

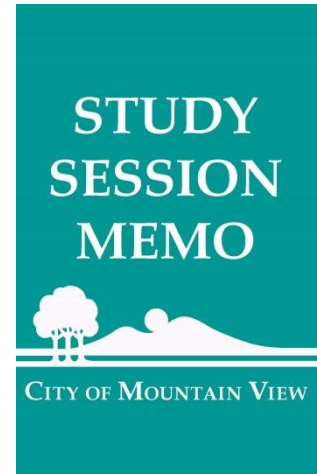
DATE: January 15, 2019

TO: Honorable Mayor and City Council

FROM: Nate Baird, Transportation Planner
Ria Hutabarat Lo, Transportation Manager
Dawn S. Cameron, Assistant Public Works Director
Michael A. Fuller, Public Works Director

VIA: Daniel H. Rich, City Manager

TITLE: **Vision Zero Policy**



PURPOSE

The purpose of this Study Session is to present initial research and analysis regarding fatal and severe injury traffic collisions that have occurred in the City of Mountain View and receive Council input on a draft Vision Zero Policy.

BACKGROUND

On April 18, 2017, the Mountain View City Council identified the adoption and implementation of a Vision Zero policy/program as a Council priority for Fiscal Years 2017-18 and 2018-19 (Council Goal 3.3). The safe accommodation of all modes and people of all abilities is also repeatedly emphasized in the City's 2030 General Plan mobility-related goals regarding complete streets, accessibility, walkability, bikeability, transit, and safe routes to school.¹

Vision Zero is an integrated set of policies, plans, programs, and approaches based on the philosophy that loss of life from traffic collisions is unacceptable and preventable. Vision Zero was pioneered in Sweden when the country adopted its Vision Zero policy in 1997. Based on this policy, the Swedish government analyzed where traffic collisions were occurring and how they could be prevented or made less severe through cross-disciplinary efforts. These efforts have had dramatic results. Traffic collision-related fatalities, which had been consistently increasing since the 1940s, dropped from more

¹ City of Mountain View 2030 General Plan Goals MOB-1 through MOB-6
<https://www.mountainview.gov/civicax/filebank/blobdload.aspx?blobid=10702>

than seven per 100,000 people in 1997 to less than three per 100,000 people in 2015.² By comparison, in 2016, the United States had a rate of 11.6 traffic collision fatalities per 100,000 people.³

Inspired by the Swedish results, local, regional, and national government agencies across the world have adopted Vision Zero policies and programs of their own. The Vision Zero Network—an organization of U.S. cities—has taken up the cause of bringing the Vision Zero approach to the United States. Locally, the Silicon Valley Bicycle Coalition and California Walks have produced a “Vision Zero Toolkit” for government agencies in Santa Clara and San Mateo Counties. These sources recommend the following components for policy/plan adoption:

- A clear goal to eliminate traffic fatalities and severe injuries;
- A public commitment to Vision Zero by elected officials;
- An adopted Action Plan;
- Engagement of multiple key departments (including traffic, police, and health);
- Community engagement (including residents and local community groups); and
- Ongoing evaluation of results.

Staff is initiating the Vision Zero process for Mountain View with a presentation of preliminary research findings and introduction of a draft Vision Zero Policy for consideration by the City Council. A Vision Zero Policy adopted by Council will achieve the first two bullets listed above by including a clear goal and a public commitment by elected officials.

The draft policy was presented to the Bicycle/Pedestrian Advisory Committee (B/PAC) on September 26, 2018. The B/PAC supported the proposed policy and provided input that has been incorporated into the draft policy. Staff also introduced the draft Vision Zero concept to the Youth Advisory Committee on October 8 and the Senior Advisory Committee on October 17 as part of a general transportation update.

² World Resources Institute (2018) Sustainable and Safe: A Vision and Guidance for Zero Road Deaths. https://wriorg.s3.amazonaws.com/s3fs-public/17_Report_Safe_Systems_final.pdf accessed 9/18/2018.

³ National Highway Transportation Safety Administration (NHTSA) as cited by the Insurance Institute for Highway Safety and Highway Loss Data Institute. <https://www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/state-by-state-overview> accessed 9/18/2018.

After the Vision Zero Policy is adopted, a Vision Zero Action Plan will be developed. The actions included in such a plan typically relate to what are known as the 7Es, which categorize the various tools for making change: Engineering, Education, Enforcement, Evaluation, Encouragement, Engagement, and Equity. A Vision Zero Action Plan for Mountain View would likely include elements or tools from all 7Es.

DISCUSSION

Preliminary Collision Research and Analysis

In the United States, Vision Zero efforts have been led by large cities like New York, Chicago, San Francisco, and Los Angeles, which made progress by focusing on interdepartmental coordination and data-based decision-making processes. These focus areas enabled the cities to achieve better communication across large, isolated departments and divisions while also prioritizing limited resources toward achieving Vision Zero goals. While these efforts provide many lessons for other jurisdictions, large cities operate in a different context than smaller, less urban communities like Mountain View.

To assist deliberations on a potential Vision Zero policy in Mountain View, staff conducted a preliminary analysis of fatal and severe-injury collisions in the City. This analysis is based on an understanding that Vision Zero approaches must be locally tailored and responsive to unique local conditions, agency strengths, opportunities, and challenges. The data provides the foundation for the Vision Zero Policy and informs the action plan by helping to determine the severity of the problem for Mountain View and to gain an understanding of the types and causes of the collisions.

Data Sources and Assumptions

A Vision Zero Policy in the City of Mountain View would focus on fatalities that occur on local streets, including those at the crossings with railroads, as well as State roads where the City has enforcement, access, or maintenance authority.

This analysis generally excludes transportation-related fatalities and severe-injury collisions that occurred on the freeways (U.S. 101, SR 85, and SR 237) because the City does not control design, access, operation, maintenance, or enforcement of these State-owned facilities. El Camino Real and Central Expressway are included in the City total, however, because the City provides enforcement, some maintenance activities, and some regulatory authority over parking and land use access along these facilities.

Collisions that occur at railroad crossings with Mountain View streets (Rengstorff Avenue and Castro Street) are not investigated or recorded by the Mountain View Police Department because they fall within the jurisdiction of the San Mateo County Sheriff Transit Police Bureau. As a result, collisions that occur at railroad crossings with local streets are not reflected in the State database for traffic collisions and were added by City staff using data from the San Mateo County Sheriff.

Where fatality rates are compared with national or international averages, freeway-related fatalities are included in order to allow for comparison of equivalent parameters.

Based on the principles of Vision Zero, collisions are referred to as collisions or crashes, instead of accidents. There are two reasons for this choice. The term “accident” suggests an absence of deliberate intention, which is not accurate in all cases. It also suggests that collisions are mishaps that could not have been foreseen or prevented. By comparison, “collision” is a more neutral and appropriate term that allows for impartial understanding of the severity of conditions and a range of contributing factors.

Fatal Traffic Collisions in Mountain View

In Mountain View, 28 people died in traffic collisions on City streets between January 1, 2006 and December 31, 2016, including two at crossings between City streets and the railroad (see Table 1). An additional nine people were killed in collisions along freeways in Mountain View during this period.

