the Citywide program the countywide Safe Routes to School (SRTS) is also a resource to a program with a simple goal: helping more children get to school by walking and bicycling.	Engineering Education
<b>Mendocino County Regional Active</b>	Details bicycle and pedestrian improvements on County significant corridors. Includes detailed priority bike and pedestrian projects.	Engineering

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Document/ Program	Description	E's Addressed
<b>Transportations Plan (2017)</b>		
<b>Mendocino Council of Governments 2020 Regional Transportation Improvement Program (2019)</b>	The Regional Transportation Improvement Program (RTIP) is a program of highway, local road, transit and active transportation projects that a region plans to fund with State and Federal revenue.	Engineering
<b>Fort Bragg Police Department Ongoing Programs and Resources</b>	The City Police Department has a number of programs and resources to reduce traffic fatalities and injuries including a crosswalk safety pamphlet, a bicycle safety pamphlet and an ongoing commitment to enforcing traffic violations at key location in Fort Bragg including schools.	Enforcement Education
<b>Walk and Bike Mendocino</b>	Walk and Bike Mendocino promotes walking and biking as a primary transportation choice in short distance travel in Mendocino County.	Education

**Factors Considered in the Determination of Emphasis Areas**

This section presents collision data analysis of collision type, collision factors, facility type, roadway geometries, analyzed for the various emphasized areas. Emphasis areas were determined by factors that led to the highest amount of injury collisions, with a specific emphasis on fatal and severe (F+SI) injury collisions. In addition to the collision data, emphasis areas were also identified from the feedback received from stakeholders. This section also presents comprehensive programs, policies and countermeasures to reduce collisions in specific emphasis areas.

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**Emphasis Area 1 – Intersections Collisions**

The City of Fort Bragg experienced a total of 49 reported collisions on the high injury network. 42 (86 percent) of these collisions occurred at intersection, including 5 fatal and severe injuries (F+S) collisions. The following collision data is based on only intersection injury collisions in the high injury network in the City of Fort Bragg.

28%                      24%                      66%  
**Pedestrian collisions**            **Improper turning**                      **Occurred on Route 1**

Table 11. Emphasis Area 1 Strategies

Objective:			
Reduce the number of fatal and severe injury collisions at intersections.			
	Strategy	Performance Measure	Agencies/ Organizations
<b>Education</b>	Conduct public information and education campaign for intersection safety laws regarding traffic signals, stop signs, and turning left or right.	Number of education campaigns	City/ School District/ Police Department
<b>Enforcement</b>	Targeted enforcement at high-risk intersections to monitor traffic law violations right-of-way violations, speed limit laws and other violations that occur at intersections.	Number of tickets issued.	Police Department
<b>Engineering</b>	<ul style="list-style-type: none"> <li>• S02, Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number</li> <li>• S03, Improve signal timing (coordination, phases, red, yellow, or operation)               <ul style="list-style-type: none"> <li>• S08, Convert signal to mast arm (from pedestal-mounted)</li> <li>• S09, Install raised pavement markers and striping (Through Intersection)                   <ul style="list-style-type: none"> <li>• S16/NS04/NS05, Convert intersection to roundabout</li> </ul> </li> </ul> </li> <li>• NS06, Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs               <ul style="list-style-type: none"> <li>• NS07, Upgrade intersection pavement markings (NS.I.)                   <ul style="list-style-type: none"> <li>• R01, Add Segment Lighting</li> </ul> </li> </ul> </li> <li>• R22, Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)</li> <li>• R27, Install delineators, reflectors and/or object markers</li> </ul>	Number of intersections improved.	City
<b>EMS</b>	S05, Install emergency vehicle pre-emption systems	EMS vehicle response time.	Mendocino County Local Emergency Services Agency

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**Emphasis Area 2 – Pedestrian Safety**

The City of Fort Bragg experienced a total of 49 reported collisions on the high injury network. 13 (27 percent) of these collisions were pedestrian collisions, including 3 fatal or severe injury (F+SI) collisions. The following collision data is based on only pedestrian injury collisions in the high injury network in the City of Fort Bragg.

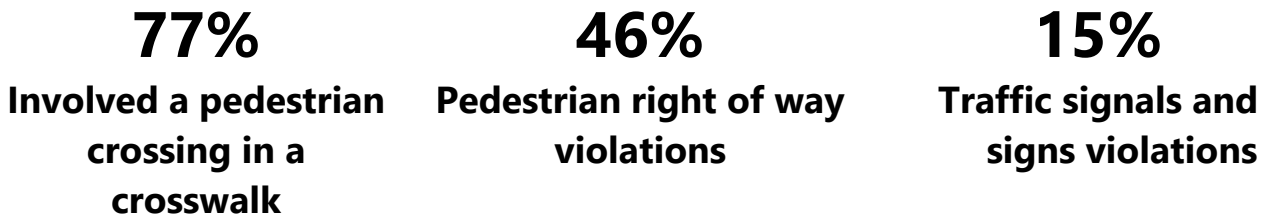


Table 12. Emphasis Area 2 Strategies

Objective:			
Reduce the number of fatal and severe pedestrian injury collisions.			
	Strategy	Performance Measure	Agencies/ Organizations
<b>Education</b>	Conduct pedestrian safety campaigns and outreach to raise their awareness of pedestrian safety needs through media outlets, social media and Bike and Walk Mendocino. Update pamphlet for crosswalk safety for Fort Bragg every 3-5 years	Number of education campaigns	City/ School District/ Police Department
<b>Enforcement</b>	Targeted enforcement at high-risk locations especially near schools and downtown	Number of tickets issued.	Police Department
<b>Engineering</b>	<ul style="list-style-type: none"> <li>• S21PB, Modify signal phasing to implement a Leading Pedestrian Interval (LPI)</li> <li>• NS07, Upgrade intersection pavement markings (NS.I.)               <ul style="list-style-type: none"> <li>• NS19PB, Install raised medians (refuge islands)</li> </ul> </li> <li>• NS21PB/R35PB, Install/upgrade pedestrian crossing (with enhanced safety features)               <ul style="list-style-type: none"> <li>• R36PB, Install raised pedestrian crossing</li> </ul> </li> <li>• R37PB, Install Rectangular Rapid Flashing Beacons (RRFB)               <ul style="list-style-type: none"> <li>• High-visibility ladder crosswalks</li> <li>• Mid-block curb extension</li> </ul> </li> <li>• In-road yield sign for pedestrian crossing at crosswalk</li> <li>• The City should apply for HSIP pedestrian set aside funds every two years</li> </ul>	Number of locations improved.	City
<b>EMS</b>	S05, Install emergency vehicle pre-emption systems	EMS vehicle response time.	Mendocino County Local Emergency Services Agency

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**Emphasis Area 3 – Improper Turning Collisions**

The City of Fort Bragg experienced a total of 49 reported collisions on the high injury network. 10 (20 percent) of these collisions were improper turning collisions, including 1 fatal or severe injury (F+SI) collisions. The following collision data is based on only improper turning injury collisions in the high injury network in the City of Fort Bragg.

