



Recommendations to Improve Pedestrian & Bicycle Safety for the Town of Ivanhoe



October 2018



Acknowledgements

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We would like to acknowledge the many residents, 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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Introduction

At the invitation of the Tulare County Association of Governments (TCAG), 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 Ivanhoe on September 29, 2018. 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 actionable next steps in collaboration with community partners.

TCAG requested a workshop to 1) provide county staff, community organizations, and residents with a toolkit for promoting pedestrian and bicycle safety to inform future active transportation projects; 2) strengthen working relationships between various agencies and organizations and other stakeholders to ensure the best outcomes for the residents of Ivanhoe; and 3) develop consensus regarding pedestrian and bicycle safety priority and actionable next steps.

Cal Walks and SafeTREC (Project Team) facilitated the workshop on September 29, 2018 from 9:00 a.m. to 12:30 p.m. at Ivanhoe Elementary School Cafeteria. Breakfast, a bike rodeo for youth, Spanish-language facilitation, and simultaneous Spanish-to-English interpretation were provided to maximize community participation. Forty-three (43) individuals attended the workshop, including community residents, representatives from the TCAG, Tulare County Resource Management Agency, Family Health Care Network, Visalia Unified School District, Leadership Counsel for Justice and Accountability, and Tulare County Supervisor-Elect Eddie Valero.

The three and a half (3.5) hour training consisted of: 1) walking assessments along three key routes; 2) 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; 3) a crowdsourcing map activity to identify undocumented safety traffic collisions and to document safety concerns and barriers identified by residents; and 4) small group action-planning discussions to prioritize recommendations for Ivanhoe's active transportation efforts. This report summarizes the workshop proceedings, as well as recommendations for projects, policies, and programs for pedestrian and bicycle safety in Ivanhoe.

Background

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

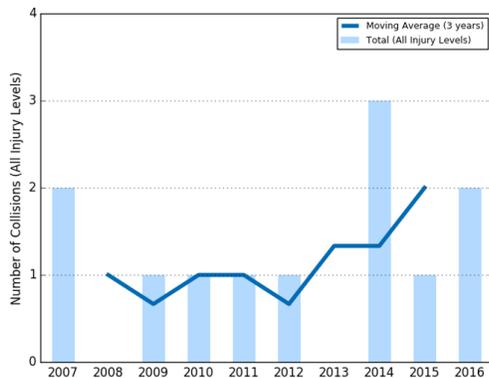
The Ivanhoe CPBST planning process was initiated in June 2018. The planning process consisted of:

- **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:
 - [Ivanhoe Complete Streets Plan](#), 2016
 - [Tulare County Bicycle Transportation Plan](#), 2010
 - [Ivanhoe Community Plan](#), 1990
 - [Regional Tulare County Transportation Plan](#), 2018
 - [Regional Active Transportation Plan for the Tulare County Region](#), 2016
 - [2019 Tulare County Federal Transportation Improvement Program](#), 2018
- **Analysis and Mapping of Pedestrian and Bicycle Injury Data:** SafeTREC used the Statewide Integrated Traffic Records System (SWITRS) and the Transportation Injury Mapping System (tims.berkeley.edu) to analyze pedestrian and bicycle injury data in Ivanhoe, as well as census data to create collision rates based on population. Patterns of injury collisions, victim characteristics, and demographics were analyzed to inform the planning process for the CPBST.
- **Identification of Priority Discussion Topics for Training:** The Planning Committee identified the neighborhoods surrounding Ivanhoe Elementary School as the geographic focus of the Ivanhoe CPBST due to residents' safety concerns with existing conditions and challenges for children walking and biking to school. The Planning Committee identified the the following workshop goals:
 - To develop a preliminary Safe Routes to School Plan for children walking and biking to and from Ivanhoe Elementary School;
 - To supplement existing Caltrans work planned for on State Route 216 (SR 216), a route Ivanhoe Elementary School students use to get to school;
 - To inventory sidewalks and identify gaps in sidewalk connectivity in the area surrounding Ivanhoe Elementary School;
 - To assist Ivanhoe parents and residents in developing walking and biking safety programs for Ivanhoe Elementary School students; and
 - To identify infrastructure improvements that would improve safety for Ivanhoe families.
- **Site Visit:** The Project Team facilitated an in-person site visit on September 5, 2018 with the Planning Committee at Ivanhoe Elementary 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. The Project Team used the site visit findings to develop the workshop presentation, including featuring local infrastructure examples and developing the walking and biking assessment route maps.

Existing Conditions

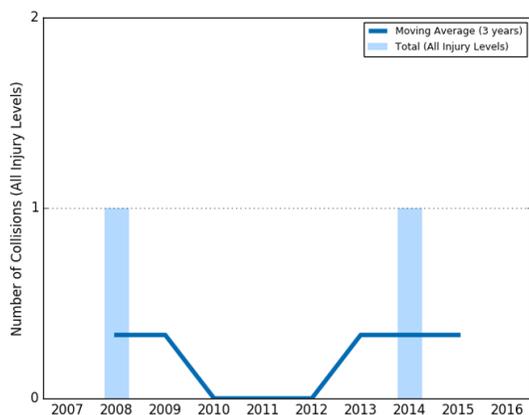
Pedestrian & Bicycle Collision History¹

Pedestrian Injury Collision Trend
with 3-year moving average



Between 2012-2016, there were seven pedestrian collisions, including one fatality and one severe injury in Ivanhoe. Collisions in this time period were concentrated on Avenue 328, Avenue 332, and Road 160. They occurred primarily during high traffic and morning times between 6:00 a.m. and 8:59 a.m. and in the evening between 6:00 p.m. and 8:59 p.m. The top two collision factors for pedestrian collisions are driver failure to yield right-of-way to pedestrians at a crosswalk (42.9%) and pedestrian failure to yield right-of-way to vehicles (28.6%).² Over the same time period, pedestrian collisions appear to be on an upward trajectory.

Bicycle Injury Collision Trend
with 3-year moving average



Between 2012-2016, there was one fatal bicycle collision in Ivanhoe. The collision occurred on Avenue 328 in between Road 155 and Road 156. The collision factor was a driver or bicyclist failure to use right edge of roadway.³

Due to the Ivanhoe's remote location where residents report long waits for law enforcement and emergency services response to incidents, workshop participants and the Planning Committee noted that there are a number of unreported collisions in official data sources. For a variety of reasons, these collision victims may choose to forego contacting law enforcement altogether for and seek medical care directly. Residents may know of unreported collisions; therefore, the workshop included a crowdsourcing activity where community members were asked to identify pedestrian and bicyclist

¹ 2016 SWITRS data are provisional as of November 2017.

² 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.

³ 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.

collisions that have occurred in the community, as well as other safety concerns and barriers. Through this crowdsourcing exercise, community members identified an additional seven traffic collisions not reflected in official data sources at the following locations: Road 160/Avenue 332; Road 159/Avenue 332; Road 156/Avenue 328; two on Road 159/Avenue 328; Avenue 327/State Route 216, and State Route 216/ Jasmine Avenue.



Workshop participants engage in crowdsourcing activity

In terms of qualitative safety concerns, participants identified high speeds along Avenue 328, Avenue 332, Road 156, Road 159, Road 160, and State Route 216 (SR 216) as the top concern. Participants also identified the lack of sidewalks and pedestrian-scale lighting throughout the community as barriers to safety, particularly along Avenue 332, Road 159, Road 160, Azalea Avenue, Heather Avenue and Hawthorne Road.



Results of breakout group crowdsourcing activity.

A full discussion of the pedestrian and bicyclist collision data prepared by SafeTREC can be found in Appendix A.

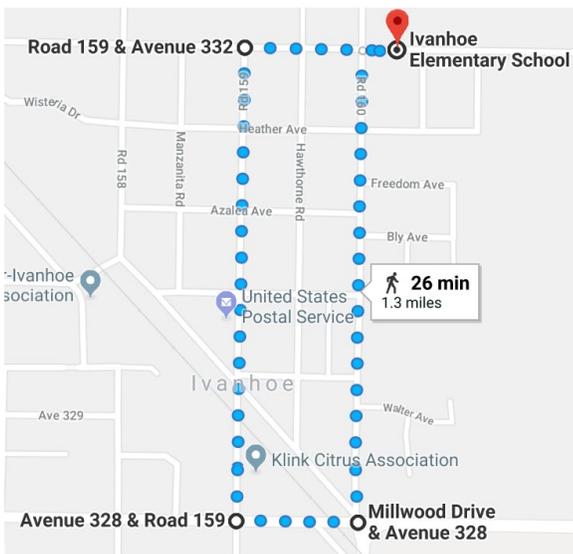
Equity Concerns

Nationwide, pedestrian fatality rates in lower-income communities are generally higher—sometimes more than twice as high—when compared to higher income communities. State funding programs generally define census tracts at or below 80% of the statewide median household income of \$51,026 as disadvantaged communities, and with a median household income of \$31,611, Ivanhoe is a financially disadvantaged community. Pedestrian and bicycle collisions in Ivanhoe mirror a similar pattern to that of the nationwide trends, with all documented pedestrian collisions occurring in the census tracts with median household incomes of less than \$50,000 and half of those occurring in census tracts with median household incomes of less than \$35,000. Furthermore, as an unincorporated community of Tulare County, Ivanhoe lacks its own local decision-making authority and must compete for the time, attention, and resources of the larger county. Workshop participants shared that many residents are unsure of which county agency to contact about infrastructure improvements or other community programs. Workshop participants also shared that residents are afraid to reach out to agencies or law enforcement because of their own or a relative’s immigration status and often forgo doing so.