Table 1: Traffic-Related Fatalities, Mountain View 2006-2016

Collision Location	Collision Fatalities
City Streets, El Camino Real, and Central Expressway	26
Railroad Crossings with City Streets	2
Freeways: U.S. 101, SR 85, SR 237	9
TOTAL	37

Source: TIMS 2018; San Mateo County Sheriff, 2018

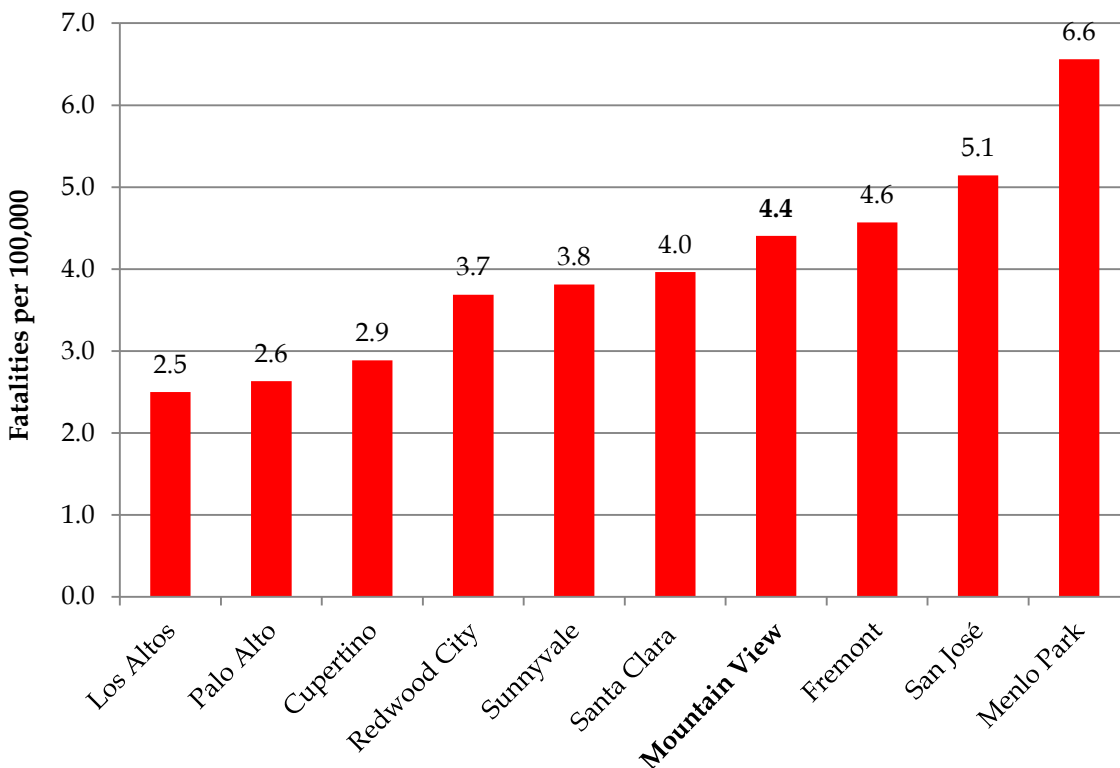
This total fatality rate of 37 people represents an annual average of 3.3 people, which is equivalent to a rate of 4.4 fatalities per 100,000 people per year.⁴ This rate of 4.4

⁴ Collision data is from the Transportation Injury Mapping System (TIMS) at UC Berkeley’s Safe Transportation Research and Education Center (SafeTREC). TIMS was developed to provide easy access to the California Statewide Integrated Traffic Records System (SWITRS), which collects traffic collision data from agencies across California. SafeTREC geocodes SWITRS data to facilitate mapping

fatalities per 100,000 per year is substantially lower than the national average, in which the comparable traffic collision-related death rate was 11.6 deaths per 100,000 people in 2016.⁵ The lower-than-national fatality rate in Mountain View likely reflects a variety of factors, including past traffic safety efforts, demographic characteristics, vehicle fleet, and the regional land use and transportation mix.

Relative to nearby cities, the fatality rate in Mountain View between 2006 and 2016 is slightly higher than peer cities such as Los Altos (2.5 fatalities per 100,000), Palo Alto (2.6), Cupertino (2.9), Sunnyvale (3.8), and Santa Clara (4.0). It is lower than nearby cities of Fremont (4.6), San Jose (5.1), and Menlo Park (6.6).

Figure 1: Annual Average Collision Fatalities per 100,000 People for Various Cities, 2006-2016



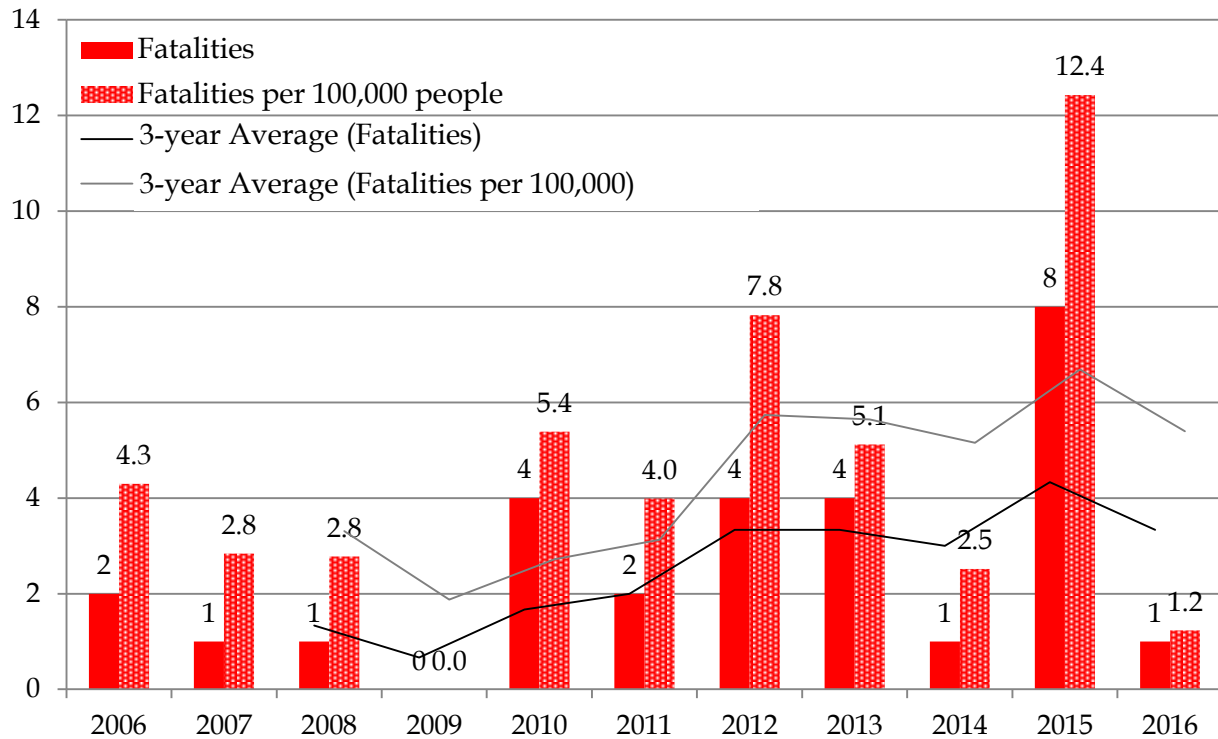
Source: TIMS 2018; San Mateo County Sheriff, 2018

of fatal and injury collisions. While local data is more comprehensive, geocoded data from TIMS demonstrates patterns, trends, and location more easily and quickly. <https://tims.berkeley.edu/> retrieved August 2018.

