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

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 Cudahy

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Introduction

At the invitation of the City of Cudahy, 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 Cudahy 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 Thursday, August 24, 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 Thursday, September 28, 2017 from 9:00 am to 1:00 pm, which consisted of: 1) an overview of multidisciplinary approaches to improve pedestrian and bicycle safety; 2) three walkability and bikeability assessments along three key routes; and 3) small group action-planning discussions to facilitate the development of community-prioritized recommendations to inform Cudahy'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 Cudahy

Sidewalks in Disrepair and Debris

Sidewalks throughout the City vary in ease of access and condition along a single residential and commercial street. During the site visit, sidewalks were present along all observed streets, but they are often narrowed by utility poles and anchors, overgrown vegetation, large debris and trash, and parked vehicles. Some sidewalks are in disrepair and are damaged by cracks and uplifted tree roots. In several locations, sharp-edged sign stumps had been left behind after the removal of signage, creating a safety hazard for pedestrians and people who may bike on the sidewalk. Along residential streets, such as Live Oak Street, Clara Street, and Santa Ana Street, overgrown tree branches and shrubs blocked the view of the street, signage, and the view of drivers backing out of driveways.

Cracked sidewalks, illegal dumping, and a sharp-edged signpost stump near Clara Street Park.

Lack of Pedestrian-Scale Lighting

The majority of street lighting in the City is oriented toward vehicles (meaning lights are relatively high in relation to the street); sidewalks, crossings, and bicycle zones are unevenly lit by light spillover from nearby homes, businesses, street lights, and bus shelters. There is a lack of pedestrian-scale lighting along both residential and commercial streets, including at transit stops, near storefronts, parks, and other community spaces. Atlantic Avenue and Wilcox Avenue, the City's two main thoroughfares, would benefit from additional street and pedestrian-scale lighting, especially near commercial areas and school zones where many people walk on a daily basis.

The bus shelter at Atlantic Avenue and Clara Street relies on light spillover from the streetlight.

Lack of Bicycle Facilities

During the site visit and workshop assessments, Cal Walks staff observed a lack of bicycle facilities and bicycle signage and wayfinding. Bicyclists were observed riding on the sidewalk, likely due to concerns with the high speed of vehicles. Planning Committee members also believed bicyclists are uncomfortable riding along certain streets that are narrow and require bicyclists to ride very close to vehicles. Bicyclists were also observed riding on the wrong side of the road.


A bicyclist rides on the shoulder along Atlantic Avenue towards Live Oak Street (left), while another rides on the sidewalk (right).

High Speeds and Wide Streets

The majority of Cudahy streets are narrower, low-volume residential roads–measuring between 35 and 45 feet in width. Atlantic Avenue and Wilcox Avenue are wider thoroughfares, however, with higher volumes of vehicles and trucks. While the posted speed limits for these streets are 35 and 30 MPH, respectively, 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] The intersection of Atlantic Avenue and Clara Street, in particular, is rather wide, measuring 75 feet in width with two travel lanes in each direction, a landscaped median, a left turn lane, sidewalks with bus shelters, and a standard marked crossing. Residents on the site visit noted that high vehicle speeds along Atlantic Avenue are a major safety concern for pedestrians and bicyclists.

Atlantic Avenue is a wide multi-lane road with high speeds and frequent truck traffic.

Pedestrian & Bicycle Collision History

Cudahy is the second smallest city in Los Angeles County, spanning 1.23 square miles. Although pedestrian and bicycle collisions appear to be on a downward trajectory, the number of fatalities and severe collisions is alarming for a city of this size.

Between 2011-2015,[2] there were 20 pedestrian collisions, including 1 fatality and 2 severe injuries in Cudahy, with collisions concentrated on Atlantic Avenue, Wilcox Avenue and Clara Street. The top two primary collision factors for pedestrian collisions were drivers failing to yield to a pedestrian with the right-of-way (40%) and a pedestrian failing to yield the right-of-way to a driver when outside of a marked or unmarked crosswalk[3] (25%). Over the 10-year period between 2006-2015, pedestrian collisions appear to be on a downward trajectory.

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[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.

[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.

Between 2011-2015, there were 18 bicycle collisions, including 3 severe injuries in Cudahy, with collisions concentrated on Atlantic Avenue, Wilcox Avenue and Clara Street. The top two primary collision factors for bicycle collisions were bicyclists failing to yield the right-of-way to a driver (33.3%) and improper turning by either the driver or bicyclist (22.2%). Over the 10-year period between 2006-2015, bicycle collisions appear to be on a downward trajectory.

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

September 28, 2017 Workshop

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

Participants learning and discussing the 6 E's approach to pedestrian and bicycle safety.

