



City of Half Moon Bay

LOCAL ROADWAY SAFETY PLAN

DRAFT

MARCH 2024

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GLOSSARY OF TERMS

Countermeasures are engineering infrastructure improvements that can be implemented to reduce the risk of collisions.

Emphasis Areas represent types of roadway users, locations, or collisions with safety issues identified based on local trends that merit special focus in the City's approach to reducing fatal and severe injury collisions.

Local Roadway Safety Plans, or LRSPs, are documents that provide local-level assessments of roadway safety and identify locations and strategies to improve safety on local roadways.

Crash Severity is defined by the guidelines established by the Model Minimum Uniform Crash Criteria (MMUCC, Fifth Edition) and is a functional measure of the injury severity for any person involved in the crash.

- **Fatal Collision [K]** is death because of an injury sustained in a collision or an injury resulting in death within 30 days of the collision.
- **Severe Injury [A]** is 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.
- **Other Visible Injury [B]** includes bruises (discolored or swollen); places where the body has received a blow (black eyes and bloody noses); and abrasions (areas of the skin where the surface is roughened or blotchy by scratching or rubbing which includes skinned shins, knuckles, knees, and elbows).
- **Complaint of Pain [C]** classification could contain authentic internal or other non-visible injuries and fraudulent claims of injury. This includes: 1. Persons who seem dazed, confused, or incoherent (unless such behavior can be attributed to intoxication, extreme age, illness, or mental infirmities). 2. Persons who are limping but do not have visible injuries; 3. Any person who is known to have been unconscious because of the collision, although it appears he/she has recovered; 4. People who say they want to be listed as injured do not appear to be so.
- **Property Damage Only [O]** Collision is a noninjury motor vehicle traffic collision which results in property damage.

Highway Safety Improvement Program (HSIP) is one of the nation's core federal-aid programs. Caltrans administers HSIP funds in the state of California and splits the state share of HSIP funds between State HSIP (for state highways) and local HSIP (for local roads). The latter is administered through a call for projects biennially.

Primary Collision Factors (PCFs) convey the violation or underlying causal factor for a collision. Although there are often multiple causal factors, a reporting officer at the scene of a collision indicates a single relevant PCF related to a California Vehicle Code violation.

Safe Streets for All (SS4A) is a federal discretionary grant program created by the 2021 Bipartisan Infrastructure Law with \$5 billion in appropriated funds for 2022 through 2026.

Safe System Approach is a layered method for roadway safety promoted by the FHWA. This approach uses redundancies to anticipate mistakes and minimize injury. For more, visit https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf.

Safety Partners are agencies, government bodies, businesses, and community groups that the City can work with to plan, promote, and implement safety projects.

Strategies are non-engineering tools that can help address road user behavior, improve emergency services, and build a culture of safety.

Systemic safety defines an analysis and improvement approach based on roadway and environmental factors correlated with crash risk (rather than targeting locations solely on documented crash history). The approach takes a broad view to evaluate risk across an entire roadway system.

INTRODUCTION

This chapter serves as a standalone local roadway safety plan (LRSP) for the City of Half Moon Bay. It was developed concurrently with the Countywide LRSP; therefore, some discussion will refer back to the Countywide LRSP to avoid redundancy.

However, because every community has unique safety challenges, this LRSP includes individually tailored emphasis areas, crash trends, prioritized project lists, project scope recommendations, Safe System-aligned recommendations, and implementation/monitoring recommendations. A living document, this LRSP is designed to be flexible and responsive to evolving community needs. The City will revisit and update this LRSP at least every five years.

The City of Half Moon Bay has a 2023 population of 11,226 per California Department of Finance. The city has 30 total centerline miles per Caltrans 2022 California Public Road Data. From 2018 through 2022, there were 145 reported crashes on surface streets in the City and 17 fatal/severe injury crashes. In that time period, pedestrians were involved in 9 percent of all reported crashes and 18 percent of fatal/severe injury crashes. Bicyclists were involved in 10 percent of all reported crashes and 12 percent of fatal/severe injury crashes. LRSP provides Safe System-aligned strategies tailored to Half Moon Bay's crash history and local priorities, as well as performance measures to evaluate progress.

This LRSP was informed by technical analysis as well as from input from key stakeholders and the general public. The following sections describe the plan development and recommendations.

Contents

This LRSP provides the following:

	A vision and associated goals		Policies, plans, guidelines and standards
	Crash data and trends		Safe System – aligned recommendations
	Engagement and coordination activities		Implementation and tracking
	Prioritized projects and social equity considerations		

Upon Council adoption and affirmation of the plan's vision and goals in 2024, this plan will be posted online by the City for public viewing.

VISION AND GOALS

The City of Half Moon Bay vision for roadway safety is:

- Eliminate all traffic fatalities and reduce the number of non-fatal crashes by 50 percent by 2050.

To support this vision, the City has established the following goals:

1. Regularly review crash history and community needs to identify and prioritize opportunities to reduce crash risk for roadway users of all ages and abilities.
2. Embrace the Safe System approach to promote engineering and non-engineering strategies in the community.
3. Monitor implementation of the City of Half Moon Bay LRSP to track progress towards goals.

PLAN DEVELOPMENT

Existing Safety Efforts

This LRSP relies on the City of Half Moon Bay's solid foundation of plans, policies, and programs that support safe, equitable mobility in the city. For a list of Half Moon Bay's existing initiatives and ongoing efforts to build a Safe System, see Table 1:

Table 1. City of Foster City Safety Policies, Plans, Guidelines, Standards, and Programs

Program Name	Program Description	Safe System Elements
San Mateo C/CAG Safe Routes to School (SR2S) Program Guide	The SR2S program works to make it easier and safer for students to walk and bike to school. C/CAG partners with the County Office of Education to increase biking and walking and safe travel to school. Annual reports summarize schools' participation.	Safe Roads Safe Speeds Safe Road Users
City of Half Moon Bay Bicycle and Pedestrian Master Plan	This plan identifies needs and prioritizes improvements to the City of Half Moon Bay's pedestrian and bicycle facilities and programs. Informed by existing infrastructure and current safety issues, this plan recommends improvements to address current and future bike/ped demand based on current conditions and anticipated infill development. This plan also provides a blueprint for the City to implement a complete bicycle and pedestrian network over time. Finally, the plan provides the City with the necessary tools to apply for a grant funding for implementation. The plan should be revised over time as new conditions and opportunities arise.	Safe Roads, Safe Road Users, Safe Speeds
Capital Improvement Project—Neighborhood Traffic Safety Program	This program involves the implementation of a neighborhood traffic-calming and safety program and will provide a source of funding to address neighborhood concerns.	Safe Roads, Safe Road Users, Safe Speeds

Program Name	Program Description	Safe System Elements
Capital Improvement Project—Bicycle and Pedestrian Connectivity and Safety Program	This program is intended to fund bicycle and pedestrian improvements identified in the Bicycle and Pedestrian Master Plan as part of other defined projects. Funds may also be used as a matching source for potential grant opportunities. Examples of elements funded through this program include bike lane striping and regulatory/wayfinding signage.	Safe Roads, Safe Road Users, Safe Speeds

Safety Partners

A variety of agency staff and community partners were involved throughout the development of this LRSP and played an integral role in identifying priorities, providing local context, and reviewing the existing conditions analysis. Many of the strategies identified in this plan will require coordination with these partners and their support of Foster City's effort to create a culture of roadway safety. While additional partners may be identified in the future, those involved in development of the LRSP include:

- City/County Association of Governments of San Mateo County (C/CAG)
- County Public Health
- Office of Sustainability
- San Mateo County Office of Education (SMCOE)
- San Mateo County Transportation Authority (SMCTA)
- California Highway Patrol
- Metropolitan Transportation Commission (MTC)
- Silicon Valley Bicycle Coalition (SVBC)
- Caltrans
- Foster City Police Department

Community Engagement and Input

This LRSP includes community members' experiences and concerns gathered from project team hosted pop-up events and an interactive webmap.

ENGAGEMENT TIMELINE AND EVENTS

The project team hosted a series of public engagement events countywide to support the concurrent development of the Countywide LRSP and of the City's plan. These events focus on jurisdiction-specific issues and on countywide concerns. The table below lists the events, organized by themed engagement phases, and is followed by the community input themes we heard.

Table 2. Community Engagement Phases and Events

Date	Event	Location
August 10, 2023	Countywide Virtual Kickoff Meeting: Shared the purpose and timing of the plan	Virtual meeting (recorded and posted to plan website)
August 16, 2023	Phase 1 Pop-up/Tabling Event: Shared crash data analysis; received input on locations and safety concerns	East Palo Alto
August 19, 2023		Half Moon Bay Farmers Market
August 20, 2023		Foster City Summer Days
August 27, 2023		San Carlos Block Party
August – September, 2023	Phase 1 Concurrent Online Input	Online webmap (countywide input)
December 17, 2023	Phase 2 Pop-up/Tabling Event: Shared draft prioritized locations and types of engineering recommendations; received comments on locations and votes/input on types of treatments and desired locations	Belmont Farmers' Market
December 20, 2023		Woodside Public Library
January 9, 2024		Colma BART Station
January 16, 2024		Atherton Library
January 18, 2024		Brisbane Farmers' Market
February 7, 2024		Portola Valley Bicycle, Pedestrian, & Traffic Safety Committee
March – April 2024	Phase 3 Draft Plan	Various
	Share the draft plan publicly on the project website, through electronic distribution channels, and with presentations to C/CAG Committees and the Board.	

