Recommendations to Improve Pedestrian & Bicycle Safety for the City of Sanger

October 2017

California Walks
Stepping Up for Health, Equity, & Sustainability

Berkeley SafeTREC
SAFE TRANSPORTATION RESEARCH AND EDUCATION CENTER

Recommendations to Improve Pedestrian & Bicycle Safety for the City of Sanger

By Jaime Fearer, Tony Dang, Austin Hall, California Walks;
Jill Cooper, Ana Lopez, Amanda Reynosa, UC Berkeley Safe Transportation Research & Education Center (SafeTREC)

Introduction

At the invitation of the City of Sanger, the University of California at Berkeley's Safe Transportation Research and Education Center (SafeTREC) and California Walks (Cal Walks) facilitated a community-driven pedestrian and bicycle safety action-planning workshop in the City of Sanger to improve pedestrian safety, bicycle safety, walkability, and bikeability across the City.

Prior to the workshop, Cal Walks staff conducted an in-person site visit on Tuesday, August 1, 2017, to adapt the Community Pedestrian and Bicycle Safety Training program curriculum to meet the local communities' needs and to provide context-sensitive example strategies for the community's existing conditions. Cal Walks facilitated the workshop on September 6, 2017, which consisted of: 1) an overview of multidisciplinary approaches to improve pedestrian and bicycle safety; 2) two walkability and bikeability assessments along two key routes; and 3) small group action-planning discussions to facilitate the development of community-prioritized recommendations to inform the City of Sanger's active transportation efforts. This report summarizes the workshop proceedings, as well as ideas identified during the process and recommendations for pedestrian and bicycle safety projects, policies, and programs.

Background

Community Pedestrian and Bicycle Safety Training Program

The Community Pedestrian and Bicycle Safety Training (CPBST) program is a joint project of UC Berkeley SafeTREC and Cal Walks. Funding for this program is provided by a grant from the California Office of Traffic Safety (OTS) through the National Highway Traffic Safety Administration (NHTSA). The purpose of the CPBST program is to train local neighborhood residents and safety advocates on how to improve pedestrian and bicycle safety and to strengthen their collaboration with local officials and agency staff to make communities safer and more pleasant to walk and bike. For each training, the program convenes a multi-sector, multi-disciplinary local planning committee to tailor and refine the training's curriculum and focus to meet the community's needs. Additionally, Cal Walks staff conduct pre-training site visits to collect on-the-ground observations of existing walking and biking conditions to inform the training's scope and focus.

The half-day training is designed to provide participants with both pedestrian and bicycle safety best practices and a range of proven strategies (the 6 E's: Empowerment & Equity, Evaluation, Engineering,

Enforcement, Education, and Encouragement) to address and improve pedestrian and bicycle safety conditions and concerns. Participants are then guided on a walkability and bikeability assessment of nearby streets before setting pedestrian and bicycle safety priorities and actionable next steps for their community.

For a summary of outcomes from past CPBST workshops, please visit:
www.californiawalks.org/projects/cpbst and https://safetrec.berkeley.edu/programs/cpbst

Selected Pedestrian & Bicycle Safety Conditions in the City of Sanger

High Speeds & Wide Streets

While the posted speed limits along many of the arterial streets that run through the community–including Jensen Avenue, Greenwood Avenue, Academy Avenue, and Annadale–are 30-35 miles per hour (MPH), the width of the streets and travel lanes are documented to encourage drivers to travel at higher speeds. Research has demonstrated that wide streets and wide travel lanes are associated with higher vehicle speeds, which affect the safety of people walking and bicycling.[1] Moreover, these major arterial streets are very wide and likely unnecessarily wide for the traffic volumes observed.

Wide streets and travel lanes encourage drivers to speed.

Lack of Sidewalks & Other Pedestrian and Bicycle Facilities

While major streets and Downtown Sanger generally have sidewalks, we observed numerous sidewalk gaps in the residential areas of the community. Additionally, crosswalks tended to be standard transverse style markings (two parallel lines) as opposed to high-visibility markings (ladder or piano style crosswalks), and bicycle lanes were sparse. We also observed a mix of curb ramps throughout the community, with some areas featuring more updated ramps, while others had older curb ramps whose style does not conform to ADA standards or best practices. Some areas lacked curb ramps altogether.

[1] See Kay Fitzpatrick, Paul Carlson, Marcus Brewer, and Mark Wooldridge, "Design Factors That Affect Driver Speed on Suburban Arterials": Transportation Research Record 1751 (2000):18–25.

Sidewalks do not exist in some locations.

Bicyclist crossing the street using crosswalk from riding on the sidewalk.

Faded Markings

The existing pavement markings for drivers, pedestrians, and bicycles were faded and in poor condition. Particularly for people walking and biking, these faded markings create more challenging conditions when walking or biking or when attempting to cross the street. Moreover, many streets lacked on-street bicycle lanes, where we observed bicyclists riding on the sidewalk, likely due to their concerns with high vehicle speeds.


Faded crosswalk markings are less effective at alert drivers to the presence of people walking.

