



Recommendations to Improve Pedestrian & Bicycle Safety for the City of Lemon Grove



October 2018



Acknowledgements

Planning Committee

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We would like to thank the Planning Committee for inviting us into their community and for hosting the Community Pedestrian and Bicycle Safety Training in Lemon Grove.

Many thanks to the Healthy Eating Active Living Zone (HEAL Zone) and Kitchenista for providing dinner and refreshments in support of this training. Additionally, we thank the Lemon Grove Branch Library for providing the Community Meeting Room for this training.

We would like to acknowledge the many HEAL Zone community members present at the workshop and their dedication to pedestrian and bicycle safety. Their collective participation meaningfully informed and strengthened the workshop's outcomes.

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Recommendations to Improve Pedestrian & Bicycle Safety for the City of Lemon Grove

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Introduction

At the invitation of the Lemon Grove Healthy Eating Active Living (HEAL) Zone, California Walks (Cal Walks), the University of California at Berkeley's Safe Transportation Research and Education Center (SafeTREC), and the Planning Committee collaboratively developed and facilitated a Community Pedestrian and Bicycle Safety Training (CPBST) in the City of Lemon Grove. The CPBST is a joint project of Cal Walks and SafeTREC (Project Team) 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.

The Lemon Grove HEAL Zone requested a workshop to 1) provide Lemon Grove HEAL Zone Resident Leadership Academy participants with a toolkit for promoting pedestrian and bicycle safety infrastructure and programmatic projects; 2) strengthen working relationships between City staff to ensure the best outcomes for the residents of Lemon Grove; and 3) develop consensus regarding pedestrian and bicycle safety priorities and actionable next steps toward healthy and active living hubs around existing community-identified destinations, such as schools, grocery stores, parks, and libraries.

The Project Team facilitated the workshop on July 19, 2018 from 5:00 p.m. to 8:30 p.m. at the Lemon Grove Branch Library Community Meeting Room. Dinner was provided to maximize community participation. Nine (9) individuals attended the workshop, including residents, a San Diego Unified School District representative, and members of the HEAL Zone Resident Leadership Academy.



Training participants planning for infrastructure and programmatic projects in Lemon Grove.

The training consisted of: 1) walking assessments along two 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 and; 3) small group action-planning discussions to prioritize recommendations for Lemon Grove's active transportation and healthy living efforts. This report summarizes the workshop proceedings, as well as recommendations for projects, policies, and programs for pedestrian and bicycle safety in Lemon Grove.

Planning Process

For each training, the program convenes a local planning committee to tailor and refine the training's curriculum to meet the community's needs. The Project Team conducts 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. The Lemon Grove CPBST planning process was initiated in April 2018. The planning process consisted of:

- **Community Plans and Policies Review:** Cal Walks conducted a review of current community planning documents to inform the training with local context and prepare to build off existing and future active transportation efforts. The following documents were reviewed prior to the site visit:
 - [Lemon Grove Downtown Specific Plan](#), 2018
 - [The Sage Project at Lemon Grove](#), 2016-2017
 - [Lemon Grove Connect Main Street Specific Plan](#), 2016
 - [County of San Diego General Plan Annual Progress Report](#), 2015
 - [General Plan Update Progress Report](#), 2015
 - [Lemon Grove Health and Wellness Element](#) 2014
 - [San Diego Regional Bike Plan- Riding to 2050](#), 2010
 - [Lemon Grove Bikeway Master Plan](#), 2006
- **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 Lemon Grove, 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 area between Lemon Grove Branch Library and Lemon Grove Park along Lincoln Street and Washington Street as the geographic focus of the Lemon Grove CPBST, which also encompasses the Lemon Grove Avenue/Central Avenue intersection and its surrounding residential streets: School Lane, Lincoln Street, Olive Street, Burnell Avenue, and Main Street. These areas have high levels of pedestrian, bicycle, and vehicle traffic because of the concentration of key community destinations such as, parks, schools, places of worship, recreation centers, and bus and light rail lines. The Planning Committee communicated to the Project Team that these areas are ideal to create safe, healthy, and active living hubs in Lemon Grove. The Planning Committee identified the following goals for the CPBST:
 - Train the Resident Leadership Academy participants to build safe, healthy, and active living hubs in Lemon Grove in concert with their peers;
 - Establish safe and walkable routes for residents to access community resources;
 - Increase the use of underutilized public spaces;
 - Increase communication and foster partnerships between Lemon Grove City Staff, residents, and schools.
- **Site Visit:** The Project Team facilitated an in-person site visit on June 28, 2018 with the Planning Committee at the Lemon Grove HEAL Zone to 1) review existing pedestrian and bicycle collision data specific to the City of Lemon Grove; 2) collect qualitative data based on in-person observations of existing conditions and travel behaviors; and 3) conduct preliminary walking assessments of the CPBST focal area. The Project Team used the site visit findings to develop the workshop presentation, including featuring local infrastructure examples and developing the walking assessment route maps. During the site visit, the Planning Committee identified local residents, Institute for Public Strategies, Lemon Grove School District, Lemon Grove City Staff, Lemon Grove Planning Commissioners, Lemon Grove City Council Candidates, Lemon Grove Clergy Association, Live Well, and Traffic Safety as key stakeholders to invite to the CPBST.



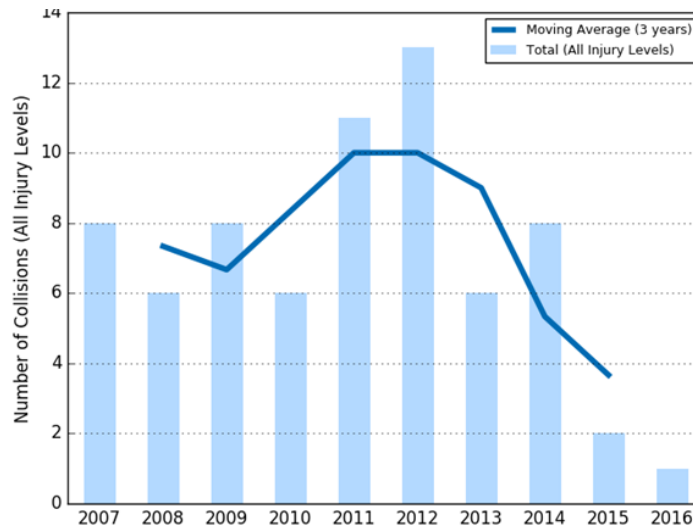
Planning Committee members and Cal Walks staff discussing the Mt. Vernon Street/Washington Street intersection during the site visit.

Existing Conditions

Pedestrian & Bicycle Collision History¹

Between 2012-2016, there were 30 pedestrian collisions, including three (3) fatalities and eight (8) severe injuries to pedestrians in the City of Lemon Grove. Collisions in this time period are concentrated on Broadway and intersections along California State Route 94 (SR 94) and California State Route 125 (SR 125). Collisions primarily occurred during high-traffic times in the evening, between 6:00 p.m. and 8:59 p.m. The top three pedestrian collision factors for collisions involving pedestrians were pedestrians failing to yield the right-of-way to vehicles outside of a crosswalk (33.3%); drivers failing to yield to pedestrian right of way in a crosswalk (23.3%); and a pedestrian's failure to yield right-of-way to vehicles already in crosswalk (13.3%).² Over the 2012-2016 period, pedestrian collisions appear to be on a downward trajectory.

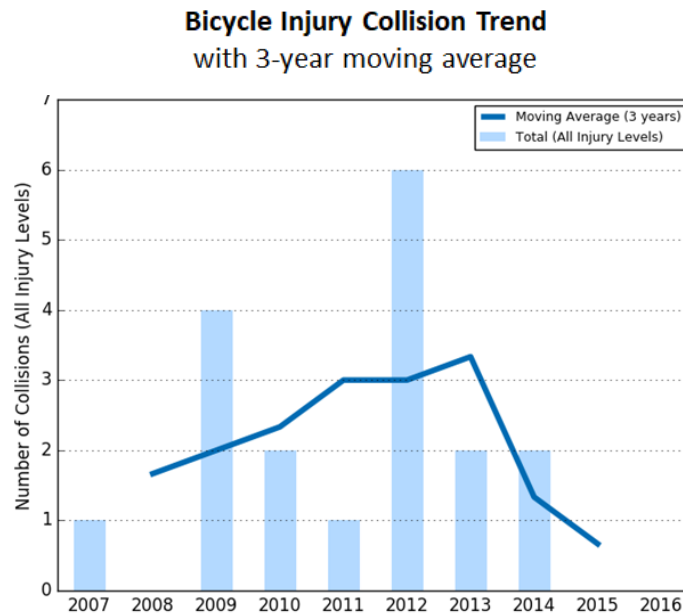
Pedestrian Injury Collision Trend
with 3-year moving average



¹ 2016 SWITRS data are provisional as of March 2018.

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

Between 2012-2016, there were ten (10) bicycle collisions, including one (1) severe injury and five (5) other visible injuries to bicyclists in the City of Lemon Grove.³ Collisions in this time period occurred along Broadway, Massachusetts Avenue, and Lemon Grove Avenue. Collisions primarily occurred in the afternoon, between 3:00 p.m. and 5:59 p.m., with the majority of collisions taking place on Thursdays. The top bicycle collision factor for collisions involving bicycles was unsafe turning with or without signaling by either the driver or the bicyclist (20.0%).⁴ Similarly, to pedestrian collisions, bicycle collisions appear to be on a downward trajectory between 2012 and 2016.



