San Francisquito Canyon Road

Corridor Traffic Safety Study

Los Angeles County Public Works

February 2025

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1. INTRODUCTION

San Francisquito Canyon Road is 19-mile corridor bounded by Copper Hill Drive in Santa Clarita to the south and Elizabeth Lake Road in unincorporated Los Angeles County to the north. The corridor provides important connectivity to the local neighborhoods of Green Valley and for travelers between Santa Clarita and the southwestern region of the Antelope Valley. Due to a series of collisions and community concerns in recent years, a Corridor Traffic Safety Study was initiated to identify potential road safety challenges and suggest countermeasures to mitigate those safety issues. **Figure 1** illustrates the study corridor and adjacent major roads.

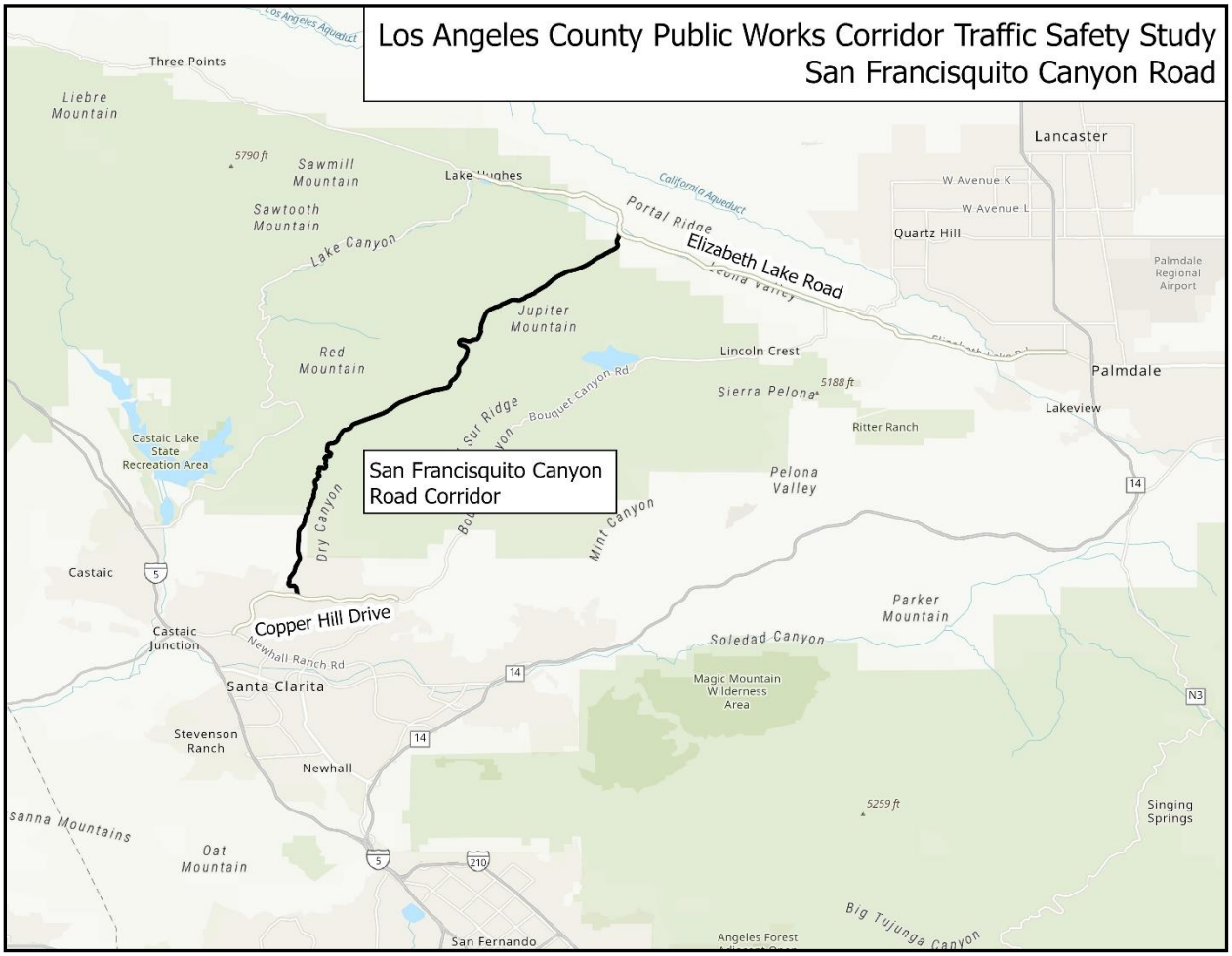


Figure 1 – Overview of San Francisquito Canyon Road from the City of Santa Clarita boundary to Elizabeth Lake Road

2. EXISTING CONDITIONS

To initiate the Corridor Traffic Safety Study, an Existing Conditions Assessment was conducted to provide a baseline understanding of the current safety features, collision patterns, and opportunities to improve safety on San Francisquito Canyon Road. The assessment reviewed the most recent and complete five years of collision data and documented roadway characteristics such as existing speed limits and curve data.

Five years of collision data for San Francisquito Canyon Road were obtained from the Transportation Injury Mapping System (TIMS) and verified with traffic collision data from Los Angeles County Public Works. Data was collected from January 1, 2018 to December 31, 2022 as these were the most recent years with datasets considered final.

From 2018 to 2022, there were a total of 128 collisions, five of which resulted in fatalities and 24 resulted in severe injuries. The TIMS database does not include property damage only (PDO) collisions, so this was not included in the analysis. **Figure 2** shows an analysis of all collisions along San Francisquito Canyon Road and identifies locations with more collisions and a larger proportion of fatal/severe injuries. The figure also breaks down the collision type of all the high-severity collisions.

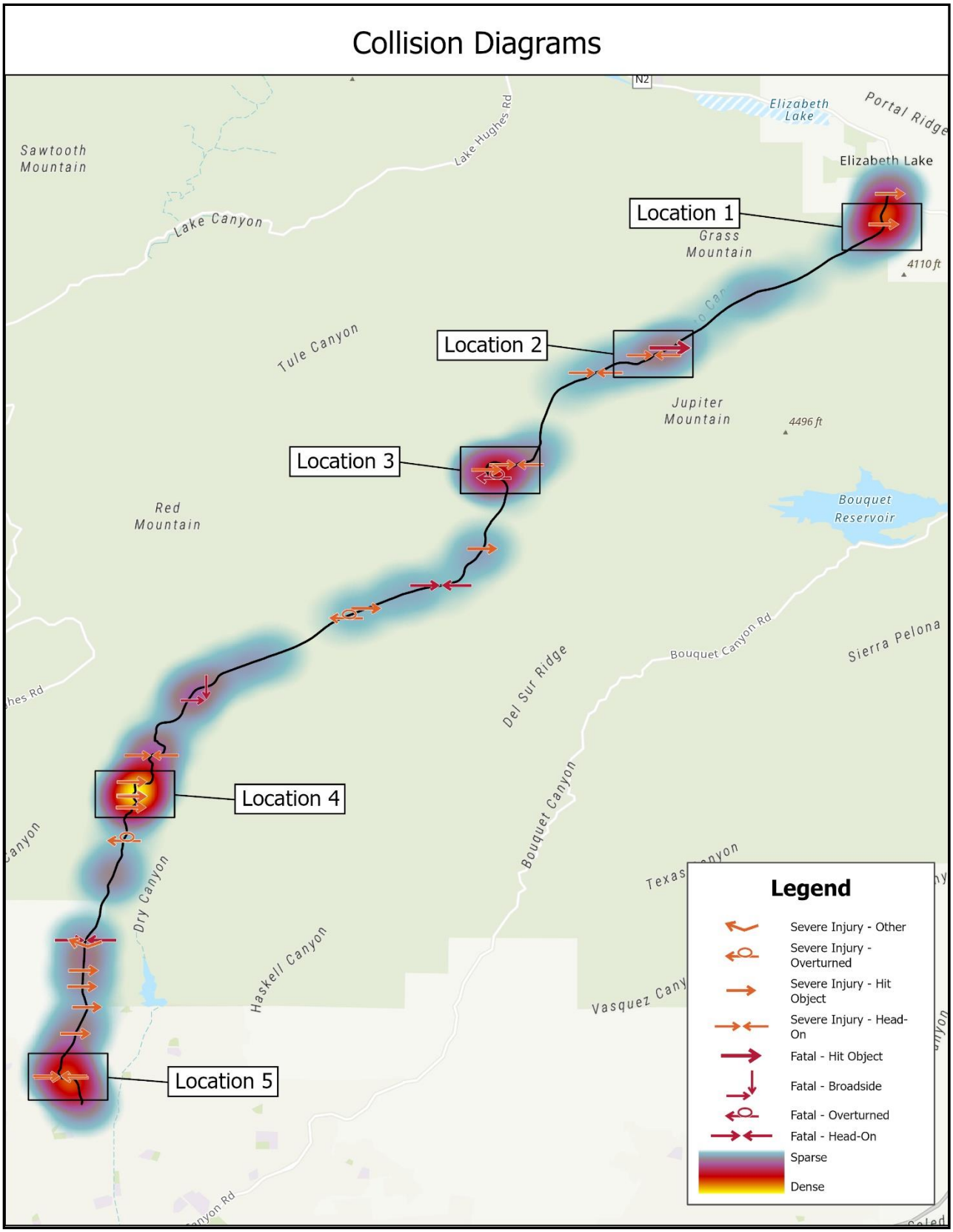


Figure 2 – Collision Diagram along Study Corridor

The Existing Conditions Assessment included field visits to verify the information available to the County and to evaluate current roadway conditions. The field visits reviewed the entire length of the corridor but focused on areas with higher collision activity.

The observed data from the collision data, constituent feedback, and field visits led to several spot locations where greater focus would result in the largest impact. **Figures 3 to 7** show the initial five locations overlayed with collision data provided from TIMS. Collisions that occurred at the same location with the same severity level and collision type are indicated by a corresponding, adjacent number.

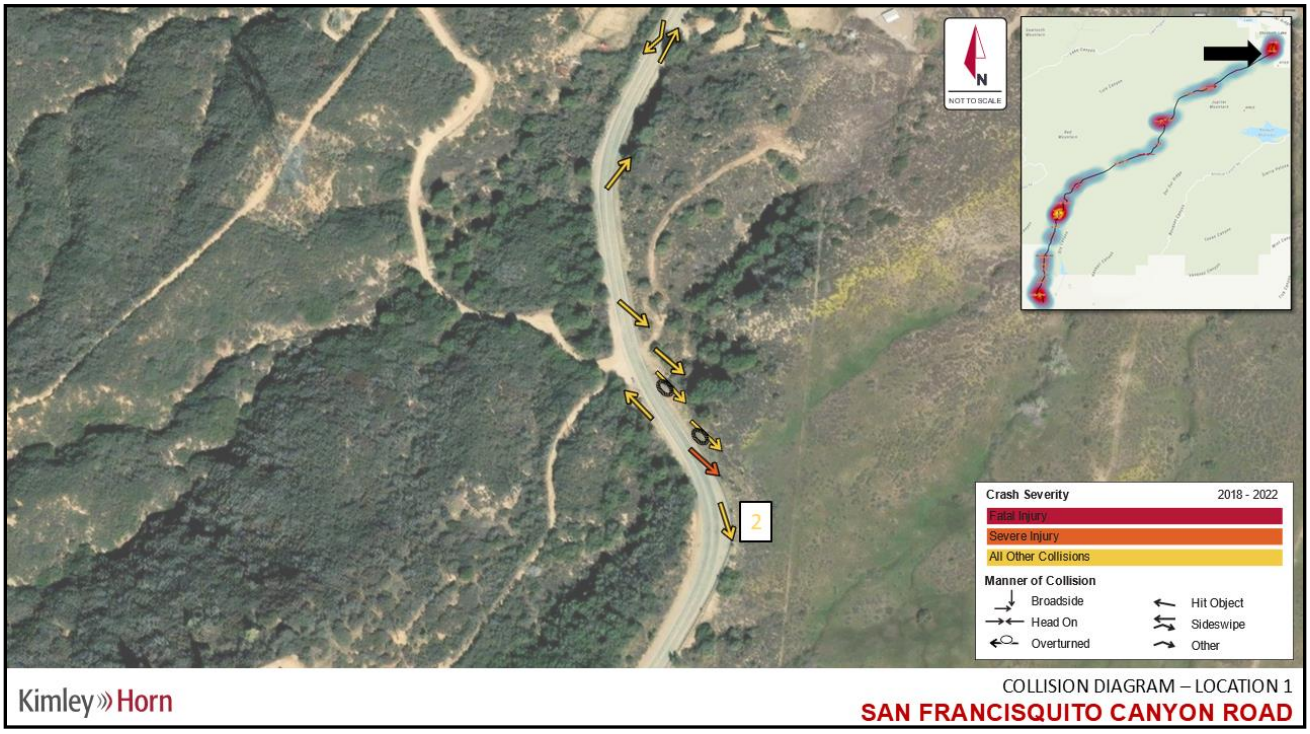


Figure 3 – Collision Diagram Location 1

Location 1 had a significant number of collisions showing drivers crossing the centerline onto the other side of the roadway and colliding with fixed objects.