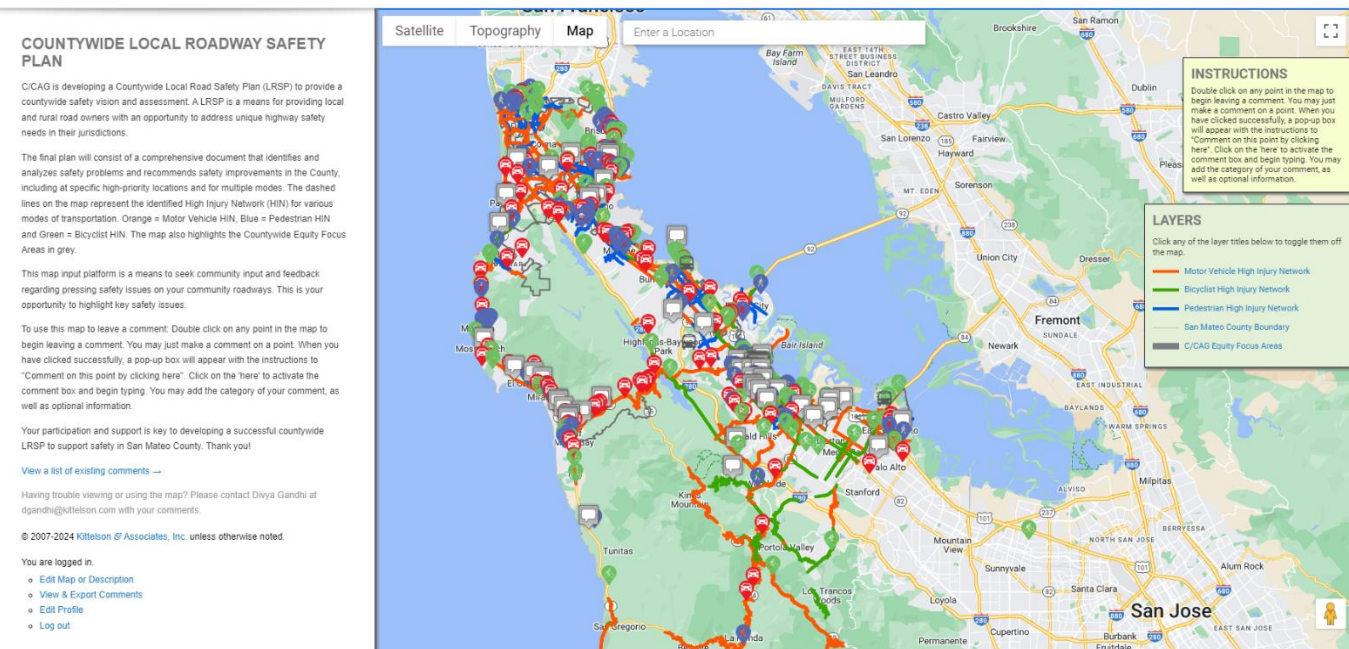
Figure 1. A pop-up event at the Half Moon Bay Farmers Market



ONLINE MAP SURVEY

The project team made an online countywide webmap tool and survey available during August and September 2023 for the public to provide comments and respond to questions to guide the plan’s development (see Figure 50). Respondents were able to record location-specific feedback, associate a travel mode, and leave a detailed comment pertaining to a safety concern.

Figure 2. Online Map Survey Tool



Countywide, there were a total of 528 comments recorded by 352 respondents. There were 44 comments made within the City of Foster City in addition to the conversations and feedback recorded at the Phase I event in August. The comments included the following:

Biking Concerns/Requests

- Add new bike infrastructure such as protected bike lanes, separated bike lanes, road diets, bike tunnels, and bike bridges.
- Upgrade or general maintenance concerns of existing bike infrastructure including restriping bike lanes and removing debris along bike paths.
- Concerns regarding conflicts with motor vehicles including high traffic volumes and congestion, vehicle speeds, right of way issues, and turning conflicts at intersections.

Pedestrian Concerns/Requests

- Add new pedestrian infrastructure or upgrade existing infrastructure such as building new and/or continuous sidewalks, widening existing sidewalks, providing pedestrian refuge islands, midblock crossings, and high visibility crosswalks.
- Requests to provide safe crossing paths across highways.
- Signage requests including installing STOP signs at unsignalized intersections, installing rectangular rapid flashing beacons, push buttons for WALK signs and increasing pedestrian walk times and modifying signals to include a leading pedestrian interval (especially at schools).
- Concerns regarding conflicts with motor vehicles including speeding, running STOP signs and conflicts at intersections.
- Pedestrian visibility concerns: street lighting is absent or insufficient.
- Concerns regarding speeding bikes, creating potential conflicts with pedestrians.

Traffic Enforcement Concerns

- Multiple concerns regarding running STOP signs, red lights, and illegal turning movements.
- Concerns regarding speeding observed at multiple locations – requests for traffic calming especially in school zones.

Roadway Infrastructure/ Traffic Operations Concerns

- Primary concerns include traffic congestion, and narrow lanes.
- Concerns regarding maintenance of roadway infrastructure including high friction of the roadway surfaces, potholes, improving visibility at intersections, repairing roadways from storm damage.
- Requests to separate traffic in opposing directions to prevent head-on crashes.
- Requests to improve emergency vehicle access and to make the roadway infrastructure in the city ADA compliant.
- Install street lighting to increase visibility along roadways.

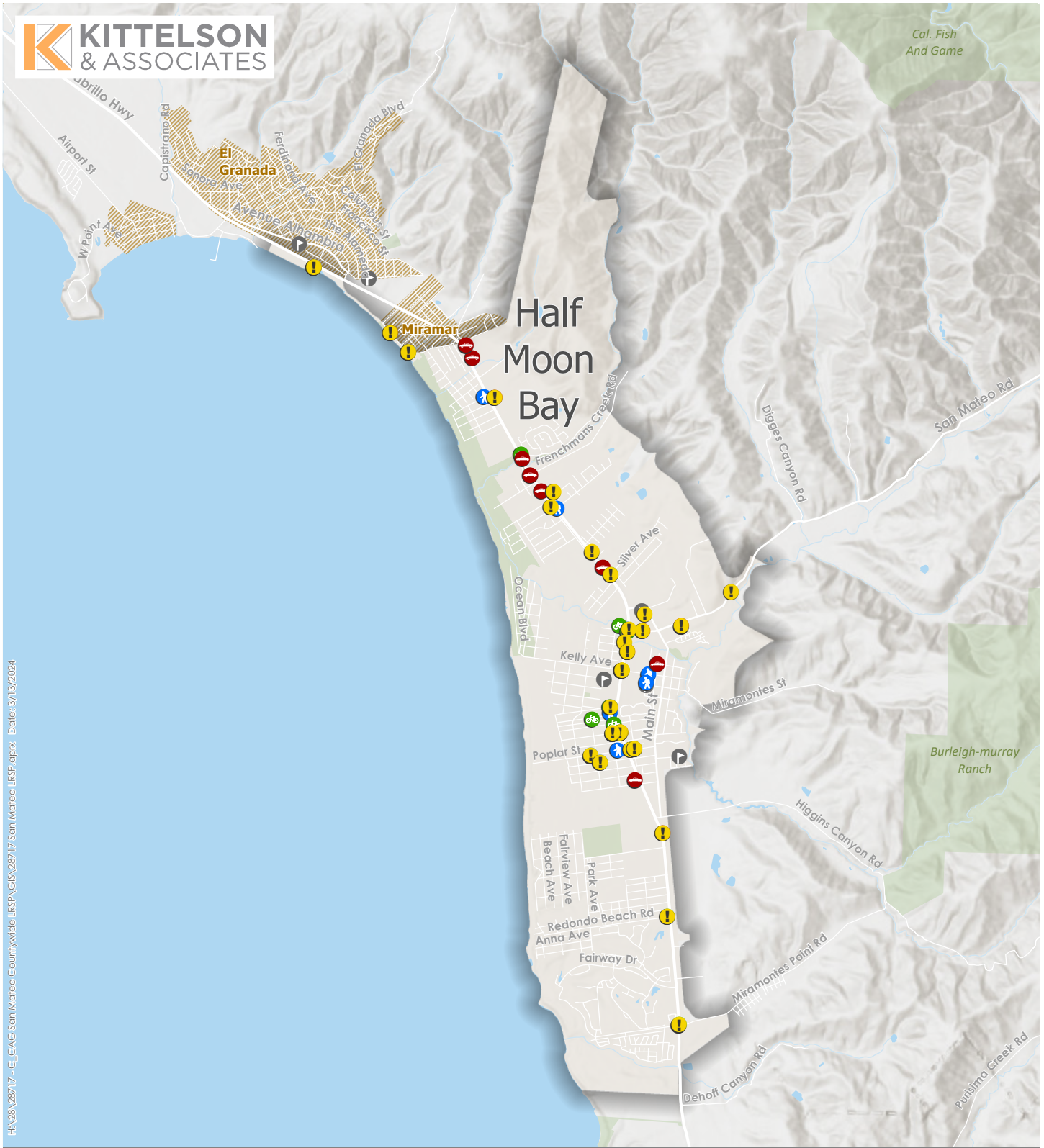
The location and modal emphasis of comments in Half Moon Bay is presented in Figure 51. The comments received are provided in Appendix A. The project team also identified common themes in the responses made countywide which may be relevant to the City. Those are presented in the Community Engagement section of the Countywide LRSP.

