



Recommendations to Improve Pedestrian & Bicycle Safety for the Zane Middle School Community



October 2018



Acknowledgements

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We would like to thank the planning committee for inviting us into their community and for hosting the Community Pedestrian and Bicycle Safety Training in Eureka.

We would like to thank the City of Eureka for providing dinner and refreshments in support of this training. We would like to thank the Humboldt County Public Health Department for providing pedestrian and biking safety coloring books and the Redwood Community Action Agency for providing [Humboldt Bay Area Bike Maps](#) to participants. Thank you to Catherine L. Zane Middle School for providing the workshop space.

We acknowledge the community members and agencies present at the workshop and their dedication to pedestrian and bicycle safety. Their collective participation meaningfully informed and strengthened the workshop’s outcomes.

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Recommendations to Improve Pedestrian & Bicycle Safety for the Zane Middle School Community

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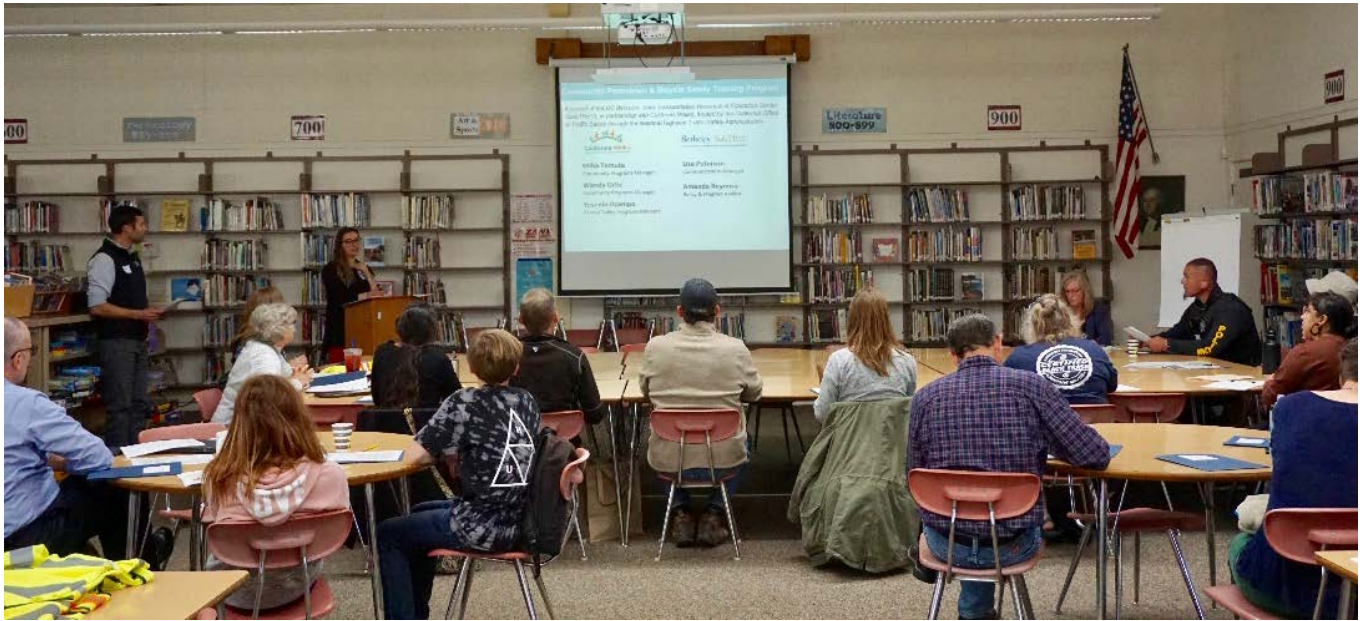
Introduction

At the invitation of the City of Eureka, California Walks (Cal Walks), the University of California at Berkeley's Safe Transportation Research and Education Center (SafeTREC), and the Planning Committee collaboratively planned and facilitated a Community Pedestrian and Bicycle Safety Training (CPBST) in Eureka. The CPBST is a community-driven pedestrian and bicycle safety action-planning workshop aimed to improve walkability and bikeability around Zane Middle School and across the City.

The City of Eureka requested a workshop to 1) provide City and County staff, community organizations, and residents with a toolkit for promoting pedestrian and bicycle safety to inform future active transportation projects around Zane Middle School; 2) strengthen working relationships between various agencies and organizations and other stakeholders to ensure the best outcomes for the residents and students of Eureka; and 3) develop consensus regarding pedestrian and bicycle safety priorities and actionable next steps for the area surrounding Zane Middle School.

Cal Walks and SafeTREC (Project Team) facilitated the workshop on May 22, 2018 from 3:00 PM to 6:00 PM at the Zane Middle School Library. Twenty-four (24) individuals attended the workshop including residents, students, the City of Eureka Departments of Public Works and Community Services, Redwood Community Action Agency, Humboldt County Department of Public Health, Yurok Tribe, Zane Middle School, the Eureka Police Department, and Humboldt County Supervisor Virginia Bass' Office (4th District).

The training consisted of: 1) an overview of multidisciplinary approaches to improve pedestrian and bicycle safety using the intersectional 6 E's framework including: Equity & Empowerment, Evaluation, Engineering, Education, Encouragement, and Enforcement; 2) walkability assessments along three key routes and; 3) small group action-planning discussions to prioritize recommendations for Eureka's trail expansion efforts. The Planning Committee's goal was to create safe, convenient, and fun opportunities for children to walk and bike to and from Zane Middle School, including using the City's interconnected trail system. This report summarizes the workshop proceedings, as well as recommendations for projects, policies, and programs for pedestrian and bicycle safety in Eureka.



Background

The CPBST is a joint project of Cal Walks and SafeTREC that aims to leverage a community's existing strengths to develop a community-driven pedestrian and bicycle safety action plan and to identify pedestrian and bicycle safety priorities and concrete next steps in collaboration with community partners. For each training, the program convenes a local multi-disciplinary planning committee to tailor and refine the training's curriculum and focus to meet the community's needs. Cal Walks and SafeTREC conduct pre-training site visits to collect on-the-ground observations of existing walking and biking conditions to adapt the CPBST curriculum and to provide context-specific strategies for the community's existing conditions.

Planning Process

The Eureka CPBST planning process was initiated in April 2018. The planning process consisted of:

- **Community Plans and Policies Review:** Cal Walks conducted a review of current community planning documents to inform the training with local context and prepare to build off existing efforts. The following documents were reviewed prior to the site visit:
 - [Opportunities to Improve Transportation Equity in Humboldt County](#), May 2006
 - [Safe Routes to School Programs in Rural California: A Guide for Communities and Partners](#), September 2015
 - [HCAOG Safe Routes to Schools Regional Prioritization Tool](#), November 2012
 - [Humboldt Regional Bicycle Plan Update 2012](#)
- **Analysis and Mapping of Pedestrian and Bicycle Injury Data:** UC Berkeley SafeTREC used the Statewide Integrated Traffic Records System (SWITRS) data and the Transportation Injury Mapping System (tims.berkeley.edu) to analyze injury trends in Eureka as well as census data to create rates based on population. Patterns of injury collisions, victim characteristics and demographics were analyzed and presented to the Planning Committee.

- **Identification of Priority Discussion Topics for Training:** The Planning Committee identified the conversion of a city-owned sewer line into a connected part of the Eureka trail system that runs behind Zane Middle School as the focus of the Eureka CPBST:
 - To assess existing conditions along the proposed trail behind Zane Middle School;
 - To explore potential pedestrian and bicycle infrastructure changes along S Street and adjacent streets;
 - To support and build on existing Safe Routes to School education and encouragement efforts by Redwood Community Action Agency;
 - To address City, School District, and community concerns related to students getting to and from school along S Street, and Buhne Street;
 - To provide an opportunity to gather community input on the City’s proposed Bay to Zoo trail, which would connect the coast to the communities surrounding Zane Middle School; and
 - To provide an opportunity for community members to give input on potential future pedestrian and bicycle infrastructure improvements in the City.

- **Site Visit:** The Project Team facilitated an in-person site visit on May 1, 2018 with the Planning Committee at Zane Middle School to 1) review existing pedestrian and bicycle collision data; 2) collect qualitative data based on in-person observations of existing conditions and travel behaviors and; 3) conduct preliminary walking assessments of the focal neighborhood. Site visit findings were used to develop the workshop presentation, including providing local infrastructure examples and developing the walk/bike assessment route maps.

Existing Conditions

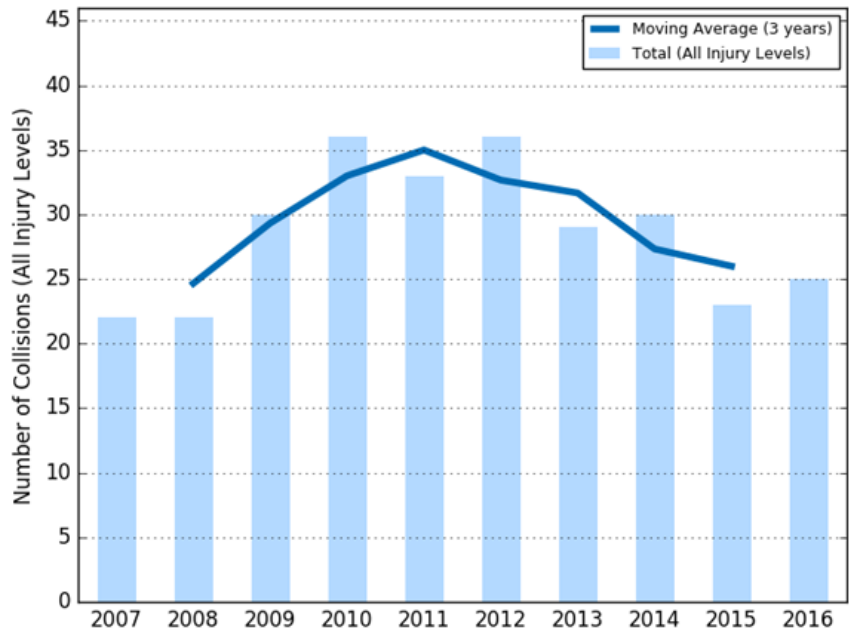
Pedestrian & Bicycle Collision History

Between 2012-2016, there were 143 pedestrian collisions, including nine (9) fatalities and twenty-two (22) severe injuries with collisions concentrated on or along U.S. Route 101 (US 101), locally known as Broadway Street and Redwood Highway, with smaller concentrations along F Street.¹ Collisions primarily occurred during high-traffic times in the late afternoon, between 3:00 PM and 5:59 PM. The top two primary collision factors for collisions involving pedestrians were drivers failing to yield to a pedestrian with the right-of-way in a crosswalk (44.8%) and pedestrians failing to yield to drivers² (28%).

¹ 2015 and 2016 SWITRS data are provisional as of November 2017.

² Pedestrians have the right-of-way in marked and unmarked crossings, and drivers are legally required to yield to pedestrians in these instances. However, when pedestrians cross outside of marked or unmarked crossings, pedestrians must yield the right-of-way to drivers. A pedestrian is legally able to cross outside of a marked or unmarked crossing between two intersections where one or none of the intersections is signalized but only if the pedestrian yields the right-of-way to oncoming drivers. This is not the same as the term “jaywalking,” which refers to crossing outside of a marked or unmarked crossing between two signalized intersections.

