



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



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Introduction

At the invitation of the City of Merced, 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 Merced 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 Monday, April 10 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 Wednesday, June 21 from 10:00 am to 2:30 pm 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 Merced'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 Merced

High Speeds & Wide Streets

While the posted speed limits are 30-45 miles per hour (MPH) on major arterial streets that run through the community—including Childs Avenue, Olive Avenue, Martin Luther King Jr. Way, R Street, M Street, and G Street—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,¹ which affect safety for people walking and bicycling.

Aside from the arterial streets, Cal Walks staff also noted that residential and collector streets in the neighborhood are also wide, including the streets immediately adjacent to Tenaya Middle School (N Street, P Street). In addition to challenges with driver speeds on these streets, the width of these residential streets results in more difficult crossings for residents and students, especially the numerous unmarked crossings surrounding the school.



Cal Walks staff member attempting to cross at G Street at W 20th Street.

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.

Need for Crossing Enhancements

Throughout the neighborhood surrounding Tenaya Middle School, Cal Walks staff noted very few marked crossings on the neighborhood streets. Most of the marked crossings were faded and painted with plain lateral lines rather than with high-visibility longitudinal markings. Marked crosswalks do exist along the arterial roads in the community, though some are placed far apart. While on the site visit, traffic did not yield to staff attempting to cross G Street at 20th Street—a marked school crossing. While the paint was not faded, the crosswalk was marked with plain lateral lines, and there were no advance stop/yield markings or signage.



A marked crosswalk with plain lateral lines across Martin Luther King Jr Way.

Lack of Sidewalks, Particularly in County Pockets

The County pockets that line the border of Merced frequently lack sidewalks, creating an incomplete sidewalk network, particularly in close proximity to schools like Tenaya Middle School and Golden Valley High School.



A pedestrian walking along the road shoulder on East Childs Avenue.

Inadequate Bicycle Facilities

During our site visit, Cal Walks staff observed bike lanes installed on arterial streets such as R Street and G Street that were not wide enough for the traffic speeds and volumes of those corridors. These bike lanes appeared to be the minimum width of 4 feet, but on R Street, for example, half of the bike lane's width was located in the gutter. The high speeds and traffic volumes of these streets discourage the use of the minimum standard bike lane and call for wider lanes. During both the site visit and the workshop, Cal Walks staff observed many people, especially youth, biking on the sidewalk rather than using these on-street facilities. On Olive Avenue, Cal Walks staff observed a signed bike route with additional guidance for cyclists to use the sidewalk.

The excessive width and high speeds on Olive Avenue make it an unsafe walking and biking environment. Further, cyclists on sidewalks create additional hazards for people walking and potential conflict areas at driveways and intersections for cyclists because drivers may not be looking for or anticipating them.



Bike Route – Recommend Use Sidewalk signage on Olive Avenue.

Pedestrian & Bicycle Collision History

Between 2011-2015,² there were 178 pedestrian collisions, including 8 fatalities and 18 severe injuries in Merced, with collisions concentrated on Olive Avenue, R Street, M Street, G Street, 16th Street, Martin Luther King Jr. Way, and north of McNamara Park. When examining the three-year moving

² Please note 2014 and 2015 data is provisional.

average of pedestrian collisions,³ pedestrian collisions in the community are on an upward trajectory. The data also revealed that nearly one-third of the victims in these pedestrian collisions were age 19 or younger, while the rest were distributed among age groups older than 20. When examining the Primary Collision Factors (PCF), driver violations accounted for 46.1% of pedestrian collisions over the 5-year period, while pedestrian violations accounted for 28.6%. Of the pedestrian violations, the majority of the violations involved a pedestrian failing to yield to a driver when crossing outside of a crosswalk, while under 10% resulted from a pedestrian crossing outside of a crosswalk between two signalized intersections.⁴ The majority of driver violations (86.6%) consisted of pedestrian right-of-way violations.⁵

For bicyclists between 2011-2015, there were 236 collisions, including 2 fatalities and 14 severe injuries, with collisions concentrated on Yosemite Avenue, Olive Avenue, R Street, M Street, K Street, G Street, 16th Street, Martin Luther King Jr. Way, and E. Childs Avenue between Parsons Avenue and California State Route 99. When examining the 3-year moving average of bicyclist collisions, bicyclist collisions in the community are on an upward trajectory. The data also revealed one-third of the victims in these bicyclist collisions were aged 19 or younger, and another one-third were aged 45-64. When examining the Primary Collision Factors (PCF), 28.4% involved a bicyclist riding on the wrong side of the road.

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

June 21, 2017 Workshop

The City of Merced 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 of Merced, local school districts, and other stakeholders to ensure the best outcomes for the residents of Merced; and 3) develop consensus regarding pedestrian and bicycle safety priority and actionable next steps.

The workshop was hosted from 10:00 am to 2:30 pm, and a light breakfast, lunch, child care, and simultaneous interpretation from English to Spanish and from English to Hmong were provided to maximize community participation. Thirty-one (31) individuals attended the workshop, including local youth leaders, residents, and representatives from the City of Merced Planning Division, City of Merced Youth Council, City of Merced Recreation & Parks Commission, City of Merced Bicycle Advisory

³ The moving or rolling average is useful for tracking trend changes over time, especially when the number of collisions is subject to variability. The generally accepted traffic safety practice is to examine a three-year moving average, where data points are the midpoint of the three years of data specified.

⁴ 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. This is not the same as the term “jaywalking,” which refers to crossing outside of a marked or unmarked crossing between two signalized intersections. 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.

⁵ Pedestrian Right-of-Way Violations are defined as instances where a driver fails to yield to a pedestrian in a marked or unmarked crosswalk when the pedestrian has the right of way (e.g., when the pedestrian has a “Walk” signal at a signalized intersection).

Commission, United Way, California Office of Traffic Safety, Alta Planning + Design, California High Speed Rail Authority, Building Healthy Communities Merced, Merced College, Merced County Department of Public Health, Golden Valley Health Centers, and Merced High School.



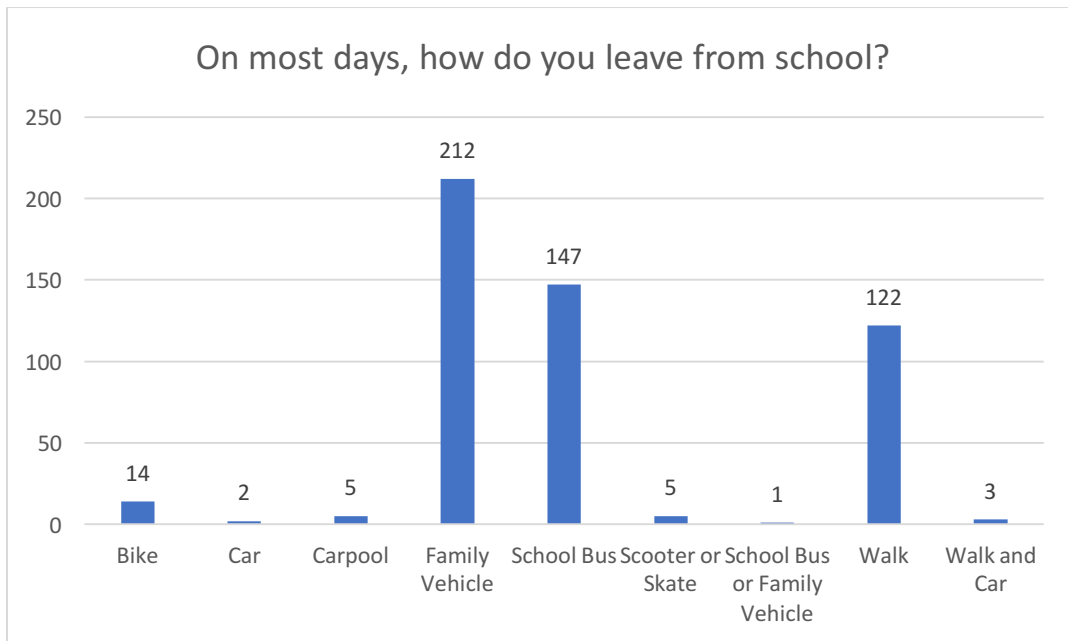
Participants learning and discussing the 6 E’s approach to pedestrian and bicycle safety.