PHASE 2 COMMUNITY ENGAGEMENT FEEDBACK

The project team held an event at the Belmont Farmers' Market in January as part of Phase 2, which provided the project team with input on specific location concerns, general traffic safety/behavioral concerns, and opinions on specific engineering treatments or strategies. The comments received are provided in Appendix B. The following themes were identified for locations in the City of Half Moon Bay:

Motor Vehicle Comments

- Concerns about speeding on roadways, specifically between Highway 1 and Main Street
- Desire for improvements to encourage slower speeds



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- | | | | |
|--|---------------------------------|--|-----------------------|
| | Safety Concern - Walking | | Schools |
| | Safety Concern - Bicycling | | BART Station |
| | Safety Concern - Public Transit | | Caltrain Station |
| | Safety Concern - Driving | | Unincorporated Places |
| | General Comments | | Parks |

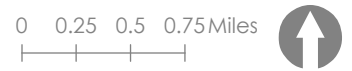


Figure 3

**Public Comments
City of Half Moon Bay, CA**

CRASH DATA & TRENDS

This section provides an overview of the five years of crash data used for this analysis. The data were downloaded from the Transportation Injury Mapping System¹ (TIMS) Crash database representing the full years 2018 through 2022. TIMS is a commonly used data source for safety plans. This analysis includes only crashes for which some level of injury is reported and excludes property damage only (PDO) crashes. We removed crashes along grade-separated freeways from the dataset, but we retained crashes that occur along at-grade State Highway facilities and those that occurred within the influence area of freeway ramp terminal intersections.

The crash records used provide the best available data for analysis but do not account for crashes that go unreported or for near-miss events. This plan includes recommendations that would improve jurisdictions' ability to capture one or both of those elements and enhance future crash analyses.

The discussion that follows provides a high-level overview of crash trends that informed the plan recommendations. For a more complete description of trends and findings, refer to Appendix C.

Emphasis Areas

The project team analyzed crash data in Half Moon Bay and compared countywide trends to establish emphasis areas. Emphasis areas are crash dynamic, behavioral, or road user characteristics that the City can focus on to maximize fatal and severe injury reduction on local roads.

A review of crash data and input led to the development of the following emphasis areas for the City of Half Moon Bay:

1. **Pedestrian and bicyclist safety.** Countywide, pedestrians were involved in 13 percent of injury crashes but 23 percent of fatal/severe injury crashes, showing a disproportionate involvement in the most severe outcomes. Similarly, bicyclists were involved in 13 percent of injury crashes but 20 percent of fatal/severe injury crashes. In Half Moon Bay, pedestrians and bicyclists were involved in 18 percent and 12 percent of the 17 reported F/SI crashes—higher than their overall share of all injury crashes (9 percent and 10 percent, total).
2. **Nighttime/low light safety.** Countywide, crashes occurring in dark conditions—especially in dark, unlit conditions—are more severe than those that occur in daylight. Motor vehicle crashes in dark, unlit conditions have about double the average severity when they occur compared to crashes in daylight. In Half Moon Bay, two of the three fatal/severe injury pedestrian crashes (67 percent) occurred in dark conditions. Among crashes of all modes, 24 percent of fatal/severe injury crashes occurred in dark conditions.
3. **Unsignalized intersections on arterials/collectors.** Countywide, crashes for all modes most frequently occurred at the intersection of higher order and lower order roadways – most commonly along arterial and collector roadways. Pedestrian and bicyclist crashes most frequently occur at unsignalized intersections.
4. **Vulnerable age groups (youth and aging).** Countywide across all modes, crash victims between the 15 to 34 years old are more likely to be injured including F/SI as a result of traffic safety than other groups. Victims between the ages 50 – 69 and 75 to 84 are also more likely to be severely injured than other groups. In Half Moon Bay, 8 crashes or 6 percent of all reported injury crashes involve at fault drivers who are under 30 years old.

¹ Transportation Injury Mapping System, <http://tims.berkeley.edu>

5. **Motor vehicle speed related roadway segment crashes.** Countywide, motor vehicle crashes were more severe along roadway segments than at any other location type; unsafe speed was the most commonly cited the primary crash factor (27 percent of injury crashes and 23 percent of fatal/severe injury crashes). In Half Moon Bay, “Too fast for conditions” was the top-cited violation among motor vehicle crashes (in 37 percent of injury crashes).
6. **High speed roadways (35+mph).** Countywide, crashes on roadways with posted speeds 40mph or higher had an average crash severity per mile 13 times higher than along roadways with posted speeds of 25 mph or less.
7. **Alcohol involvement.** Countywide, one in ten (10 percent) of motor vehicle injury crashes and one in five F/SI motor vehicle crashes (19 percent) involved alcohol. In Half Moon Bay, 13 percent of all reported injury crashes involve impaired driving.

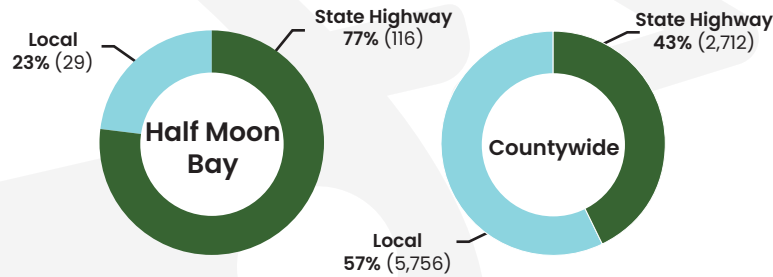
The next pages present summary findings from a crash data review that compares the City of Half Moon Bay to countywide trends in these emphasis areas. It includes summary statistics related to the above-cited emphasis areas but also shows:

- The share of local crashes that occurred on or at a State Highway facility compared to Countywide levels.
- The most frequently reported local crash types compared to Countywide levels.
- The share of bicyclist and motor vehicle crashes among all injury crashes and among F/SI crashes. Countywide and locally, bicyclist crashes account for a higher share of F/SI crashes than among all injury levels.
- The share of local and Countywide crashes occurring in dark conditions for crashes of all injury levels and for F/SI crashes (organized by mode).
- Reported pedestrian and bicyclist crashes summarized by the most common preceding movements countywide, with a comparison of those movements’ share of local crashes to Countywide shares.
- The local and Countywide share of crashes involving drugs or alcohol and involving drivers under age 30.

Half Moon Bay—Crash History

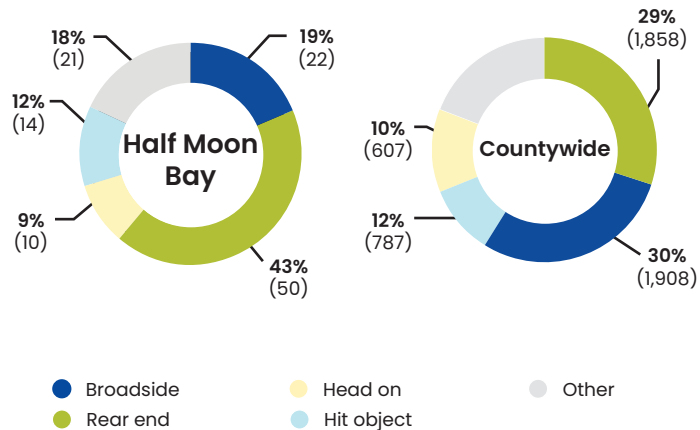
Total Crashes

In Half Moon Bay, 145 fatal and injury crashes were reported on at-grade facilities between 2018 – 2022, where:



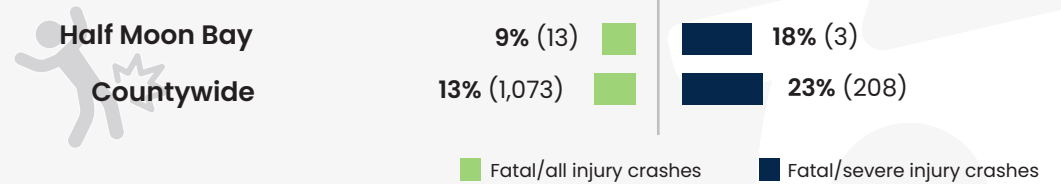
Most Frequent Collision Types

Broadside, rear-end, head-on, and hit-object crashes were the most common crash types in the region. Here is how Half Moon Bay compares:

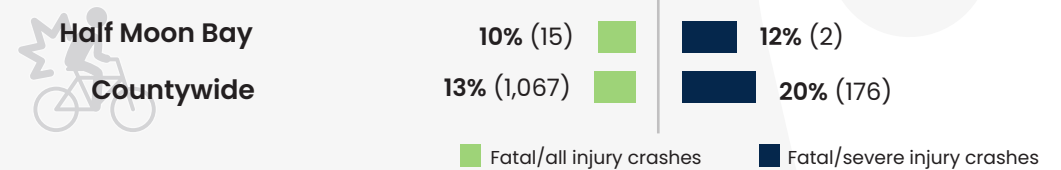


Mode Involvement

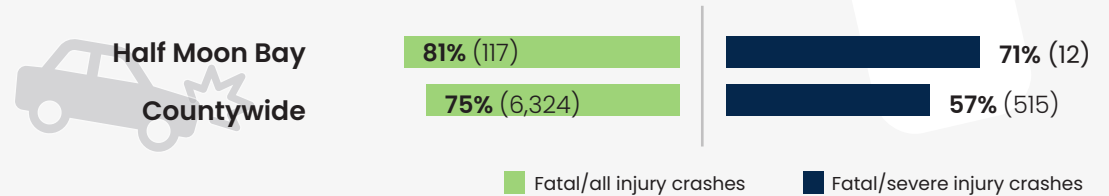
Pedestrian Crashes (8)



Bicycle Crashes (5)



Motor Vehicle¹ Crashes (56)



13% (19)

of reported collisions in Half Moon Bay involved drugs or alcohol



6% (8)

of reported collisions in Half Moon Bay involved young drivers¹

8% (625)

Compared to the countywide total, where 8% (625) of reported collisions involved drugs or alcohol

5% (472)

Compared to the countywide total, where 5% (472) of reported collisions involved young drivers²

1. Motor crashes include motor vehicles and motorcyclists.

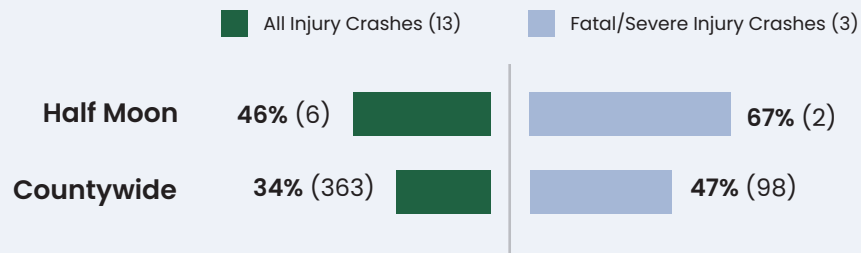
2. Young driver crashes are crashes that involve at fault drivers who are under 30 years old.

Half Moon Bay—Crash History

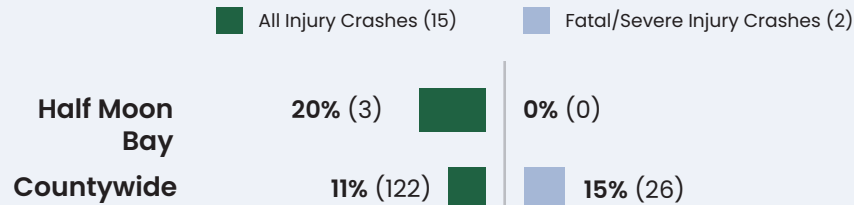
Dark Conditions

Crashes reported in nighttime conditions were found to be more severe—especially in dark, unlit conditions. Here is how Half Moon Bay compares to Countywide crashes:

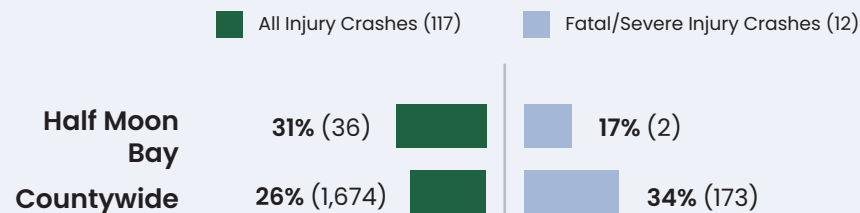
Share of Pedestrian Crashes in Dark Conditions (6)



Share of Bicyclist Crashes in Dark Conditions (3)

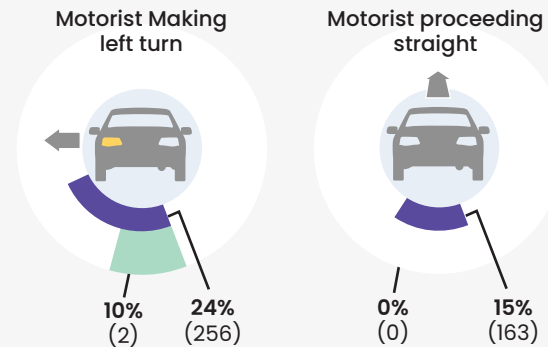


Share of Motor Vehicle Crashes in Dark Conditions (36)

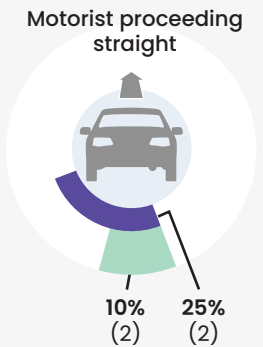


Reported Pedestrian Crashes (3)

Pedestrian Crossing at Intersection

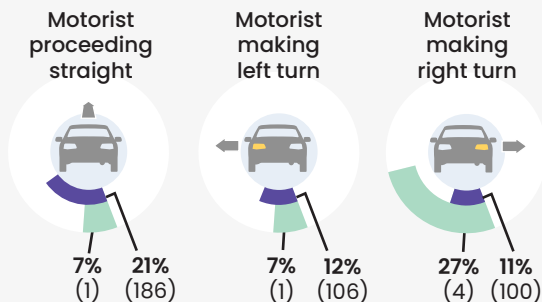


Pedestrian Crossing Not at a Crosswalk

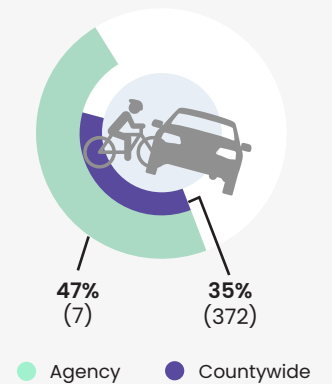


Reported Bicycle Crashes (2)