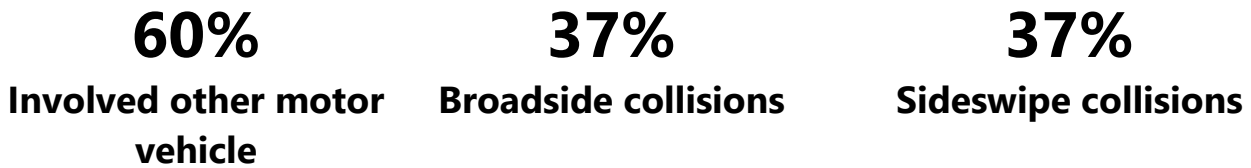


Table 13. Emphasis Area 3 Strategies

Objective:			
Reduce the number of fatal and severe injury collisions at intersections that are a result of improper turning.			
	Strategy	Performance Measure	Agencies/ Organizations
<b>Education</b>	Conduct public information and education campaign for intersection safety laws regarding traffic lights, stop signs, and turning left or right.	Number of education campaigns	City/ School District/ Police Department
<b>Enforcement</b>	Targeted enforcement at high-risk intersections to monitor improper turning violations.	Number of tickets issued.	Police Department
<b>Engineering</b>	<ul style="list-style-type: none"> <li>• S02, Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number</li> <li>• S03, Improve signal timing (coordination, phases, red, yellow, or operation)               <ul style="list-style-type: none"> <li>• S08, Convert signal to mast arm (from pedestal-mounted)</li> </ul> </li> <li>• S09, Install raised pavement markers and striping (Through Intersection)               <ul style="list-style-type: none"> <li>• S16/NS04/NS05, Convert intersection to roundabout</li> </ul> </li> <li>• NS06, Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs               <ul style="list-style-type: none"> <li>• NS07, Upgrade intersection pavement markings (NS.I.)                   <ul style="list-style-type: none"> <li>• R01, Add Segment Lighting</li> </ul> </li> </ul> </li> <li>• R22, Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)               <ul style="list-style-type: none"> <li>• R27, Install delineators, reflectors and/or object markers</li> </ul> </li> </ul>	Number of intersections improved.	City
<b>EMS</b>	S05, Install emergency vehicle pre-emption systems	EMS vehicle response time.	Mendocino County Local Emergency Services Agency

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**Emphasis Area 4 – Route 1 Collisions**

The City of Fort Bragg experienced a total of 49 reported collisions on the high injury network. 36 (73 percent) of these collisions were collisions that occurred on Route 1, including 3 fatal or severe injury (F+SI) collisions. The following collision data is based on only Route 1 injury collisions in the high injury network in the City of Fort Bragg.

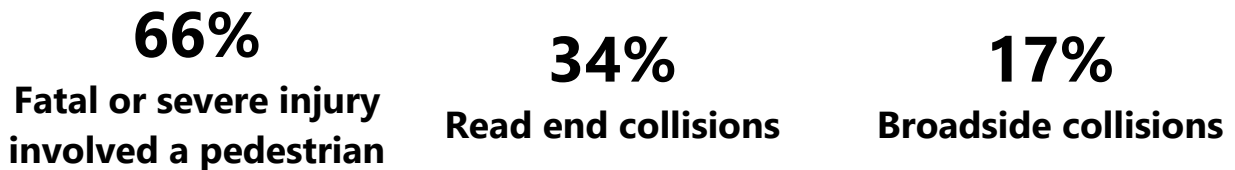


Table 14. Emphasis Area 4 Strategies

<b>Objective:</b>			
<b>Reduce the number of fatal and severe injury collisions that occur on Route 1.</b>			
	<b>Strategy</b>	<b>Performance Measure</b>	<b>Agencies/ Organizations</b>
<b>Education</b>	Conduct public information and education campaign for intersection safety laws regarding traffic lights, stop signs, turning left or right, and speeding.	Number of education campaigns	City/ School District/ Police Department
<b>Enforcement</b>	Targeted enforcement at high-risk intersections to monitor safety along Route 1.	Number of tickets issued.	Police Department
<b>Engineering</b>	<ul style="list-style-type: none"> <li>S02, Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number</li> <li>S03, Improve signal timing (coordination, phases, red, yellow, or operation)</li> <li>S09, Install raised pavement markers and striping (Through Intersection)               <ul style="list-style-type: none"> <li>S16/NS04/NS05, Convert intersection to roundabout</li> </ul> </li> <li>NS06, Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs</li> <li>S21PB, Modify signal phasing to implement a Leading Pedestrian Interval (LPI)               <ul style="list-style-type: none"> <li>NS07, Upgrade intersection pavement markings (NS.I.)</li> <li>NS19PB, Install raised medians (refuge islands)</li> </ul> </li> <li>NS21PB/R35PB, Install/upgrade pedestrian crossing (with enhanced safety features)R27, Install delineators, reflectors and/or object markers</li> </ul>	Number of locations improved.	City
<b>EMS</b>	S05, Install emergency vehicle pre-emption systems	EMS vehicle response time.	Mendocino County Local Emergency Services Agency



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**Emphasis Area 5 – Alley Way Safety**

The City of Fort Bragg experienced a total of 3 reported collisions on alley ways. The following collision data is based on only alley way collisions in the City of Fort Bragg.

**Substandard  
width**

**Sightline issues**

**Pedestrian conflicts**

Table 15. Emphasis Area 5 Strategies

<b>Objective:</b>			
<b>Reduce the number of collisions at Alley Ways.</b>			
	<b>Strategy</b>	<b>Performance Measure</b>	<b>Agencies/Organizations</b>
<b>Engineering</b>	<ul style="list-style-type: none"> <li>Pave and install mark crosswalks at alleyway driveways</li> </ul>	Number of alley ways improved.	City

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**Emphasis Area 6 – Older Adult Party at Fault Collisions**

The City of Fort Bragg reported a total of 49 reported collisions on the high injury network. The following is a review of the demographic data, provided in the party data of the collisions occurring on the high injury network.

**60%**  
**Fatal or severe injury collisions party at fault was between the ages of 50-69**

**60%**  
**Fatal or severe injury collisions party at fault was a female**

Table 16. Emphasis Area 6 Strategies

<b>Objective:</b>			
<b>Reduce the number of older adult fatal and severe injury collisions.</b>			
	<b>Strategy</b>	<b>Performance Measure</b>	<b>Agencies/Organizations</b>
<b>Education</b>	Target education programs for older adults. Distribute brochures/fliers with basic red light running, speeding, distracted driving, aggressive driving and stop sign violations information at driver training programs. Include statistics of older adult larger risks of fatalities.	Number of education campaigns	City/ Police Department

## **5. Countermeasure Identification**

This section summarizes the process of selecting countermeasures on Fort Bragg streets as part of the analysis for the LRSP. Countermeasures were selected for each of the identified high-risk intersections and roadway segments based on extensive review of existing conditions at the site and characteristics of identified collisions on the High Injury Network.