The workshop was hosted from 9:00 am to 1:00 pm at the Clara Street Park Recreation Center. Lunch and childcare were provided and the entire workshop was facilitated in Spanish to maximize community participation. Forty-three (43) individuals attended the workshop, including residents, Cudahy Vice Mayor Christian Hernandez, and representatives from the City of Cudahy, Padres Lideres en Acción, Cudahy en Marcha, From Lot to Spot, Los Angeles County Supervisor Hilda L. Solis' Office, Walnut Park Civic Engagement Project, and the Los Angeles Bicycle Coalition.

Reflections from Walkability & Bikeability Assessment

Workshop participants conducted walkability and bikeability assessments along three routes.

- Route 1 traveled east on Clara Street beginning at Clara Street Park, north on Wilcox Avenue, west on Live Oak Avenue, south on Atlantic Avenue, and east on Clara Street. Route 1 focused on the intersection of Wilcox Avenue and Live Oak Avenue and crossings along Live Oak Avenue and Atlantic Avenue.

- Route 2 traveled west from Clara Street Park to Atlantic Avenue and east along the opposite side of Clara Street to Wilcox Avenue and returned to Clara Street Park. Route 2 focused on Clara Street and the intersection of Clara Street and Wilcox Avenue.
- Route 3 traveled east on Clara Street, north on Wilcox Avenue to Florence Avenue, and south on the opposite side of Wilcox Avenue to Clara Street Park. Route 3 focused on pedestrian and bicycle safety needs along Wilcox Avenue.

Participants utilizing a high-visibility crosswalk enhanced with a rectangular rapid flashing beacon (RRFB) during the walkability and bikeability assessment.

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:

- **Narrow Sidewalks and Sidewalks in Disrepair and Debris**: Participants found many sidewalks in the City to be too narrow for two adults to walk side-by-side and pass comfortably. Even where sidewalks were sufficiently wide, they were often narrowed by street furniture, such as light and utility poles, utility anchors, bus shelters and benches, debris, signage, and overgrown landscaping.

  A major concern was the amount of debris and trash on and along sidewalks. Debris consisted of overgrown trees and shrubs on personal property and the City's landscape buffer, illegally dumped furniture and clothing, and animal remains and waste.

Workshop participants use an umbrella to provide shade along Live Oak Street where the landscape buffer is devoid of shade trees.

- **Lack of Shade**: Participants on all three assessment routes noted a lack of shade along residential and commercial streets. Many residential streets have landscape strips but some have been paved over or contain tree species that offer little shade. Participants requested more trees be planted throughout the community.

- **High Levels of Pedestrian and Bicycle Activity**: Residents noted the high volume of pedestrian and bicycle activity throughout the City as a community asset. Many community members travel to nearby destinations on foot, by bike, or on the single Cudahy transit bus. Many people can be found outside, even during traditional work hours, creating a lively, active street scene.
- **Bus Stop Shelters and Benches**: Although participants considered the design of the covered bus shelter located at Atlantic Avenue and Clara Street to be an example that could be replicated throughout the City, they were conflicted over the bench design. Some prefered the divided bench design, which prevents people from lying down, while others believed it denied a place to rest for the homeless, resulting in their displacement. Participants were interested in adding more benches and places throughout the community.

Community Resident Recommendations

Following the walkability and bikeability assessment, Cal Walks facilitated small-group action planning discussions. Workshop participants discussed two sets of questions:

- The first set of questions focused on prioritizing non-infrastructure community-led education and encouragement projects and what strategies could be employed to cultivate student and parent leadership.
- The second set of questions focused on prioritizing infrastructure improvements for reducing the number of injuries and fatalities with a focus on City-led priorities.

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

Non-Infrastructure Priorities & Recommendations

- **Safe Walking & Biking Education Campaigns:** Participants would like to develop and implement driver education campaigns to educate drivers on sharing the road with cyclists, navigating conflict zones, and bicyclists' rights to use the full lane. Education is also needed for people who bike to educate them on safe cycling skills, preferred bicycle routes in the community, and the rules of the road.

  Participants also expressed concern over unsafe driver behavior near schools and the need to educate drivers about speed limits in school zones and safe behaviors during pickup and drop-off. A need to educate parents and students was also expressed with a desire to integrate youth into safe walking and biking campaigns. The Los Angeles Unified School District was identified as a potential partner in these efforts. Overall, participants favored an education approach balanced with enforcement supporting educational efforts, over enforcement efforts focused on ticketing.
- **Develop Walkability & Bikeability Promotoras Program:** Participants conveyed the importance of developing education and encouragement programs that are created by and for the community. They supported the development of a promotoras program to establish and develop community leaders to carry out safe walkability and bikeability efforts. A community organization, like Padres Lideres en Acción or Cudahy en Marcha, can serve as a home organization for such a program.

