

**DATE:** March 27, 2024

**TO:** Bicycle/Pedestrian Advisory Committee

**FROM:** Priyoti Ahmed, Transportation Planner  
Ria Hutabarat Lo, Transportation Manager

**VIA:** Damian Skinner, Assistant Public Works Director  
Edward Arango, Acting Public Works Director

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

---

**RECOMMENDATION**

Review and provide input on the Integrated Vision Zero Action Plan and Local Road Safety Plan Draft Report.

**BACKGROUND**

On [December 10, 2019](#), Council adopted a Vision Zero Policy, which established a goal of reaching zero fatal traffic collisions by 2030. Council also received information on existing, recent, and proposed actions covering the Vision Zero 7Es: Engineering, Education, Encouragement, Engagement, Emergency Response, Evaluation, and Enforcement. One of the initial actions identified was to develop a Vision Zero Action Plan (VZAP or the Plan) to identify priority projects, programs, strategies, and actions that encompass all 7Es.

In 2020, the City contracted with Nelson\Nygaard Consulting Associates, Inc., to prepare an integrated VZAP and Local Road Safety Plan (LRSP) report. The VZAPs typically use a multi-pronged hotspot approach to transportation safety by addressing key crash factors and improving corridors on the High Injury Network using the 7Es. By comparison, LRSPs use a systemic infrastructure approach to transportation safety by identifying locations with similar characteristics to those of where fatal or severe injury collisions occurred and treating these locations with engineering countermeasures.

Building on these two approaches, this integrated Plan aims to: (1) identify priority segments and intersections based on systemic crash analysis and prioritization criteria; (2) develop eight emphasis areas to achieve Vision Zero; and (3) recommend multi-pronged actions.

Throughout the Plan, the project team provided input and received feedback from the Vision Zero Working Group, Bicycle/Pedestrian Advisory Committee (BPAC), and the broader Mountain View community.

### **Vision Zero Working Group**

As part of the initial Vision Zero Policy adoption, a Vision Zero Working Group (VZWG) was established to review and provide feedback on Vision Zero-related projects. This working group includes staff from multiple departments, including Public Works, Community Development, Police, Fire, City Manager's Office, Community Services, and Library. Over the course of Plan's development, the VZWG met four times to review and provide feedback on crash analysis, emphasis areas, proven countermeasures, prioritization criteria, scored segments and intersections, and infrastructure projects and non-infrastructure program recommendations.

### **Community Meetings**

While the VZAP/LRSP approach is largely a data-driven process based on Caltrans LRSP direction and Federal Highway Administration (FHWA) Proven Safety Countermeasures, staff held two community engagement events for the public to provide feedback. The first community meeting was held virtually on March 22, 2022 with 100 participants. Community members reviewed crash analysis findings, expressed their personal experience on recent crashes, and provided feedback on prioritization criteria and proven safety countermeasures. The second community meeting was an in-person open house on March 27, 2023 with 20 participants. Community members reviewed and provided feedback on scored segments and intersections, infrastructure projects, and potential non-infrastructure program recommendations. Outreach for both events included postings on social media platforms, email blasts, and Citywide yard signs.

### **Bicycle/Pedestrian Advisory Committee**

The Bicycle/Pedestrian Advisory Committee (BPAC) reviewed and provided feedback at pivotal stages of the VZAP and LRSP development. On [January 27, 2021](#), the BPAC reviewed and provided feedback on the VZAP and LRSP collision analysis. On [March 30, 2022](#), the BPAC received further information and provided feedback on proven safety countermeasures and prioritization criteria. On August 22, 2022, in a joint meeting with the City of San Jose, the BPAC received information that compared the Vision Zero actions and approaches taken by Mountain View and San Jose. Finally, on [February 22, 2023](#), the BPAC reviewed and provided feedback on emphasis areas and proposed LRSP infrastructure recommendations related to safety countermeasure locations and projects.

In addition to BPAC review, the Council Transportation Committee (CTC) also reviewed and provided feedback on the prioritization framework and proposed infrastructure countermeasures at their meeting on [May 3, 2022](#).

## **ANALYSIS**

The VZAP and LRSP Draft Report compiles all of the analysis, findings, and recommendations developed through the integrated process. These findings are outlined below.