Pedestrian & Bicycle Collision History

Between 2006-2015,[2] there were 38 pedestrian collisions, with an overall increasing trend of pedestrian collisions over the 10-year period. In the most recent set of data between 2011-2015, 21 pedestrian collisions resulted in 4 severe injuries in the City of Sanger, with collisions concentrated on Greenwood Avenue and Jensen Avenue. When examining the Primary Collision Factors (PCF) over the same 5-year period, driver violations accounted for 52.4% of pedestrian collisions, while pedestrian violations accounted for 19.1%. The majority of driver violations consisted of pedestrian right-of-way violations, while pedestrian violations involved pedestrians failing to yield to a driver when legally crossing outside of a crosswalk.[3] When examining time of day for pedestrian collisions, we see that these collisions are mostly occurring during daylight hours.

Between 2006-2015, there were 38 bicycle collisions, with an overall increasing trend of bicycle collisions over this 10-year period. In the most recent set of data between 2011-2015, 22 bicycle collisions resulted in 1 fatality and 2 severe injuries in the City of Sanger, with collisions concentrated on Bethel Avenue, Jensen Avenue, 7th Street, and 9th Street. When examining time of day for bicycle collisions, we see that these collisions are mostly occurring in the late afternoon and evening hours.

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

September 6, 2017 Workshop

The City of Sanger requested a workshop to 1) provide City staff, community organizations, and residents with a toolkit for promoting pedestrian and bicycle safety to inform future active

[2] Please note 2014 and 2015 data is provisional.

[3] 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.

transportation projects; 2) strengthen working relationships between City of Sanger, residents, and other stakeholders to ensure the best outcomes for the residents of the City of Sanger; and 3) develop consensus regarding pedestrian and bicycle safety priority and actionable next steps.

The workshop was hosted from 4:00 pm to 8:00 pm, and dinner, child watch, and simultaneous interpretation from English to Spanish were provided to maximize community participation. Eleven (11) individuals attended the workshop, including representatives from the City of Sanger, California Health Collaborative, The Sanger Scene (local media), the Fresno County Department of Public Health, and Sanger Cycling.

Participants conducting walk assessment.

Reflections from Walkability & Bikeability Assessment

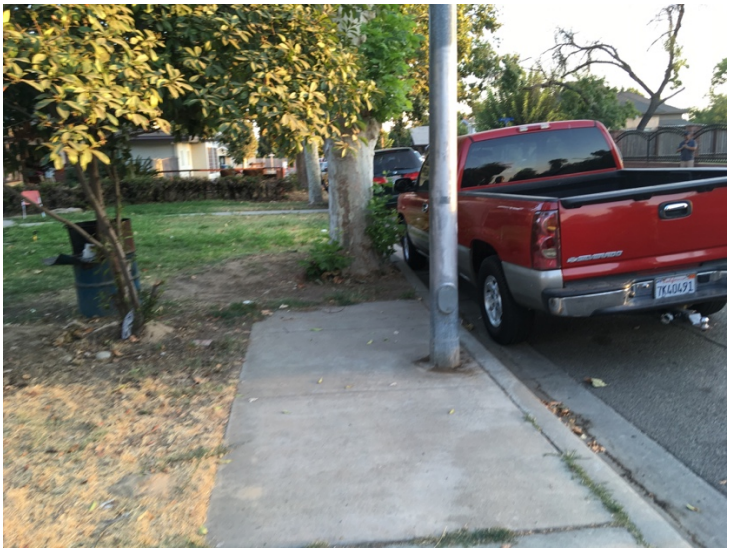
Workshop participants conducted walkability and bikeability assessments along 2 routes:

- Route 1 traveled south on West Avenue, west on Webster Street, north on Greenwood Avenue, and east on Jensen Avenue. This route focused on comparing and contrasting the smaller streets to walking and crossing conditions on Jensen Avenue and Greenwood Avenue.
- Route 2 traveled south on West Avenue and P Street, then detoured east on 8th Street (due to construction along 7th Street), north on Academy Avenue, and west on Jensen Avenue. This route examined walking conditions in the Downtown Sanger area and compared them to walking and crossing conditions with Jensen Avenue and Academy Avenue.

Participants were asked to 1) observe infrastructure conditions and the behavior of all road users; 2) apply strategies learned from the 6 E's presentation that could help overcome infrastructure concerns and unsafe driver, pedestrian, and bicyclist behavior; and 3) identify positive community assets and strategies which can be built upon.

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

- **Challenging Road Construction Conditions:** Route 2 participants modified their route numerous times due to large road construction projects in Downtown Sanger. Navigating the route was difficult due to complete sidewalk closures and torn up road beds. There did not appear to be a well-signed alternative route for people walking, and construction did not seem to take into account providing an accessible alternate route for people with disabilities.
- **Incomplete Sidewalk Network**: Participants noted that while the major streets have sidewalks, many of the residential areas were missing sidewalks. Additionally, the condition of sidewalks varied greatly, with some damaged and chipped sidewalks found even in the Downtown Sanger area.



Sidewalk ended abruptly during walk assessment.

- **Difficult Crossings on Major Streets**: Participants noted numerous faded marked crosswalks that made crossing more challenging and potentially dangerous for pedestrians. Additionally, these crosswalks did not employ high-visibility markings. Route 1 participants experienced drivers not yielding to the group while attempting to cross Jensen Avenue.

Difficult crossings across major streets in the community.