Pedestrian Collision Trend with 3-year moving average

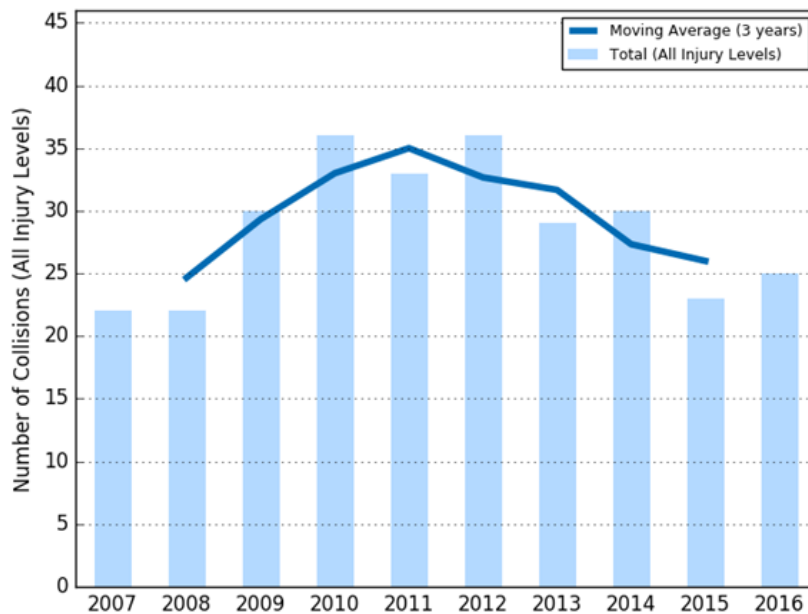


Between 2012-2016, there were 104 bicycle collisions, including two (2) fatalities and seven (7) severe injuries with collisions concentrated on or along SR 101, with smaller concentrations along California Street³. Collisions primarily occurred during high-traffic times in the late afternoon, between 3:00 PM and 5:59 PM. The top three primary collision factors for collisions involving bicycles were bicyclists’ failure to ride on right edge of roadway if riding below the normal speed of traffic (10.6%), bicyclists or driver’s failure to stop at a limit line or crosswalk at a stop sign (9.6 %), and bicyclists or drivers failure to stop or yield right-of-way at a stop sign (9.6%).⁴

³ 2015 and 2016 SWITRS data are provisional as of November 2017.

⁴ According to California Vehicle Code 21200, bicycles are considered vehicles; therefore, bicyclists on public streets have the same rights and responsibilities as automobile drivers. This makes it difficult to discern whether a bicyclist or driver is at fault.

Bicycle Collision Trend
with 3-year moving average



A full discussion of 2012-2016 pedestrian and bicyclist collision data prepared by SafeTREC can be found in Appendix A and B.

Equity Concerns

The City of Eureka has urban and rural active transportation needs, which reflect past decisions and future opportunities. Built on a grid system with a rural scale, streets were originally designed for low-volume, low-speed traffic. US 101 is a major state highway that parallels Eureka’s entire coastal north-south route, including the Downtown area, yet has insufficient pedestrian and bicycle facilities to accommodate for the current amount of pedestrian and bicycle traffic in the area. The lack of adequate facilities makes it difficult for people to safely walk and bike, and particularly affects those who walk and bike as their main mode of transportation, such as lower income, homeless, and/or housing insecure individuals.

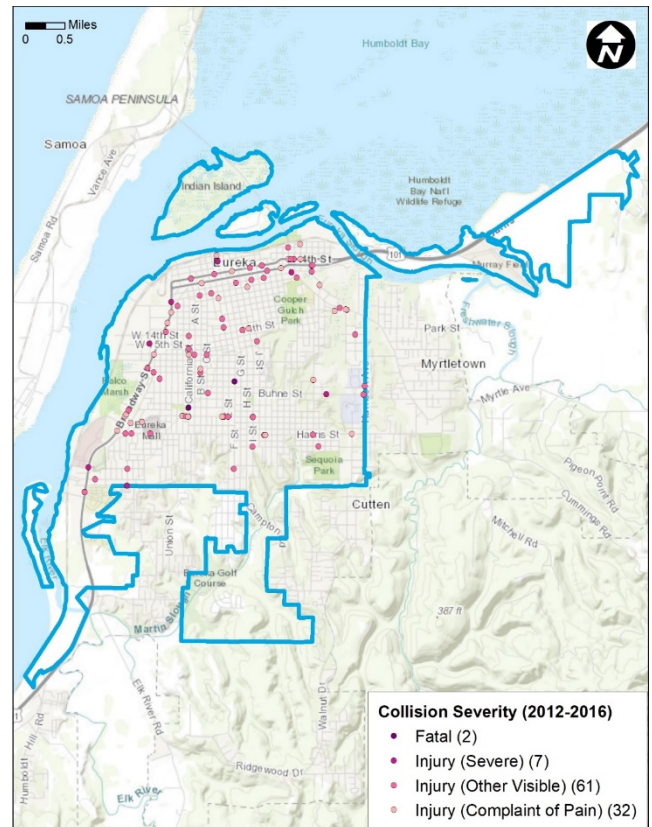
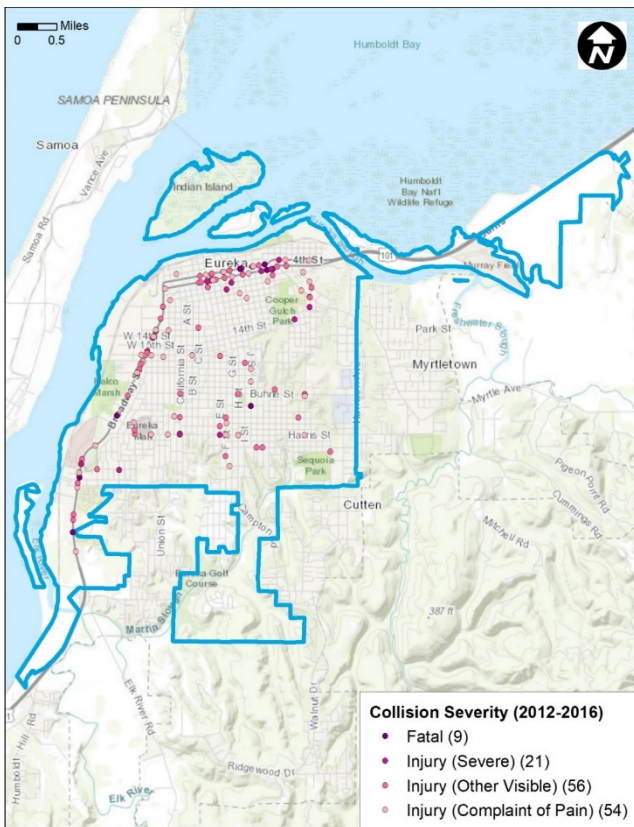
The majority of collisions involving pedestrians and bicyclists occur on and around the US 101 corridor and other higher speed one-way streets in Downtown Eureka. Many of these streets were designed and built decades ago and are more characteristic of rural communities than the urban center Eureka continues to become. Changes in development patterns, commuting practices, and population growth have made the need for safe, accessible, and affordable active transportation options more evident. Along with infrastructure needs, education and encouragement programs are needed to encourage

travel by walking and biking and use of existing facilities, including the Waterfront Trail and Bay to Zoo Trail, as well as to educate drivers of active transportation users' needs.

Although the CPBST workshop focused on the area around Zane Middle School, the City of Eureka expressed a commitment during the site visit and workshop to address walking and biking safety concerns citywide and support education and encouragement efforts aimed at increasing active transportation use throughout the City.

Pedestrian Collisions
2012-2016

Bicycle Collisions
2012-2016

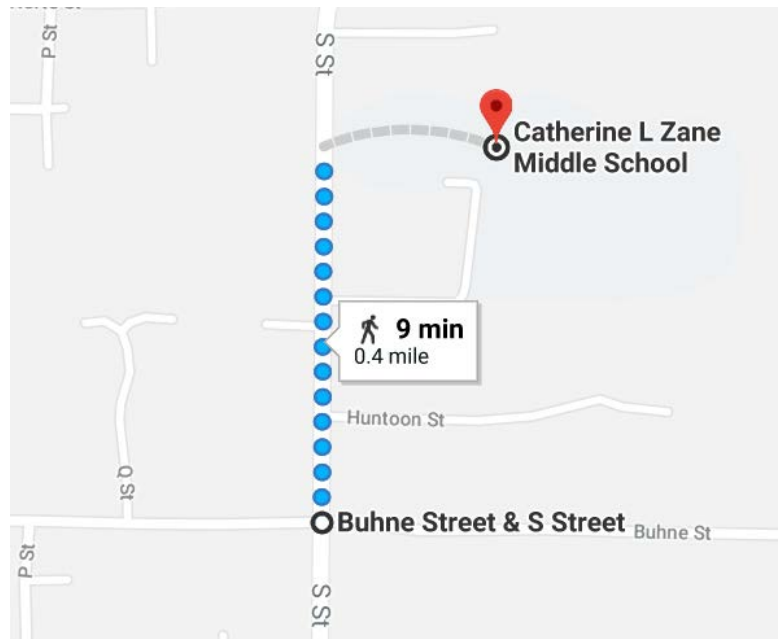


Walkability & Bikeability Assessment Reflections

Workshop participants conducted walkability and bikeability assessments along three routes. Participants were asked to 1) observe infrastructure conditions and the behavior and needs of all road users; and 2) identify positive community assets upon which pedestrian and bicycle safety strategies can be built.

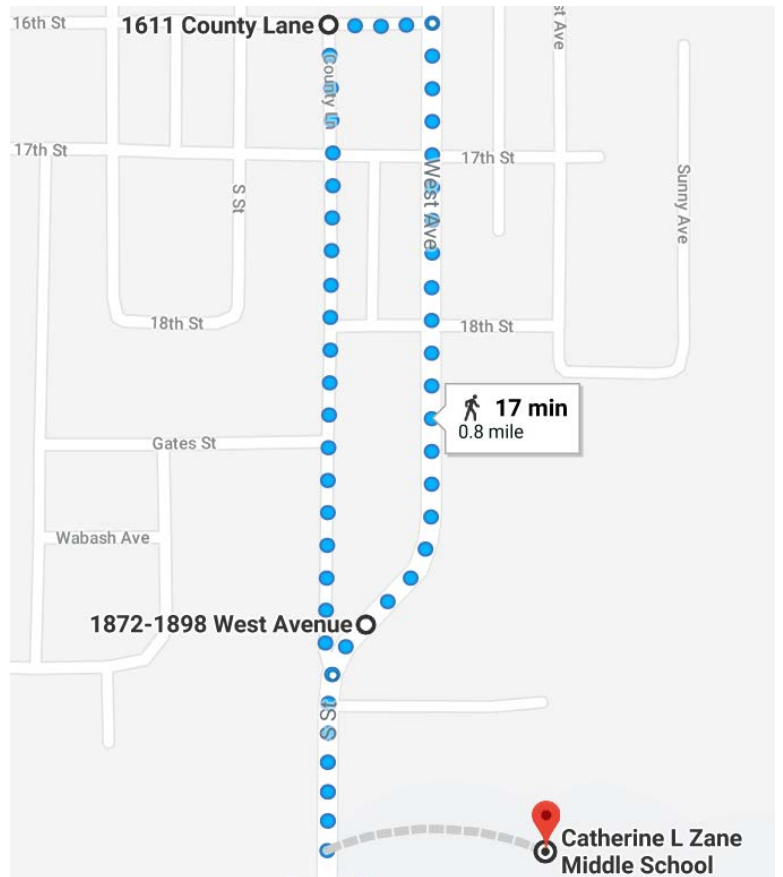
Route 1: Buhne Street and S Street Intersection

The first walking route focused on the infrastructure and walking experience around the front entrance of Zane Middle School, especially at the intersection of Buhne Street and S Street, which is used by many students to get to and from school. S Street experiences high volumes of vehicle traffic during school arrival and dismissal times. Starting the walk assessment at Zane Middle School, participants walked up the school driveway to South Street, south on South Street to Buhne Street and observed the intersection of Buhne Street and South Street then traveled north on South Street back to the School.