### **Systemic Safety Analysis and Safety Corridors**

Based on the Caltrans LRSP methodology, a systemic safety analysis identifies risk factors associated with crashes to guide Citywide investments in countermeasures that could prevent crashes in similar locations. In Mountain View, the systemic analysis was conducted from 2014 to 2019.

The systemic safety analysis also identified the City's High Injury Network (HIN), shown in Figure 1, is equivalent to the Safety Corridors as described in Assembly Bill 43 (AB 43) and California Vehicle Code (CVC) Section 22358.7(a)(1). Based on the CVC,<sup>1</sup> a "Safety Corridor" is defined as a roadway segment within an overall roadway network where the highest number of serious injury and fatality crashes occur. In Mountain View, the HIN identified as part of the LRSP and VZAP definition is consistent with the Safety Corridor. The City's Safety Corridors, therefore, include the following:

1. Rengstorff Avenue from El Camino Real to Garcia Avenue/Charleston Road;
2. Shoreline Boulevard from El Camino Real to North Road;
3. California Street from San Antonio Road to Hope Street;
4. Ellis Street from Middlefield Road to Manila Avenue;
5. El Monte Avenue from Springer Road to El Camino Real;
6. San Antonio Road from El Camino Real to Central Expressway;
7. Middlefield Road from western City limit (400' east of San Antonio Road) to Central Expressway; and
8. Old Middlefield Way from Middlefield Road to U.S. 101.

El Camino Real and Central Expressway (within Caltrans and Santa Clara County authorities, respectively) are listed in the HIN but do not meet the Safety Corridor criteria due to being outside of the City's authority.

The City's Safety Corridors represent approximately 7% of the overall roadway network, well within the 20% limit established by the CVC. Furthermore, this percentage is consistent with surrounding jurisdictions, such as Palo Alto and Sunnyvale.

---

<sup>1</sup> California Vehicle Code (CVC) [Section 22358.7\(a\)\(1\)](#) instructs Caltrans to define Safety Corridors in the revised California Manual on Uniform Traffic Control Devices ([CA-MUTCD](#)) based on considerations regarding the number of serious injuries and fatalities.



Figure 1: Crash Locations and the High Injury Network in Mountain View, 2014 to 2019

## Findings

Initial findings from the VZAP and LRSP regarding the HIN and crash contributing factors have been used to inform educational materials under the Safe Routes to School program, expand the City’s crossing guard program, and prioritize infrastructure improvements along the HIN. Current or recently completed City projects along the HIN are listed in Table 1 below.

**Table 1: Current or Recent City Projects Along the High Injury Network**

Project from City’s Capital Improvement Program (CIP)	Capital Project Description
CIP 20-61 and 22-29—El Camino Real Pedestrian and Bicycle Improvements	High-visibility crossings, pedestrian hybrid beacons, protected bikeways on El Camino Real.
CIP 17-41—Stierlin Road Bicycle and Pedestrian Improvements	Protected intersection at Shoreline Boulevard/Montecito Avenue, protected bikeways on Shoreline Boulevard from Montecito Avenue to Middlefield Road.
CIP 21-40—California Street Complete Street Improvement Pilot	Pilot road diet, high-visibility crossings, midblock crossings, parking-protected bikeways, and protected intersections.
CIP 21-37—Active Transportation Improvements	Shoreline Boulevard pathway from Wright Avenue to Villa Street.
CIPs 19-61 and 21-38—El Monte Corridor Improvements	Road diet, high-visibility crossings, buffered bike lanes, green street elements, slip lane removal, protected intersections (where feasible).
CIP 24-28—Street Reconstruction (Middlefield Road)	High-visibility crossings, protected bikeways, and protected intersections on Middlefield Road from Moffett Boulevard to Bernardo Avenue.
CIP 21-39—Grant Road and Sleeper Avenue Intersection Improvements	Pedestrian hybrid beacon at Grant Road/Sleeper Avenue.
CIP 16-27—Shoreline Boulevard and Villa Street Intersection Improvements	High-visibility crossings and slip lane removal (complete).
CIP 20-01—Street Resurfacing (Miramonte Avenue)	Hans Avenue intersection improvements with rectangular rapid flashing beacon, bulb-outs, and high-visibility crosswalks; road diet; buffered bike lanes from Cuesta Drive to Castro Street;