Walking & Biking Assessment Reflections

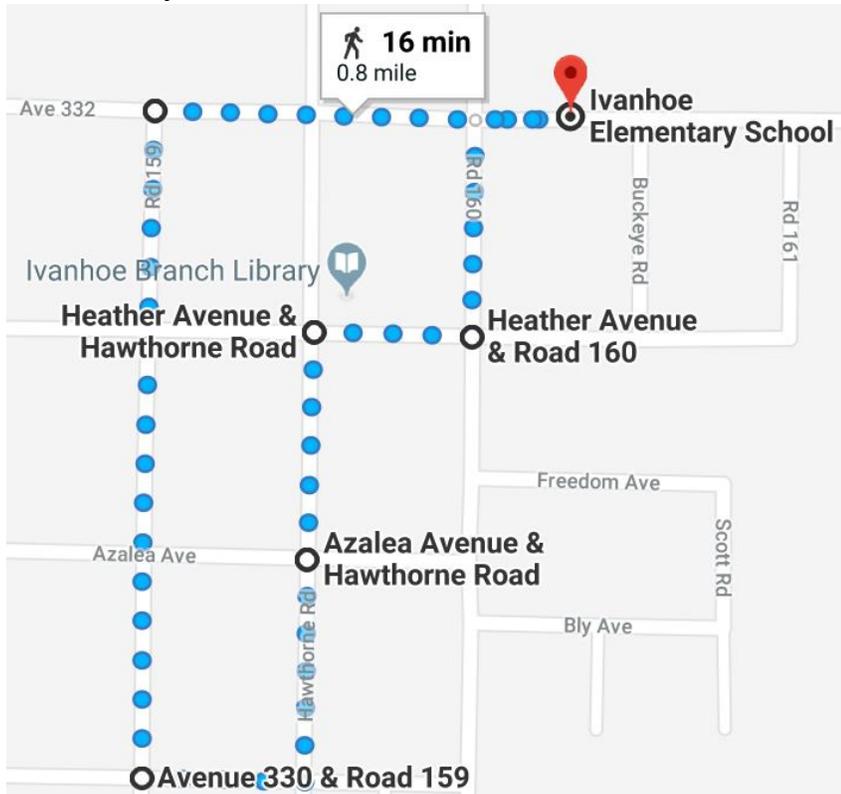
Participants were asked to 1) observe infrastructure conditions and the behavior of all road users; 2) assess the qualitative and emotional experience of walking or biking along the route; 3) identify positive community assets and strategies which can be built upon; and 4) consider how the walking and biking experience might feel different for other vulnerable users. Workshop participants conducted walking and biking assessments along three key routes:

Route 1: Road 159 & Road 160



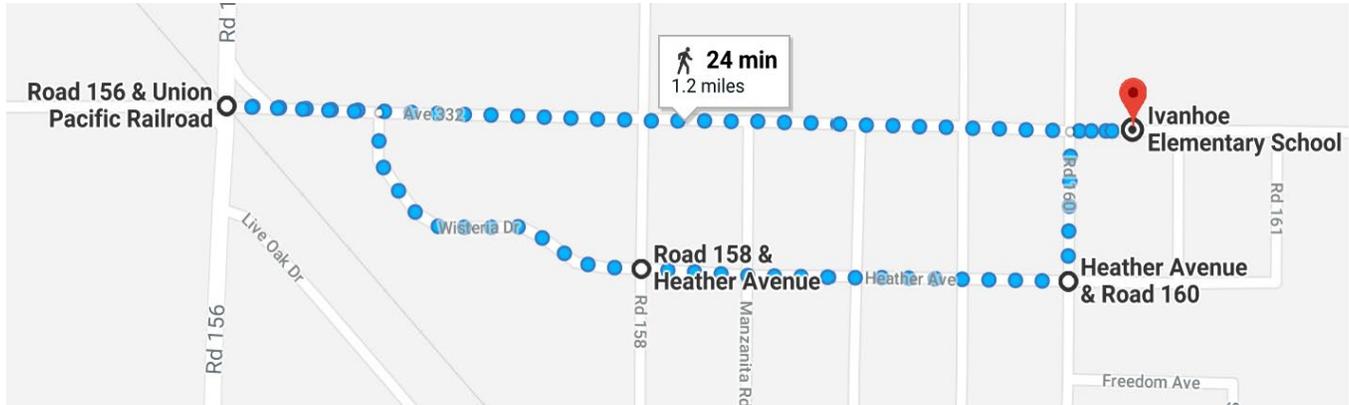
The first walking route focused on Road 159, Road 160, and the challenging five-way intersection of Road 160/Avenue 328/Depot Drive/SR 216, where a rail line bisects the neighborhood. Students regularly use Road 159 and Road 160 to walk and bike to Ivanhoe Elementary School, the Boys and Girls Club, and San Felipe de Jesus Catholic Church located at Road 159/Avenue 328. Children must regularly navigate large trucks, which enter and exit driveways along Road 159 and 160 to access scales and several produce packing companies. Starting the walking assessment at Ivanhoe Elementary School, participants walked west on Avenue 332, south on Road 160, west on Avenue 328, north on Road 159, and east on Avenue 332.

Route 2: Boys & Girls Club



The second walking route focused on walking and biking routes used by youth to get to the Boys and Girls Club, Ivanhoe Library, and Ivanhoe Elementary School. Starting the walking assessment at Ivanhoe Elementary School, participants walked west on Avenue 332, south on Road 159, east on Avenue 330, north on Hawthorne Road, east on Heather Avenue, north on Road 160, and east on Avenue 332.

Route 3: Avenue 332



The third walking route focused on Avenue 332, a highly frequented route for students walking to and from Ivanhoe Elementary School. Starting the walking assessment at the Ivanhoe Elementary School, participants walked west on Avenue 332, south on Road 156, southeast on Live Oak Drive, northeast on Avenue 330, north on Road 158, and east on Avenue 332 to return to Ivanhoe Elementary School.

Following the walking and biking assessment, the participants shared the following reflections:

- **Missing Sidewalks and Various Poor Sidewalk Conditions:** Sidewalks conditions vary along the three assessment routes with different widths and maintenance conditions, and many segments completely lack sidewalks. Participants expressed appreciation for the wide sidewalks directly in front of Ivanhoe Elementary School on Avenue 332 and in front of the Boys and Girls Club. They strongly supported expanding these sidewalk improvements to other routes

frequently used by youth, including Road 159 and Road 160 where sidewalks are missing between certain segments—including the west side of Road 160 from Heather Avenue to Avenue 328; the west side of Road 159 from Azalea Avenue to the Boys and Girls Club; and the north side of Avenue 332 from Manzanita Road to Road 160. Participants shared that existing sidewalks along Route 2 are narrow and do not allow groups of students to walk together to and from Ivanhoe Elementary School. Residents reported that due to the narrow sidewalks, some students often walk in the street.



Participants walk on the street due to the lack of sidewalks heading north on Hawthorne Road.



Participants walk south on Road 159 alongside the Boys and Girls Club. Participants noted the sidewalk is an ideal width for Ivanhoe.

Where sidewalks did exist in the community, participants noted several challenges for residents and youth to safely travel along the sidewalks. In the residential areas, participants on Route 1 noted private mailboxes placed in the middle of sidewalk—residents shared that the local post office delivers mail from their trucks rather than on foot, so residents have resorted to placing their mailboxes as close to the street as possible in order to receive their mail.



Private mailboxes completely obstruct many sidewalks.

- **High Motorist Speeds & Narrow Roads:** Many streets in Ivanhoe are very narrow and lack lane or center divider markings. Many streets are straight and consequently, conducive to motorists' traveling at speeds above the posted speed limit. The narrow streets without bike lanes or sidewalks, high speeds of drivers, and lack of sidewalks all contribute to an unsafe environment for residents, especially for students who travel in all directions when walking or biking to and from school. A mother of 4 children explained on the walking assessment that she never allows



Participants share the road with a freight truck along Road 156.

her children to ride their bikes and scooters in the street because of the narrow roads and high motorist speeds. Participants on Route 1 also shared that many non-residents engage in drag racing in Ivanhoe due to the long and straight streets in the community and speed through the community, disregarding residents' safety.

- **Freight Traffic and Packing Houses:** Along Road 159 and Road 160, residents and youth must contend with large trucks associated with the produce packing houses. These conditions were particularly difficult on Road 160, where there is no physical separation from the sidewalk or shoulder areas from the packing house and trucks. Large pallets of produce obscure visibility of people walking from truck drivers who may not be expecting people to be walking through the active trucking area. Residents also shared that the packing area can get very busy during harvest and packing times with a lot of trucking activity on Road 160, where a truck scale is also located. Participants on Route 1 and Route 3 experienced having to walk or bicycle along the narrow roads with the many freight trucks that travel through Road 156 and Road 160 and appeared to be driving above the posted speed limits of 40 mph and 35 mph, respectively.



Participants walk on Road 160 without separation from freight trucks and produce pallets associated with packing plant.



Packing facility on Road 159 with fencing to separate facility from sidewalks.

- **Loose and Stray Dogs:** Participants shared that loose and stray dogs in Ivanhoe discourage residents from walking or biking. Participants reported being chased or attacked by loose dogs while on foot or on bicycle. The problem has been severe enough to change or prevent active transportation.



Unleashed dogs approach participants along Road 159.

- **Lack of Street Lighting:** The lack of street and pedestrian-scale lighting creates challenging conditions for people walking, biking, and driving at night. During the walking assessment, participants noted that only one street light per block was insufficient. Participants shared that they would like to see at least two working street lights per block throughout the community and one street light in each alley. Once the sun sets, residents do not feel comfortable or safe walking and biking in Ivanhoe due to personal security concerns, and parents do not allow their children to stay for after-school or extracurricular activities.