- **Extending Improvements from Downtown to Neighborhoods**: Participants highlighted numerous aspects of Downtown Sanger's walking environment–including wide sidewalks, bulb outs, and bicycle parking–that they would like to see extended to other areas of the community.

Great walking conditions in Downtown Sanger include wide sidewalks, curb extensions, benches, trash receptacles, and high-visibility crosswalk markings.

- **Need to Reach More Residents**: During Route 2, participants spoke to residents concerned with improving pedestrian safety and learned of a resident's personal challenges and experiences with crossing Jensen Avenue, including her experience of being hit in the marked crosswalk. This demonstrated that there are likely many more interested and concerned residents, but that outreach and engagement strategies must change to reach them.

Community Resident Recommendations

Following the walkability and bikeability assessment, Cal Walks facilitated small-group action planning discussions. Workshop participants discussed a series of questions developed in conjunction with local partners, including:

- The first set of questions focused on identifying education and encouragement programs that would be most effective for the community and would be most effective at cultivating student and parent leadership to sustain programs.
- The second set of questions focused on how best to integrate equity in active transportation projects that the City develops. This discussion also focused on identifying specific infrastructure projects for the City of Sanger and where they are most needed.

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

- **Focusing on Nontraditional Forms of Community Engagement**: Participants noted that the City has ongoing challenges with engaging residents in its planning and policymaking processes and that in order to engage and sustain resident participation, the City and its partners need to shift away from traditional meeting structures and toward nontraditional forms of community engagement. Participants identified adopting intercept surveys as one strategy for direct communication with residents, as well as leveraging the Go Out and Tour Sanger (GOATS)

bicycle ride as a way to engage residents and seek feedback. The GOATS bicycle ride currently meets to highlight and tour existing bicycle facilities in the community, while also teaching participants how to ride more safely. The GOATS concept could easily be adapted to collect participant feedback on walking and biking conditions that need improvement in the City.

- **Infrastructure Improvements on Jensen Avenue:** Based on the collision data, the walk assessment experience, and the conversation with a resident during the walk assessment, the group unanimously supported pursuing infrastructure improvements on Jensen Avenue to reduce driver speeds and improve crossing conditions. Participants discussed the possibility of traffic calming and reducing the number of travel lanes on Jensen Avenue–which would require upfront community education and engagement to foster buy-in–as well as upgrading uncontrolled crossings with high-visibility crosswalk markings and rectangular rapid flashing beacons.
- **Develop a Rules of the Road Safety Education Campaign:** Participants identified that improving the knowledge of drivers and pedestrians was a priority and expressed that not all residents were aware of the rules of the road. Participants supported the development of a comprehensive "Rules of the Road" safety education campaign focused on communicating the effect of speed on collision severity and on the legal responsibility of drivers to yield to pedestrians in marked or unmarked crosswalks.

Participants engaged in action planning following the walk assessment.

California Walks/SafeTREC Recommendations

California Walks and SafeTREC also submit the following recommendations for consideration by the Kern County Department of Public Health, Kern County Department of Public Works, City of Bakersfield Public Works, and residents:

- **Temporary Demonstrations on Jensen Avenue**: Because there appears to be widespread interest in improving safety conditions on Jensen Avenue–particularly at uncontrolled crossings–we recommend that the City plan and implement temporary demonstration projects on Jensen Avenue to demonstrate to community residents what pedestrian and bicycle safety improvement projects could look like on that street. Temporary demonstrations can be accomplished with low-cost materials and provide a non-traditional opportunity for the City to solicit feedback from residents. We recommend reviewing the Ventura/Kings Canyon Corridor Complete Streets Plan[4] to see how the City of Fresno experimented with temporary demonstrations. The City could also pursue funding from the Fresno Council of Governments (FresnoCOG) to support its temporary demonstration efforts.
- **Integrate Complete Streets into Maintenance Projects:** We recommend that the City integrate a complete streets approach in the City's maintenance projects through the use of a complete streets/paving project coordination checklist[5] to help ensure that regular road maintenance projects include pedestrian and bicycle safety improvements whenever possible. This is a cost-effective approach that we have seen work in other communities to dramatically expand their bicycle networks and to improve pedestrian and bicycle safety.
- **Pursue Funding for a Dedicated Safe Routes to School Coordinator:** We recommend that the City work with the Sanger Unified School District to pursue funding through the state or regional Active Transportation Program (ATP) for a paid Safe Routes to School (SRTS) Coordinator. The ATP is expected to release a call for projects in Spring 2018. The roles and responsibilities of a SRTS Coordinator—either part-time or full-time—vary by locality and according to the recently released "Building Momentum for Safe Routes to School" toolkit co-authored by Safe Routes to School National Partnership,[6] a SRTS Coordinator may:
    - Recruit and train volunteers to implement education and encouragement activities at individual schools;
    - Coordinate district or county-wide activities such as special Walk and Bike to School Day events;
    - Identify and prioritize safety concerns through walk assessments and community outreach;
    - Work with engineers and planners on changes to the physical infrastructure around schools;
    - Identify funding opportunities to expand SRTS programming; and
    - Lead or implement a local SRTS task force.

