



Alameda

Vision Zero Action Plan



November 3, 2021

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A GUIDE TO READING THE PLAN

Alameda's Vision Zero Action Plan defines a path toward achieving the City's goal to eliminate traffic deaths and severe injuries by 2035. Its development was guided by the Vision Zero Task Force, a group comprised of community members, regional public agency partners, and City of Alameda ("City") staff from seven different departments. The Plan emphasizes making systemic change based on data to create an environment where human mistakes on our roads do not cause death or severe injury, and it works to protect our most vulnerable road users.

Reading the Full Action Plan

Reading this Plan from start to finish will give the fullest understanding of our approach. Chapter 1 starts with an overview of Vision Zero and why we need it in Alameda. Chapter 2 introduces the Plan's goals and speaks to what City staff and community members are already doing to address traffic safety in Alameda. Chapter 3 delves into findings from ten years of Alameda crash data. Then Chapter 4 outlines 50+ actions aimed at achieving Vision Zero, organized according to the Plan's five goals. Finally, Chapters 5 and 6 outline the performance measures we'll use to track progress, and next steps.

For information on how this Plan defines key words, see page 32: Important Terms.



Interested in equity?

Discussions of equity are threaded throughout this document. Page 2 contains an introduction to equity in Vision Zero. Pages 7-9 provide an overview of disproportionate impacts found in the crash data analysis, including a map that shows crashes compared to areas of high social vulnerability. The detailed crash analysis in Appendix F contains an analysis of crashes by race, though the findings were inconclusive. The section called "Actions That Prioritize Street Design and Education" on page 17 speaks to the role of police enforcement in the Action Plan and highlights a few actions related to recommendations from Alameda's community-led Committee on Police Reform & Racial Justice. Finally, pages 18-19 contain seven actions aimed at increasing equity. To see how the Plan uses terms like "socially vulnerable areas" and "equity priority communities", see Important Terms on page 32.

Where's the data?

Vision Zero uses data to prioritize traffic safety investments. Page 3 speaks to the average number of people who die or suffer injuries on Alameda streets per year. The crash data analysis overview is in Chapter 3: Traffic Safety in Alameda. Appendix F contains the detailed analysis behind the summary. For actions aimed at improving data collection and analysis, see page 29. More collision-related maps are in Appendices B & C.

But what is the City going to do?

Every Action Plan needs actions! Find over 50 of them in Chapter 4: Making Our Streets Safer. See Appendix D for a list of street safety improvements that are already funded for Fiscal Years 2021/2022 and 2022/2023.

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1. WHAT IS VISION ZERO?

Vision Zero is an international movement with a goal to eliminate traffic crashes that result in deaths and life-changing injuries, which impact not only the victims, but also their families and communities. Vision Zero encompasses all people who use roadways, whether they are walking, wheeling, biking, taking transit, driving, or traveling in an automobile. Successful Vision Zero communities do this by reducing the number and severity of crashes. Vision Zero calls for new approaches to designing streets, communicating about traffic safety, and collaborating across city government departments to keep travelers safe. Though Vision Zero seeks to eliminate deaths and life-changing injuries for all travelers, many strategies focus on improving safety of those people who crash data show to be the most vulnerable to these outcomes: people walking, wheeling, and biking. Vision Zero also uses data analysis to focus actions on the causes and locations of the most severe crashes.

ALAMEDA'S VISION ZERO POLICY AND TASK FORCE

In November 2019, the Alameda City Council adopted a resolution establishing Vision Zero as the City's guiding principle for transportation planning, design, and maintenance. It made safety the highest priority in transportation efforts and set a goal for the City to eliminate traffic deaths and life-changing injuries. The Vision Zero policy is available in Appendix A.

The policy also required that a multi-disciplinary Vision Zero Task Force guide the development of a Vision Zero Action Plan. In accordance, the City convened a Task Force comprised of community members, commissioners, and multi-disciplinary City and regional staff. They helped develop this Plan, which provides implementation actions and policy changes to help Alameda reach its Vision Zero goal by 2035.

A VISION ZERO APPROACH

A Vision Zero approach to transportation planning, design, and maintenance is based on collaboration, accountability, and prioritizing equity. It uses a data-driven approach and focuses on creating safe traffic speeds.

Vision Zero represents a shift in the City's approach to traffic safety: **traffic deaths and serious injuries are no longer viewed as inevitable, but as preventable.** The City aims to do this by creating an environment where human error does not cause death or life-altering injury. This systems approach focuses on "upstream" factors including street design, policies, laws, and operations.

Alameda's transportation system must be designed to make it easy for people to engage in safe behaviors so that all people feel safe and comfortable traveling along Alameda's streets. While individuals are still responsible for abiding by traffic policies and laws, the primary focus is on creating a safe system rather than attempting to perfect human behavior.

Traditional Approach to Traffic Safety	Vision Zero Approach to Traffic Safety
Traffic deaths are inevitable.	Traffic deaths are preventable.
Prevent collisions.	Prevent fatal and severe crashes.
Assume human behavior is perfect.	Integrate human error into approach.
Rely on individual responsibility.	Use a systems approach.

ALAMEDA VISION ZERO ACTION PLAN

While Vision Zero addresses safety for all road users, it aims to increase equity by prioritizing those who are disproportionately impacted by current conditions and are most vulnerable to injury. Prioritizing safety improvements according to data rather than community complaints can help this happen: complaints are more likely to arise from areas where residents have time, access, and resources to voice their concerns. The Vision Zero Task Force also considered each action recommended in this Plan to minimize unintended consequences that place disproportionate burdens on equity priority communities.

The City acknowledges that it cannot eliminate all crashes, but it can focus on those that are most likely to result in death or life-changing injury, since those are the ones that impact people and their loved ones the most. Focusing on these more severe crashes can also lead to reducing crashes overall. For example, lower motor vehicle speeds reduce the severity of crashes due to decreased kinetic energy; but they also reduce the likelihood of crashes in the first place, because people have more time to stop and avoid a crash.

Through this Plan, the City has laid the foundation and developed a framework for City staff, community groups, and individual residents to increase safety in Alameda and achieve our Vision Zero goals.

INCREASING SUSTAINABLE TRANSPORTATION + SAFETY TOGETHER

Since 2018, Alameda has adopted many plans that call for a dramatic increase in the use of sustainable transportation, including the Climate Action and Resiliency Plan, the Transportation Choices Plan, and the City's upcoming Active Transportation Plan.

The vision, goals, and actions in this Vision Zero Action Plan align with these efforts to shift to more sustainable modes of transportation. By working to make our streets safer for vulnerable road users, this Plan supports the City's goals to increase walking, bicycling, and wheeling and reduce greenhouse gas emissions.

While Alameda's Vision Zero policy makes safety the "highest priority when balancing the competing demands for space in the public right of way," focusing on transportation safety alone will not achieve these ambitious plan goals to reduce auto trips and increase walking, biking, and transit. This Vision Zero Action Plan aims to complement and support those goals.

For information on how this Plan defines key words, see page 32: Important Terms.



WHY DOES ALAMEDA NEED VISION ZERO?

Every year, an average of two people die on Alameda streets and ten people suffer life-changing injuries. This loss, pain, and trauma is unnecessary and unacceptable, and impacts our entire community.

Between 2009 and 2018, 2,229 people were injured or killed in collisions on streets in Alameda. The total number of annual injury crashes ranged from 83 to 122 among motorists, 6 to 17 among motorcyclists, 27

to 45 among bicyclists, and 24 to 43 among pedestrians.¹

It is time for Alameda to take a comprehensive and strategic approach to traffic safety. This Vision Zero Action Plan presents bold strategies to help Alameda create streets that are safe for people of all ages and abilities and who travel by a variety of modes.

Each year, an average of two people die and 221 people suffer from an injury as a result of traffic crashes in Alameda.

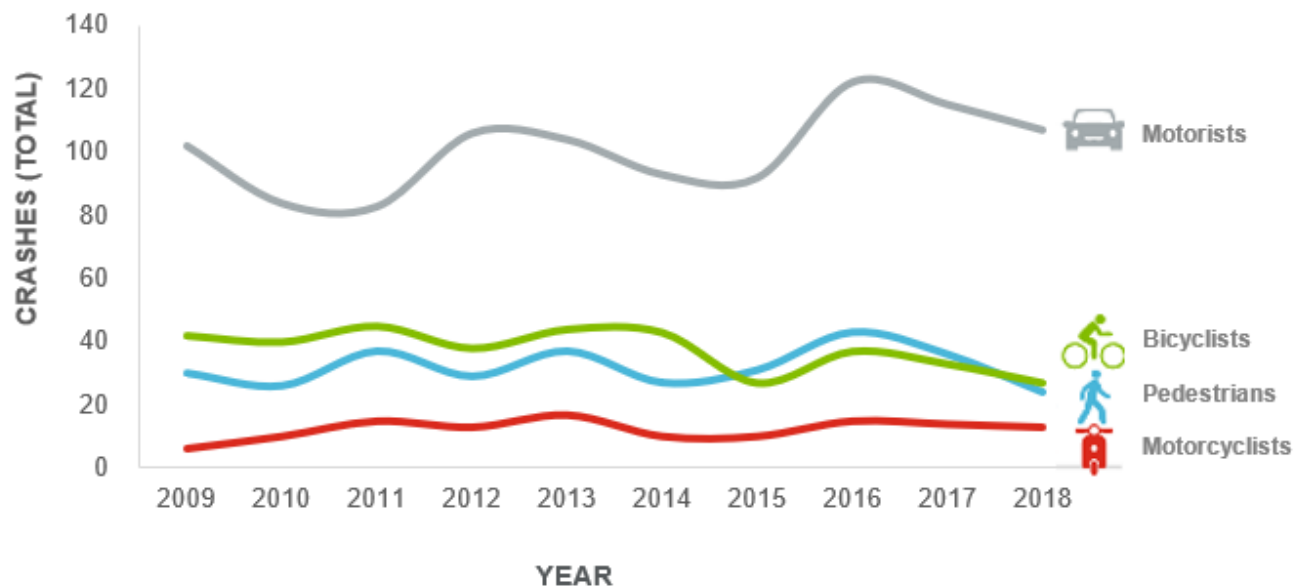


Figure 1. Total Injury Crashes by Year and Mode from 2009 to 2018
Source: Statewide Integrated Traffic Records System (2009-2018)

¹ The crash data used in this analysis is from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS).