Student Travel Survey

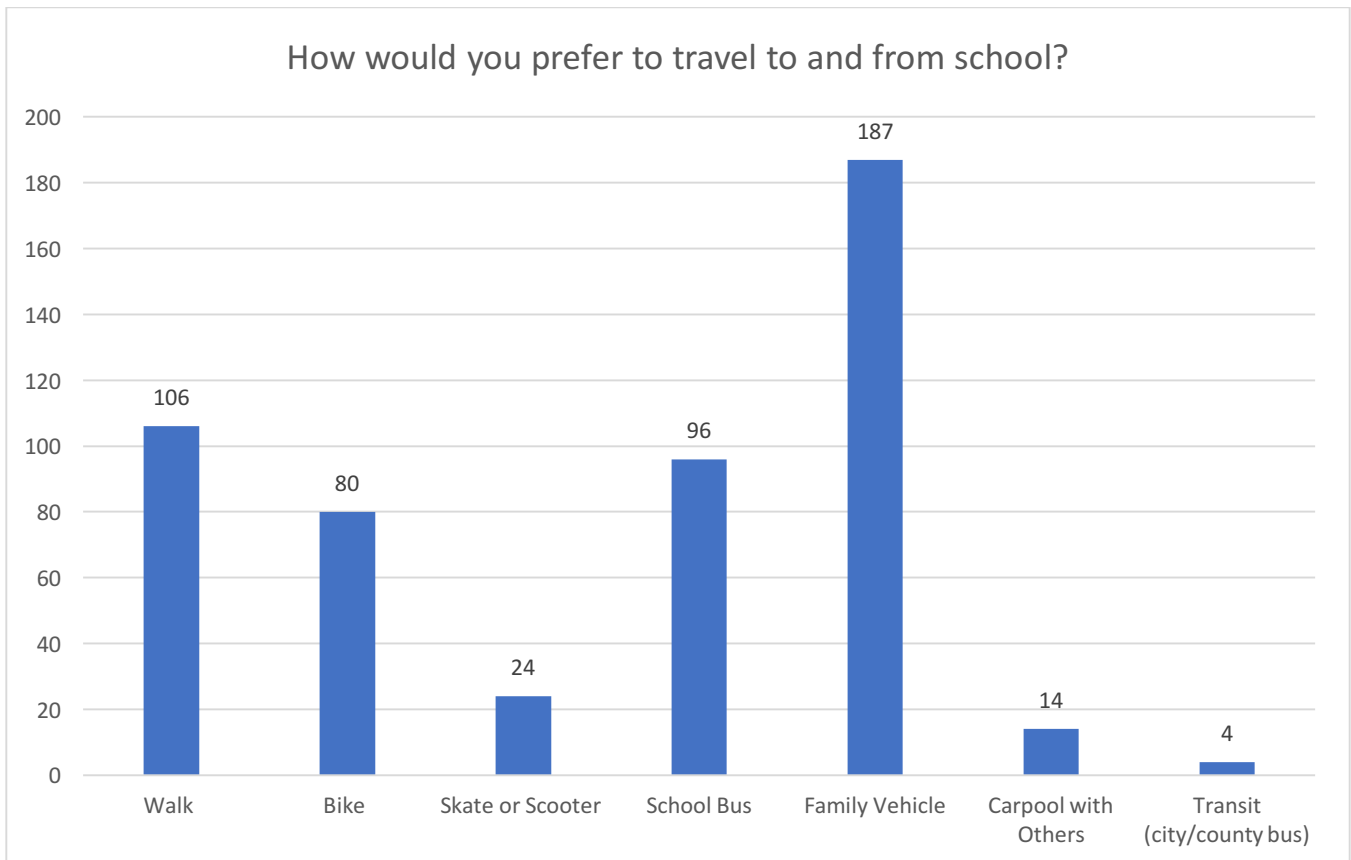
The local planning committee developed and implemented a 12-question Student Travel Survey for Merced students to take the week of the workshop through the following month. The Recreation & Parks Commissioner, Corinne Chavez, shared it with school leadership, and 515 students participated; the full survey results can be found in Appendix B.

The purpose of the tally was to gauge current student travel behaviors and what factors may influence traveling by active modes more often. Some highlights include:

- Over 40% of respondents currently travel to and from school in a family vehicle;



- Physical and environmental factors appear to be the biggest barriers to walking and biking to school (e.g., people driving fast and/or distracted, distance and time to and from school), and perceptions of personal safety also affect students' decisions to walk and bike to school (e.g., violence or crime, not enough students or adults to walk or bike with, not enough crossing guards);
- Respondents noted that having safer street crossings and more shade would encourage them to walk more in Merced; and
- Respondents noted that having more bike lanes and more secure bike parking would encourage them to bike more in Merced.



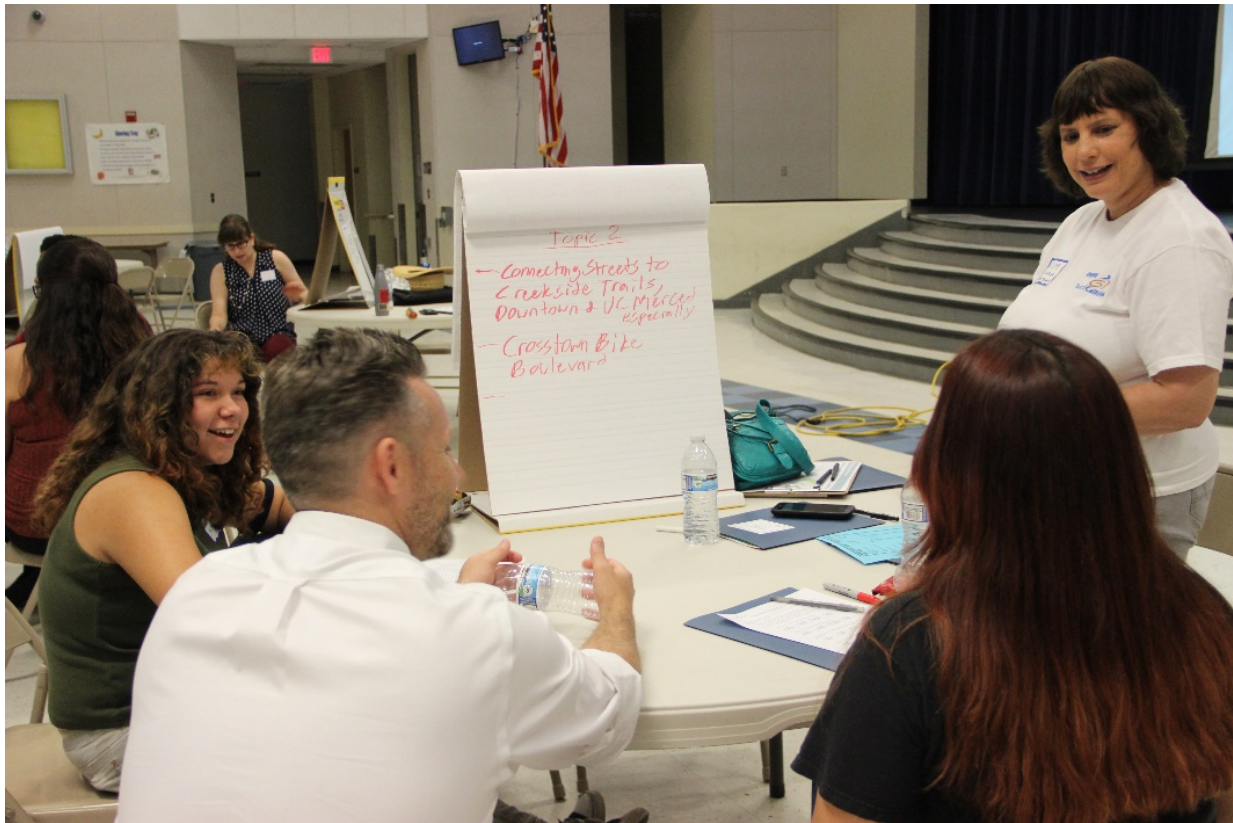
Reflections from Walkability & Bikeability Assessment

Workshop participants conducted walkability and bikeability assessments along 2 routes.

- Route 1 traveled on W. 8th Street, N Street, W. Childs Avenue, and Mimi Lane/P Street, focusing on observing walking and biking conditions around Tenaya Middle School and on W. Childs Avenue.
- Route 2 traveled on W. 8th Street, Martin Luther King Jr. Way, W. Childs Avenue, W. 5th Street, W. 7th Street, and N Street, focusing on walking and biking conditions east of Tenaya Middle School, along Martin Luther King Jr. Way, and at the skewed intersection of W. Childs Avenue and Martin Luther King Jr Way.

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.



Workshop participants discuss walkability and bikeability assessment findings.

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

- **Difficult School Crossings for Children Walking & Biking:** Participants noted that children have trouble crossing W. Childs Avenue when there is no crossing guard present because drivers do not regularly yield to pedestrians in the crosswalk. Even though streets like N and M are residential near Tenaya Middle School and Reyes Elementary School, they are signed for 30 MPH and 35 MPH, respectively, outside of school zone hours. Additionally, M Street is signed as a bike route with off-center sharrow markings. Another challenging crossing is the uncontrolled intersection across 5 travel lanes at Martin Luther King Jr. Way and 11th Street, also signed as a bike route. Here, the crossing signage is dated, and if not fully signalized, the intersection would benefit from RRFBs, high-visibility striping, and advance yield lines and accompanying signage. Participants observed unmarked crossings adjacent to Tenaya Middle School, and even a marked school crossing at N Street and 5th Street that has no curb ramps on either end of the crossing (this is the only marked crossing on the east side of the school campus between 5th Street and 8th Street).
- **Sidewalk Conditions:** Participants highlighted the same gaps in the sidewalk network that Cal Walks staff observed on our site visit. Additionally, they expressed concern over sidewalk maintenance, including tripping hazards along older sections, missing curb ramps on residential streets, and vegetation blocking both access and visibility in some areas.