Figure 4 – Collision Diagram Location 2

Location 2 had a fatal "hit object" collision from drivers heading southbound near MM 3.53.

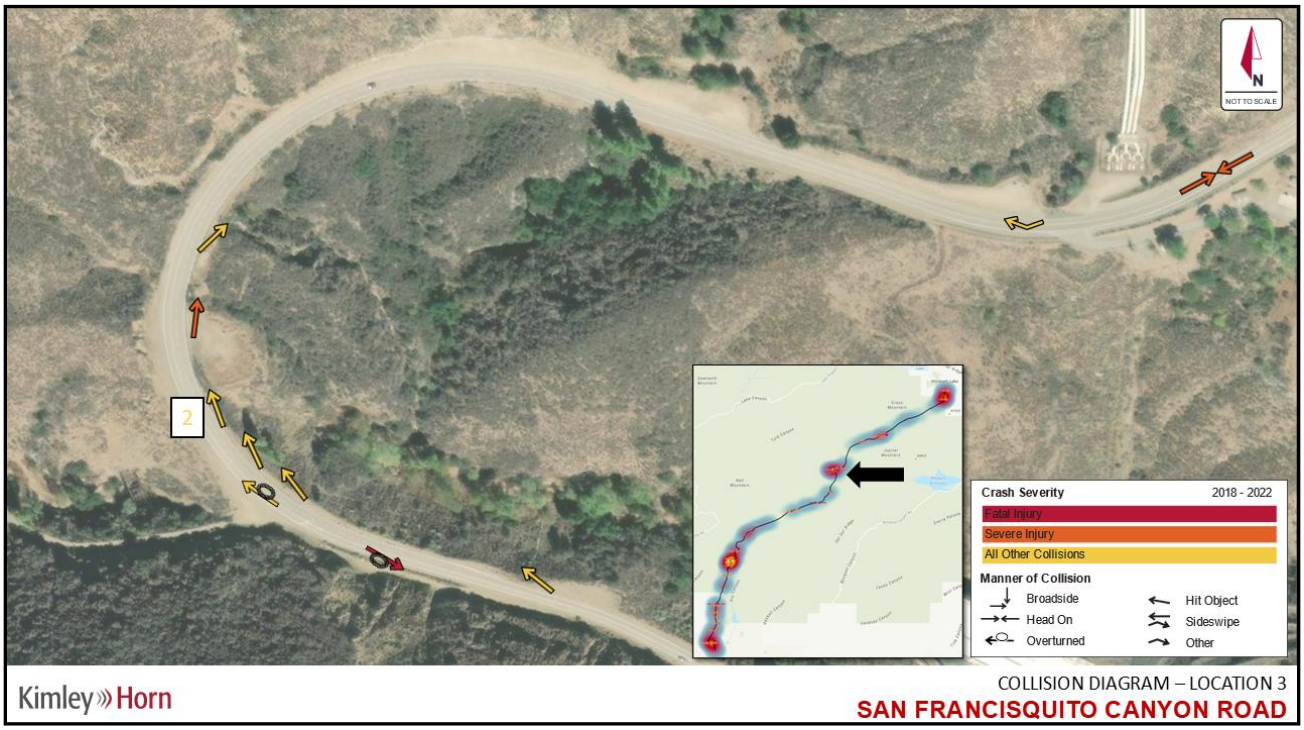


Figure 5 – Collision Diagram Location 3

Location 3 had seven "hit object" collisions in the northbound direction. This location also had an "overturned" collision resulting in a fatality.

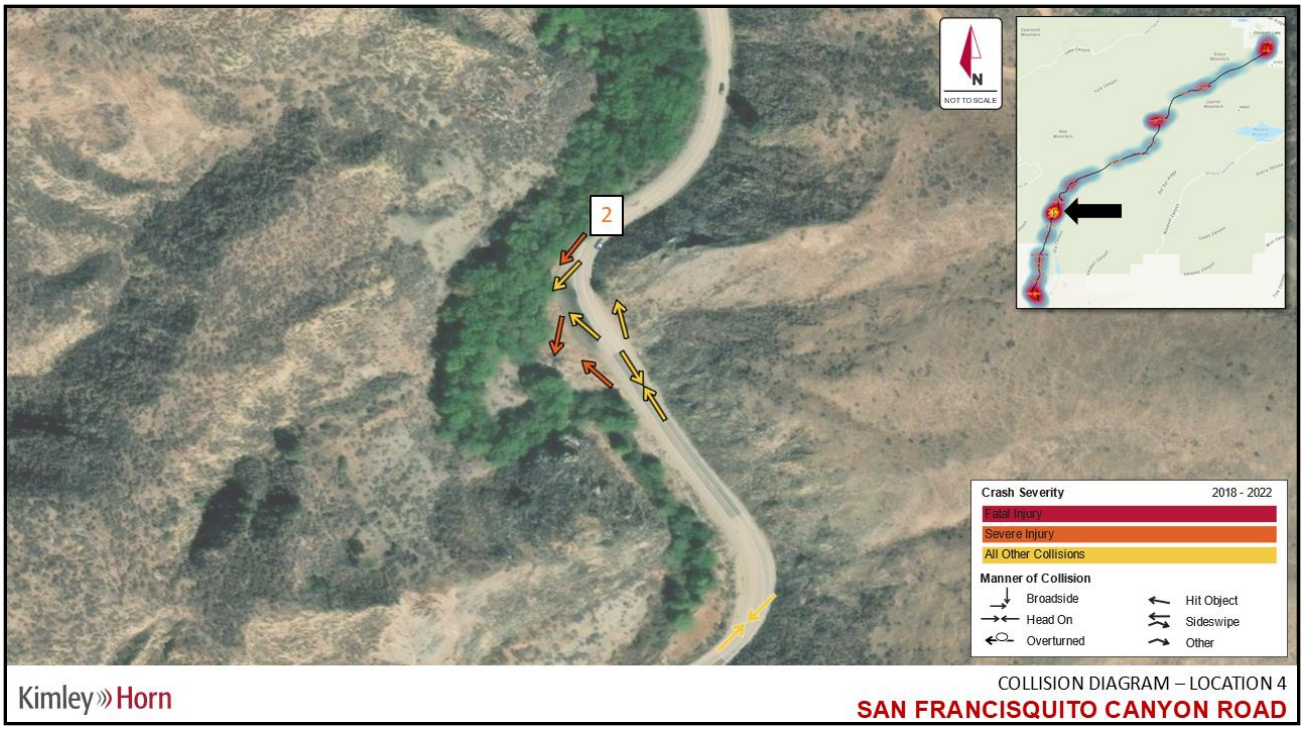


Figure 6 – Collision Diagram Location 4

Location 4 had seven "hit object" collisions near MM 14.52.

Figure 7 – Collision Diagram Location 5

Location 5 had four "overturned" and three "head-on" collisions, two of which resulted in severe injuries.

These five locations will serve as focus locations for further analysis. The entirety of the Existing Conditions Assessment can be viewed in **Appendix A** in this report.

3. COMMUNITY OUTREACH

The project team met with the Green Valley Town Council on January 10, 2024 to initiate the project and inform the community about the scope and intent of the study. Subsequently, the initial set of proposed safety improvements and findings of the Existing Conditions Assessment were brought up at a community meeting in Green Valley on June 12, 2024. This meeting included significant email communications to all surrounding Town Councils and distribution of community flyers to every address along the study corridor. Additionally, both an in-person meeting option and online meeting option via Zoom were provided to ensure all community members impacted by the study, including those outside of Green Valley, could attend. There were additional in-person meetings held with the Leona Valley Town Council on July 8, 2024 and with the Lakes Town Council on August 3, 2024. These meetings sought to introduce the project; present the collision analysis and other data; discuss an initial draft of potential countermeasures, including a pilot delineator project; and discuss resident concerns and suggestions.

The project team received a total of 83 comments from Q&A sessions at the in-person meetings, via the Zoom chat feature at the meeting in Green Valley, comment cards, emails to the project team with Los Angeles County Public Works, and in person after the meetings. A frequently asked questions (FAQ) list was created to answer the most common concerns and suggestions asked by the community. The Comment Matrix and FAQ can be viewed in its entirety in **Appendix B** and **Appendix C**.

4. EMPHASIS AREAS

Emphasis areas were identified to focus safety mitigation strategies on the specific safety needs in the corridor that would have the biggest impact on reducing traffic injuries along San Francisquito Canyon Road. They were selected based on the five focus areas, existing collision patterns, and causal factors as well as community feedback. The three emphasis areas identified for San Francisquito Road focused on unsafe speed, unsafe passing, and lane departure collisions.

Unsafe Speed

Unsafe speed includes driving a vehicle at a speed that exceeds the posted speed limit or is inappropriate for the prevailing road conditions. It greatly increases the risk of collisions and the severity of injuries as drivers have less time to react to unexpected situations, increased stopping distances, and are more likely to lose control of their vehicles. Speed data collected by the County in October 2023 and a high proportion of comments from community stakeholders indicate that speeding is common on the corridor. The data revealed that there have been 41 collisions during the study period that involved unsafe speed. This accounts for 32% of all collisions along San Francisquito Canyon Road. 12 of these collisions resulted in severe injuries.

Unsafe Passing

Unsafe passing is the act of overtaking another vehicle in a prohibited or unsafe manner by crossing solid yellow lines, disregarding no-passing zones, doing so in areas with limited visibility such as curves, or with too little clearance from on-coming traffic. Unsafe passing tends to result in higher severity injuries when compared to other types of collisions. For instance, data shows that there were 19 "head-on" collisions along San Francisquito Canyon Road during the study period, but more than half of those resulted in severe injuries to the parties involved. Out of the eight deaths along the corridor, five were a result of "head-on" collisions. There were an additional nine "sideswipe collisions" which were associated with unsafe passing.

Lane Departure Collisions

Lane Departure collisions occur when a vehicle unintentionally leaves the intended travel lane and runs off into the surrounding terrain or into oncoming traffic. These collisions typically occur due to a variety of factors, including distracted driving, fatigue, adverse road/weather conditions, and more. Along San Francisquito Canyon Road, there were 72 "hit object" collisions during the study period. This made up over 56% of all collisions along the corridor with 15 of those resulting in severe injuries.

5. FOCUS SEGMENTS

The length, diverse terrain, and design features of San Francisquito Canyon Road necessitated a breakdown of the corridor into five focus segments. The segmentation allows the County to subdivide similar improvements so they can be grouped more efficiently and allow the County to more easily apply for various types of funding. Additionally, each of these five sections have distinct attributes which have their own needs and safety improvements tailored based on the emphasis areas. The breakdown of the five sections can be seen in **Figure 8** on the following page and is discussed further in the following paragraphs.