The analysis includes data from 2009 to 2018, the ten most recent years of data available.

2. VISION ZERO IN ALAMEDA

VISION AND GOALS

The Vision Zero Task Force helped develop the vision statement and five goals for this Plan. The vision and goals reflect best practices in Vision Zero planning from across the country, the information learned from the crash analysis, and the guiding principles established by the Task Force. The goals are numbered, but the numbering does not reflect prioritization.

VISION: People of all ages and abilities can travel safely using any mode, and traffic deaths and serious injuries are eliminated by 2035.

GOALS TO ACHIEVE VISION

GOAL 1: EQUITY

Ensure that the Vision Zero Policy and Action Plan are implemented equitably and fairly for all people.

GOAL 2: INSTITUTIONAL COMMITMENT

Create an institutional commitment to Vision Zero throughout City government.

GOAL 3: COMMUNITY SUPPORT

Foster community support and responsibility for the safety of people traveling within Alameda.

GOAL 4: DECREASE SPEEDS AND CRASHES

Reduce motor vehicle speeds and decrease collisions between people driving, riding a motorcycle, biking, walking, or wheeling.

GOAL 5: IMPROVE DATA

Improve the use, collection, and organization of data to allow for evaluation and reporting that fosters transparency and creates trust with all stakeholders and residents.

WHAT ARE WE DOING NOW?

Even before creating this Plan and during the Plan development, City staff and members of the Alameda community have been working hard to improve traffic safety. The efforts listed below have been occurring in tandem and reflect the cohesive support and broad approach to the City of Alameda's Vision Zero strategy.

MAJOR TRAFFIC SAFETY PROJECTS

The City is already working to improve safety on many cross-town corridors. Street safety improvement projects are in various stages of planning and construction on many corridors: Central Avenue, Clement Avenue, Clement Avenue/Tilden Way, Cross Alameda Trail, Otis Drive, Lincoln Avenue, and Willie Stargell Avenue. More information is at www.AlamedaCA.gov/SaferStreets.

SAFE ROUTES TO SCHOOLS EDUCATION AND SAFETY IMPROVEMENTS

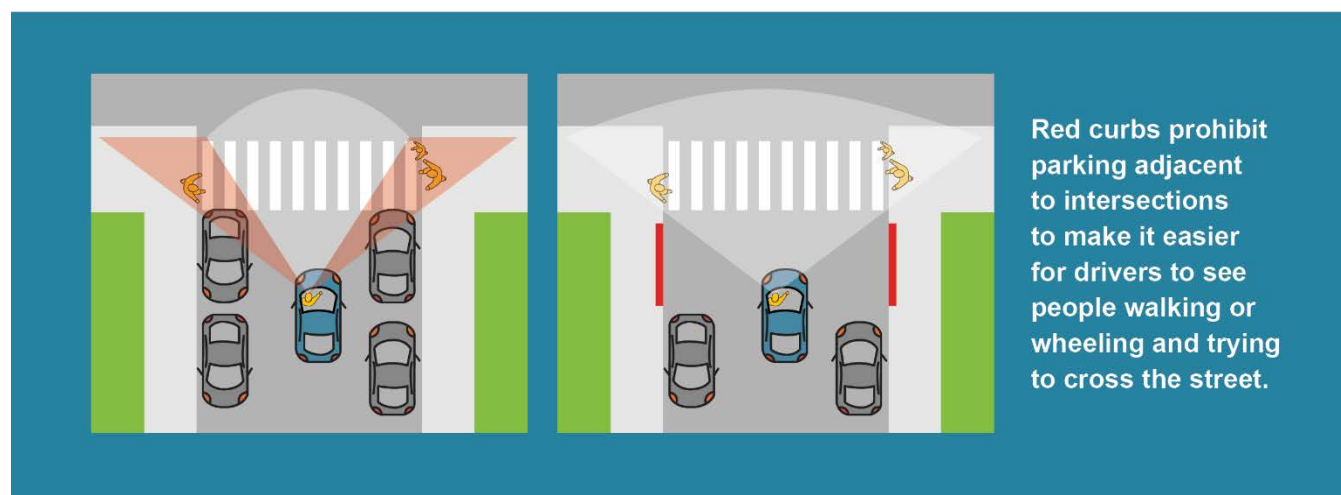
The City supports the Alameda County Safe Routes to Schools program, which works with parent volunteers to encourage families to walk, bike, carpool, and take transit to school. In 2021, the City also began implementing safety infrastructure recommendations from the School Safety Assessments conducted by the program. Separately from the countywide program, in 2021 the City, via a contract with a non-profit, began funding bicycle safety education in schools, with a goal of reaching all fifth graders in the city each year.

SLOW STREETS ALAMEDA

In April 2020, in response to the COVID-19 pandemic, Alameda began implementing a Slow Streets program which has reached 4.5 miles of streets, including Pacific Avenue, San Jose Avenue, Santa Clara Avenue, and Versailles Avenue. Orion Street will be added in mid-2021. Along these Slow Streets, through automobile traffic is discouraged and drivers are asked to use alternate routes, with the exception of local traffic and emergency vehicles. This effort has reduced traffic volumes and created safer places for people to walk, bike, and wheel.

POLICY FOR IMPROVEMENTS TO VISIBILITY (DAYLIGHTING)

Parking immediately adjacent to an intersection makes it difficult for drivers to see motor vehicle and bicycle traffic in the cross-street, as well as pedestrians entering the crosswalk (see graphic below). When the Alameda City Council approved the Policy for Improvements to Visibility (Daylighting) in 2019, the City began painting more red curbs at intersections to increase visibility between roadway users and improve safety. In 2021, the City is undertaking the High Injury Corridor Daylighting Project, painting red curbs adjacent to intersections along eight high injury corridors.



ALAMEDA VISION ZERO ACTION PLAN

STREET DESIGN POLICY

In early 2020, the City Council adopted the Policy on Street Width, Lane Width, Bike Lanes, Crosswalks, and Bulb-outs. This policy prioritizes safety for vulnerable road users, establishes standard travel lane widths, calls for regular high-visibility marked crosswalks on arterial roads, and more. (The policy is included as Appendix E.)

VISION ZERO IMPLEMENTATION TEAM

First convened in November 2019, this multidisciplinary team of City and agency staff coordinates on-going traffic safety efforts. This team includes representation from Public Works, Transportation Planning, Police, the City Manager's Office, and the Alameda Unified School District. This team also conducts site visits at locations of fatal crashes and will help implement the actions in this Plan.

VISION ZERO OUTREACH

The City created a Vision Zero website in 2019. It provides resources developed to support and implement this Plan, including maps, crash data, meeting materials, and links to other traffic safety-related City projects. Since late 2020, the City has been sending out regular Vision Zero updates to a growing mailing list of interested parties. At the beginning of the pandemic, City staff launched the COVID-19: Get Around Safe Pledge, to raise awareness about traffic safety during COVID.

VISION ZERO IN THE CAPITAL IMPROVEMENT PLAN

The City's 2021-2023 Capital Budget used high injury corridors and socially vulnerable areas as prioritization criteria for transportation system improvement funding. See Appendix D for the resulting capital projects related to Vision Zero.

ACTIVE TRANSPORTATION PLAN

The City is updating and consolidating its previous bicycle and pedestrian plans to improve conditions for people biking, walking, and using wheelchairs and mobility scooters, pedal and electric scooters, electric bikes, skateboards, and other similar wheeled vehicles. The Active Transportation Plan provides analysis, tools, and programmatic and infrastructure recommendations to help the City improve safety, comfort, and connectivity for people walking, wheeling, and bicycling, and to increase these trips in Alameda.

COMMITTEE ON POLICE REFORM AND RACIAL JUSTICE

This community-led effort, which included five active subcommittees, made recommendations for advancing racial justice and reforming policing in Alameda. Launched in August 2020 when the City Manager appointed the Steering Committee members, the City Council approved moving forward on a series of Committee recommendations in March 2021.

COMMUNITY ACTION

Residents have held rallies and led other efforts to call for action to improve traffic safety in Alameda. The 2019 Street Safety Rally focused on safety around schools following a series of child-involved collisions. In 2016, community leaders organized the extensive multimedia "Slow Down in Town/Stay Alive, Drive 25" campaign to decrease speeding. Community members have also been engaged with the City's Active Transportation Plan to ensure that safety is a key priority of the plan. Bike Walk Alameda, a local nonprofit, works to increase safety for people biking and walking.