- **Need for Walk & Bike Amenities:** Participants expressed the desire for additional walk and bike improvements like additional shade (either trees or shade structures), water fountains, benches, public restrooms at parks, and secure bike parking at public and private destinations.
- **Insufficient Lighting:** Participants noted concerns about a lack of sufficient street and pedestrian-scale lighting, particularly on residential streets like R and 8th and near schools, including Tenaya Middle School.
- **Improvements on Childs Avenue:** Participants pointed to W. Childs Avenue between Martin Luther King Jr. Way and West Avenue as a positive example of a bike route in the City. While the bike lanes are minimum-width and are not buffered or protected, they are clearly marked and provide safe access to a key east-west route in South Merced. Additionally, the four-way signalized intersection at Childs and Martin Luther King Jr. Way has greatly improved safety at the skewed intersection, and is a good example of a project that came to fruition through a cooperative effort between the City, Caltrans, and 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 identifying non-infrastructure (education and encouragement) programs that would be most effective for the community, as well as strategies for engaging and sustaining parent and school community leadership.
- The second set of questions focused on identifying specific infrastructure projects for Merced and criteria for how the City should prioritize these infrastructure projects.

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

Non-Infrastructure Priorities & Recommendations

- **Opportunities for Traffic Safety Education:** In both the walkability and bikeability assessment, and in the small-group action planning discussions, participants brainstormed a number of opportunities for traffic safety in the community. Ideas included:
 - An informational pamphlet with residents' monthly PG&E bill that would include education for all road users, and may focus on signage and markings, like what sharrow markings indicate;
 - Childs Avenue and Martin Luther King Jr. Way are truck routes; an education campaign that focuses on drivers and the local businesses that operate freight on those and similar routes;
 - Create an "I walk / I bike" campaign that engages community members and leadership to share their stories and encourages others to join them for a walk or bike ride in Merced;
 - Engaging youth leadership to:
 - Work with the DMV and local driver's education providers on new and teen driver workshops that focus on safe driving around pedestrians and bicyclists
 - Create educational videos and hold VideoVoice workshops by and for youth leaders
 - Utilize social media networks for traffic safety messaging

- **Engage Youth Leadership:** In addition to the traffic safety education opportunities that engage youth directly, participants identified opportunities to engage youth leadership at school by adding pedestrian and bicycle safety curricula to classes like physical education, civics/government, and even student club activities. Both outlets could offer incentives like bike giveaways and other rewards.

Infrastructure Priorities & Recommendations

- **Utilize Data to Prioritize Corridor Improvements:** Participants would like to see the City perform a deep analysis of the collision and engineering data to help develop a more systematic and equitable prioritization process for traffic safety improvements across the City. From an initial look at five-year collision data, as well as the workshop walk assessment, participants suggested first studying Olive Avenue, M Street, and G Street by Merced High School. They would also like the City to examine and begin to gather data on sidewalk and lighting deficiencies.
- **Focus on Crossing Enhancements:** Participants highlighted low-cost, easy to implement solutions like updated signage, high-visibility markings, and RRFBs as a suite of improvements for challenging and unsafe crossings across the city, with a priority at school crossings. Rectangular Rapid Flash Beacon (RRFB) is a relatively inexpensive crossing enhancement, and when activated, it has a relatively high rate of driver yielding as compared to otherwise uncontrolled crossings.
- **Improve Access to/from UC Merced:** Participants would like to see the City partner with the County to focus on improving active transportation and transit access to and from the UC Merced campus. The City may have data on what City neighborhoods have high concentrations of students living in them, or could begin to collect this data. From there, they could begin to engage with students, faculty and staff, and interested residents to plan for improved access to campus. Additionally, participants believe there is an opportunity to work with students and faculty in various academic concentrations to develop an education and encouragement campaign, or to have students assist with community outreach and planning.

California Walks/SafeTREC Recommendations

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

- **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 checklist⁶ 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.
- **Establish a Student Safety Patrol Program:** Given the challenges with school arrival/dismissal highlighted by the participants at Tenaya Middle School and the interest in further cultivating student leadership among students, Cal Walks and SafeTREC recommend that Tenaya Middle School establish a formal Student Safety Patrol program to help address both of these

⁶ 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

community priorities. Student Safety Patrols help to improve school arrival/dismissal procedures and vehicle traffic flow by having Patrollers direct their fellow students under the guidance of a Safety Patrol Advisor—a committed teacher or parent volunteer who coordinates the student trainings and patrols. Patrollers can also teach other students about traffic safety on a peer-to-peer basis. The AAA Safety Patrol Program provides about \$200 worth of safety materials, such as belts, badges, vests, and instruction materials for Safety Patrol Advisors and Patrollers. The AAA Northern California office provides support and free materials for first time schools. For more information, visit: schoolsafetypatrol.aaa.com.

- **Pursue Funding for a Dedicated Safe Routes to School Coordinator:** Schools in the Merced City School District and in other school districts in the City of Merced would benefit from a paid Safe Routes to School (SRTS) Coordinator. Cal Walks and SafeTREC recommend that the School District work with the City to establish and sustain a paid Coordinator position. SRTS Coordinator positions are funded in various ways, including local general funding, state and regional Active Transportation Program (ATP) funding, and through various public-health related grants. The upcoming 2018 ATP funding will be an important opportunity, and this workshop can serve as an early step in the planning process. 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,⁷ 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.

Acknowledgments

We would like to thank the Kim Espinosa and Chigoziri Ibechem with the City of Merced for inviting us into their community and for hosting the Community Pedestrian and Bicycle Safety Training. We would also like to thank Cal Walks Youth Leader MariaJosé Diaz for presenting on her experiences and for helping to facilitate the workshop, and Recreation & Parks Commissioner Corinne Chavez and Youth Council member Cynthia Ratzlaff for making sure Youth Council leadership was involved in the workshop, from planning to the day of the workshop.

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.

⁷ 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>.

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

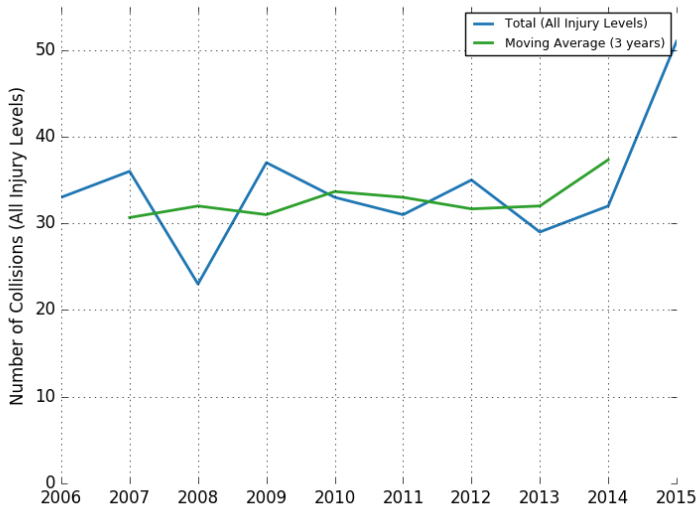
Pedestrian and Bicycle Collision Data Analysis

Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

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 360 people injured or killed in 340 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 Merced, CA. There were 187 people killed or injured in 178 pedestrian collisions.