[4]Available http://www.fresnocog.org/sites/default/files/publications/VKC_Project/FinalPlan_2.pdf

[5] See City of Oakland Checklist for Complete Streets/Paving Project Coordination as an example. Available at https://safety.fhwa.dot.gov/road_diets/guidance/docs/oakland_chklist.pdf

[6] See Safe Route to School National Partnership & Santa Clara County Public Health Department, "Building Momentum for Safe Routes to School: A Toolkit for School Districts and City Leaders," 2017. Available at: http://www.saferoutespartnership.org/resources/toolkit/building-momentum-safe-routes-school

Acknowledgments

We would like to thank Daniel Galvez, Joaquin Zamora, and David Brletic with the City of Sanger for inviting us into their community, for hosting the Community Pedestrian and Bicycle Safety Training, and for generously providing dinner for participants.

We would like to acknowledge the many 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.

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

Appendix A

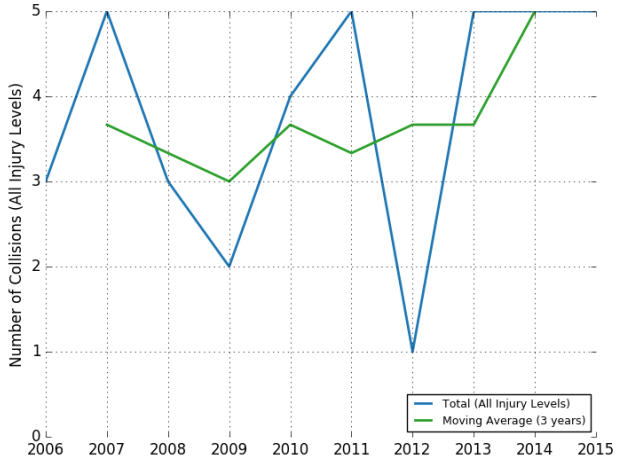
Pedestrian and Bicycle Collision Data Analysis

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

PEDESTRIANS

Number of Collisions Involving Pedestrians, 2006-15



The blue line shows the number of pedestrian collisions where a fatality and/or injury occurred. There were 41 people injured or killed in 38 pedestrian collisions over the last 10 years.

The green line shows the three-year moving average of the number of pedestrian collisions where a fatality and/or injury occurred. The moving average is useful for tracking trend change over time, especially when the number of collisions is subject to variability. Data points are the midpoint of the three years of data specified.

The following analyses are based on the most current five years, 2011 to 2015, of data for Sanger, CA. There were 22 people injured in 21 pedestrian collisions.

Top Violation Types for Collisions Involving Pedestrians

Type of Violation	Collisions N (%)
Other violation	6 (28.6%)
Driver must yield pedestrian right of way in a crosswalk	6 (28.6%)
Pedestrian yield, upon roadway outside crosswalk	4 (19.1%)
Starting or backing while unsafe	3 (14.3%)
Unsafe speed for prevailing conditions (use for all prima facie limits)	2 (9.5%)
Total	**21 (100.0%)**

Pedestrian Actions in Collisions Involving Pedestrians

Pedestrian Action	Collisions N (%)
Crossing in Crosswalk at Intersection	8 (38.1%)
Crossing Not in Crosswalk	5 (23.8%)
In Road, Including Shoulder	5 (23.8%)
Not in Road	3 (14.3%)
Total	**21 (100.0%)**

* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

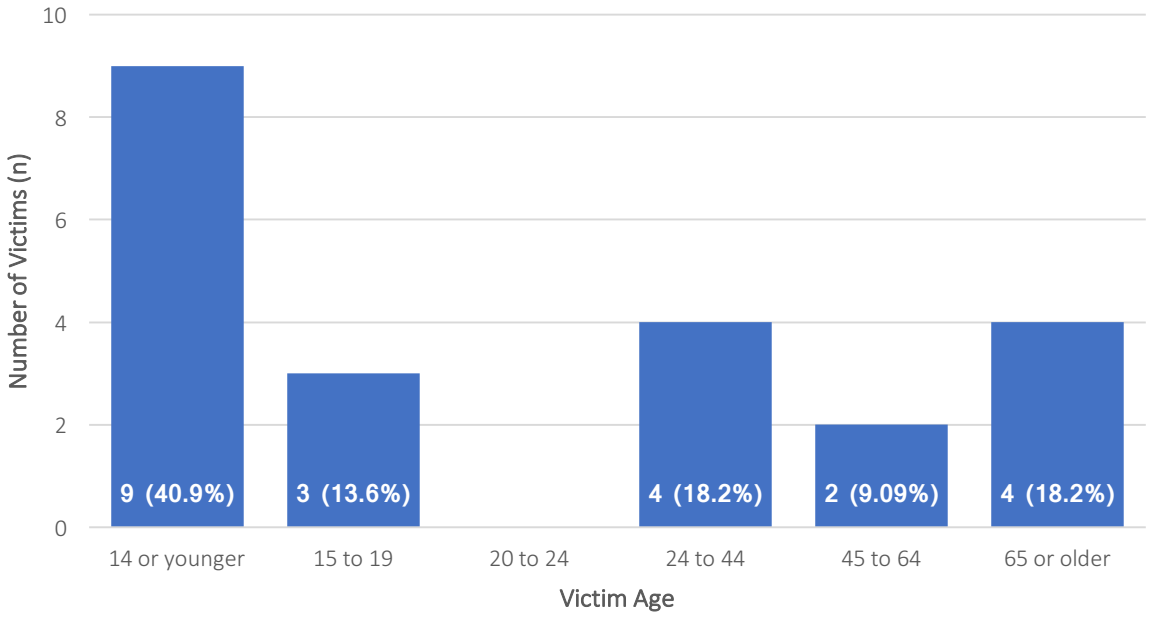
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