3. TRAFFIC SAFETY IN ALAMEDA

Before creating recommendations, key collision trends were analyzed to develop a targeted and data-driven approach to understanding traffic safety. This showed two main factors associated with crashes occurring in Alameda – dangerous behaviors and street design impacts. Following is a summary of crash trends related to these elements. These trends inform the actions presented later in the Plan.

The crash data used in this analysis is from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). The analysis includes data from 2009 to 2018, the ten most recent years of data available.² For a more detailed analysis of the crash data, refer to Appendix F: Detailed Crash Analysis.

Broadening the meaning of “traffic safety”

The Vision Zero Task Force recognizes that Black, Indigenous, and People of Color may experience traffic safety differently from their white counterparts: some may fear for their safety from police interactions, including via traffic enforcement, in addition to worrying about crashes. Everyone, regardless of where, when, or how they travel, or their demographic or economic background, should be able to feel safe while traveling on Alameda's streets.

DISPROPORTIONATE IMPACTS

Motor vehicles are involved in the highest share of crashes; however, crashes involving only motor vehicles are much less likely to result in fatal or life-changing injuries when compared to crashes that involve other road users. Crashes that involve pedestrians, bicyclists, and motorcyclists are disproportionately severe compared to motorist-only crashes. Pedestrians are involved in 18 percent of Alameda's total crashes but 35 percent of the city's severe crashes.

Certain demographic populations are also more vulnerable than others. **On average, younger and older victims (ages 10-24 and 65-84) were over-represented in severe crashes compared to other age groups.** Vulnerabilities can also be compounded, meaning that older people may be more at risk of experiencing a severe injury when walking, biking, or riding a motorcycle. Older pedestrians are especially vulnerable – 66 percent of pedestrian victims of fatal crashes were 65 years old or older, though this age group only represents 15 percent of the population.³

² The 2016-2018 data were still considered “provisional,” which means that the overall numbers could change slightly if additional reports are identified and processed. However, correspondence with the TIMS managers suggested that there were unlikely to be substantial changes from the current version, especially for 2016 values. Some fatal crashes were added or corrected during a data review with the City of Alameda and the Alameda Police Department.

³ American Community Survey, 2018, five-year estimates

Pedestrians and bicyclists make up...

5% of Alameda's commute to work mode share

And are involved in...

39% of Alameda's crashes

62% of Alameda's severe crashes

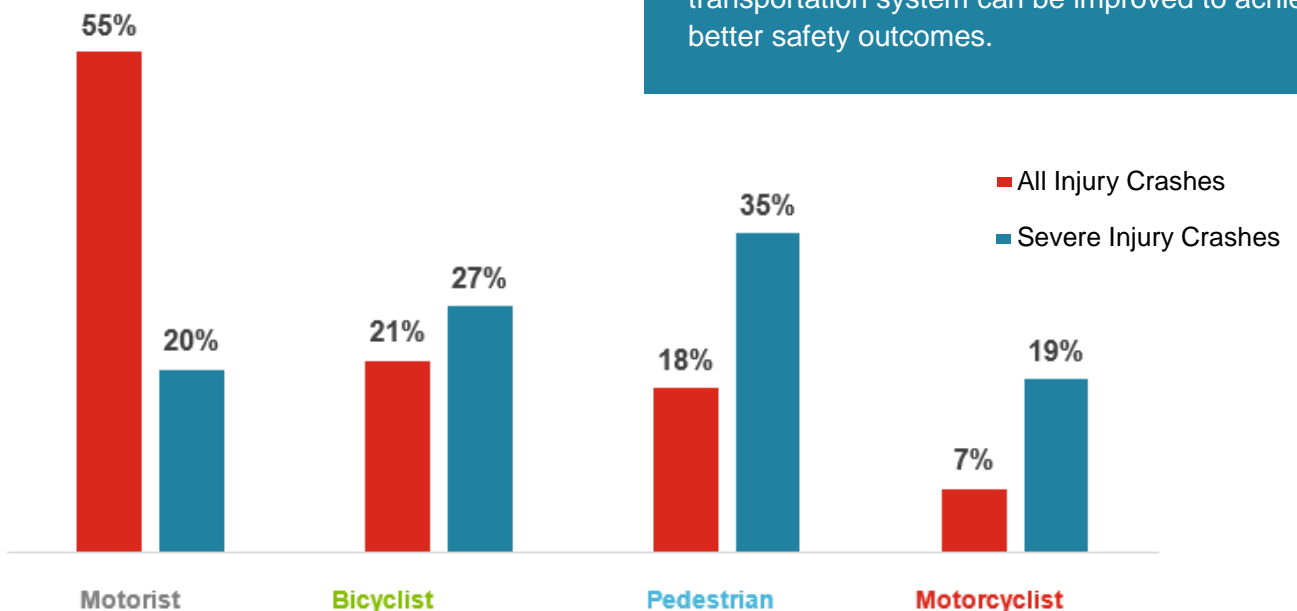


Figure 2. All Injury Crashes and Severe Injury Crashes by Mode

Source: Statewide Integrated Traffic Records System (2009-2018)

Crash Data Limitations

The crash analysis in this Plan only includes police-reported crashes. This means analysis may not reflect crashes involving someone who is uncomfortable reporting to or interacting with police, or who did not have the time or motivation to report.

Also, crash data does not capture situations where there was nearly a crash, but no crash occurred. These “near miss” situations are not crashes but they can make people feel unsafe or uncomfortable traveling on the roadway.

While police-reported crash data is known to be an underrepresentation of crashes, it is the most complete data source available and likely captures *most* crashes, especially those resulting in a death or life-changing injury. When combined with public and stakeholder input, crash analysis offers valuable insight into how the design and operation of the transportation system can be improved to achieve better safety outcomes.

41% of severe crashes occurred in a Socially Vulnerable Community while only 30% of Alameda's roadways are within a Socially Vulnerable Community.

Crashes Compared to Areas of High Social Vulnerability

Crash Analysis, 2009-2018 Data
City of Alameda

Crashes in Areas with High Social Vulnerability

- Severe Crash
- Non-severe Crash

Other Crashes

- Severe Crash
- Non-Severe Crash

- Highest and High Social Vulnerability
- Hospital
- Shopping and Business
- Parks
- Future Parks
- Schools and Libraries
- Municipal and Other

0 0.5 1 mi



This analysis was normalized by the mileage of roadways in Socially Vulnerable Areas compared to the mileage outside of these areas. Socially Vulnerable Communities include those categorized as "High" or "Highest" in the Social Vulnerability Assessment completed for the City of Alameda's *Climate Action and Resiliency Plan* (2019).

DANGEROUS BEHAVIORS

Crash data includes information about actions and behaviors that may have contributed to a crash. Patterns of behavior are studied because a Vision Zero approach acknowledges and seeks to account for user error on our roadways. The crash analysis showed that in Alameda, certain behaviors are strongly associated with all crashes and some with severe crashes in particular. Alameda can take a

larger step towards reducing traffic-related injuries and deaths by focusing on strategies that will mitigate the impacts of these top dangerous behaviors. Reducing instances of these top dangerous behaviors will require everyone to do their part to walk, bike, ride, wheel, and drive safely and watch out for vulnerable road users.

Four dangerous driver behaviors are most common among ALL crashes in Alameda: failure to yield to other motorists or pedestrians, unsafe speed, and improper turning.

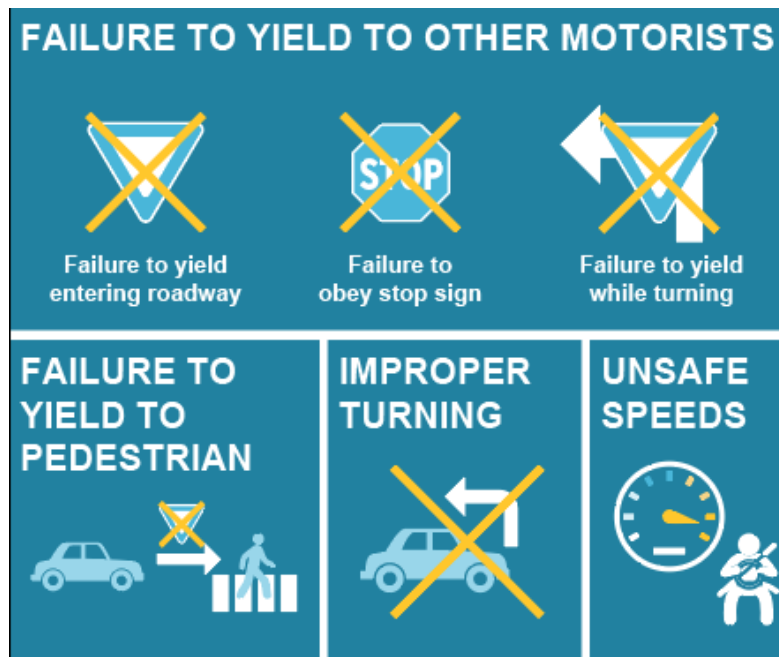


Figure 3. Top Four Behaviors Associated with All Crashes

Source: Statewide Integrated Traffic Records System (2009-2018)

The top two dangerous behaviors associated with SEVERE crashes are failure to yield to pedestrians and unsafe speed.