Top Violation Types for Collisions Involving Pedestrians

Type of Violation	Collisions N(%)
Driver must yield pedestrian right of way in a crosswalk	71 (39.9 %)
Pedestrian yield, upon roadway outside crosswalk	46 (25.8%)
Unsafe speed for prevailing conditions (use for all prima facie limits)	6 (3.4%)
Jaywalking, between signal controlled intersections	5 (2.8%)
Starting or backing while unsafe	5 (2.8 %)
Other violation	27 (15.2%)
Not stated	18 (10.1%)
Total	178 (100.0%)

Pedestrian Actions in Collisions Involving Pedestrians

Pedestrian Action	Collisions N(%)
Crossing in Crosswalk at Intersection	75 (42.1%)
Crossing Not in Crosswalk	71 (39.9%)
In Road, Including Shoulder	21 (11.8%)
Not in Road	8 (4.5%)
Crossing in Crosswalk Not at Intersection	3 (1.7%)
Total	178 (100.0%)

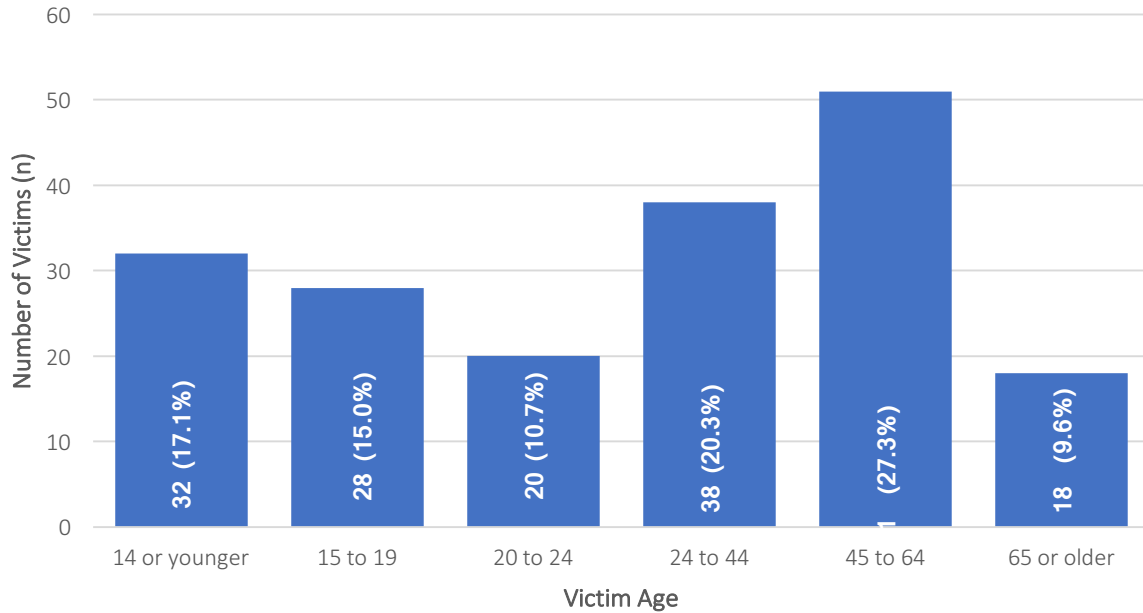
* Data Source: California Statewide Integrated Traffic Records System (SWITRS). Collision data for 2014 and 2015 are provisional at this time.

Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

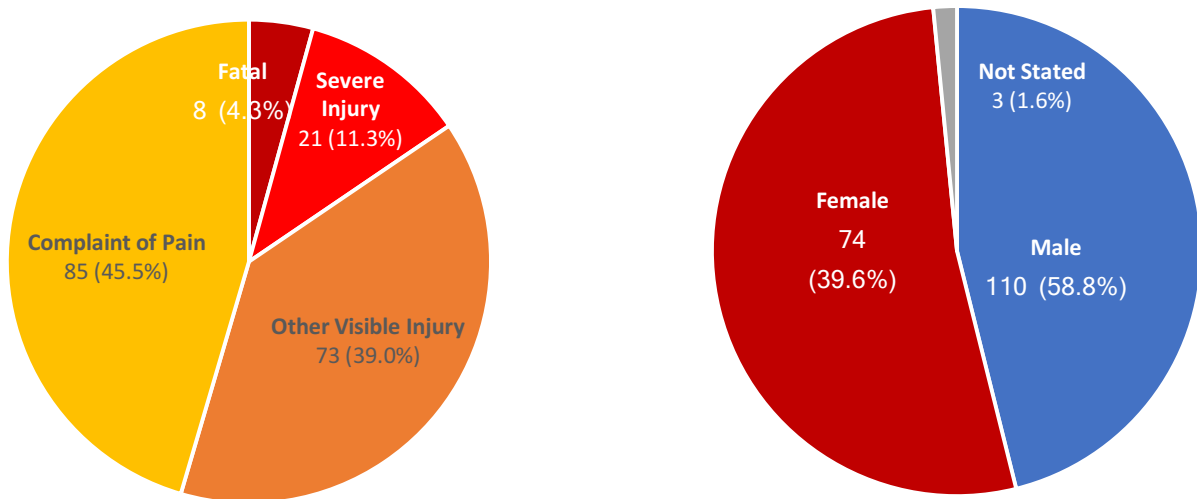
Pedestrian Victim Demographics

The age of pedestrian victims ranged considerably across all age groups, with youth age 19 or younger accounting for 32.5 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.

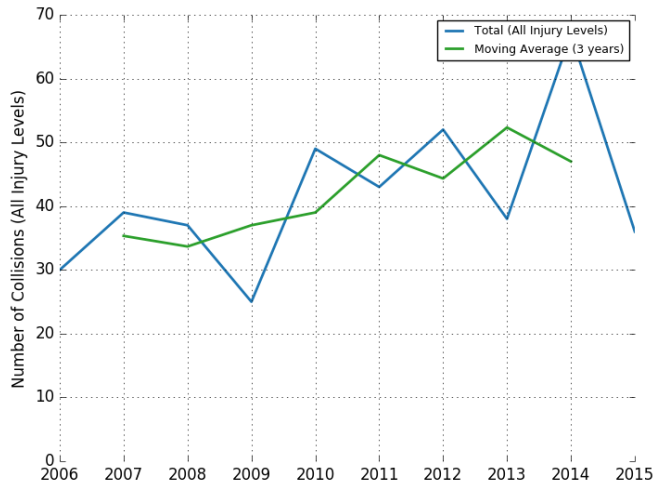
Funding for this project was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

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 425 people killed or injured in 416 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 Merced, CA. There were 243 people killed or injured in 236 bicycle collisions.

Top Violation Types for Collisions Involving Bicycles

Type of Violation	Collisions N(%)
Wrong side of road	67 (28.4%)
Automobile right of way	48 (20.3%)
Traffic signals and signs	29 (12.3%)
Improper Turning	25 (10.6%)
Other Hazardous Violations	18 (7.6%)
Other Violations	17 (7.2%)
Unknown or not stated	25 (10.6%)
Total	236 (99.8%)

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

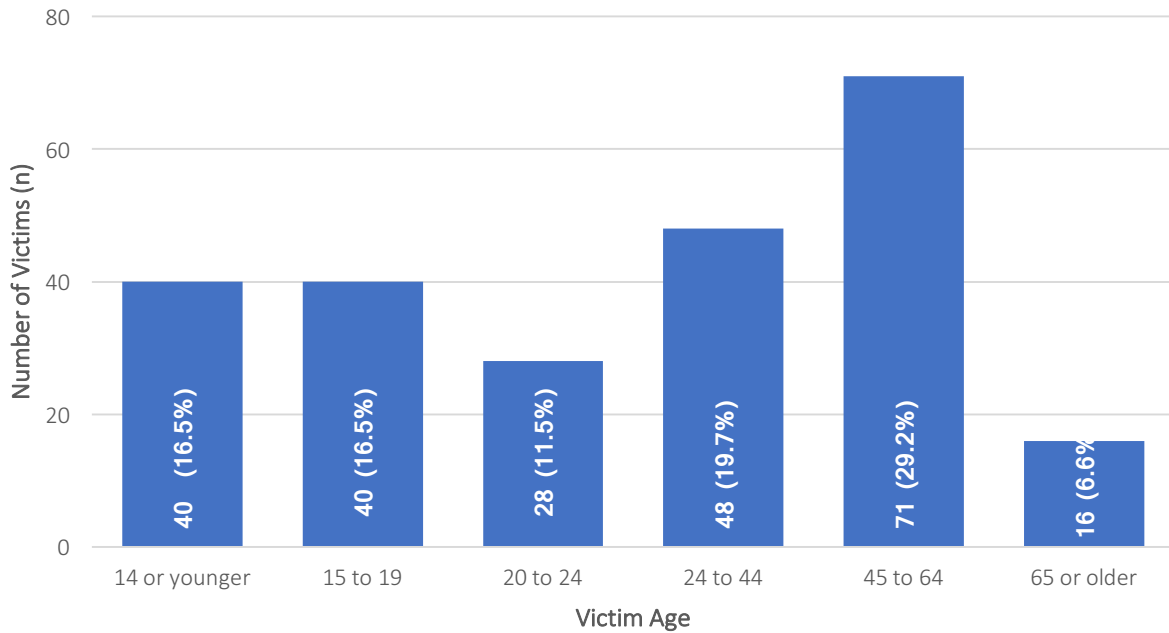
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Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