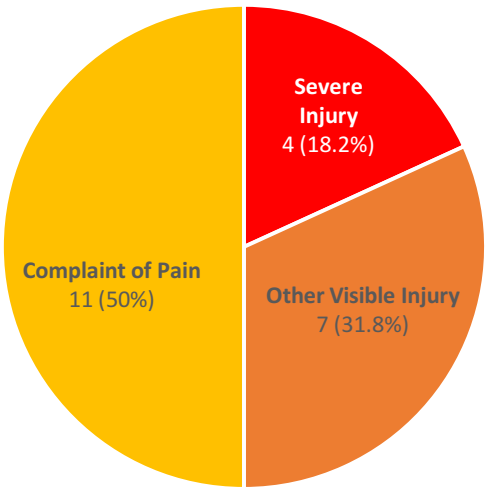
Pedestrian Victim Demographics

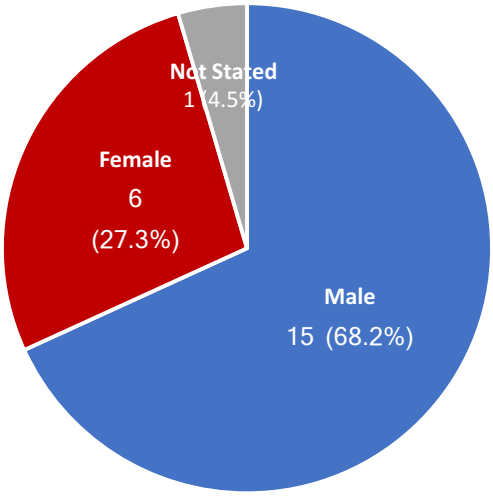
The age of pedestrian victims ranged considerably across all age groups, with youth age 19 or younger accounting for 54.5% percent of all victims. Victims were primarily male.



Victim Injury Severity, 2011-15

Most collisions resulted in minor injuries.





* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

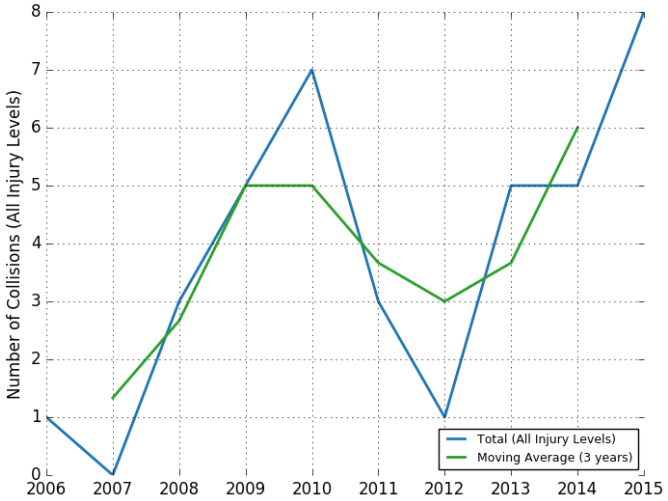
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

BICYCLISTS

Number of Collisions Involving Bicyclists, 2006-2015



The blue line shows the number of bicycle collisions where a fatality and/or injury occurred. There were 39 people killed or injured in 38 bicycle collisions over the last 10 years.

The green line shows the three-year moving average of the number of bicycle collisions where a fatality and/or injury occurred. The moving average is useful for tracking trend change over time, especially when the number of collisions is subject to variability.

The following analyses are based on the most current five years, 2011 to 2015, of data for Sanger, CA. There were 23 people killed or injured in 22 bicycle collisions.

Top Violation Types for Collisions Involving Bicycles

Type of Violation	Collisions N(%)
Other Violations	7 (33.3%)
Automobile Right of Way	6 (27.3%)
Traffic Signals and Signs	4 (18.2%)
Not stated/Unknown	3 (13.6%)
Wrong Side of Road	2 (9.1%)
Total	**22 (100%)**

* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

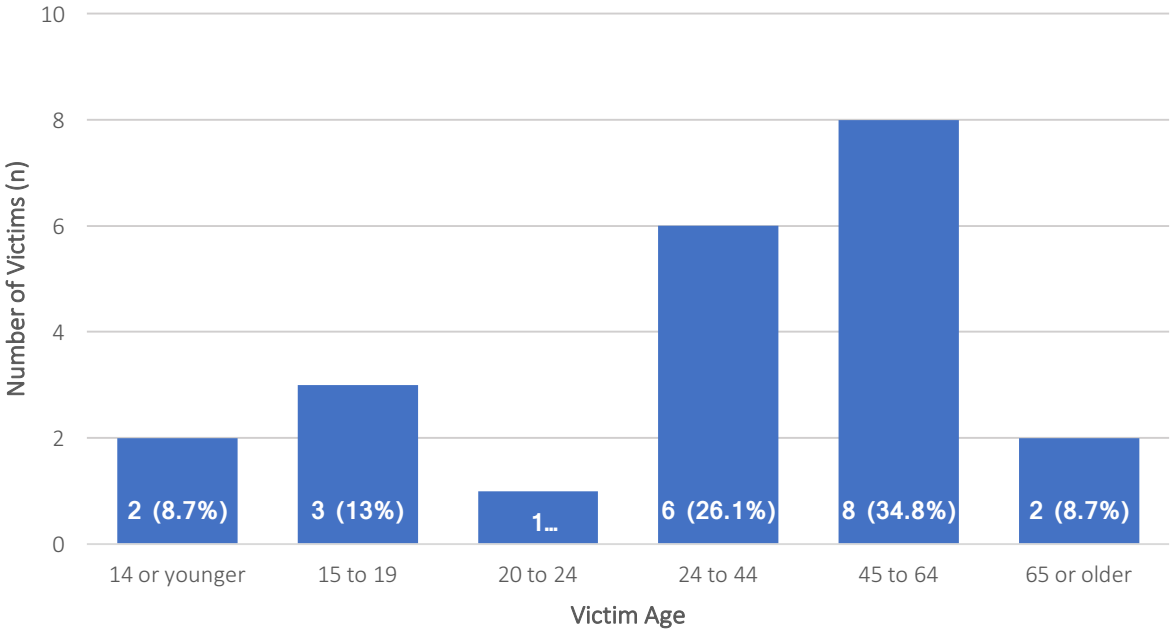
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

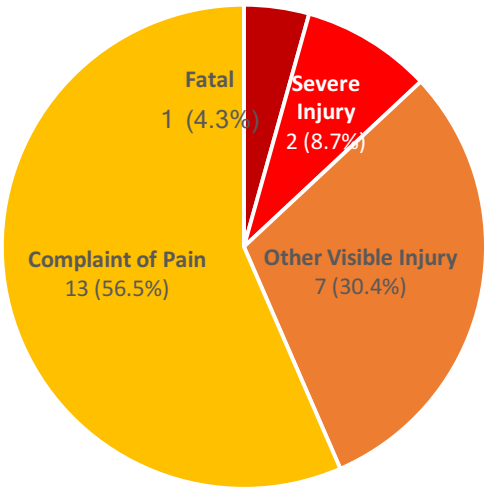
Bicycling Victims Demographics

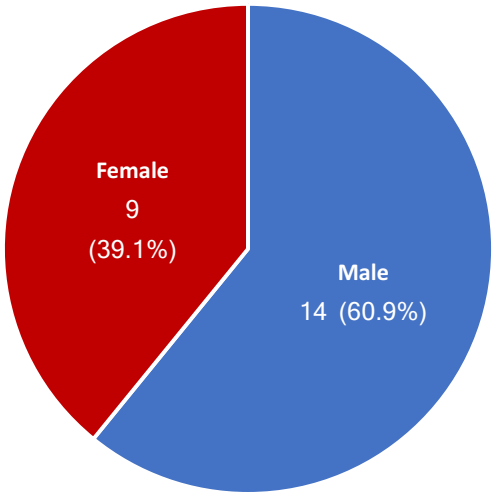
The age of bicycling collision victims varied across all age groups, with youth age 19 or younger accounting for 22.73 percent of victims. The majority of victims were male.



Victim Injury Severity, 2011-15

Most collisions resulted in minor injuries.





* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

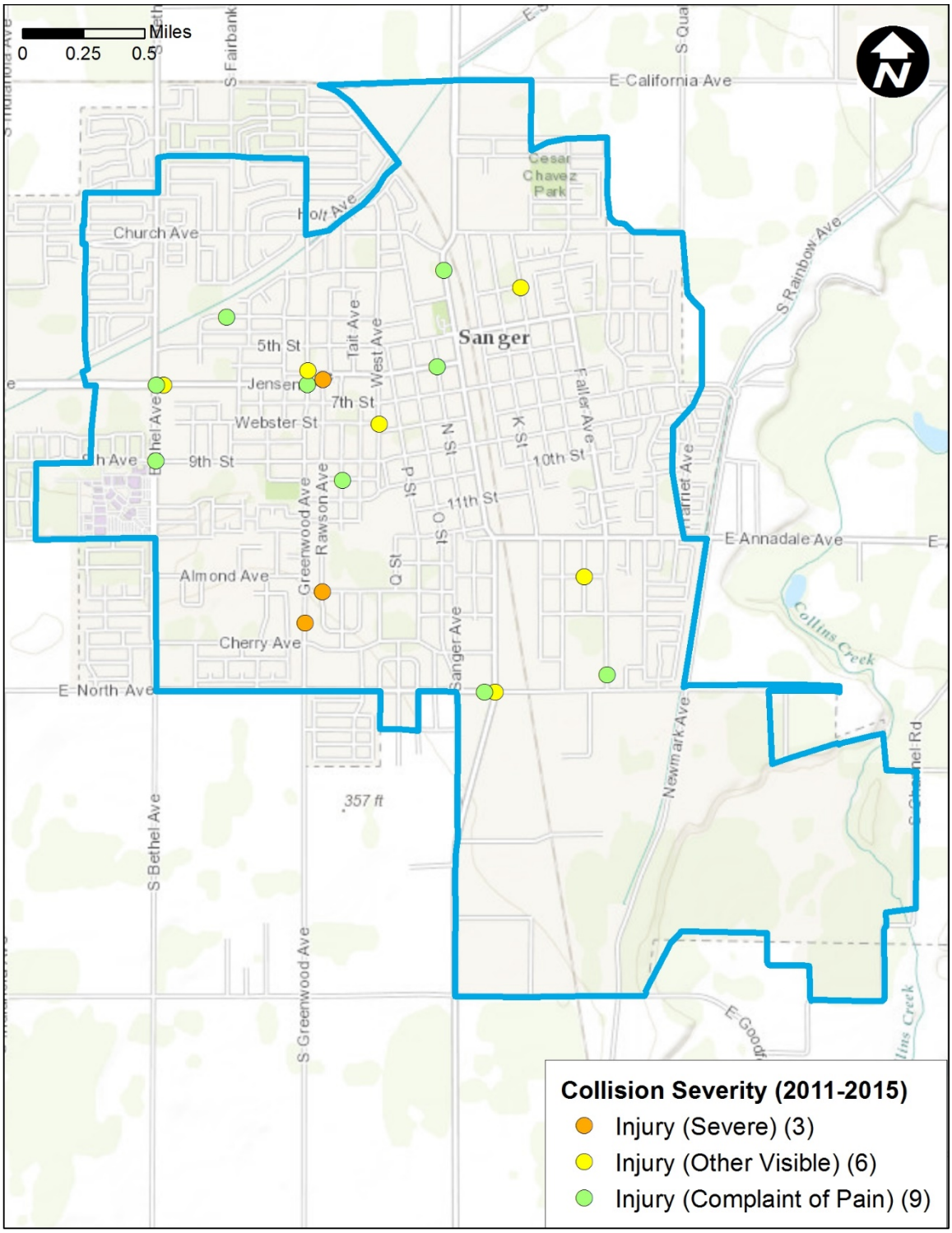
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Pedestrian Collision Locations, 2011-15

Note: Only 18 of 22collisions are geo-coded.



* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

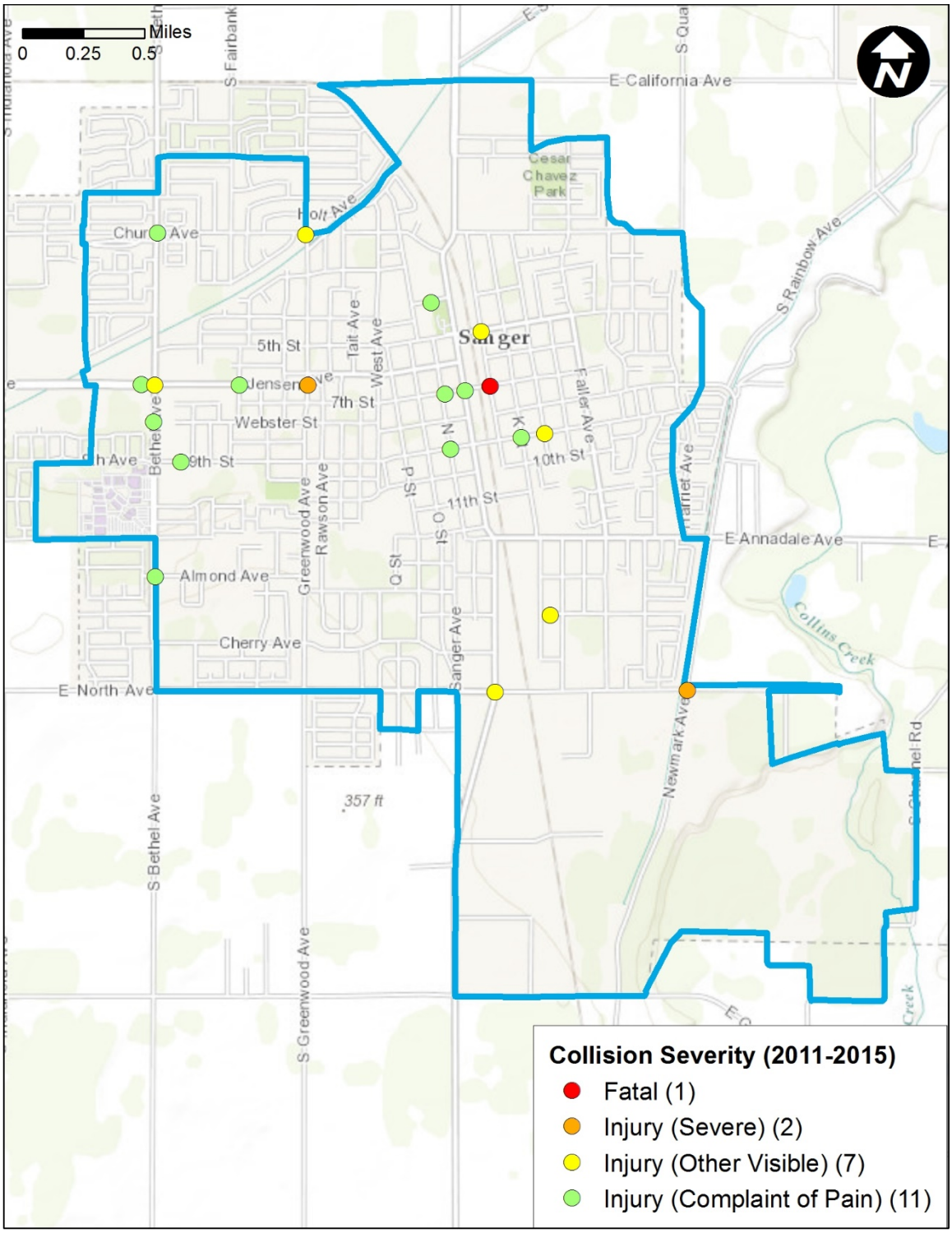
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Sanger, CA – 9/6/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Bicycle Collision Locations, 2011-15