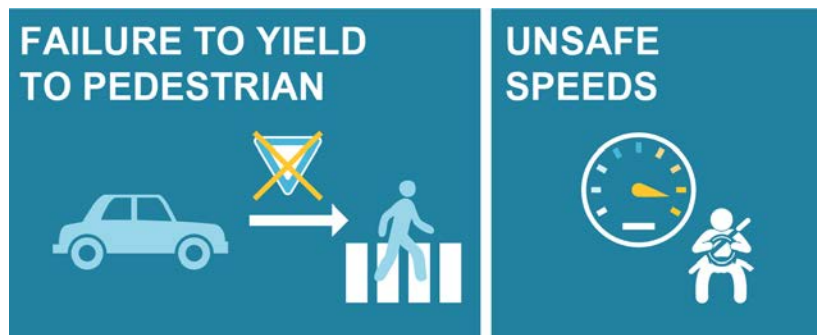


Figure 4. Top Two Behaviors Associated with Severe Crashes

Source: Statewide Integrated Traffic Records System (2009-2018)

ALAMEDA VISION ZERO ACTION PLAN

Among pedestrian crashes, the most common behavior leading to crashes was improper yielding, most frequently by drivers. In 55 percent of pedestrian crashes, the driver failed to yield to a pedestrian (either at a marked or unmarked crosswalk), and in 20 percent of pedestrian crashes, reports documented that a pedestrian failed to yield right of way to a driver. Pedestrians are noted as failing to yield when they cross outside of a legal crosswalk or where traffic controls indicated their responsibility to yield.⁴ People walking may be more likely to cross outside of a legal crosswalk along streets with long block lengths where there are few designated crossings.

Bicycle crashes are linked to a relatively wide range of behaviors; however, improper yielding (by both drivers and bicyclists) and improper turning were the most frequently cited traffic violations and were associated with 27 percent and 14 percent of bicycle crashes, respectively.

A few types of motorist, bicyclist, and pedestrian movements are associated with severe crashes in Alameda. The most common crash types vary by roadway user.

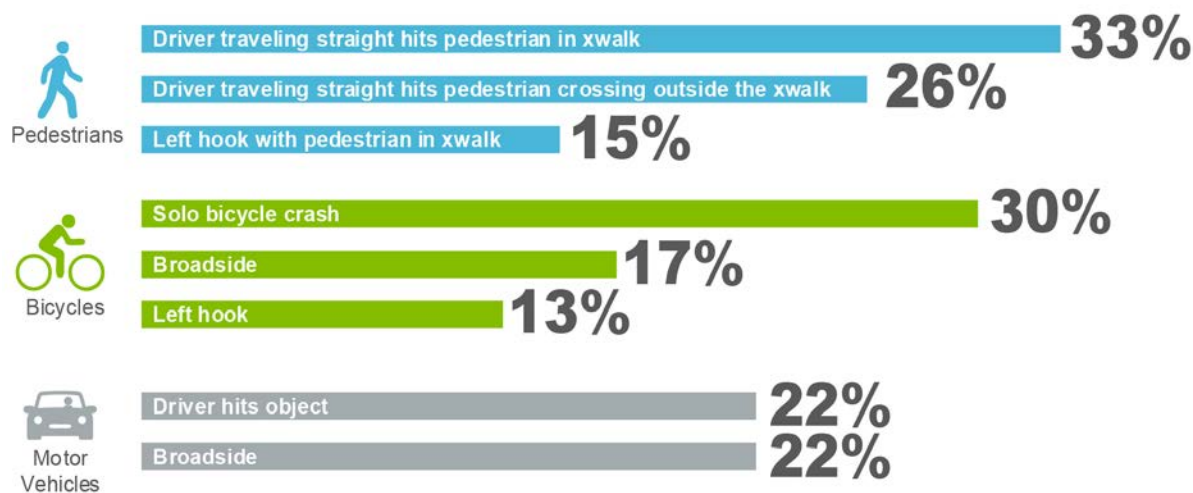


Figure 5. Most Common Road User Movements Associated with Severe Crashes

Source: Statewide Integrated Traffic Records System (2009-2018)

Broadside = T-bone crash where both road users are traveling straight in perpendicular travel paths

Left hook = one road user is traveling straight, the other is turning left



63% of crashes involving younger victims (ages 18 or younger) occurred within ¼ mile of a school while only 38% of Alameda's streets are within a ¼ mile of a school.



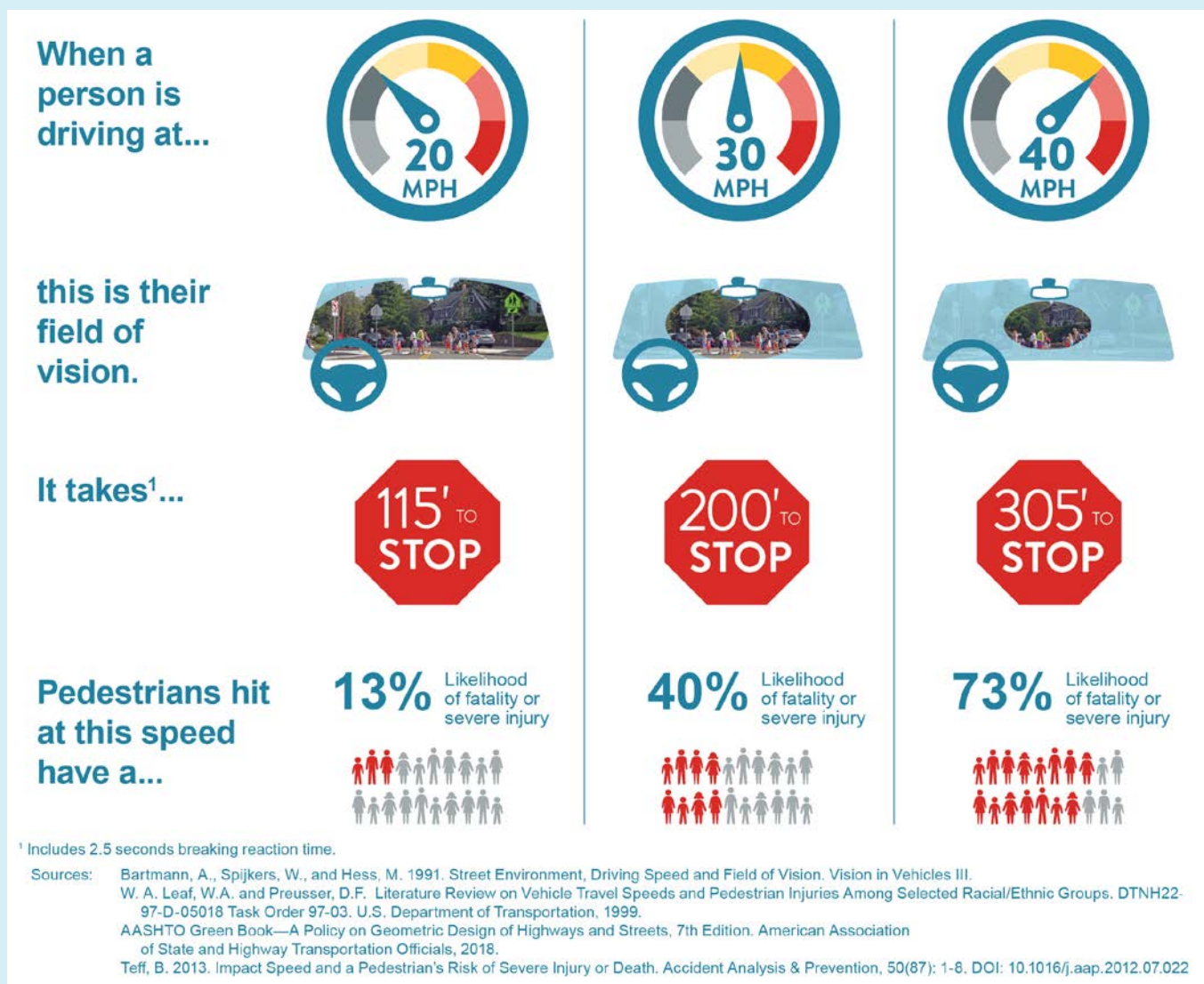
A disproportionate share of severe crashes occurred during dark conditions (with streetlights present). This trend was most pronounced among pedestrian crashes.

⁴ Drivers are required to yield to pedestrians at all legal crosswalks. According to the California Vehicle Code, all intersections, and any mid-block locations with crosswalk markings are considered legal

crosswalks. Intersection crossings that do not have marked crosswalks are still legal crosswalks. California Vehicle Code, Division 11, Chapter 5, 21950.

SPEED MATTERS

As shown in Figure 3 and Figure 4, speeding was among the top factors associated with all crashes and severe crashes in Alameda. It was associated with 26 percent of automobile-automobile crashes and 35 percent of motorcycle-involved crashes. While *unsafe speed* was only noted as a factor in a small share of crashes involving bicyclists and pedestrians, all travel at *higher* speeds has a direct influence on road user safety. Speed impacts the ability of road users to avoid a crash and impacts victim injury severity if a crash occurs. The impacts are especially significant for crashes between motor vehicles and pedestrians or bicyclists. The information presented in the image below shows that as speed increases, even by just a small increment, a driver's field of vision decreases, and the distance and time required to stop and avoid a crash increases but is less likely to be available. Dropping speeds only 10 miles per hour reduces the risk of serious injuries and fatalities by more than half. The speed limit on most Alameda streets is 25 miles per hour (mph).



STREET DESIGN IMPACTS

One of the core tenets of Vision Zero is designing streets that are forgiving. While it is important for all road users to travel safely and follow the law, Alameda's streets should be designed so that a mistake does not cause a life-changing injury or death. The crash analysis indicates that certain locations are associated with a higher share of crashes than others. Implementing evidence-based design improvements at locations associated with a higher number of crashes and identifying the common design elements of these locations can help Alameda reduce the likelihood and severity of crashes that occur.