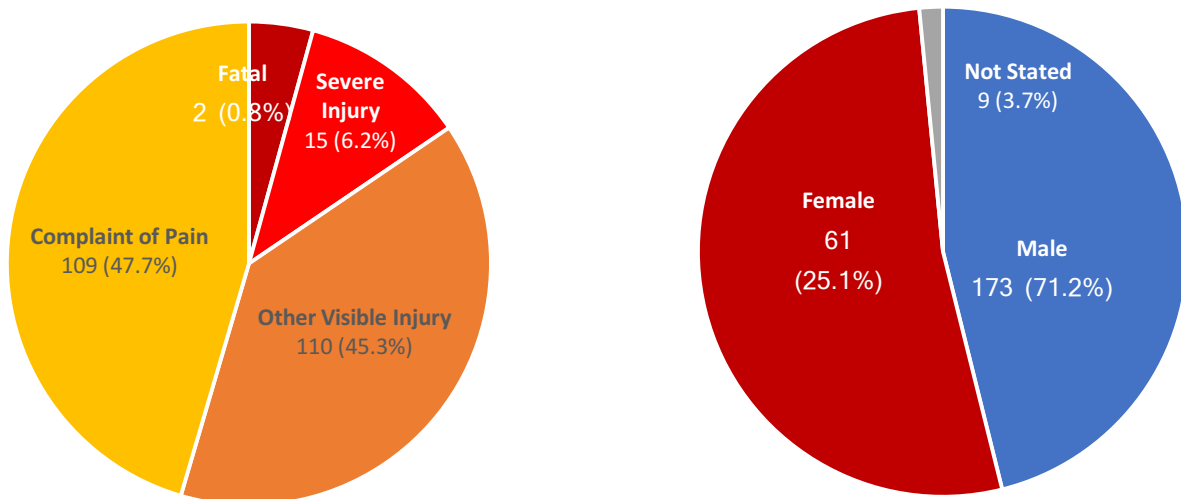
Bicycling Victims Demographics

The age of bicycling collision victims varied across all age groups, with youth age 19 or younger accounting for 32.9 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.

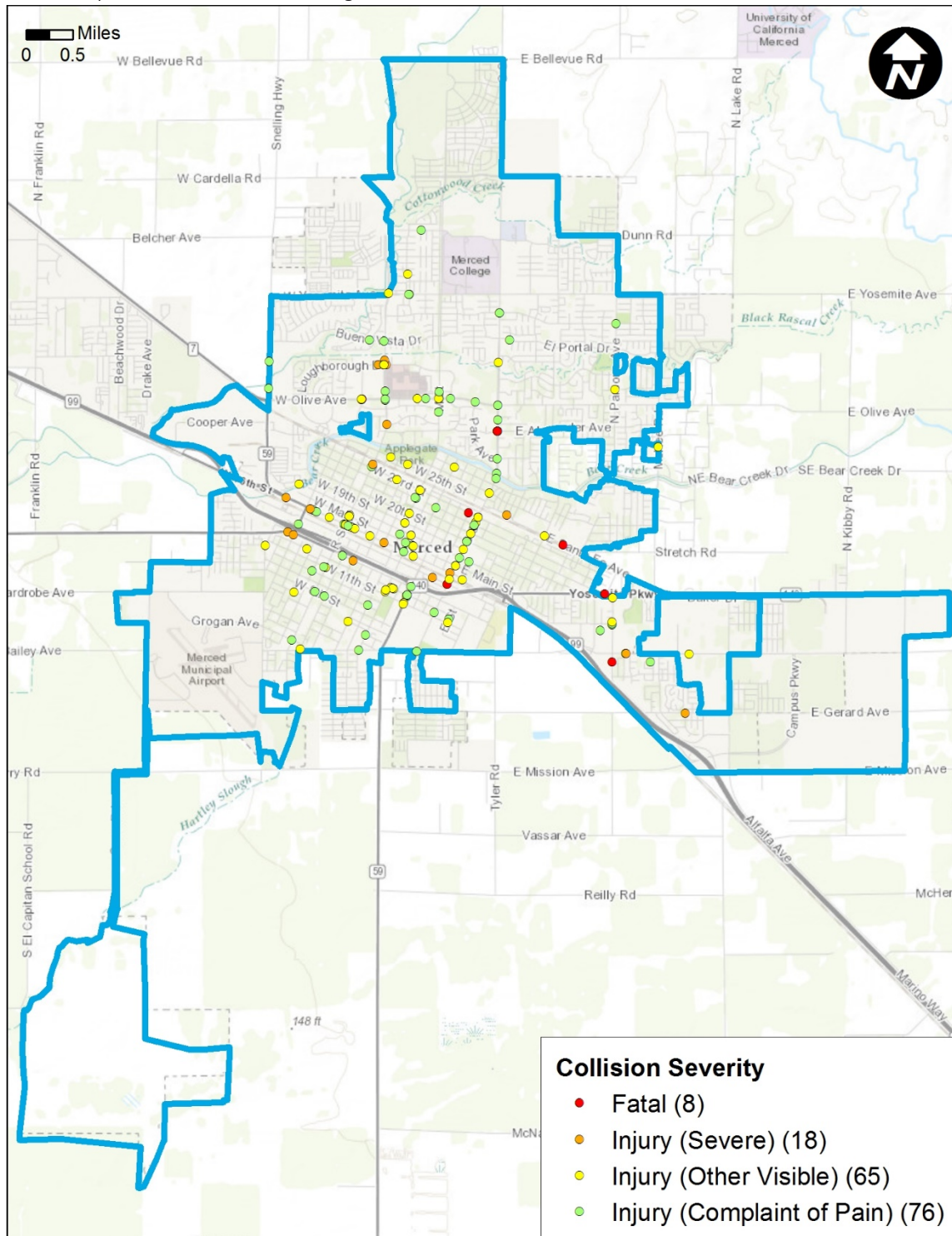
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Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Collision Locations, 2011-15

Note: Only 167 of 178 collisions are geo-coded.



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

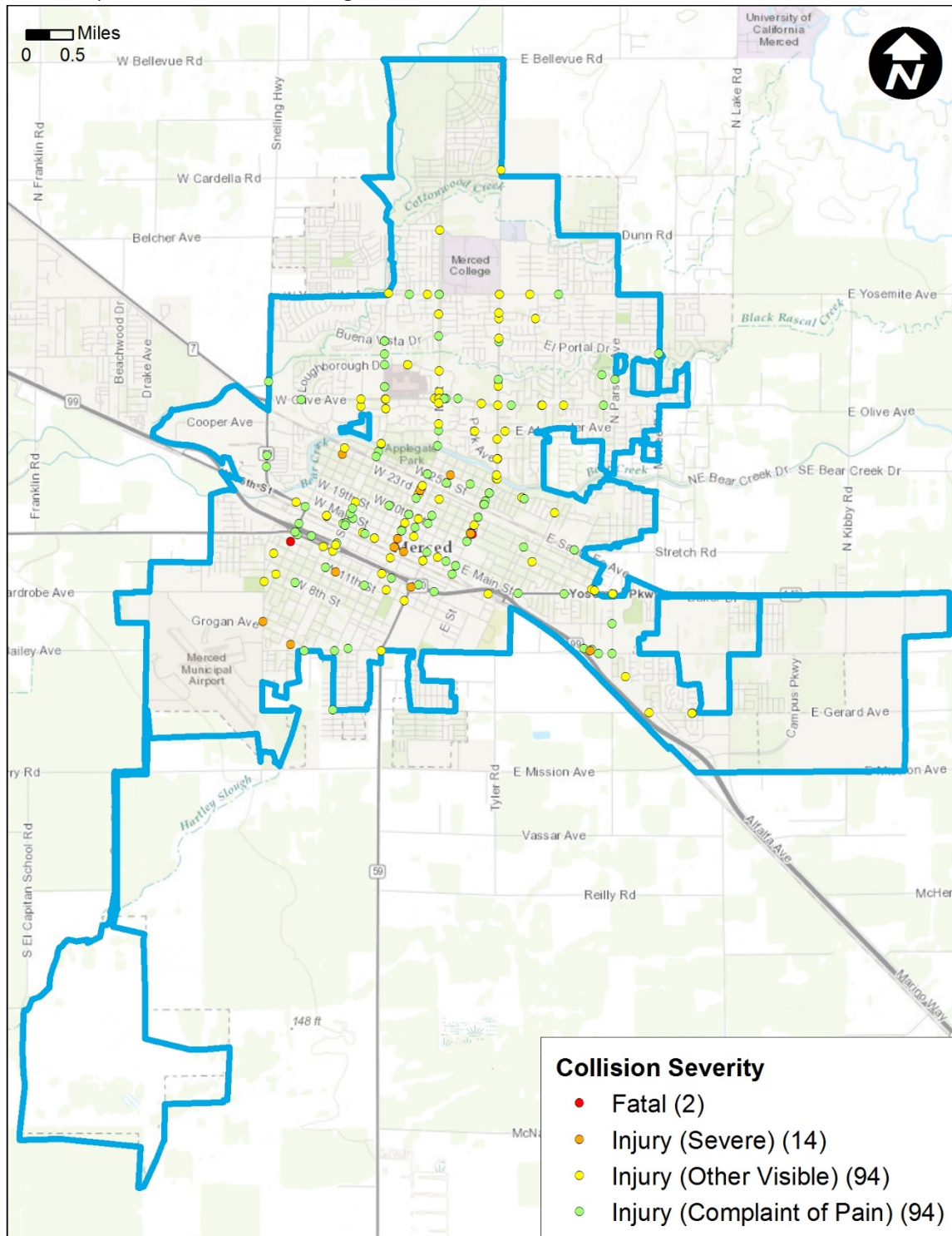
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Community Pedestrian and Bicyclist Safety Workshop – Merced, CA – 6/21/17