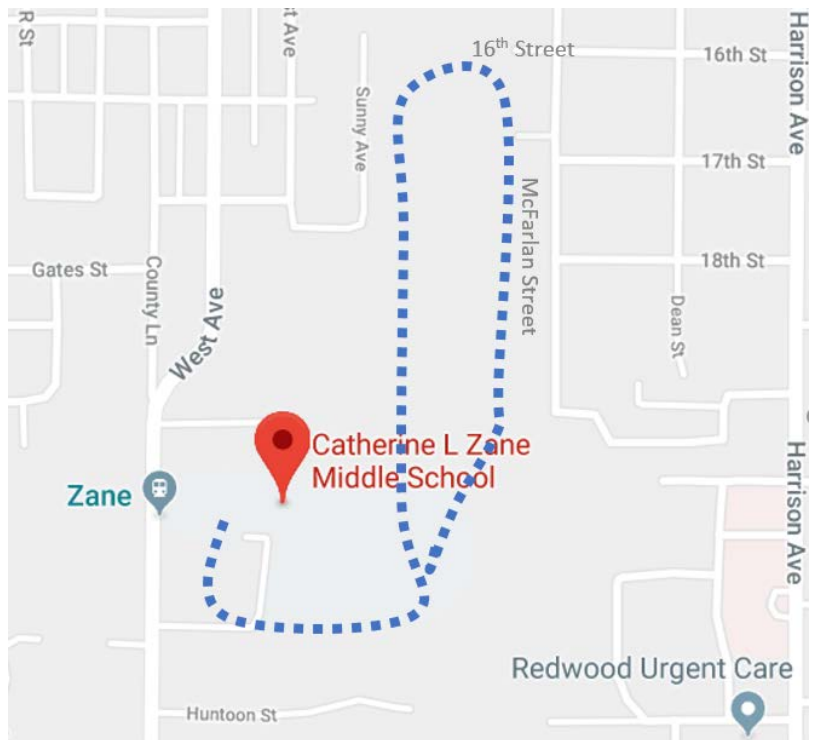
Route 2: S Street and County Lane

The second walking route focused on S Street and County Lane. Participants traveled north on S Street to County Lane, east on County Lane, south on West Avenue to S Street and continued back to Zane Middle School.



Route 3: Proposed Bay to Zoo Trail SRTS Connection

The third walking route focused on the Bay to Zoo Trail Safe Routes to School (SRTS) connection at Zane Middle School. Participants walked down to the School's field, continued along a City easement running along the proposed Bay to Zoo Trail connection towards 16th Street. At 16th Street, participants continued south down McFarlan Street to Hillside Drive where they walked a pedestrian path between two residential homes leading back to the school field.



Following the walkability and bikeability assessment, the participants shared the following reflections:

- **Vehicle Congestion on S Street:** The school parking lot experiences high volumes of vehicle traffic during school arrival and dismissal times, resulting in vehicle traffic spilling onto S Street and backing up in both directions on S Street, towards Buhne Street and County Lane.



Parents and caregivers are lined-up along S Street up to Huntoon Street during dismissal time.
Photo Credit: California Walks

- **Parking in No Parking Zone:** Parents and other caregivers park in the No Parking Zone north on S Street towards County Lane and south on S Street past Buhne Street, narrowing the vehicle travel lane and blocking the shoulder where bicyclists ride. The School Principal stated that the City has installed bulb-outs in addition to the No Parking or Loading Zones signage on S Street towards County Lane and the Eureka Police enforce the No Parking Zone. However, parents and other caregivers continue to park in the red zone, making it difficult for students to see oncoming traffic while crossing at the marked crosswalk right in front of the school.



A workshop participant activates the solar-powered LED crosswalk sign in front of the school. No Parking Zones are marked on either side of the street. Photo Credit: California Walks

- **Vehicle Turning Conflicts with Pedestrians:** Participants observed several turning conflict areas between students and drivers along S Street. Drivers turning onto S Street do not always respect or defer the right-of-way to students crossing S Street along at Buhne Street, Huntoon Street, and Trinity Street. During the assessment, participants and staff witnessed a student scream as a vehicle on Trinity Street turned right onto S Street into the crosswalk where students were crossing in the marked crosswalk at Trinity Street. Only in response to the student’s scream did the driver stop and allow the students to finish crossing S Street.
- **Student Crossing Behavior:** Students walking to and from school often use the unsignalized marked crosswalk at Trinity Street and S Street to cross from west to east on S Street rather than walking to the signalized Buhne Street intersection and crossing with the pedestrian signal. The Principal expressed concern about students crossing at the unsignalized crosswalk on S Street and Trinity and shared that a student was injured in a collision with a motorist last year

due to a car turning into the student at S Street and Trinity. The Principal noted that he prefers the students walk to and cross at the signalized Buhne Street intersection and expressed concern that many students cross at Trinity Street where drivers have less visibility of the crosswalk, are less likely to yield, and travel at higher speeds.



Students crossing in the marked crosswalk at S Street and Trinity Street. The Principal stated and California Walks observed vehicles failing to yield to students crossing. Photo Credit: California Walks

- **Overgrown Landscaping:** Overgrown bushes and trees force pedestrians to walk off the sidewalk and onto S Street with vehicular traffic, especially in the area where S Street and West Avenue connect.



Overgrown vegetation forces workshop participant to walk in the street along S Street. Photo Credit: California Walks

- **Missing and Narrow Sidewalks and Narrow Streets:** There is a gap in sidewalk connectivity where S Street converts into County Lane. The road is also narrow, forcing pedestrians, bicyclists, and drivers to maneuver around each other on the roadway. The sidewalk resumes at County Lane and Gates Street but is very narrow. These are frequently walked routes for Zane Middle School students and students from nearby Eureka High School.

Missing sidewalks along S Street near County Lane.
Photo Credit: California Walks



- **Parking on the Sidewalk:** When walking along County Lane, pedestrians encounter a variety of walking conditions, including narrow sidewalks, dirt, gravel, or overgrown vegetation in the road shoulders, and sidewalks and walking zones narrowed or blocked by parked vehicles.



A vehicle parked on the sidewalk along County Lane blocks access for pedestrians. In the right foreground the sidewalk is cracked.
Photo Credit: California Walks

- **Lighting:** Participants observed a lack of lighting infrastructure along the path and noted that the path is dark with a lack of clear sightlines, especially during winter months. Lack of lighting was also a concern along the City’s pedestrian path beginning at McFarlan Street and Hillside Drive leading to the school field.



Overgrown vegetation and lack of street lighting and pedestrian-scale lighting create darkened sidewalks and reduce the visibility of pedestrians who walk along S Street.

Photo Credit: California Walks

- **Peaceful, Natural Area for Walking:** Participants expressed appreciation for the path as a peaceful and natural resource for community members and if cleaned up, could provide an opportunity for more physical activity for students and residents while the Bay to Zoo Trail SRTS connection is explored. Participants walking this route expressed excitement around the City’s proposed Bay to Zoo trail SRTS connection, which would connect the coast to the communities surrounding Zane Middle School. Several participants said they walk the route regularly, while others were unaware of its existence, condition, and use as a potential route to school and the neighboring community.



Community members walk their dogs along the Zane Middle School path leading along the school's soccer field to City's proposed Bay to Zoo trail SRTS connection.

Photo Credit: California Walks

Key Opportunities to Improve Walking and Biking Safety

Following the walkability and bikeability assessment, the Project Team facilitated small-group action planning discussions where participants discussed and prioritized infrastructure improvements for reducing the number of injuries and fatalities, as well as education and encouragement programs aimed at increasing the number of people and the frequency of walking and biking in Eureka.

Participants were asked:

1) What education and encouragement programs are needed to cultivate student and parent leadership in pedestrian and bicycle safety efforts; and 2) What infrastructure projects are needed to encourage students to walk/bike/roll/take transit to school?

Participants then voted on their priority recommendations to pursue after the workshop.

Community Recommendations

Workshop participants provided the following priority recommendations and next steps for overall pedestrian and bicyclist safety improvements in the workshop area and throughout the City of Eureka:

Community Programs, Policies, and Campaigns

- **Pedestrian and Bicycle Education during Physical Education Classes:** Participants were interested in developing a pedestrian and on-bicycle education program to be incorporated into physical education classes because they believe that students need an opportunity to learn how to walk and bike safely in their community. Pedestrian and on-bike education would not only teach students necessary safety skills but also encourage them to make more trips by walking and biking as they get older and cultivate an awareness of pedestrian and bicyclist behaviors and safety challenges that could improve their driving behavior later on in life.

In the short-term, participants envisioned in-classroom education materials could be provided to physical education teachers to share with students alongside seasonal education events like Walktober/Walk to School Day and May is Bike Month/Bike to School Day. In the long-term, participants hoped to secure funding to implement and sustain on-bike and crosswalk education curriculum and bike maintenance programs. They also wanted to garner support and get buy-in from Eureka schools to make the bicycle and pedestrian education curriculum mandatory throughout the District.

- **Support for Trails and Trail Connections:** Participants would like to build support for existing trails and trail connections and see more trail infrastructure built in the City of Eureka. In the short-term, participants want to build support for existing trails through community education campaigns, trail bicycle education events, distribution of the Bay to Zoo Trail infographic, and information on the physical, financial, and community benefits of trail development to communities.
- **Community Media Campaigns:** Participants also wanted to amplify walking and biking safety messages through various media campaigns. Several opportunities were identified including a community wide campaign through Humboldt Access Channel and location specific pop-up demonstrations that would be covered by the media, thereby greatly extending the reach of each event.

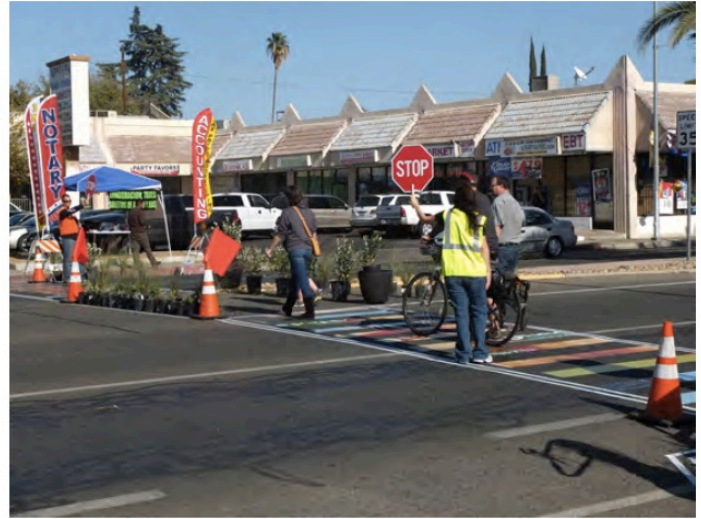
Infrastructure Concerns & Priorities

- **Pop-up Demonstrations:** Participants proposed temporary demonstration projects as a way to educate all road users and build community support for additional walking and biking infrastructure, especially trails. Crosswalk demonstrations were proposed on the middle of S Street at Hill Street and Harrison Street where the County and City have an existing project, as

well as locations near the City and County boundary. Roundabout⁵ demonstrations were also proposed at crossings where roundabout installation could improve safety of all road users.