A full discussion of the pedestrian and bicyclist collision data prepared by SafeTREC can be found in Appendix A and B.⁵

Equity Concerns

Nationwide, pedestrian fatality rates in lower-income communities are generally higher—sometimes more than twice as high⁶—when compared to higher income communities. State funding programs generally define Census tracts at or below 80% of the statewide median household income (\$51,026) as disadvantaged communities. Pedestrian and bicycle collisions in Lemon Grove between 2012-2016 mirror a similar pattern to that of the nationwide trends. Data show pedestrian and bicycle collisions and collision severity disproportionately concentrated along corridors and in neighborhoods with lower median household incomes. Of the 28 pedestrian collisions geocoded on the Lemon Grove 2012-2016 Pedestrian Collision Map, nearly half (12) are concentrated in areas or on the border of neighborhoods

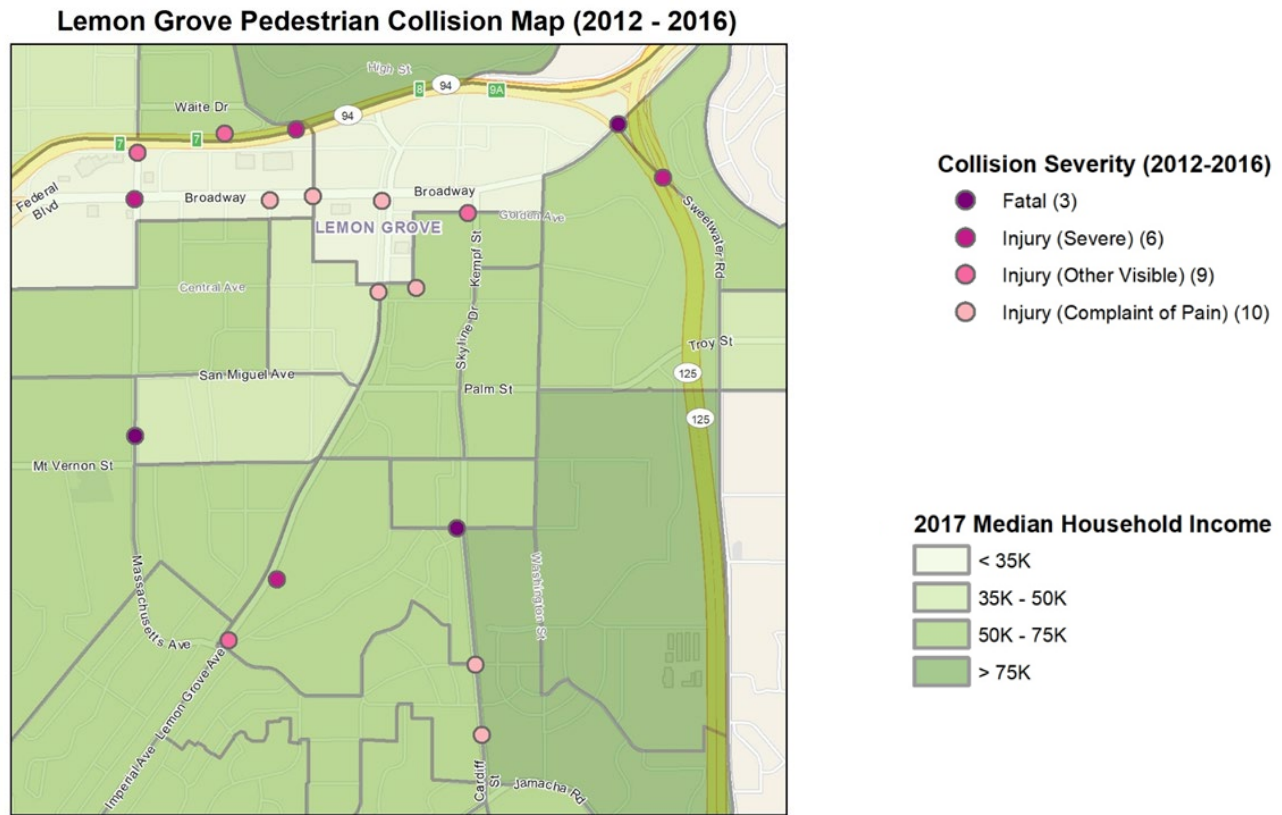
³ 2016 SWITRS data are provisional as of March 2018.

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

⁵ Appendix B used a data set from November 2017.

⁶ Pedestrian Deaths in Poorer Neighborhoods Report, "Governing, August 2014. Available at <http://www.governing.com/gov-data/pedestrian-deaths-poor-neighborhoods-report.html>

where the median household income is less than \$35,000 per year.⁷ Of the ten (10) bicycle collisions geocoded on the Lemon Grove 2012-2016 Bicycle Collision Map, seven (7) were concentrated in the area or on the border of neighborhoods where the median household income is less than \$35,000 per year. Furthermore, the majority of collisions were geocoded on larger arterials, including Broadway and Lemon Grove Boulevard, which supports the community’s qualitative safety concerns with these streets.



Workshop participants expressed concern for the safety of bicyclists in the community, particularly how drivers behave toward bicyclists, and shared that there is an overall negative perception of bicyclists, where the unsafe or inconsiderate behaviors of some bicyclists are assumed to represent all bicyclists.

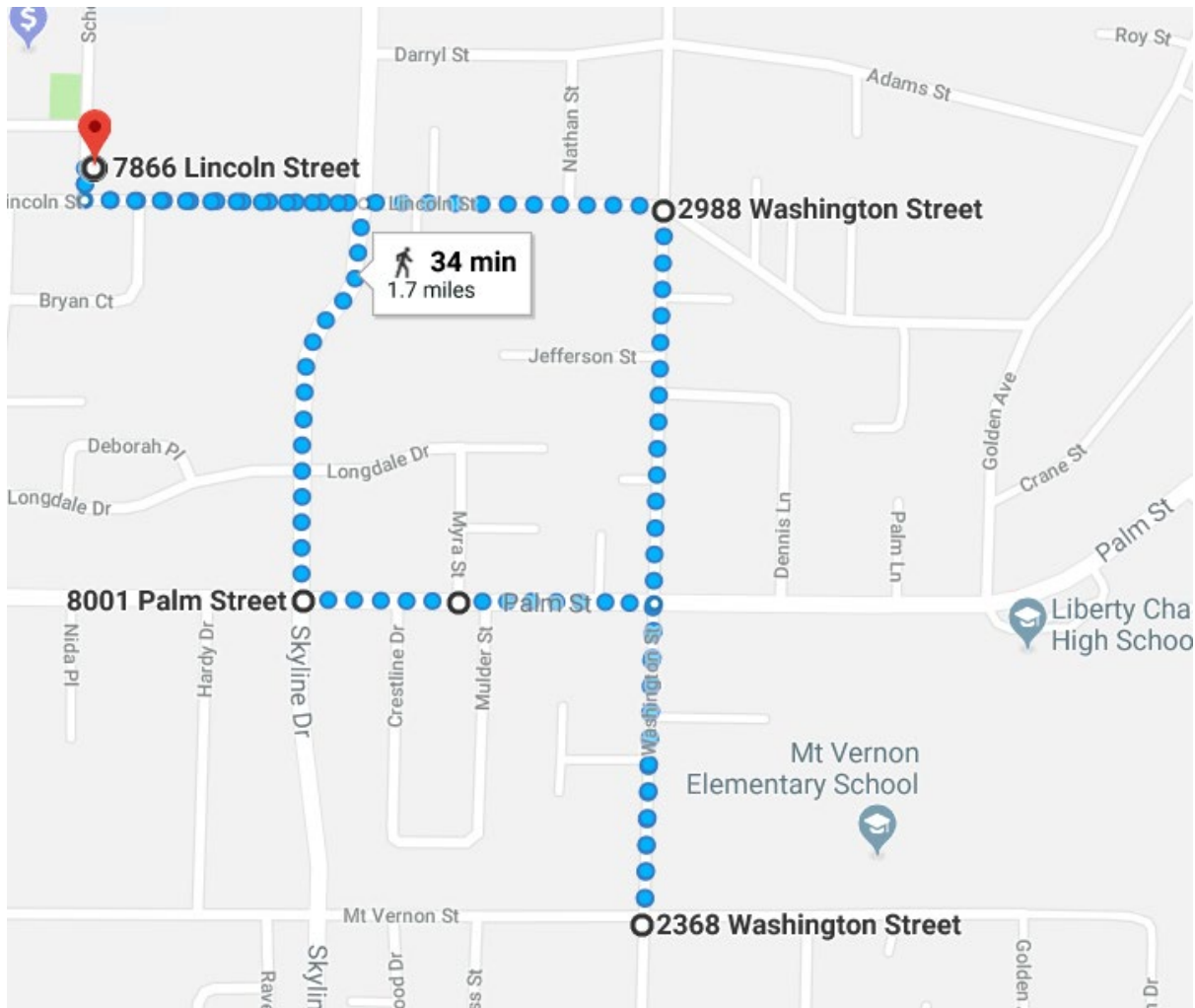
⁷ There were 30 pedestrian collisions in Lemon Grove between 2012 and 2016, but only 28 are geocoded. Two collisions are not mapped because the crash location in the police report was unclear.

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 two key routes:

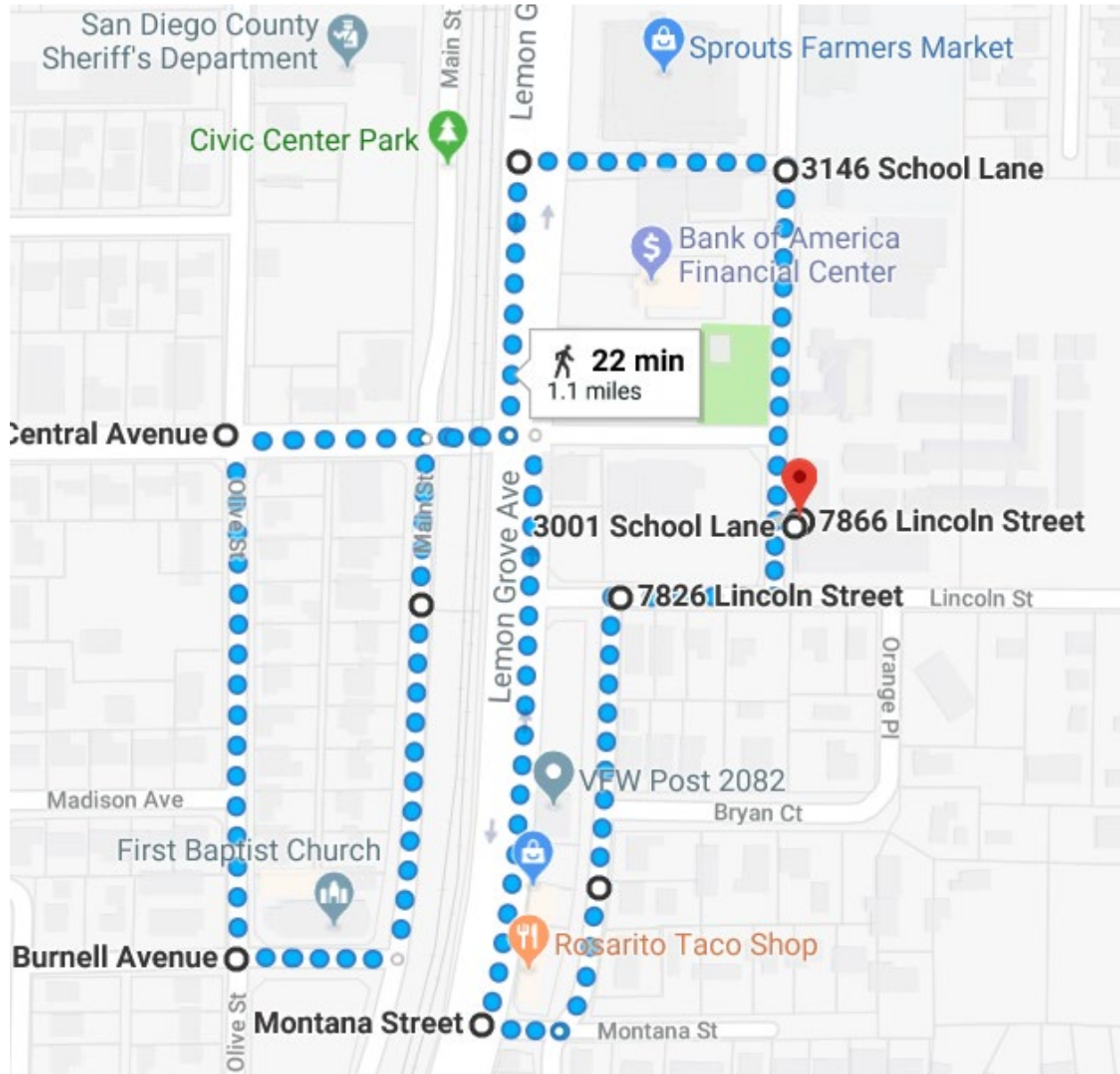
Route 1: Lemon Grove Park

The first walking route focused on Lincoln Street, Washington Street, and Skyline Drive. Washington Street and Skyline Drive, all highly frequented routes that students take to walk and bike to Lemon Grove Park. Starting the walking assessment at the Lemon Grove Branch Library, participants walked east on Lincoln Street, south on Washington Boulevard to Mt. Vernon Street, north on Washington Street to Palm Street, west on Palm Street, north on Skyline Drive, and west on Lincoln Street to the Lemon Grove Branch Library.