Pedestrian and Bicycle Collision Analyses, 2006-15*

Collision Locations, 2011-15

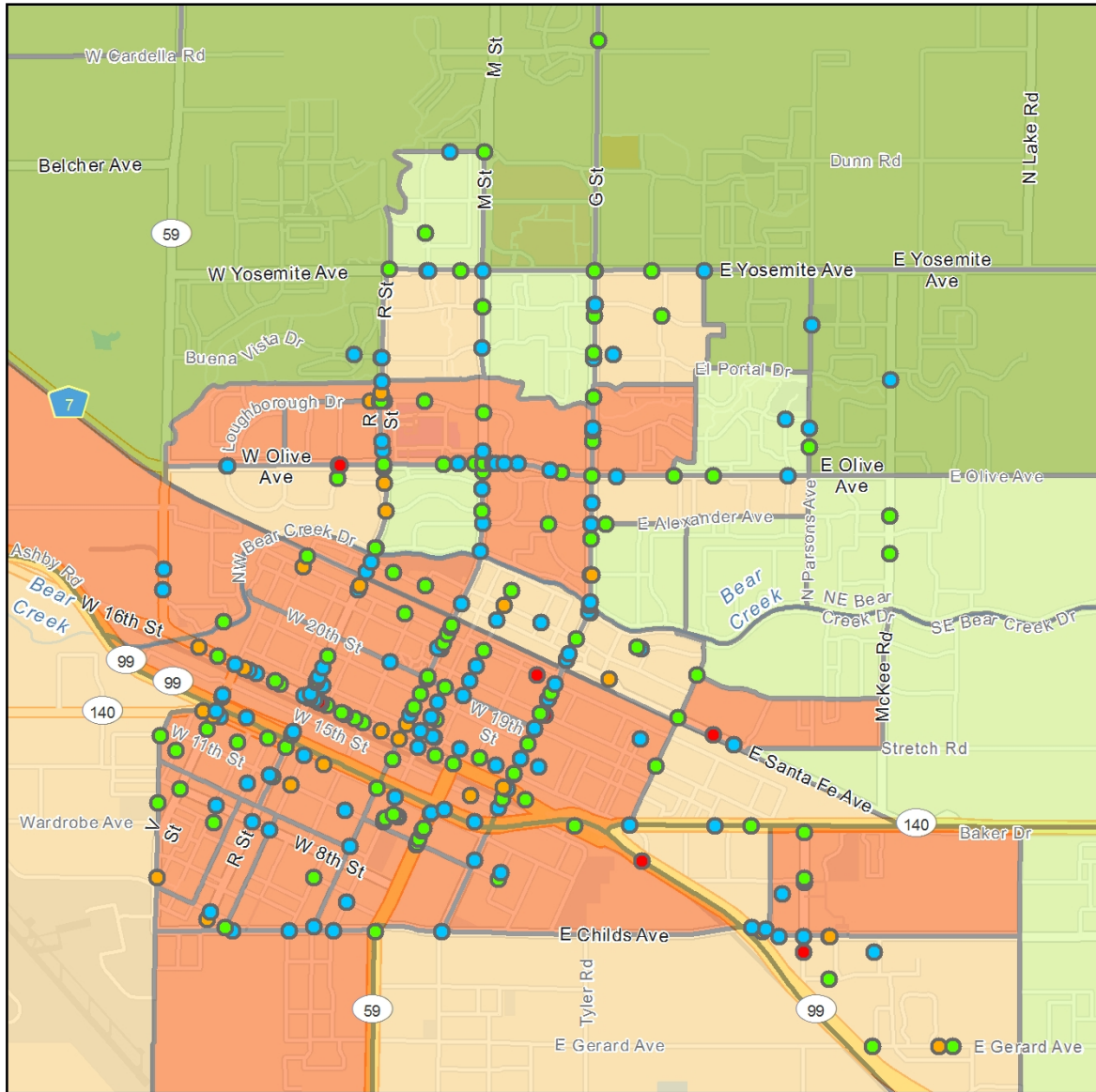
Note: Only 204 of 236 collisions are geo-coded.



* 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.

Merced Bicycle/Pedestrian Collision Map (2011 - 2015)



Collision Severity (2011-2015)

- Fatal (10)
- Injury (Severe) (32)
- Injury (Other Visible) (157)
- Injury (Complaint of Pain) (165)

2016 Median Household Income

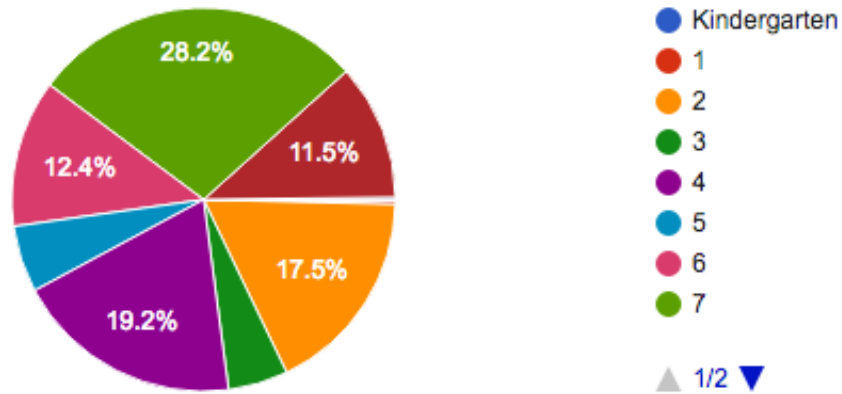
- < 35K
- 35K - 50K
- 50K - 75K
- > 75K

Appendix B

Student Travel Survey Results

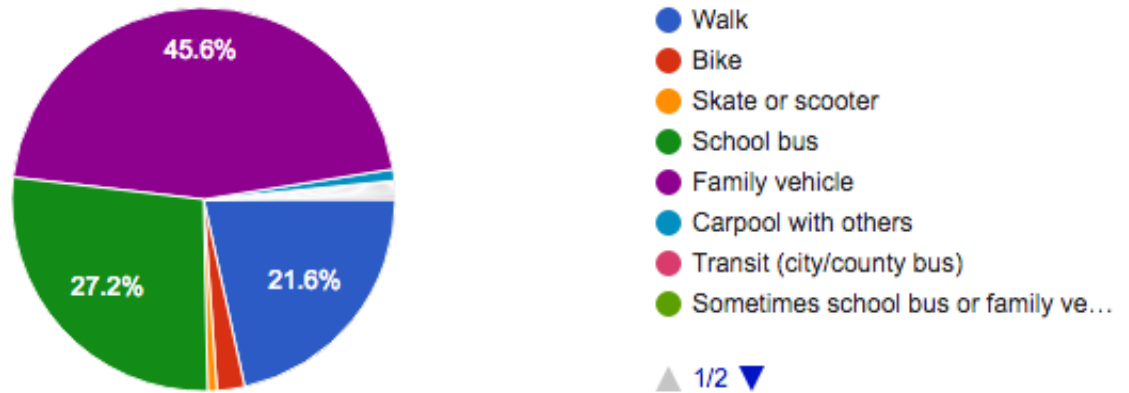
What grade are you currently in?

515 responses



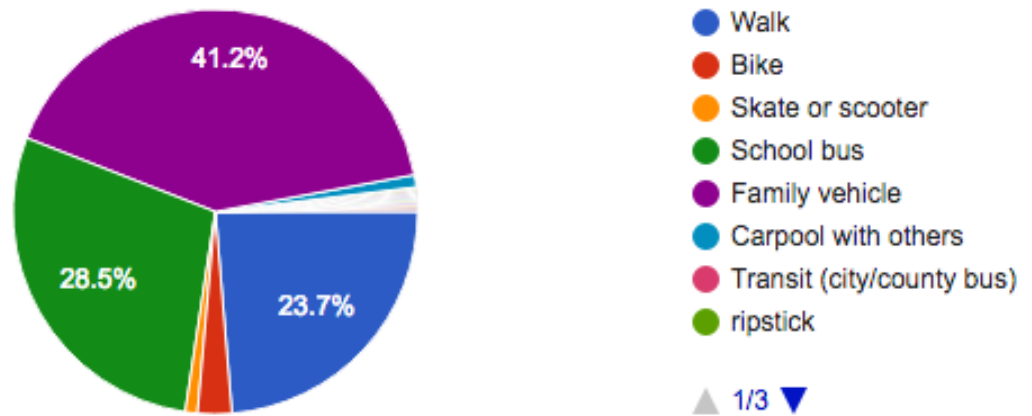
On most days, how do you arrive at school?