Project from City’s Capital Improvement Program (CIP)	Capital Project Description
	protected bikeway (east side) Hans Avenue to Castro Street; and sidewalk gap closure at Starr Way to Barbara Avenue.
CIP 16-59—Charleston Road Improvements	Protected bikeways, protected intersections, sidewalks, and dedicated transit lanes.
CIP xx-15 and xx-16—Annual Traffic Infrastructure Maintenance/Neighborhood Traffic Management Program	High-visibility crosswalks on Latham Street (complete); buffered bike lanes on Cuesta Drive from Springer Road to Miramonte Avenue (complete); LED-enhanced crosswalk at Middlefield Road and Independence Avenue (complete); and eight-phase signal at Shoreline Boulevard and Latham Street.
Development-Related Improvements	Protected Bikeways on Amphitheatre Parkway; protected intersections at Amphitheatre Parkway and Shoreline Boulevard; signal upgrade at San Antonio Road and Fayette Drive (complete).

### Infrastructure Recommendations

The VZAP/LRSP Draft Plan includes recommendations for infrastructure projects and non-infrastructure programs based on technical analysis and input from the VZWG, community meetings, and BPAC.

Caltrans guidance for the LRSPs requires recommendations for specific infrastructure improvements at prioritized street corridors and intersections. The locations of these infrastructure projects were reviewed by the BPAC on February 22, 2023. Recommended corridor and intersection projects are listed in Tables 2 and 3, respectively. Each recommendation is subject to further engineering feasibility analysis.

**Table 2: Recommended Corridor Projects**

ID	Corridor	Segment/Location	Recommended Improvements Beyond Fiscal Year 2023-24 <sup>2</sup>
S-1	Rengstorff Avenue	El Camino Real—Middlefield Road	Green complete streets (CIP 27-xx)
S-2	El Camino Real (ECR)	Intersections of Escuela Avenue, El Monte Avenue, Shoreline Boulevard,	Protected intersections (CIP 22-29, ECR/Escuela/El Monte; CIP 27-xx, El Camino Real Construction)

<sup>2</sup> Capital Improvement Program (CIP) references are based on the Council Adopted Fiscal Year 2023-24 Budget as outlined in the [June 13, 2023](#) City Council meeting, Item 6.2, Attachment 1.

ID	Corridor	Segment/Location	Recommended Improvements Beyond Fiscal Year 2023-24 <sup>2</sup>
		Calderon Avenue, Sylvan Avenue	
S-3	Shoreline Boulevard	El Camino Real—Middlefield Road	Protected bikeways from El Camino Real to Montecito Avenue
S-4	California Street	Showers Drive—Shoreline Boulevard	Permanent installation—pending pilot results (CIP 26-xx, California Street Construction, Showers Drive to Shoreline Boulevard)
S-5	El Monte Avenue	City Limits to El Camino Real	El Monte corridor improvements (CIP 21-38, pending additional funding)
S-6	Ellis Street	Full Extent	Protected bikeways
S-7	San Antonio Road	Full Extent (in Mountain View)	Complete streets overpass (by Caltrain with County of Santa Clara and City of Palo Alto)
S-8	East Middlefield Road	East of State Route 85	Midblock crossing at light rail transit and sidewalk over State Route 85 and Stevens Creek Trail
S-9	Latham Street	West of Shoreline Boulevard	Sharrows, curb extensions or splitters, advance stop bar, high-visibility crosswalks, bike boulevard signs and markings, and speed humps west of Escuela Street—CIP 16-38, Latham Street/Church Street, bike boulevard (Pages 26-27, 33-35).
S-10	Grant Road	City Limits—El Camino Real	High-visibility crosswalks, new bikeways (Martens Avenue to El Camino Real)
S-11	Central Expressway	Shoreline Boulevard—Bernardo Avenue	High-visibility crosswalks, protected bikeways (by County of Santa Clara)
S-12	Old Middlefield Way	Full Extent	High-visibility crossings, protected bikeways
S-13	East Evelyn Avenue	Full Extent	Bikeways (CIP 25-xx and 27-xx, Evelyn Bikeway Design, Construction)
S-14	Amphitheatre Parkway	Full Extent	Protected bikeways