Route 2: Lemon Grove Farmer's Market

The second walking route focused on the routes residents take to access the new Farmers' Market at the Veterans of Foreign Wars (VFW) Post 2082 parking lot. The Planning Committee was especially interested in assessing this route to inform their efforts with creating safe routes to healthy food throughout the City. Starting the walking assessment at Lemon Grove Branch Library, the group of observers walked north on School Lane, west towards Lemon Grove Avenue, south on Lemon Grove Avenue, west on Central Avenue, south on Olive Street, east on Burnell Avenue, north on Main Street, briefly east on Central Avenue, south on Lemon Grove Avenue, briefly east on Montana Street, north on Citronella Avenue, east on Lincoln Street, briefly north on School Lane to the Lemon Grove Library.



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

- **Sidewalk Gaps:** Numerous key routes for residents currently lack sidewalks, including: the south side of Lincoln Avenue—from Citronella Street to Skyline Drive; the north side of Lincoln Avenue—from Skyline Drive to Juliellynn Way; and both north and south side of Lincoln Avenue at Juliellynn Way and past Washington Street. Along Lincoln Avenue, sidewalk connectivity is inconsistent and often requires students accessing the nearby schools and the library to walk into the street and share the road with bicyclists and motorists. Although workshop participants applauded the bike lanes on Skyline Drive, the lack of sidewalks on both the east and west sides of Skyline Drive forces students and residents to walk in the paved shoulder until sidewalks resume on the east side of Skyline Drive at Longdale Drive. Skyline Drive is a downhill street where both motorists and bicyclists travel at high speeds, which participants shared makes them feel unsafe when walking on the paved shoulder heading south on Skyline Drive.



Workshop participants walking in the road because of a parked vehicle in the unpaved shoulder.

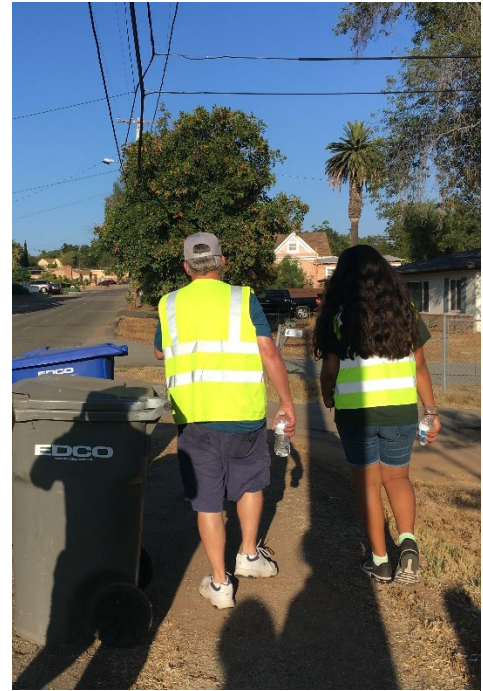
- **Challenging Crossings:** The Washington Street/Palm Street intersection proved to be especially difficult to cross; despite being a legal unmarked crosswalk, pedestrians must cross two vehicle travel through lanes, one left turning lane, and two bike lanes (one in each direction) when travelling east and west on Palm Street. Participants applauded the City's installation of bulb-outs with landscaping buffers and updated Americans with Disabilities Act (ADA) ramps and the speed feedback sign at this intersection, but felt the street was still unsafe to cross because of the high driver speeds and the wide road. Furthermore, many families must cross the Palm Street intersection in order to continue travelling south on Washington Street to access the Lemon Grove Park. Once people continue travelling south past Palm Street, there are no sidewalks leading them to Lemon Grove Park.



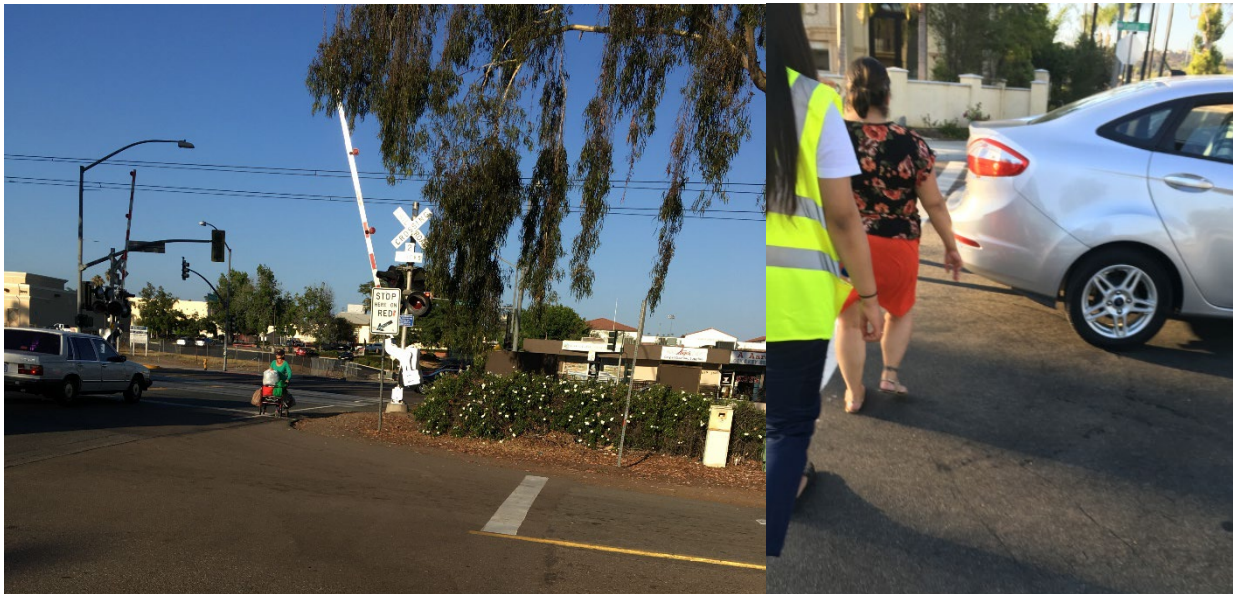
Workshop participants walking in the road because of a parked vehicle in the unpaved shoulder.

Similarly, the Main Street/Central Avenue intersection was difficult to cross: despite also being a legal and marked crosswalk, pedestrians must navigate through motorists on the street on the southeast of the intersection before or after passing the two trolley railroad tracks.

- **Unimproved Shoulders for Pedestrians:** While some road shoulders throughout Lemon Grove are paved, many are not. Participants on Route 1 noticed unpaved shoulders with a lot of rocks and others solely with dirt, which get very muddy during the rainy season and forces students to walk in the road with motorists and bicyclists. A young participant noted that some people experiencing homelessness walk without shoes and commented that it must be painful to walk on some of Lemon Grove's unpaved and rocky shoulders.
- **Motorist Behaviors:** Participants expressed safety concerns with the Main Street/Central Avenue intersection where participants observed motorists on Main Street encroaching and blocking the existing north-south pedestrian crosswalk along Central Avenue. This was largely due to motorists attempting to avoid waiting for the trolley to pass through the railroad crossing. While assessing the route, participants observed a near miss where a motorist along Main Street attempted to pass Central Avenue and make a right turn onto Lemon Grove Avenue and did not see a woman walking with a cart.



Participants walking on a dirt road that gets muddy during the rainy season.



Woman crosses southeast portion of Main Street/Central Avenue intersection seconds before a near miss encounter (left). Participants cross north along Central Avenue and are forced to navigate through motorists blocking crosswalk while awaiting signal on Lemon Grove Avenue (right).

- **High Motorist Speeds:** Participants shared safety concerns with drivers speeding on School Lane, Central Avenue, and on residential streets and cited these high driver speeds as discouraging for walking or biking. Participants appreciated the marked crosswalk and fluorescent school zone signage at the School Lane/Central Avenue intersection in front of the Lemon Grove Library and Lemon Grove Academy Middle school; however, they continue to feel unsafe crossing at the School Lane/Central Avenue intersection because of high motorist speeds along School Lane. Participants also expressed concerns with high motorist speeds along Central Avenue and Lemon Grove Avenue as these are highly frequented routes to get to the Lemon Grove Community Church and the future community garden at the corner of Central Avenue and Olive Street.

Key Opportunities to Improve Walking and Biking Safety

Following the walking assessment, the Project Team facilitated small-group action planning discussions where participants prioritized and preliminarily planned 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 Lemon Grove.

Through a voting process during the training, participants chose to focus on and preliminarily plan for a Pedestrian Scramble Temporary Demonstration, Crosswalk Keepers Program, and Community Speed Radar Program. Participants self-selected which project they wanted to collaborate on with their fellow participants to develop a plan and discussed the:

- Problem the infrastructure project/community program is intended to solve;
- People, organizations, and agencies that should be involved to implement the infrastructure project/community program;
- Resources needed to implement the infrastructure project/community program; and
- Short-term and long-term action steps to implement the infrastructure project/community program.

Community Recommendations

Infrastructure Projects

- **Pedestrian Scramble Temporary Demonstration:** In an effort to improve pedestrian safety at crossings, participants were interested in implementing a temporary demonstration of a pedestrian scramble at the Broadway/Lemon Grove Avenue and Massachusetts Avenue/Broadway intersections. Participants shared that motorists appear to be travelling above the speed limit throughout the City and often encroach into crosswalks as pedestrians are entering the crosswalk, resulting in near misses when motorists turn. Participants were especially concerned with youth, those experiencing homelessness, and parents with strollers who are observed mostly navigating the streets of Lemon Grove as pedestrians.

Participants shared that a temporary pedestrian scramble demonstration at the Broadway /Lemon Grove Avenue intersection is ideal because of the high level of pedestrian traffic from the Lemon Grove Depot Orange Line Trolley Station. Participants also identified a temporary pedestrian scramble demonstration at the Massachusetts Avenue/Broadway intersection as a priority location because of the high level of pedestrian activity going to and coming from local grocery stores, restaurants, and pharmacies at the Lemon Grove Plaza and Gateway Plaza; the

wide lanes pedestrians must cross; and the intersection's proximity to SR 94. Participants identified the Lemon Grove Public Works Department, Lemon Grove City Manager, Lemon Grove City Council, Lemon Grove School Board, residents, youth, and businesses as key collaborators in bringing temporary pedestrian scramble demonstrations to Lemon Grove.