Identified collision factors and existing conditions were cross referenced with the Caltrans LRSM identified countermeasures that are HSIP approved. Countermeasures that best fit the site and had the highest opportunity for systemic implementation were selected. Countermeasures were selected not only for each high-risk location, but also for each identified citywide Emphasis Area.

### **Countermeasures Selection**

In 2010, the Federal Highway Administration (FHWA) published a set of three manuals local and rural road owners to present a simple, data driven safety analysis framework for rural agencies across the country. In conjunction with these documents, California Department of Transportation (Caltrans) developed the Local Roadway Safety Manual (LRSM). The goal of this manual is to *“maximize the safety benefits for local roadways by encouraging all local agencies to proactively identify and analyze their safety issues and to position themselves to compete effectively in Caltrans’ statewide, data-driven call-for-projects.”*<sup>5</sup> Although, the LRSM identifies all of California’s local roadway safety issues and the countermeasures that address them, this document only highlights the issues and countermeasures relevant to the local roads of the City of Chowchilla. This section identifies the different solutions for the City from HSIP-qualified and non-HSIP countermeasures. It also provides a brief description along with their corresponding crash reduction factors (CRF), expected life and baseline cost. An excerpt of the LRSM, detailing each available HSIP countermeasure referenced in the recommendations tables, is included as **Appendix C**.

The countermeasures have been divided into three categories:

- Signalized (S) – countermeasures only applicable for signalized intersections;
- Non-Signalized (NS) – countermeasures only applicable to stop-controlled, or uncontrolled intersections;
- Roadway Segment (RS) – countermeasures only applicable to roadway segments;
- Other (O) – countermeasures that do not qualify for HSIP funding.

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<sup>5</sup> <https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/hsip/2020/lrsm2020.pdf>

## Draft Countermeasure Toolbox

**Appendix D** detail the draft countermeasures for each high-risk location and Emphasis Area, separated by intersections and roadway segments. While not all of these countermeasures will be included in the resulting safety projects, they are included to give the City a toolbox for implementing future safety improvements through other means, such as the City's Capital Improvement Program.

### Signalized Intersections Countermeasures

**S03 – Improve signal timing (coordination, phases, red, yellow, or operation) Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number.** Includes adding phases, lengthening clearance intervals, eliminating or restricting higher-risk movements, and coordinating signals at multiple locations.

- Crash Reduction Factor – 15%
- Expected Life – 10 years
- Baseline Cost – Approximately \$11,000 per intersection

**S09 – Install raised pavement markers and striping (Through Intersection)** Addition of clear pavement markings, raised pavement marking to help guide motorists through complex intersections.

- Crash Reduction Factor – 10%
- Expected Life – 10 years
- Baseline Cost – Approximately \$35,000 per intersection

**S12 – Install raised median on approaches (S.I.)** Addition of raised medians next to left-turn lanes at intersections, directly over existing pavement.

- Crash Reduction Factor – 25%
- Expected Life – 20 years
- Baseline Cost – Approximately \$45,000 - \$40,000

**S17PB – Install pedestrian countdown signal heads** A pedestrian countdown signal contains a timer display and counts down the number of seconds left to finish crossing the street. Countdown signals can reassure pedestrians who are in the crosswalk when the flashing "DON'T WALK" interval appears that they still have time to finish crossing.

- Crash Reduction Factor – 25%
- Expected Life – 20 years
- Baseline Cost – Approximately \$10,000

**S21PB - Modify signal phasing to implement a Leading Pedestrian Interval (LPI).** A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter an intersection 3-7

- Crash Reduction Factor – 15%
- Expected Life – 10 years

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seconds before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn left.

- Baseline Cost –  
Approximately \$4,000 per intersection

### Non-Signalized Intersections Countermeasures

**NS06 – Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs.** The visibility of intersections and, thus, the ability of approaching drivers to perceive them can be enhanced by installing larger regulatory and warning signs at or prior to intersections. A key to success in applying this strategy is to select a combination of regulatory and warning sign techniques appropriate for the conditions on a particular unsignalized intersection approach.

- Crash Reduction Factor –  
15%
- Expected Life – 10 years
- Baseline Cost –  
Approximately \$4,200 per intersection

**NS07 – Upgrade intersection pavement markings (NS.I.).**

Unsignalized intersections that are not clearly visible to approaching motorists, particularly approaching motorists on the major road. The strategy is particularly appropriate for intersections with patterns of rear-end, right-angle, or turning crashes related to lack of driver awareness of the presence of the intersection

- Crash Reduction Factor –  
25%
- Expected Life – 10 years
- Baseline Cost –  
Approximately \$900 per intersection

**NS20 – Install pedestrian crossing at uncontrolled locations (signs and markings only).** Adding pedestrian crossings has the opportunity to enhance pedestrian safety at locations noted as being problematic. Pavement markings delineate a portion of the roadway that is designated for pedestrian crossing. These markings will often be different for controlled verses uncontrolled locations

- Crash Reduction Factor –  
25%
- Expected Life – 10 years
- Baseline Cost –  
Approximately \$5,000

**NS21PB – Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features).** Adding pedestrian crossings that include enhances safety features has the opportunity to enhance pedestrian safety at locations noted as being especially problematic. The enhanced safety elements help delineate a portion of the roadway that is designated for pedestrian crossing.

- Crash Reduction Factor –  
35%
- Expected Life – 20 years
- Baseline Cost –  
Approximately \$15,000

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**NS22PB – Install Rectangular Rapid Flashing Beacon (RRFB)** Rectangular Rapid Flashing Beacon (RRFB) includes pedestrian-activated flashing lights and additional signage that enhance the visibility of marked crosswalks and alert motorists to pedestrian crossings

- Crash Reduction Factor – 35%
- Expected Life – 20 years
- Baseline Cost – Approximately \$40,000

### Roadway Countermeasures

**R01 – Add segment lighting.** Providing roadway lighting improves the safety during nighttime conditions by (1) making drivers more aware of the surroundings, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances to perceive roadway characteristic in advance of the change, and (3) improving non-motorist's visibility and navigation.

- Crash Reduction Factor – 35%
- Expected Life – 20 years
- Baseline Cost – Approximately \$100,000

**R22 – Install/Upgrade signs with new fluorescent sheeting (regulatory or warning).** The target for this strategy should be on roadway segments with patterns of head on, nighttime, non-intersection, run-off road, and sideswipe crashes related to lack of driver awareness of the presence of a specific roadway feature or regulatory requirement. Ideally this type of safety CM would be combined with other sign evaluations and upgrades (install chevrons, warning signs, delineators, markers, beacons, and relocation of existing signs per MUTCD standards.).

- Crash Reduction Factor – 15%
- Expected Life – 10 years
- Baseline Cost – Approximately \$2,000

**R26 – Install dynamic/variable speed warning signs.** This strategy primarily addresses crashes caused by motorists traveling too fast around sharp curves. It is intended to get the drivers attention and give them a visual warning that they may be traveling over the recommended speed for the approaching curve. Care should be taken to limit the placement of these signs to help maintain their effectiveness.