515 responses



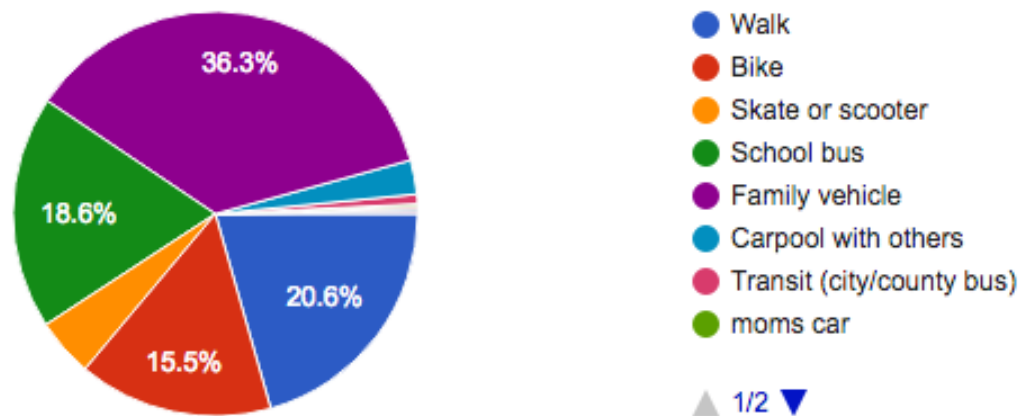
On most days, how do you leave from school?

515 responses



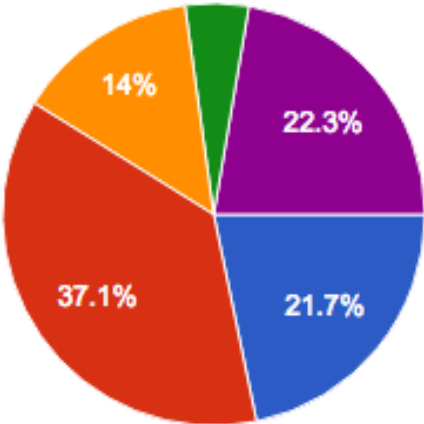
How would you prefer to travel to and from school?

515 responses



What is your usual travel time to school?

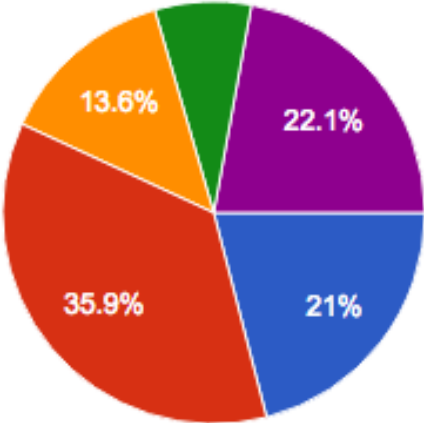
515 responses



- Less than 5 minutes
- 5-10 minutes
- 11-20 minutes
- More than 20 minutes
- Don't know/not sure

What is your usual travel time from school?

515 responses

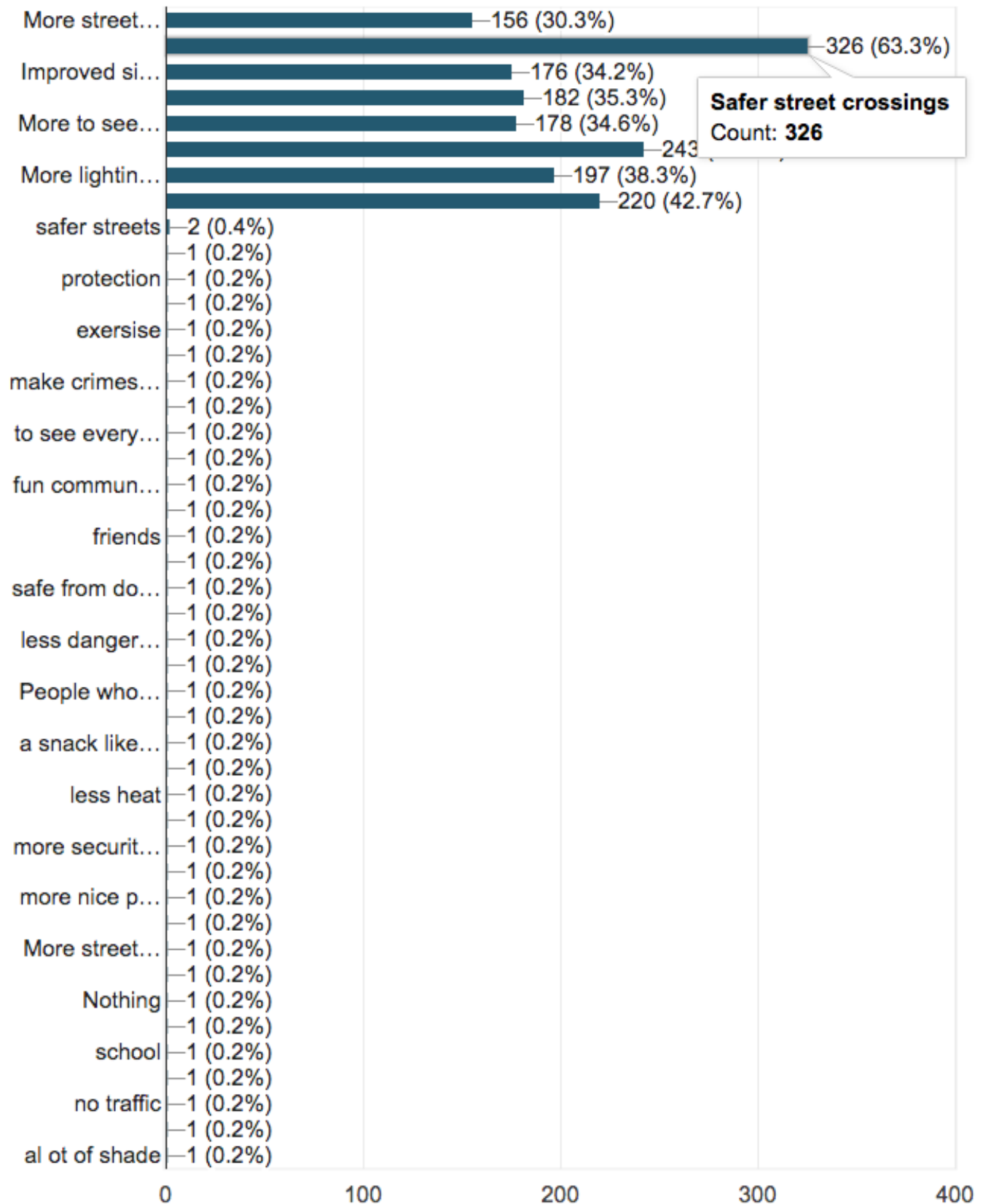


- Less than 5 minutes
- 5-10 minutes
- 11-20 minutes
- More than 20 minutes
- Don't know/not sure

What would encourage you to walk more in Merced? (Choose all that apply)