⁵ National Highway Safety Administration 2016 Fatal Traffic Crash Data. Report retrieved September 2018 from <https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data>.

Over the past decade, the three-year average for fatality rates in Mountain View may have a slight upward trend, as suggested in Figure 2. The small sample size, however, makes this apparent trend less than statistically significant.

Figure 2: Traffic Collision Fatalities and Fatalities per 100,000 People, Mountain View 2006-2016 (excluding freeways)



Source: TIMS 2018; San Mateo County Sheriff, 2018

Note: Fatalities per 100,000 people exceeds actual number of fatalities because Mountain View's population is less than 100,000.

Fatal and Severe-Injury Traffic Collisions in Mountain View

In order to gain an understanding of all severe-injury collisions and provide an opportunity to better understand trends, both fatal and severe-injury collisions need to be considered.⁶ These are known as Killed or Severely Injured (KSI) traffic collisions.

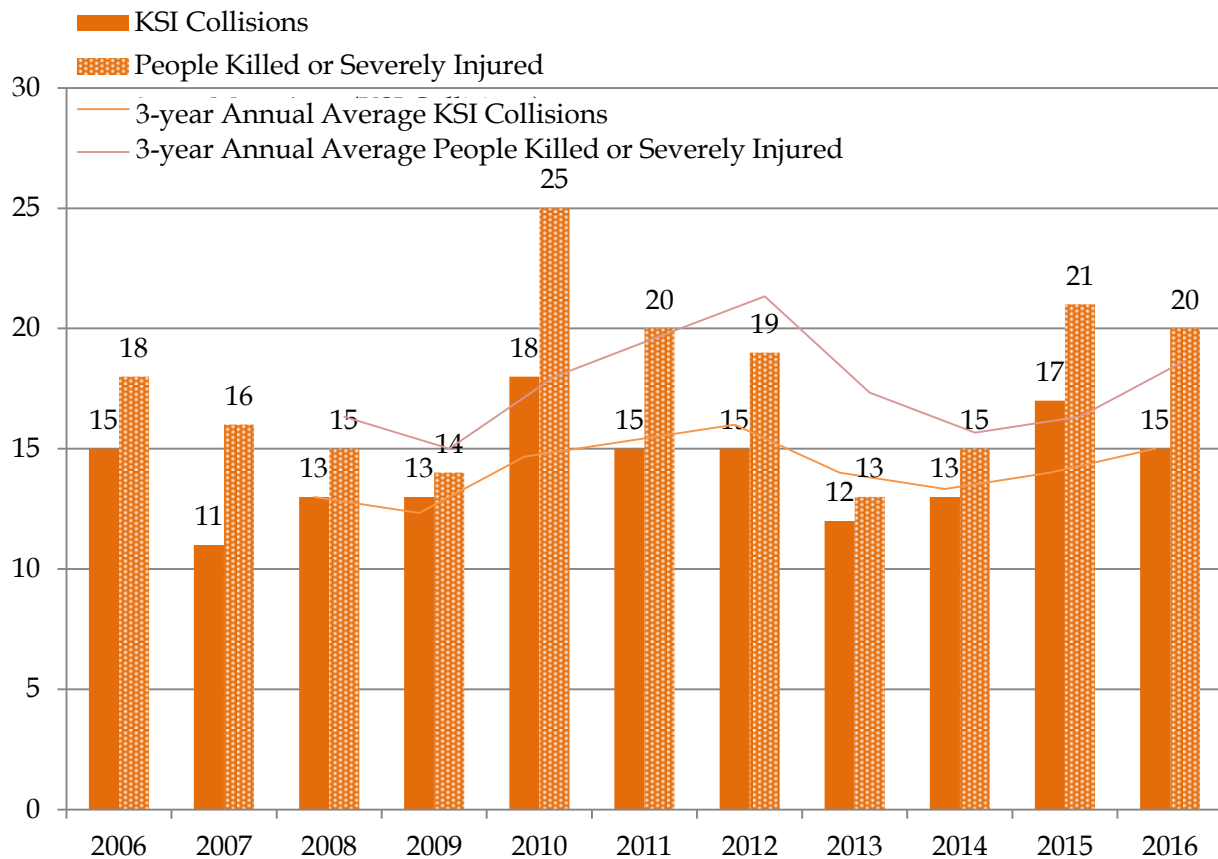
Between 2006 and 2016, 196 people were either killed or severely injured in 157 KSI traffic collisions along Mountain View streets.⁷ This is equivalent to a rate of 17.8

⁶ In California, a "severe-injury collision" involves an injury other than a fatal injury which results in broken bones, dislocated or distorted limbs, severe lacerations, or unconsciousness at or when taken from the collision scene. It does not include minor laceration.

people killed or severely injured in traffic collisions on Mountain View streets each year.

As seen in Figure 3, there is no clear trend in the rate of KSI collisions or the number of people killed or severely injured in these collisions in Mountain View over the past decade.

Figure 3: KSI Traffic Collisions and Number of People Killed or Severely Injured, Mountain View 2006-2016