Community Programs, Policies, and Campaigns

- **Crosswalk Keepers Program:** Inspired by Mexico City's [Peatónito](#)⁸, a caped defender of pedestrian rights, the workshop participants were interested in developing their own crossing guard program with a cultural twist. Participants felt that drivers traveled above the speed limit near school zones and often stop in the crosswalk as pedestrians are entering the crosswalk. Participants agreed that having a crossing guard at key locations—such as the Skyline Drive/Palm Street, Palm Street/Washington Street, Massachusetts Avenue/Broadway, and the Lemon Grove Avenue/Central Avenue intersections—could be effective in keeping pedestrians and bicyclists safe from drivers. Participants contemplated collaborating with the Retired Senior Volunteer Patrol (RSVP), Student Safety Patrol Program, middle and high school students, and school security staff in order to enact this program. This action group identified eighth graders' 20 volunteer hour graduation requirement as a potential motivator for recruiting students to assist the crossing guard, as well as to train the next generation of culturally-relevant crossing guards.

Participants wanted to ensure that the crossing guard costume was culturally relevant and appropriate for the Latino and African-American community in Lemon Grove. Participants proposed that the crossing guard be a volunteer within their network, while they worked to secure funding to transition to a paid part-time position. They identified resources needed for this program, including a costume budget, reflective material and vests, a stop sign, and a megaphone. In the immediate future, participants committed to connecting with the nearby schools and conducting outreach to introduce the costumed crossing guards to neighborhood residents before doing crosswalk enforcement and to have a volunteer dress up in character to conduct a crossing enforcement action. In the long run, they were committed to finding funding for the position and changing costumes periodically.

- **Community Speed Radar Program:** Participants were interested in implementing a speed radar program to address high vehicle speeds in the community, particularly around schools, parks, the Lemon Grove Library, and other community gathering spaces. Participants especially wanted to focus the program on Broadway and Lemon Grove Avenue and at the Skyline Drive/Palm Street intersection where vulnerable seniors and those using assisted mobility devices are concentrated. The main goals of the program are to increase drivers' awareness of the existing speed limits; to alert drivers to their own speed in an effort to encourage them to slow down; and to create a safer street environment for all road users. In order to start the program, participants first wanted to cultivate relationships with the Department of Motor Vehicles (DMV) and the City to assess the feasibility of the program and any support the two agencies can offer. Participants identified volunteers, signage, speed radar guns, and DMV collaboration as essential resources to piloting the program and hoped to develop specific educational activities later on, potentially incorporating a Péatonito mascot, and themed activities for specific days of the year. This group planned to begin conducting outreach to

⁸ Peatónito is a Spanish word that translates to "Little Pedestrian."

volunteers, the DMV, and the City by late August 2018; choosing specific locations in September 2018; and piloting the program during Walk to School day in October 2018.

Cal Walks/SafeTREC Recommendations

The Project Team also submits the following recommendations for consideration:

- **Community-Focused PLACE IT! Workshop:** Workshop participants shared that James Rojas had conducted a PLACE IT! training with Lemon Grove City leadership and are interested in bringing a community-based workshop to the residents of Lemon Grove. The Project Team **recommends the Planning Committee connect with James Rojas** to bring the [Model Installation](#) exercise to Lemon Grove community residents. While James Rojas offers various courses and activities, the Model Installation exercise would assist workshop participants to visualize and expand upon the infrastructural and programmatic ideas that were generated during the CPBST.
- **Lighting Assessment:** The Project Team noted a lack of pedestrian-scale lighting in the areas around the Lemon Grove Branch Library, Lemon Grove Farmers' Market, and along Central Avenue between Cypress Avenue and School Lane. The majority of lighting is vehicle-oriented street lighting and in a few cases, the street lighting has been damaged and is not in working order. A community garden will be built at Central Avenue and Olive Street, adding to the community resources serving the surrounding neighborhood. Residents will likely access the neighborhood garden by walking or biking. The Project Team **encourages and recommends the workshop participants collaborate with the City of Lemon Grove, community-based partners, and residents to perform a citywide nighttime street lighting assessment** focused on pedestrian and bicycle lighting needs around schools, parks, businesses, community assets, and along key pedestrian and bicycle corridors such as Lemon Grove Boulevard, Central Avenue, Skyline Drive Lincoln Avenue and Washington Street. A lighting assessment can be used to identify and inventory nighttime pedestrian-scale lighting needs in areas of high night-time pedestrian activity. A nighttime assessment will also identify lighting fixtures in need of repair or replacement, and with an inventory, the City 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.
- **Activate Vacant Lots:** The Project Team **recommends workshop participants explore opportunities to activate vacant lots and unused spaces in the City to create healthy, recreational, and vibrant community spaces for people of all ages and abilities.** The vacant lot located at Lemon Grove Boulevard and Lincoln Street is across the street from the VFW Post 2082 parking lot where the weekly Lemon Grove Farmers' Market takes place. The parking lot offers a unique opportunity to revitalize an area of the community and provide gathering space for programming and other events to support the new Farmers' Market. The Project Team **recommends the Planning Committee explore opportunities through [From Lot to Spot](#) and grant opportunities through [KaBOOM!](#), which helps communities build safe places for children to play.**

- **Go Human Campaign:** Workshop participants expressed concerns that certain community members who walk and/or bike as their primary mode of travel are being targeted by law enforcement at certain intersections and that their rights to use the road are not respected by drivers due to negative assumptions of who they are or of the activities in which they are engaged. The Project Team ***recommends the Planning Committee explore Southern California’s Council of Government’s (SCAG) Go Human campaign that encourages the use of human-powered transportation and works to change the way road users think about others on the road.*** A campaign highlighting the human nature of active transportation can educate drivers and law enforcement on the numerous reasons why people choose or have no other option but to walk and bike. The campaign could also support and expand the Crosswalk Keepers Program reach by featuring the costumed crossing guard on the Go Human signage.
- **Bike Lane Improvements:** Workshop participants shared that bike lanes in Lemon Grove, such as the ones on Lemon Grove Avenue, were underutilized due to high motorist speeds. Consequently, workshop participants observed many bicyclists riding on the sidewalk despite bike lanes being present, especially in the downtown area. The Project Team ***recommends Lemon Grove Public Works Department conduct a speed study along Lemon Grove Avenue, Broadway, and Massachusetts Avenue and to install appropriate traffic and speed calming measures,*** including, but not limited to, low-cost curb extensions, high-visibility crosswalk markings, and decreased vehicle lane widths. The Massachusetts Avenue bike lanes, which run north-south, currently do not connect with the Broadway bike lanes to the north, nor the Lemon Grove Avenue bike lanes to the south. The Project Team ***recommends Lemon Grove Public Works Department assess the bicycle lane widths*** on Lemon Grove Avenue, Broadway, and Massachusetts Avenue, and extend the Massachusetts bike lanes to connect with the Lemon Grove Avenue and Broadway bike lanes. Finally, the Project Team ***recommends Lemon Grove Public Works Department paint high-visibility green conflict zone markings for the Broadway, and Massachusetts Avenue bike lanes*** to mark potential conflict zones between bicyclists and motorists.

Appendix A

Pedestrian and Bicycle Collision Data Analysis
Workshop Handout

2012-2016 LEMON GROVE DATA ANALYSES

Community Pedestrian and Bicycle Safety Training Workshop July 19, 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.

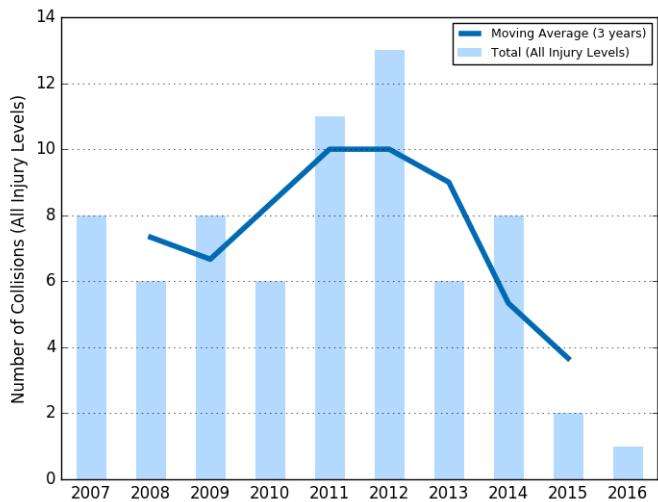
PEDESTRIANS



71 people were killed or injured in 69 pedestrian collisions in the last 10 years (2007-2016).

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

There were 2 pedestrian collisions in 2015, but an average of 3.7 pedestrian collisions per year for the 3-year rolling average between 2014 and 2016.

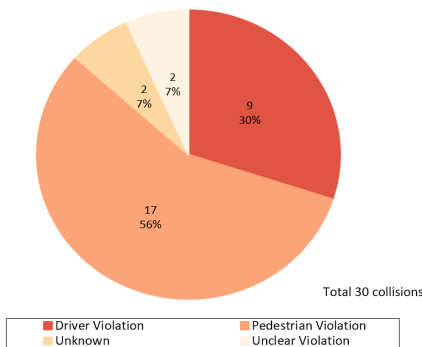


*This line is useful for tracking change over time, especially when the number of collisions changes a lot between years. Data points are at the midpoint of the three years of data specified.

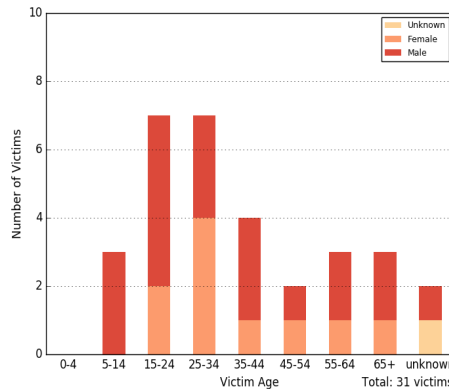
30% driver violations

VS.

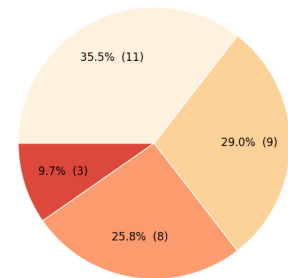
56% pedestrian violations



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



64.5% of victims were male
19.4% of victims were 18 and under
19.3% of victims were age 60 and older



35.5% of victims (or 11 people) were KILLED or SEVERELY INJURED

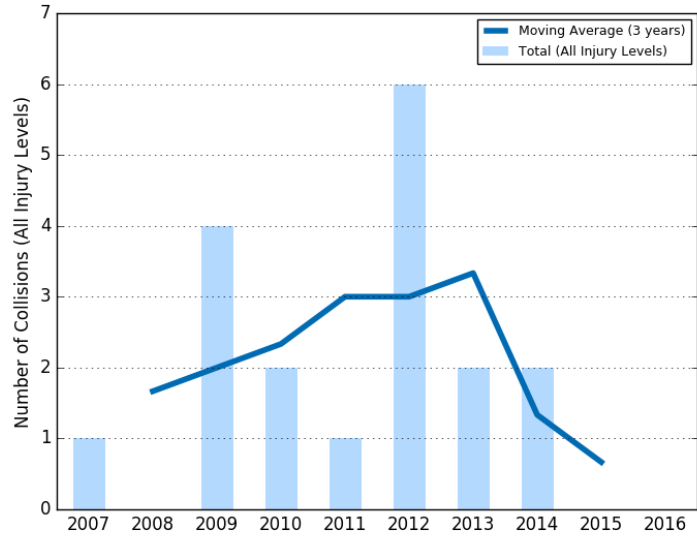
BICYCLES



19 people were killed or injured in **18** bicycle collisions in the last 10 years (2007-2016).