ID	Corridor	Segment/Location	Recommended Improvements Beyond Fiscal Year 2023-24 <sup>2</sup>
S-15	North Whisman Road	Central Expressway—Fairchild Drive	Complete streets
S-16	Miramonte Avenue	El Camino Real—City Limit	Complete streets upgrades Castro Street to El Camino Real (CIP 23-31) and City limits to Cuesta Drive
S-17	Sierra Vista Avenue	Full Extent: Silverwood Avenue—Rengstorff Avenue	Bike boulevard treatments
S-18	Cuesta Drive	Miramonte Avenue—Grant Road	Potential road diet (where feasible), high-visibility crossings, protected bikeways from Miramonte Avenue to Grant Road
S-19	East Dana Street	Calderon Avenue—Moorpark Avenue	Speed reduction, potential road diet, curb radii reduction, high-visibility crossing, slip lane removal, protected bikeways over State Route 85
S-20	Garcia Avenue	Bayshore Boulevard—Amphitheatre Parkway	Protected bikeways

**Table 3: Recommended Intersection Projects**

ID	Corridor	Segment/Location	Recommended Improvements Beyond Fiscal Year 2023-24 <sup>3</sup>
I-1	El Camino Real	Castro Street	Protected Intersection (CIP 25-xx, ECR/Castro Street)
I-2	Middlefield Road	Independence Avenue	Median crossing island, pedestrian hybrid beacon, and improved intersection lighting
I-3	Charleston Road	Amphitheatre Parkway	High-visibility crossing, protected intersection
I-4	Ortega Avenue	Latham Street	Curb extension, high-visibility crosswalk, traffic calming with traffic circle
I-5	Moffett Boulevard	State Route 85	Protected bikeways (CIP 24-03)

<sup>3</sup> CIP references are based on the Fiscal Year 2023-24 Budget as outlined in the [June 13, 2023](#) City Council Item 6.2, Attachment 1.

ID	Corridor	Segment/ Location	Recommended Improvements Beyond Fiscal Year 2023-24 <sup>3</sup>
I-6	Rengstorff Avenue	Old Middlefield Way	High-visibility crossing
I-7	California Street	Pacchetti Way	Pedestrian signal modification, high-visibility crosswalk, median crossing, curb radius reduction, bike signal phasing, and bike treatment at intersection
I-8	Whisman Road	Middlefield Road	High-visibility crossing, protected intersection
I-9	Whisman Road	Flynn Avenue	High-visibility crossing
I-10	Shoreline Boulevard	Amphitheatre Parkway	Curb ramp and hydrant relocation
I-11	East El Camino Real	Grant Road	High-visibility crosswalk, reduced curb radius, curb extensions, green-colored dashed bike lanes, pedestrian signal heads, adjusted signal timing, pedestrian refuge islands, bike box
I-12	Sierra Vista Avenue	Hackett Avenue	High-visibility crossing, bidirectional ramp, traffic circle
I-13	Mountain Shadows Drive	Shoreline Boulevard	Pedestrian hybrid beacon
I-14	Rengstorff Avenue	San Ramon Avenue	Pedestrian hybrid beacon at Junction Avenue
I-15	Charleston Road	Independence Avenue	Pedestrian refuge islands and high-visibility crossing
I-16	Bryant Avenue	Shady Spring Lane	High-visibility crossing
I-17	Rengstorff Avenue	Plymouth Street	Pedestrian hybrid beacon or other improvement
I-18	Evelyn Avenue	Bernardo Avenue	High-visibility crossing
I-19	Madison Drive	Van Buren Circle	Curb extension

### **Non-Infrastructure Recommendations**

The non-infrastructure recommendations listed in Table 4 focus on policy and programming to improve road safety for all road users. Actions include:

- Public messaging on speeding.

- Safe routes to school training and encouragement.
- Enforcement efforts that focus on behaviors associated with fatal and severe injury crashes.
- Policy and organizational efforts to support the City’s 2019 Vision Zero Policy goals.

The non-infrastructure recommendations were developed using the eight VZAP/LRSP emphasis areas and cover the following “Es”: Education, Encouragement, Engagement, Enforcement, Emergency Response, and Evaluation. In accordance with the [FHWA Safe System Approach](#), non-infrastructure recommendations are presented in relation to the five safe system elements:

- Safe Road Users (RU);
- Safe Roads (SR);
- Safe Speeds (SP);
- Safe Vehicles (VE); and
- Post-Crash Care (CC).