Bicyclist Proceeding Straight



Perpendicular Bicyclist Crashes



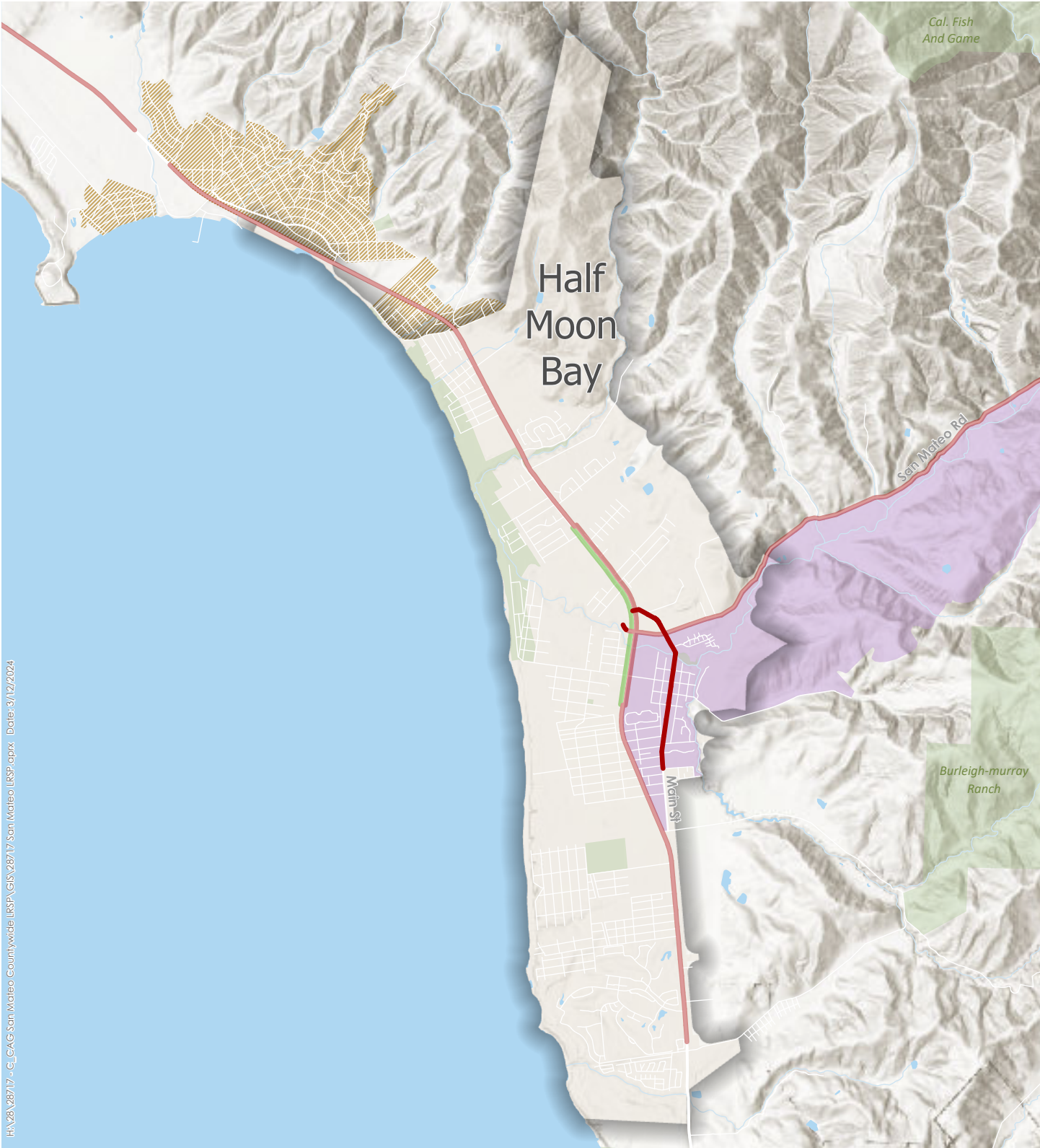


Countywide High Injury Network






In addition to the systemic analysis findings, the analysis included countywide spatial analysis to identify a countywide high injury network for each travel mode (pedestrians, bicyclists, and motor vehicles). The countywide HIN results were folded into the subsequent regional and local prioritization (described in the next section). Additionally, the characteristics of the HIN and crashes along them were identified as risk factors and incorporated into emphasis areas and into a systemic portion of the prioritization process. Table 3 and Figure 4 show the HIN segments identified within the City.





Table 3. Countywide HIN Segments in Half Moon Bay

Roadway name	All County Jurisdiction(s) including this HIN Roadway	Total Length, all jurisdictions included (mi)	Motor Vehicle HIN	Bicyclist HIN	Pedestrian HIN
SR 1	Half Moon Bay, Pacifica, Unincorporated	30.4	X	X	
San Mateo Rd	Half Moon Bay, Unincorporated	6.6	X		
Main St	Redwood City, Half Moon Bay	2.0	X		



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-  Schools
-  BART Station
-  Caltrain Station
-  Unincorporated Places
-  Parks

- Local HIN**
-  Motor Vehicle
 -  Bicycle
 -  Pedestrian
 -  C/CAG Equity Focus Areas




- Highway HIN**
-  Motor Vehicle
 -  Bicycle
 -  Pedestrian



Figure 4
**Pedestrian + Bicyclist + Motor Vehicle
 Combined High Injury Network (HIN)
 City of Half Moon Bay, CA**

PROJECT IDENTIFICATION & PRIORITIZATION

Methodology

Using the results of the crash data analysis and adding a focus on social equity, the project team identified priority locations for the City to target for future safety improvements. The prioritization used three equally weighted factors to prioritize locations for safety projects:

- **Crash history** – used to identify the locations with the highest reported five-year crash frequency and severity.
- **Social equity** – used to identify locations where projects would benefit disadvantaged populations and align with future grant funding opportunities that emphasize social equity.
- **Systemic factors** – used to identify locations that have roadway and land use characteristics associated with crash frequency and severity. Using systemic factors emphasizes a proactive rather than purely reactive approach. Each factor was weighted relative to the other factors based on the average severity of relevant crashes (for example, if pedestrian crashes on arterials/collectors were overall twice as severe as pedestrian crashes at unsignalized intersections overall, then the former would be weighted twice the latter).

Each factor is comprised of multiple criteria and overlaid on jurisdictions' roadway data to identify locations for future safety projects. The prioritization process was conducted three times, one for each travel mode. The weighting scheme for each mode is presented in the three figures below (Figure 5, Figure 6, and Figure 7).

Figure 5. Pedestrian Prioritization Factor/Criteria Weighting (Sum to 100 Percent)

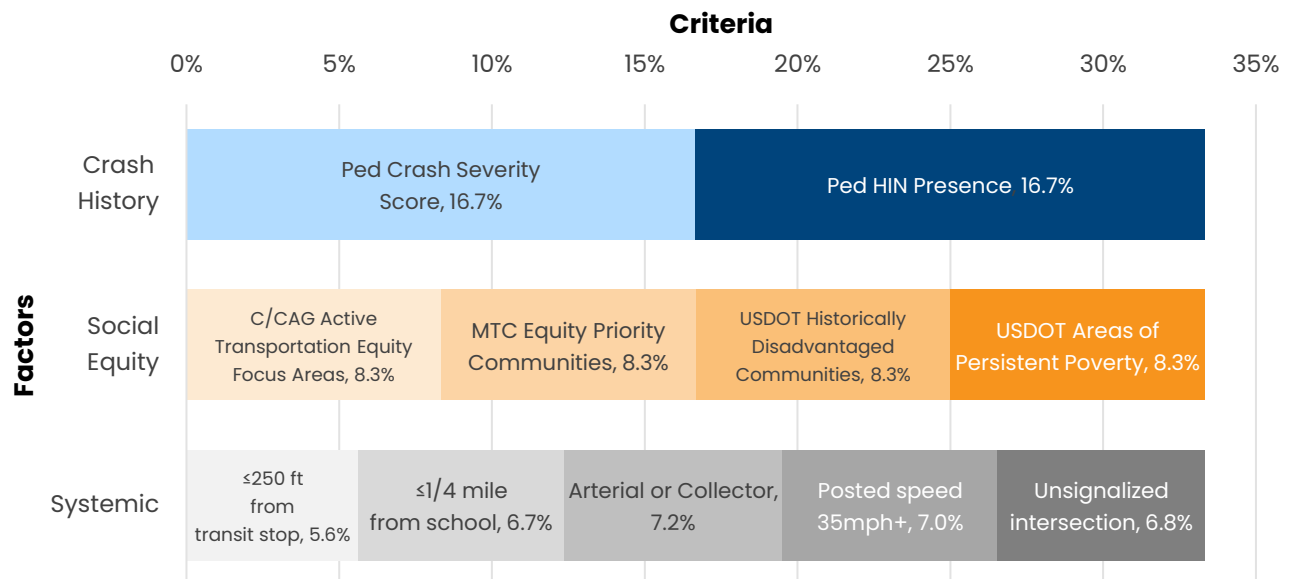


Figure 6. Bicycle Prioritization Factor/Criteria Weighting (Sum to 100 Percent)

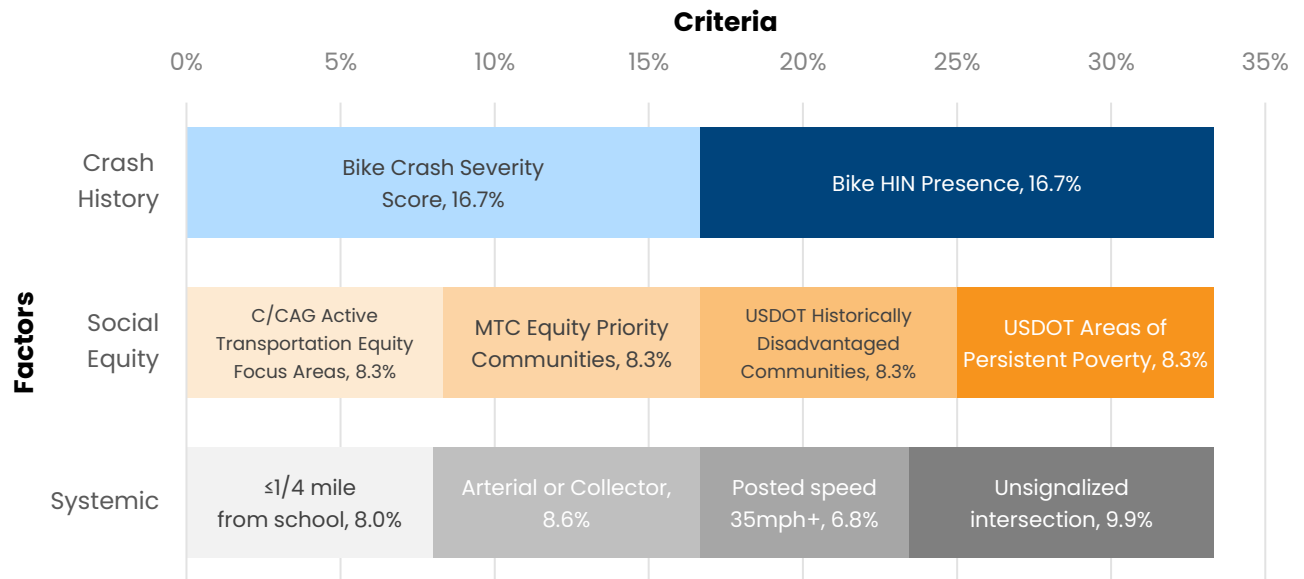
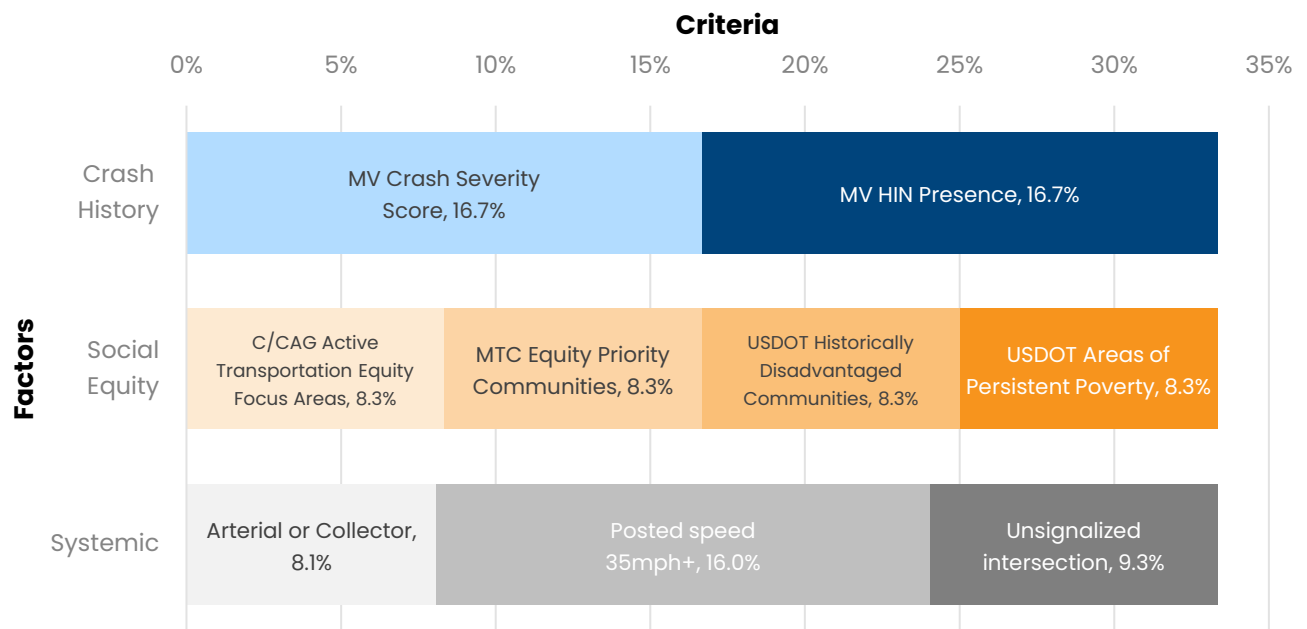