Crosswalk Location (before)



Crosswalk Location (after)

Example of temporary crosswalk demonstration in Fresno, CA. Photo Credit: Ventura / Kings Canyon Corridor Complete Streets Plan

- **Signage and Wayfinding Installation:** Participants would like to see additional pedestrian and bicycle signage and wayfinding in the City, including that which connects existing and proposed trails to nearby amenities. Additional signage and wayfinding can help to direct residents to existing pedestrian and bicycle facilities or along safer pedestrian and bicycle routes where conflicts with vehicles are reduced. Signage and wayfinding can also build community knowledge of the existing pedestrian and bicycle network in the City and County. The City currently has a wayfinding project underway that can support these goals.



Example of bicycle wayfinding on the Los Angeles River Bicycle at the Egret Park entrance. Photo Credit: LADOT Bike Blog

⁵A roundabout is a type of circular intersection that has been recognized by the Federal Highway Administration as a safer and more efficient street design than a standard intersection. Source: <https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/>

Workshop participants expressed concern at the speed and behavior of some bicyclists on existing trails and the need for trail use education. Participants discussed installation of safety and etiquette user guides and instructional striping on existing trails to educate trail users on safe and courteous behaviors while using the trail. Potential signage and striping could include specific user guides for pedestrians and bicyclists, including trail use guides for runners, those with mobility challenges, and parents with small children. Trail education should focus on the shared use of the trail and share responsibility to keep it safe.



[Share the Trail](http://www.roseville.ca.us/ShareTheTrail) etiquette guidelines for the Roseville, CA trail system. Image Credit: City of Roseville

- **Trail Connections:** Participants would like to see more trail infrastructure built in the City of Eureka, in particular, the Bay to Zoo Trail Safe Routes to School connections to Zane Middle School and other schools. These SRTS connections would provide students a safer way to get to and from school and reduce vehicle congestion on local streets during school arrival and dismissal times, while also providing opportunities for commuters to travel to job centers and amenities by walking and biking.

Cal Walks/SafeTREC Recommendations

California Walks and SafeTREC also submit the following recommendations for consideration by the City of Eureka and its residents:

- **School and School District Safe Routes to School Policies:** Schools and school districts are a key partner in providing students with pedestrian and bicycle education and supporting a culture of health and safety. In support of school pedestrian and bicycle education instruction, the Project Team recommends workshop participants collaborate with the Eureka Union School District to

explore the development of a Safe Routes to School (SRTS) District Policy to educate, support, and encourage safe walking and biking to from school and in the community. A number of resources exist to support SRTS development. The Safe Routes to School National Partnership has [programming resources](#) to assist in policy development of Safe Routes to Schools and Change Lab Solutions has developed an interactive [Safe Routes to School Policy Workbook](#) which includes a [Policy Builder](#) to help communities create and implement policies that support active transportation.

- **CDPH Kid’s Plate Grant:** The [California Department of Public Health’s Kid’s Plate Grant](#) funds injury prevention efforts to reduce or eliminate unintentional injuries in children and youth up to age 18. The grant includes bicycle safety as a key focus area and is typically released each year, although the December 2017 cycle funded projects from 2018-2020. The Project Team recommends the Planning Committee explore potential partnerships with Humboldt County Public Health and other local partners to support pedestrian and bicycle injury prevention activities at Eureka elementary and middle schools, especially around Walk to School Day and Bike to School Day. The CDPH Kids Plate Grant is a potential funding opportunity to provide additional long-term and site-specific Safe Routes to School education and encouragement programs for Eureka schools.
- **Speed Calming:** The Project Team recommends the City install additional speed calming measures along S Street/West Avenue, such as edge lines or optical speed bars to reduce the lane width which could reduce vehicular speeds. Edge line pavement markings provide a visual reference to guide drivers and help to reduce drifting onto the shoulder where pedestrians and bicyclists could be walking/biking. Optical speed bars could increase drivers' perception of speed and cause them to reduce their speed. Both countermeasures are relatively low cost according to the United States Department of Transportation Federal Highway Administration's [“Low-Cost Treatments for Horizontal Curve Safety 2016”](#) guide.



Optical speed bars on a rural road. Source: Federal Highway Administration; Photo Credit: KLS Engineering, LLC

- **Crossing Enhancements:** Workshop participants requested additional crossing improvements throughout the community. The Project Team recommends the development of a crosswalk enhancement policy and design guide, lead by the City and CPBST partners, to help identify and prioritize crossing improvements across the City, particularly along roads with high pedestrian and bicycle traffic and near schools, parks, trail connections, and other neighborhood resources. Lower cost crossing enhancement options include high-visibility crosswalks with rectangular rapid flashing beacons, bulb-outs, and additional crosswalk signage. These and other crossing enhancements will not only provide pedestrians and bicyclists with safer facilities and allow them to commute to job centers and connect to community resources and amenities by walking and biking. The City's Public Works representative in attendance confirmed to workshop participants that there are several improvement plans underway, such as the installation of pedestrian hybrid beacons and bulb-outs. The Project Team recommends that the City and Zane Middle School administrators jointly identify top priority crossings and crossing improvements to improve safety for students walking and biking.
- **Lighting Assessment:** The Project Team encourages and recommends CPBST partners organizations and attendees to collaborate and perform a citywide street lighting assessment focused on pedestrian and bicycle lighting needs around schools, parks, businesses, and along key pedestrian and bicycle corridors. The Project Team noted a lack of pedestrian-scale lighting in the area around Zane Middle School, particularly at crosswalks leading up to the schools. Proper street lights provide safety and security and improve the overall well-being of road users. Lighting should be uniform, consistent, and reduce glare and light pollution.

Appendix A

Pedestrian and Bicycle Collision Data Analysis

2012-2016 EUREKA DATA ANALYSES

Community Pedestrian and Bicycle Safety Training Workshop May 22, 2018

The goal of the Community Pedestrian and Bicycle Safety Training (CPBST) is to make communities safer and more pleasant for walking and bicycling. This workshop will train local residents and safety advocates in pedestrian and bicycle safety as well as create opportunities for collaboration with local officials and agency staff.

This fact sheet highlights 2012-2016 pedestrian and bicycle collision data to help your community better prioritize recommendations that emerge from this workshop.

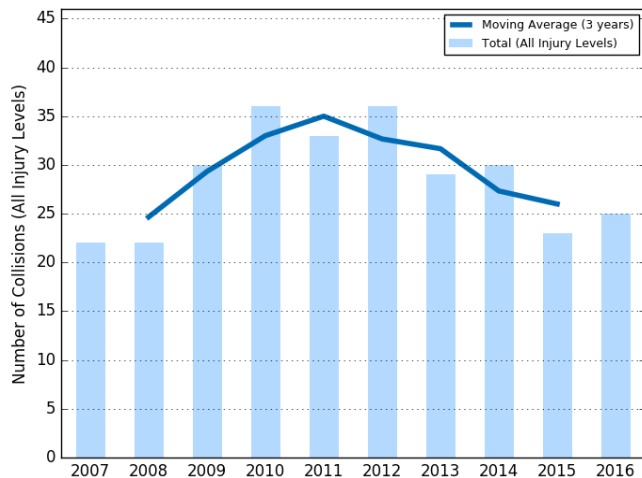
PEDESTRIANS



315 people were killed or injured in **286** pedestrian collisions in the last 10 years (2007-2016).

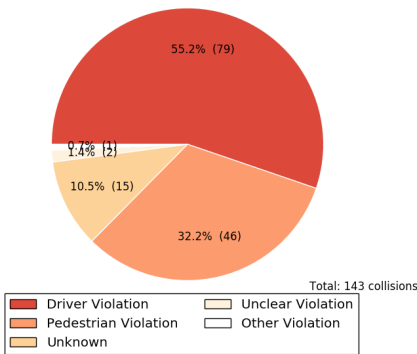
The **three-year moving average** line shows a **downward** trend in pedestrian collisions.*

There were **23** pedestrian collisions in 2015, but an average of **26** pedestrian collisions per year for the 3-year rolling average between 2014 and 2016.

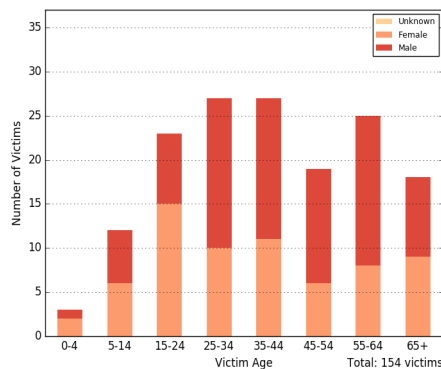


*This line is useful for tracking change over time, especially when the number of collisions changes a lot between years. Data points are at the midpoint of the three years of data specified.

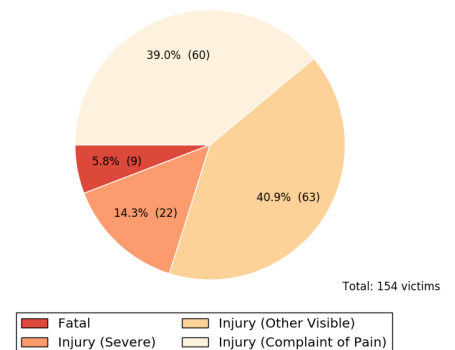
55.2% driver violations
VS.
32.2% pedestrian violations



*Unclear violations were committed either by the driver, pedestrian or bicyclist.



56.5% of victims were male
65.2% of victims ages 15-24 were female
27.8% of victims were age 55+



20.1% of victims (or 31 people) were **KILLED** or **SEVERELY INJURED**

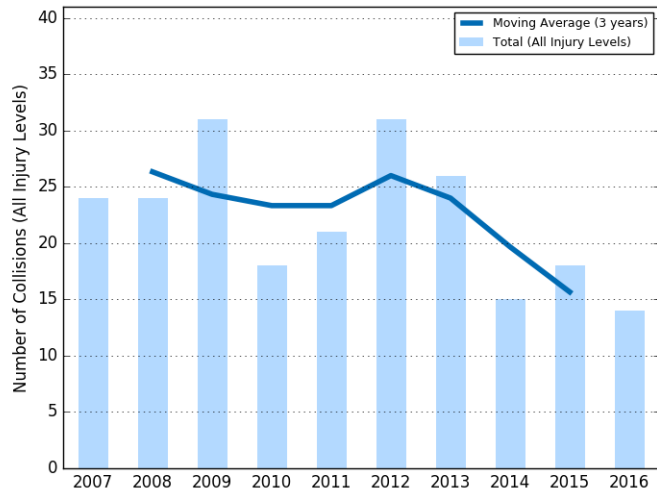
BICYCLES



229 people were killed or injured in 222 bicycle collisions in the last 10 years (2007-2016).

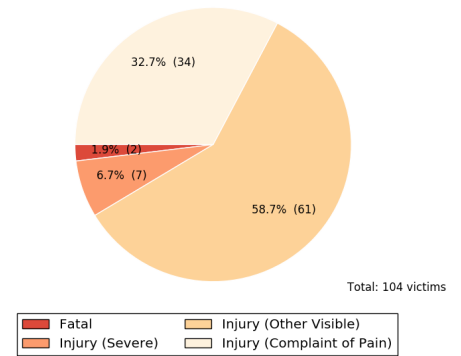
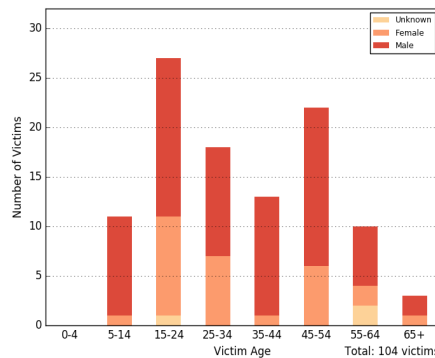
The **three-year moving average** line shows a **downward** trend in bicycle collisions.*

There were **18** bicycle collisions in 2015, but an average of **15.7** bicycle collisions per year for the 3-year rolling average between 2014 and 2016.