Key Opportunities to Improve Walking and Biking Safety

Following the walking and biking assessment, the Project Team facilitated small-group action planning discussions where participants prioritized and outlined plans for infrastructure projects and community programs aimed at reducing the number of injuries and fatalities, as well as increasing the number of people and the frequency of walking and biking in Ivanhoe.

Through a voting and self-selecting process during the training, participants chose to focus on and outline ideas for Temporary Demonstrations of Crossing Enhancements, a Crossing Guard Program, and Safe Routes to School Programs. Participants selected which project they wanted to collaborate on with their fellow participants to develop a plan and discussed:

- The problem the project is intended to solve;
- The people, organizations, agencies, and resources needed to implement the project;
- Resources needed to implement the infrastructure project/community program; and
- Short-term and long-term action steps to implement the project.

Community Recommendations

Workshop participants provided the following recommendations and next steps for overall pedestrian and bicyclist safety improvements:

Infrastructure Projects

- **Temporary Demonstrations of Crosswalk Enhancements:** Participants identified the implementation of temporary crosswalk enhancements at the Avenue 328/Road 159 and Hawthorne Road/Heather Avenue intersections to envision how the implementation of a permanent high-visibility marked crosswalk can improve pedestrian safety conditions. The Avenue 328/Road 159 intersection is very busy with 1) motorists traveling along Avenue 328 as one of the main thoroughfares through the community; 2) students, parents, and employees from the south side of town trying to cross along Road 159; and 3) residents, families, and youth congregating at San Felipe de Jesus Catholic Church for weekend activities. There are no pedestrian markings, signals, or crosswalks at this intersection, yet residents frequently here. The Hawthorne Road/ Heather Avenue intersection also does not have a marked crosswalk or stop signs for pedestrians crossing in any direction, and parents have identified this fact as a reason they do not allow their children to walk or bike to the library on their own. For both locations, participants identified temporary high-visibility crosswalk markings and curb extensions in washable chalk or paint supplemented with traffic cones as the safety improvements for the temporary demonstration.

Within the first three months after the CPBST, participants committed to establishing a group of parents and youth to engage Ivanhoe Library and Ivanhoe Elementary School staff to support and assist with the temporary demonstrations. Once a support group is established, participants will develop a budget, plan the temporary demonstrations, connect with their Tulare County Resource Management Agency and begin securing necessary permits. Simultaneously, participants will begin soliciting donations for necessary materials, including plants, flags, cones, and chalk. By December 2018, participants will finalize preparation to implement the temporary demonstrations at the beginning of the Ivanhoe Elementary School term in January 2019. Participants will use these short-term action steps to collect data to present to Tulare County Association of Governments and Caltrans to encourage the development of a permanent enhanced marked pedestrian crossing at these two intersections.

Community Programs, Policies, and Campaigns

- **Church Crossing Guard Program-** Participants identified the implementation of a volunteer crossing guard program adjacent to churches as a priority for improving pedestrian safety. Participants identified San Felipe de Jesus Catholic Church, a, and Walnut Grove Assembly of God as priority locations to implement a pilot of the volunteer crossing guard program due to the lack of safe pedestrian crossings to access these churches and the high level of foot traffic at these churches for meals and religious classes and services. Participants identified engaging a prominent leader and intergenerational church-goers from both churches to help ensure the program's promotion, success, and long-term sustainability. In order to implement the program, participants committed to establishing a volunteer group in the three months following the CPBST. In six months, participants aim to obtain proper crossing guard training

from CalTrans, necessary program supplies, including safety vests and stop/slow sign paddles with reflectors; and multiple volunteers committed to participating. Participants targeted 9 months after the CPBST to launch the program with a rotating cadre of volunteers.

- **Safe Routes to School Programs:** Participants identified soccer leagues, bike rodeos, community movie/family nights, and a walking school bus program as priority safe routes to school programs for the children of Ivanhoe. Students that live south of Avenue 328 typically take the Tulare County Area Transit (TCaT) bus to school, while students that live north of Avenue 328 typically walk to school, often by themselves or in small groups. Many students walk north on Road 159 to get to school and often must walk in the street due to a lack of continuous sidewalks throughout the community. Consequently, participants were interested in developing a walking school bus program to increase the visibility of children walking to school.

Participants identified two meeting locations for the initial launch of the walking school bus. Students would walk in groups from these locations and meet at the school no later than 7:45 a.m. when the breakfast program begins. The first meeting location would be at San Felipe de Jesus Church the Avenue 328/Road 159 intersection. Many families in the area attend that church, so students will already be familiar with walking to the location. This group would walk north on Road 159 and east on Avenue 332 to get to school. The second meeting location would be at the Road 156/Avenue 332 intersection, where participants would walk east on Avenue 332. Participants identified Ivanhoe Elementary School staff, Visalia Unified School District, and parents as essential partners in developing and establishing the program. Tulare County Supervisor-Elect Eddie Valero shared his experiences with the Cutler-Orosi walking school bus program and encouraged participants to work with the School District to apply the lessons learned from Cutler-Orosi to ensure the program's success. Participants also identified coordinating with school teachers and active parents as a strategy to solicit adult leaders for the walking school buses.

To make the walking school bus program more fun for youth, participants would like to secure materials for students to make two cardboard cut-out walking school buses to increase the visibility of the students to motorists and other pedestrians. Additionally, participants expressed interest in designing and purchasing student t-shirts to develop a sense of pride and ownership in the program. In the immediate future, participants committed to begin conversations with Ivanhoe Elementary School staff and other interested parents to help develop the program and bring it to fruition by Fall 2019.

Additional resources that may help include the Safe Routes to School National Partnership's [Rural Communities: Best Practices and Promising Approaches for Safe Routes](#) guide to help rural communities develop a SRTS program in light of their unique infrastructure challenges.

Cal Walks/SafeTREC Recommendations

California Walks and SafeTREC also submit the following recommendations for consideration:

- **Pursue Kid’s Plate Grant to Support Non-infrastructure Programs:** 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, 0 to 18 years of age. The grant includes bicycle safety as a key focus area. The Project Team **recommends Ivanhoe Community Group and Leadership Counsel for Justice and Accountability review the CDPH Kids Plate Grant** as a potential funding source to support Safe Routes to School education and encouragement programs for the Ivanhoe Elementary School community.
- **Communitywide Lighting Assessment:** The Project Team **recommends workshop participants collaborate with Tulare County Public Works Department to perform a communitywide street lighting assessment** focused on pedestrian-scale lighting needs, especially around Ivanhoe Elementary School, local businesses, and along Road 160, Road 158, Road 156, and Avenue 332. A lighting assessment can be used to identify and inventory nighttime pedestrian-scale lighting needs in areas of high nighttime pedestrian activity. A nighttime assessment will also identify lighting fixtures in need of repair or replacement. With an inventory, the County can develop a proactive and equitable plan for streetlight maintenance that is not complaint-driven. Proper street lights provide a sense of safety and security and improve the overall well-being of road users. Lighting should be uniform, consistent, and reduce glare and light pollution.
- **Apply for Parks and Play Grants:** The Project Team **recommends the Ivanhoe Community Group and Leadership Counsel for Justice and Accountability collaboratively apply for several KaBoom! grants**, including the [Build it with KaBOOM!](#) and [Play Everywhere](#) grant to support safe places for kids to play in the community and provide benches and play structures for kids near Ivanhoe Elementary School. Many families who live near Ivanhoe Elementary School use the school playground as a park in the evenings and on the weekends. This option is less available for families that live further away from the school, and consequently, children play in empty lots or other open spaces throughout the community. The Project Team also **recommends the workshop participants work with the TCAG** to identify empty lots or irregular pieces of County-owned land to install pocket parks throughout Ivanhoe.
- **Train Residents to Conduct Additional Walking/Biking Assessments:** The Project Team **recommends that the Ivanhoe Community Group and Leadership Counsel for Justice and Accountability train more residents to conduct additional walking/biking assessments**, specifically in the neighborhoods south of Avenue 328 and key routes to Ivanhoe Elementary School. The community collection of qualitative data is critically important to better position Ivanhoe to be competitive for grant opportunities. Conducting walking and biking assessments along these routes should be coupled with photos to document existing conditions and safety barriers.
- **Develop a Good Neighbor Outreach Kit:** The Project Team **recommends the Ivanhoe Community Group work with Leadership Counsel for Justice and Accountability and other stakeholders to develop a “Good Neighbor Outreach Kit”** as a communication and outreach tool to local businesses, agencies, or residents to politely ask for small changes that could have

a huge impact on safety. The kit could include basic information on why a certain behavior is creating a safety hazard for people walking and biking and key routes students are using to walk and bike to school. Example actions for community residents include: 1) communicate safety challenges faced by children walking to school to packing facilities on Road 160 and request the facility to implement some minor improvements to separate the facilities from people walking and biking (akin to the separation of packing facilities on Road 159); and 2) approach the local post office and explain the unintended consequences of residential mail pick-up/drop-off that has resulted in private mailboxes obstructing sidewalks.