Figure 7. Motor Vehicle Prioritization Factor/Criteria Weighting (Sum to 100 Percent)



Social Equity

Social equity is a critical factor for project prioritization, and emphasizing social equity within a project prioritization process helps to promote infrastructure spending and improvements in disadvantaged and/or disinvested neighborhoods. We considered and included multiple local, regional, and national datasets for social equity prioritization to reflect different measures available and because available funding opportunities use different indicators. The prioritization included measures accounting for all of the following indicators:

- C/CAG Active Transportation Equity Focus Areas
- MTC Equity Priority Communities
- USDOT Historically Disadvantaged Communities
- USDOT Areas of Persistent Poverty

Layering in these four indicators allows the prioritization to identify more locations that may meet the criteria for just one of these indicators while still elevating locations that show up in multiple or all indicators. The raw scoring data also equips the City to understand which locations meet which measures.

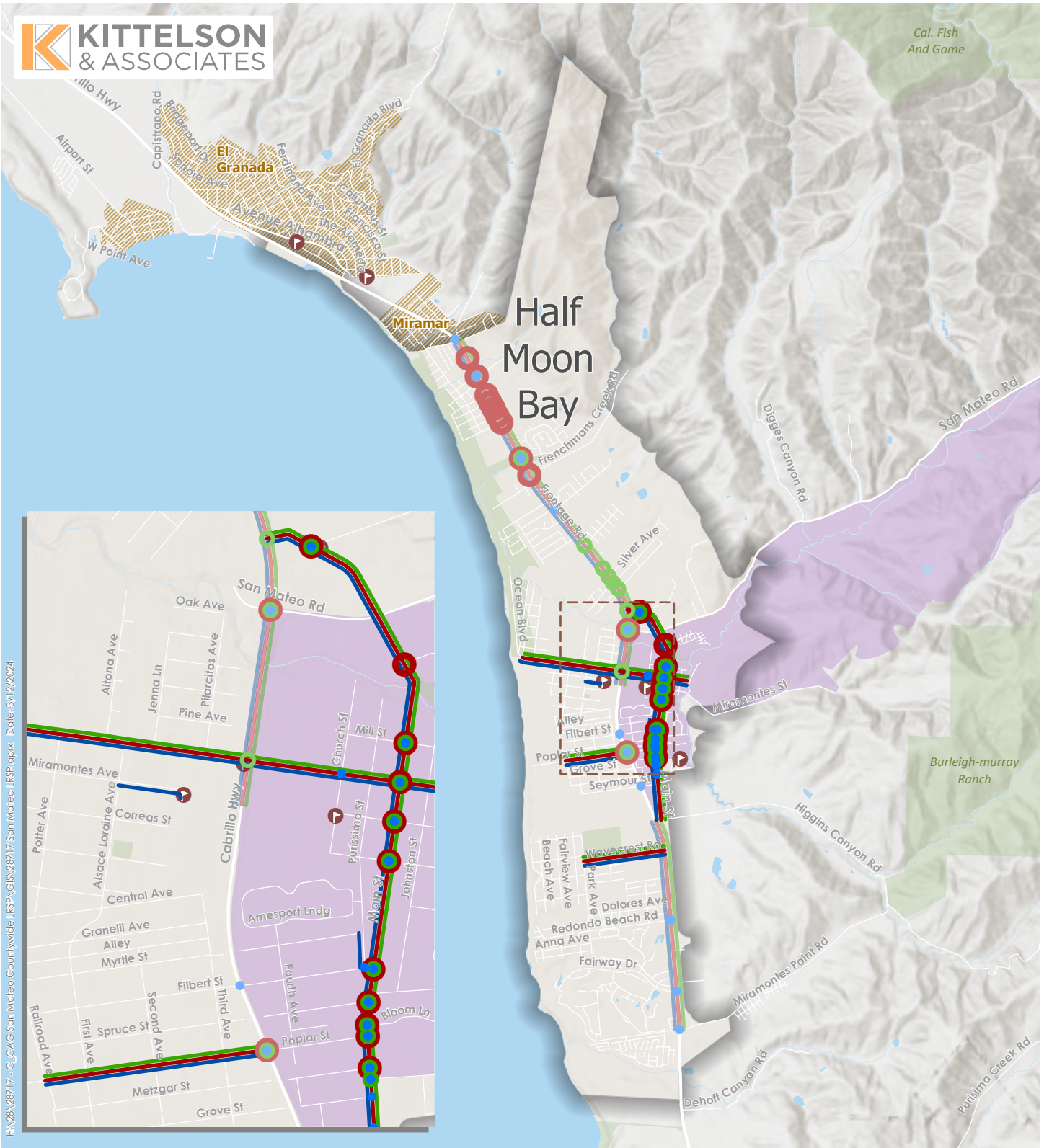
Results

The prioritization resulted in the following top locations. For more details (including the scores of each location), consult Appendix D. Figure 8 also shows the locations.

Table 4. Priority Locations

ID	Location	Corridor/ Intersection	State Highway?	Motor Vehicle Emphasis	Bicycle Emphasis	Pedestrian Emphasis
1	Highway 1 and Poplar St	Intersection	Yes	X	X	X
2	Highway 1 and Ruisseau Francais Ave	Intersection	Yes	X	X	X
3	Main St and Lewis Foster Dr	Intersection	No	X	X	X
4	Highway 1 and Miramontes Point Rd	Intersection	Yes			X
5	Highway 1 and Fairway Dr	Intersection	Yes			X
6	Highway 1 and Mirada Rd	Intersection	Yes			X
7	Highway 1 and Redondo Beach	Intersection	Yes			X
8	Highway 1 and Roosevelt Blvd	Intersection	Yes			X
9	Highway 1 and Filbert St	Intersection	Yes			X
10	Highway 1 and Spindrift Way	Intersection	Yes			X
11	Filbert St and Purissima St and Main St	Intersection	No			X

ID	Location	Corridor/ Intersection	State Highway?	Motor Vehicle Emphasis	Bicycle Emphasis	Pedestrian Emphasis
12	Highway 1 and Seymour St	Intersection	Yes			X
13	Church St and Kelly Ave	Intersection	No			X
14	Highway 1 and Highway 92	Intersection	Yes	X	X	X
15	Kelly Ave	Corridor	No	X	X	X
16	Main St	Corridor	No	X	X	X
17	Poplar St, from Highway 1 to Railroad Ave	Corridor	No	X	X	X
18	Highway 1, from Miramontes Point Rd to Main St South	Corridor	Yes	X	X	X
19	Highway 1, from Main Spindrift Way to Rousseau Francais Ave	Corridor	Yes	X	X	X
20	Wavecrest Rd, from Highway 1 to the Coastal Trail	Corridor	No	X	X	X
21	Miramontes Ave, from Alsace Lorraine to east end	Corridor	No			X



Local Priority Locations

- Pedestrian Intersections
- Bicycle Intersections
- Motor Vehicle Intersections
- Pedestrian Segments
- Bicycle Segments
- Motor Vehicle Segments

Highway Priority Locations

- Pedestrian Intersections
- Bicycle Intersections
- Motor Vehicle Intersections
- Pedestrian Segments
- Bicycle Segments
- Motor Vehicle Segments

- P Schools
- C/CAG Equity Focus Areas



Figure 8

**Priority Intersections and Segments
City of Half Moon Bay, CA**



IMPROVEMENTS – ENGINEERING, POLICY & PROGRAMS

This section presents Safe System-aligned recommendations that can create levels of redundancy for traffic safety in the City of Half Moon Bay. First are engineering recommendations: identified project scopes and a table of engineering countermeasures proven to reduce fatal and severe injury crashes. The countermeasures align to the crash types as listed in the table. Complementing those countermeasures is a holistic set of policy and programmatic recommendations that will help align City departments and partners in pursuit of the plan’s vision and goals.