The vast majority of all crashes and severe crashes occurred at intersections, specifically unsignalized intersections. Data shows that people riding bikes are particularly vulnerable at unsignalized intersections as they are overrepresented in severe crashes at these locations relative to other road users. Additionally, public input indicated that unsignalized intersections had a higher share of near misses compared to signalized intersections or non-intersection locations.

However, a disproportionate share of crashes (and severe crashes) among all modes occurred at signals: nearly 22 percent of crashes occurred at signalized intersections and less than seven percent of intersections in Alameda are signalized. Addressing high-crash locations in Alameda will require safety solutions at both signalized and unsignalized intersections.

60% of all crashes and 62% of severe crashes occurred on arterials.

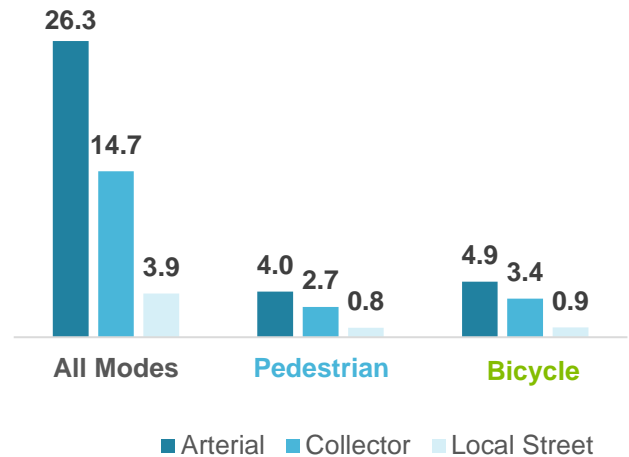


Figure 6. Number of Crashes Per Mile
Source: Statewide Integrated Traffic Records System (2009-2018)

Arterial streets are disproportionately dangerous for all road users. These types of streets have higher motor vehicle volumes than local streets, and often also have more travel lanes; examples of arterial streets include Park Street, Lincoln Avenue, and Otis Drive. These streets have a higher share of pedestrian and bicycle crashes in terms of frequency and severity on a per-mile basis. According to public input, these roadways also had a higher share of near misses (also called close calls) compared to local streets.

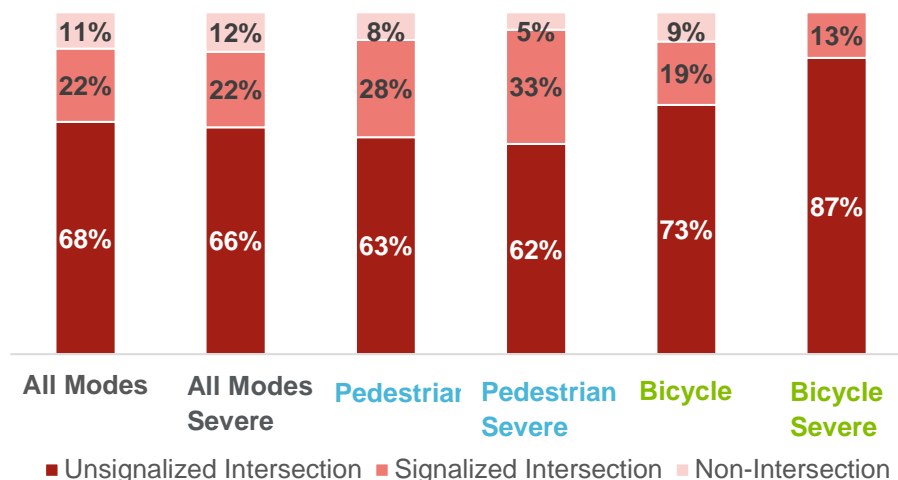


Figure 7. Location of Crashes by Mode for All Crashes and Fatal and Life-changing Injury Crashes
Source: Statewide Integrated Traffic Records System (2009-2018)

HIGH INJURY CORRIDORS

The City conducted an additional spatial analysis of crash data to identify the most dangerous streets in Alameda. These corridors, referred to as high injury corridors, were identified by selecting the streets with the highest crash densities and weighting crashes by severity. Crashes that resulted in a fatal or life-altering injury received a higher weight than other injury crashes. The crash data used for the analysis includes crashes involving all road users.

The City will use the high injury corridors to allocate funds for capital improvement projects and prioritize other traffic safety efforts to ensure efficient use of City resources. Several of the actions identified in this Vision Zero Action Plan build off of the high injury corridors analysis. By focusing on the most dangerous streets, the City can focus limited funding and staff time where they can have the biggest impact on traffic safety.



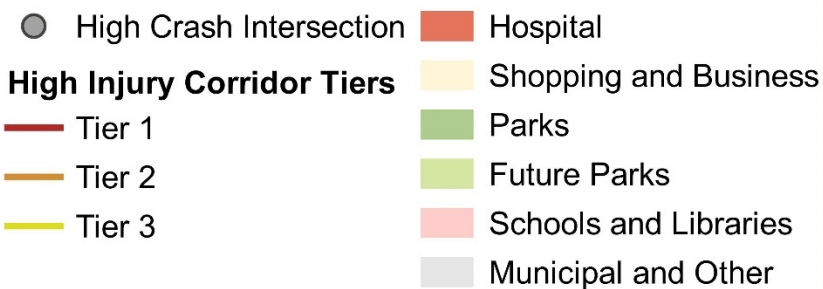
Photo credit: Maurice Ramirez

73% of crashes occurred along
20% of Alameda's roadways.

The high injury corridors map is a useful tool for focusing design improvements
and other roadway safety strategies to where they are likely to have the largest
impact on improving safety for all users.

High Crash Intersections and High Injury Corridors - All Modes

Crash Analysis, 2009-2018 Data
City of Alameda

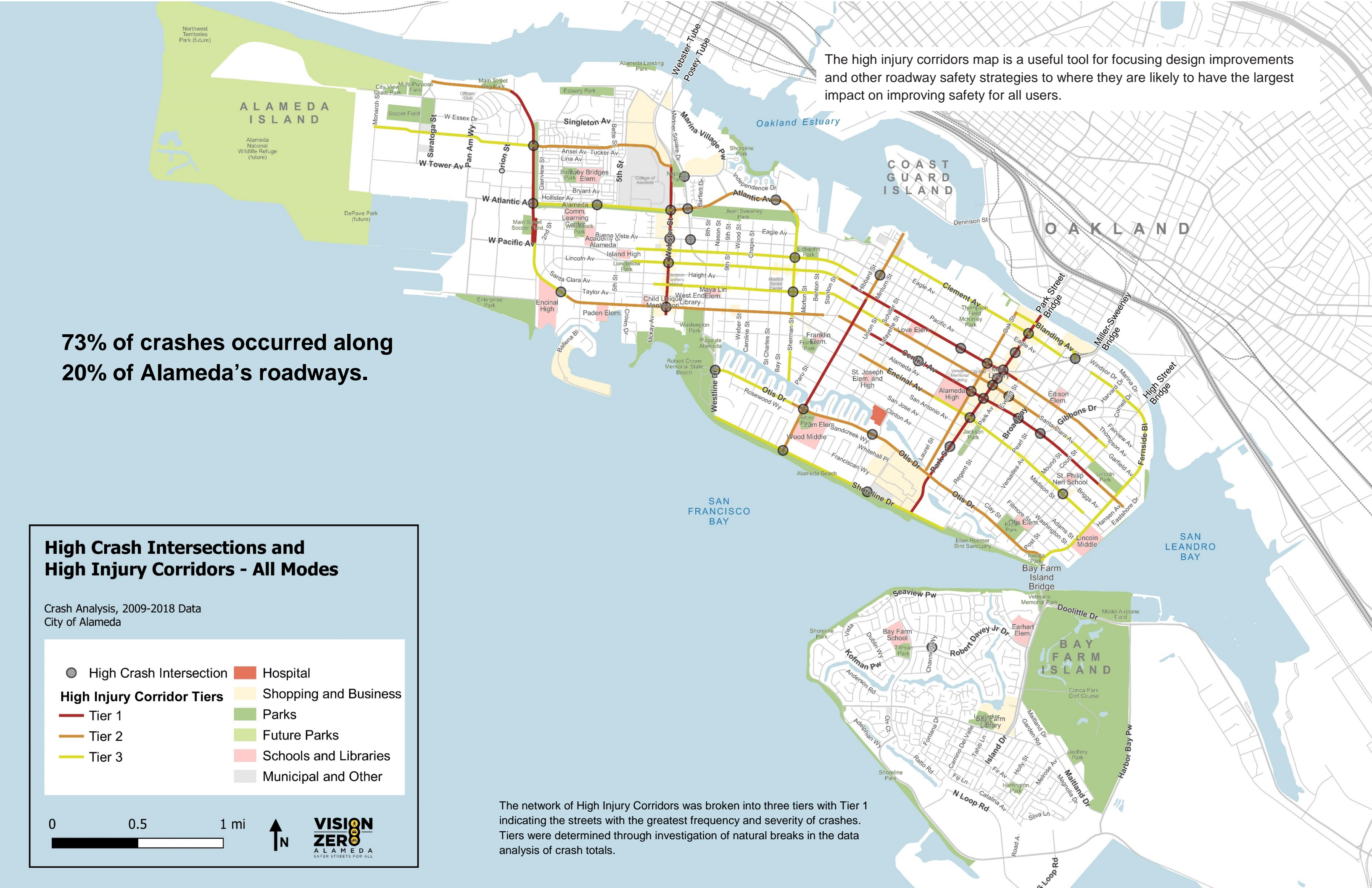


0 0.5 1 mi



**VISION
ZER**
ALAMEDA
SAFER STREETS FOR ALL

The network of High Injury Corridors was broken into three tiers with Tier 1 indicating the streets with the greatest frequency and severity of crashes. Tiers were determined through investigation of natural breaks in the data analysis of crash totals.