Infrastructure Priorities & Recommendations

- **Install Pedestrian-Scale Lighting**: Participants expressed concern about the lack pedestrian-scale lighting throughout the City. Street lighting is mostly oriented toward vehicles and the roadway. Current lighting for pedestrians and bicyclists comes from light spilling over from residential and commercial properties and street lights. Pedestrian-scale lighting, with a preference for solar-powered fixtures, was identified as a priority citywide especially around schools and commercial districts.
- **Tree and Landscaping Opportunities**: Participants identified trees and the shade they provide to pedestrians as a community asset they would like to see replicated. Currently, there are sidewalk buffers filled with large shade trees along many streets, but some are filled with tree species that provide little or no shade or remain unfilled or paved over. Participants expressed a desire to see more shade trees planted in the community to provide shade along sidewalks and near bus shelters. Areas along Clara Street and Live Oak Street were identified as opportunities for tree planting. Residents also expressed a need for regular maintenance of existing trees and landscaping to ensure they do not block light, signage, driver visibility, and the sidewalk. Participants also identified the distribution of a neighborhood flyer that has lighting, maintenance, and landscaping reminders as a potential next step.

Overgrown trees and shrubs block street signs, narrow the sidewalk, and block driver's views at driveways along Live Oak Street.

- **Roadway Improvements and Streetscape Upgrades**: Pothole repair and roadway repaving was identified as a major concern and an opportunity as part of a larger roadway revitalization project. Participants wanted to see the entire roadway upgraded with improved drainage and rain guards and native plant installations, as well as high-visibility crosswalks. Residents believe one way for the City to address debris on the sidewalk is to provide a separate recycling receptacle. Residents also noted that regular washing of trash receptacles is needed to reduce bad odors. Residents believed that cultivating a sense of community through community clean up efforts and education, like the City's Cleanup Day, would result in improved sidewalk and overall community cleanliness.

Safety improvements along Clara Street near the entrance to Clara Street Park.

California Walks/SafeTREC Recommendations

California Walks and SafeTREC also submit the following recommendations for consideration by the City of Cudahy:

- **Crossing Enhancements**: Cal Walks and SafeTREC commend the City for the recent installation of several pedestrian safety countermeasures along Clara Street between Clara Street Park and Elizabeth Learning Center, namely the addition of high-visibility crosswalks, solar powered fluorescent rectangular rapid flashing beacons, high-visibility pedestrian crossing signage, advanced yield lines, ADA curb ramps, and a pedestrian refuge island. These improvements are critical for locations with high daily volumes of vulnerable road users. Pedestrians and bicyclists visit the Elizabeth Learning Center, Clara Street Park, and the adjacent community center regularly for community events, including a weekly food donation center. We recommend the installation of similar improvements at intersections near schools and community spaces, such as Ellen Ochoa Learning Center, Teresa Hughes Elementary, and Cudahy Park.

  We recommend an assessment of marked and unmarked crosswalks along Atlantic Avenue and Wilcox Avenue, where the City's commercial areas are located, to identify appropriate safety improvements. Workshop participants noted the intersections of Atlantic Avenue and Elizabeth Street and Wilcox Avenue and Clara Street are of great concern, particularly the long wait time for pedestrians to cross Atlantic Avenue, which encourages youth to disobey the signal. Accordingly, we recommend the City conduct a citywide analysis of pedestrian signal timing at all signalized intersections, with special attention paid to signalized intersections near schools and senior facilities. These signals should be inspected and retimed at no more than 2.8' per second as needed, especially near senior facilities and schools, to provide adequate time for seniors and children to safely cross. We have seen the City of San Jose take this approach, where the City evaluated the signal timing for pedestrian crossings at 13 senior/community center hub sites, 43 senior housing complexes, and 256 schools, resulting in retiming of 195 signals across the City to provide seniors and children with more time to safely cross busy streets to access schools, congregate meals, socialization opportunities, and other social services.
- **Pedestrian-Scale Lighting Assessment**: Cal Walks and SafeTREC recommend the City work with residents and community-based organizations, such as Padres Lideres en Acción and Cudahy en Marcha to conduct a community night-time light assessment to identify and inventory nighttime lighting needs for pedestrians and cyclists, including the addition of pedestrian-scale lighting in areas of high nighttime pedestrian activity. A nighttime assessment will also identify lighting fixtures in need of repair or replacement.
- **Bicycle Facilities, Signage & Wayfinding**: Workshop participants requested additional bicycle facilities throughout the City but were concerned about the safety of bicyclists riding along narrow streets like Clara Street and that the addition of bike lanes along narrower streets would also impact vehicle traffic. Cal Walks and SafeTREC recommend the City pursue funding through the Active Transportation Program (ATP) to develop a Bicycle Plan for the City.

Acknowledgments

We would like to thank Victor Maria Santiago of City of Cudahy and Susie de Santiago of Cudahy en Marcha for inviting us into their community and for hosting the Community Pedestrian and Bicycle Safety Training. We would also like to thank Monica Curiel of Bike San Gabriel Valley for facilitating the training in Spanish.