Source: TIMS 2018; San Mateo County Sheriff, 2018

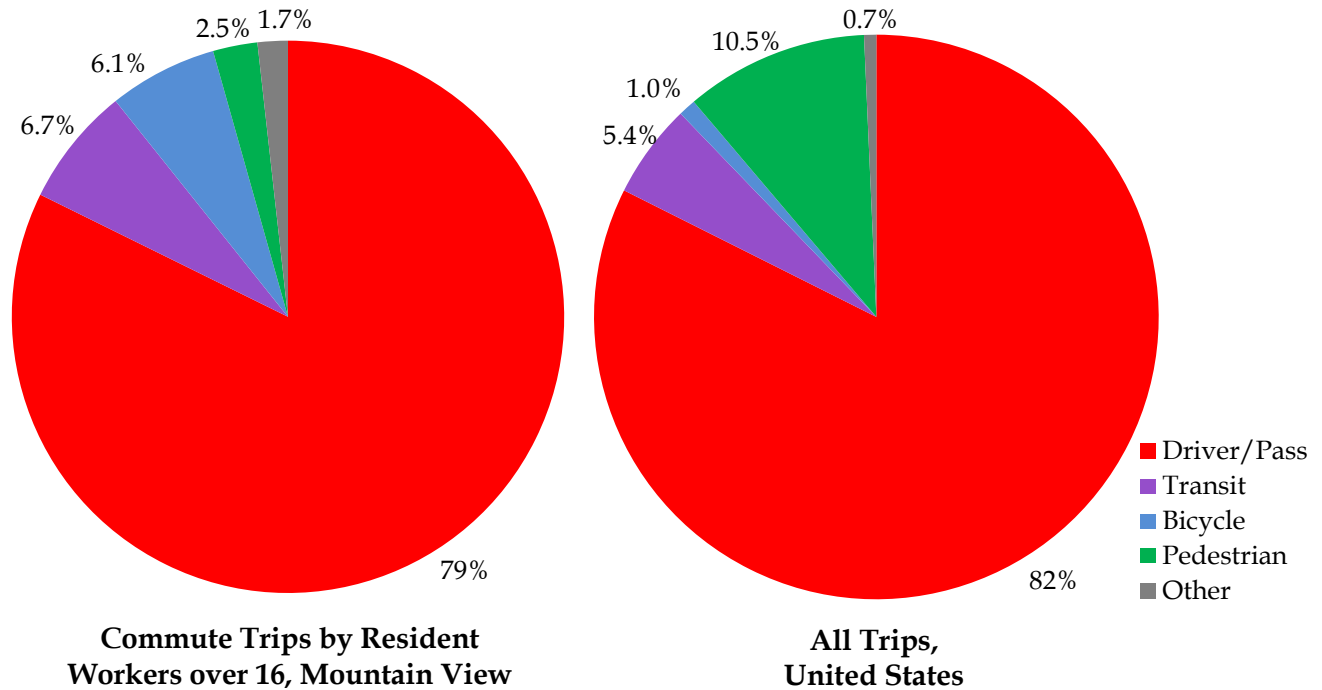
Mode of Transportation

Between 2006 and 2016, the majority of the people killed or severely injured in traffic collisions in Mountain View are vehicle drivers or passengers (54 percent). However, pedestrians and bicyclists are disproportionately killed or injured in traffic collisions

⁷ If freeways are included, 253 people were killed or severely injured in 197 KSI collisions.

relative to their share of transportation activity. As shown in Figures 4 and 5, while pedestrians and bicyclists constitute about 3 percent and 6 percent of commute trips respectively,⁸ they comprise 46 percent of those who are killed or severely injured (28 percent and 18 percent, respectively).

Figure 4: Mode Share for Commute Trips by Resident Workers over 16, Mountain View, 2012-2016 and All Trips, United States, 2017

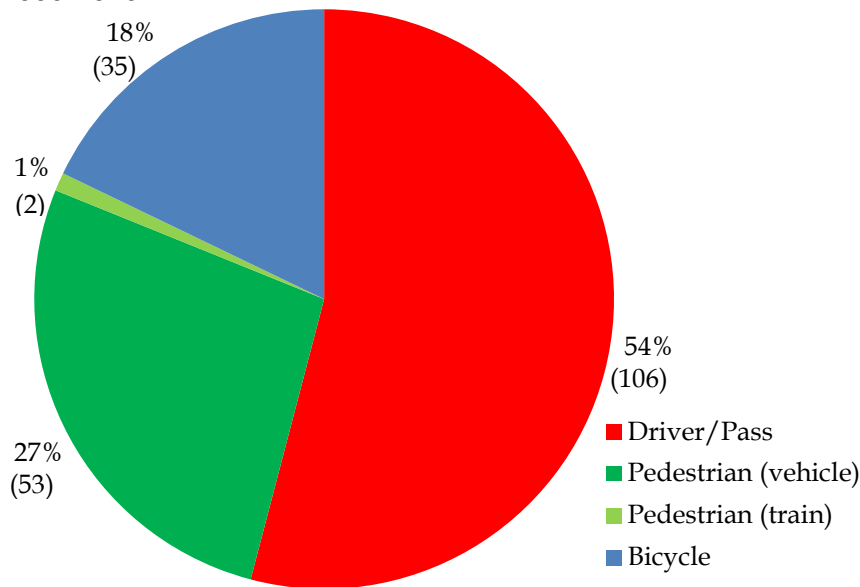


Source: United States Census American Community Survey 2018;⁹ National Household Travel Survey 2017

⁸ Adult resident worker commute share is being used as an approximate proxy for total transportation in the City. In Mountain View, children’s commute trips have higher rates of walking and biking, and commute trips to or through Mountain View by people who live in other cities have lower rates of walking and biking. National data on mode of transportation for all trips was used to provide a broader perspective on the potential applicability of commute data to all trips.

⁹ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>.

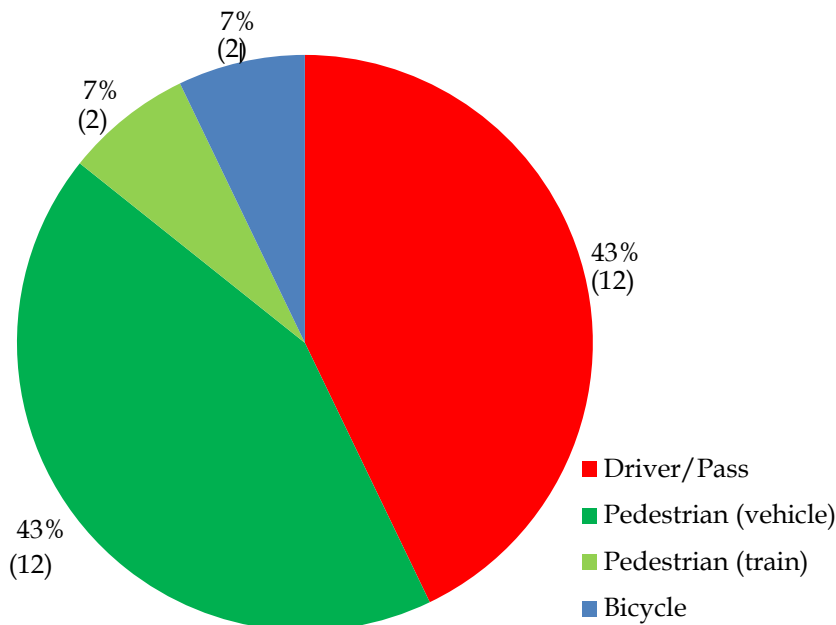
Figure 5: People Killed or Severely Injured in Traffic Collisions, Mountain View, 2006-2016



Source: TIMS 2018; San Mateo County Sheriff, 2018

This disparity is even more severe for fatalities (Figure 6). Between 2006 and 2016, pedestrians represented only 3 percent of commute mode share, but 50 percent of those killed in traffic collisions (with both vehicles and trains) in Mountain View. Bicyclists represented an additional 7 percent of those killed in traffic collisions.