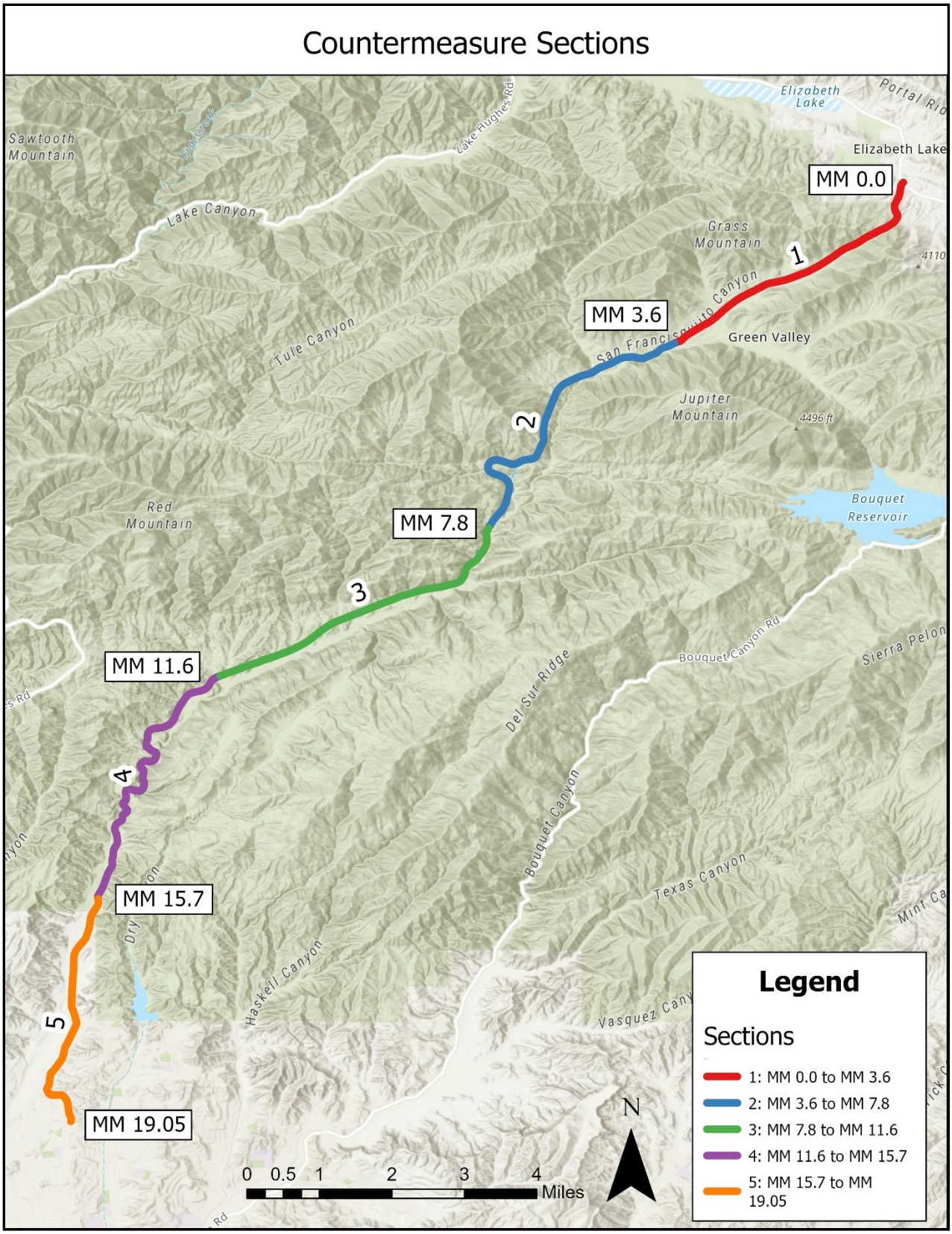


Figure 8 – Breakdown of San Francisquito Canyon Road into Five Sections

Section 1: MM 0.0 to MM 3.6

Section 1 marks the beginning of San Francisquito Canyon Road at its intersection with Elizabeth Lake Road to the north and ends just south of the unincorporated community of Green Valley. The Green Valley community will require additional consideration when implementing improvements such as noise impacts and driveway accessibility. A pilot delineator project is currently being tested in this area with the intent to gather feedback from the local community and the Public Works' maintenance teams on its implementation.

Section 2: MM 3.6 to MM 7.8

Section 2 picks up at the south of Green Valley and continues until just after the horseshoe curve. At either of these ends, it is important to implement measures to reduce speeding as traffic enters town or the horseshoe curve. Additionally, a portion of Section 2 has recently undergone repaving in which the County implemented centerline rumble strips and Safety Edge, a feature which the study will be proposing corridor-wide where it is not currently installed. Section 2 and Section 3 also mark the transition between two different Public Works maintenance districts.

Section 3: MM 7.8 to MM 11.6

Section 3 is distinguished by its minimal curves and long straightaways. This begins just south of the horseshoe curve and continues until roughly 1.5 miles north of the intersection by San Francisquito Canyon Road and Rotor Road. This section is unique from the rest of the corridor as it has the least number of curves and therefore provides an opportunity where installing a passing lane would be most feasible and effective. The history verified that there are not as many run-off road collisions as the other sections during the study period and that the focus should be on illegal passing and speeding in this area.

Section 4: MM 11.6 to MM 15.7

Section 4 has the largest number of sharp curves and bridge crossings with limited roadway widths. As a result, these locations have a large differential between its low-speed advisories relative to its posted speed limit. This signifies the need to regulate speeding in this area, especially as drivers need to slow prior to the low-speed advisories. The recommendations for this section include more unique improvements such as tapering lane widths and optical speed bars.

Section 5: MM 15.7 to MM 19.05

Section 5 passes through a diverse equestrian community and at its final stretch, crosses into the City of Santa Clarita. This section of the corridor contains minimal driveways to access the local businesses and community. It is also the only section with marked pedestrian crossings, mostly to accommodate equestrian users, and targeted crossing improvements such as transverse rumble strips have been recommended.

6. COUNTERMEASURES

An exhaustive, proven list of countermeasures was established by the project team which can be utilized for reducing collisions. **Table 1** shows the list and purpose of the countermeasures which were used to address specific collisions throughout San Francisquito Canyon Road.

Table 1 – List of Countermeasures and Purpose

No.	Safety Improvement	Benefit
1	Edge lines and centerlines	Visual indication to help prevent **lane departure collisions**
2	Driver feedback signs	Visual indication to drivers that they may be travelling over the recommended speed to reduce **unsafe speeds**
3	Guardrail	Reduce severity of **lane departure collisions**
4	Delineators	Prevent **unsafe passing**; especially in areas with high head-on crashes such as along curves
5	Install/upgrade pedestrian crossing	Provide pedestrian crossing features with enhanced safety features (e.g. flashing beacons, curb extensions, medians and pedestrian crossing island) to warn drivers of dangers of **unsafe speeds** or **unsafe passing**
6	Transverse rumble strips	Provide auditory and tactile alert to drivers approaching equestrian crossings and warns drivers of dangers of **unsafe speeds** or **unsafe passing**
7	Centerline rumble strips	Auditory and tactile indication to alert drivers they are driving out of their travel lane to reduce **unsafe passing**
8	Advance warning beacons	Visual indication to reinforce driver awareness of regulatory signs targeting **unsafe passing**, **unsafe speeds**, and **roadway departure**
9	Widen shoulder	Provides additional sight distance, roadway width, and emergency pull out to prevent **unsafe passing** and **lane departure collisions**
10	Safety edge	Provides safe reentry to roadway to reduce **roadway departure collisions**
11	Passing lanes/expanded turnouts	Provides appropriate alternative for slow vehicles to be passed to avoid **unsafe passing**
12	Centerline buffer	Provides additional sight distance and roadway width at curves to avoid **unsafe passing**
13	Enhanced roadway striping (6" edge line)	Enhanced visual indication to help drivers to prevent **lane departure collisions**
14	Tighten turning radius	Slow turning vehicles and shorten pedestrian crossing distance to reduce **unsafe speeds**
15	Optical speed bars	Transverse stripes spaced at gradually decreasing distances to increase drivers' perception of speed and cause them to reduce **unsafe speeds**
16	Taper lane width	Visual appearance of high speed to get drivers to slow down and reduce **unsafe speeds**

From the table, each section utilized several countermeasures which were selected based on the emphasis areas identified by the collision history and public outreach. Each proposed safety

enhancement has an infographic card which provides a high-level cost estimate, benefit-cost ratio, crash reduction factor, implementation schedule, warrant, and geometric feasibility. The card is specific to each countermeasure for each section to detail the specific constraints and benefits a countermeasure may offer in certain locations. The data on the cards can be explained further below:

- High-level Cost Estimate – an approximation of the total cost of a project at a broad level of detail given limited available information at the preliminary stages of planning. This will vary based on each section as the estimate was tailored based on scale and scope which differs based on the collision history, length of section, community feedback, and more.
- Benefit-Cost Ratio (BCR) – a calculation to evaluate whether the benefits derived from the project, which is measured based on the reduction of collisions and its costs, outweighs its cost. The BCR may differ despite similar countermeasures as it is a ratio of two varying numbers: the CRF and the high-level cost estimate.
- Crash Reduction Factor [1] (CRF) – indication of the effectiveness of a countermeasure, measured by its percentage of collisions it is expected to reduce based on academic research and prior projects. This will vary based on each countermeasure and section as CRF's can target specific collision types or the reduction percentage may differ based on location specific characteristics.
- Implementation Schedule – organizes countermeasures by short, mid, and long-term implementation. Short-term is defined as improvements which can be done in the near future with minimal effort and cost. Long-term countermeasures more complex and may require major engineering design, significant capital/maintenance costs, or best completed in conjunction with a future roadway project to optimize resources.
- Warrant – justification for implementation of countermeasure based on analysis of collision history, community outreach, site visits, and other corridor-specific assessment.
- Geometric Feasibility – high-level evaluation of limitations in the installation of the countermeasure such as additional maintenance requirements, cost, right-of-way, noise impacts, and more.

Thirteen example locations were provided to the community as a way of visualizing where some of the countermeasures the study proposed can be implemented. Each location includes details on what each improvement is intended to accomplish that vary based the challenges and needs it faces.

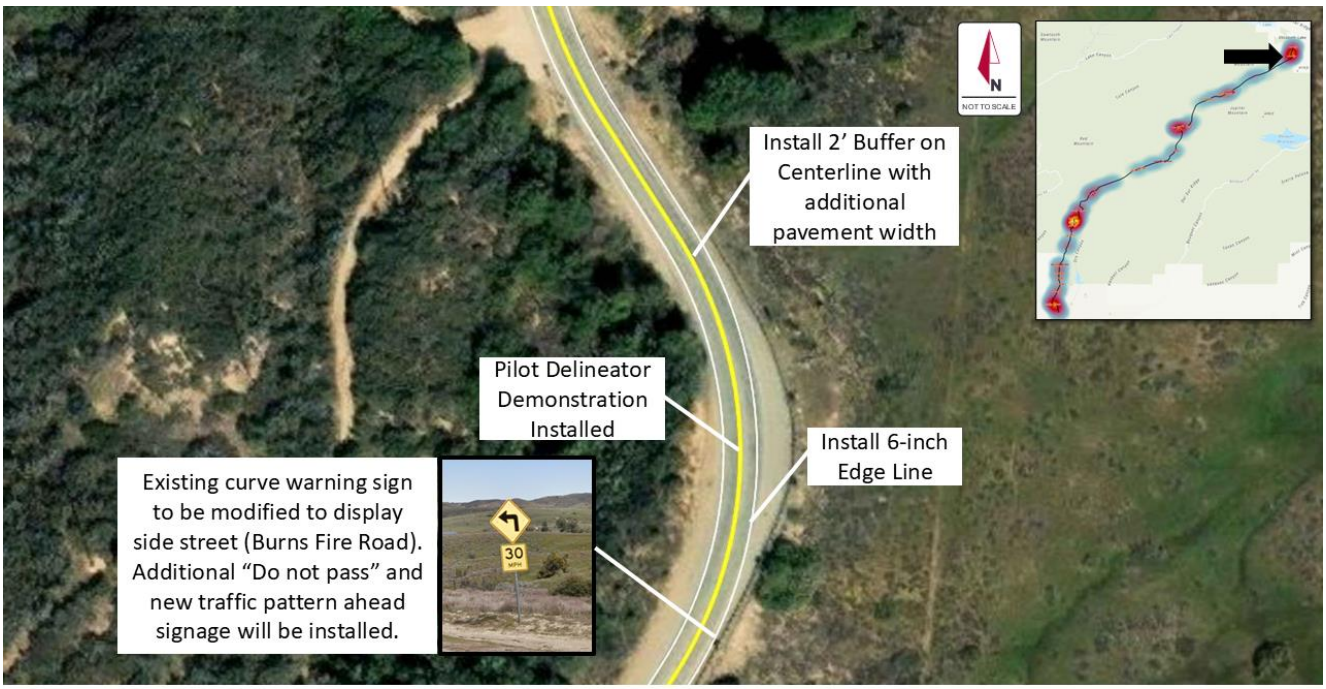
There are several corridor-wide proposed improvements which aim to solve issues found across multiple sections. To be suitable for implementation corridor-wide, these improvements must be low-cost and relatively straightforward to enact, such as when regularly scheduled maintenance or repaving activities occur naturally. These improvements include enhanced roadway striping (6-inch edge line), Safety Edge, centerline buffers and centerline rumble strips. The enhanced roadway striping will allow drivers to better visualize the roadway geometry to prevent lane departure collisions. The Safety Edge will allow drivers which have inadvertently departed the roadway to more easily reenter the roadway without losing control. Centerline buffers will provide additional roadway width along areas with sharp curves where drivers typically inadvertently cross the centerline. The centerline rumble strips

1. Sourced from CMF Clearinghouse and the Federal Highway Administration (Introduction to Crash Modification Factors)

will provide auditory and visual warnings to drivers who may be unsafely passing or crossing the centerline.