Cudahy CPBST Workshop Planning Committee

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 – Cudahy, CA – 9/28/17

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 65 people injured or killed in 58 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 Cudahy, CA. There were 22 people killed or injured in 20 pedestrian collisions.

Top Violation Types for Collisions Involving Pedestrians

Type of Violation	Collisions N(%)
Driver must yield to pedestrian right of way in a crosswalk.	8 (40%)
Pedestrian yield, upon roadway outside crosswalk.	5 (25%)
Unsafe turn with/without signaling.	2 (10%)
Jaywalking, between signal controlled intersections.	2 (10%)
Red or Stop, vehicles stop at limit line or X-walk. When making right turn at a red light/stop sign driver required to yield to any vehicle approaching so closely as to constitute an immediate hazard.	1 (5%)
Public or private property, yield to approaching traffic so close as to constitute an immediate hazard.	1 (5%)
Other violation	1 (5%)
Total	**20 (100.0%)**

Pedestrian Actions in Collisions Involving Pedestrians

Pedestrian Action	Collisions N(%)
Crossing in Crosswalk at Intersection	11 (55%)
Crossing Not in Crosswalk	7 (35%)
In Road, Including Shoulder	1 (5%)
Not in Road	1 (5%)
Total	**20 (100.0%)**

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

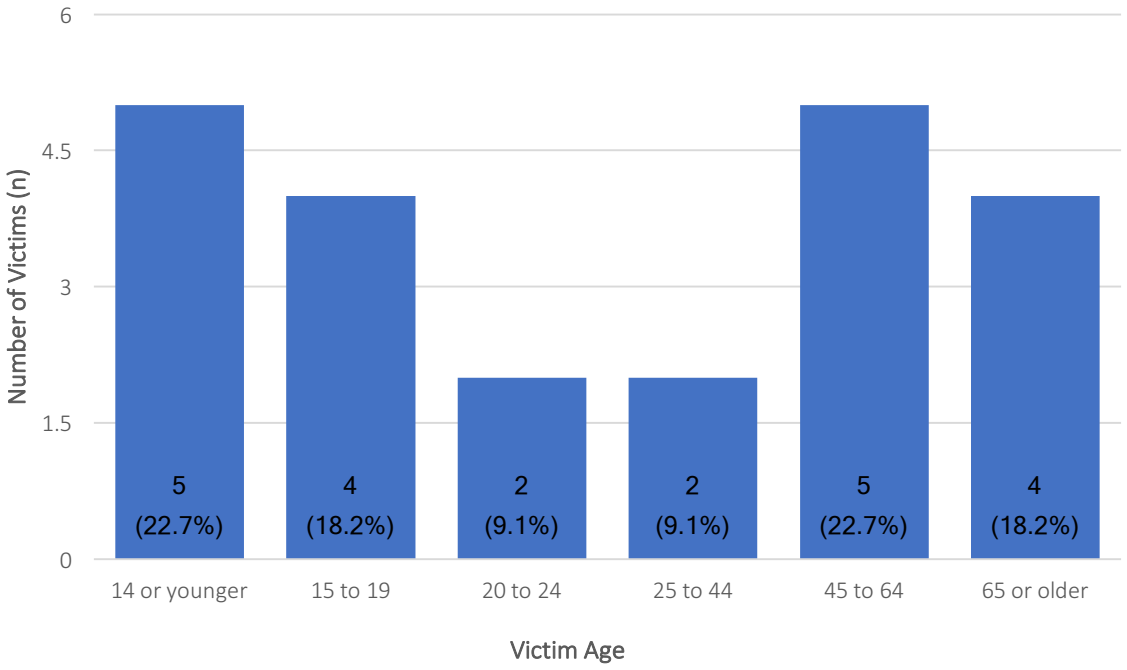
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Cudahy, CA – 9/28/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