* This line is useful for tracking change over time, especially when the number of collisions changes a lot between years. Data points are at the midpoint of the three years of data specified.

Bicycles must follow all the same rules of the road as vehicles. As a result, we cannot break down violations by driver vs. bicyclist.



Majority of the victims were male.
 9 out of 10 victims ages 0-13 were male
 8 out of 11 victims ages 15-18 were male
 6 out of 10 victims ages 21-24 were female

8.6%
 of victims (or 9 people)
KILLED or SEVERELY INJURED

SUMMARY



113.1 pedestrian fatalities & injuries per 100,000 population over the last five years, which is **2.5 times more than** Humboldt County and **3.2 times more than** California



77.9 bicyclist fatalities & injuries per 100,000 population over the last five years, which is **2.1 times more than** Humboldt County and **2.3 times more than** California

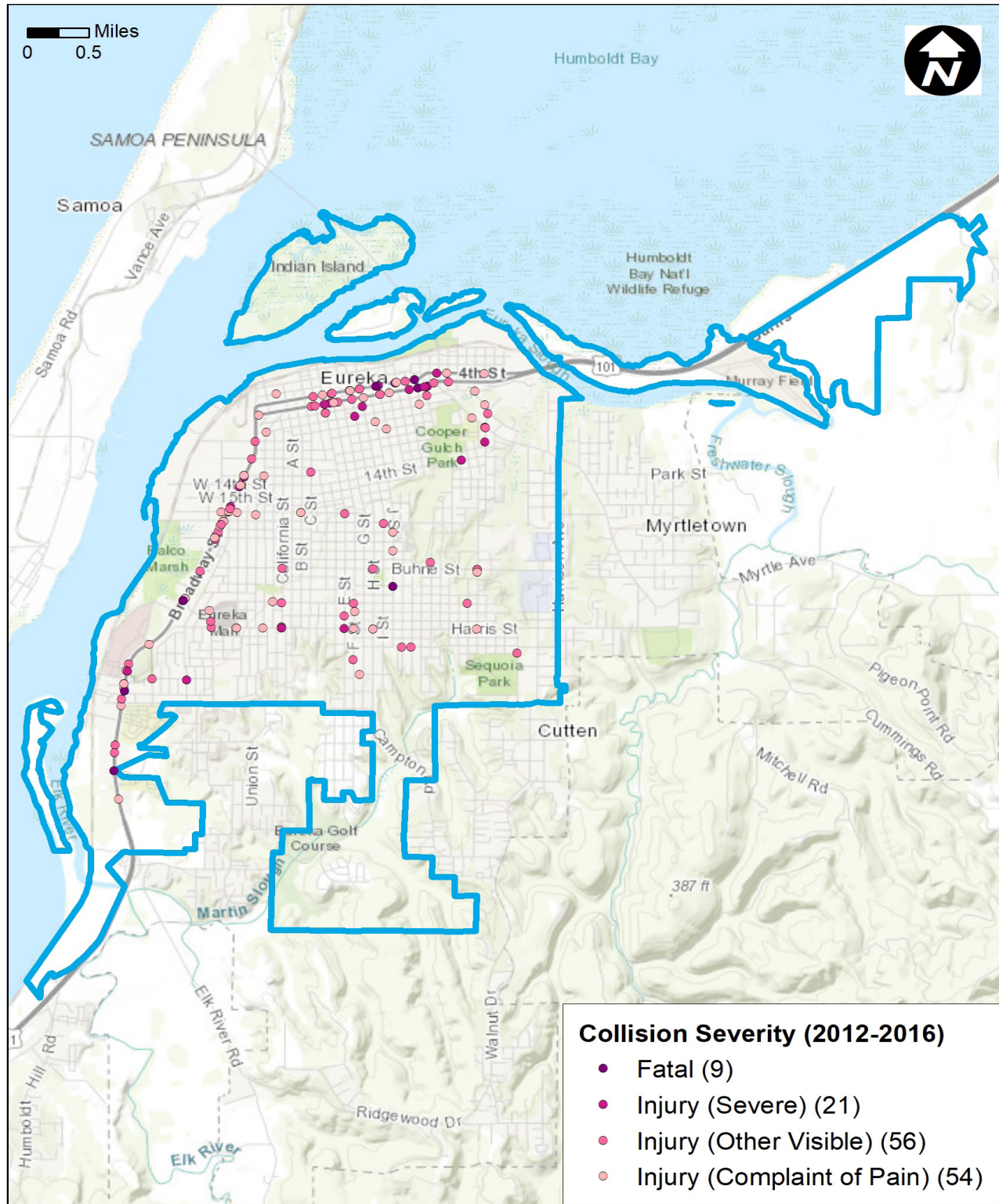
	Yearly Population Rate of Fatalities & Injuries per 100,000 Population Calculated Over a 5-year Period*	
	Pedestrian	Bicyclist
Eureka	113.1	77.9
Humboldt	44.8	36.4
California	35.9	33.3

Source: U.S. Census Bureau, Population Division (intercensal population data for 2016).

* The rate per population is calculated by adding the number of fatalities and injuries from 2012 to 2016 divided by five times the population in 2016.

Pedestrian Collisions 2012-2016

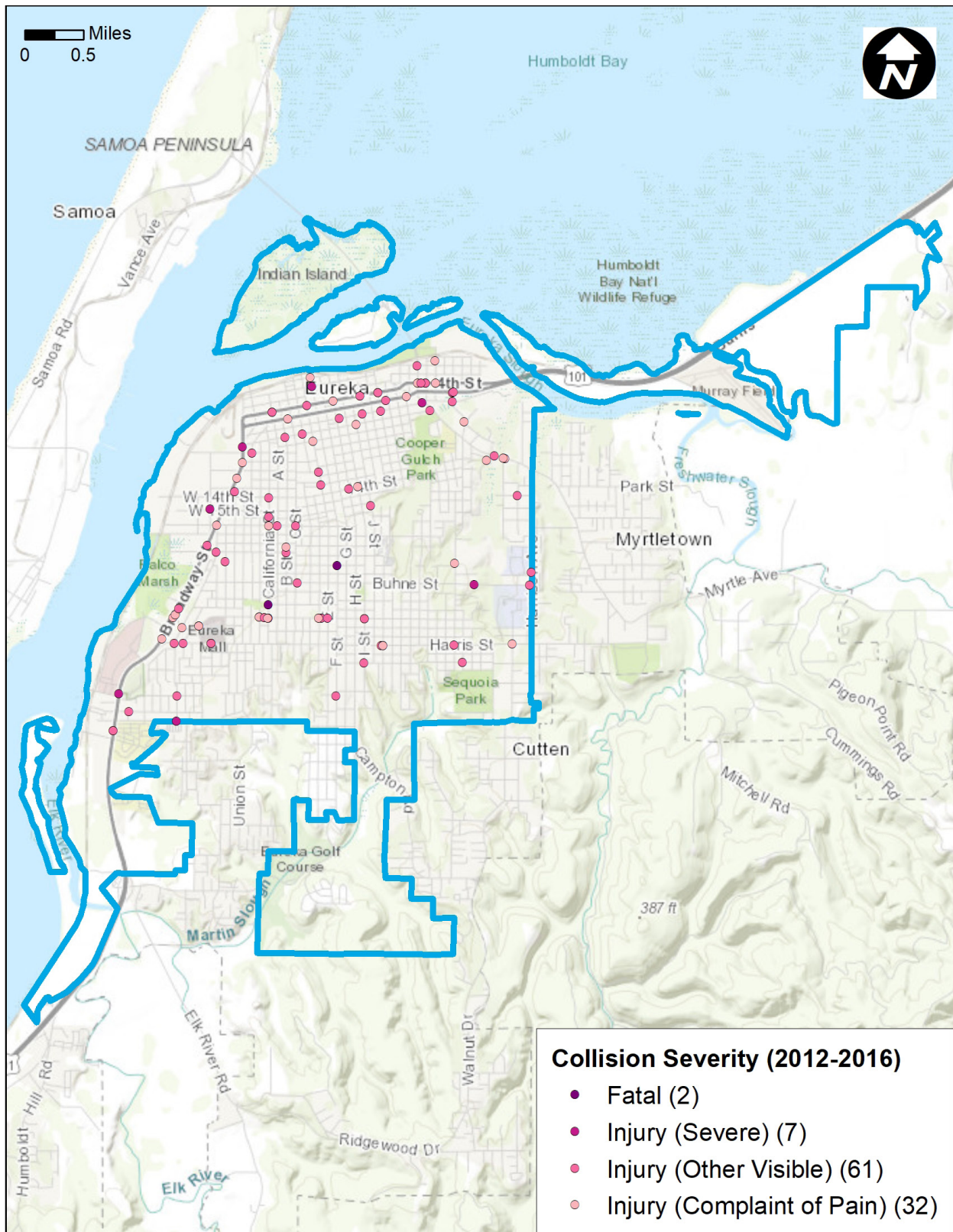
140 of 143 collisions mapped in Eureka, CA.



Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2015 and 2016 are provisional as of November 2017.

Bicyclist collision locations, 2012-2016

102 of 104 collisions mapped in Eureka, CA.



Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2015 and 2016 are provisional as of November 2017.

Appendix B

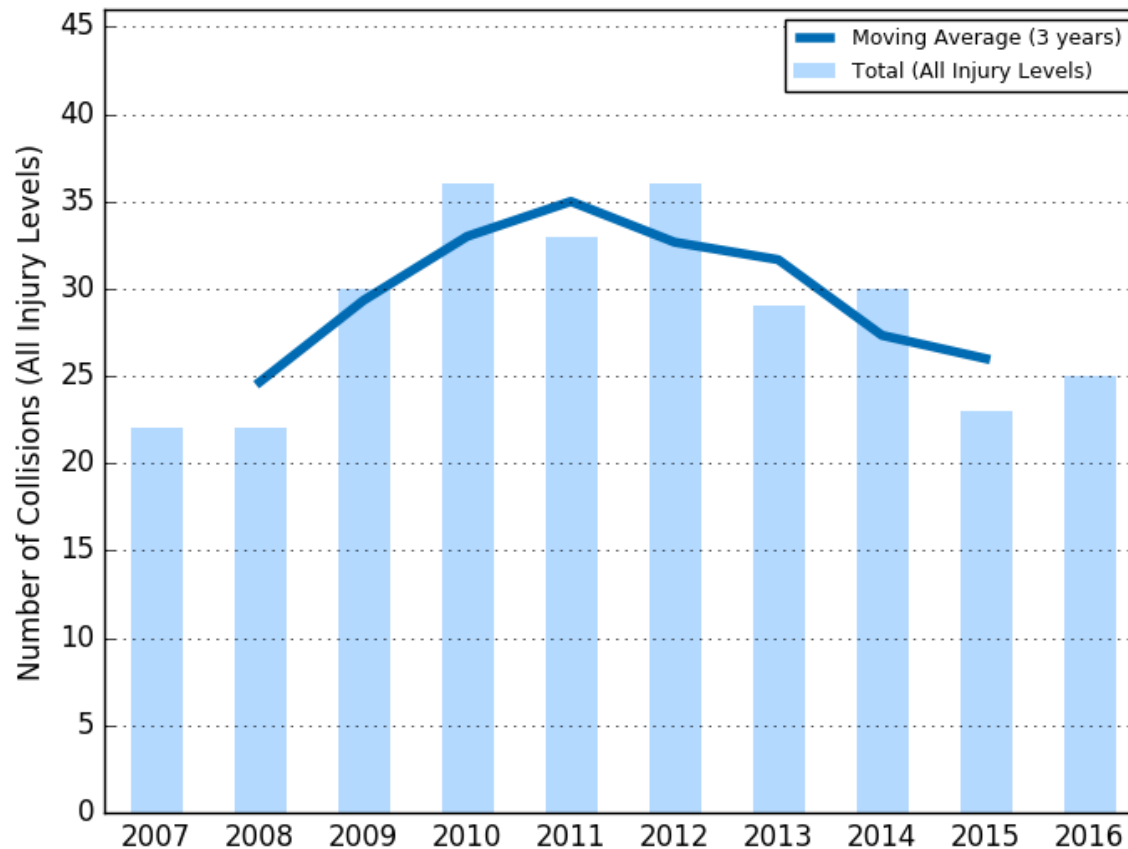
Pedestrian and Bicycle Collision Data Analysis
Site Visit Presentation