Section 1

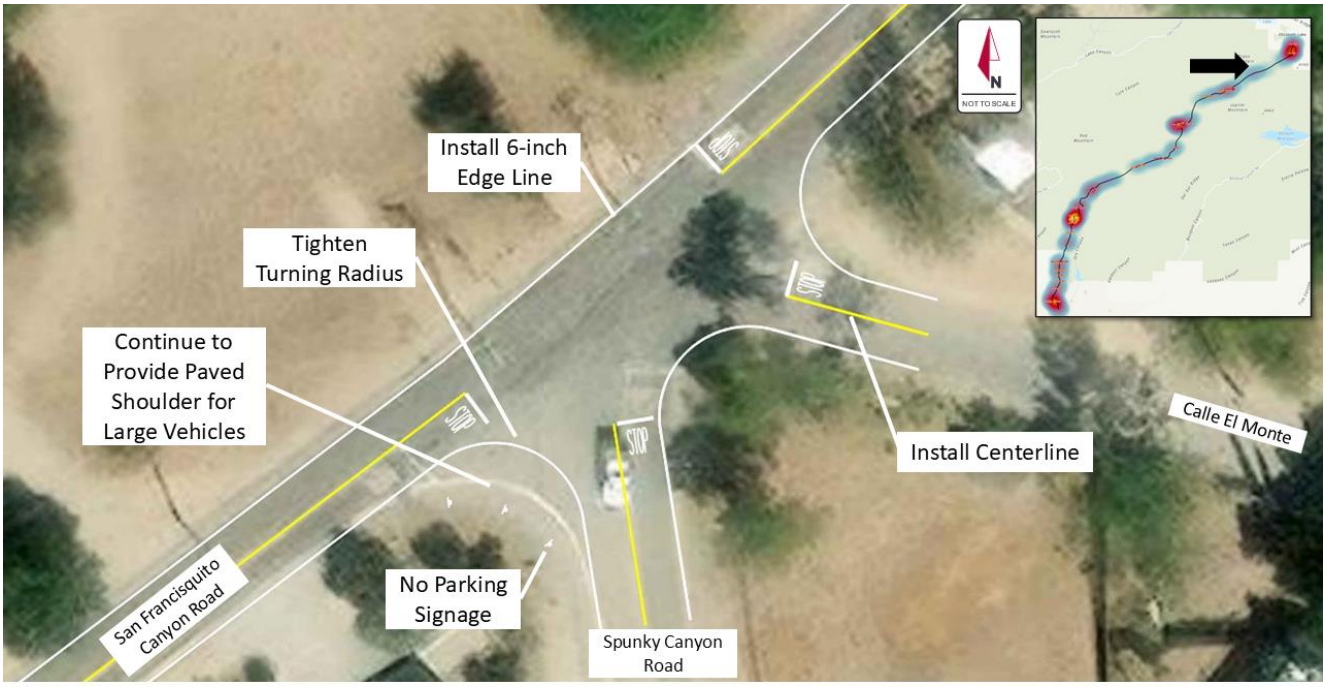
Section 1 analyzed two example locations in its analysis. Location A is the first S-curve south of Elizabeth Lake Road was analyzed due to its high number of collisions. Location B is the stop-controlled intersection at the community of Green Valley based on feedback received from the community.



Kimley»Horn

LOCATION A – MM 0.42
SAN FRANCISQUITO CANYON ROAD

An analysis of Location A found that collisions at this location were classified as "hit object" or "overturned," many of which occurred as drivers crossed the centerline. The collision history led to a pilot delineator installation which is being tested as a way to prevent drivers from unsafely passing along curves or other areas with a history of "head-on" collisions. The pilot delineator installation also brought additional clarity through the addition of street and warning signage.



Kimley»Horn

LOCATION B – MM 3.03
SAN FRANCISQUITO CANYON ROAD

Location B involves the intersection of San Francisquito Canyon Road, Spunky Canyon Road, and Calle El Monte in Green Valley. The possibility of installing a roundabout was discussed during community outreach sessions. The idea proved to be unpopular among the community and the project team found that there would be significant issues due to the need of right-of-way acquisition. Instead, the improvements at this intersection focus on tightening the turning radius as a striping change which provides the perception to drivers to slow down prior to making any turns.

Outside of these two locations, community outreach led to reports of close calls when entering or exiting intersections or private driveways. A potential long-term improvement throughout Section 1 is to widen the shoulder at these locations which will provide additional sight distance and allow drivers to pull over and exit the main roadway.

San Francisquito Canyon Road

Corridor Traffic Safety Study

SECTION 1

Enhanced roadway striping (6-inch edge line)

$60,000 probable cost	71.5 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Enhanced visual indication to help drivers to prevent **lane depature collisions**	**Geometric Feasibility:** Additional minor cost and maintenance needed

SECTION 1

Centerline Buffer

$350,000 probable cost	3.2 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Provides additional sight distance and roadway width at curves to avoid **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed

SECTION 1

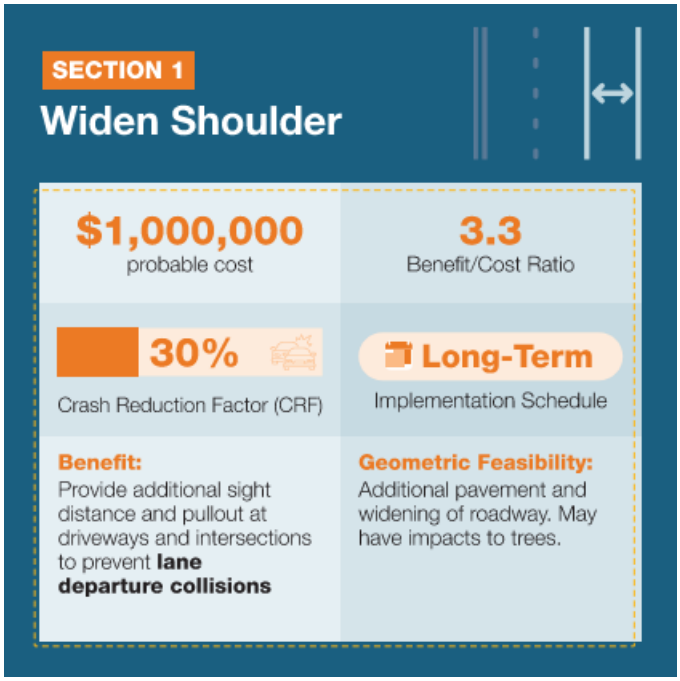
Delineators

$150,000 probable cost	2.4 Benefit/Cost Ratio
15% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Prevents drivers from **unsafe passing**; especially in areas with high head-on crashes such as along curves	**Geometric Feasibility:** Additional pavement width may be needed. Maintenance is an issue. Need to maintain driveway and street access

SECTION 1

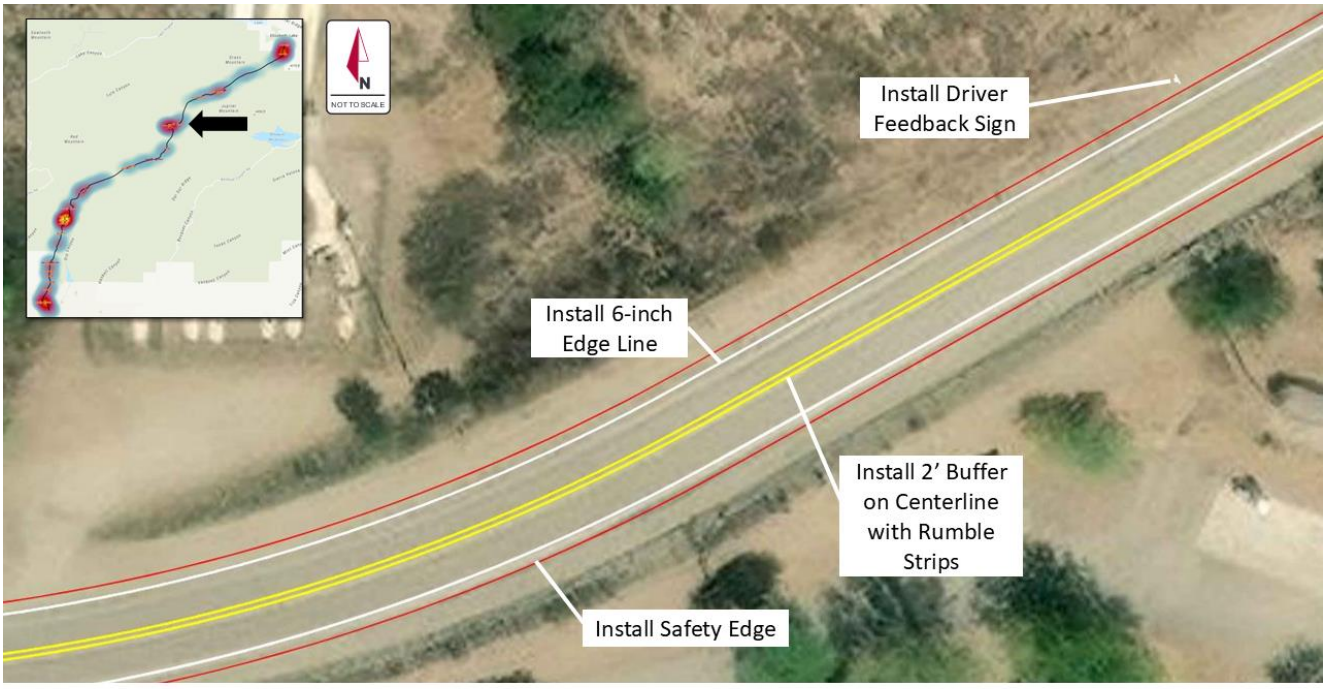
Tighten Turning Radius

$10,000 probable cost	5.8-18.9 Benefit/Cost Ratio
18-59% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Slow right turning vehicles and reduce crossing distance to reduce **unsafe speeds**	**Geometric Feasibility:** Need to consider turning movement of vehicles and ensure vehicles do not illegally park



Section 2

Section 2 analyzed two example locations in its analysis. Location C is a curve at MM 6.27 because of a severe injury "head-on" collision and Location D is the horseshoe curve due to its collision history.



Kimley»Horn

LOCATION C – MM 6.27
SAN FRANCISQUITO CANYON ROAD

Location C's severe injury "head-on" collision north of the horseshoe curve was found to be caused due to unsafe speed. A driver speed feedback sign was proposed to reduce unsafe speeding in sensitive areas such as around curves.

Kimley»Horn

LOCATION D – MM 6.7
SAN FRANCISQUITO CANYON ROAD

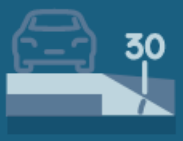
Location D has a number of run-off collisions in the northbound direction of travel off the right edge of the roadway. The corridor-wide 6-inch edge line and Safety Edge were best suited to mitigate these issues. Additionally, community feedback found that the merge of the passing lanes heading northbound were leading to several reported close calls and led to a discussion on their removal at a community outreach meeting. Further discussion on removal of the passing lane found that it was unpopular among the community as there has been an established need for additional passing lanes to prevent unsafe passing. Alternatively, extending the paved shoulder by the merge will allow drivers to not merge immediately in cases where it is unsafe and would mitigate the issue discussed. Similar to Section 1, widening the shoulder is also proposed at private driveways throughout as needed.