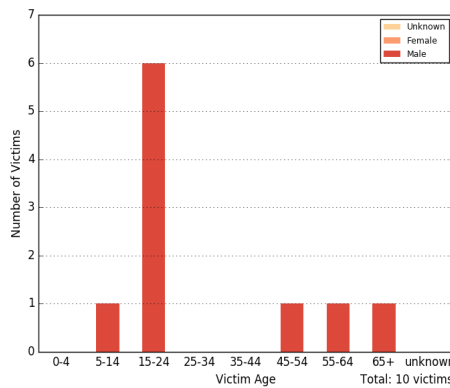
The **three-year moving average** line shows a **downward** trend in bicycle collisions.*

There were **0** bicycle collisions in 2015, but an average of **0.7** bicycle collisions per year for the 3-year rolling average between 2014 and 2016.

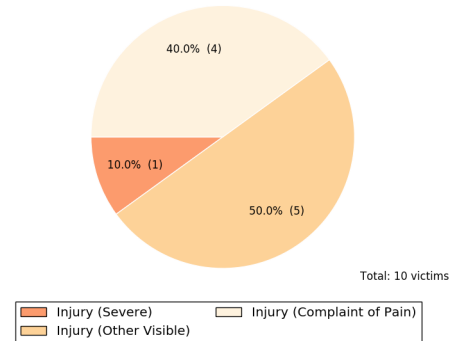


* This line is useful for tracking change over time, especially when the number of collisions changes a lot between years. Data points are at the midpoint of the three years of data specified.

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



All of the victims were male
45.5% of victims were 20 and under



Most collisions resulted in minor injuries.

SUMMARY



23.1 pedestrian fatalities & injuries per 100,000 population over the last five years in the City of Lemon Grove, which is **35.3% less than** San Diego County and **35.7% less than** California



7.4 bicyclist fatalities & injuries per 100,000 population over the last five years in the City of Lemon Grove, which is **74.6% less than** San Diego County and **77.8% less than** California

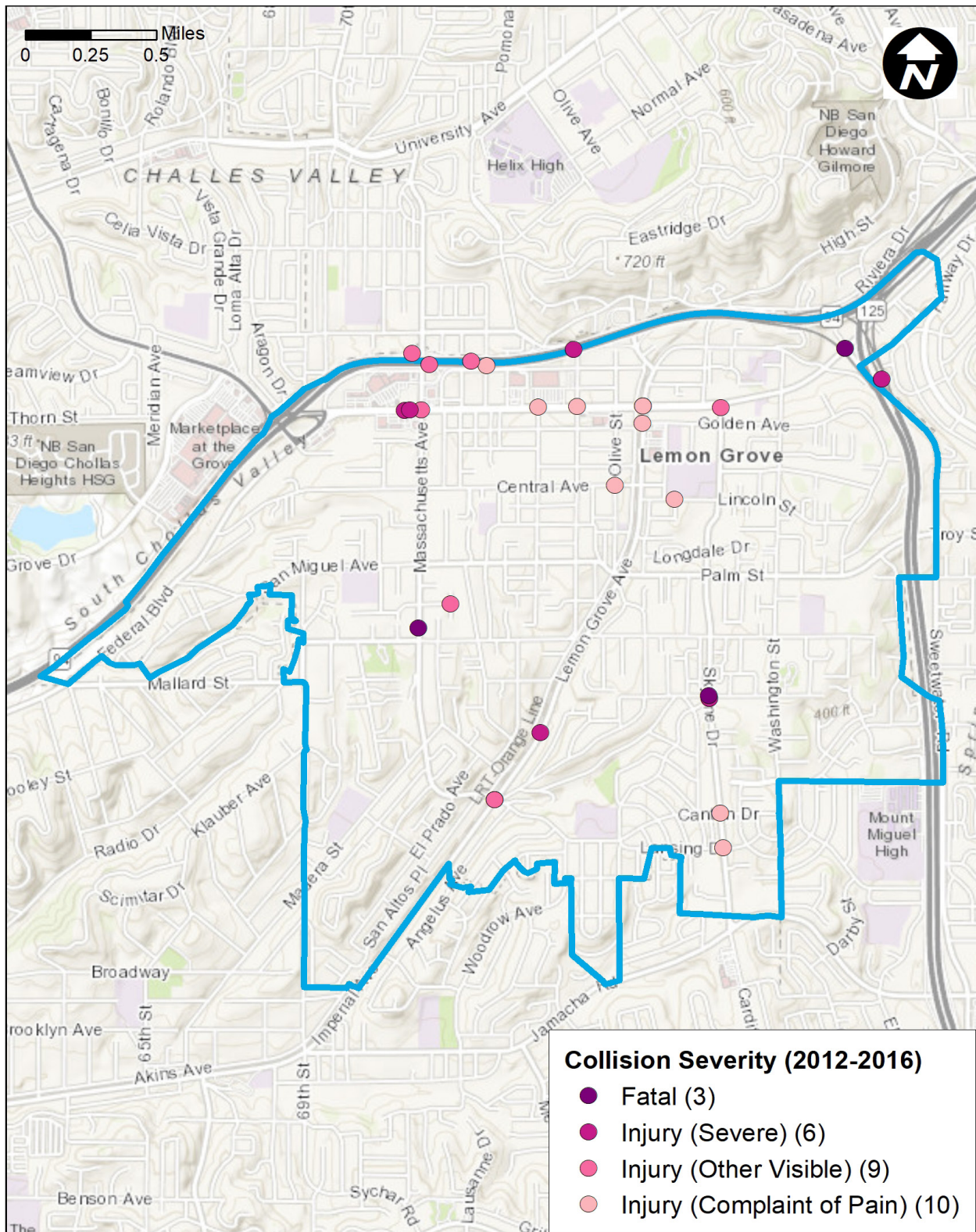
	Yearly Population Rate of Fatalities & Injuries per 100,000 Population Calculated Over a 5-year Period*	
	Pedestrian	Bicyclist
Lemon Grove	23.1	7.4
San Diego	35.7	29.1
California	35.9	33.3

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

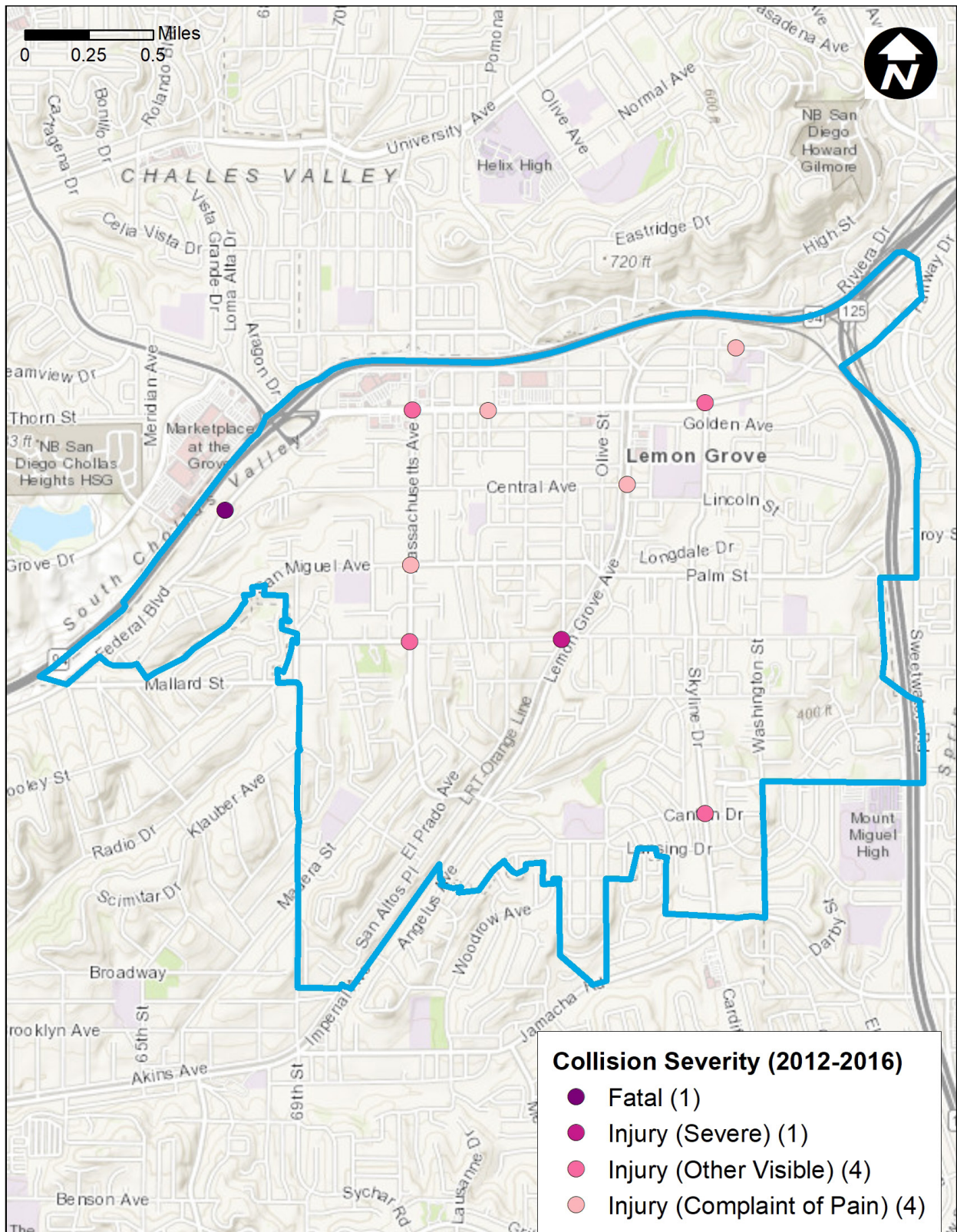
28 of 30 pedestrian collisions mapped in Lemon Grove, CA.



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

Bicyclist Collision Locations, 2012-2016

10 bicycle collisions in Lemon Grove, CA.