- **Develop an Ivanhoe Collision Guide & Self-Reporting Collision Database:** The Project Team **recommends that the Ivanhoe Community Group partner with UC Berkeley SafeTREC to train residents and implement the self reporting database Street Story.** This will document community collisions and provide qualitative data that will support Ivanhoe’s efforts to address walking and biking safety.
- **Explore Feasibility of a Roundabout at Road 160/Avenue 328 Intersection:** Due to the confusing nature of the five-way intersection of Road 160/Avenue 328/Depot Drive/SR 216, the Project Team **recommends the Tulare County Public Works Department collaborate with Caltrans to explore the feasibility of a roundabout at this intersection.** The roundabout can also be used as a placemaking opportunity to signal to drivers that they are entering the Ivanhoe community, similar to the recently implemented roundabout in nearby Woodlake. Because of the complex nature of the intersection and the overlapping jurisdictions of the streets involved (including Tulare County, Caltrans, the railroad, and the private landowner where Ivanhoe Speedy Mart is located), implementation of a roundabout would be a longer-term improvement for the community. In the near-term, the Project Team recommends the **Tulare County Public Works Department conduct outreach to the Ivanhoe Fire Station and residents on the potential closure and/or restricted access to Depot Drive from Road 160.** By closing access to Depot Drive or limiting access to fire trucks, this would reduce the complex nature and confusing turning movements that currently occur at this intersection. After outreach is conducted, the Department could pilot closures of Depot Drive on several days to collect before and after data to help evaluate the closure’s impact on traffic, emergency services, and residents travel patterns and needs. Lastly, the Project Team **recommends Tulare County Public Works work with Caltrans, the Ivanhoe Community Group, and Leadership Counsel for Justice and Accountability to pilot a temporary roundabout demonstration** within the next 12-24 months. This temporary demonstration would enable residents, local businesses, the fire department, and other stakeholders to envision what a roundabout could look like for the community, as well as help work out any kinks with a potential design by allowing freight trucks and fire trucks to test out the roundabout design to make sure it works for them.

Appendix A

Pedestrian and Bicycle Collision Data Analysis
Workshop Handout

2012-2016 IVANHOE DATA ANALYSES

Community Pedestrian and Bicycle Safety Training Workshop September 29, 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 available to help your community better prioritize recommendations that emerge from this workshop.

PEDESTRIANS

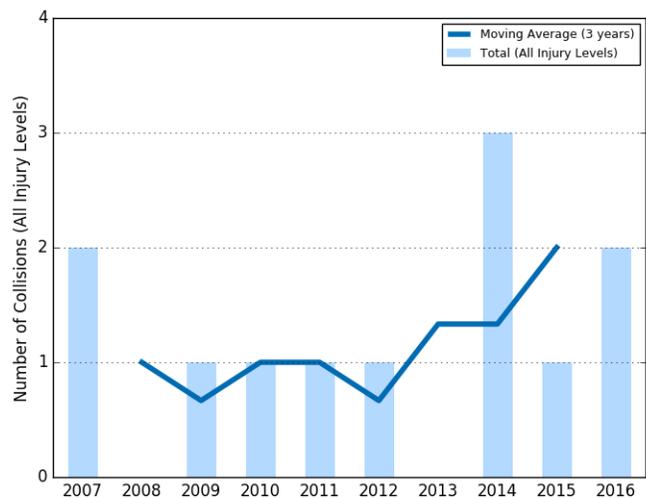


15 people were killed or injured in **12** pedestrian collisions in the last 10 years (2007-2016).

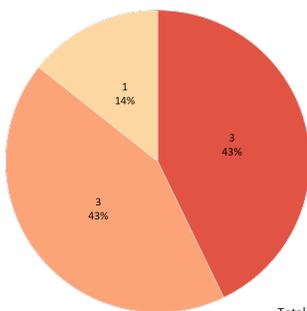
The **three-year moving average** line shows an **upward** trend in pedestrian collisions.*

There were **1** pedestrian collision in 2015, but an average of **2** 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.



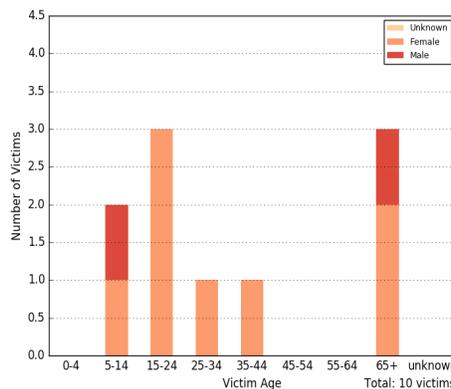
43.0% driver violations
VS.
43.0% pedestrian violations



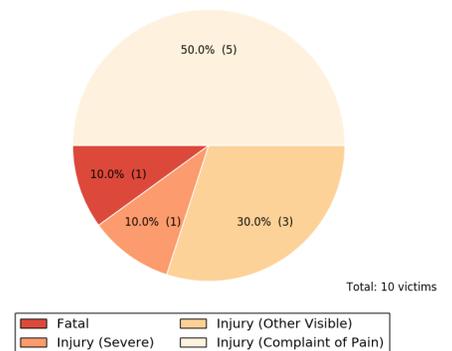
Total: 7 collisions

■ Driver Violation ■ Pedestrian Violation ■ Unclear Violation

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



80.0% of victims were female
50.0% of victims were 18 and under
30.0% of victims were age 65+



Total: 10 victims

20.0%
of victims (or 2 people) were
KILLED or SEVERELY INJURED

Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2016 is provisional at this time.

Funding for this program was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

BICYCLES

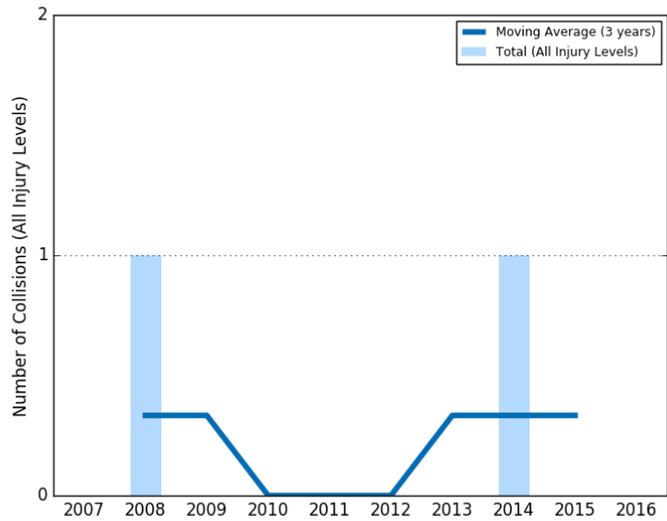


1 fatality 2 bicycle collisions in the last 10 years (2007-2016).

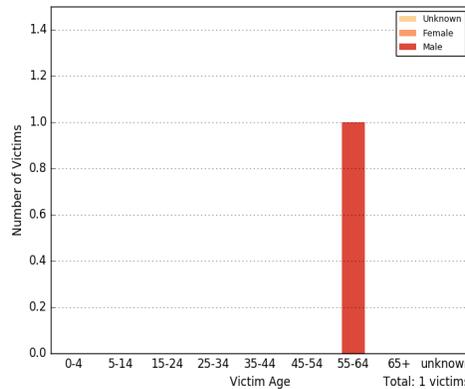
The **three-year moving average** line shows an **upward** and **stagnant** trend in bicycle collisions.*

There were **0** bicycle collisions in 2015, but an average of **0.3** bicycle collisions per year for the 3-year rolling average between 2014 and 2016.

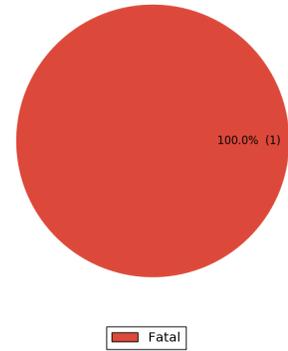
* This line is useful for tracking change over time, especially when the number of collisions changes a lot between years. Data points are at the midpoint of the three years of data specified.



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



1 male victim.



One fatality resulted from the 2014 bicyclist collision.

SUMMARY



19.9 pedestrian fatalities & injuries per 100,000 population over the last five years in Ivanhoe, which is **16.0% less than** Tulare County and **44.6% less than** California



4.9 bicyclist fatalities & injuries per 100,000 population over the last five years in Ivanhoe, which is **75.7% less than** Tulare County and **85.3% less than** California

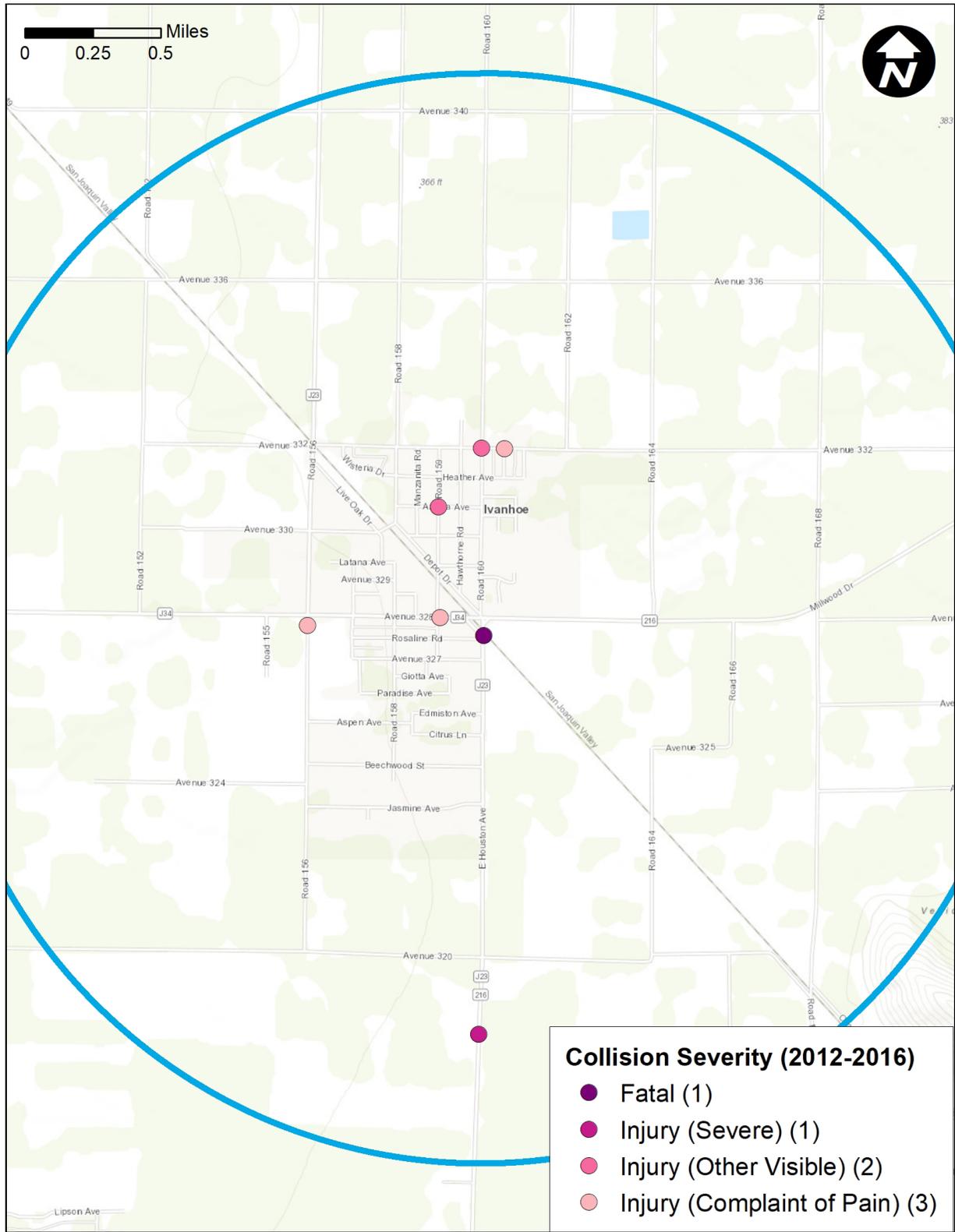
	Yearly Population Rate of Fatalities & Injuries per 100,000 Population Calculated Over a 5-year Period*	
	Pedestrian	Bicyclist
Ivanhoe	19.9	4.9
Tulare County	23.7	20.2
California	35.9	33.3