Figure 6: People Killed in Traffic Collisions, Mountain View, 2006-2016



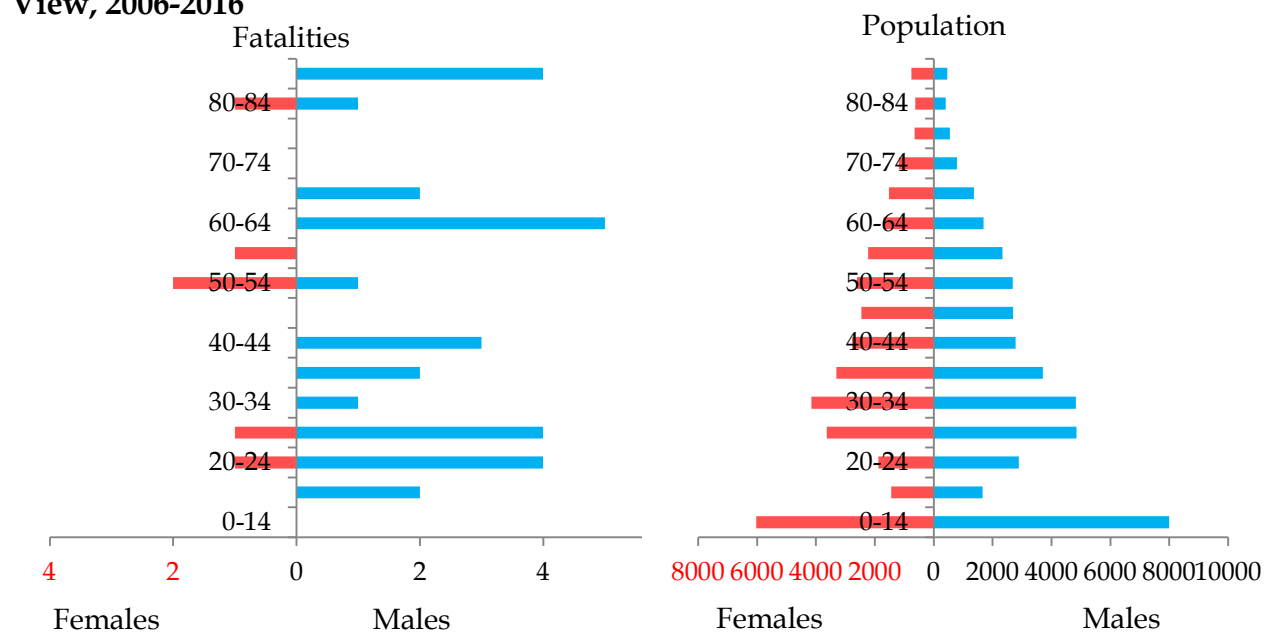
Source: TIMS 2018; San Mateo County Sheriff, 2018

Demographics

Males, young adults, and seniors were overrepresented among those killed in traffic collisions. As shown in Figure 7, boys and men represent 83 percent of traffic collision fatalities compared to 53 percent of the total population. Males between the ages of 15 and 29 represent 23 percent of the population, but 34 percent of collision fatalities. Males over the age of 60 represent 13 percent of the population, but 41 percent of collision fatalities.

Due to data limitations, this analysis includes nine traffic fatalities on freeways and excludes the two traffic fatalities at crossings of City streets with the railroad

Figure 7: Traffic Fatalities (left) and Residents (right) by Age and Gender, Mountain View, 2006-2016



Source: TIMS 2018

Crash Contributing Factors

As part of this preliminary analysis, staff considered primary contributing factors recorded by the Police for collisions in which people were killed or severely injured.

As shown in Table 2, the primary contributing factor in over 10 percent of fatal collisions include driving or riding under the influence, failing to yield right-of-way to pedestrians crossing within a crosswalk, and unsafe speed.

When collisions involving severe injuries were also included, driving or riding under the influence was still the most frequent primary collision factor. Additionally, other primary contributing factors in over 10 percent of KSI collisions included crossing a roadway divider, failure to yield to oncoming vehicles during a turn, and pedestrian failure to yield to vehicles on the roadway outside of crosswalks.

Table 2: Primary Collision Factors for Fatal and KSI Collisions, Mountain View 2006-2016

Primary Collision Factor	Fatal Collisions	Share	KSI Collisions	Share
Driving/riding under influence of alcohol/drugs	4	14%	19	12%
Failure to yield to pedestrian within a crosswalk	4	14%	10	6%
Driving at unsafe speed	3	11%	14	9%
Red light violation	2	7%	10	6%
Improper turn or failure to signal	2	7%	8	5%
Factors other than driver/rider/pedestrian	2	7%	7	4%
Railroad trespass	2	7%	2	1%
Failure to yield to oncoming vehicle during turn	1	4%	17	11%
Pedestrian failure to yield to vehicle outside of crosswalk	1	4%	16	10%
Unsafe lane change	1	4%	4	3%
Crossing roadway divider	0		18	12%
Dooring	0		2	1%
Unsafe starting or backing	0		1	1%
Unknown or not stated	6	21%	29	19%
TOTAL	28	100%	157	100%

Source: TIMS 2018; San Mateo County Sheriff, 2018

According to a study by the NHTSA and Virginia Tech Transportation Institute (VTTI), cited by the California Department of Motor Vehicles, 80 percent of collisions involve some form of distracted driving.¹⁰ Distracted driving is not currently coded as a primary collision factor in the Police reports that feed into SWITRS and, therefore, it does not appear in the above statistics. According to the NHTSA/VTTI study, key actions that cause distracted driving and lead to collisions include using electronic

¹⁰ Driver Distractions https://www.dmv.ca.gov/portal/dmv/?1dmy&urile=wcm:path:/dmv_content_en/dmv/pubs/brochures/fast_facts/ffd128

devices, reaching for an object inside the vehicle, looking at an object or event outside of the vehicle, eating or drinking while driving, and applying cosmetics.

High-Injury Network

Many cities in the Vision Zero Network note that a disproportionately large number of traffic fatalities have historically occurred on a small number of roads. This set of roads is referred to as the High Injury Network (HIN). Cities typically use information on the HIN to undertake more detailed collision analysis and assist in developing Vision Zero action plans.

In Mountain View, collision data indicates that between 2006 and 2016, 50 percent of KSI collisions occurred on just six corridors in the City. This HIN can be seen in Figures 8 and 9. Mountain View's HIN includes the following corridors:

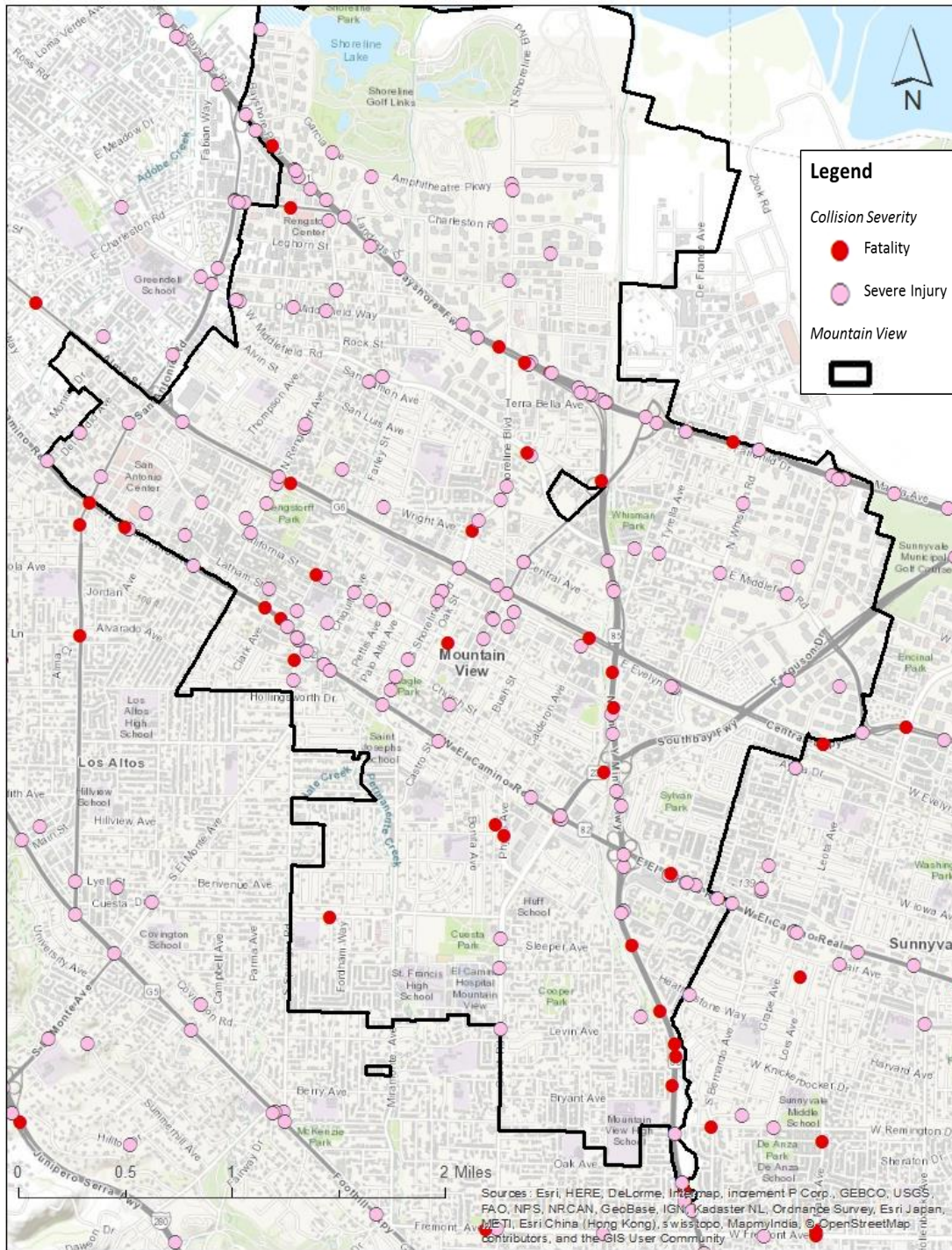
- El Camino Real (24 KSI collisions between 2006 and 2016)
- Shoreline Boulevard (13 KSI collisions between 2006 and 2016)
- Rengstorff Avenue (12 KSI collisions between 2006 and 2016)
- Middlefield Road (9 KSI collisions between 2006 and 2016)
- Central Expressway (8 KSI collisions between 2006 and 2016)
- California Street (7 KSI collisions between 2006 and 2016)

Given that the above streets are more than a mile long, staff also analyzed KSI collisions per mile on a segment basis. This analysis helped to identify particular street segments with a higher concentration of KSI collisions, as well as shorter streets with a disproportionately high rate of KSI collisions. Based on KSI collisions per mile, the resulting HIN is expanded to include the following additional streets:

- El Monte Avenue (3 KSI collisions between 2006 and 2016)
- Old Middlefield Way (5 KSI collisions between 2006 and 2016)
- Ellis Street (3 KSI collisions between 2006 and 2016)
- San Antonio Road in Mountain View (3 KSI collisions between 2006 and 2016)

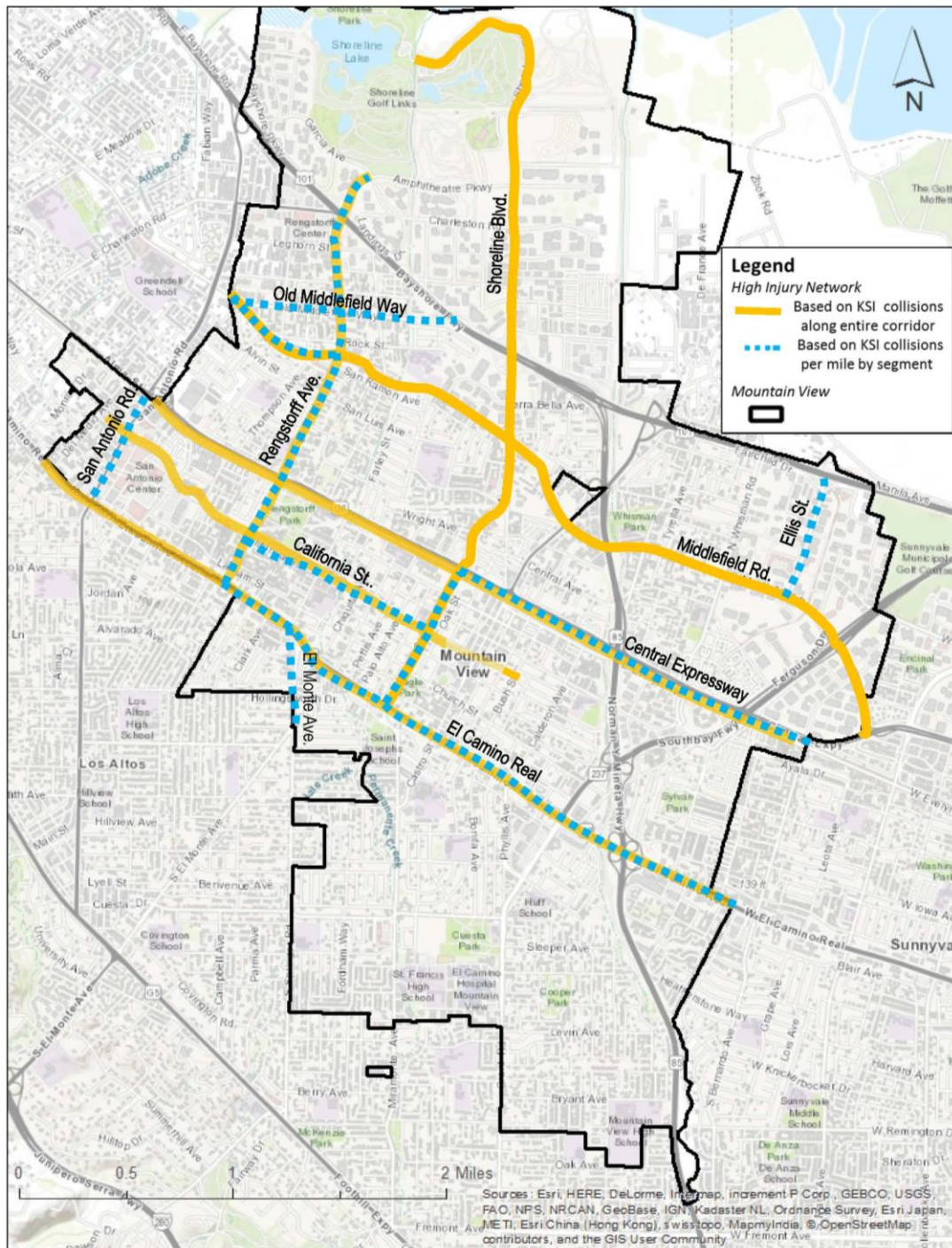
A rate of 0.5 KSI collisions per mile per year represents one severe or fatal collision per mile of road every two years. Street segments with a KSI collision rate close to, or in excess of, 0.5 KSI collisions per year, per mile are presented in Figure 9 and Table 3. By way of comparison to high-injury routes in Sunnyvale, El Camino Real between Bernardo Avenue and Fair Oaks Avenue had a rate of 1.1 KSI collisions per mile, per year, while Fremont Avenue between Sunnyvale-Saratoga Road and Wolfe Road had a rate of 0.7 KSI collisions per mile, per year between 2012 and 2016.