Community Pedestrian and Bicycle Safety Workshop Site Visit

Eureka, CA

4/1/18

Pedestrian Injury Collision Trend with 3-year moving average

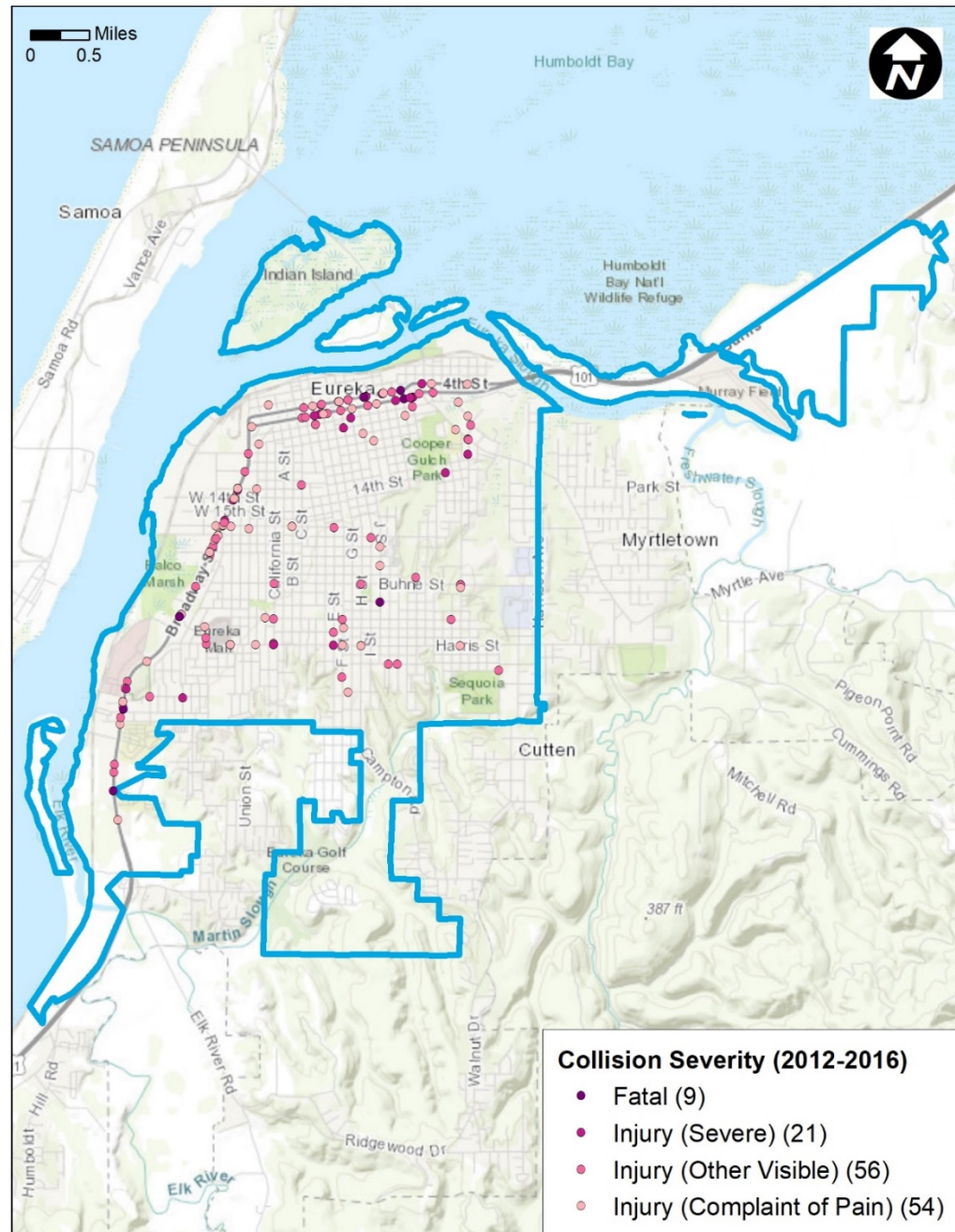


Note: 2015 and 2016 Statewide integrated Traffic Record Systems (SWITRS) data are provisional as of November 2017.

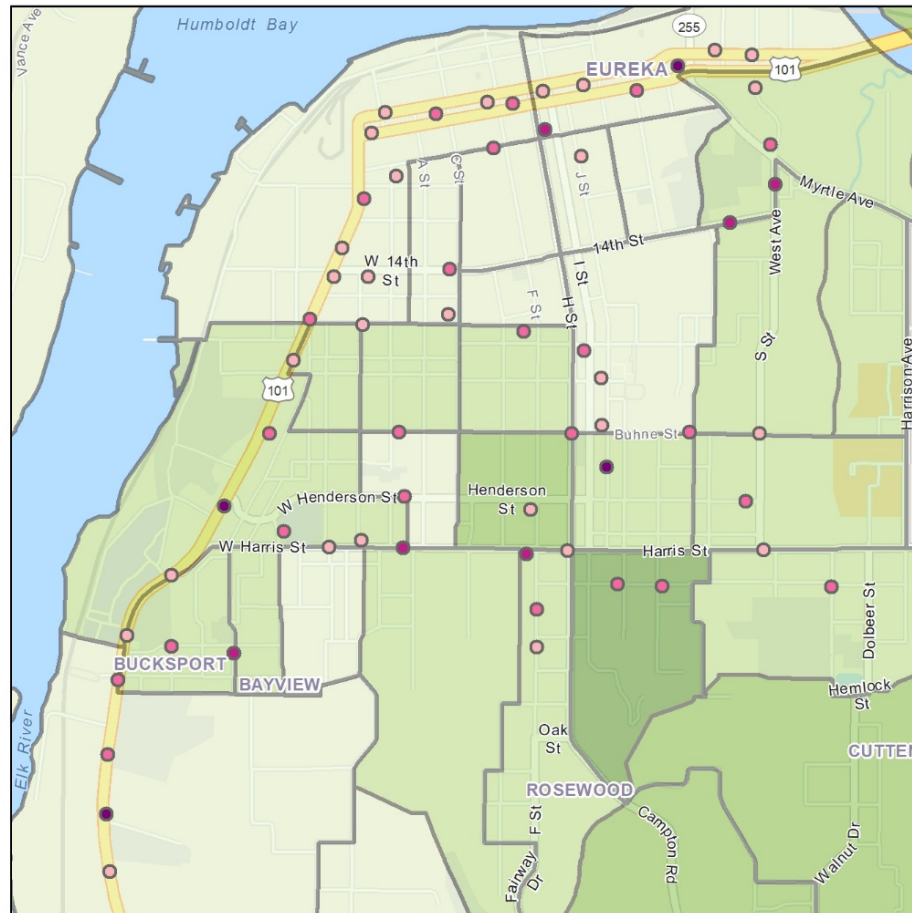
Pedestrian Injury Collisions 2012-2016

Only 140 of 143 collisions are mapped.

Note: 2015 and 2016 SWITRS data are provisional as of November 2017.



Eureka Pedestrian Collision Map (2012 - 2016)



Collision Severity (2012-2016)

- Fatal (9)
- Injury (Severe) (21)
- Injury (Other Visible) (56)
- Injury (Complaint of Pain) (54)

2017 Median Household Income

- < 35K
- 35K - 50K
- 50K - 75K
- > 75K

Pedestrian Injury Collisions by Time of Day and Day of Week Total: 143 collisions

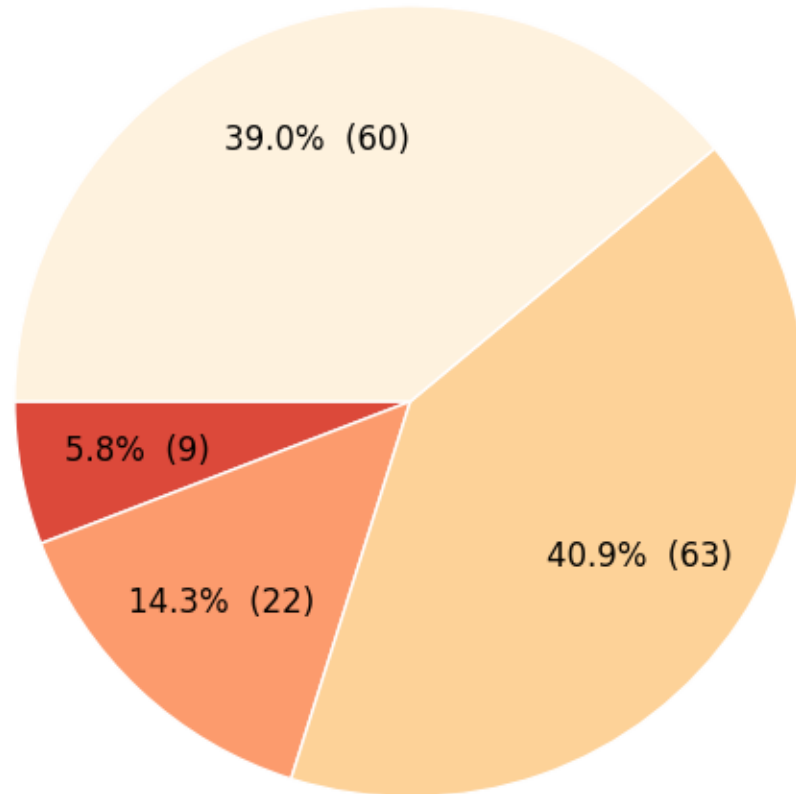
09:00PM-11:59PM	3	2	1	4	5	5	1
06:00PM-08:59PM	3	5	5	4	5	3	4
03:00PM-05:59PM	7	3	7	5	9	1	2
Noon-02:59PM	5	4	7	2	3	2	1
09:00AM-11:59AM	2	2	4	2	5	2	0
06:00AM-08:59AM	2	3	1	2	3	0	1
03:00AM-05:59AM	0	0	0	0	0	1	0
Midnight-02:59AM	1	1	0	1	1	1	0
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

*The colors in this graph refer to how frequently a collision occurs at that time & day.