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

7 collisions mapped within a 2-mile radius from Road 160 & Avenue 328 in Ivanhoe, CA.



Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2016 is provisional as of September 2018.

Bicyclist Collisions, 2012-2016

1 collision mapped within a 2-mile radius from Road 160 & Avenue 328 in Ivanhoe, CA. de



Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2016 is provisional as of September 2018.

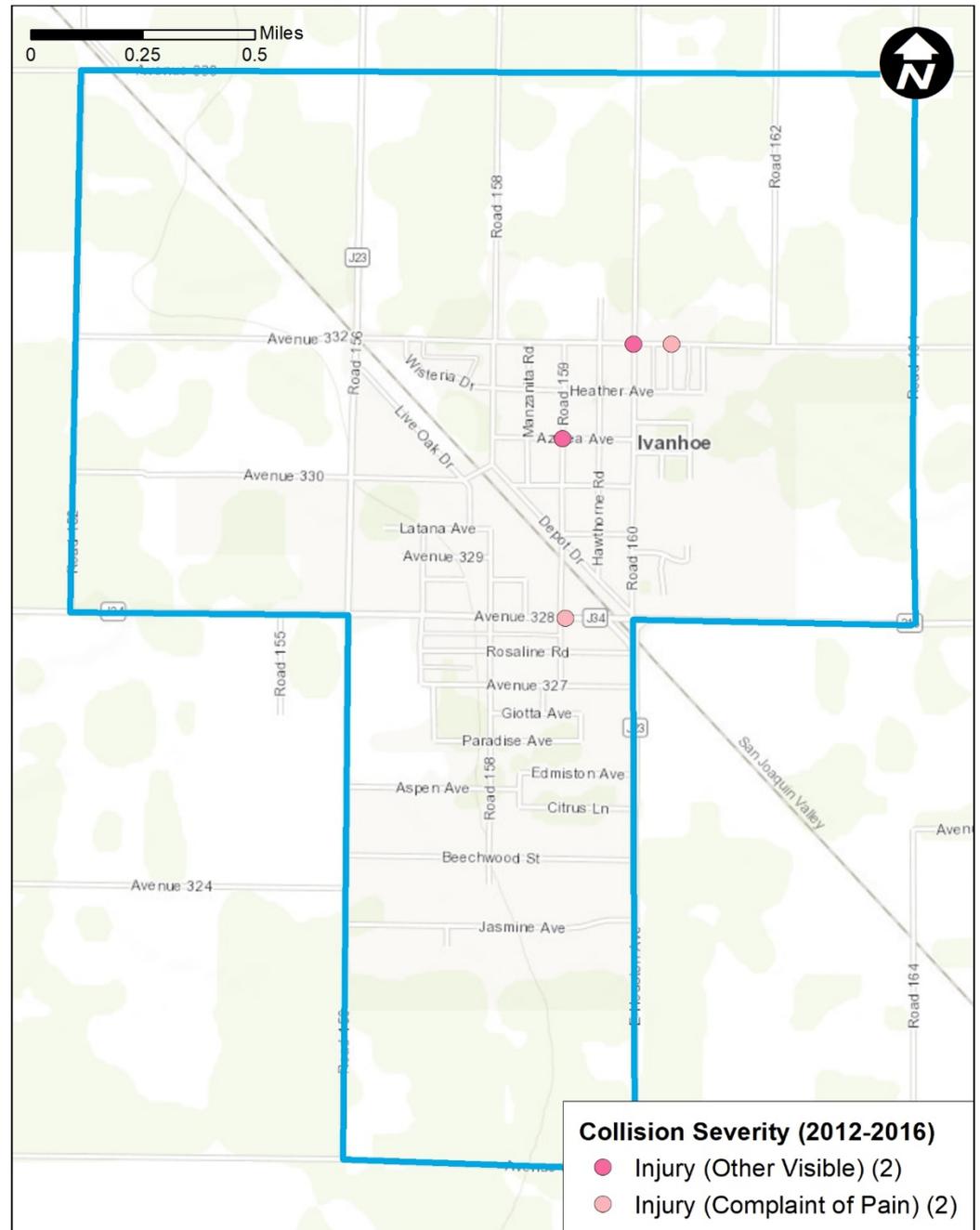
Appendix B

Pedestrian and Bicycle Collision Data Analysis
Site Visit Presentation

Community Pedestrian and Bicycle Safety Workshop Site Visit Ivanhoe, CA 9/5/18

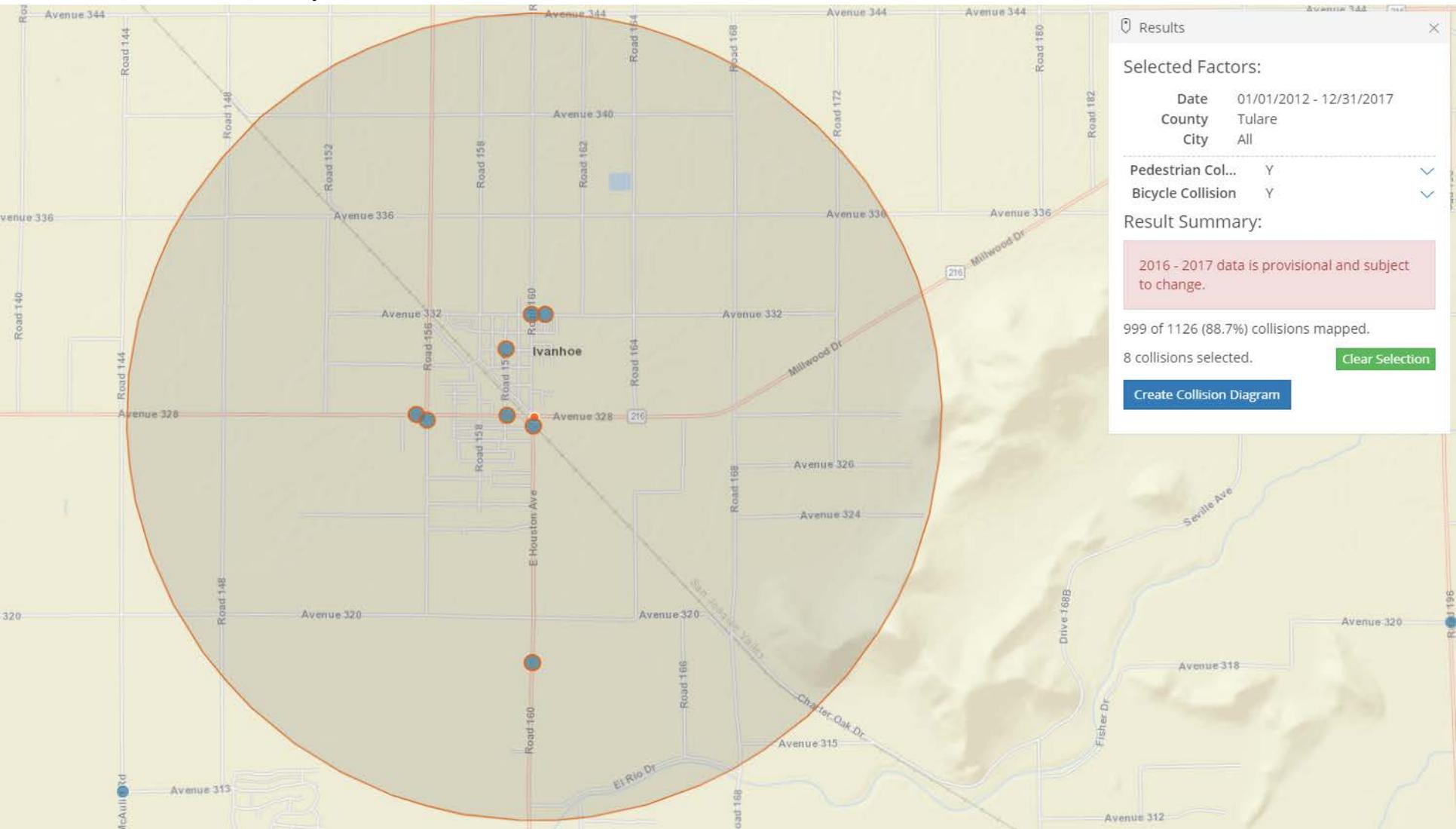
Pedestrian Injury Collisions 2012-2016

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

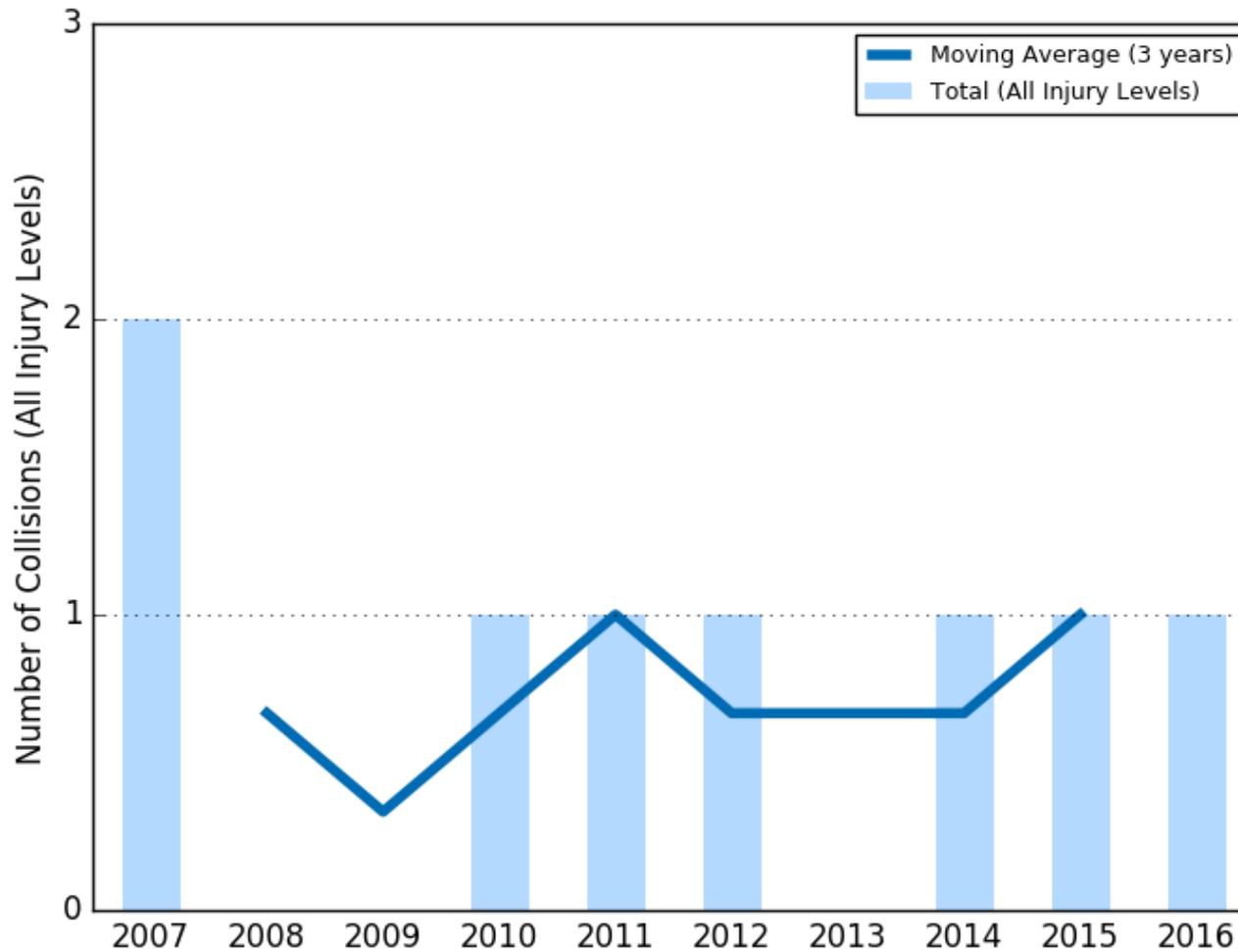


What is the geographic area of interest?

Pedestrian and Bicycle Collisions, 2012-2017, SWITRS data via TIMS



Pedestrian Injury Collision Trend with 3-year moving average