San Francisquito Canyon Road

Corridor Traffic Safety Study

SECTION 2

Safety Edge



$30,000 probable cost	23.8 Benefit/Cost Ratio
14% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule

Benefit:
Provides safe reentry to roadway to reduce **lane departure collisions**. Note: northern section already have been installed by County

Geometric Feasibility:
Minor additional pavement and widening of roadway needed. Most effective when paired with repavement activities

SECTION 2

Centerline Rumble Strips

$125,000 probable cost	9.6 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule

Benefit:
Auditory and tactile indication to alert drivers they are driving out of their travel lane to reduce **lane departure collisions**. Note: northern section already have been installed by County

Geometric Feasibility:
Target improvement when repaving

SECTION 2

Enhanced roadway striping (6-inch edge line)

$70,000 probable cost	50.4 Benefit/Cost Ratio
21% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule

Benefit:
Enhanced visual indication to help drivers to prevent **lane depature collisions**

Geometric Feasibility:
Additional minor cost and maintenance needed

SECTION 2

Driver Speed Feedback Signs

$10,000 probable cost	52.9 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule

Benefit:
Visual indication to drivers that they may be travelling over the recommended speed such as prior to a sharp curve to reduce **unsafe speeds**

Geometric Feasibility:
Should limit application to maintain effectiveness

SECTION 2

Centerline Buffer

$400,000 probable cost	3.8 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Provides additional sight distance and roadway width at curves to avoid **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed

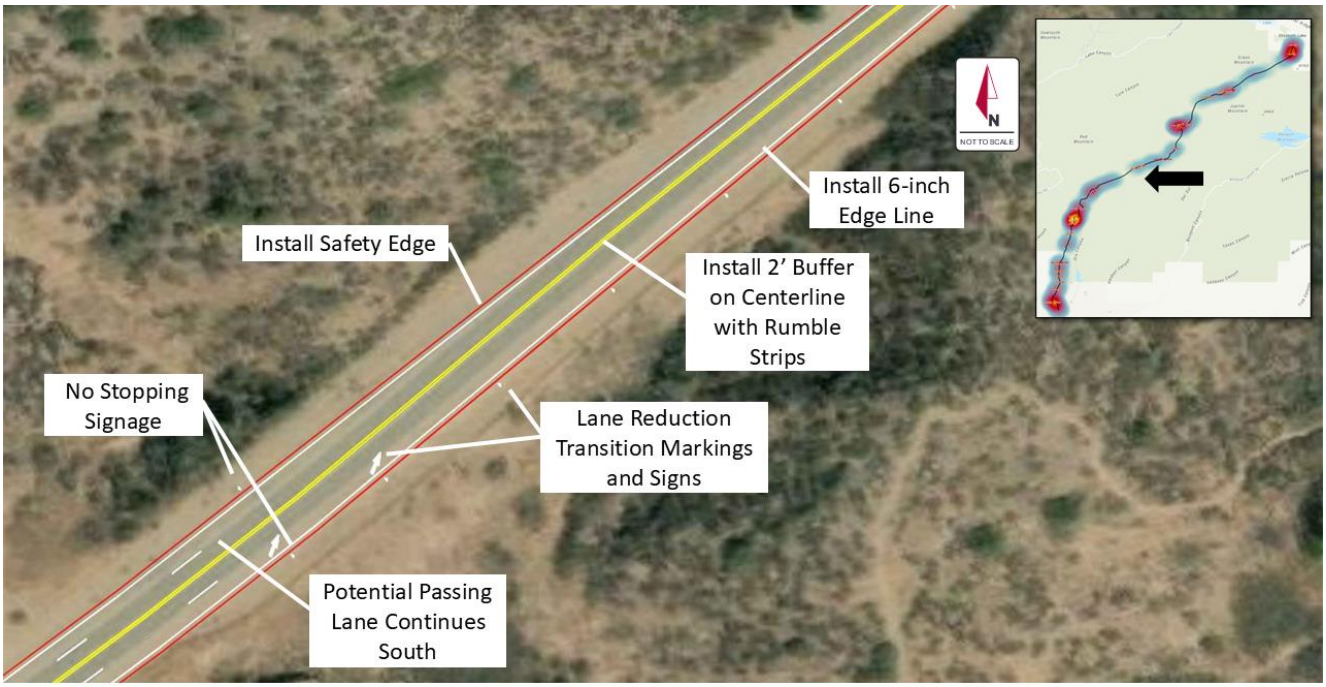
SECTION 2

Widen Shoulder

$575,000 probable cost	0.5 Benefit/Cost Ratio
30% Crash Reduction Factor (CRF)	Long-Term Implementation Schedule
Benefit: Provides additional paved emergency pull out. Pertinent to the merge at the horseshoe curve to address merging complaints to prevent **lane departure collisions.**	**Geometric Feasibility:** Additional pavement and widening of roadway needed

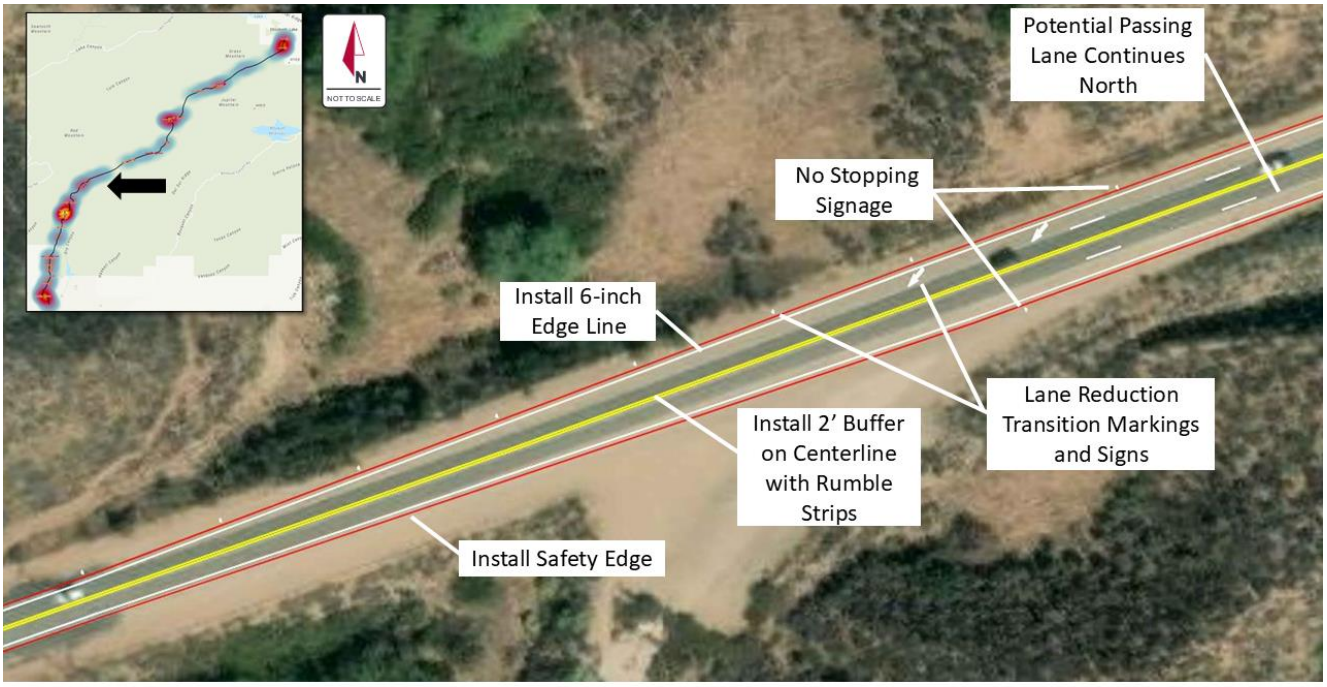
Section 3

Section 3 analyzed one example location in its analysis. Location E is a proposed passing lane from MM 10.55 to 11.80 in an effort in reduce unsafe passing along the corridor.



Kimley»Horn

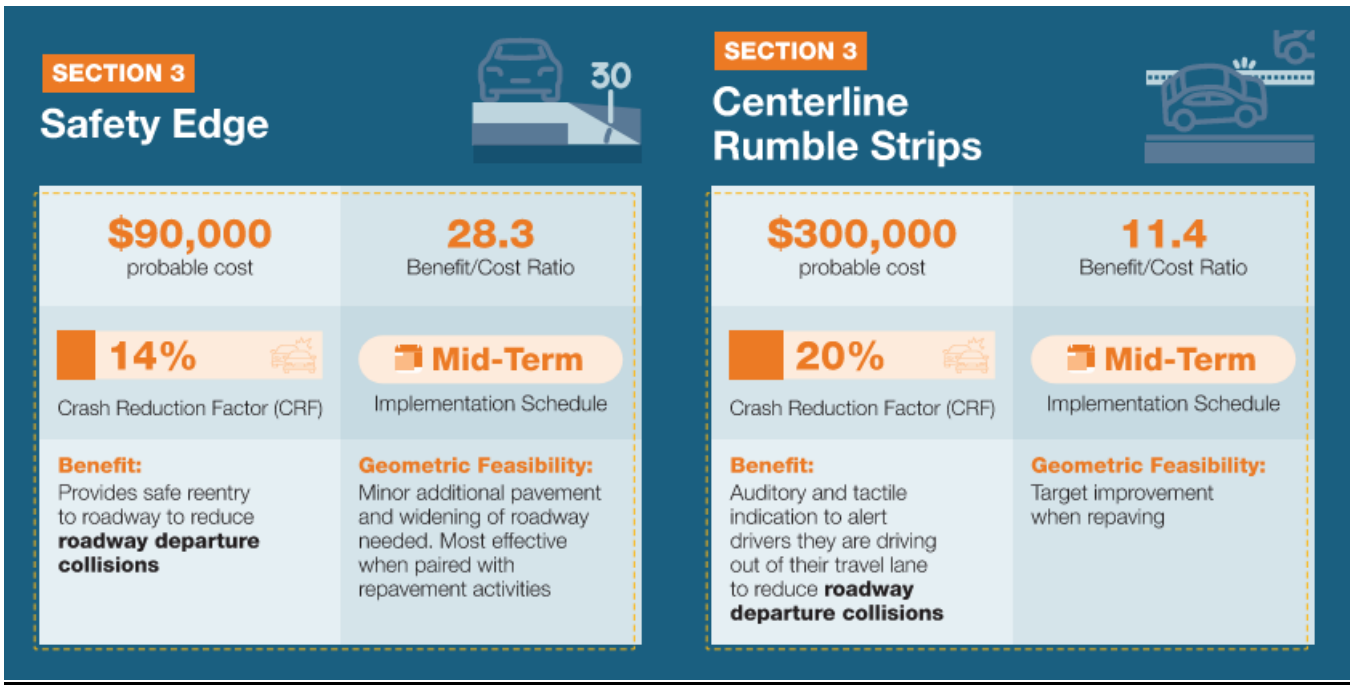
LOCATION E – Beginning MM 10.55
SAN FRANCISQUITO CANYON ROAD



Kimley»Horn

LOCATION E – End MM 11.8
SAN FRANCISQUITO CANYON ROAD

Passing Lanes are most suitable at this location due to the lack of curves in this section which has led many drivers to pass illegally and unsafely in its existing condition. The implementation of this countermeasure will allow for a safe and legal manner of passing.