Figure 8: Fatal (red) and Severe-Injury (pink) Collisions in Mountain View and adjacent jurisdictions, January 1, 2006 through December 31, 2016



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community. Made by: SWITRS GIS Map at TIMS (<https://tims.berkeley.edu>), SafeTREC, UC Berkeley. Copyright © 2018 UC Regents; all rights reserved.

Figure 9: Mountain View's High-Injury Network, January 1, 2006 through December 31, 2016



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community. Made by: SWITRS GIS Map at TIMS (<https://tims.berkeley.edu>), SafeTREC, UC Berkeley. Copyright © 2018 UC Regents; all rights reserved.

Table 3: Collisions by Street Segment, Mountain View 2006-2016

Street (Street Segment)	KSI Collisions	KSI Collisions per Year	KSI Collisions per Year per Mile
El Camino Real (Rengstorff Avenue to Castro Street)	12	1.09	0.84
El Monte Avenue	3	0.27	0.68
Rengstorff Avenue (El Camino Real to Central Expressway)	4	0.36	0.61
Middlefield Road (West of Rengstorff Avenue)	4	0.36	0.61
El Camino Real (East of Castro Street)	11	1.00	0.59
Old Middlefield Way	5	0.45	0.57
Shoreline Boulevard (El Camino Real to Central Expressway)	5	0.45	0.57
Ellis Street	3	0.27	0.55
Rengstorff Avenue (north of Middlefield Road)	5	0.45	0.51
Rengstorff Avenue (Central Expressway to Middlefield Road)	3	0.27	0.45
San Antonio Road	3	0.27	0.45
Central Expressway (Shoreline Boulevard to Bernardo Avenue)	4	0.36	0.45
California Street (Rengstorff Avenue to Shoreline Boulevard)	5	0.45	0.38

Source: TIMS 2018; San Mateo County Sheriff, 2018

CONCLUSION

The preliminary research findings above help us to understand the scale of the traffic fatalities in Mountain View relative to other communities. It also helps us to understand where to focus future efforts in terms of the most vulnerable users, key contributing factors, and high-injury locations.

As an initial step, the City of Mountain View could consider and adopt a Vision Zero Policy to inform later development of a Vision Zero Action Plan. The Action Plan will build upon existing efforts within the City and identify new opportunities.

Overview of Draft Vision Zero Policy

Attachment 1 provides a draft Vision Zero Policy for the City of Mountain View. This policy would establish Vision Zero principles, goals, standards, and practices to guide the City in moving toward a goal of zero fatal collisions along City streets. The four key principles outlined in the draft Policy include the following:

- Loss of life from traffic collisions is unacceptable and often preventable.
- Humans are inherently vulnerable, and the transportation system should be designed to protect human life to the extent feasible.
- Human error is inevitable and unpredictable, and the transportation system should be designed to anticipate error so that the consequence of a collision is not severe injury or death.
- Safe human behaviors, education, and enforcement are essential to a safe system.

The draft Policy establishes the following long-term and interim goals:

- By 2030, eliminate fatal traffic collisions.
- By 2030, reduce the annual number of KSI collisions by 50 percent from a 2016 baseline of 15 collisions.
- Every three years, decrease the 3-year annual average number of people killed or severely injured in traffic collisions by 15 percent from a current 3-year annual average baseline of 19 people.¹¹

Eliminating all fatal collisions is the primary goal of a Vision Zero program that recognizes loss of life is unacceptable. A target date of 2030 is suggested as a reasonable but ambitious timeframe for developing and implementing multi-disciplinary actions to achieve this goal. This is an aspirational goal that may never be fully achieved due to collision factors that are beyond the City's control, but it expresses the City's commitment to improve traffic safety.

¹¹ Three-year averages are calculated using Statewide data with an 18-month lag. The baseline 3-year average calculated in 2018 is 19 people who were killed or severely injured in collisions that occurred in 2014, 2015, and 2016.

Reducing the number of KSI collisions, as described in the second goal, will increase the probability of reducing and eventually eliminating fatal collisions. In reviewing these goals, the B/PAC requested that a goal be added to provide interim targets to demonstrate ongoing monitoring and progress. Therefore, the third goal of reducing the 3-year annual average for people killed or severely injured was added.

To achieve this vision, the draft Policy outlines key standards and practices, including:

- Continuous improvement approach that involves evaluation and tracking;
- Development of an action plan based on the 7Es;
- Prioritizing collaboration and data-driven strategies;
- Supporting regional, State, and Federal Vision Zero efforts; and
- Interdepartmental collaboration on implementing the Vision Zero Action Plan.

Existing Traffic Safety Efforts in Mountain View

Future efforts associated with Vision Zero will build upon existing City activities that aim to reduce the number and severity of traffic collisions, including:

- Capital projects to plan, design, and deliver protected infrastructure for bicyclists and pedestrians, and coordinating transportation planning efforts with neighboring jurisdictions and regional agencies;
- Traffic enforcement efforts, including regional coordination on traffic enforcement with other police departments in Santa Clara County;
- Coordination meetings between Public Works Traffic Engineering and the Police Department in response to specific fatal collisions, as well as on a quarterly basis to discuss trends, patterns, and opportunities for collaboration;
- Implementation of a Safe Routes to School program providing bicycle and pedestrian education and encouragement;
- Bicycle and pedestrian safety education efforts by the Community Services Department, which include training volunteers who deliver trail etiquette materials and education about safe riding to the public; and
- Library programs to help residents learn how to repair bicycles.

Early Opportunities

A comprehensive list of actions will be developed as part of the Vision Zero Action Plan. As an initial step, a number of potential near-term opportunities can be gleaned from the above preliminary analysis. These opportunities encompass the 7Es discussed previously and include:

- Building upon existing City activities, forums, and strategies in the development and implementation of an action plan for achieving the Vision Zero goals;
- Undertaking targeted education and enforcement to discourage motorists from driving under the influence of drugs and alcohol, failing to yield to pedestrians at crosswalks, speeding, and distracted driving;
- Providing Vision Zero input to the Comprehensive Modal Plan to help inform the prioritization process used to identify key Citywide corridors and gaps;
- Prioritizing capital improvement projects (CIPs) that address pedestrian safety, bicyclist safety, and motorist speeds along the HIN; and
- Updating the City's 2014 Pedestrian Master Plan (PMP), including development of a prioritized project list, and detailed implementation and phasing plan.

HUMAN RIGHTS ANALYSIS

Mountain View Human Rights Analysis Pilot

On December 13, 2016, Mountain View City Council adopted the Universal Declaration of Human Rights as a guiding principle for policy and legislative decisions in Mountain View. On April 3, 2018, Council approved a pilot to include human rights analysis in the review of selected projects scheduled for Council consideration in Fiscal Year 2018-19. Vision Zero was selected as one of three projects/policies to be analyzed as part of this pilot. The following guiding questions are to be used during the human rights analysis:

1. Who are the populations that this policy/program/practice will affect? Does the policy/program/practice have any impact on the displacement of children and seniors? Does it provide tenant relocation? Does it result in a net increase or net decrease in available housing units?

