

**DATE:** May 3, 2022

**TO:** Council Transportation Committee

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**SUBJECT:** Vision Zero Action Plan/Local Road Safety Plan

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**RECOMMENDATION**

Receive a report on the integrated Vision Zero Action Plan and Local Road Safety Plan and provide feedback on:

1. The proposed Local Road Safety Plan countermeasures; and
2. The prioritization framework for the Local Road Safety Plan.

**BACKGROUND**

On [December 10, 2019](#), the City Council adopted a Vision Zero Policy. This policy established the principles that the loss of life from traffic crashes is unacceptable and often preventable, and the transportation system should be designed to protect human life to the extent feasible and to anticipate error so that the consequence of a crash is not severe injury or death. Furthermore, it recognizes that safe human behaviors, education, and enforcement are essential to a safe system.

The Vision Zero Policy deliberation was supported by an analysis, which examined crash data to identify the City's High Injury Network (HIN), key crash contributing factors, and other issues related to fatal and severe injury crashes (KSI).

Under the Vision Zero Policy, the City Council established the goal of eliminating fatal traffic crashes by 2030. Council also established more incremental goals of a 50% decrease in the three-year annual average number of traffic crashes involving fatalities or severe injuries by 2030, which represents a larger subset of crashes compared to the number of fatal crashes.

At the December 10, 2019 meeting, Council also received information on existing, recent, and proposed actions that might be included in a Vision Zero Action Plan. These actions include the Vision Zero 7Es (7Es): engineering, education, encouragement, engagement, emergency response, evaluation, and enforcement.

Staff is now developing an integrated Vision Zero Action Plan (VZAP) and Local Road Safety Plan (LRSP). The VZAP typically uses a multi-pronged hot-spot approach to transportation safety at locations with a collision history by addressing key factors in behaviors (such as driving under the influence (DUI), speeding, encroaching in pedestrian right-of-way), and improving corridors on the HIN, using the 7Es. By comparison, LRSPs use a systemic safety analysis to identify engineering improvements that may be implemented at locations with similar characteristics to where respective KSI collisions have occurred.

The integrated VZAP/LRSP will be a living document that provides a framework for identifying, analyzing, and prioritizing roadway safety improvements in Mountain View.

## **ANALYSIS**

To advance the integrated VZAP/LRSP, a systemic safety analysis has been undertaken based on collision data from 2014 through 2019. Detailed findings on the analysis were presented to the Bicycle/Pedestrian Advisory Committee (B/PAC) on [March 30, 2022](#) (see Attachment 1). The analysis found a higher-than-average incidence of KSI collisions were associated with the following roadway and land use factors in the City:

- Streets with a posted speed of 35 mph or above (20% of streets, 73% of KSI crashes)<sup>1</sup>;
- Intersections of 35 mph streets with 25 mph streets (50% of KSI crashes);
- Signalized intersections (30% of KSI crashes);
- Two-way, stop-controlled intersections (18% of all KSI crashes, 45% of KSI crashes involving people walking); and
- Commercial areas and Precise Plan areas, including downtown Mountain View (60% of crashes, about 40% of land area).

The analysis also found that people walking and biking are disproportionately affected by fatal and severe injury crashes. Key factors associated with higher-crash intersections for people

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<sup>1</sup> Although there is a correlation between roadway posted speed limits and the severity of a collision resulting in a fatality or severe injury, the multicollinearity of other variables such as lane width, number of lanes, traffic volumes, intersection traffic control, and lighting are important to consider in terms of contributing factors to the collision occurring.

walking and biking include intersections of higher- and lower-speed roads and intersections in commercial or Precise Plan areas.