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

UNINCORPORATED Pedestrian Collision Map (2012 - 2016)



Collision Severity (2012-2016)

- Injury (Other Visible) (2)
- Injury (Complaint of Pain) (2)

2017 Median Household Income

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

Pedestrian Collisions by Time of Day and Day of Week

09:00PM-11:59PM -	0	0	0	0	0	0	0
06:00PM-08:59PM -	0	0	0	0	0	0	0
03:00PM-05:59PM -	0	0	0	0	0	1	0
Noon-02:59PM -	0	0	0	0	0	0	0
09:00AM-11:59AM -	0	0	0	0	0	0	0
06:00AM-08:59AM -	1	0	1	0	1	0	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

Total: 4 collisions

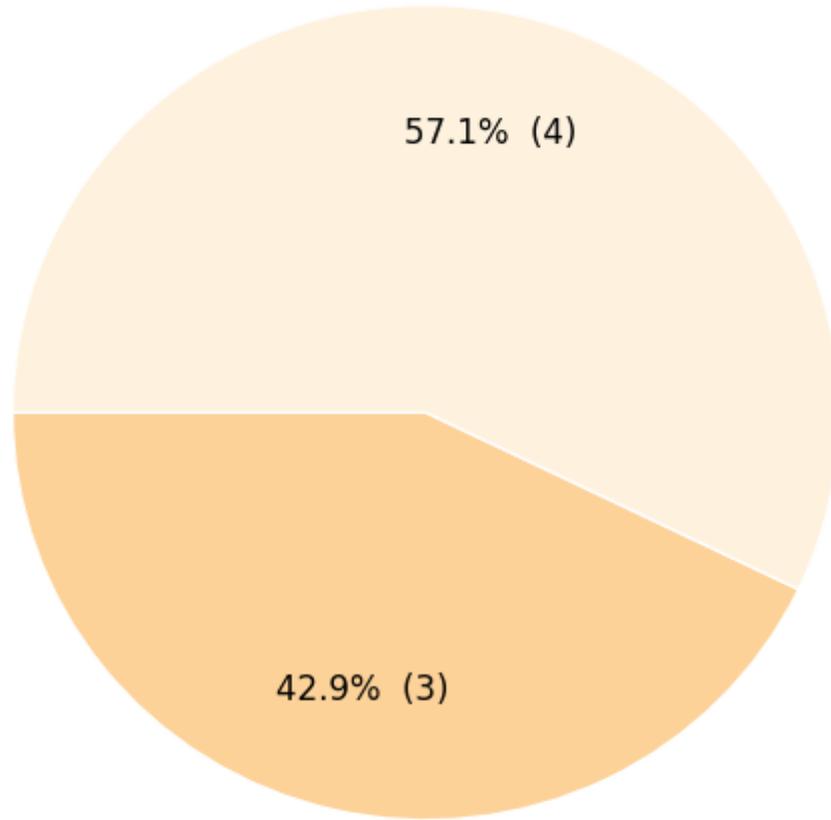
*The colors in this graph refer to how frequently a collision occurs at that time & day.

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

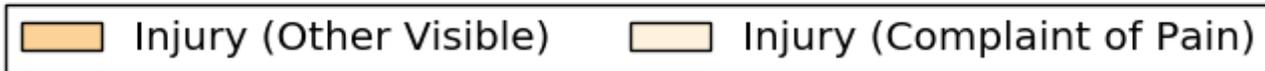
CVC No.	Description	Freq.	Percent
21950	Driver failure to yield right-of-way to pedestrians at a crosswalk	3	75.0%
21954	Pedestrian failure to yield right-of-way to vehicles	1	25.0%
Total		4	100.0%