Project Scopes

With the development of this plan the project team worked with the City to identify two project locations or two groups of project locations to apply safety treatments. We worked from the list of priority project locations and used potential benefit-to-cost ratio to identify a suite of treatments the City could consider at these locations. The City can move forward with further project development and community engagement to advance solutions at these locations. They may also consider bundling some of the treatments identified with the same treatments at other, similar locations identified in this plan, for a systemic approach.

The project scopes were developed exclusively from a list of City-approved engineering countermeasures, which are presented as an engineering toolbox in the next section. The team prepared a suite of treatments to reduce crashes at the project locations. For each treatment, the list presents a planning-level cost of the treatments as recommended and the crash reduction benefit.

The scoped project locations include:

- Kelly Ave E to W City limit. Recommended improvements include:
 - Separated bike lanes

- Midblock pedestrian crossing with enhanced safety features (flashing beacons, curb extensions, advance “yield” lines)
- Dynamic/variable speed warning signs
- Main St N to City limit. Recommended improvements include:
 - Separated bike lanes
 - Pedestrian crossing with enhanced safety features (Rectangular Rapid Flashing Beacon, curb extensions, advance “yield” lines) at Main St/Spruce St
 - Raised pedestrian crossings at three locations
 - Dynamic/variable speed warning signs

For more information on the location, cost, and crash diagnostics of these project scopes, see Appendix E.

Engineering Countermeasure Toolbox

This section presents Safe System-aligned engineering recommendations that can create levels of redundancy for traffic safety in the City of Half Moon Bay. First is a table of engineering countermeasures proven to reduce fatal and severe injury crashes. The countermeasures align to the crash types as listed in the table. Complementing those countermeasures is a holistic set of policy and programmatic recommendations that will help align City departments and partners in pursuit of the plan’s vision and goals.

Table 5. City of Half Moon Bay Countermeasure Toolbox

Countermeasure Name	Applicable Location(s) ¹	Crash Types Applicable	Crash Reduction Factor (if Available)	Cost (if available) ²	Systemic Opportunity?
Lighting*	All	Nighttime	0.4		Medium
Install raised median on approaches*	SI	Signalized local/arterial intersections	0.25	\$-\$\$\$	Medium
Create directional median openings to allow (and restrict left turns and U-turns (signalized intersection))*	SI	Signalized local/arterial intersections	0.5	\$-\$\$	Medium
Install raised pavement markers and striping*	SI	Wet, night, all	0.1	\$	High
Install flashing beacons as advance warning (SI)*	SI	Rear end, broadside	0.3	\$-\$\$	Medium
No right turn on red	SI	Pedestrian crashes, signalized local/arterial intersections	N/A	\$	Medium

Countermeasure Name	Applicable Location(s) ¹	Crash Types Applicable	Crash Reduction Factor (if Available)	Cost (if available) ²	Systemic Opportunity?
Centerline hardening or continuous raised median	SI	All crashes	0.46	\$	Medium
Install pedestrian countdown signal heads*	SI	Pedestrian crashes, signalized local/arterial intersections	0.25	\$	High
Install pedestrian crossing*	SI	Pedestrian crashes, signalized local/arterial intersections	0.25	\$	High
Install pedestrian scramble*	SI	Pedestrian crashes, signalized local/arterial intersections	0.4	\$	High
Install advance stop bar before crosswalk (bicycle box)*	SI	Pedestrian crashes, signalized local/arterial intersections	0.15	\$	High
Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	SI	Pedestrian crashes, signalized local/arterial intersections	0.6	\$	High
Install painted safety zone	SI	Pedestrian crashes, signalized local/arterial intersections	N/A	\$	High
Install Protected Intersection Elements	SI	Pedestrian crashes, signalized local/arterial intersections	N/A	\$-\$\$\$	Low

Countermeasure Name	Applicable Location(s)¹	Crash Types Applicable	Crash Reduction Factor (if Available)	Cost (if available)²	Systemic Opportunity?
Convert to all-way STOP control (from two-way or Yield control)*	UI	All crashes	0.5	\$	Low
Install signals*	UI	All crashes	0.3	\$\$\$	Low
Convert intersection to roundabout (from all-way stop)*	UI	All crashes	Varies	\$\$\$	Low
Convert intersection to roundabout (from stop or yield control on minor road)*	UI	All crashes	Varies	\$\$\$	Low
Covert intersection to mini-roundabout*	UI	All crashes	0.3	\$\$	Low
Create directional median openings to allow (and restrict) left turns and U-turns (unsignalized intersections)*	UI	All crashes	0.5	\$-\$\$	Medium
Install raised medians (refuge islands)*	UI	Pedestrians and bicycle	0.45	\$	Medium
Install pedestrian crossings (signs and markings only)*	UI	Pedestrians and bicycle	0.25	\$-\$\$\$	High
Install pedestrian crossings (with enhanced safety features)*	UI	Pedestrians and bicycle	0.35	\$-\$\$\$	Medium
Install/upgrade larger or additional STOP signs or other intersection warning or regulatory signs*	UI	Turning crashes related to lack of driver awareness	0.15	\$	High
Upgrade intersection pavement markings*	UI	Turning crashes related to lack of driver awareness	0.25	\$	High

Countermeasure Name	Applicable Location(s)¹	Crash Types Applicable	Crash Reduction Factor (if Available)	Cost (if available)²	Systemic Opportunity?
Install flashing beacons at stop-controlled intersection*	UI	Broadside, rear end	0.15	\$\$\$	High
Install pedestrian signal or pedestrian hybrid beacon*	UI	Pedestrian and bicycle	0.3	\$\$\$	High
Install transverse rumble strips on approaches*	UI	All crashes	0.2	\$	High
Install splitter islands on the minor road approaches*	UI	All crashes	0.4	\$	Medium
Corridor access management	R	N/A	0.35	\$	Medium
Install edgeline rumble strips/stripes*	R	All crashes	0.15	\$-\$\$\$	High
Install separated bike lanes*	R	Pedestrian and bicycle	0.45	\$-\$\$	High
Install/upgrade pedestrian crossing (with enhanced safety features)*	R	Pedestrian and bicycle	0.35	\$\$-\$\$\$	Medium
Install raised pedestrian crossing*	R	Pedestrian and bicycle	0.35	\$	Medium
Remove or relocate fixed objects outside of clear recovery zone*	R	Hit object	0.35	\$-\$\$	High
Install delineators, reflectors, and/or object marker*	R	All crashes	0.15	\$	High
Install/upgrade signs with new fluorescent sheeting (regulatory or warning)*	R	All crashes	0.15	\$	High
Install dynamic/variable speed warning signs*	R	Driver behavior	0.3	\$	High

Countermeasure Name	Applicable Location(s) ¹	Crash Types Applicable	Crash Reduction Factor (if Available)	Cost (if available) ²	Systemic Opportunity?
Extend pedestrian crossing time	SI	Pedestrian	N/A	\$	High
Pedestrian phase recall	SI	Pedestrian	N/A	\$	High
Extend green time for bikes	SI	Bicycle	N/A	\$	High
Extend yellow and all-red time	SI	All crashes	N/A	\$	High
Lane narrowing	R	All crashes	N/A	\$-\$\$\$	Low
Bicycle crossing (solid green paint)	UI	Bicycle	N/A	\$	Medium
Curb extensions	UI	All crashes	N/A	\$-\$\$\$	Low
ADA-compliant directional curb ramps and audible push buttons	SI	Pedestrian	N/A	\$-\$\$\$	Low
Curb radius reduction	SI, UI	All crashes	N/A	\$\$	Low
Splitter islands	UI, SI	All crashes	N/A	\$\$	Medium
Approach curvature	UI, SI	All crashes	N/A	\$\$\$	Low
Roadside design features	All	All crashes	N/A	\$-\$\$\$	Low

*Indicates countermeasure is eligible for California HSIP funding as of the most recent funding cycle

1: UI = Unsignalized Intersection; SI = Signalized Intersection; R = Roadway segments; All = All of the above
 2: \$ = ≤\$50,000; \$\$ = \$50,000 - \$200,000; \$\$\$ = > \$200,000

Proposed Policy, Program, and Guidelines Recommendations

In addition to the engineering countermeasures and projects recommended above, the City aims to promote policies, programs, and standards that foster a culture of safety. The table below defines several policy and program recommendations organized into thematic categories. Implemented in cooperation with partners, these recommendations will deepen the dedication to safety shared throughout the community and round out the City's Safe System Approach.