The crash data for the systemic analysis from 2014 to 2019 was obtained from the Transportation Injury Mapping System (TIMS), which is maintained by UC Berkeley, and typically has a time lag of approximately three years. This time lag reflects the considerable time that it takes to complete Police investigations, determine primary collision factors, submit local information to the Statewide system, compile information at the State level, and process data into a complete geocoded database. The Police Department provides a list of [recent collisions](#) on the City's website.. Staff added the locations of crashes involving a bicyclist or a pedestrian from 2020 to March 31, 2022 to the previously identified HIN and segments with high-KSI rates (see Figure 1). This analysis confirmed that the bicycle and pedestrian crash locations since 2019 are consistent with the VZAP/LRSP findings.

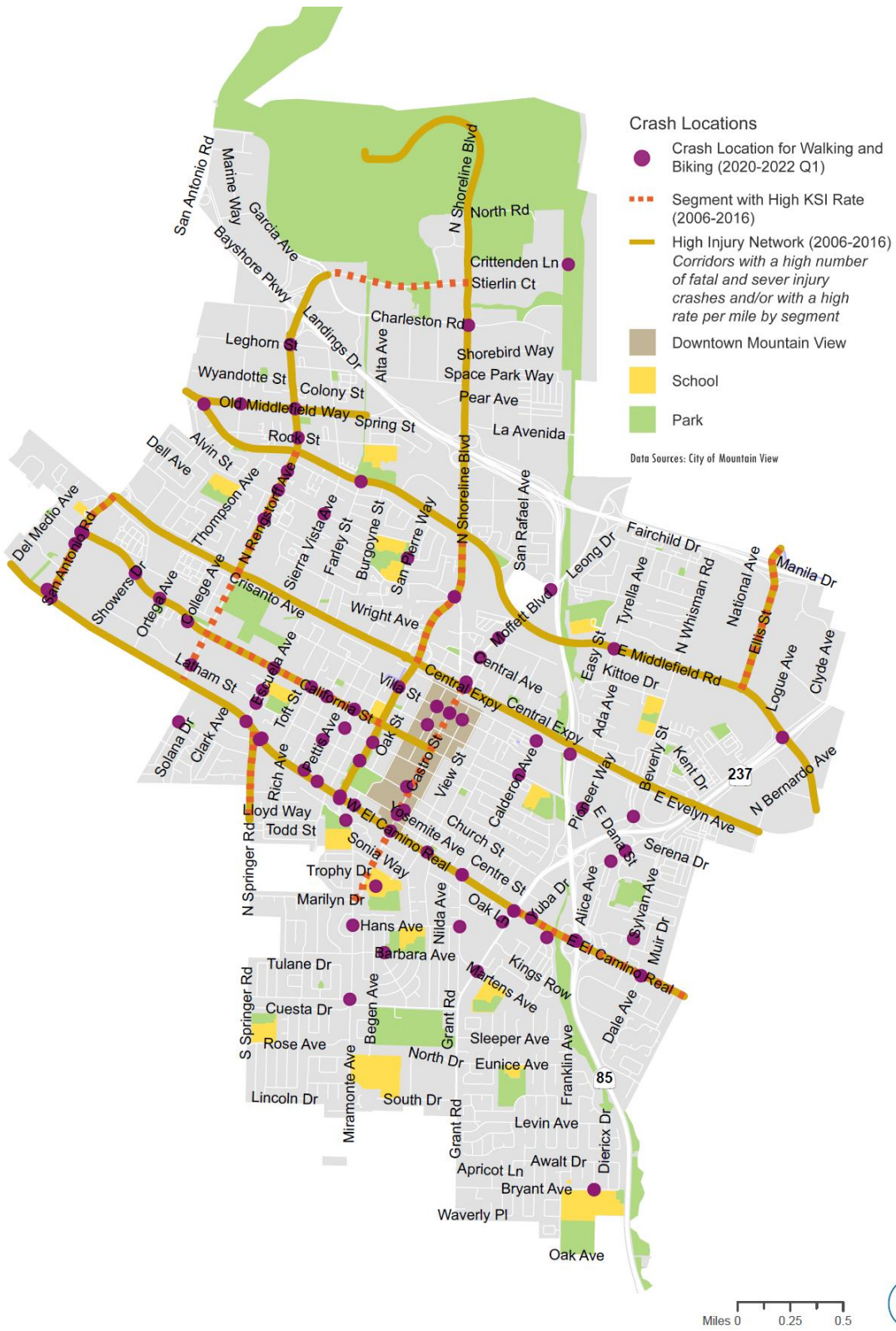


Figure 1: Crash Locations for Walking and Biking (2020—March 31, 2022)