Total: X collisions

Pedestrian Victim Injury Severity

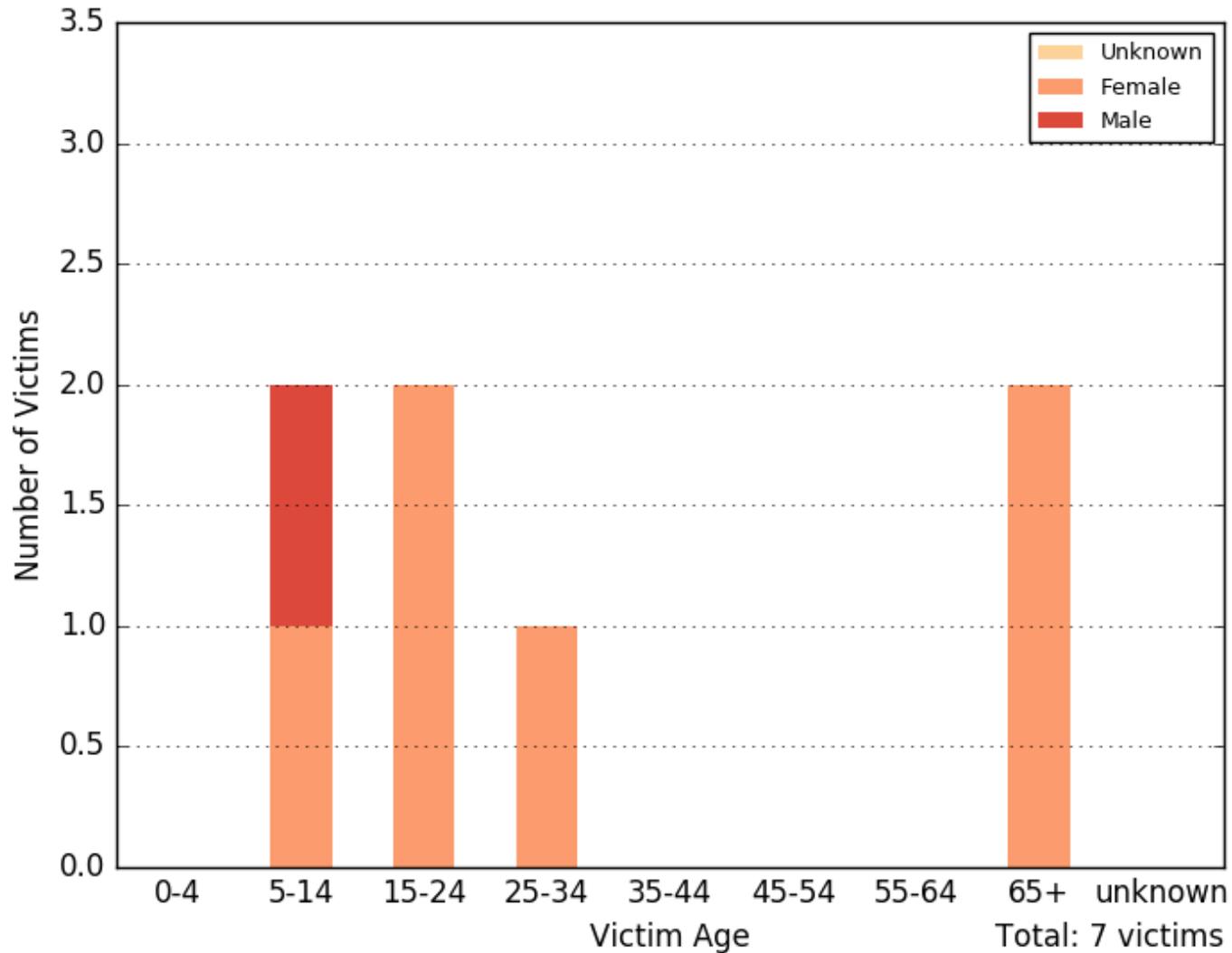


Total: 7 victims



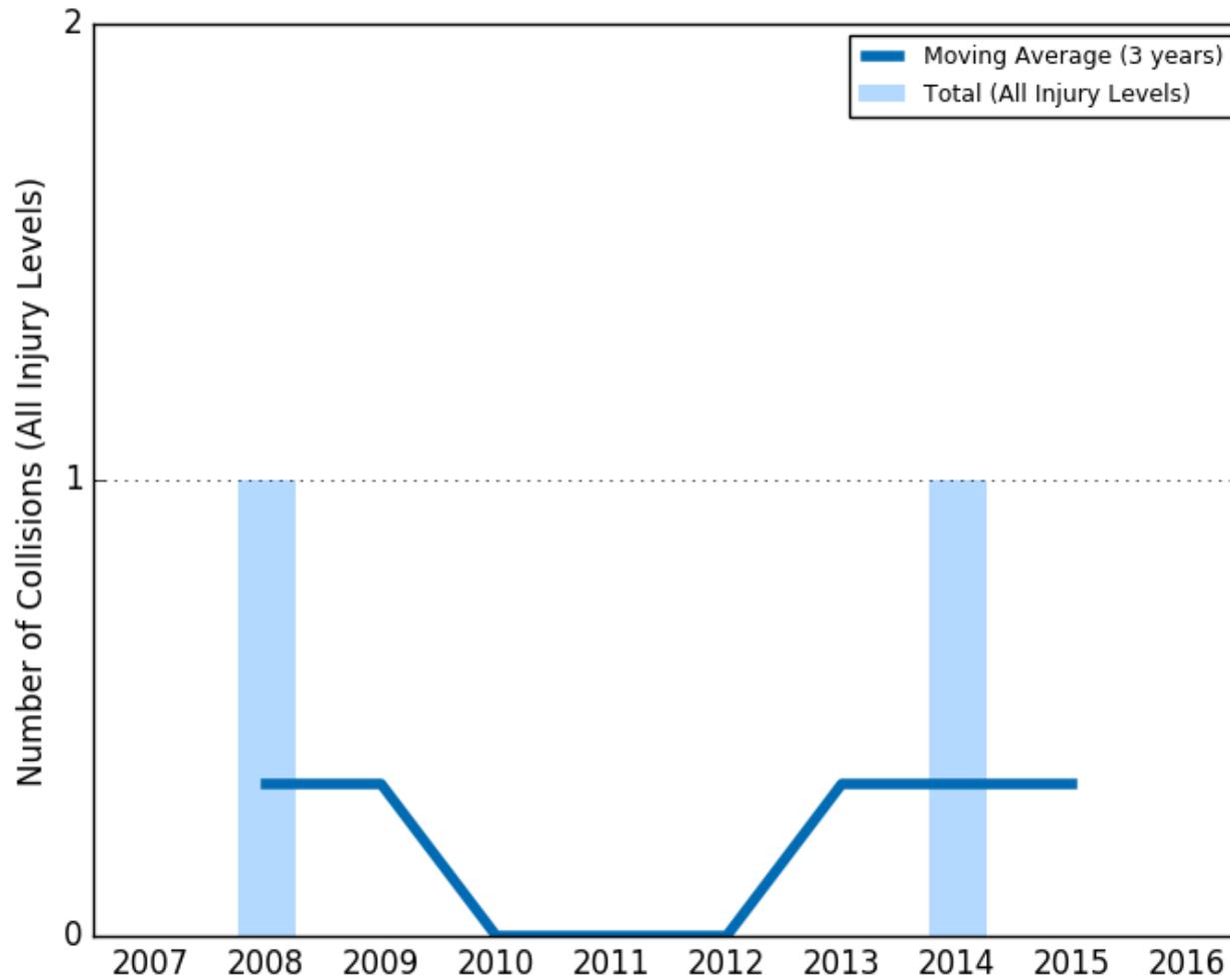
Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

Pedestrian Injury Victims by Age and Gender



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

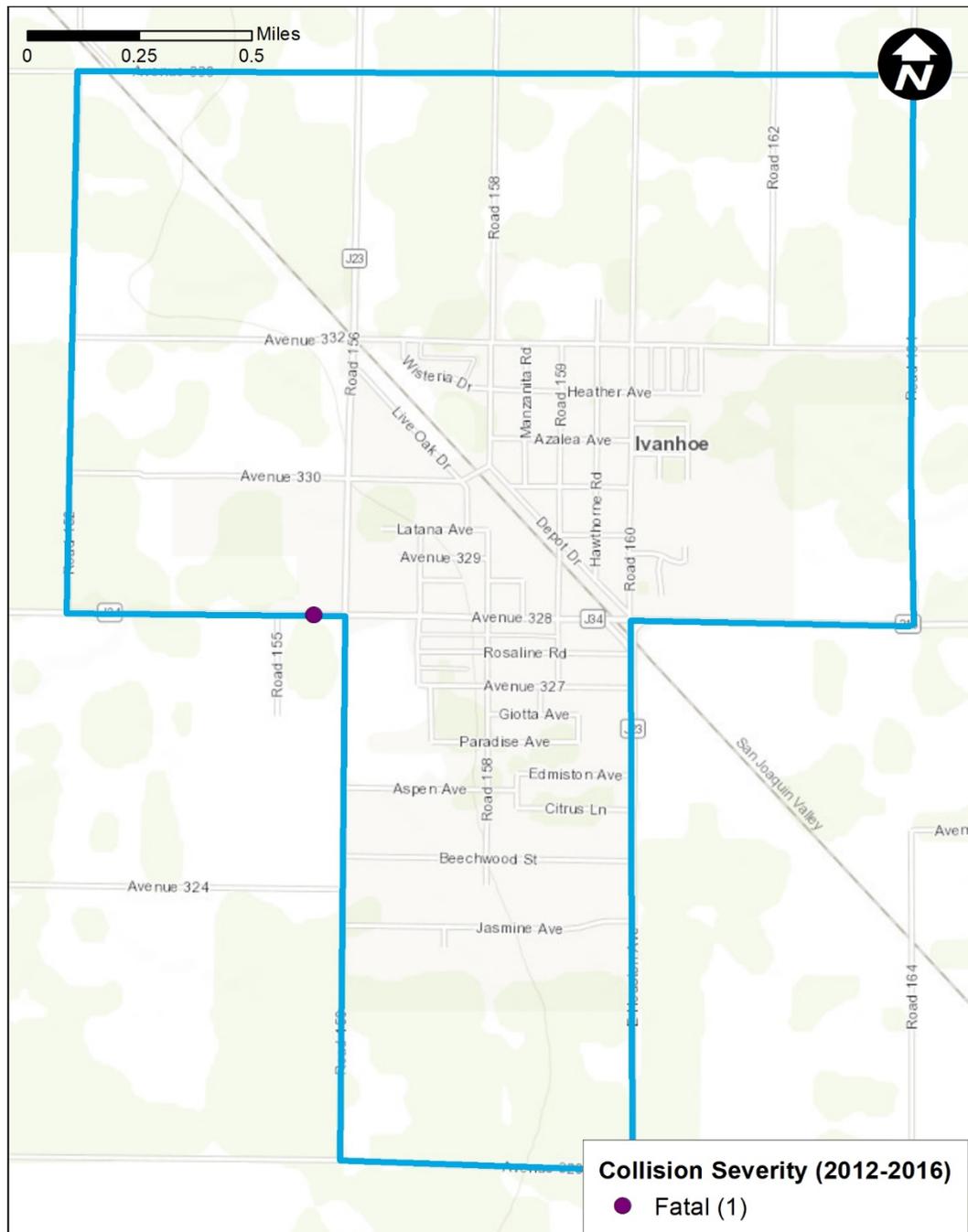
Bicycle Injury Collision Trend with 3-year moving average