Top 10 Violations in Pedestrian Collisions (with # and %) Total: 143 collisions

CVC No .	Description	Freq.	Percent
21950	Driver failure to yield right-of-way to pedestrians at a crosswalk	64	44.8%
21954	Pedestrian failure to yield right-of-way to vehicles	40	28.0%
0	Unknown	15	10.5%
21456	Pedestrian failure to yield right-of-way at traffic signal	6	4.2%
22106	Unsafe starting or backing up of vehicle	4	2.8%
23152	Driving under the influence of alcohol	4	2.8%
21453	Failure to stop at a limit line or crosswalk at a red light. Failure to yield right-of-way to pedestrian when turning on a red light	3	2.1%
21952	Driver failure to yield right-of-way to pedestrians on sidewalks	2	1.4%
10852	Wilfully injure or tamper with a vehicle or its contents without the owner's consent	1	0.7%
21650	Failure to drive on right half of the roadway (with some exceptions)	1	0.7%
22450	Driver failure to stop at a limit line or crosswalk at a stop sign	1	0.7%
22107	Unsafe turning with or without signaling	1	0.7%
22103	Unsafe U-turn in residential district	1	0.7%
Total		143	100.0%

Pedestrian Victim Injury Severity

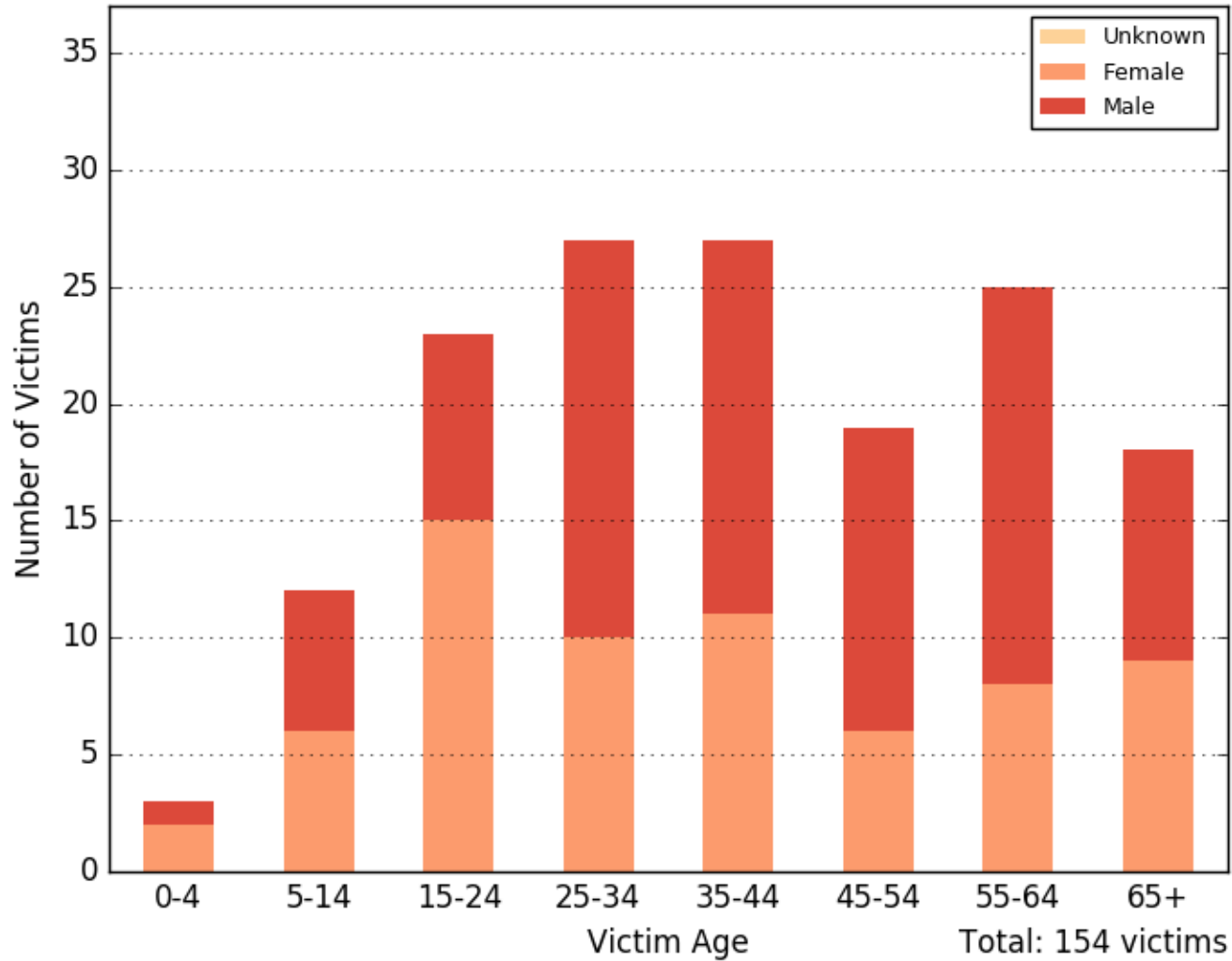


Total: 154 victims



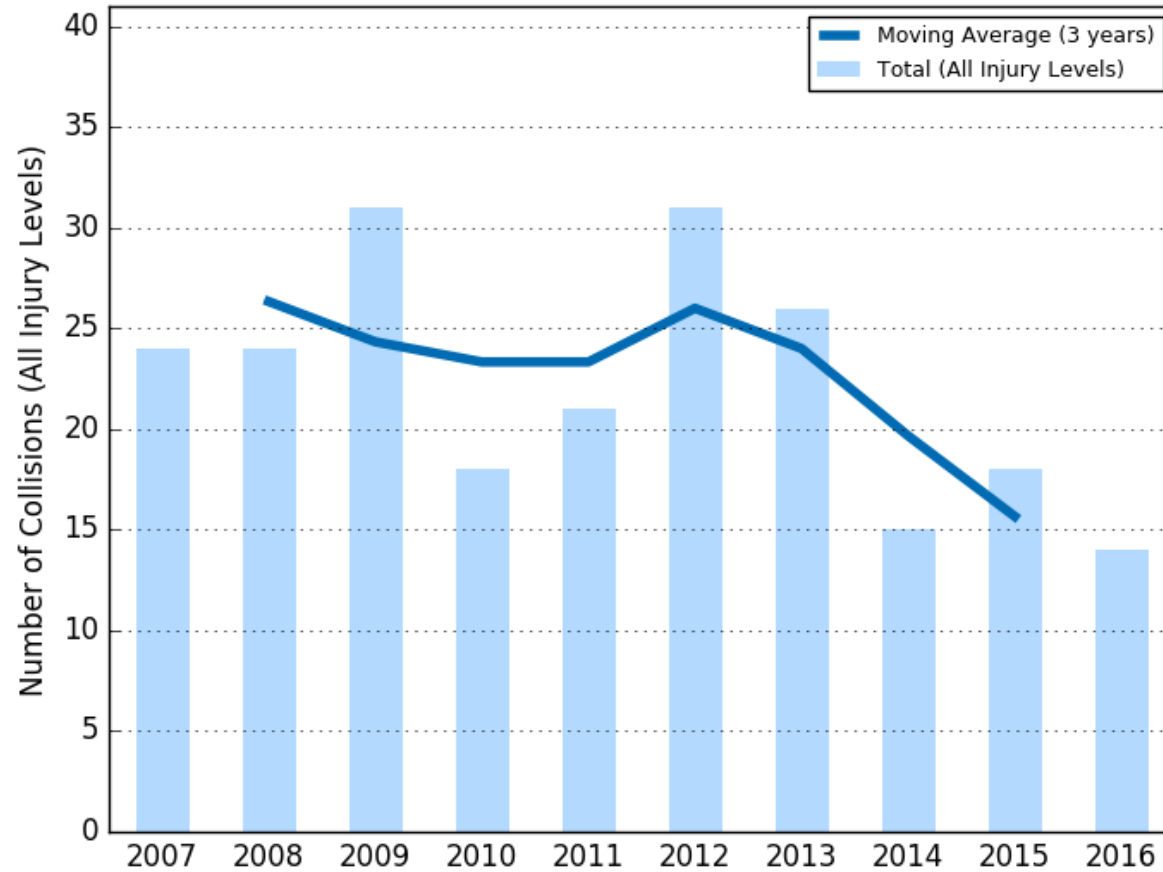
Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