**Proven Countermeasures**

To reduce fatal and severe injury crashes, the Federal Highway Administration (FHWA) developed a list of infrastructure-oriented safety treatments (i.e., countermeasures) with proven effectiveness and benefits. The B/PAC memo in Attachment 1 provides a detailed description of the 22 countermeasures listed in Table 1 below, including their effectiveness and benefits and their applicability to the different types of crashes.

**Table 1: FHWA Countermeasures by Roadway Users**

<b>Countermeasures–Pedestrians and Bicyclist</b>	<b>Countermeasures–Drivers</b>
Crosswalk visibility enhancements	Improved intersection lighting, extension lines, and signage.
Curb radius reductions	Impaired driving policies.
Curb extensions	Reduce speed limit by 5 mph.
Leading Pedestrian Intervals (LPIs)	25 mph business and residential districts.
Medians and pedestrian refuge islands	Traffic calming strategies.
Sidewalks and walkway facilities	Protected left turns.
Rectangular rapid flashing beacons (RRFBs)	Speed management strategies.
Pedestrian Hybrid Beacons (PHBs)	Access management.
Bicycle signal phase	Road diets.
Bike box treatment at intersections	
Protected intersections	
Class IV protected bikeways	
Bicycle boulevards	

Note: Some of the countermeasures in Table 1 could improve safety for all modes of transportation. As noted in the B/PAC memo, all of these countermeasures are already implemented or planned in certain areas of the City.

**Project Prioritization Criteria**

Based on the systemic safety analysis and historic crash analysis, the countermeasures will be applied to specific locations to develop a list of projects. The project list will include historic KSI crash locations as well as other location(s) identified through the systemic safety analysis process. This approach will help the City to proactively implement improvements that enhance safety.

The project prioritization criteria will be used to evaluate the project list and recommend five grant-ready (detailed project scope, project completion cost estimates, and implementation schedule and funding strategy) projects. Suggested project prioritization criteria include:

1. **Severity of Crashes**—This category includes the severity of crashes from the historical crash analysis. This criterion is consistent with City’s Vision Zero policy and Caltrans’ Local Road Safety Plan goals and metrics.

2. **Proven Effectiveness**—This category includes cost and benefits analysis for different safety improvements. The FHWA has different proven effectiveness for different countermeasures. Through this criterion, there will be a determination of what is the planning-level cost of implementation versus its proven effectiveness.
3. **Equity**—This goal is consistent with the City’s General Plan related to improving equity throughout the City. The metrics associated with equity are income and vulnerable road users (i.e., bicyclists, pedestrians, seniors, youth, and people with disabilities).
4. **Proximity to Key Destinations**—This category improves accessibility to destinations that are pedestrian and bicyclist attractors and locations that should be accessible for all modes of transportation. Key destinations include: schools, parks/open spaces, commercial centers, senior centers, senior living communities, health-care facilities, and libraries.
5. **Implementation**—This category includes the implementation feasibility of different safety improvements. The metric includes the potential to leverage ongoing City efforts, such as planned CIPs, development projects, or ongoing maintenance efforts, project completion time frames, and degree of agency coordination.