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

Appendix B

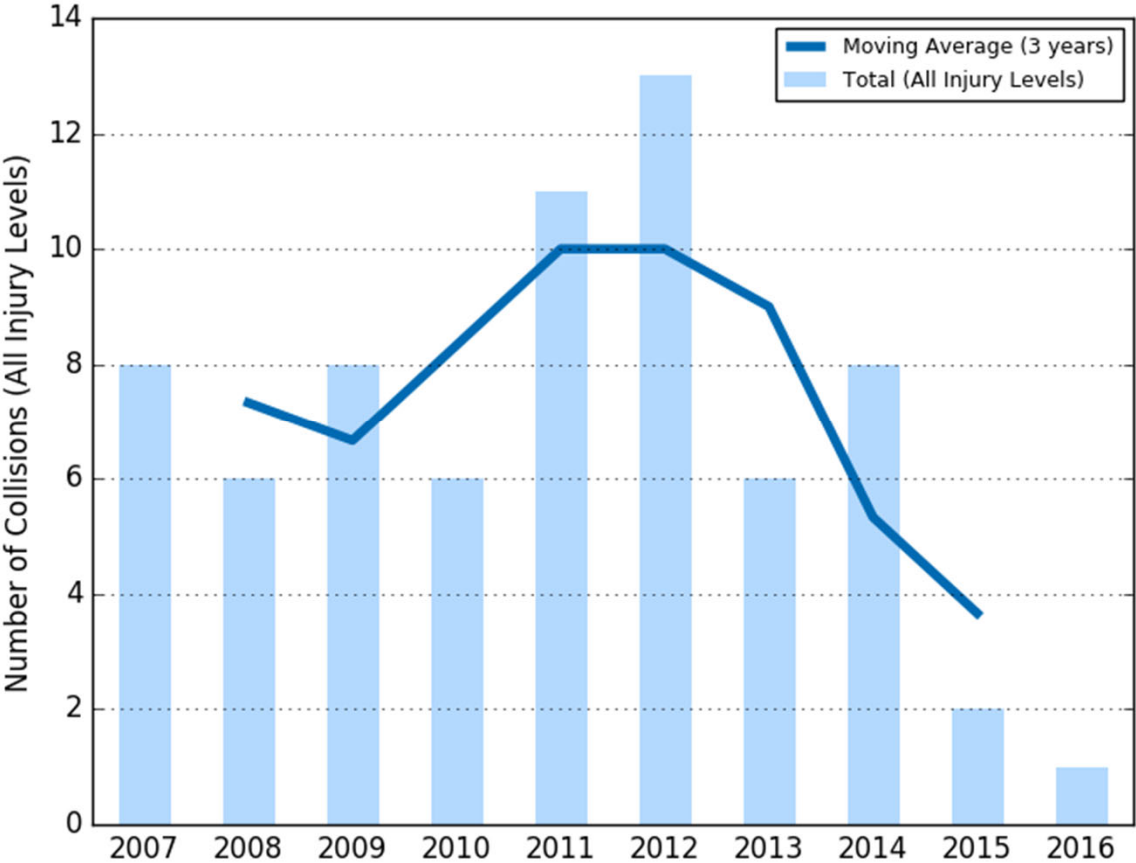
Pedestrian and Bicycle Collision Data Analysis
Site Visit Presentation

Community Pedestrian and Bicycle Safety Workshop Site Visit

Lemon Grove, CA

6/28/18

Pedestrian Injury Collision Trend
with 3-year moving average

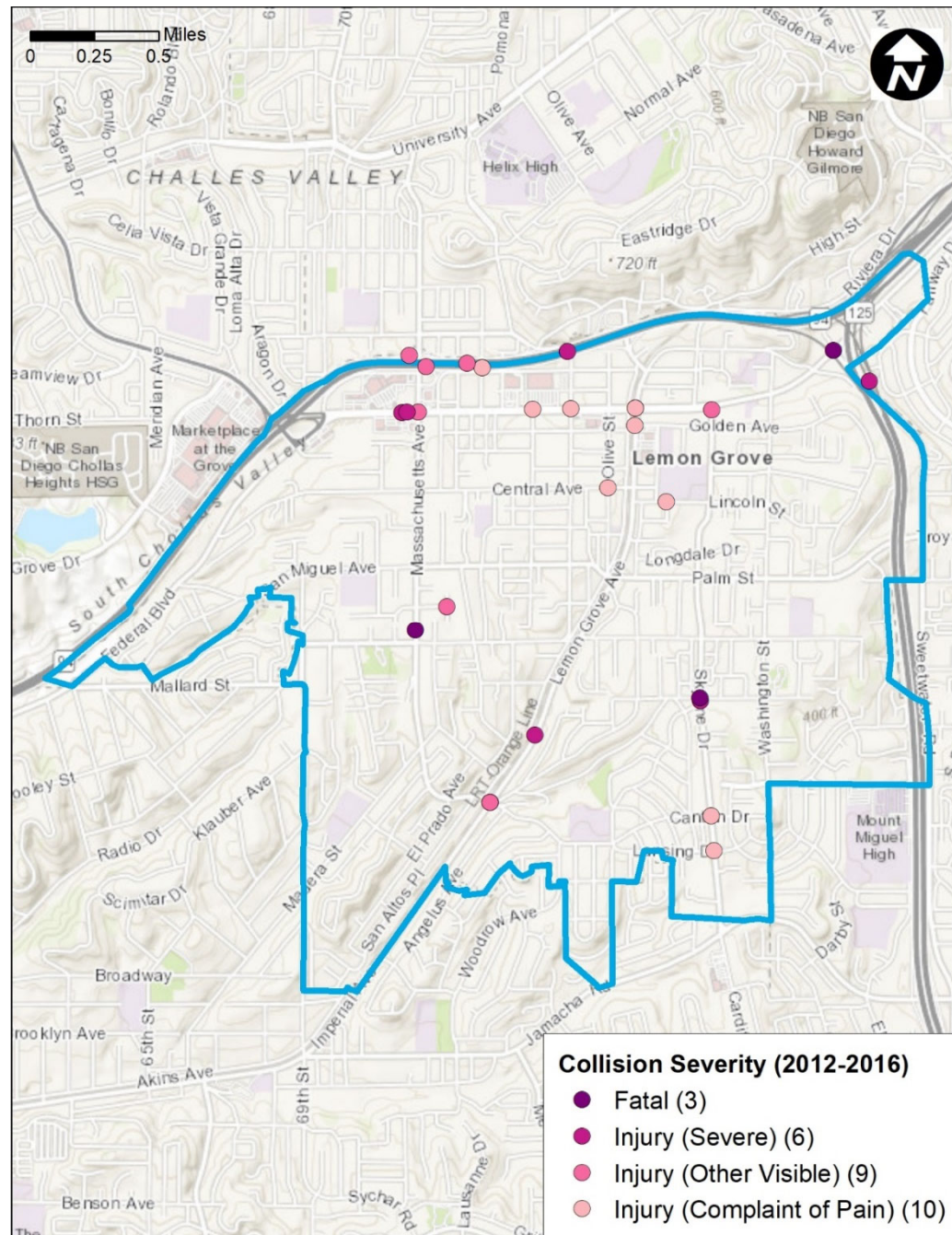


Note: 2016 Statewide Integrated Traffic Records System (SWITRS) data are provisional as of March 2018.

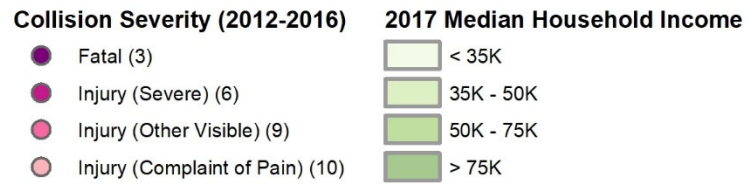
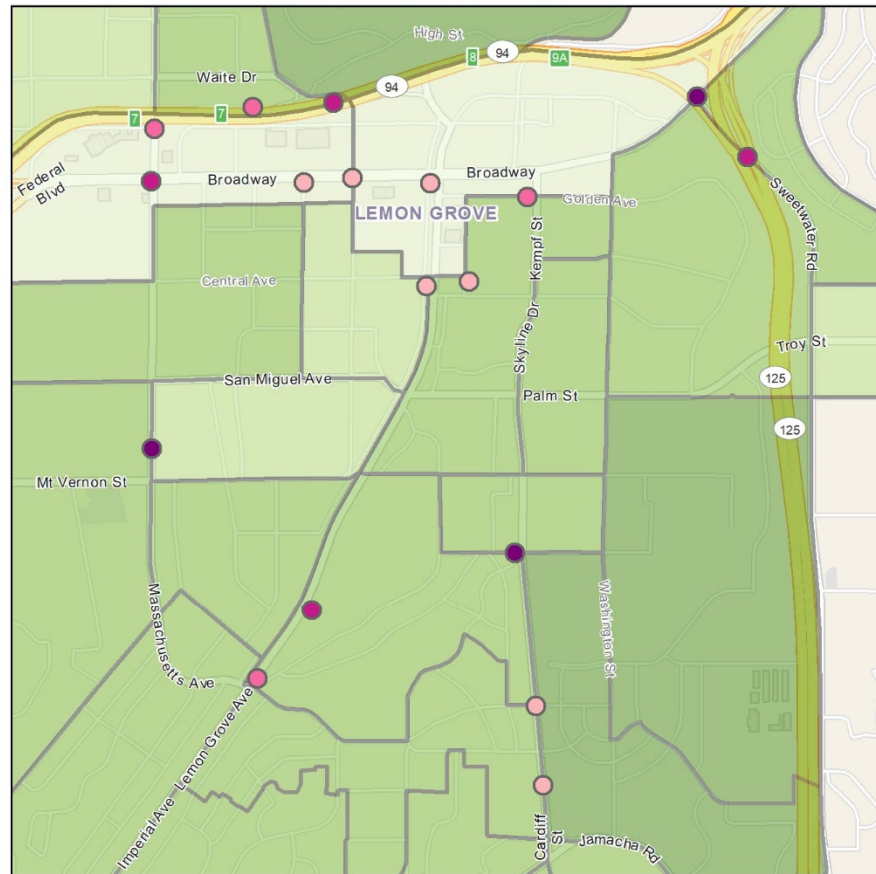
Pedestrian Injury Collisions 2012-2016

Only 28 of 30 collisions are mapped.

Note: 2016 SWITRS data are provisional as of March 2018.