- Crash Reduction Factor – 30%
- Expected Life – 10 years
- Baseline Cost – Approximately \$ 20,000

**R34PB – Install sidewalk/pathway (to avoid walking along roadway).** Sidewalks and walkways provide people with space to travel within the public right-of-way that is separated from roadway vehicles. The presence of sidewalks on both sides of the street has been found to be related to significant reductions

- Crash Reduction Factor – 80%
- Expected Life – 20 years
- Baseline Cost – Approximately \$150,000

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in the “walking along roadway” pedestrian crash risk compared to locations where no sidewalks or walkways exist.

**R35PB – Install/upgrade pedestrian crossing (with enhanced safety features).** Adding pedestrian crossings has the opportunity to greatly enhance pedestrian safety at locations noted as being problematic. The enhanced safety elements, which may include curb extensions, medians and pedestrian crossing islands, beacons, and lighting, combined with pavement markings delineating a portion of the roadway that is designated for pedestrian crossing.

- Crash Reduction Factor – 35%
- Expected Life – 20 years
- Baseline Cost – Approximately \$25,000

### Other Countermeasures

**Bulb outs/curb extensions.** Curb extensions (also called bulb-outs) extend the sidewalk into the parking lane to narrow the roadway and provide additional pedestrian space at key locations; they can be used at corners and at mid-block. Curb extensions enhance pedestrian safety by increasing pedestrian visibility, shortening crossing distances, slowing turning vehicles, and visually narrowing the roadway.

**Speed Feedback Signs.** Speed feedback signs, also known as dynamic speed displays, provide drivers with feedback about their speed in relationship to the posted speed limit. When appropriately complemented with police enforcement, speed feedback signs can be an effective method for reducing speeds at a desired location.

**In Road Yield/stop Signs.** In-street pedestrian crossing signs (MUTCD R1-6 or R1-6a) are placed within the roadway, either between travel lanes or in a median. The sign may be used to remind road users of laws regarding right-of-way at an unsignalized pedestrian crossing. This countermeasure is used with other crosswalk visibility enhancements to indicate optimal or preferred locations for people to cross and to help reinforce the driver requirement to yield the right-of-way to pedestrians at crossing locations.

## 6. Safety Projects

### High-Collision Network Projects

This section summarizes the process of selecting safety projects as part of the analysis for the City of Fort Bragg's LRSP. The next step after the identification of high-risk locations, emphasis areas and applicable countermeasures is to identify location-specific safety improvements for all high-risk roadway segments and intersections.

Specific countermeasures and improvements were selected from the 2020 LRSM, where:

- S refers to improvements at signalized locations,
- NS refers to improvements at non-signalized locations, and
- R refers to improvements at roadway segments.

The corresponding number refers to the countermeasure number in the LRSM (2020). The countermeasures were grouped into safety projects for high-risk intersections and roadway segments. A total of four safety projects were developed. All countermeasures were identified based on the technical teams' assessment of viability that consisted of extensive analysis, observations, and City staff input. The most applicable and appropriate countermeasures as identified have been grouped together to form projects that can help make high-risk locations safer.

**Table 17** lists the safety projects for high-risk intersections and roadway segments, along with total base planning level cost (2021 dollar amounts) estimates and the resultant preliminary Benefit-Cost (B/C) Ratio. The "Total Benefit" estimates were calculated for the proposed improvements being evaluated in the proactive safety analysis. This "Total Benefit" is divided by the "Total Cost per Location" estimates for the proposed improvements, giving the resultant B/C Ratio. The B/C Ratio Calculation follows the methodology as mentioned in the LRSM (2020).

**Appendix E** lists the detailed methodology to calculate B/C Ratio, the complete cost, benefit and B/C Ratio calculation spreadsheet.

The next step in the process will be to prepare grant ready materials for HSIP Cycle 11 applications. TJKM has scoped to provide the City with materials for up to three applications. However, it should be noted that while the LRSP projects were based on high-risk locations, HSIP applications can be expanded to include many locations across the city.

Once the three desired projects are selected, our team recommends three potential options for selecting locations to include in the HSIP applications:



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- Select the top projects ranked by crash cost
- City identifies desired intersections
- Apply for various intersections citywide with more generic cost estimates

These safety projects were chosen based on the previously completed collisions analysis, which was used to identify main collision attributes that were found to be leading factors of fatal and severe collisions in Fort Bragg. These collision factors were identified to be pedestrian collisions, automobile right of way collisions, unsafe speed collisions and intersection collisions.

For fatal and severe injury (F+SI) collisions, 60 percent of collisions involved a pedestrian. Redwood Avenue and Highway 1/ Main Street have a higher concentration of pedestrian collisions, compared to other roads in Fort Bragg. Recommended improvements at these locations include reducing modifying signal phasing to implement a leading pedestrian interval, upgrading pedestrian crossings at uncontrolled locations, installing sidewalks and installing Rectangular Rapid Flashing Beacon.

For F+SI collisions in the City of Fort Bragg, 40 percent of collisions were automobile right of way collisions. South Main Street, East Bush Street, East Laurel Street, East Oak Street and Highway 20 have a higher concentration of automobile right of way collisions, compared to other Fort Bragg roads. Recommended improvements at these locations include improving signal timing, and installing raised pavement markers and striping (Through Intersection).

For F+SI collisions in the City of Fort Bragg, 20 percent of collisions were unsafe speed collisions compared to 12 percent of collisions of all severity, meaning unsafe speed collisions are more likely to result in a fatal or severe injury. Main Street had a higher concentration of unsafe speed collisions, compared to other Fort Bragg roads. Recommended improvements at these locations include installing dynamic/variable speed warning signs.

When evaluating roadways vs intersections, it was observed that the majority of collisions occurred at intersections. In the City of Fort Bragg, 90% of all collisions occurred at intersections whereas 10% occurred on roadway segments. Many of these collisions occurred along Route 1/ Main Street. Recommended improvements at intersection locations include improving signal timing, installing raised pavement markers and striping and modifying signal phasing to implement a Leading Pedestrian Interval (LPI).