Pedestrian Injury Victims by Age and Gender



Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

Bicycle Injury Collision Trend with 3-year moving average

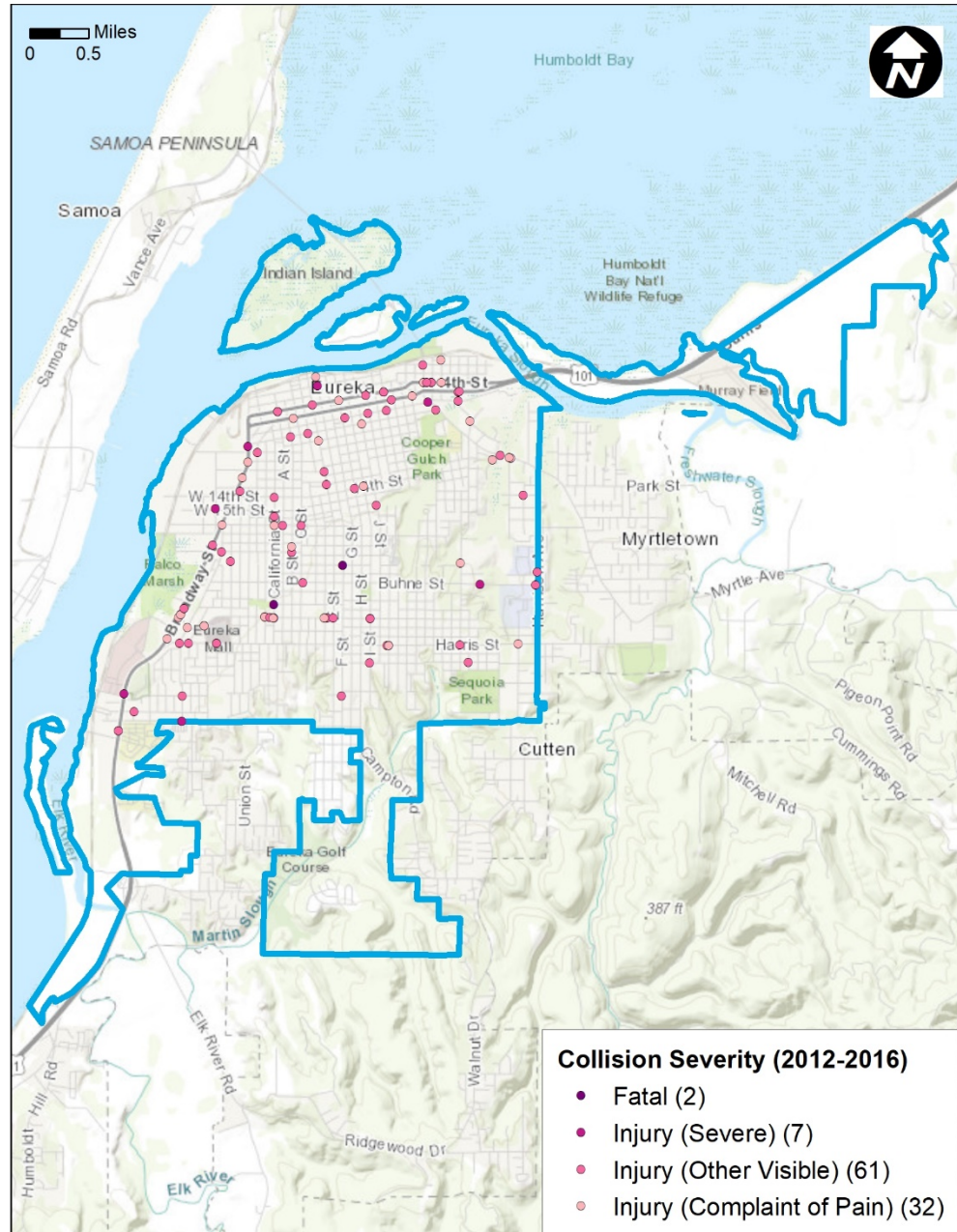


Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

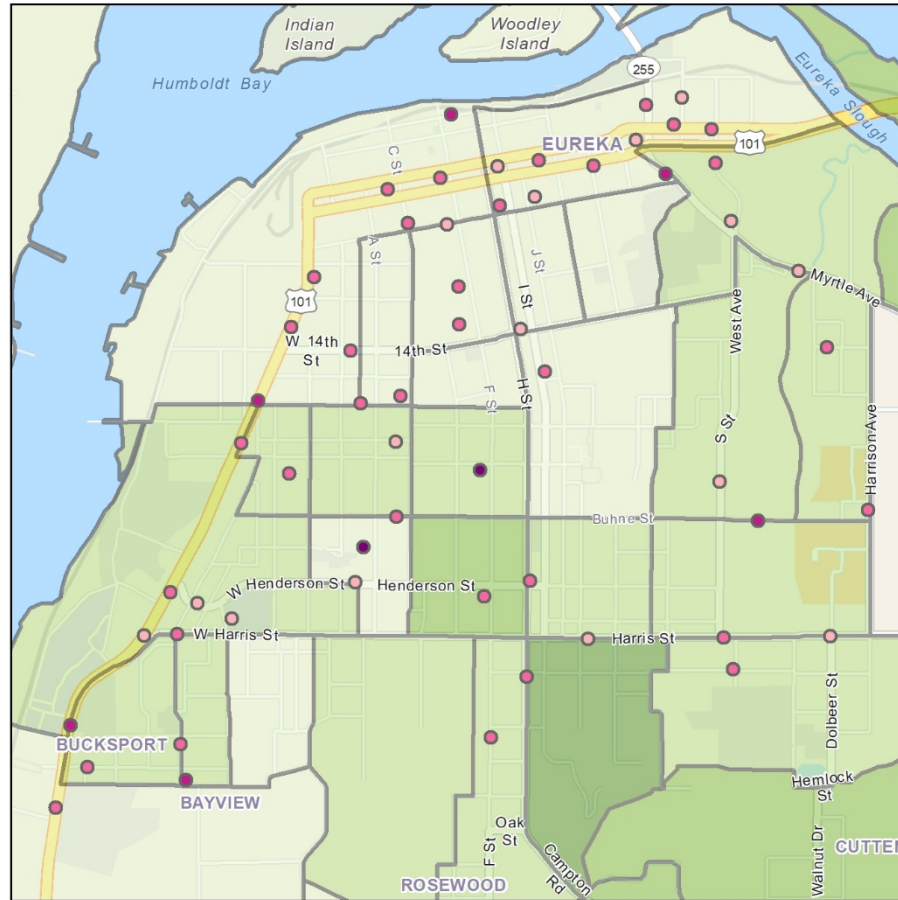
Bicycle Injury Collisions 2012-2016

102 of 104 collisions are mapped.

Note: 2015 and 2016 SWITRS data are provisional as of November 2017.



Eureka Bicycle Collision Map (2012 - 2016)



Collision Severity (2012-2016)

- Fatal (2)
- Injury (Severe) (7)
- Injury (Other Visible) (61)
- Injury (Complaint of Pain) (32)

2017 Median Household Income

- < 35K
- 35K - 50K
- 50K - 75K
- > 75K

Bicycle Injury Collisions by Time of Day and Day of Week Total: 104 collisions

09:00PM-11:59PM	2	1	1	0	0	1	0
06:00PM-08:59PM	2	1	5	2	3	3	1
03:00PM-05:59PM	8	4	2	7	6	3	3
Noon-02:59PM	6	8	1	1	1	1	4
09:00AM-11:59AM	4	2	4	1	2	1	1
06:00AM-08:59AM	3	3	2	3	0	1	0
03:00AM-05:59AM	0	0	0	0	0	0	0
Midnight-02:59AM	0	0	0	0	0	0	0
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

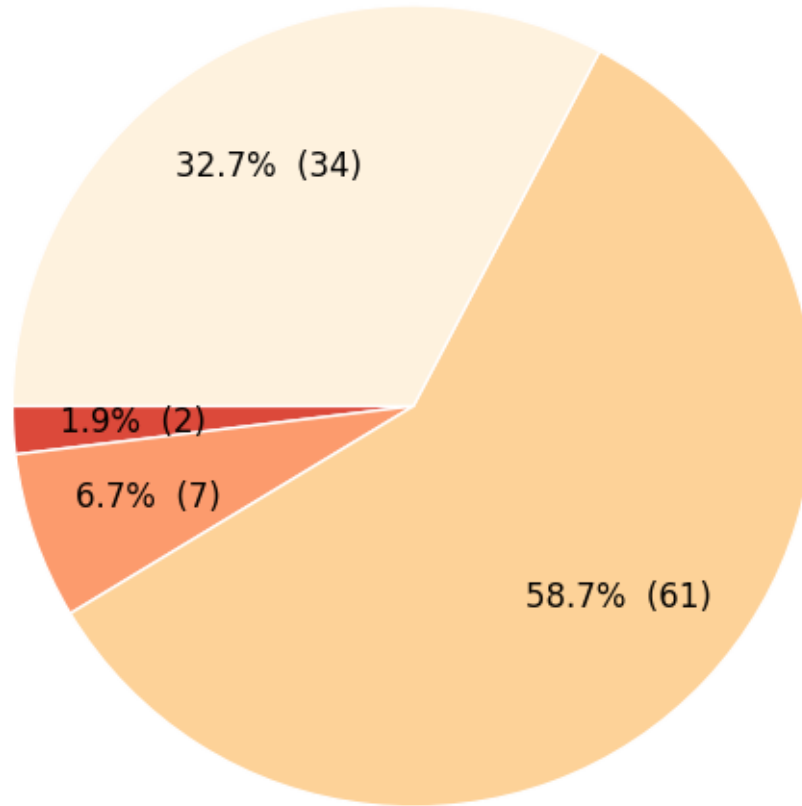
*The colors in this graph refer to how frequently a collision occurs at that time & day.

Top 10 Violations in Bicycle Collisions (with # and %)

Total: 104 collisions

CVC No .	Description	Freq.	Percent
21202	Bicyclist failure to ride on right edge of roadway if riding below the normal speed of traffic	11	13.9%
22450	Driver failure to stop at a limit line or crosswalk at a stop sign	10	12.7%
21802	Failure to stop or yield right-of-way at a stop sign	10	12.7%
21650	Failure to drive on right half of the roadway (with some exceptions)	9	11.4%
0	Unknown	7	8.9%
21804	Driver failure to yield right-of-way when entering/crossing a highway	7	8.9%
21657	Driver failure to comply with roadway temporarily designated as one-way	7	8.9%
21801	Driver failure to yeild right-of-way when making a left turn or U-turn	7	8.9%
22107	Unsafe turning with or without signaling	6	7.6%
21453	Failure to stop at a limit line or crosswalk at a red light. Failure to yield right-of-way to pedestrian when turning on a red light	5	6.3%
Total		79	100.0%

Bicycle Victim Injury Severity

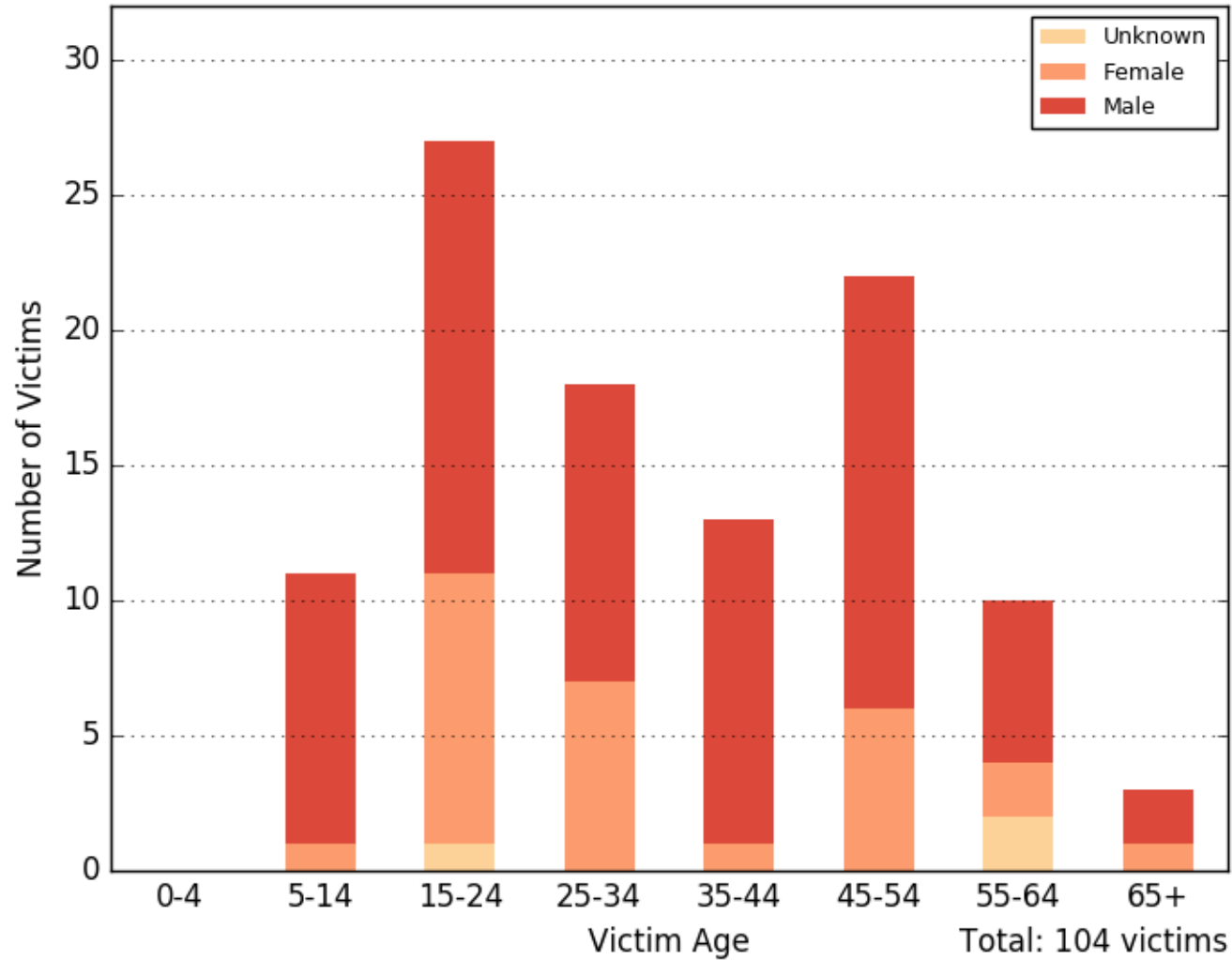


Total: 104 victims



Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

Bicycle Injury Victims by Age and Gender



Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

The Transportation Injury Mapping System (TIMS) is a web-based tool that allows users to analyze and map data from California's Statewide Integrated Traffic Records System (SWITRS).

To further explore collision data, register for a free account to access the tools and resources on TIMS.

<https://tims.berkeley.edu/>