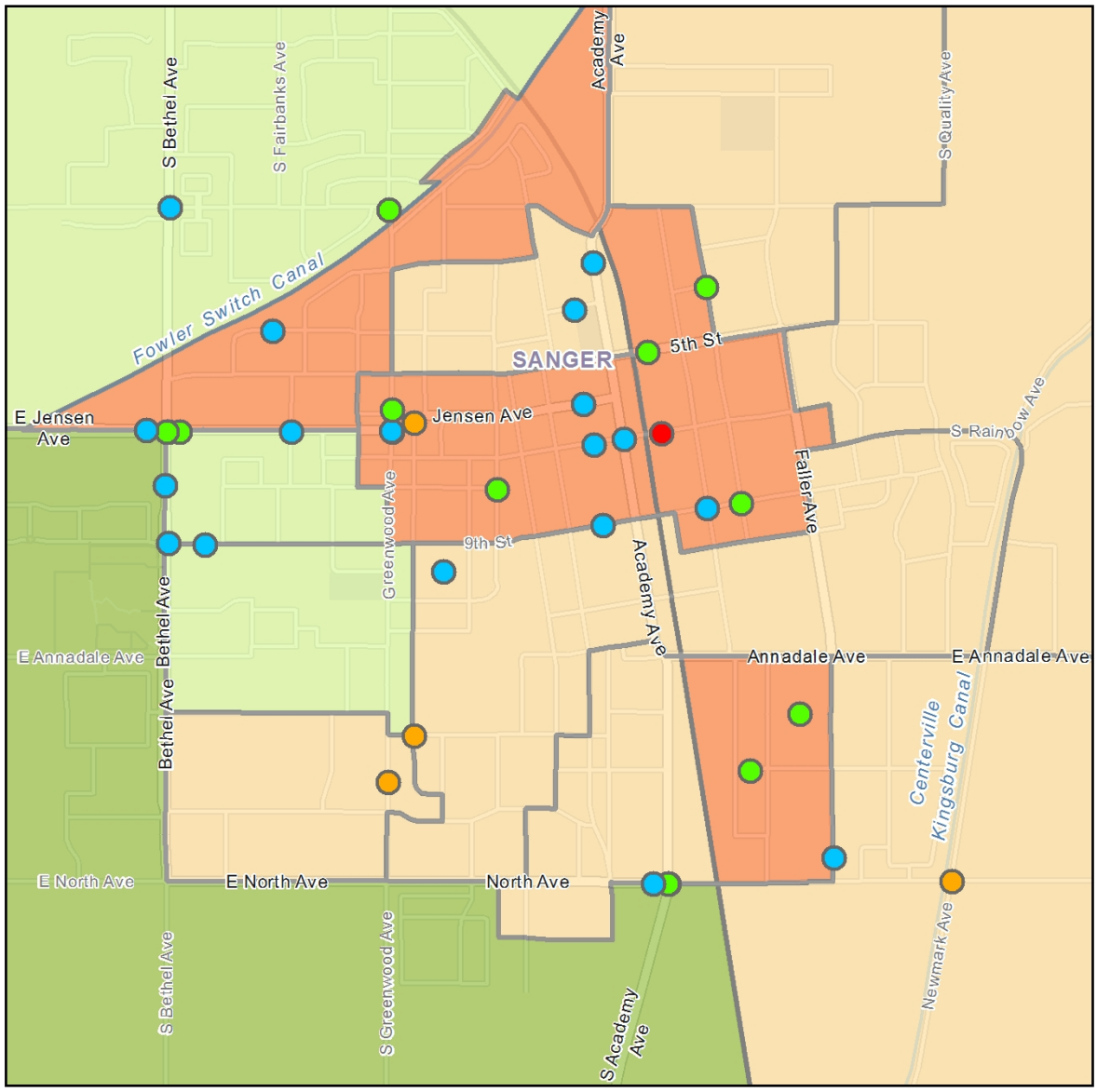
Note: Only 21 of 22 collisions are geo-coded.



* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

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

Sanger Bicycle/Pedestrian Collision Map (2011 - 2015)



Collision Severity (2011-2015)

- Fatal (1)
- Injury (Severe) (5)
- Injury (Other Visible) (13)
- Injury (Complaint of Pain) (19)

2016 Median Household Income

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

Berkeley SafeTREC

Data Source: Collision - SWITRS 2011 - 2015 (2014 - 2015 data is provisional)
Demographics - Esri, US Census Bureau, and ACS
Date: 6/16/2017

This map shows where all the pedestrian/bicycle injury collisions occurred and may not extend to the city's boundaries.