This map presents the severe injury and fatal crashes that were weighted higher than less severe crashes and helped identify the High Injury Corridors and High Injury Intersections.

Severe Crashes

Crash Analysis, 2009-2018 Data
City of Alameda

Severe Crashes (fatal and life altering injuries)

Hospital

Shopping and Business

Parks

Future Parks

Schools and Libraries

Municipal and Other

0

0.5

1 mi

N

VISION ZERO

ALAMEDA

SAFER STREETS FOR ALL

4. MAKING OUR STREETS SAFER

Alameda's vision to eliminate traffic deaths and life-changing injuries by 2035 is bold and ambitious, and achieving it will require bold and ambitious actions by everyone in Alameda.

Traffic safety in Alameda affects everyone and it will take a concerted effort from everyone to achieve.

The actions listed below were developed based on best practices from Vision Zero planning efforts in other cities, feedback received from the Vision Zero Task Force, understanding of City of Alameda purview and capabilities, the 10-year Alameda crash analysis, and public input on draft safety programs from the Active Transportation Plan recommendations. The actions reflect a data-driven approach and target location, behavior, and population trends identified through the crash analysis presented in Appendix F: Detailed Crash Analysis and summarized in the previous section.

WHAT IS OUR TIMELINE?

While some actions can be achieved in the short term, others will necessarily take longer. The timeframes associated with each action are divided into three categories, including:

- Short term (1-2 years)
- Medium term (3-5 years)
- Long term (5+ years)

These timeframes align with the City's two-year budget cycle: short-term actions will start within this budget cycle, and medium-term will be in the next. Long-term actions will be re-evaluated with the update of this plan in five years based on progress to date and any changes in crash trends. Also, some actions will have a defined starting and ending point, while others may be started in the short term but should be conducted on an ongoing basis; these types of actions are noted by the phrase "Ongoing" in the tables below.

ACTIONS THAT PRIORITIZE STREET DESIGN AND EDUCATION

The City of Alameda and the Vision Zero Task Force aim to **prioritize actions that rely on street design changes, followed by education, to improve traffic safety**. The goal is to set people up for success by creating an environment where it feels natural to comply with traffic safety laws, both due to street design and the behavior of other drivers. Prioritizing street design interventions over enforcement measures aligns with recommendations from Alameda's Community-Led Committee on Police Reform and Racial Justice.⁵⁵ For example, installing design treatments like speed humps has been shown to reduce motor vehicle speeds by more than 5 mph and can reduce the risk of crashes by 25 percent. Treatments like speed humps have

⁵⁵ See recommendations from the Subcommittee on Unbundling Services Currently Delivered by the Police Department: <https://www.alamedaca.gov/files/assets/public/alameda-pio/unbundling-sub-committee-final-report.pdf>

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also been found to be more effective at reducing speeds than enforcement strategies.⁶

The City recognizes that redesigning streets will take time, and, even then, some road users will still take reckless risks. Per the guidance of the Vision Zero Task Force, police enforcement plays a role in this Plan, but focuses on dangerous behaviors associated with severe crashes that have been identified through crash analysis, such as speeding and failure to yield to pedestrians.

The Task Force also chose to include actions to mitigate the effects of enforcement measures on equity priority communities, and these align with recommendations from the Committee on Police

Reform and Racial Justice. Action 1.5 supports an income-based graduated traffic fine structure, which complements recommendations from the Review of Laws that Criminalize Survival Subcommittee.⁷ Action 4.11 champions automated speed camera legislation that would enable speed enforcement without direct police involvement, which was also recommended by the Subcommittee on Unbundling Services Currently Delivered by the Police Department.

GOAL 1: EQUITY

Ensure that the Vision Zero Policy and Action Plan are implemented equitably and fairly for all people.

KEY PARTNERS

*Transportation Planning, Public Works, Community-Based Organizations, Police, Fire, Alameda County Public Health, Public Information Officer, Sustainability and Resilience Manager, Commission on Persons with Disabilities, Transportation Commission.*⁸



⁶ Sanders, S., Judelman, B., and Schooley S. 2018. NCHRP Report 20-05: Pedestrian Safety Relative to Traffic Speed Management. Transportation Research Board of the National Academies of Science, Washington, D.C.

⁷ Recommendations from the Review of Laws that Criminalize Survival Subcommittee:

<https://www.alamedaca.gov/files/assets/public/alameda-pio/final-recommendations-laws-that-criminalize-survival.pdf>

⁸ The Transportation Commission is the official link to Council for oversight of implementing the Vision Zero policy and are included as a partner for implementing all actions.

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Goal 1		Lead
Short-term Actions		
1.1 ⁹	Use the City's most current Socially Vulnerable Populations map (or other disadvantaged community indicators) to prioritize investments, while also engaging with equity priority communities or community-based organizations (CBOs) representing disadvantaged groups. (Ongoing)	Transportation Planning, Public Works
1.2	Form a Vision Zero Advisory Committee to provide guidance on Vision Zero Action Plan implementation. In addition to multidisciplinary City and partner agency staff members, work to include community members who can speak from the perspectives of equity priority communities, vulnerable road users, youth, older adults, parents of school-age children, local businesses, and traffic violence victim families. Offer seats to representatives of the Commission on Persons with Disabilities, the Social Services and Human Relations Board, and the Transportation Commission. Provide compensation to community members who need it in order to participate. (Ongoing)	Transportation Planning, Vision Zero Advisory Committee
1.3	Ensure that community engagement efforts include tailored messages for vulnerable road users and target all the travel modes people use (walking, biking, wheeling, driving, etc.). Make outreach materials available in accessible formats and multiple languages. (Ongoing)	Transportation Planning, Public Engagement Officer
1.4	Present annual Vision Zero Status Reports to groups representing equity priority communities. Solicit feedback on the Report's equity analysis, including equity of enforcement-related actions. (Ongoing)	Transportation Planning, Vision Zero Task Force
1.5	Through the City Council's legislative agenda, advocate for an income-based graduated traffic fine structure at the state level, so they do not disproportionately impact people with lower incomes. Evaluate whether the City can play a role making sure that Alameda County's program discounting traffic citation fines for people with low incomes is working for Alamedans. (Ongoing)	Transportation Planning, City Manager's Office
Medium-term Actions		
1.6	Review and consider adding select visible disability statuses to the crash data form. Review Alameda Police Department's current crash data form and study any existing best practices for this. If feasible and prudent, add this field to the crash data form.	Transportation Planning, Police
1.7	With every five-year Action Plan update, use focus groups to develop a nuanced understanding of Alamedans' roadway safety trends and determine whether trends or safety concerns vary across groups, particularly equity priority communities and vulnerable road users. If budget is available, consider using polling as well. (Ongoing)	Transportation Planning, Vision Zero Task Force
1.8	Revive the citation diversion program for traffic safety violations for bicyclists and consider extending it to pedestrians.	Transportation Planning

⁹ Goals are numbered for tracking purposes, but the numbers do not reflect levels of importance.

GOAL 2: INSTITUTIONAL COMMITMENT

Create an institutional commitment to Vision Zero throughout City government.

KEY PARTNERS

Transportation Planning, Public Works, Human Resources, Police, Fire, Mayor and City Council, Community Development, City Manager's Office, Recreation and Parks, Public Information Officer, Transportation Commission.

Goal 2		Lead
Short-term Actions		
2.1	Through the City Council budget process, propose ongoing, dedicated funding and staffing for Vision Zero implementation and coordination. (Ongoing)	City Manager's Office
2.2	Continue holding internal, multi-departmental Vision Zero Implementation Team meetings to implement the Vision Zero Action Plan, and coordinate and prioritize traffic safety efforts. (Ongoing)	Transportation Planning
2.3	Inform City staff and elected officials about Vision Zero and preferred language about crashes (e.g., "crash" instead of "accident"). Create a one-pager for new City Councilmembers. (Ongoing)	City Manager's Office, Transportation Planning
2.4	Provide educational and discussion sessions on Vision Zero concepts and best practices to staff who review, design, and implement projects and programs, to integrate Vision Zero principles into their work. (Ongoing)	Public Works, Transportation Planning
2.5	Update existing Vehicle and Equipment Use Maintenance Policy to include City driver behavior expectations related to Vision Zero traffic safety.	Human Resources/Safety
2.6	Require Alameda Police officers to participate in the NHTSA's pedestrian training for law enforcement and consider integrating Vision Zero into APD's training for new officers. (Ongoing)	Police
2.7	Require staff who drive for work to review the Vehicle and Equipment Use Maintenance Policy before driving a City vehicle or driving on City business for the first time. Create a flyer highlighting the safe driving elements of this policy and require departments to post it near vehicle sign-out sheets. (Ongoing)	Transportation Planning, Human Resources/Safety
2.8	Integrate Vision Zero traffic safety into existing trainings for commercial drivers. (Ongoing)	Human Resources/Safety
2.9	Design and place Vision Zero bumper stickers on all City vehicles that spread safety messages. (Ongoing)	Public Information Officer, Transportation Planning

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Goal 2		Lead
Medium-term Actions		
2.10	Integrate Vision Zero traffic safety awareness and education into process of contracting with vendors who provide city services and drive on Alameda's streets regularly, e.g., maintenance, etc. (Ongoing)	Public Works
2.11	Establish a policy calling for safety features on new City vehicles, as well as phased retrofits to existing vehicles, as feasible. This could include pedestrian/obstacle detection and speed tracking in vehicles of all sizes, as well as large vehicle designs or features that reduce risk of death in collisions with pedestrians and bicyclists.	Fleet Manager, Transportation Planning
2.12	Develop a network of City staff who pledge to support Vision Zero through the dissemination of safety and educational information to their colleagues. (Ongoing)	Transportation Planning
Long-term Actions		
2.13	Update the Vision Zero Action Plan every five years. Revise actions to reflect current collision trends, integrate technological advancements and changes in best practices as needed. (Ongoing)	Transportation Planning



GOAL 3: COMMUNITY SUPPORT

Foster community support and responsibility for the safety of people traveling within Alameda.