2. Does the policy/program/practice have a positive, negative, or neutral impact on the current jobs-housing imbalance? Does the project or policy increase or decrease access to affordable units?
3. Does the policy/program/practice have any disparate impacts on racial/ethnic or economic groups in Mountain View? For this policy/program/practice, how will different groups be affected?
4. Does this policy/program/practice have a fiscal impact on businesses or displace small business? Does it provide economic opportunity to small businesses or different racial/ethnic or economic groups in Mountain View?

Human Rights Analysis for Vision Zero

Adoption of a Vision Zero Policy is directly aligned with the Human Rights goals of the City, especially in its affirmation of the inherent dignity and worth of human life. As previously determined, this human rights analysis will focus on four areas: populations affected; jobs-housing imbalance and affordable housing; effects on racial, ethnic, and economic groups; and fiscal impacts on businesses and economic opportunity.

Populations Affected

Vision Zero efforts encompassing the 7Es of engineering, education, enforcement, evaluation, encouragement, engagement, and equity are likely to improve conditions for all road users, specifically including pedestrians and bicyclists. As displayed in Figures 3 through 6, pedestrians, bicyclists, males over age 60, and males between the ages of 15 and 30 are currently disproportionately killed or severely injured in traffic collisions in Mountain View. As the City implements actions to eliminate traffic fatalities, these negative impacts are likely to be reduced.

Motorist behavior, risk tolerance, physical vulnerability, and traffic exposure all play a role in the above disproportionate effects. In relation to bicycling, efforts to systematically address traffic safety can be expected to both reduce KSI collisions among existing bicyclists, and increase bicycling among those who would ride more if they felt safer. This category of “interested but concerned” bicyclists represents the majority of the population. In particular, women and older adults are more likely to be categorized as “interested but concerned” bicyclists.^{12,13}

¹² Dill, Jennifer and Nathan McNeil. “Four Types of Cyclists? Examination of Typology for Better Understanding of Bicycling Behavior and Potential.” *Transportation Research Record* Volume 2387, pp. 129-138, 2013.

By addressing safety “pain points,” Vision Zero implementation should reduce collisions among existing riders and increase participation in active transportation by women, older adults, and the entire population. Regular physical activity reduces the risk of dying prematurely. It also reduces the risk of developing or dying from some of the leading causes of illness and death, including diabetes, high blood pressure, colon cancer, obesity, hip fractures, and anxiety and depression.¹⁴ These health and longevity benefits apply to cycling even after accounting for the risk of being hit by a motorist.^{15,16}

Effect on Jobs-Housing Imbalance and Access to Affordable Housing

Since 1915, the burden of transportation costs on households has increased with vehicle ownership, vehicle miles traveled, auto-oriented built environments, and auto-oriented regional transportation networks. Since the 1970s, housing and transportation have become the two largest expenditures for households in the United States.¹⁷ Therefore, some urban planning scholars recommend that affordable housing be considered in concert with affordable transportation.

In contrast to the high cost of vehicle ownership and use, walking and bicycling are affordable transportation options that contribute to lower total household expenditures. Implementation of Vision Zero in Mountain View can, therefore, be expected to improve the quality of affordable transportation options in the City, but would not directly impact the jobs/housing imbalance.

Effect on Racial, Ethnic, or Economic Groups

More affordable transportation reduces the total burden of household costs, which relieves financial pressures facing low-income families in particular. Therefore, to the

¹³ Dill Jennifer and Nathan McNeil. “Revisiting the Four Types of Cyclists: Findings from a National Survey.” *Transportation Research Record* Volume 2587, pp. 90-99, 2016.

¹⁴ Centers for Disease Control and Prevention. “A Report of the Surgeon General: Physical Activity and Health: The Link Between Physical Activity and Morbidity and Mortality.” <https://www.cdc.gov/nccdphp/sgr/mm.htm> Accessed October 2, 2018.

¹⁵ Johan de Hartog J, Boogaard H, Nijland H, & Hoek G (2010). “Do the health benefits of cycling outweigh the risks?” *Environmental Health Perspectives*, Volume 118 No. 8, pp. 1109-1116 <https://www.ncbi.nlm.nih.gov/pubmed/20587380> Accessed October 2, 2018.

¹⁶ Celis-Morales Carlos A, Lyall Donald M, Welsh Paul, Anderson Jana, Steell Lewis, Guo Yibing *et al.* Association between active commuting and incident cardiovascular disease, cancer, and mortality: prospective cohort study *BMJ* 2017;357 :j1456

¹⁷ Haas, Peter, Carrie Makarewicz, Albert Benedict, Scott Bernstein, Thomas Sanchez and Casey Dawkins. “Housing and Transportation Cost Tradeoffs and Burdens of Working Households in 28 Metros.” Center for Neighborhood Technology, July 2006.

extent that Vision Zero results in better-quality affordable transportation options, it can be expected to improve financial conditions for low-income communities.

More analysis would be needed to understand specifically whether low-income and minority communities are disproportionately represented among fatal and severe-injury collisions in Mountain View, either individually or geographically.

As part of the Vision Zero Action Plan, attention should be paid to evaluating and ensuring that recommended actions are beneficial to vulnerable populations, minority and low-income communities, and small businesses. For example, enforcement against problematic driver behaviors like driving under the influence, speeding, or failure to yield should involve both training and evaluation to ensure that vulnerable and minority communities are not disproportionately affected.

Fiscal Impact on Businesses and Economic Opportunity

Traffic collisions impose a significant burden on businesses and families in terms of loss of life, medical expenses, lost productivity, disability-adjusted life years, property damage, and traffic congestion. By eliminating fatal collisions and reducing severe-injury collisions, Vision Zero is likely to reduce this burden on businesses and families in Mountain View.

Additionally, by improving the safety and quality of active transportation options in Mountain View, Vision Zero implementation may help to improve low-cost transportation options for accessing the large number of jobs within a bikeable distance.

RECOMMENDATION

Staff seeks input from Council on the following:

1. Does the Council support the goals for eliminating fatal collisions and reducing KSI collisions as proposed in the draft Vision Zero Policy?
2. Is there additional research or are there any revisions desired for the draft Vision Zero Policy?

NEXT STEPS

Based on input from Council, staff will amend the Draft Policy and return to Council for policy adoption at a subsequent Council meeting.

Following adoption of a Vision Zero Policy, staff would begin work on a Vision Zero Action Plan for Council's consideration in late 2019. Developing and implementing the Action Plan could include steps such as:

- Forming an interdepartmental committee of City staff to develop and implement the City's Vision Zero action plan;
- Undertaking supplementary analysis on pedestrian safety, bicycle level of stress, collisions by street segment or intersection, and posted and prevailing speeds;
- Conducting agency, stakeholder, and community engagement;
- Pursuing the early opportunities listed above, including providing Vision Zero input to the Comprehensive Modal Plan and CIPs;
- Presenting Action Plan recommendations to B/PAC and City Council; and
- Updating the Action Plan to develop and implement additional actions, such as developing CIPs, conducting education, encouragement and enforcement, and implementing monitoring and evaluation, on a three-year cycle.

PUBLIC NOTICING

The City Council's agenda is advertised on Channel 26, and the agenda and this report appear on the City's Internet website at www.mountainview.gov. The Study Session memo was sent to the B/PAC.

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Attachment: 1. Draft City Council Policy on Vision Zero