**Table 2: Project Prioritization Criteria**

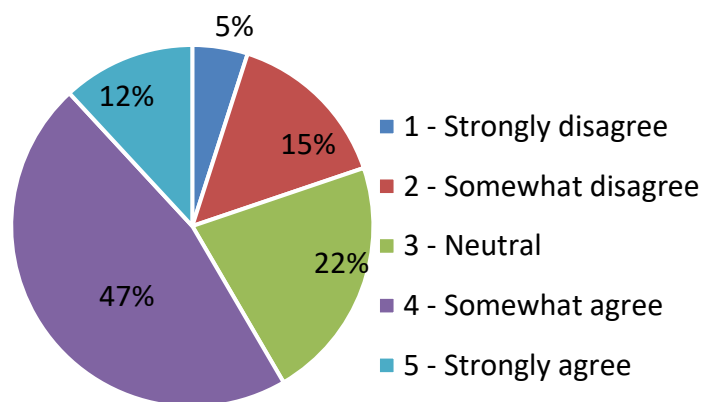
<b>Priority Criteria</b>	<b>Metric</b>
Severity of Crash	<ul style="list-style-type: none"> <li>• Fatal</li> <li>• Severe Injury</li> <li>• Minor Injury</li> </ul>
Proven Effectiveness	<ul style="list-style-type: none"> <li>• Crash reduction factor</li> <li>• Planning-level cost</li> </ul>
Equity	<ul style="list-style-type: none"> <li>• Median Household Income</li> <li>• Vulnerable Road Users (bicycle, pedestrian)</li> </ul>
Proximity to Key Destinations	<ul style="list-style-type: none"> <li>• Schools</li> <li>• Parks/Open Spaces</li> <li>• Commercial centers</li> <li>• Senior centers and senior living communities</li> <li>• Health-care facilities</li> <li>• Libraries</li> </ul>
Ease of Implementation	<ul style="list-style-type: none"> <li>• Potential to leverage Planned CIPs or ongoing development projects</li> <li>• Project time frame</li> <li>• Degree of agency coordination</li> </ul>

## **COMMUNITY FEEDBACK**

On March 24, 2022, the City held a virtual community meeting to seek feedback on the integrated VZAP/LRSP. The meeting was attended by 127 community members who lived and/or worked in Mountain View. The attendees were well representative of the different neighborhoods in Mountain View and used multiple modes of transportation to commute. The participants generally supported the proposed countermeasures and prioritization criteria with added suggestions and comments.

The countermeasures feedback included strong support for increased implementation of the following countermeasures and actions:

- “No Right Turn on Red” signs at key intersections such as El Camino Real and Grant Road;
- Quick-build strategies using paint and temporary materials;
- Lowered design speeds and posted speed limits;
- Transportation safety education for students;
- Protected bikeways and low-stress bike facilities;
- Road diets; and
- Enforcement strategies, including red-light cameras.



**Figure 2: Community Input on Prioritization Criteria**

For the prioritization criteria, most participants (59%) supported the proposed priority criteria (Figure 2) and provided thoughtful feedback, including prioritizing locations near schools, strategies that can be implemented faster, and priority improvements for bicyclists.

## **BICYCLE/PEDESTRIAN ADVISORY COMMITTEE FEEDBACK**

City staff presented updates on the VZAP/LRSP to the B/PAC on [March 30, 2022](#) and [January 27, 2021](#). The B/PAC supported the countermeasures and expressed urgency to build improvements that can be implemented quickly. Members also suggested considering “No Right on Red” signs as countermeasures where applicable.

The B/PAC also supported the proposed prioritization criteria and suggested prioritizing locations near schools with high bicycle level of traffic stress (LTS) and missing sidewalks. B/PAC members also suggested prioritizing locations with permissive left turns, multi-lane arterials near schools, and unimproved crosswalks.

## **NEXT STEPS**

City staff will incorporate community, B/PAC, and CTC feedback on countermeasures and prioritization criteria into developing the recommended integrated VZAP/LRSP. In the upcoming months, staff will develop a list of projects and apply the revised prioritization criteria to create a recommended prioritized list. Staff expects to return to the community, B/PAC, and CTC with an updated project list in late summer or early fall for further feedback prior to bringing the VZAP/LRSP to the City Council for approval.

PA-RHL-DS/TS/1/PWK

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Attachment: 1. Memorandum to the Bicycle/Pedestrian Advisory Committee (B/PAC) on Vision Zero Action Plan/Local Road Safety Plan, March 30, 2022