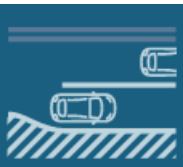
SECTION 3

Enhanced roadway striping (6-inch edge line)

$60,000 probable cost	60.0 Benefit/Cost Ratio
21% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Enhanced visual indication to help drivers to prevent **lane depature collisions**	**Geometric Feasibility:** Additional minor cost and maintenance needed

SECTION 3

Passing Lanes



$2,000,000 probable cost	2.9 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Long-Term Implementation Schedule
Benefit: Provides appropriate alternative for slow vehicles to be passed to avoid **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed. Ideally placed in areas with long straightawards for optimal sight distance

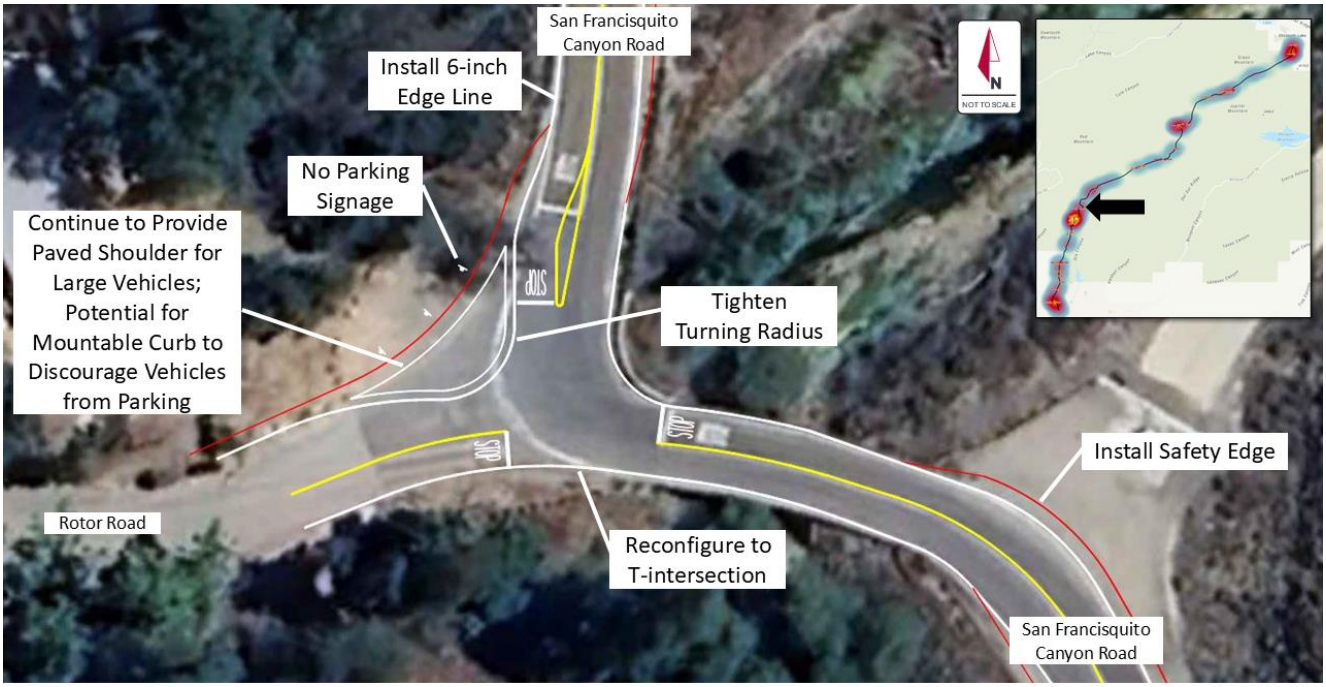
SECTION 3

Centerline Buffer

$300,000 probable cost	4.5 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Provides additional sight distance and roadway width at curves to avoid **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed

Section 4

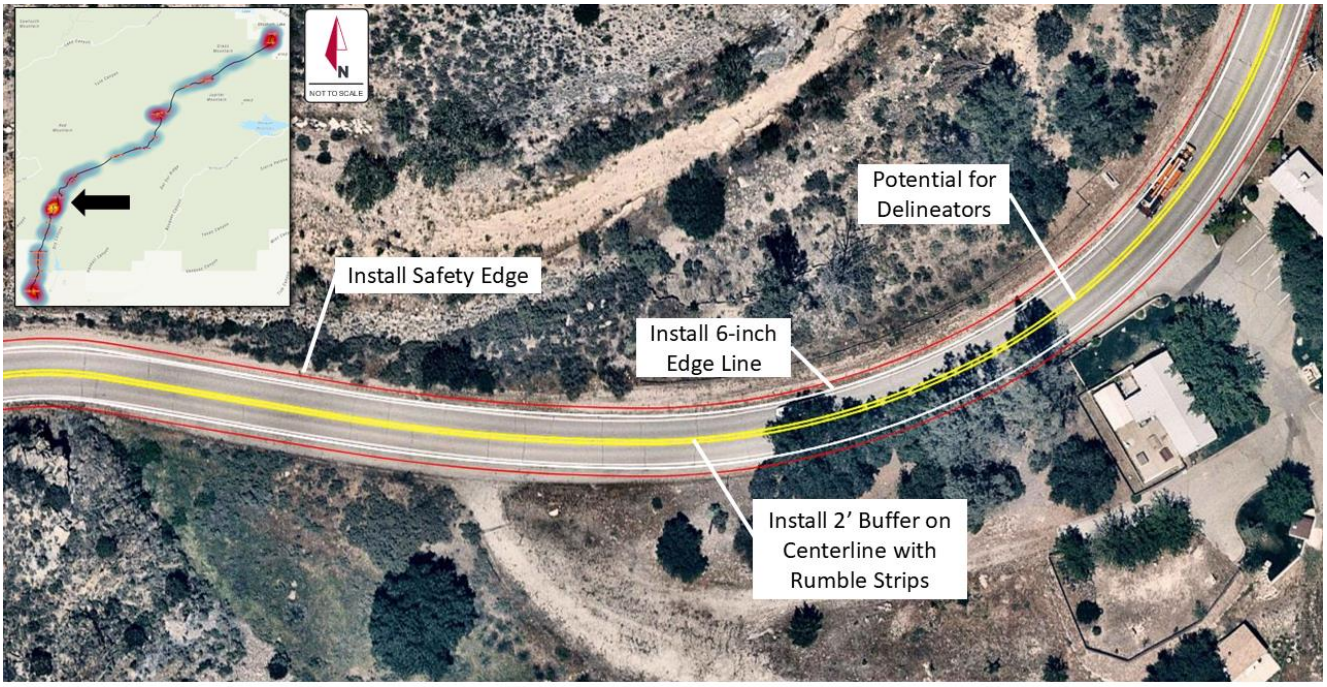
Section 4 analyzed six example locations in its analysis. Location F is an intersection by San Francisquito Canyon Road and Rotor Road, Location G a curve by the LADWP Power Plant 2, Locations H and I are two bridge crossings at MM 13.80 and 14.10 respectively, Location J is a series of curves near MM 14.51, and Location K is a turnout near MM 15.60. As discussed previously, Section 4 is distinguished by its many sharp curves compared to the rest of the corridor. As a result, there were a number of collisions that occurred on this section including a variety of severe injury and fatalities which led to a high number of example locations.



Kimley»Horn

LOCATION F – MM 13.28
SAN FRANCISQUITO CANYON ROAD

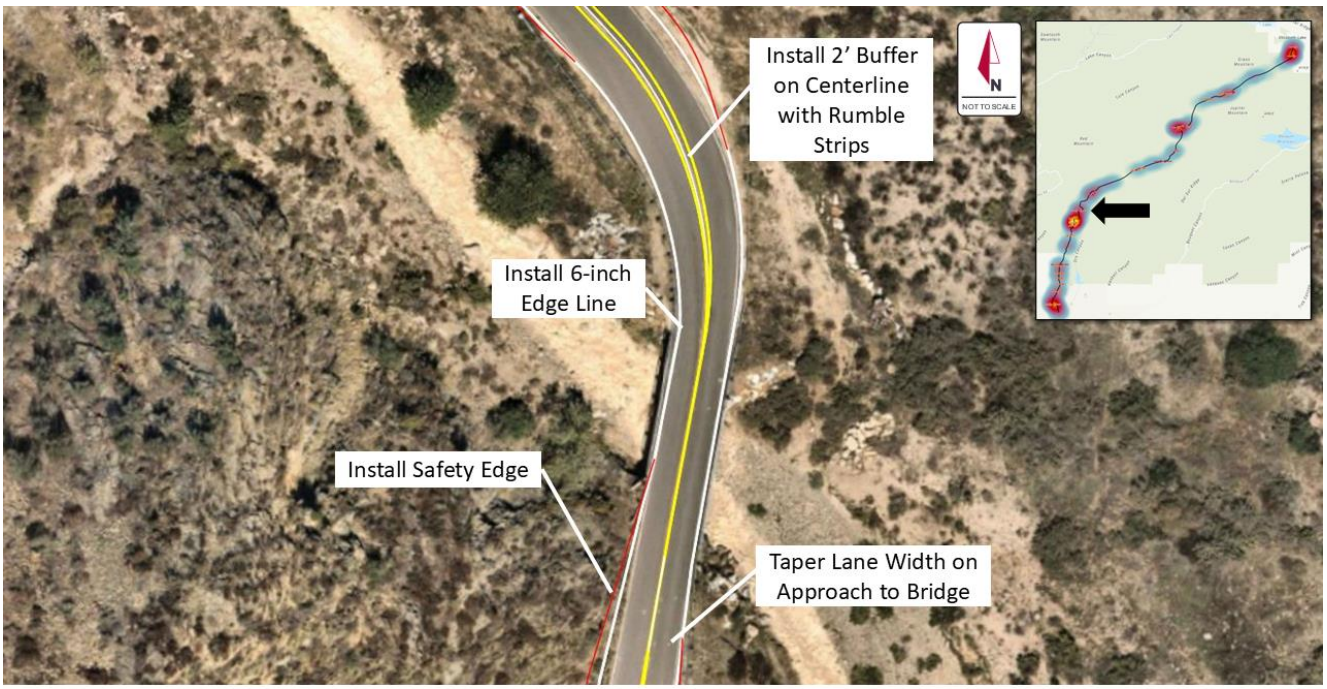
Location F is proposing to tighten the turning radius as a striping change in to provide the perception to drivers to slow down prior to making any turns and allow additional sight distance. This is utilized in conjunction with a striping change to reconfigure the intersection to more of a standard T-intersection with striping to minimize confusion for unfamiliar drivers.



Kimley»Horn

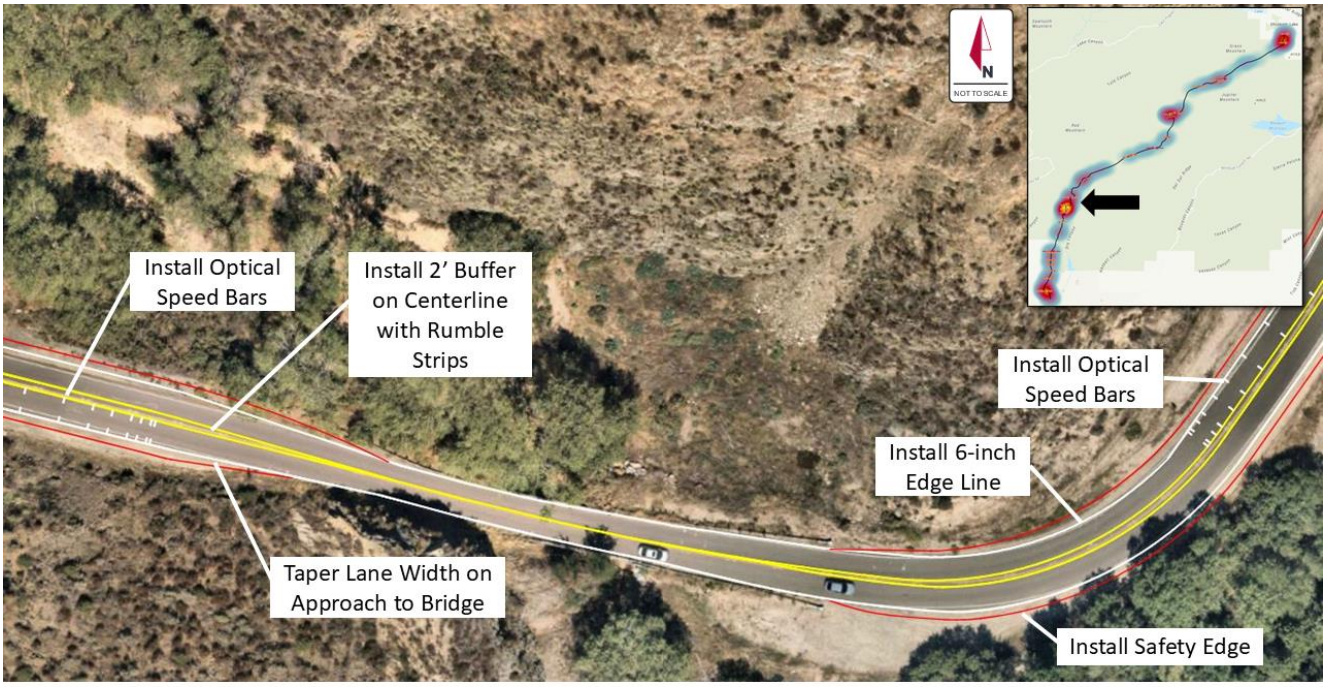
LOCATION G – MM 13.54
SAN FRANCISQUITO CANYON ROAD

Location G was brought up by community members as an area with unsafe passing taking place. There is potential for implementing delineators along this curve to prevent drivers from performing this maneuver if the pilot program at the north end of the corridor is well received.