Lemon Grove Pedestrian Collision Map (2012 - 2016)



Pedestrian Injury Collisions by Time of Day and Day of Week (2012-2016)

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

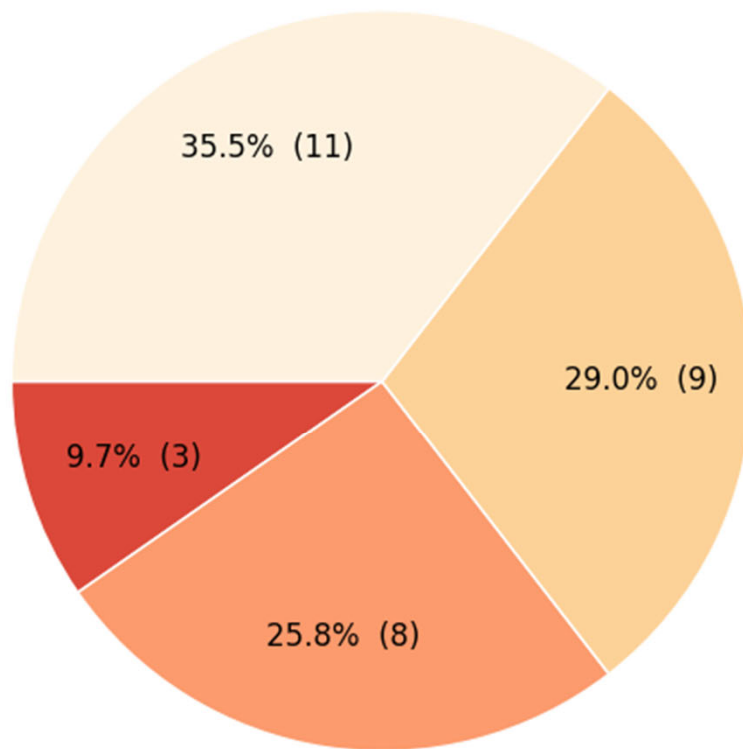
*The color gradient corresponds to the collision frequency.

Total: 30 collisions

Top 10 Violations in Pedestrian Collisions (with # and %) Total: 30 collisions

CVC No.	Description	Freq.	Percent
21954	Pedestrian failure to yield right-of-way to vehicles	10	33.3%
21950	Driver failure to yield right-of-way to pedestrians at a crosswalk	7	23.3%
21456	"Walk" pedestrian failure to yield right-of-way to vehicles already in crosswalk	4	13.3%
0	Unknown	2	6.7%
21955	At intersections, pedestrians can't cross anywhere except at a crosswalk	2	6.7%
21650	Failure to drive on right half of the roadway (with some exceptions)	1	3.3%
21956	Pedestrian failure to walk close to the edge of the roadway when there is no sidewalk present	1	3.3%
22106	Unsafe starting or backing of vehicle	1	3.3%
22107	Unsafe turning with or without signaling	1	3.3%
22350	Speeding on the highway	1	3.3%
Total		30	100.0%

Pedestrian Victim Injury Severity (2012-2016)

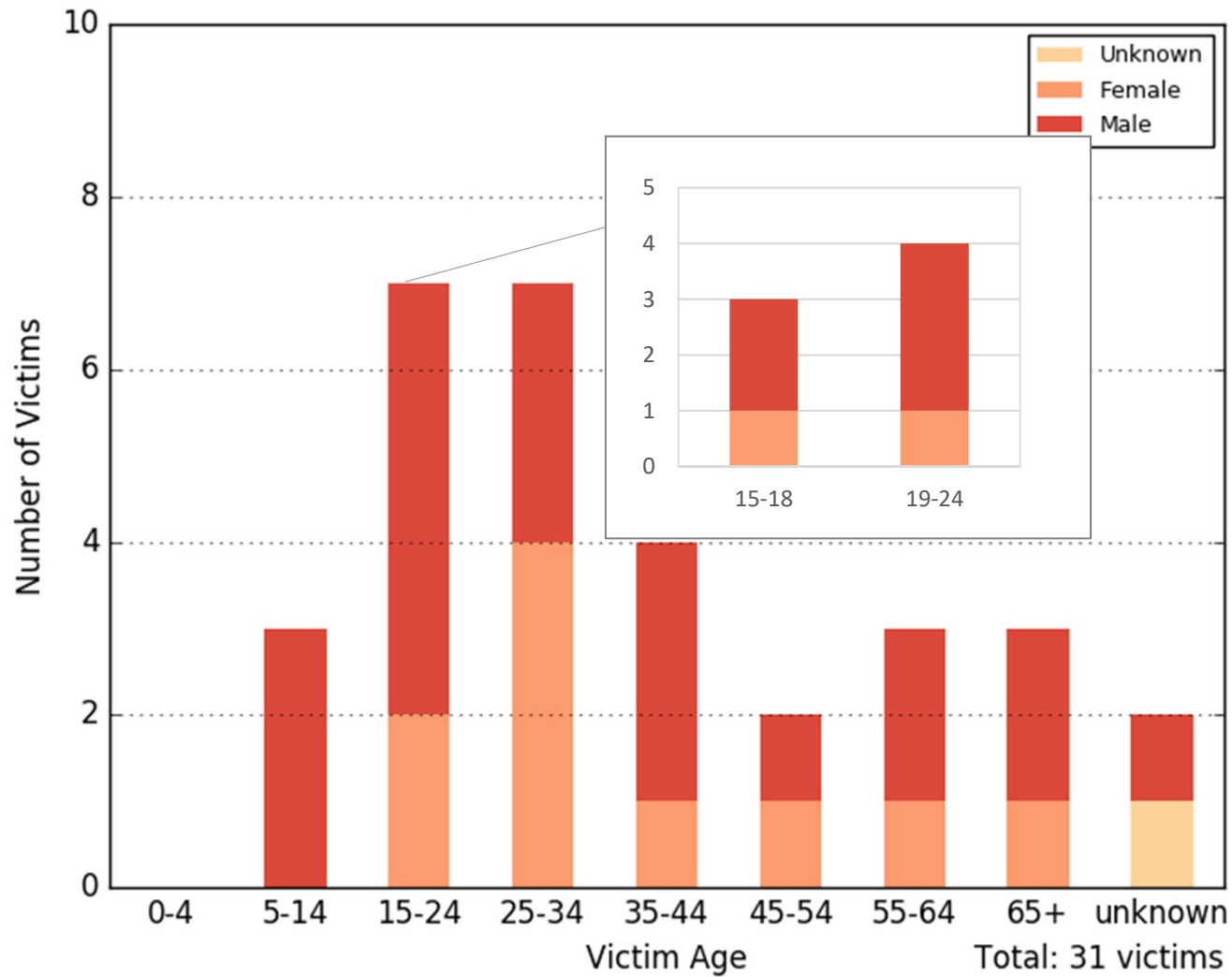


Total: 31 victims



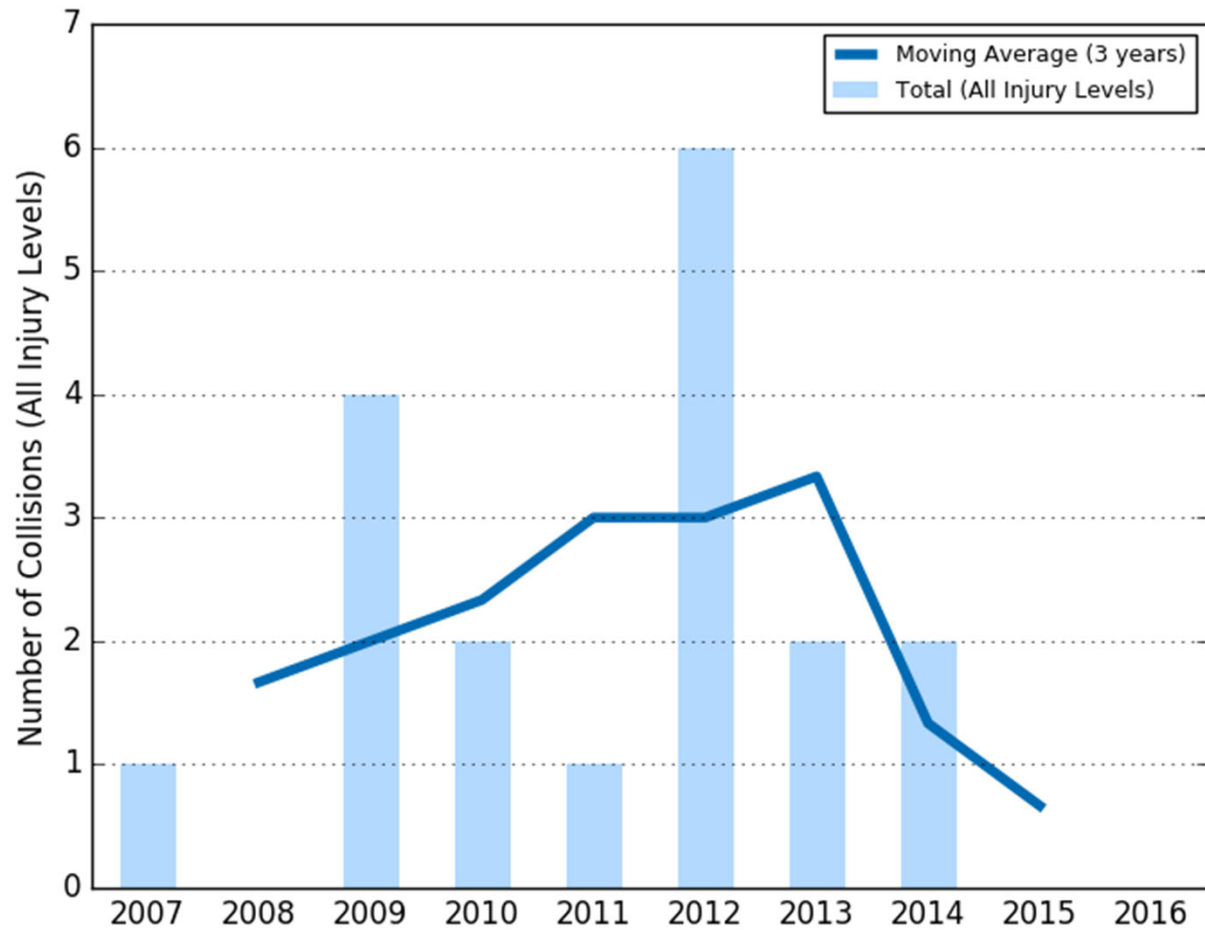
Note: 2016 SWITRS data are provisional as of March 2018.

Pedestrian Victims by Age and Gender (2012-2016)



Note: 2016 SWITRS data are provisional as of March 2018.