Table 6. City of Half Moon Bay Policy and Program Recommendations

Category	Near-Term Recommendations	Long-Term or Ongoing Recommendations
Local Culture Shift (LCS)		LCS2: High-Visibility Media Campaign LCS4: Implement Car-Free Zones
Local Enforcement Coordination (LEC)		LEC2: Speed Monitoring Awareness Radar Trailer
Local Funding (LF)	LF1: Dedicated Funding	LF2: Equitable Investment LF3: Prioritize Investments
Local Education / Outreach (LEO)		LEO1: Roadway Safety Education in Schools LEO2: Engagement Accessibility LEO3: Educational Materials for New Facilities LEO4: Transportation Safety Campaign LEO5: Safe City Fleets
Local Planning / Evaluation (LPE)		LPE1: Annual Review LPE2: Plan Update LPE3: Safety and Equity Impacts Evaluation LPE4: Safe Routes to School LPE8: Speed Limits/Speed Management Plan

NEAR-TERM ACTIONS

LCS1: Transportation Safety Advisory Committee Participation

Actively participate in the newly-formed County Transportation Safety Advisory Committee (TSAC). Bring agenda items as relevant, including but not limited to:

- Safety project updates with every step along the project development process (studies initiated / under way / complete, funding identified, design phases initiated / under way / complete)
- Annual updates to the TSAC regarding implementation progress that may be relevant for C/CAG annual monitoring reporting (e.g., projects on identified priority locations and/or the regional High Injury Network, community engagement efforts and summaries, safety funding applied for / received)
- Opportunities for cross-jurisdiction coordination (e.g., roadways or intersections shared with adjacent jurisdictions or Caltrans)
- Requests for trainings / best practices that could be provided through the TSAC

Lead agency: City of Half Moon Bay Public Works

LF1: Dedicated Funding

Propose ongoing, dedicated funding and staffing for implementation and monitoring of the safety plan, including presiding over the TSAC. This role may be fulfilled by a partial FTE or through staff augmentation.

Lead agency: City of Half Moon Bay Public Works

LONG-TERM OR ONGOING ACTIONS

LCS2: High-Visibility Media Campaign

Coordinate with County Public Health and the San Matteo County Sheriff's Office to implement a local high-visibility media campaign pertaining to one or more emphasis areas identified in this plan.

Dedicated law enforcement with media supporting the enforcement activity to ensure public awareness.

Potential communication tools:

- Bus ads
- Social media
- Text messages

Lead agency: County Public Health

Coordinating partners: County Sheriff's Office, California Highway Patrol, Office of Sustainability, SMCOE, City of Half Moon Bay Public Works

LCS4: Implement Car-Free Zones

More effectively target resources to pedestrian crash problems in a limited geographic area. Realizing these zones requires upfront analysis and planning, countermeasure development, and implementation. Implementation can focus on addressing particular problems or on increasing general safety in specific areas during windows of peak pedestrian activity. (For example: Friday nights in commercial districts, Sundays on recreational routes/areas, etc.)

Lead agency: City of Half Moon Bay Public Works

LEC2: Speed Monitoring Awareness Trailer

Coordinate with the San Matteo County Sheriff's Office to deploy a trailer to monitor speeds on streets and to raise awareness of speeding. It can be deployed long term along HIN and other arterials, or short term in neighborhoods. Use the priority locations and data in this plan to identify locations and schedule for deployment.

Lead agency: County Sheriff's Office

Coordinating partners: City of Half Moon Bay Public Works

LF2: Equitable Investment

Prioritize citywide safety investments in disadvantaged communities. Use the presence of disadvantaged communities (as identified with C/CAG Equity Focus Areas, MTC Equity Priority Communities, USDOT Historically Disadvantaged Communities, and/or USDOT Areas of Persistent Poverty) as a factor to elevate funding for certain projects or other safety-related programs.

Lead agency: City of Half Moon Bay Public Works

LF3: Prioritize Investments

Use the priority locations identified in this plan to determine safety project opportunities to advance for further project development and to identify funding. Identify pathways for improvement for the locations on the list. Continue to engage the community to refine the priorities within the list of identified sites.

Lead agency: City of Half Moon Bay Public Works

LEO1: Roadway Safety Education in Schools

Continue School Travel Fellowship Program to provide the following:

- Technical assistance to schools and planners to implement demonstration projects
- ATP Project Specialist to work with educators to provide technical assistance (bike rodeos, parent engagement workshops and resources, walk and bike audits, and additional support for walk/bike to school encouragement events) to schools in EPCs

Lead agency: SMCOE

Coordinating partners: County Public Health, Office of Sustainability, SVBC

LEO2: Engagement Accessibility

Plan community engagement efforts to be tailored for vulnerable road users and all travel modes. Make outreach materials available in accessible formats and multiple languages.

Lead agency: City of Half Moon Bay Public Works

LEO3: Educational Materials for New Facilities

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.

Lead agency: City of Half Moon Bay Public Works

LEO4: Transportation Safety Campaign

Run education campaigns and outreach to foster community awareness of a shared responsibility for road safety. Use the emphasis areas highlighted in this plan as focus areas and target groups for a campaign.

Lead agency: City of Half Moon Bay Public Works

Coordinating partners: C/CAG, County Public Health

LEO5: Safe City Fleets

Provide educational materials for City staff who drive City vehicles and integrate safety awareness training into contracting process with vendors who provide City services. Other measures include installing safety features (such as pedestrian/obstacle detection and speed tracking) on City vehicles and reporting on correction plans against unsafe driving.

Lead agency: City of Half Moon Bay Public Works

LPE1: Annual Review

Provide an annual review of plan implementation progress. This review includes an update and presentation to City Council as well as a written update to the TSAC so that C/CAG may compile county plan implementation status.

Lead agency: City of Half Moon Bay Public Works

LPE2: Plan Update

Update the plan within five years of publication. The plan update will revise actions to reflect current crash trends and will integrate technological advancements and changes in best practices as needed.

Lead agency: City of Half Moon Bay Public Works

LPE3: Safety and Equity Impacts Evaluation

Fund a study to address traffic injury and enforcement inequities to inform policies, projects, programs, and needed data quality improvements.

Solicit feedback on the report's equity analysis from groups representing equity priority communities. Topics for the study may include injury related to homelessness, race/ethnicity, language, income, and immigration status, citations by demographics, citation type, and location.

Alternately, coordinate with the TSAC to participate in a countywide version of the same that can include the City as part of its scope.

Lead agency: C/CAG

LPE4: Safe Routes to School

Continue to participate in school safety assessments at all public and private schools, develop implementation plans for improvements up to one quarter mile from the schools.

Develop a plan and timeline to include all schools in the City.

Lead agency: SMCOE

Coordinating partners: City of Half Moon Bay Public Works

LPE8: Speed Limits/Speed Management Plan

Per California Assembly Bill 43 (passed in 2021), identify business activity districts, safety corridors, and in areas with high ped/bike activities to implement reduced speeds.

To the extent possible, complement the speed reduction with design treatments like those identified in this plan to effect reduced speeds by the desired amount.

Lead agency: City of Half Moon Bay Public Works

IMPLEMENTATION & MONITORING

A key part of achieving Half Moon Bay's vision is consistently evaluating roadway safety performance and tracking progress towards the goals. The City of Half Moon Bay will develop a process to regularly collect data and information around the performance measures that can be used to assess changes city-wide and at the top priority locations.

Implementation actions are organized by plan goals and grouped by time: near-term actions, which Half Moon Bay can initiate immediately, and longer-term actions, which may require coordination and additional staff time.

This section identifies recommendations for Half Moon Bay and other county-level safety partners to implement the plan. These are aligned with the Safe System Approach and include a framework to measure plan progress over time.

Table 7. City of Half Moon Bay Goals and Measures of Success

GOAL	MEASURE OF SUCCESS
1. Regularly review crash history and community needs to identify and prioritize opportunities to reduce crash risk for roadway users of all ages and abilities.	<ul style="list-style-type: none"> • Number of LRSP project locations advanced through project development, reported at the agency level • Annual and three-year total reported crashes, fatal/severe injury crashes, crashes by mode, and crashes by emphasis areas identified
2. Embrace the Safe System Approach to promote engineering and non-engineering strategies in the community.	<ul style="list-style-type: none"> • Percent of school district participation in SRTS and roadway safety education opportunities • Number of trainings city staff have participated in regarding Safe System elements, available tools, or practices • Improved data availability or maintenance to enhance safety analysis and practice
3. Monitor implementation of the Half Moon Bay LRSP to track progress towards goals.	<ul style="list-style-type: none"> • See above in this table

City of Half Moon Bay

San Mateo C/CAG Countywide LRSP