**Table 4: Non-Infrastructure Recommendation**

ID	Description	Timeline	Department	Status
<b>Safe Road Users</b>				
RU-1	Continue Safe Routes to School (SRTS) program with a focus on traffic safety training for students walking, biking, taking transit, and driving.	Annual	Public Works	Under way
RU-2	Strengthen SRTS collaboration and partnerships with parents, schools, and students to encourage safe walking, biking, and school access.	Annual	Public Works	Under way
RU-3	Provide helmet giveaways and bicycle repairs at City or community events, such as food pantries, back-to-school events, or Monster Bash.	Annual	Public Works, Police	Under way
RU-4	Conduct multilingual Vision Zero marketing, outreach, and engagement with behavior-change campaigns and targeted media buys on emphasis areas.	2024-25	Public Works, City Manager’s Office	Planning

ID	Description	Timeline	Department	Status
RU-5	Lead community-promoted walk/bike tours in different areas of the City with a focus on encouragement and training for new users.	Biannual	Public Works	Under way
RU-6	Support traffic safety workshop or walk tour at Senior Center to identify issues and provide individualized trip planning/tips for changing abilities.	Biannual	Public Works	TBD
RU-7	Encourage community-based bicycle education and safety classes covering basic skills, network awareness, laws, rules, and safety tips.	Annual	Public Works	TBD
RU-8	Implement programs, workshops, or trainings to empower youth and address high-risk behaviors, such as riding against traffic, midblock turns, and not wearing helmets.	2024-25	Public Works, Police	Planning
RU-9	Conduct high-visibility enforcement on speed, distracted/impaired driving, yield compliance, red-light running, and key maneuvers on HIN and school routes.	Ongoing	Police	Under way
RU-10	Implement multilingual ambassador program related to blocked bike lanes and red zones where parking in such locations introduces safety concerns.	TBD	Public Works, Police	TBD
RU-11	Periodically review the crossing guard program to optimize its effectiveness.	Biannual	Public Works, Police	Under way
RU-12	Provide universal graphics and/or multilingual communications regarding high-visibility enforcement activities.	Annual	Police, City Manager's Office	TBD
RU-13	Encourage residential transportation demand management strategies, including orientation on getting around without a car.	TBD	Public Works	Planning
RU-14	Support state legislation to incorporate pedestrian/bicycle safety training into state education standards.	TBD	Public Works, City Manager's Office	TBD
<b>Safe Roads</b>				
SR-1	Implement Impaired Driving Policies (for more details see Attachment 1)			

ID	Description	Timeline	Department	Status
SR-2	Prioritize capital projects on the HIN and equity priority locations.	Biannual	Public Works	Under way
SR-3	Obtain grants to accelerate implementation of priority capital projects to enhance safety of all road users.	Biannual	Public Works	Under way
SR-4	Advance SRTS walk audits observations into improvement recommendations.	Annual	Public Works	Under way
SR-5	Provide staff training on VZAP/LRSP.	2024-25	Public Works	TBD
SR-6	Provide staff training on defensive driving in City vehicles.	2024-25	Public Works	TBD
SR-7	Provide staff training on safe systems approach and safety countermeasures.	2024	Public Works	TBD
SR-8	Coordinate periodic site visits of Vision Zero Best Practices with or without regional partners.	Annual	Public Works	Under way
SR-9	Adopt NACTO, PROWAG, and/or other Best-Practice Guidance to inform engineering judgment.	2025	Public Works	Under way
SR-10	Update City standard details to reflect Vision Zero Best Practices.	2026	Public Works	TBD
SR-11	Provide multilingual Vision Zero-informed outreach.	2024-25	Public Works, City Manager's Office	Under way
SR-12	Update VZAP update every five years.	Every five years	Public Works	TBD
SR-13	Support state legislation to address potential safety improvements.	TBD	Public Works, City Manager's Office	TBD
SR-14	Review City protocols to improve consistency with Vision Zero Policy.	TBD	Public Works	TBD
SR-15	Provide training to relevant staff to be well-versed on Vision Zero countermeasures.	TBD	Public Works	TBD
SR-16	Provide input on projects that aligns with Vision Zero goals.	TBD	Public Works	TBD