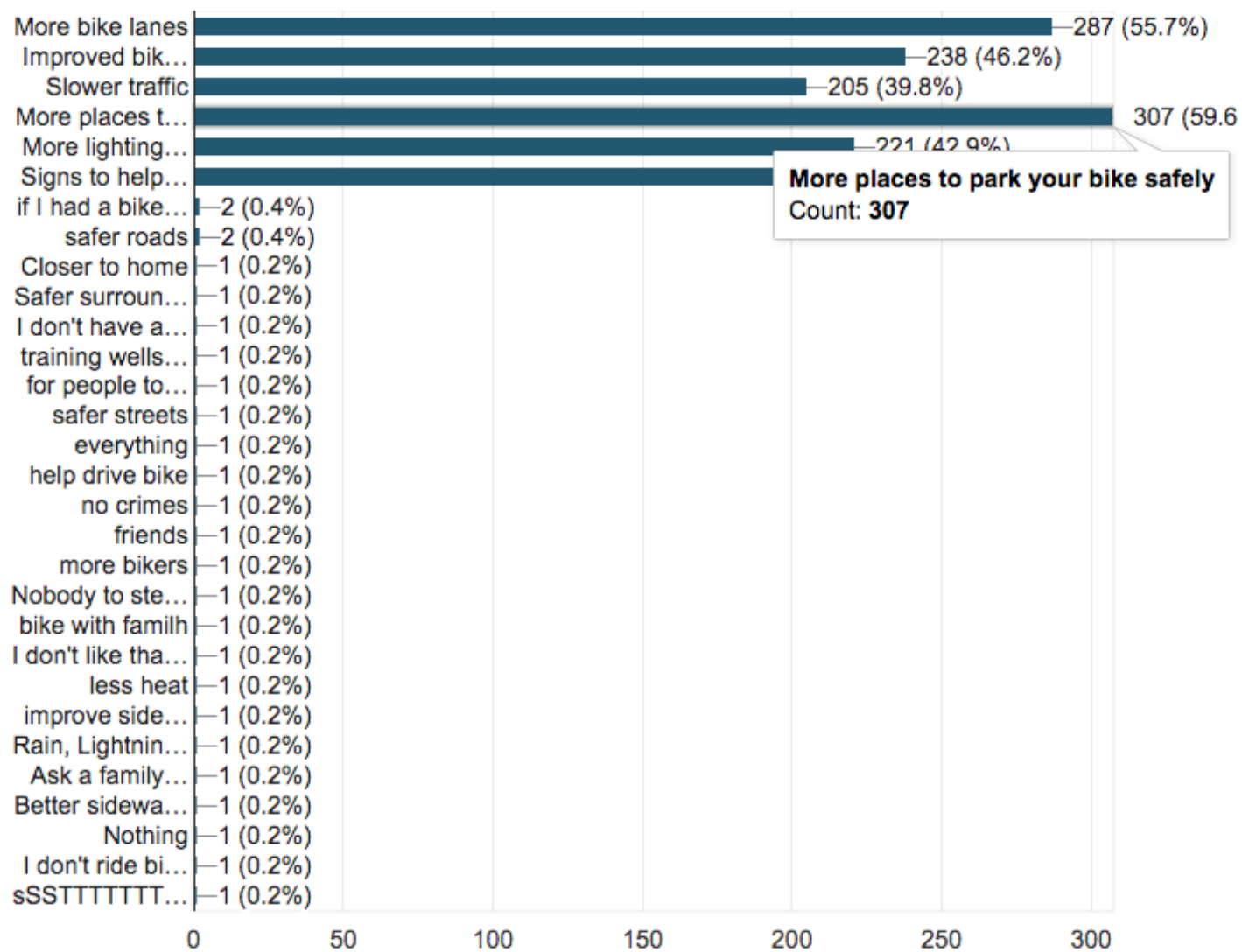
515 responses



What would encourage you to bike more in Merced? (Choose all that apply)



515 responses

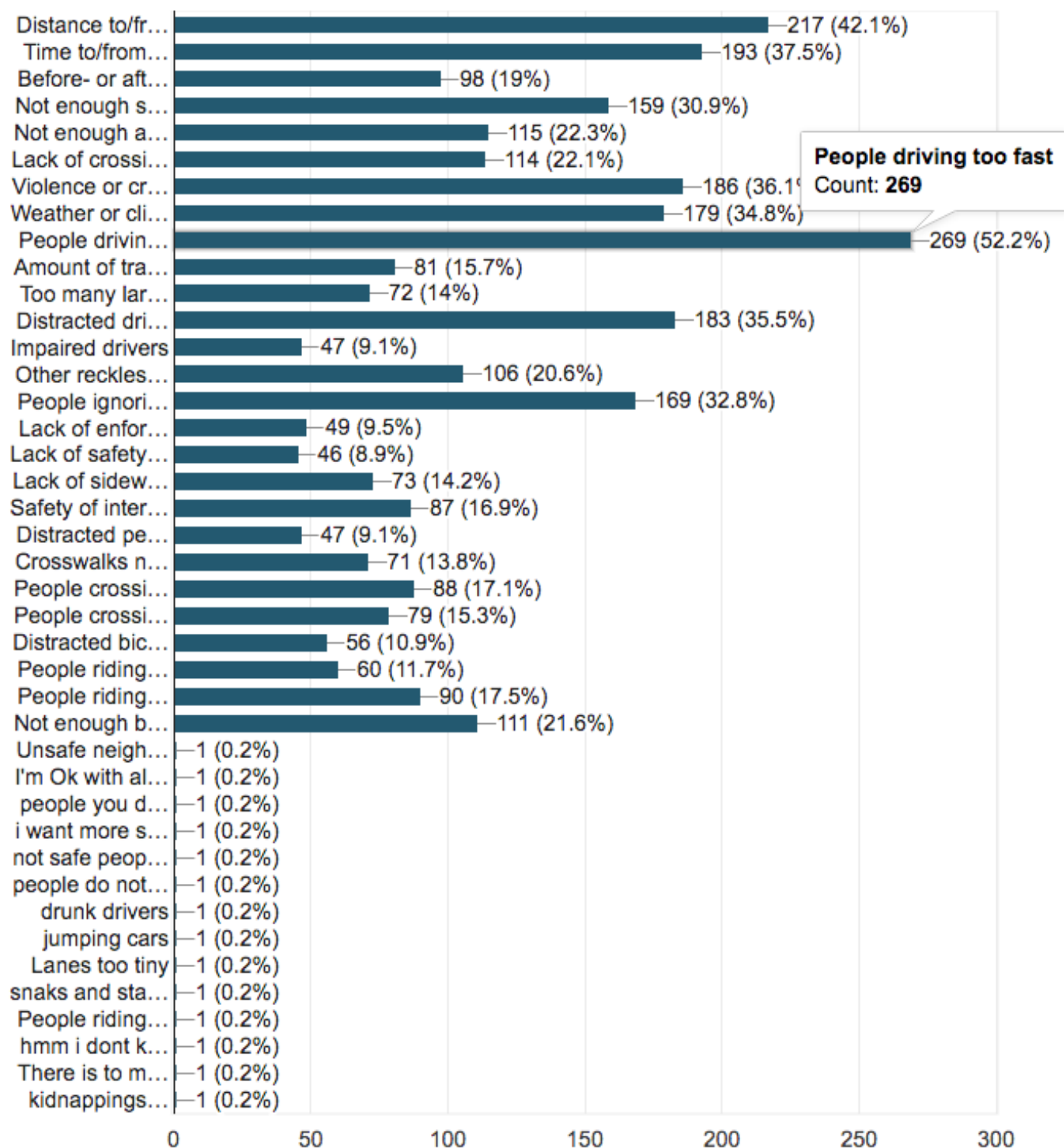


More places to park your bike safely
Count: 307

What do you think are the top 5 challenges to walking and biking to school in Merced? (Please read through all and choose exactly 5)

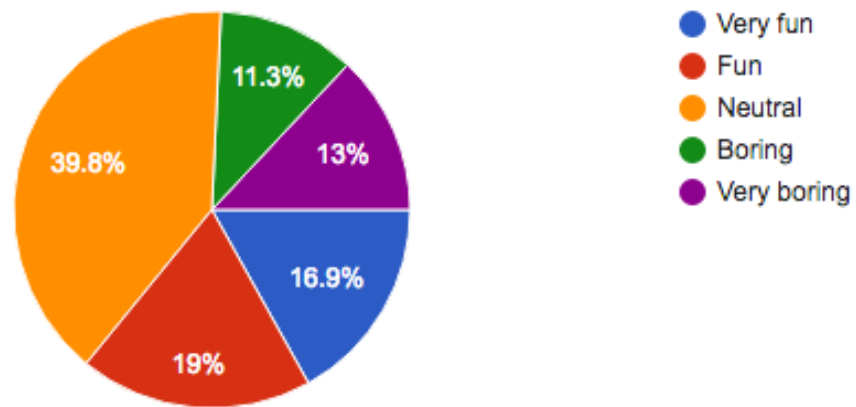


515 responses



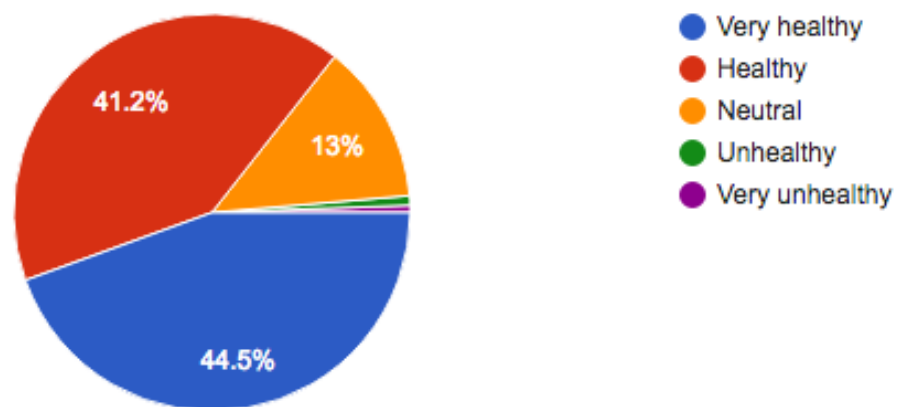
How much fun is walking to school?

515 responses



How healthy is walking or biking to school?

515 responses



Do you have additional comments?

147 responses

no (33)

No (11)

No. (3)

yes (2)

yay (2)

N/A (2)

NO (2)

no. (2)

walking can give you exercise so can riding a bike (2)

no :)

If I lived in a safer place and I lived a little bit closer to the school, I would ride my bike or walk.

Sometimes it's very hot outside, so most people don't like to walk home from school