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Table 17. List of Viable Safety Projects

Location	CM1	CM2	CM3	Cost per Location	B/C Ratio
<b>Project 1 - Systemic Improvements at Unsignalized Intersections</b>					
Redwood Ave and Route 1/S Main St	S03		S21PB	\$ 18,410	46.90
Oak St and Route 1/S Main St	S03	S09	S21PB	\$ 28,683	
Boat Yard Drive and Route 1/S Main St	S03	S09		\$ 48,878	
Route 1 and Route 20	S03			\$ 35,210	
Cypress St and Route 1/S Main St	S03		S21PB	\$ 18,410	
<b>Project 2: Pedestrian Improvements at Unsignalized Intersections</b>					
Boat Yard Dr and Route 20	NS06			\$ 840	40.04
Pine St and Route 1/S Main St	NS06	NS21PB	NS22PB	\$ 122,087	
South St and Route 1/S Main St	NS06	NS21PB		\$ 32,928	
Highway 1/Main Street and Pudding Creek Road	NS06			\$ 1,785	
Noyo Point Road and S Main Street	NS06			\$ 1,505	
Harold/Oak St	NS06	NS21PB	NS22PB	\$ 88,928	
<b>Project 3: Systemic Roadway Segment Improvements</b>					
Main St/Route 1: Airport Road to Highway 20/ Fort Bragg Willits Rd	R22	R26	R35PB*	\$ 809,445	23.04
Highway 20/ Fort Bragg Willits Rd: Route 1 to South Harbor Dr	R22	R26		\$ 34,615	
Redwood Ave: West Terminus to North Whipple St	R22			\$ 6,020	
Franklin St: Laurel St to E Chestnut St	R22			\$ 23,310	

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Location	CM1	CM2	CM3	Cost per Location	B/C Ratio
Oak Street: California Way to Harold St	R22			\$ 5,740	
River Dr/ Kemppe Way: South St to Cypress St	R22			\$ 6,440	
Chestnut Street		R26		\$ 28,000	
<i>*Estimated 54 locations.</i>					
<b>Project 4: Pedestrian and Other Roadway Segment Improvements</b>					
Main St/Route 1: Airport Road to Highway 20/ Fort Bragg Willits Rd	R01	R34PB		\$ 1,023,901	6.59
Redwood Ave: West Terminus to North Whipple St	R01			\$ 12,600	
Oak St: California Way to Dana St	R01	R34PB		\$ 742,098	
River Dr/ Kemppe Way: South St to Cypress St	R01	R34PB		\$ 580,580	
<b>Project 5: Pedestrian Set Aside</b>					
Redwood Ave: West Terminus to North Whipple St	R35PB			\$ 245,000	N/A

**Notes:** CM – countermeasure. B/C ratio is the dollar amount of benefits divided by the cost of the countermeasure. S03 - Improve signal timing (coordination, phases, red, yellow, or operation), S09 – Install raised pavement markers and striping (Through Intersection), S21PB- Modify signal phasing to implement a Leading Pedestrian Interval (LPI), NS06 - Install/upgrade larger or additional stop signs or other intersection warning/ regulatory signs, NS20PB - Install pedestrian crossing at uncontrolled locations (new signs and markings only), NS21PB - Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features), NS22PB - Install Rectangular Rapid Flashing Beacon (RRFB), R01- Add segment lighting, R22 - Install/Upgrade signs with new fluorescent sheeting (regulatory or warning) , R26 - Install dynamic/variable speed warning signs, R34PB- Install sidewalk/pathway (to avoid walking along roadway), R35PB - Install/upgrade pedestrian crossing (with enhanced safety features)  
 Costs include contingency, PS&E, environmental and construction costs

**HSIP Applications**

The next step will be to prepare HSIP grant ready materials, so that the City may submit them for HSIP Cycle 11 funding in 2022.

## 7. Evaluation and Implementation

This chapter describes the steps the City may take to evaluate the success of this plan and steps needed to update the plan in the future. The LRSP is a guidance document and requires periodic updates to assess its efficacy and re-evaluate potential solutions. It is recommended to update the plan every two to five years in coordination with the identified safety partners. This document was developed based on community needs, stakeholder input, and collision analysis conducted to identify priority emphasis areas throughout the City. The implementation of strategies under each emphasis area would aim to reduce fatal and severe injury collisions in the coming years.

Funding is a critical component of implementing any safety project. While the HSIP program is a common source of funding for safety projects, there are numerous other funding sources that could be pursued for such projects. Potential funding sources are listed below in **Table 18**.

**Table 18. Potential Funding Sources**

<b>Funding Source</b>	<b>Funding Agency</b>	<b>Amount Available</b>	<b>Next Estimated Call for Projects</b>	<b>Applicable E's</b>	<b>Notes</b>
<b>Active Transportation Program</b>	Caltrans, California Transportation Commission	~\$223 million per year	2022	Engineering, Education	Can use used for most active transportation related safety projects as well as education programs
<b>Highway Safety Improvement Program</b>	Caltrans	TBD	Early 2022	Engineering	Most common grant source for safety projects
<b>Surface Transportation Block Group Program</b>	FHWA (Administered through MCTC)	Varies by FY	TBD	Engineering	Typically used for roadway projects
<b>Congestion Mitigation and Air Quality (CMAQ)</b>	FHWA (Administered through MCTC)	Varies by FY	TBD	Engineering	Focused on projects that improve air quality
<b>Office of Traffic Safety Grants</b>	California Office of Traffic Safety	Varies by grant	Closes January 31 <sup>st</sup> annually	Education, Enforcement, Emergency Response	10 grants available to address various components of traffic safety

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<b>Funding Source</b>	<b>Funding Agency</b>	<b>Amount Available</b>	<b>Next Estimated Call for Projects</b>	<b>Applicable E's</b>	<b>Notes</b>
<b>Affordable Housing and Sustainable Communities Program</b>	Strategic Growth Council and Dept. of Housing and Community Development	~\$405 million	2022	Engineering, Education	Must be connected to affordable housing projects; typically focuses on bike/ped infrastructure/programs
<b>Urban Greening</b>	California Natural Resources Agency	\$28.5 million	2022	Engineering	Focused on bike/pedestrian infrastructure and greening public spaces
<b>Local Streets and Road Maintenance and Rehabilitation</b>	CTC (distributed to local agencies)	\$1.5 billion statewide	N/A; distributed by formula	Engineering	Typically pays for road maintenance type projects
<b>RAISE Grant</b>	USDOT	~\$1 billion	2022	Engineering	Typically used for larger infrastructure projects
<b>Sustainable Transportation Equity Project</b>	California Air Resources Board	~\$19.5 million	TBD; most recent call in 2020	Engineering, Education	Targets projects that will increase transportation equity in disadvantaged communities
<b>Transformative Climate Communities</b>	Strategic Growth Council	~\$90 million	TBD; most recent call in 2020	Engineering	Funds community-led projects that achieve major reductions in greenhouse gas emissions in disadvantaged communities.

**Implementation**

The LRSP document provides engineering, education, enforcement, and emergency medical service related countermeasures that can be implemented throughout the City to reduce F+SI collisions. It is recommended that the City of Fort Bragg implement the selected projects high-collision locations in coordination with other projects proposed for the City's infrastructure development in their future Capital Improvement Plans.

The success of the LRSP can be achieved by fostering communication among the City and the safety partners.

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### Monitoring and Evaluation

For the success of the LRSP, it is crucial to monitor and evaluate the four E-strategies continuously. Monitoring and evaluation help provide accountability, ensures the effectiveness of the countermeasures for each emphasis area, and help making decisions on the need for new strategies. The process would help the City make informed decisions regarding the implementation plan's progress and accordingly, update the goals and objectives of the plan.