KEY PARTNERS

Transportation Planning, Public Information Officer, Public Works, Sustainability and Resilience Manager, Alameda Unified School District, Alameda County Public Health, Bike Walk Alameda, business groups, Commission on Persons with Disabilities, Transportation Commission.

Goal 3		Lead
Short-term Actions		
3.1	Develop a citywide safety campaign, based on the City's collision data, to share information with the community about traffic safety for all modes and to increase awareness about Vision Zero. Use social media, yard signs, billboards, PSAs, and giveaways to promote safe roadway behavior. Target messaging (such as billboards, signs, or murals) at access points into Alameda from Oakland. Partner with entities like large employers, the Transportation Management Association, and College of Alameda for distribution of materials to employees and students. Focus messaging on the top dangerous behaviors to avoid based on crash data. Include messaging that communicates an individual and shared responsibility to keep Alameda's roadways safe. (Ongoing)	Transportation Planning, Public Information Officer
3.2	Develop and distribute educational materials and/or videos demonstrating how to navigate and interact with newer active transportation facilities (e.g. bike boxes, Pedestrian Hybrid Beacons, separated bike lanes, etc.) Include information about the purpose and goals of this infrastructure. (Ongoing)	Transportation Planning
3.3	In addition to safety campaigns, conduct communications explaining the City's Vision Zero program, prioritization, data, plans, and progress. Maintain a City webpage and a Vision Zero mailing list. Send periodic updates to the mailing list. (Ongoing)	Transportation Planning
3.4	Share preferred language usage for crashes (e.g., "crash" instead of "accident"), with media outlets active in Alameda to encourage balanced reporting of crash situations. (Ongoing)	Vision Zero Task Force

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Goal 3		Lead
3.5	Develop and follow a crash communications protocol to provide transparent public communications about fatal and severe injury crashes and to provide guidance on language usage (e.g., “crash” instead of “accident”. Assess protocol’s effectiveness as part of the annual Vision Zero Status Report and change as needed. (Ongoing)	Transportation Planning
3.6	Encourage the Alameda Unified School District to adopt a policy that supports incorporating traffic safety education into curriculum and the implementation of Safe Routes to Schools-supportive infrastructure.	Vision Zero Task Force, Alameda Unified School District



Photo credit: Maurice Ramirez

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Goal 3		Lead
Medium-term Actions		
3.7	Incorporate roadway safety education activities into city-sponsored events, as appropriate. (Ongoing)	Transportation Planning
3.8	Develop campaign materials regarding impaired driving for distribution at Alameda's bars and its wineries, distilleries, and breweries that offer tastings. Work with businesses and business districts to develop.	Public Information Officer
3.9	Hold an annual Traffic Safety Open House that includes presentations from City staff and time for public comment and discussion. Consider aligning this with the annual Vision Zero Status Report. Optionally, hold an additional two to three virtual town halls to update public on traffic safety activities. (Ongoing)	Vision Zero Task Force
3.10	Provide a comprehensive pedestrian safety program to all public and private schools, targeted to appropriate grade level. (Ongoing)	Alameda Unified School District, Transportation Planning
3.11	Provide a comprehensive bicycle safety education program to all public and private schools, targeted to 5 th graders. (Ongoing)	Alameda Unified School District, Transportation Planning
Long-term Actions		
3.12	Partner with local organizations to create a neighborhood safety ambassador program, traffic safety education kit, and other tools that community groups, schools, business groups, and others can use to promote road safety awareness and Vision Zero. (Ongoing)	Transportation Planning Unit, Public Information Officer



GOAL 4: DECREASE SPEEDS AND CRASHES

Reduce motor vehicle speeds and decrease collisions between people driving, riding a motorcycle, biking, walking, or wheeling.

KEY PARTNERS

Transportation Planning, Public Works, Police, Public Information Officer, Sustainability and Resilience Manager, Alameda Unified School District, Transportation Commission.

Goal 4		Lead
Short-term Actions		
4.1	Prioritize street safety investments on high injury corridors. Treatment locations should be guided by findings from crash analyses and supplemented by community feedback. (Ongoing)	Public Works, Transportation Planning
4.2	Create traffic engineering project checklists to use during design, review, and/or implementation that include specific safety and equity considerations.	Public Works, Transportation Planning
4.3	Use Federal Highway Administration crash reduction factors to decide on best engineering interventions at locations chosen for improvements. (Ongoing)	Public Works, Transportation Planning
4.4	Focus enforcement on dangerous moving violations, including speeding, reckless driving, failure to yield, and any other moving violations associated with severe crashes as identified through crash analysis. (Ongoing)	Police
4.5	Conduct targeted enforcement actions along high injury corridors, in school zones, and near areas with concentrations of restaurant and bar establishments. (Ongoing)	Police
4.6	Conduct citywide intersection study to determine suitability for roundabouts to increase safety by slowing vehicles, eliminating broadside crashes, and decreasing conflicts.	Transportation Planning
4.7	Deploy speed reader trailers and use other messaging devices to discourage speeding and increase traffic law compliance along high injury corridors and other arterials. Use speed reader trailers or other tools to track motor vehicle travel speeds, including along high injury corridors. (Ongoing)	Police
4.8	Aid Alameda Unified School District and other schools in developing and implementing plans to organize and standardize drop-off/pick-up at all public and private schools.	Alameda Unified School District, Transportation Planning, Public Works

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Goal 4		Lead
Medium-term Actions		
4.9	Utilize the high injury corridors analysis in project selection for the City's transportation infrastructure maintenance, project development and implementation.	Public Works, Transportation Planning
4.10	Conduct a best practice scan for guidance on infrastructure rapid response programs that respond to fatal and severe injury crash locations with infrastructure recommendations, and create a program reflecting best practices.	Transportation Planning Unit
4.11	Through the City Council legislative agenda, support state legislation to allow the use of automated enforcement cameras for speed violations.	City Manager's Office, Transportation Planning
4.12	Conduct studies at signalized intersections along high injury corridors to assess whether signalization strategies such as protected phasing and leading pedestrian/bicycle intervals could be accommodated.	Public Works
4.13	Create a program to improve bicycle and pedestrian crossings of arterials and include guidance and thresholds for crossing improvements at unsignalized and signalized crossings.	Public Works, Transportation Planning
4.14	Implement School Zone program with 15 or 20 mph speed limits on as many streets as possible per the provisions of CVC 22358.4.	Public Works, Transportation Planning Unit

Portland's Fixed Speed Safety Camera Evaluation

The City of Portland, Oregon is working to support state legislation to allow for expanded use of fixed speed cameras. In 2016 - 2018, as part of the City's Vision Zero efforts, the City installed speed safety cameras on four high-crash corridors. A recent evaluation study indicates that speed safety cameras have dramatically reduced speeding along all four corridors. Within a few months of installing the cameras, speeding (1-10 mph over the speed limit) decreased by an average of 61% and top-end speeding (11 mph or more over the speed limit) decreased by 87%. Speed studies completed two and four years after the installation of the cameras indicate that overall speeding dropped by an average of 71% and top-end speeding decreased by 94%, compared with the period before the cameras were in place.

Portland has seen strong public support for speed safety cameras as a cost-effective approach to improving traffic safety.

Source: Portland Bureau of Transportation

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Goal 4		Lead
Long-term Actions		
4.15	Conduct school safety assessments at all public and private schools, develop implementation plans for improvements up to one quarter mile from the schools. Implement the plans focusing first on the improvements within 600 feet of the schools. (Ongoing)	Alameda County Safe Routes to School, Transportation Planning, Public Works,
4.16	Prioritize high injury corridors and other arterials for lighting improvements, such as added lighting at signalized and unsignalized crossings, in addition to along roadway corridors. (Ongoing)	Public Works
4.17	Through the City Council legislative agenda, support state legislation to develop a new approach to setting speed limits, including that which would provide more control for local jurisdictions and allow for greater flexibility of speed limit setting in urban areas.	City Manager's Office, Transportation Planning



GOAL 5: IMPROVE DATA

Improve the use, collection, and organization of data to allow for evaluation and reporting that fosters transparency and creates trust with all stakeholders and residents.

KEY PARTNERS

Transportation Planning, Public Works, Police, Alameda County Public Health, local hospitals, trauma centers, and emergency medical services, Transportation Commission.