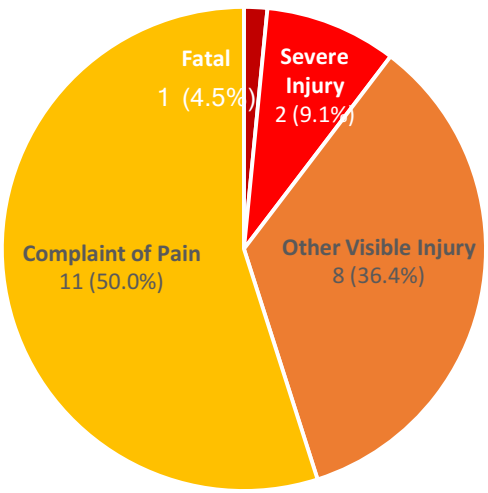
Pedestrian Victim Demographics

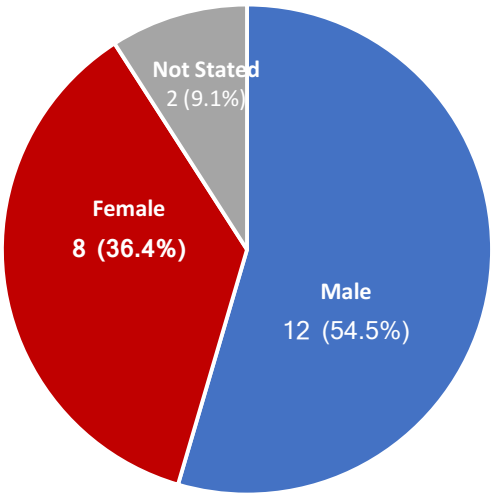
The age of pedestrian victims ranged considerably across all age groups, with youth age 19 or younger accounting for 40.9 percent of all victims. Victims were primarily male.



Victim Injury Severity, 2011-15

Most collisions resulted in minor injuries.





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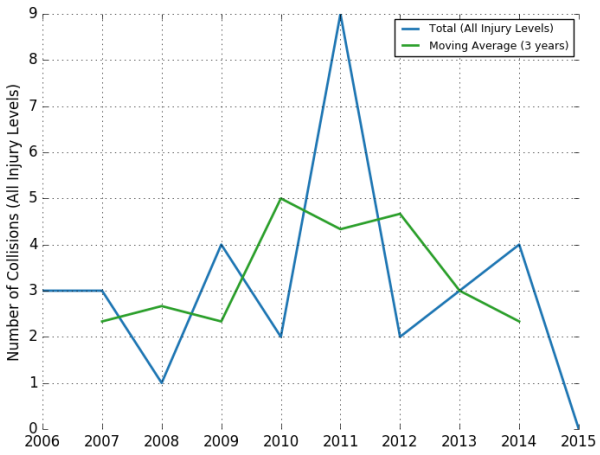
Community Pedestrian and Bicyclist Safety Workshop – Cudahy, CA – 9/28/17

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 31 people injured in 31 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 Cudahy, CA. There were 18 people injured in 18 bicycle collisions.

Top Violation Types for Collisions Involving Bicycles

Type of Violation	Collisions N(%)
Automobile Right of Way	6 (33.3%)
Improper Turning	4 (22.2%)
Traffic Signals and Signs	3 (16.7%)
Wrong Side of Road	2 (11.1%)
Other Hazardous Violation or Unknown	3 (16.7%)
Total	**18 (100.0%)**

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

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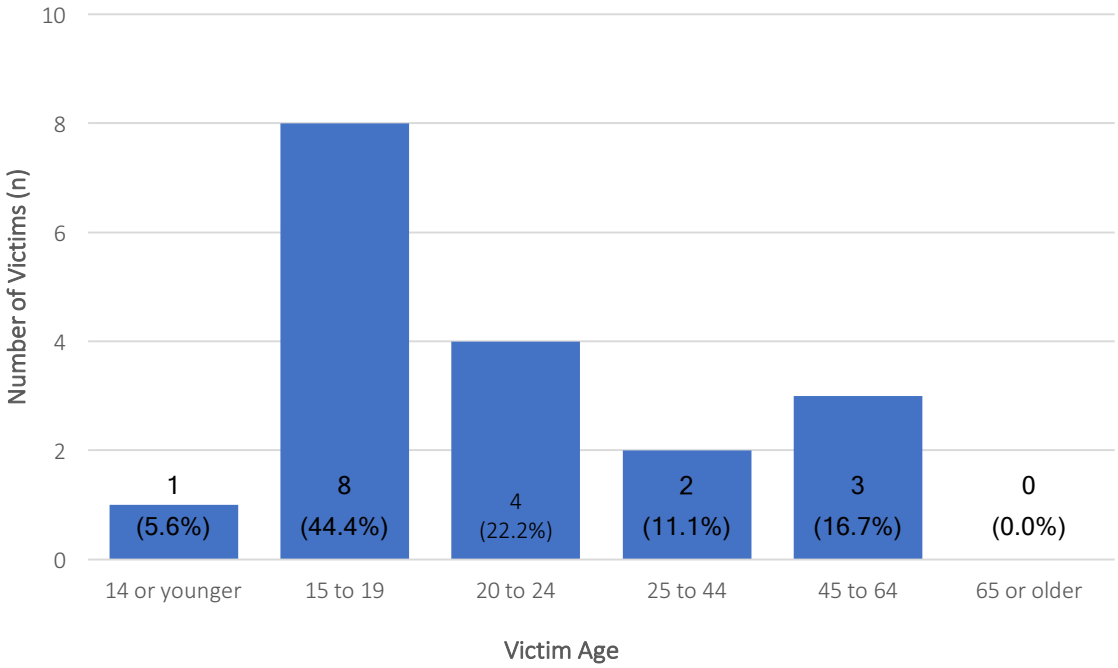
Community Pedestrian and Bicyclist Safety Workshop – Cudahy, CA – 9/28/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