After implementing countermeasures, the strategies should be evaluated annually as per their performance measures. The evaluation should be recorded in a before-after study to validate the effectiveness of each countermeasure as per the following observations:

- Number of fatal and severe injury collisions
- Number of police citations
- Number of public comments and concerns

Evaluation should be conducted during similar time periods and durations each year. The most important measure of success of the LRSP should be reduction in fatal and severe injury collisions throughout the City. If the number of F+SI collisions doesn't decrease initially, then the countermeasures should be evaluated as per the other observations, as mentioned above. The effectiveness of the countermeasures should be compared to the goals for each emphasis area.

### LRSP Update

The LRSP is a guidance document and is recommended to be updated every two to five years after adoption. After monitoring performance measures focused on the status and progress of the E's strategies in each emphasis area, the next LRSP update can be tailored to resolve any continuing safety problems. The City of Fort Bragg's Public Works Department will be accountable for the progress of the plan goals. An annual stakeholder meeting with the safety partners is also recommended to discuss the progress for each emphasis area and oversee the implementation plan. The document should then be updated as per the latest collision data, emerging trends, and the E's strategies' progress and implementation.

# Appendices:

## APPENDIX A: TABLE OF POLICIES AND PROJECTS FROM THE LITERATURE REVIEW:

Document	Highlights
<p><b>City of Fort Bragg Coastal General Plan (2008)</b></p>	<ul style="list-style-type: none"> <li>• Policy C-2.12 Roadway Safety: Improve the safety of the roadway system. All safety improvements shall be consistent with the applicable policies of the LCP including, but not limited to, the wetlands, environmentally sensitive habitat area, public access, and visual protection policies.</li> <li>• Program C-2.12.1: Periodically analyze the locations of traffic accidents to identify problems and use this information to set priorities for improvements as a part of the City's Capital Improvement Program.</li> <li>• Program C-4.1.1: Consider traffic safety, the ease and safety of pedestrian movement across Main Street, and adequacy of on-street parking as key factors in evaluation of proposed roadway improvements along Main Street.</li> <li>• Program C-4.1.4: Consider signaling the intersection of Pine Street and Main Street to provide adequate pedestrian safety.</li> <li>• Program C-9.7.1: Continue to provide traffic controls and well-lit intersections in areas with a high volume of pedestrian movement.             <ul style="list-style-type: none"> <li>• Program C-9.7.2: Consider expanded use of illuminated crosswalks</li> </ul> </li> <li>• Policy C-10.1 Comprehensive Bikeway System: Establish a comprehensive and safe system of bikeways connecting all parts of Fort Bragg.</li> <li>• Program C-10.1.1: Complete the bikeway system as indicated in Map C-2: Bicycle Paths. Make the completion of the Pudding Creek Trestle/Glass Beach to Otis Johnson Park a high priority.</li> <li>• Program C-10.1.2: Incorporate bicycle and pedestrian facilities into the design and construction of all road improvements as feasible.</li> </ul>
<p><b>Inland General Plan (2012)</b></p>	<p>Goals and Policies:</p> <p>Goal C-1: Complete Street Planning</p> <p>Goal C-2: Coordinate land use and transportation planning</p> <p>Goal C-3: Develop and manage a roadway system that accommodates future growth and maintains acceptable Levels of Service while considering the other policies and programs of the General Plan.</p> <p>Policy C-3.1.1: When a traffic analysis of levels of service and/or safety hazards indicates the need, construct the following roadway improvements:</p>

Document	Highlights
	<p>a) Signalize the Main Street/Pudding Creek Road intersection;</p> <p>b) Signalize the Franklin Street/Oak Street intersection;</p> <p>c) Widen the section of Main Street from the Pudding Creek Bridge to the northern City Limits to three lanes, adding a center turn lane;</p> <p>d) Signalize the Main Street/Pine Street intersection; and</p> <p>e) Consider extending Harrison Street south from Walnut Street to Cypress Street.</p> <p>Policy C-3.2 Roadway Standards: Continue to provide consistent standards for the City's street system.</p> <p>Program C-3.2.1: Establish standards for public streets, which allow for the following:</p> <p>a) Traffic "calming" measures;</p> <p>b) Sidewalks with curbs, gutters, and a planting strip between the sidewalk and the roadway;</p> <p>c) Rounded street corners with "bulb-outs" at key intersections;</p> <p>d) Continuation of the grid street system; and</p> <p>e) Standards for radius returns for local, collector, and arterial streets.</p> <p>Policy C-3.4 Continuation and Connectivity of Streets: Require the continuation of streets, bicycle and pedestrian paths through new developments wherever possible, and require connectivity to the street grid at as many points as feasible.</p> <p>Program C-3.4.1: Review site plans for new development to facilitate the continuation of streets to improve local circulation. Where streets are not feasible, priority shall be given to providing pedestrian and bicycle trails that establish bicycle and pedestrian connections to streets wherever possible.</p> <p>Policy C-3.6 Roadway Safety: Improve the safety of the roadway system.</p> <p>Program C-3.6.1: Periodically analyze the locations of traffic accidents to identify problems and use this information to set priorities for improvements as a part of the City's Capital Improvement Program.</p> <p>Goal C-8 Improve emergency access to the City.</p> <p>Policy C-8.1 Emergency Access: Establish an access route out of Fort Bragg that could be used in the event of damage to the Noyo River and Pudding Creek Bridges.</p> <p>Program C-8.1.1: Work with the property owners to obtain temporary use, in the event of an emergency, of the logging road that begins on Cypress Street and provides access to Highway 20 (aka the A&amp;W Haul Road), east of Fort Bragg.</p> <p>Program C-8.1.2: Work with the Mendocino Council of Governments and Mendocino County to upgrade Sherwood Road to Willits to provide a year-round emergency access route.</p>