Bicycle Injury Collision Trend with 3-year moving average

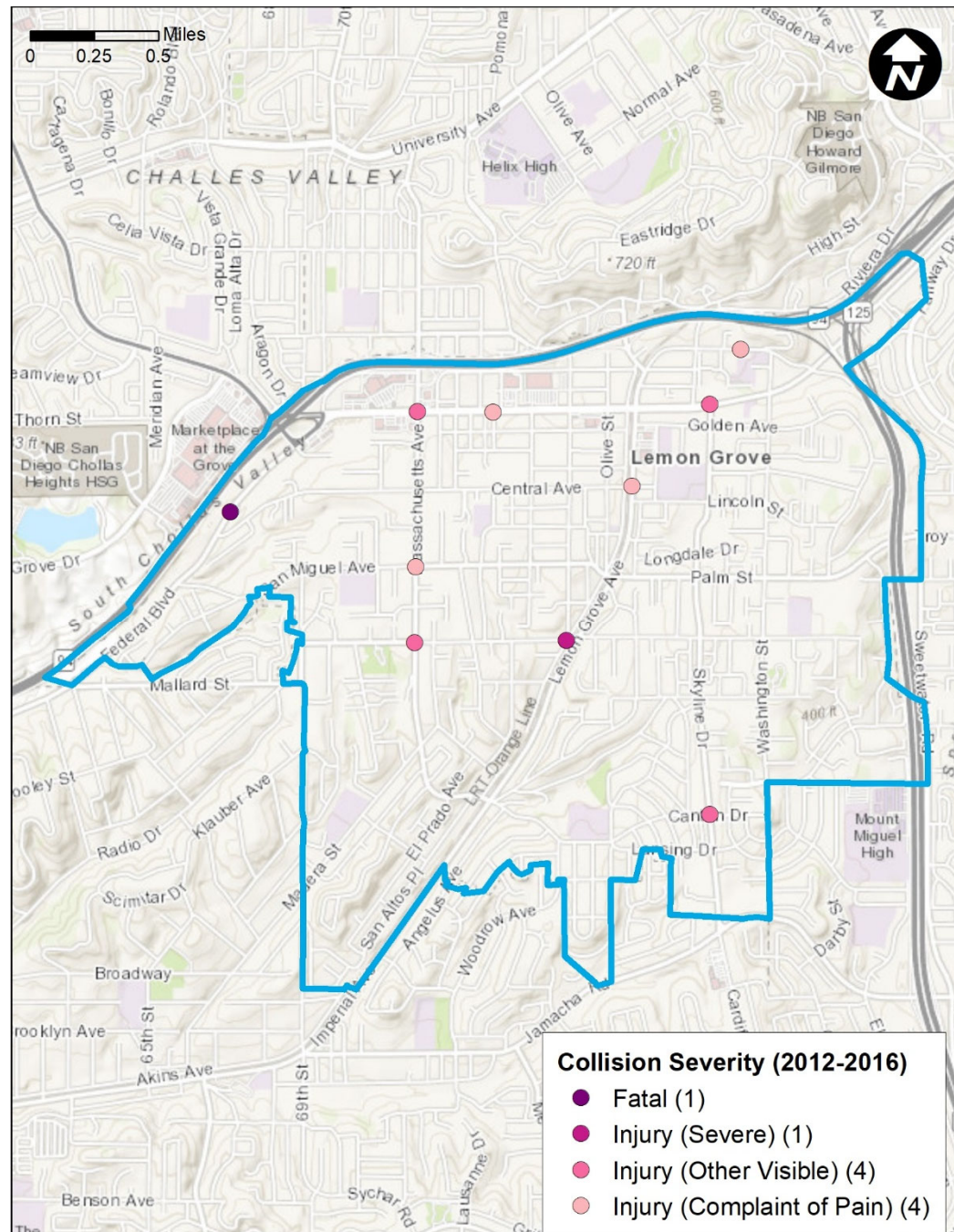


Note: 2016 SWITRS data are provisional as of March 2018.

Bicycle Injury Collisions 2012-2016

10 of 10 collisions are mapped.

Note: 2016 SWITRS data are provisional as of March 2018.



Lemon Grove Bicycle Collision Map (2012 - 2016)



Collision Severity (2012-2016)

- Fatal (1)
- Injury (Severe) (1)
- Injury (Other Visible) (4)
- Injury (Complaint of Pain) (4)

2017 Median Household Income

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

Bicycle Collisions by Time of Day and Day of Week (2012-2016)

09:00PM-11:59PM -	0	0	0	0	0	1	0
06:00PM-08:59PM -	0	0	0	0	0	0	0
03:00PM-05:59PM -	0	0	0	2	1	1	0
Noon-02:59PM -	0	0	0	0	0	0	0
09:00AM-11:59AM -	0	0	0	1	0	0	1
06:00AM-08:59AM -	1	0	0	1	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

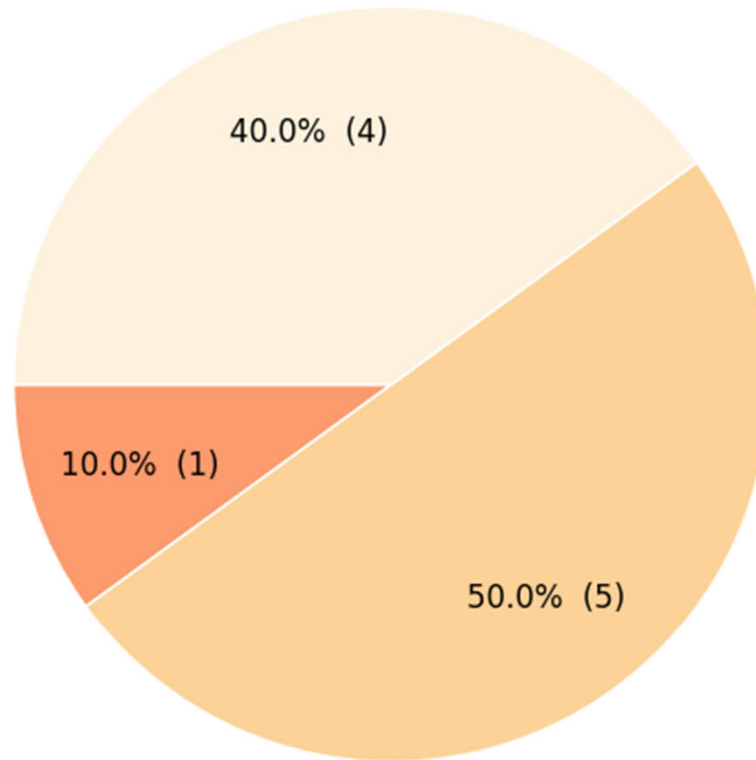
*The color gradient corresponds to the collision frequency.

Total: 10 collisions

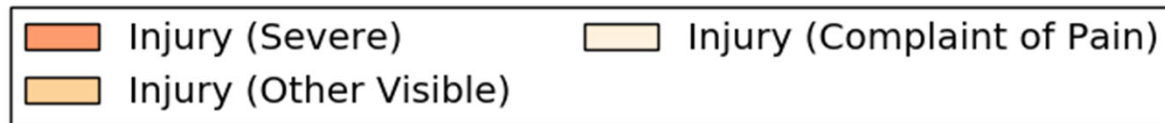
Top 10 Violations in Bicycle Collisions (with # and %) Total: 10 collisions

CVC No.	Description	Freq.	Percent
22107	Unsafe turning with or without signaling	2	20.0%
0	Unknown	1	10.0%
21208	Bicyclist shall not leave a bike lane unless it is unsafe to stay in a bike lane	1	10.0%
21209	Drivers shall not drive in the bicycle lane except under certain conditions	1	10.0%
21461	Drivers cannot disobey regulatory signs/signals	1	10.0%
21750	Driver that is passing another driver shall do so in a safe manner	1	10.0%
21804	Driver failure to yield right-of-way when entering/crossing a highway	1	10.0%
21950	Driver failure to yield right-of-way to pedestrians at a crosswalk	1	10.0%
22450	Driver failure to stop at a limit line or crosswalk at a stop sign	1	10.0%
Total		10	100.0%

Bicycle Victim Injury Severity (2012-2016)

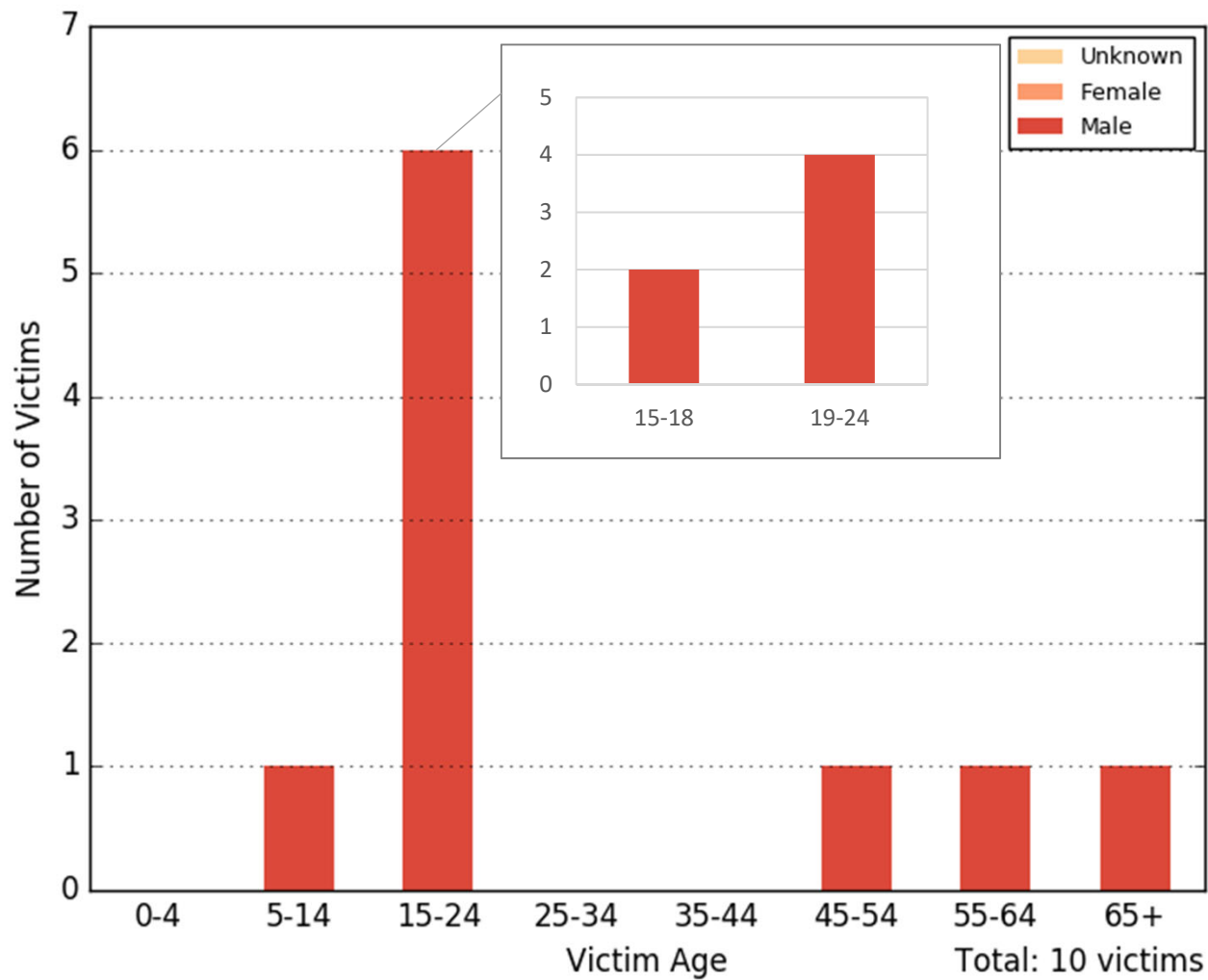


Total: 10 victims



Note: 2016 SWITRS data are provisional as of March 2018.

Bicycle Victims by Age and Gender (2012-2016)



Note: 2016 SWITRS data are provisional as of March 2018.

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/>