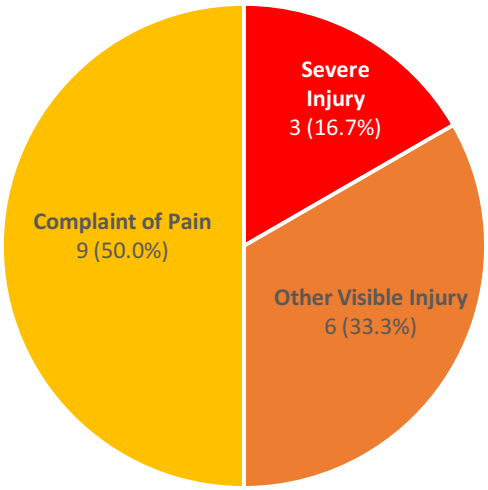
Bicycling Victims Demographics

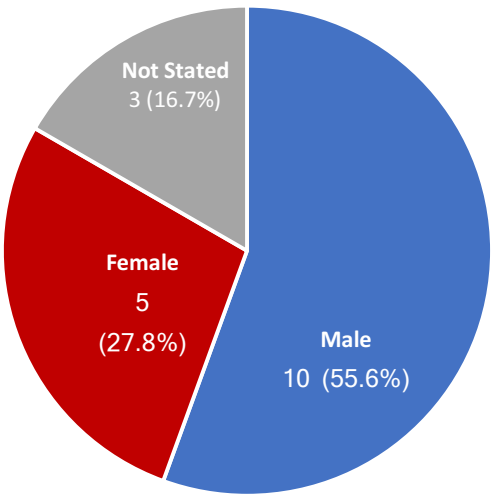
The age of bicycling collision victims varied across all age groups, with youth age 19 or younger accounting for 50.0 percent of victims. The majority of victims were male.



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.

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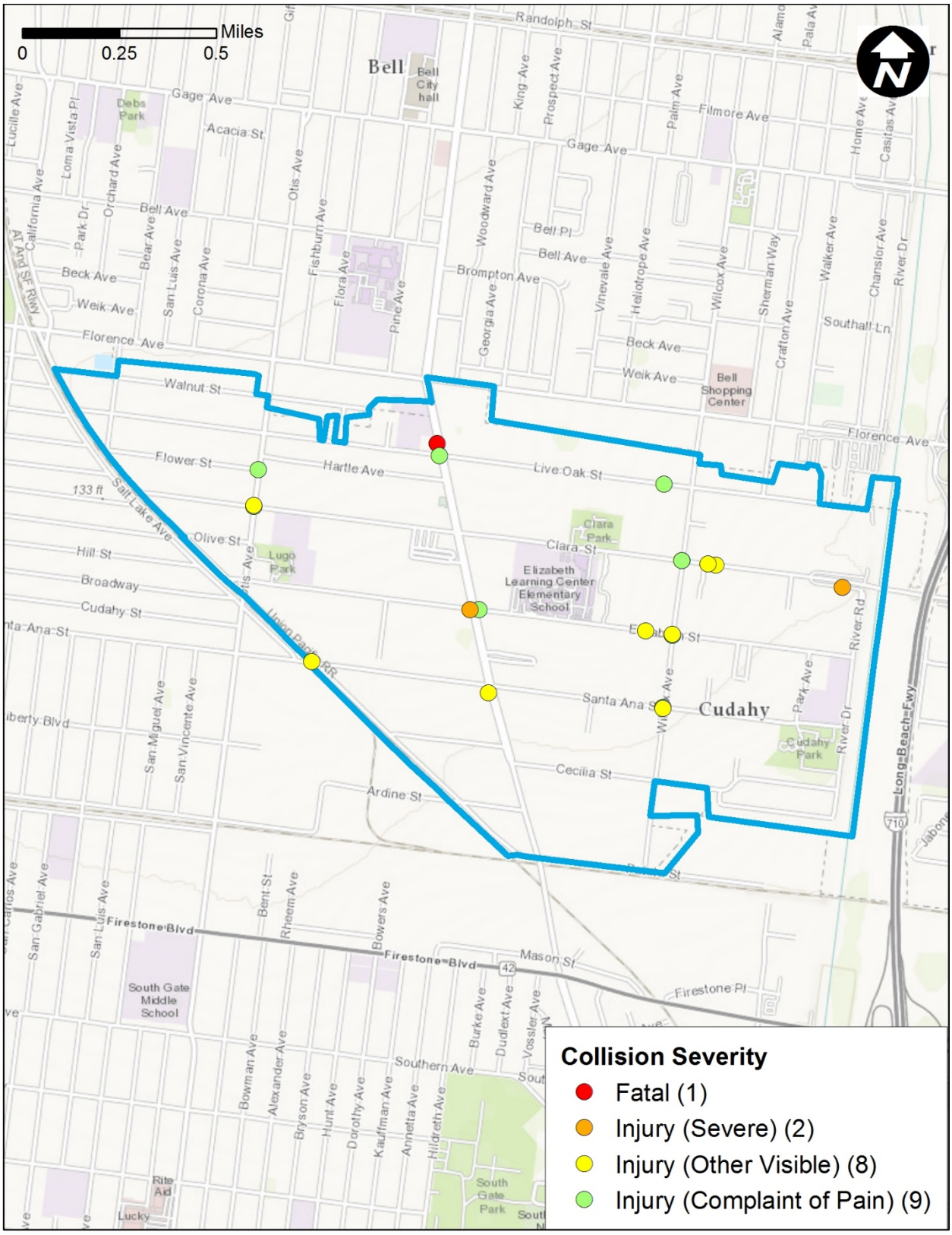
Community Pedestrian and Bicyclist Safety Workshop – Cudahy, CA – 9/28/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Pedestrian Collision Locations, 2011-15