Document	Highlights
<p><b>City of Fort Bragg Bicycle Master Plan (2009)</b></p>	<p>Program C-8.1.3: Prepare an emergency evacuation route plan for the City.</p> <p>Proposed Projects</p> <ul style="list-style-type: none"> <li>• Harold St (Maple to Fir Ave) – Install Class II Bike lanes</li> <li>• Harrison St (Walnut to Fir St) - Install Class II Bike Lanes</li> <li>• Madrone St ( Hwy 1 to Harold St) – Install Class II Bike lanes</li> <li>• Main St (Oak to Hare Creek Bridge) - Install Class II Bike Lanes</li> <li>• Main St (Elm to N City Limits) - Install Class II Bike Lanes</li> <li>• Maple St (Main St to Lincoln St) - Install Class II Bike Lanes</li> <li>• N Franklin St (Pine St to Manzanita) - Install Class II Bike Lanes</li> <li>• S Lincoln St (Willow to Chestnut) - Install Class II Bike Lanes</li> <li>• <b>Mill Site Bike Trails</b> - A Class 1 bikeway that runs along the entire length of the Mill Site coast parallel and to the west of the proposed Ocean Bluff Drive (see proposed cross section below). Upon development this would become the new Pacific Coast Bike Route (PCBR) through Fort Bragg.</li> <li>• <b>Class Beach Drive</b> - As part of the Coastal Trail project, the City plans to install a ten foot wide multi-use trail (eight feet of asphalt and four feet NaturalPAVE®) in the approximately 18 feet of right of way along the western edge of Glass Beach Drive. This trail will join the Old Haul Road/Pudding Creek Trestle multi-use trail with the bikeway system on the Mill Site.</li> </ul>
<p><b>2018 Street Safety Plan</b></p>	<ul style="list-style-type: none"> <li>• Install a 4-way STOP at the intersection of Laurel Street and Harrison Street;</li> <li>• Install a 4-way STOP at the intersection of Maple Street and Harold Street;</li> <li>• Remove the traffic circle at the intersection of Fir Street and Harrison Street;</li> <li>• Initiate dialogue and negotiations with Caltrans regarding pedestrian safety on Main Street. The focus of these efforts should be: <ul style="list-style-type: none"> <li>○ The intersection of Redwood Avenue and N Main Street with the recommendation of an advanced pedestrian timing at signal; and</li> <li>○ The intersection of Pine Street and N Main Street with the recommendation of enhanced pedestrian crosswalk. <ul style="list-style-type: none"> <li>• <b>Maple Street:</b>  <b>Lane Striping (Optional)</b> – Convert from dashed yellow to double yellow to emphasize No Passing.</li> <li><b>Narrow Through Lanes</b> – Narrow travel lanes from 12 feet to 11 feet as shown in the cross-section. The cross-section would include eight feet dedicated to parking and five feet for bike lanes on both sides together with the 11-foot travel lanes.</li> <li><b>Green Bike Lane Legend (Optional)</b> – Where there is a bike lane symbol, install a green background. The green markings would consist of paving materials that would not result in a</li> </ul> </li> </ul> </li> </ul>

Document	Highlights
	<p>slippery surface per the Ride-A-Way Colored Coatings Specifications. Ride-A-Way product brochure and specification details are included in Appendix E.</p> <p><b>No Parking</b> – Extend parking prohibitions on “block ends” where frontage housing does not have garage access. At these locations, the bike lane would move closer to the curb frontage. A striped buffer would be installed between the bike lane and the travel lane at these locations.</p> <p><b>Markings at Alleys</b> – Add cross-hatched striping in the parking lane at alley intersections.</p> <p><b>All-Way Stop-Control</b> – Create all-way stop controls at the Maple Street intersections with Whipple Street and Lincoln Street. The City may consider an additional all-way stop control at Harold Street based on a recommended citywide review of stop signs on the grid system (see Next Steps).</p> <p><b>Marked crosswalks</b> – Add north-south marked crosswalks at locations with new all-way stop controls, Whipple Street and Harold Street (there are already marked crosswalks at the intersection of Maple Street/ Lincoln Street).</p> <p><b>Bulb-outs/Curb Extensions</b> – Add striped (painted) bulb-outs on Maple Street at the proposed crosswalk locations, except at Harold Street where a physical concrete bulb-out already exists.</p> <p><b>Maple Street/Franklin Street</b> – Add high visibility ladder crosswalks on both the north and south legs of the intersection. Add advance yield markings (shark’s teeth) and pedestrian warning signs on both Franklin Street approaches.</p> <ul style="list-style-type: none"> <li>• <b>Elm Street</b></li> </ul> <p><b>Bike Cross Markings (Optional)</b> – Add green NACTO-type bike lane crossing markings at the intersections with Glass Beach Drive, Stewart Street, and North Main Street.</p> <p><b>Green Bike Lane Legend (Optional)</b> – Where there is a bike lane symbol, include a green background. The green markings are detailed in the Ride-A-Way pamphlet.</p> <p><b>Crosswalk at Glass Beach Drive</b> – Add a marked crosswalk on the north leg of the intersection along with the bike cross markings on both the north and south legs for bike crossing maneuvers from the trailhead parking to Elm Street.</p> <p><b>Install Ramp</b> – Install a curb ramp on the northwest corner of the intersection for the proposed crosswalk and bike lane crossing markings.</p> <ul style="list-style-type: none"> <li>• <b>Pine Street</b></li> </ul> <p><b>Stop Signs</b> – Convert intersections with Corry Street and Harrison Street to all-way stop control.</p> <p><b>Pedestrian Crossing Enhancements</b> – Add Pedestrian Crossing Signs (W11) on the uncontrolled east and west approaches to</p>

Document	Highlights
	<p>McPherson Street and Whipple Street. (Optional – Install advance yield markings (shark’s teeth) on the uncontrolled approaches.</p> <p><b>(Optional) Centerline Striping</b> – Convert centerline striping from dashed yellow to double yellow.</p> <p><b>Edgeline</b> – Add 6-inch edgeline striping, providing an 11-foot travel lane with the remaining space (approximately 10.5 feet each direction) for parking and bicyclists along the curb as shown on the cross section. Install a sharrow along the edge between the travel lane and the parking lane.</p> <p><b>Bulb-outs/Curb Extensions</b> – Add striped bulb-outs at crosswalk locations.</p> <p><b>Green Bike Lane Legend (Optional)</b> – Where there is a bike lane symbol,</p>
<p><b>South Main Street Access and Beautification Plan (2011)</b></p>	<p>Proposed Projects</p> <ul style="list-style-type: none"> <li>• <b>South Main at Madrone Street Intersection Improvements</b> – median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main at Maple Street</b> - median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main and Hazel Street</b> – median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main and Walnut Street</b> – median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main and South Street</b> - median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main and North Harbor Drive</b> - median refuge island, high visibility crosswalks, striping improvements</li> <li>• <b>South Main and South of Noyo Bridge</b> - median refuge island, high visibility crosswalks, striping improvements <ul style="list-style-type: none"> <li>• <b>State Route at Boat Yard Drive</b>- bulb out, striping improvements</li> <li>• <b>South Main and Cypress Street</b> – Bulb outs, Striping</li> </ul> </li> <li>• <b>South Main at State Route</b> - Bulb outs, Striping, remove one slip lane, reconfigure other slip lane</li> <li>• <b>Roundabout Option – South Main and North Harbor Drive</b></li> </ul>
<p><b>City of Trails: Trails Feasibility Study (2016)</b></p>	<p>Projects</p> <ul style="list-style-type: none"> <li>○ <b>Redwood Avenue Connection to Downtown Fort Bragg</b> – Pedestrian improvements are proposed for Chief Celery Drive. Redwood Avenue improvements would include new wayfinding signs leading to/from Franklin Street and information about trails for visitors. A new parking area located on the GP Mill Site due west of Alder Streets would serve the middle section of the Coastal Trail (currently in design).</li> </ul>