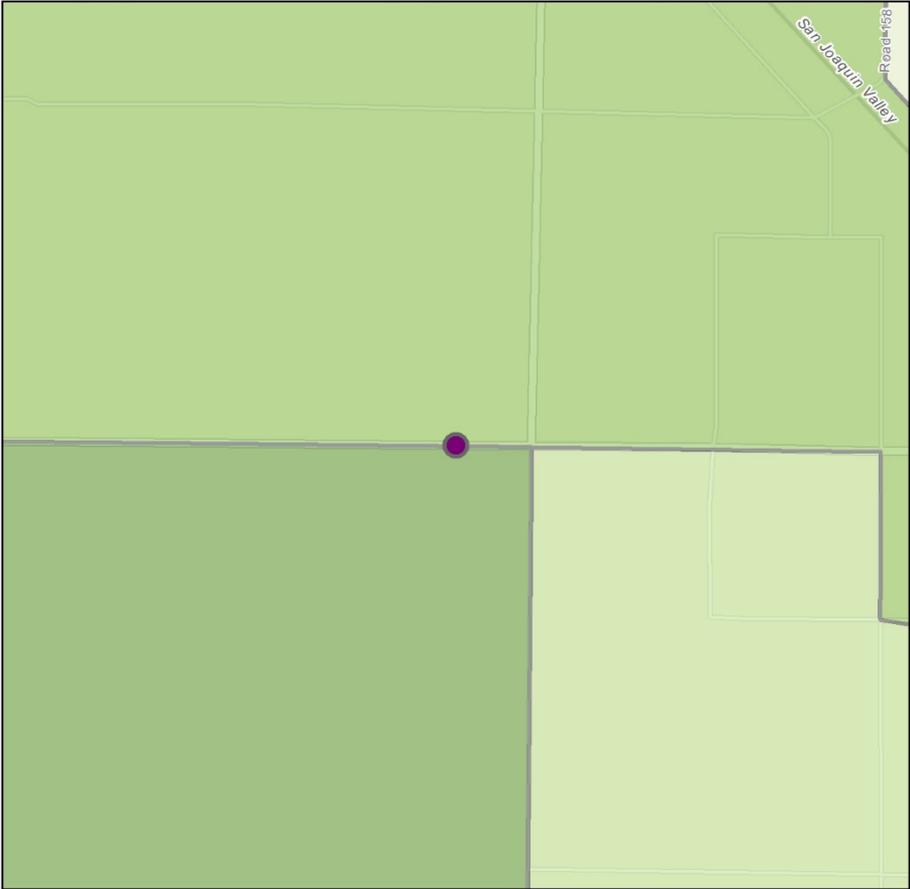
Note: 2015 and 2016 SWITRS data are provisional as of November 2017.

Bicycle Injury Collisions 2012-2016

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



UNINCORPORATED Bicycle Collision Map (2012 - 2016)



Collision Severity (2012-2016)	2017 Median Household Income
● Fatal (1)	< 35K
	35K - 50K
	50K - 75K
	> 75K

Bicycle Collisions by Time of Day and Day of Week

09:00PM-11:59PM -	0	0	0	0	1	0	0	-
06:00PM-08:59PM -	0	0	0	0	0	0	0	-
03:00PM-05:59PM -	0	0	0	0	0	0	0	-
Noon-02:59PM -	0	0	0	0	0	0	0	-
09:00AM-11:59AM -	0	0	0	0	0	0	0	-
06:00AM-08:59AM -	0	0	0	0	0	0	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.

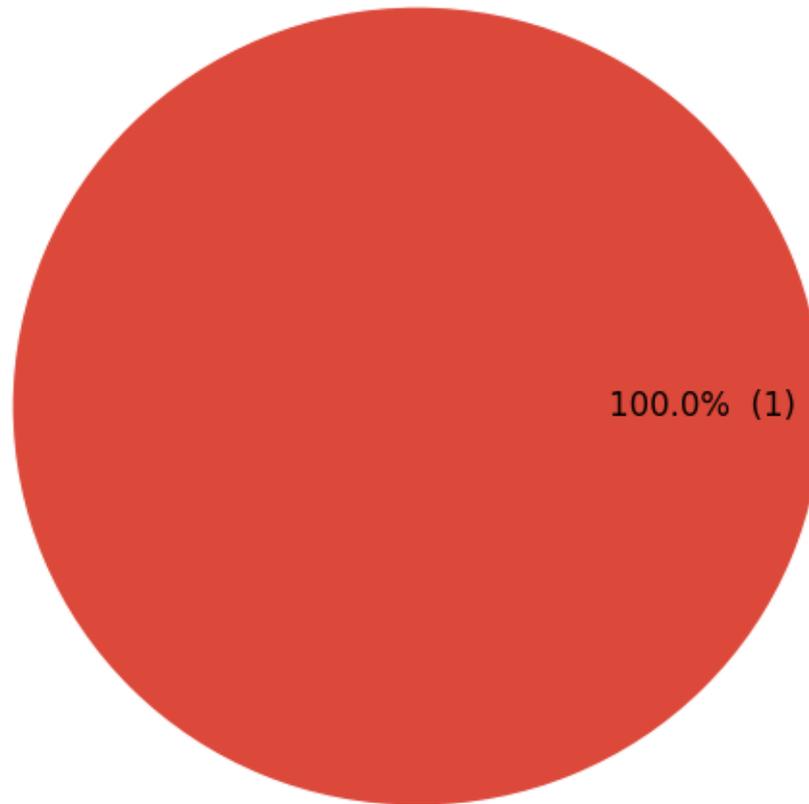
Total: 1 collision

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

CVC No.	Description	Freq.	Percent
21202	Bicyclist, failure to use right edge of roadway	1	100.0%
Total		1	100.0%

Total: X collisions

Bicycle Victim Injury Severity

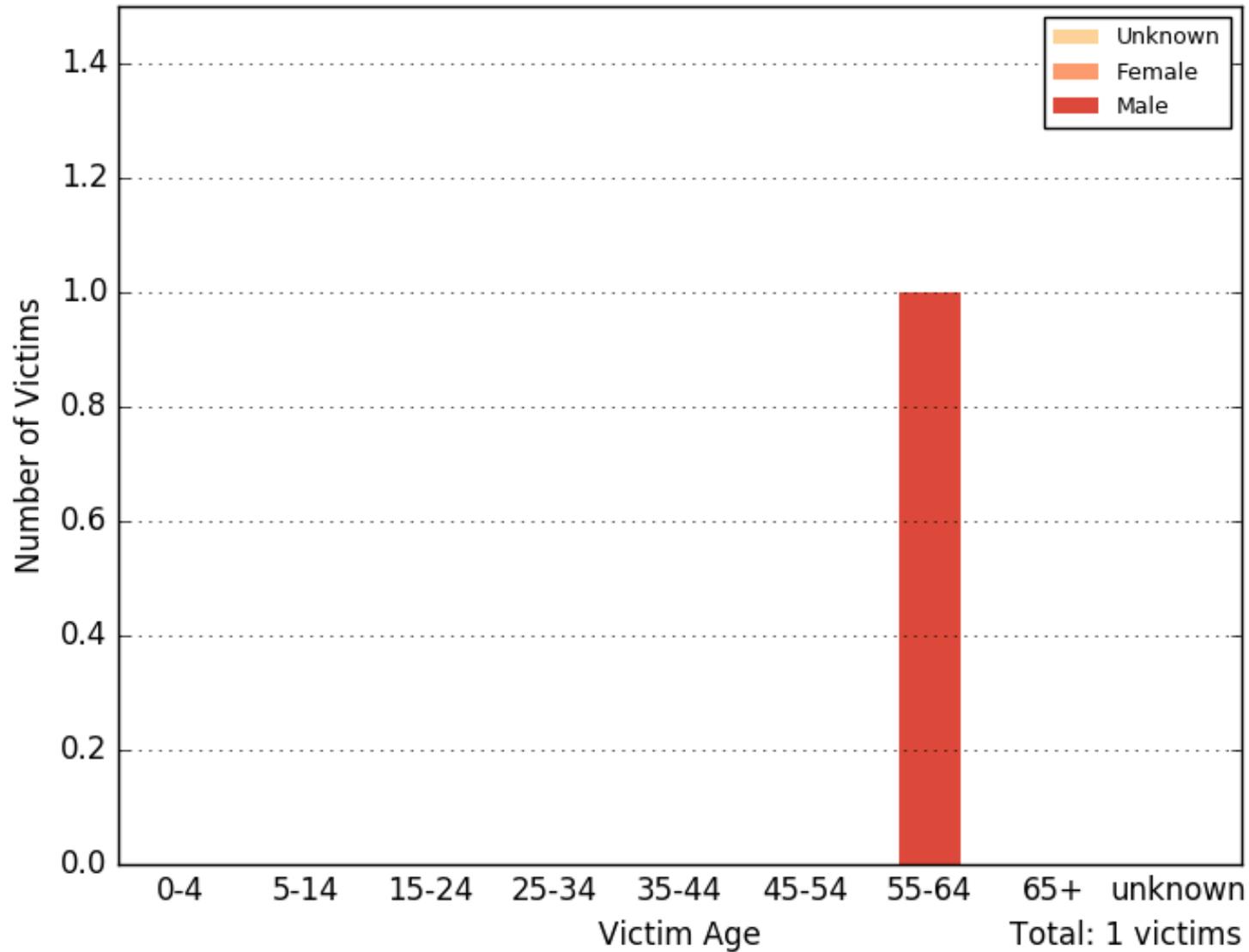


Total: 1 victims



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

Bicycle 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/>