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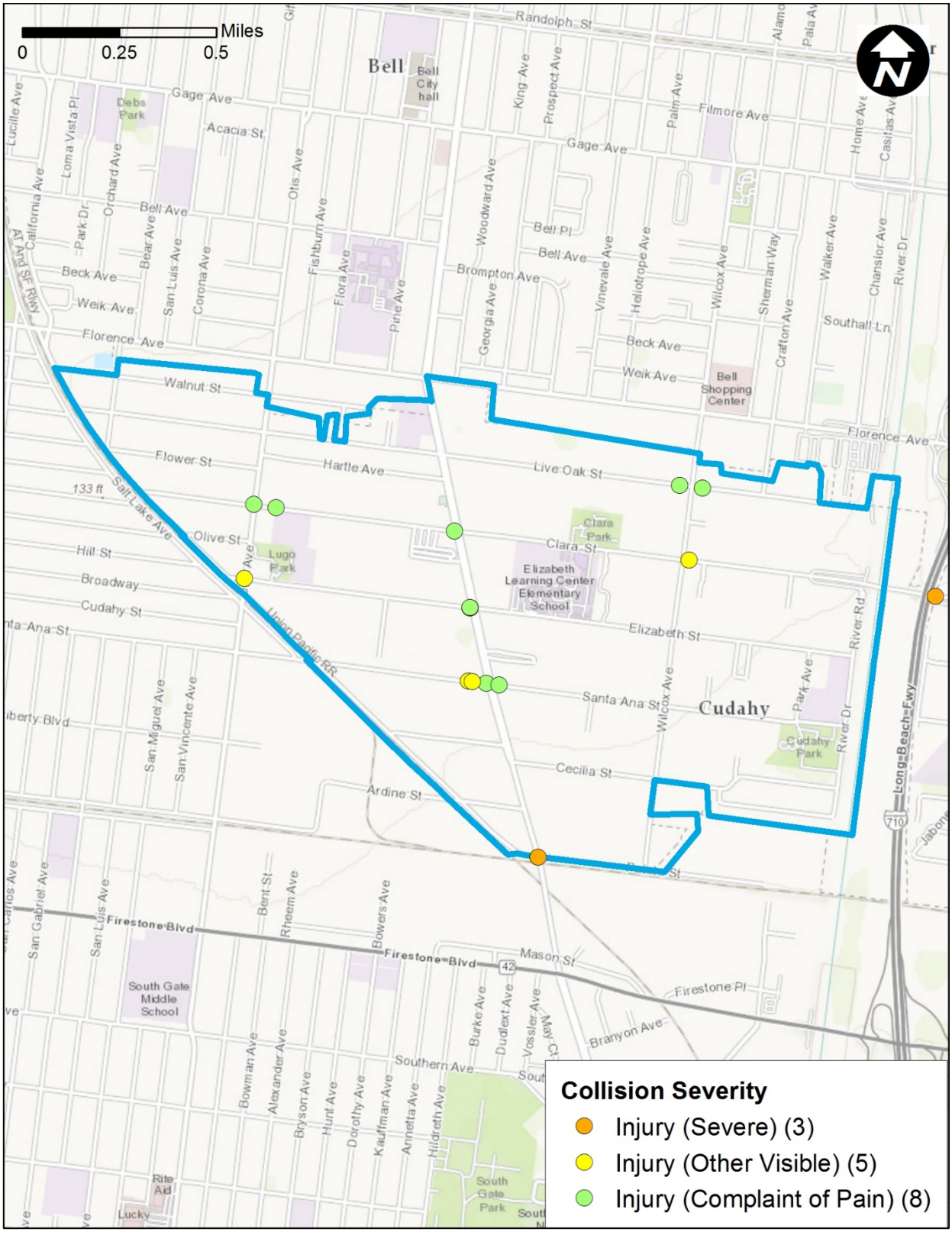
Community Pedestrian and Bicyclist Safety Workshop – Cudahy, CA – 9/28/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Collision Locations, 2011-15

Note : Only 16 of 18 collisions are geo-coded.