Kimley»Horn

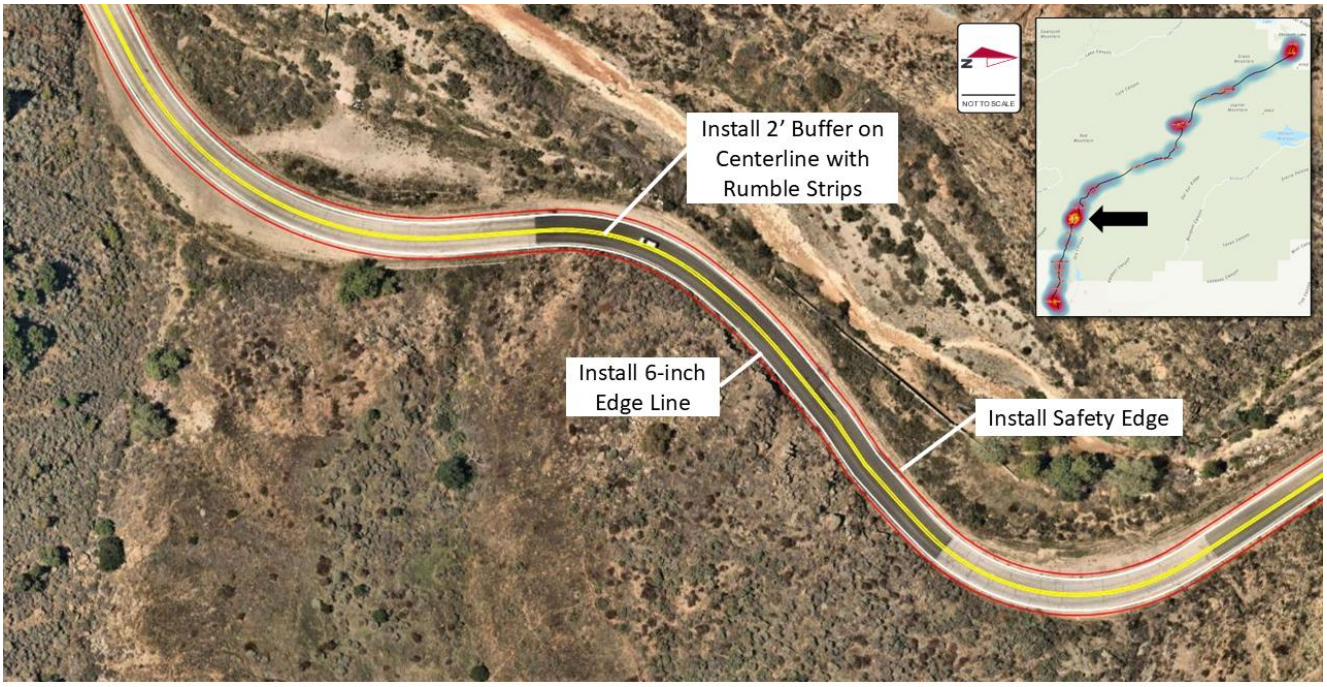
LOCATION H – MM 13.80
SAN FRANCISQUITO CANYON ROAD



Kimley»Horn

LOCATION I – MM 14.10
SAN FRANCISQUITO CANYON ROAD

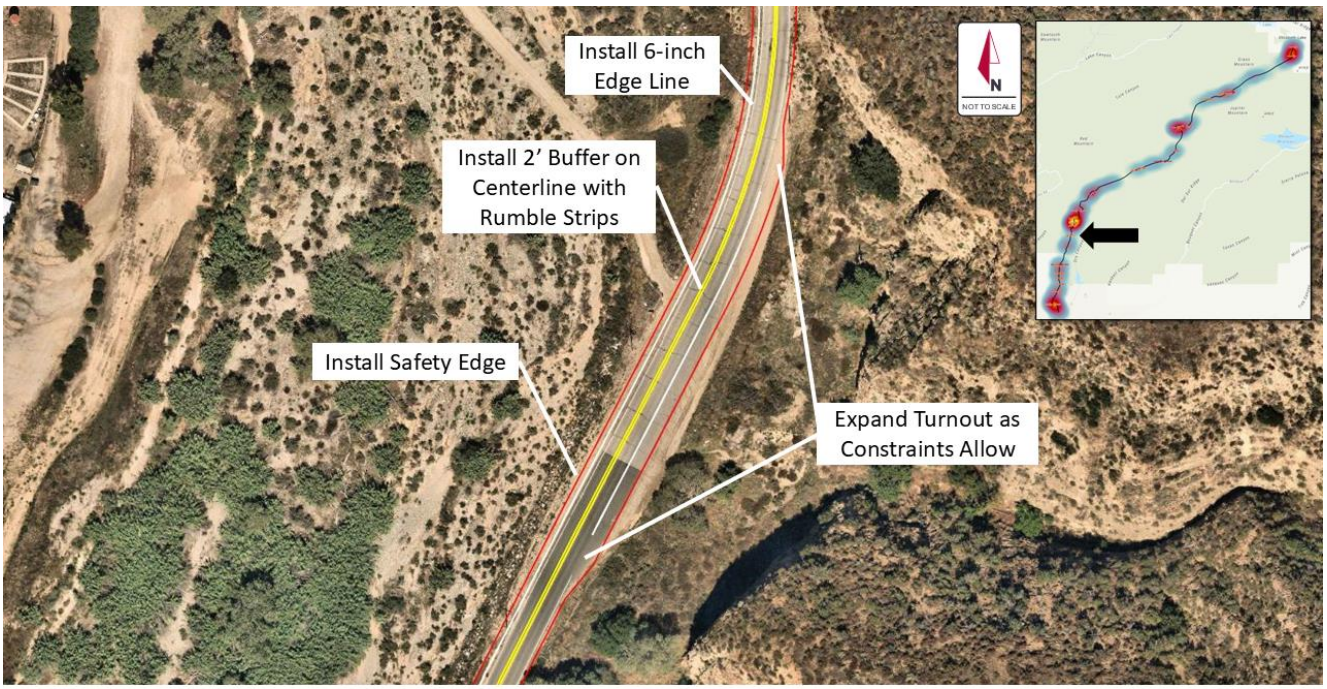
Locations H and I have similar issues with the roadway width narrowing due to a bridge. To prevent collisions at both these locations, issues with unsafe speeding should be addressed. Tapering the lane width reduces the lane width available to drivers which provides the impression that there is less room and a need to slow down. Installing optical speed bars may assist with preventing unsafe speed ahead of the curve and bridge, by giving an illusion to drivers that they are speeding up.



Kimley»Horn

LOCATION J – MM 14.51
SAN FRANCISQUITO CANYON ROAD

Location J is a series of sharp curves near MM 14.51. The corridor-wide proposed improvements of enhanced roadway striping (6-inch edge line), Safety Edge, and centerline buffers and centerline rumble strips would serve as the most ideal implementation at this location.



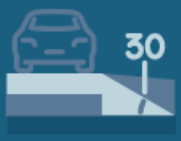
Kimley»Horn

LOCATION K – MM 15.60
SAN FRANCISQUITO CANYON ROAD

Location K will widen the shoulder to expand the turnout as constraints allow to provide additional room for drivers to get up to the speed of the roadway when reentering. There is also opportunity to add additional signage to provide clarity on the usage of turnouts.

SECTION 4

Safety Edge



$90,000 probable cost	44.1 Benefit/Cost Ratio
14% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule

Benefit: Provides safe reentry to roadway to reduce **lane departure collisions**. Will assist this section facing issues of persistent water erosion.

Geometric Feasibility: Minor additional pavement and widening of roadway needed. Most effective when paired with repavement activities

SECTION 4

Centerline Rumble Strips

$325,000 probable cost	17.8 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule

Benefit: Auditory and tactile indication to alert drivers they are driving out of their travel lane to reduce **lane departure collisions**. Pertinent to this section due to its high number of curves

Geometric Feasibility: Target improvement when repaving

SECTION 4

Enhanced roadway striping (6-inch edge line)

$70,000 probable cost	93.4 Benefit/Cost Ratio
21% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule

Benefit: Enhanced visual indication to help drivers to prevent **lane depature collisions**

Geometric Feasibility: Additional minor cost and maintenance needed

SECTION 4

Centerline Buffer

$350,000 probable cost	7.0 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule

Benefit: Provides additional sight distance and roadway width at curves to prevent **unsafe passing**. Pertinent to this section due to its high number of curves

Geometric Feasibility: Additional pavement and widening of roadway needed. Locations with sharper curves can look into larger buffers

San Francisquito Canyon Road

Corridor Traffic Safety Study

SECTION 4

Delineators

$175,000 probable cost	5.3 Benefit/Cost Ratio
15% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Prevents drivers from **unsafe passing**; especially in areas with high head-on crashes such as along curves	**Geometric Feasibility:** Additional pavement width may be needed. Maintenance is an issue

SECTION 4

Tighten Turning Radius

$10,000 probable cost	3.3-10.3 Benefit/Cost Ratio
18-59% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Slow right turning vehicles and provide more standardized T-intersection appearance for drivers to reduce **unsafe speeds**	**Geometric Feasibility:** Need to consider turning movement of vehicles and ensure vehicles do not illegally park

SECTION 4

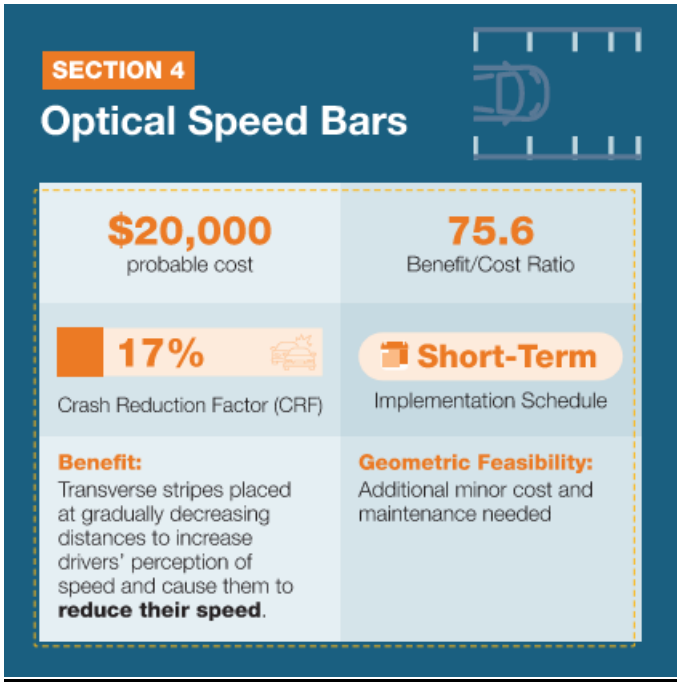
Taper Lane Width

$2,000 probable cost	101.8 Benefit/Cost Ratio
42% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Visual appearance of high speed to get drivers to slow down and reduce **unsafe speeds**	**Geometric Feasibility:** Additional minor cost and maintenance needed