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Document	Highlights
	<ul style="list-style-type: none"> <li>○ <b>Old Mill Road Redevelopment to North Noyo Harbor</b> – Old Mill Road is an abandoned road that drops from the southern section of the Coastal Trail (near the cemetery) down to Noyo Harbor and Noyo Beach. This report evaluates requirements for redeveloping this old road cut into a multi-use trail that would extend the Coastal Trail to the beach at Noyo Bay, and potentially beyond to North Noyo Harbor.</li> <li>○ <b>South Noyo Harbor Trail</b> – An existing social trail on private property leads from Highway 1 down to South Noyo Harbor. Landowners on the alignment would like to reduce illegal activities there and employers at the Harbor have expressed interest in the trail. This report recommends installation of timber (or concrete timber) steps and surfacing with quarry fines on the inclined sections.</li> </ul>
<p><b>City of Trails:  Supplemental Trail  Feasibility Studies  (2017)</b></p>	<p style="text-align: center;">Projects</p> <ul style="list-style-type: none"> <li>○ <b>Old Mill Road</b> An existing route along the face of the coastal bluff south of the Coastal Trail would be converted to a multi-use trail. The trail would be located on the levee top of the existing Noyo Harbor dredge pond berm west of the cliff face roadway.</li> <li>○ <b>North Harbor Drive</b> A trail separate from the roadway would be implemented on North Harbor Drive between Casa Del Noyo and the Noyo Fishing Center to connect with the lower portion of Harbor Drive. This Study addresses the feasibility of placing a Class 1 or Class II* multi-use trail parallel to the North Harbor Drive. Due to right-of-way and topographic constraints along the roadway, a trail structure cantilevered over the narrow road shoulder and adjacent retaining wall was evaluated.</li> </ul>
<p><b>City of Fort Bragg FY  2020-2021 Budget</b></p>	<p style="text-align: center;">Proposed Projects</p> <ul style="list-style-type: none"> <li>• South Main St Bike and Ped Improvements</li> <li>• Maple Street SD and Alley Rehabilitation</li> </ul>
<p><b>Mill Site Specific Plan  (2012)</b></p>	<p><b>Improvement of Pedestrian Safety has been emphasized.</b></p> <p><b>Policy MM-1. "Complete Streets."</b> As part of the first Master Tentative Subdivision Map for the Plan Area, the applicant shall establish a multi-modal network of "complete streets" that balances the needs for safety and comfort of pedestrians, cyclists, drivers, and transit riders and that substantially conforms to the conceptual street network design.</p> <p><b>Policy MM-14. Complete Streets.</b> All streets shall be designed as complete streets for the safety and comfort of cyclists and pedestrians, including children, the elderly, and people with disabilities, consistent with US Department of Transportation complete streets guidelines.</p> <p><b>Policy MM-16. Safe Streets.</b> The design speed of streets in the Central and Northern Districts shall not exceed 25 miles per hour, with typical operating speeds below 20 miles per hour. In the Southern District, design speeds may be as high as 30 miles per hour, with typical</p>

Document	Highlights
	<p>operating speeds below 25 miles per hour. Streets shall be designed to optimize pedestrian safety and comfort, with the minimum number of travel lanes necessary to accommodate their traffic function at Level of Service E or better, averaged over the midweek peak one hour. If unacceptable traffic congestion is identified, traffic shall be redistributed onto additional streets, or accommodated with a right- or left-turn pocket, rather than by adding a travel lane.</p> <p><b>Specific traffic calming elements included in the site design include:</b></p> <ul style="list-style-type: none"> <li>• Corner “bulb-outs” at most intersections, ensuring low-speed turning movements and improving pedestrian safety;</li> <li>• Ample landscape along the roadway edge;</li> <li>• Small blocks and stop signs at most intersections; and</li> <li>• Bicycle lanes on the wider streets</li> </ul> <p><b>Policy MM-32. Additional Traffic Calming Measures.</b> The City engineer may require additional traffic calming features where necessary to ensure pedestrian safety.</p>
<p><b>Mendocino County Regional Active Transportation Plan (2017)</b></p>	<p>Goals</p> <ul style="list-style-type: none"> <li>• To improve our public spaces so the street, road and transportation system meets the needs of all surface transportation modes, including vehicular, bicycle, pedestrian and transit.</li> <li>• Provide a safe and useable network of bicycle and pedestrian facilities throughout the region as a means to lessen dependence on vehicular travel and improve the health of Mendocino County’s residents.</li> <li>• Maximize investment in non-motorized transportation facilities through maintenance.</li> </ul>
<p><b>Mendocino County Safe Routes to School Plan (2014)</b></p>	<p>Goals</p> <p><b>Goal 1:</b> Improve the health of Mendocino County children by focusing attention on and increasing active travel to school.</p> <p><i>Objective A: Increase the number of students walking and bicycling to school</i></p> <p><i>Objective B: Annually increase the number of children exposed to Safe Routes to School education and encouragement activities</i></p> <p><i>Objective C: Increase the number of county residents that are familiar with SRTS and resources available</i></p> <p><b>Goal 2:</b> Support school travel routes that are accommodating, safe, convenient, and “complete” for all modes.</p> <p><i>Objective A: Increase funding for walking, bicycling and transit investments near schools</i></p> <p><i>Objective B: Review school connections and potential SRTS needs during project development for all county roads</i></p> <p><i>Objective C: Incorporate Safe Routes to School policies, priorities, and design guidance into future county general plan updates</i></p> <p><i>Objective D: Limit traffic speeds and volumes along key routes to schools</i></p>

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Document	Highlights
	<p><b>Goal 3:</b> Maximize interagency cooperation in all SRTS project and programs in an effort to build a sustainable program.</p> <p><i>Objective A: Establish an ongoing countywide SRTS program that serves all interested schools in Mendocino County.</i></p> <p><i>Objective B: Seek and secure outside grant funding for SRTS programs and activities, and leverage local funding for school area improvements</i></p>
<p><b>Mendocino County Pedestrian Facility Needs Inventory and Engineered Feasibility Study (2019)</b></p>	<p>Projects  Tier 1 Projects</p> <ul style="list-style-type: none"> <li>• Elm Street Pedestrian Improvements</li> <li>• South Main Street Corridor Pedestrian Enhancements</li> <li>• Maple Street Pedestrian Improvements</li> </ul>
<p><b>Mendocino Council of Governments 2020 Regional Transportation Improvement Program (2019)</b></p>	<p>Projects</p> <ul style="list-style-type: none"> <li>• S. Main St Bicycle &amp; Pedestrian Access Project – Fort Bragg - This project will continue pedestrian improvements along a state highway, linking to existing facilities. The project will improve access to a major shopping area, school facility, and tourist attractions. Pedestrian safety will be improved.</li> </ul>



**APPENDIX B. CONSOLIDATED COLLISION DATABASE**



## **APPENDIX C: HSIP ELIGIBLE COUNTERMEASURES**





## **APPENDIX D: COUNTERMEASURE TOOLBOX**



**APPENDIX E: B/C RATIO CALCULATION - LRSM (2020)**