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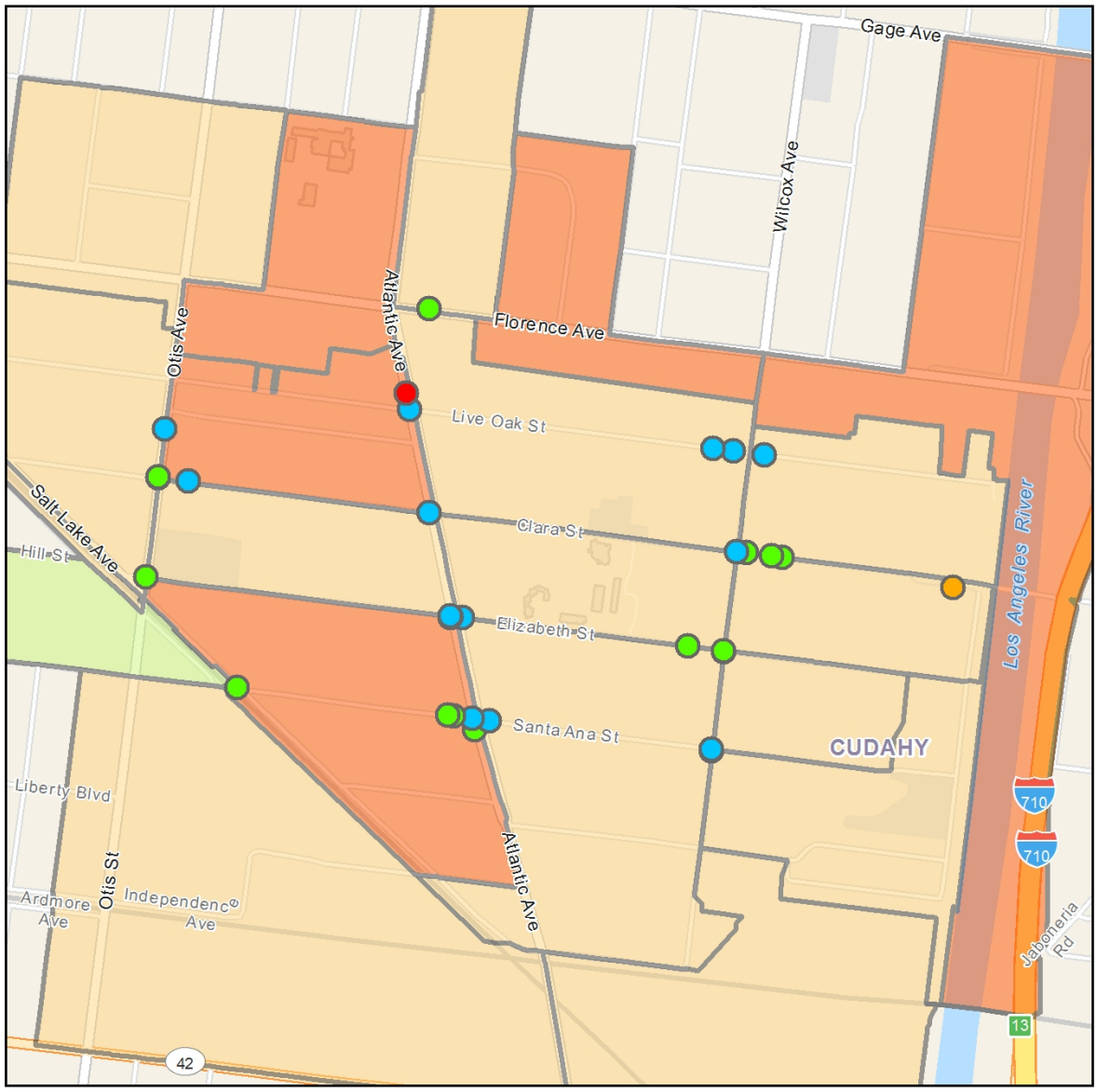
Cudahy Bicycle/Pedestrian Collision Map (2011 - 2015)



Collision Severity (2011-2015)

- Fatal (1)
- Injury (Severe) (3)
- Injury (Other Visible) (14)
- Injury (Complaint of Pain) (17)

2016 Median Household Income

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

Berkeley SafeTREC

Data Source: Collision - SWITRS 2011 - 2015 (2014 - 2015 data is provisional)
Demographics - Esri, US Census Bureau, and ACS
Date: 5/12/2017

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