ID	Description	Timeline	Department	Status
<b>Safe Speeds</b>				
SP-1	Conduct Vision Zero marketing that encompasses speed management campaign.	2024	Public Works	TBD
SP-2	Share Neighborhood Traffic Management Program (NTMP) ineligible study results and study data with Mountain View’s SRTS Coordinator.	TBD	Public Works	TBD
SP-3	Conduct high-visibility traffic enforcement on speed along the HIN.	Ongoing	Police	TBD
SP-4	Implement speed-limit reductions in accordance with AB 43.	2025	Public Works	Planning
SP-5	Track AB 645 automated enforcement pilot and support state legislation to expand the permanent program to all California cities.	2025	City Manager’s Office, Public Works	Under way
<b>Safe Vehicles</b>				
VE-1	Conduct public education campaign on benefits of pedestrian-friendly vehicles, such as compact cars.	TBD	Public Works	TBD
VE-2	Support free bicycle repair events.	2024	Public Works	Under way
VE-3	Provide education for decision makers on vehicle size and design impacts.	TBD	City Manager’s Office, Public Works	TBD
VE-4	Support state legislation for vehicle technology that addresses key crash factors.	TBD	City Manager’s Office, Public Works	TBD
<b>Post-Crash Care</b>				
CC-1	Provide multilingual emergency response teams for empathetic engagement with victims’ families.	TBD	Fire, Police	TBD
CC-2	Provide continuing education for emergency responders to understand travel behavior, decisions, and lived experience of local pedestrians/bicyclists.	TBD	Police	Under way

<b>ID</b>	<b>Description</b>	<b>Timeline</b>	<b>Department</b>	<b>Status</b>
CC-3	Establish protocols for Best-Practice communications to encourage accurate and agency-based narratives in media stories on crashes.	TBD	City Manager's Office, Public Works, Police	Under way
CC-4	Explore opportunities for acknowledgment and/or remembrance program.	TBD	City Manager's Office, Police	TBD
CC-5	Establish a rapid-response crash team (MVRRT) to examine factors associated with crashes on the HIN and potential solutions.	TBD	Fire, Police, Public Works	TBD
CC-6	Explore process to have fatal and serious injury crash reports shared with Traffic and Transportation staff in a timely manner.	2024	Police, Public Works	Under way
CC-7	Improve consistency of reporting for vehicle-pedestrian and vehicle-bicycle crashes.	2024	Police, Public Works	Under way
CC-8	Monitor collision data on a scheduled basis to measure progress toward Vision Zero goals.	Biannual	Police, Public Works	Under way
CC-9	Conduct quarterly Vision Zero Working Group meetings addressing recent activities, debriefing on recent crashes, and progress toward goals.	2024	Public Works+	Under way
CC-10	Collect before-and-after data when infrastructure improvements are made to measure behavior change.	TBD	Public Works	TBD

**NEXT STEPS**

Staff will be bringing the draft report, with BPAC's feedback on the recommendations, to the CTC this spring, and a final report to City Council later this year for consideration and adoption.

If Council adopts the Plan, staff will continue to work with multiple departments to implement the next steps in relation to non-infrastructure recommendations. Staff will also apply for grants to design and construct infrastructure recommendations.

**CONCLUSION**

The Draft Vision Zero Action Plan (VZAP)/Local Road Safety Plan (LRSP) respond to Council's Vision Zero Policy, which aims to eliminate fatal traffic crashes in Mountain View by 2030. The Plan was developed through a data-driven process involving crash and systemic safety analyses

with feedback from the BPAC, stakeholders, and community members. Based on this process, the Plan identifies seven safety corridors, including Rengstorff Avenue, Shoreline Boulevard, California Street, Ellis Street, El Monte Avenue, San Antonio Road, Middlefield Road, and Old Middlefield Way. The Plan includes infrastructure recommendations to address these corridors and other priority roadway segments and intersections. The Plan also includes non-infrastructure recommendations to provide additional direction in relation to safe road users, safe roads, safe speeds, safe vehicles, and post-crash care.

PA-RHL/1/PWK

935-03-27-24M

Attachment: 1. Draft Vision Zero Action Plan and Local Road Safety Plan

cc: PWD (A), APWD (A)–Byrer, PCE–Gonzales, CTE