Goal 5		Lead
Short-term Actions		
5.1	Provide an annual Vision Zero Status Report to the Transportation Commission, City Council, and the public. (Ongoing)	Transportation Planning
5.2	Update Police Department crash data database configuration to allow Public Works and Transportation Planning to run up-to-date crash reports.	Police, Transportation Planning
Medium-term Actions		
5.3	Document the impacts of Vision Zero actions and infrastructure projects on roadway behaviors. Conduct before-and-after studies of Vision Zero actions, including safety projects installed along high injury corridors. (Ongoing)	Public Works, Transportation Planning
5.4	Create staffing roles to ensure ongoing updates, additions, and improvements to the spatial databases of street design features and traffic safety projects. Integrate traffic volume and speed data into the spatial databases as available.	Public Works
5.5	Develop methods to easily and equitably collect data on unreported collisions and near-misses, to the extent feasible.	Transportation Planning
5.6	Encourage Alameda County Public Health to create a crash database that builds upon compiled state data (SWITRS) with data from hospital and emergency medical services. Support this effort by also providing up-to-date police-reported crash data to avoid the SWITRS time lag.	Transportation Planning, Alameda County Public Health
5.7	With every five-year Action Plan update, generate new High Injury Corridor maps and conduct a major crash data analysis per behaviors, movement types, violations, alcohol-involved crashes, age, mode, and more.	Transportation Planning

5. PERFORMANCE MEASURES

To track progress towards achieving Plan goals, the City of Alameda and the Vision Zero Task Force identified ten performance measures listed below. In addition, staff will track progress on each of the 55 actions. The action progress tracking table is in Appendix G.

Staff will report on the performance measures and progress on actions annually between five-year Plan

updates. Performance measures can be used by City staff and community members to help keep Alameda on track to meet its Vision Zero goals. The performance measures can also provide insight into which actions are working well and which ones may need adjustment or additional support.

Performance measures to track crashes and injuries

1. Number of injury crashes, by mode
2. Number of severe crashes, by mode
3. Number of people who died in crashes, by mode
4. Number of people who suffered severe injuries, by mode
5. Number of children in crashes and severe crashes
6. Number of older adults in crashes and severe crashes

Performance measures to track street design projects to improve roadway safety

7. Number of safety improvement projects¹⁰
 - a. Percent installed in socially vulnerable areas
 - b. Percent installed along high injury corridors
 - c. Percent installed within 600' of schools

Performance measures to track police enforcement prioritization

8. Percentage of traffic enforcement actions associated with dangerous moving violations, including speeding, reckless driving, failure to yield, and any other moving violations associated with severe crashes as identified through crash analysis.
9. Percentage of traffic enforcement actions along high injury corridors.
10. Traffic stops by race.¹¹



Photo credit: Maurice Ramirez

¹⁰ Safety improvement projects will include the number of new high-visibility crosswalks, daylit intersections, curb bulb-outs, rapid rectangular flashing beacons, pedestrian crossing islands, intersections with traffic signal safety improvements, traffic circles, and roundabouts, in addition to miles of new bikeways and roadway reconfigurations. The list can expand to include other Federal Highway Administration proven countermeasures, National Association of City Transportation Officials safety recommendations, or similar.

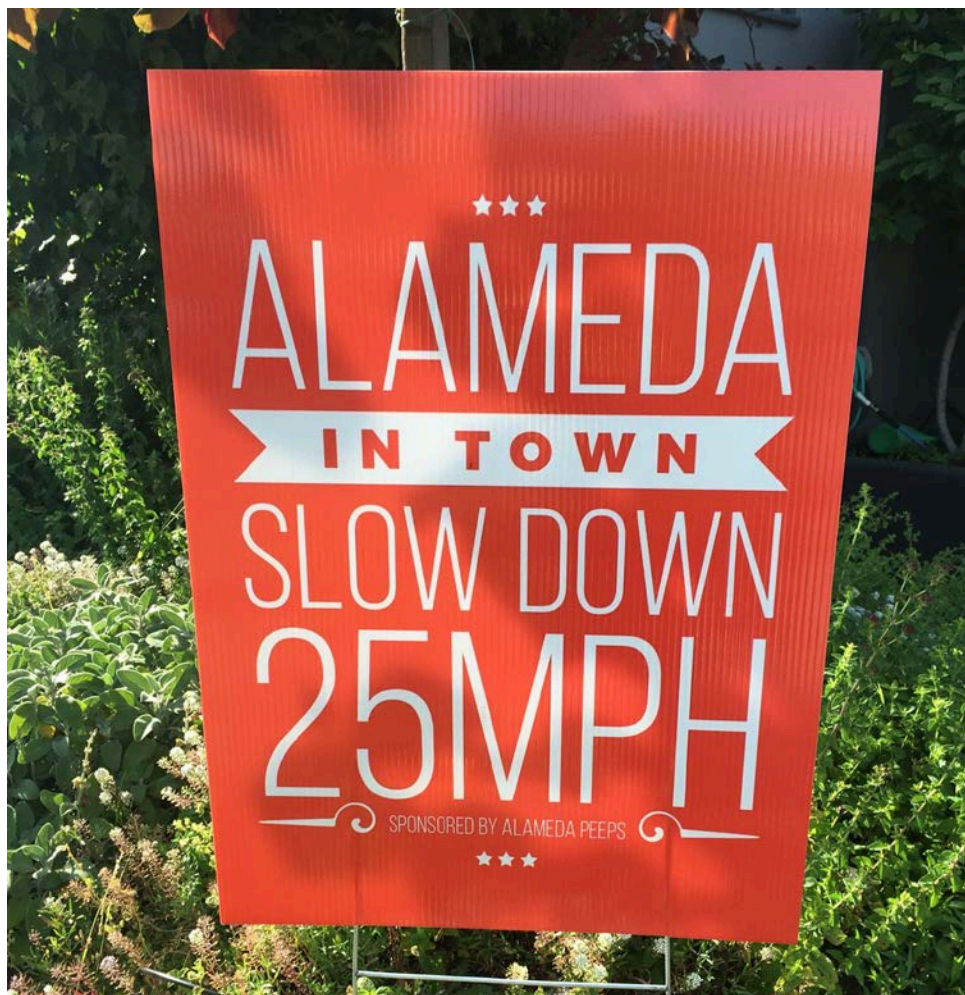
¹¹ The Alameda Police Department will be required to track traffic stops by race beginning in 2022 and the data will be available for tracking in 2023. This effort is part of California's Racial Identity and Profiling Act.

6. NEXT STEPS

City staff, partner implementers, stakeholders, and residents should acknowledge that Vision Zero is a long-term strategy. The City and community have already started acting on shared values of traffic safety, but other Vision Zero communities in the U.S. and around the world have found that improvement may not come quickly and may not be linear. It is critical that the City be held accountable for the outcomes identified in the performance measures, but a full picture of Vision Zero also includes recognition of actions the City is taking to reach the community's desired outcomes.

This Plan provides a framework to keep the City and partners motivated, accountable, and focused on the 19-year goal. Every crash avoided or reduced in severity represents a lifelong benefit to the individual and the community.

Alamedans like you have played an important role in advocating for safer streets and helped encourage the City to adopt a Vision Zero Policy and create this Vision Zero Action Plan. Your continued support and commitment to practicing safe travel behaviors will help make Alameda's streets safer for everyone.



IMPORTANT TERMS

EQUITY PRIORITY COMMUNITIES

This Plan uses this term broadly to mean communities that are prioritized to increase equity due to experiences of racism, ableism, lack of economic resources, or similar.

EQUITY

Equity in the context of Vision Zero includes addressing social disparities in transportation systems. This can mean focusing traffic safety investments in any areas where there's been previous underinvestment related to historical redlining or other systems that segregate cities by income or race.

SOCIALLY VULNERABLE AREAS

For this Plan, this term refers to the map created as part of the social vulnerability assessment of the Alameda Climate Action and Resiliency Plan. It defined socially vulnerable areas according to 12 indicators, including percent of populations or households that are renters, very low income, people of color, and people with disabilities, limited English proficiency, and more.¹² The City will update this map as needed.

VULNERABLE ROAD USER

This refers to people who are physically vulnerable on the road because they have less crash protection than people in motor vehicles. In a crash with a car, people who are walking, wheeling, biking, or using a motorcycle are more likely to die or suffer a severely injury than those in motor vehicles. The degree of vulnerability can be compounded by age (young people or elders) or disability.

WALKING AND WHEELING

This refers to people who walk, use a mobility device (e.g., wheelchair or scooter), or use a skateboard, pedal or electric scooter, roller blades, or other similarly wheeled devices to travel.

HIGH INJURY CORRIDORS

This refers to corridors that were identified during the crash analysis as having a disproportionately high number of fatal and serious injuries. A high injury corridor map was developed by identifying the streets with the highest crash densities and weighting crashes by severity.

SEVERE CRASHES

This refers to crashes that resulted in a death or severe injury, as noted in the police report of the reporting officer.

TRAFFIC CRASH (NOT ACCIDENT)

The term "accident" implies nothing could have been done to prevent the event from happening. Traffic deaths and serious injuries are preventable incidents for which proven solutions exist and so they are crashes or collisions, not accidents

ALL AGES AND ABILITIES

This means streets, intersections and sidewalks are designed to be safe and comfortable for children, seniors, people with disabilities, and other vulnerable road users. Streets that are safe for people of all ages and abilities are safe for everyone.

¹² More information is in Appendix G of the Climate Action and Resiliency Plan: https://www.alamedaca.gov/files/sharedassets/public/public-works/climate-action-page/new-folder/final-carp-9-2019/alameda_carp_final_appendices_091119appendices.pdf

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TOOLE
DESIGN

November 3, 2021