SECTION 4

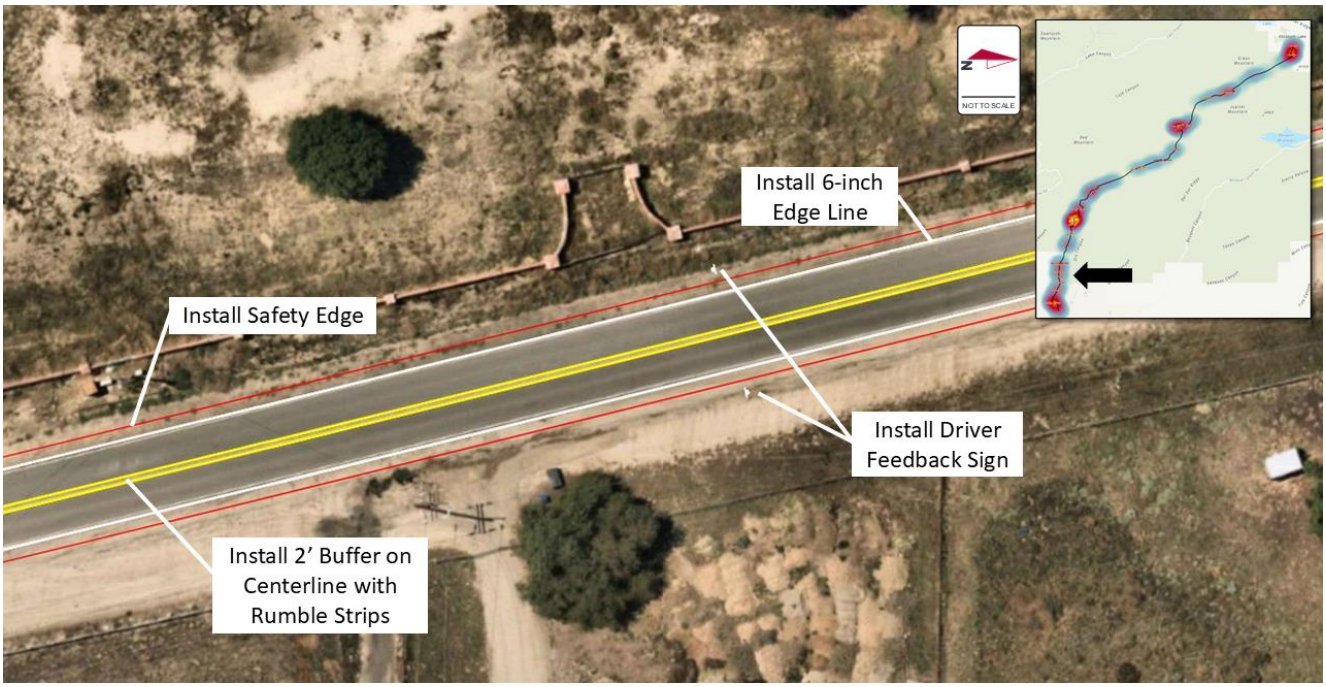
Expanded Turnouts

$2,000,000 probable cost	4.7 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Long-Term Implementation Schedule
Benefit: Provides safe area for emergency pull out and allows slow vehicles to pull over to prevent **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed. Limited in length due to curvature of road



Section 5

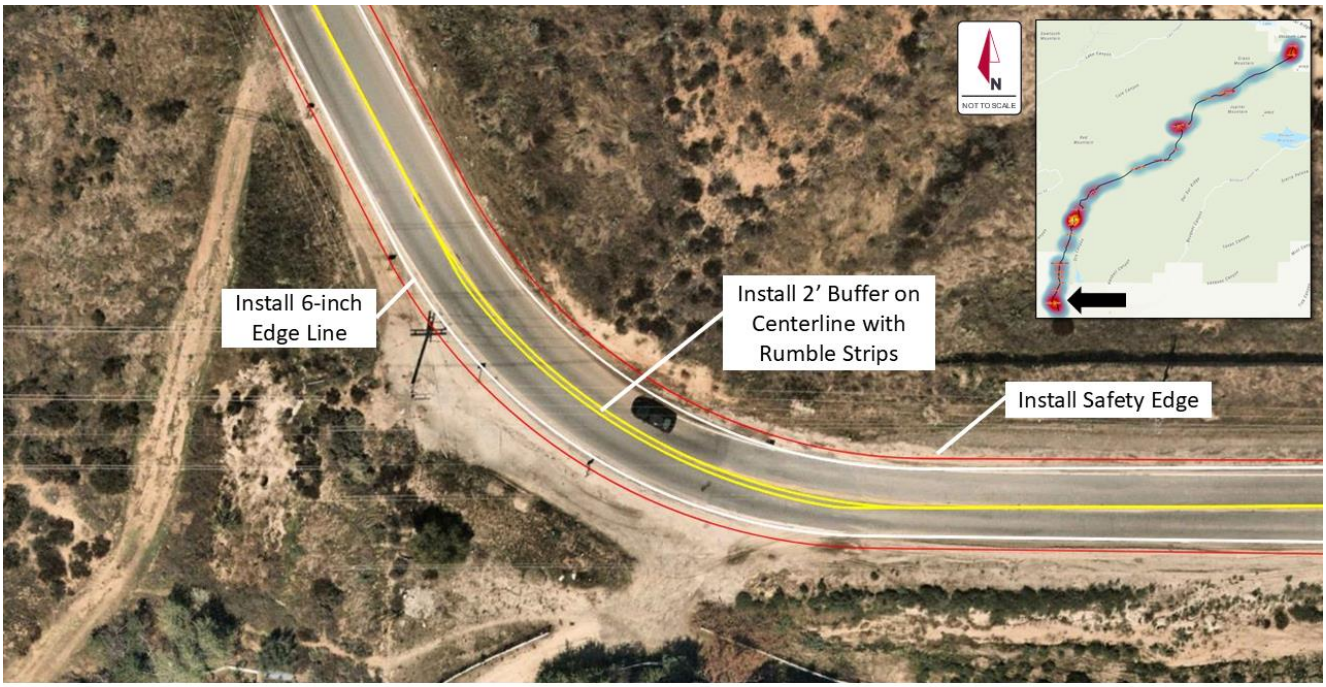
Section 5 analyzed two example locations. Location L is a segment near MM 17.73 with issues of unsafe speeds and Location M is a curve at MM 19.22.



Kimley»Horn

LOCATION L – MM 17.73
SAN FRANCISQUITO CANYON ROAD

Location L proposes a driver speed feedback sign to remind drivers of their speed and to reduce unsafe speeding.



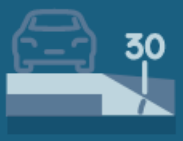
Kimley»Horn

LOCATION M – MM 19.22
SAN FRANCISQUITO CANYON ROAD

Location M has two severe injury "head-on" collisions and the corridor-wide implementation of a 2-foot buffer with rumble strips along curves is recommended to enhance safety at this location. In addition, transverse rumble strips are recommended to alert drivers of equestrian crossings utilized by the local community.

SECTION 5

Safety Edge



$80,000 probable cost	74.0 Benefit/Cost Ratio
14% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Provides safe reentry to roadway to reduce **lane departure collisions**. Will assist this section facing issues of persistent water erosion.	**Geometric Feasibility:** Minor additional pavement and widening of roadway needed. Most effective when paired with repavement activities

SECTION 5

Centerline Rumble Strips

$275,000 probable cost	29.9 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Auditory and tactile indication to alert drivers they are driving out of their travel lane to reduce **roadway departure collisions**	**Geometric Feasibility:** Should limit application on areas near sensative businesses. Target improvement when repaving

SECTION 5

Enhanced roadway striping (6-inch edge line)

$60,000 probable cost	156.8 Benefit/Cost Ratio
21% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Enhanced visual indication to help drivers to prevent **lane depature collisions**	**Geometric Feasibility:** Additional minor cost and maintenance needed

SECTION 5

Driver Speed Feedback Signs

$10,000 probable cost	377.3 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Visual indication to drivers that they may be travelling over the recommended speed such as along a long straightaway to reduce **unsafe speeds**	**Geometric Feasibility:** Should limit application to maintain effectiveness

SECTION 5

Transverse Rumble Strip on Approaches

$60,000 probable cost	4.0 Benefit/Cost Ratio
20% Crash Reduction Factor (CRF)	Short-Term Implementation Schedule
Benefit: Provides auditory and tactile alert to drivers approaching equestrian crossings warn drivers of dangers of **unsafe speeds** or **unsafe passing**	**Geometric Feasibility:** Should install grooved transverse rumble strips to ensure longevity

SECTION 5

Centerline Buffer

$425,000 probable cost	7.0 Benefit/Cost Ratio
35% Crash Reduction Factor (CRF)	Mid-Term Implementation Schedule
Benefit: Provides additional sight distance and roadway width at curves to prevent **unsafe passing**	**Geometric Feasibility:** Additional pavement and widening of roadway needed. Locations with sharper curves can look into larger buffers

All of these countermeasures were composed together in a Conceptual Plan which covers the entirety of San Francisquito Canyon Road. This is meant to show all 13 example locations together and includes improvements to areas outside of these specific focus areas. The goal is to provide a single, overarching visual of the entirety of the corridor which the County can use as a baseline for future improvements to the corridor. The Conceptual Plan can be viewed in **Appendix D**, and it is important to note that future studies, further engineering analysis, regulatory requirements, and more may result in different improvements to San Francisquito Canyon Road**.**

7. FUNDING OPPORTUNTIES

Competitive funding resources are available to assist in the development and implementation of safety projects along San Francisquito Canyon Road. The County should continue to seek available funding and grant opportunities from local, state, and federal resources to accelerate their ability to implement safety improvements which can be implemented in increments of the five sections explained earlier to further accelerate project timelines. This section provides a high-level introduction to some of the main funding programs and grants for which the County can apply.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a federal program that apportions funding as a lump sum for each state, which is then divided among apportioned programs. These flexible funds can be used to preserve or improve safety conditions and performance for any projects on Federal-aid highway, bridge projects on any public road, projects involving facilities for non-motorized transportation, and other types of projects.

In addition, some improvements do not need a benefit-cost analysis conducted for them, but there is a funding cap, and improvements are subject to funding availability. These improvements include installing or upgrading edge lines (up to $250,000) and installing or upgrading guardrails (up to $1,000,000). The County can apply for HSIP funding for these projects with relative ease.

California's local HSIP focuses on infrastructure projects with nationally recognized crash reduction factors. Normally, HSIP call-for-projects is made at an interval of one to two years. The applicant must be a city, a county, or a tribal government federally recognized within the State of California.

Additional information regarding this program at the federal level can be found online at: https://safety.fhwa.dot.gov/hsip/. California specific HSIP information, including dates for upcoming calls for projects, can be found at: Local Highway Safety Improvement Program (HSIP) | Caltrans.

California Senate Bill 1

California Senate Bill 1 (SB1) is a landmark transportation investment bill created to rebuild California by fixing neighborhood streets, freeways, and bridges in communities across California. SB1 funds are targeted toward transit, congested trade, and commuter corridor improvements.

California's state-maintained transportation infrastructure will receive roughly half of SB1 revenue, $26 billion. The other half will go towards local roads, transit agencies, and an expansion of the state's growing network of pedestrian and bicycle routes. Each year, this new funding will be used to tackle deferred maintenance needs both on the state highway system and the local road system, including:

- Local Street and Road Maintenance and Rehabilitation: $1.5 billion
    - This funding is dedicated to improving local road maintenance, rehabilitating, and/or safety through projects such as restriping and repaving.
- Bicycle and Pedestrian Projects: $100 million
    - This will go to cities, counties, and regional transportation agencies to build or convert more bike paths, crosswalks, and sidewalks. It is a significant increase in funding for these projects through the ATP.
- Local Planning Grants: $25 million

Safe Streets and Roads for All Grant Program

The Bipartisan Infrastructure Law established the Safe Streets and Roads for All (SS4A) program with $5 billion in funds to be appropriated over five years (2022 to 2026) to support initiatives that prevent roadway deaths and serious injuries across the nation. Eligible applicants include cities, towns, counties, and metropolitan planning organizations. Applicants may apply for a Planning and Demonstration Grant or Implementation Grant. Planning Grants are to develop a comprehensive safety action plan such as a Vision Zero Action Plan or supplement an existing safety action plan. Implementation Grants must show how applicants will implement strategies that are consistent with an existing safety action plan. In the case of Los Angeles County, which adopted its Vision Zero Action Plan in 2020 and is eligible for Implementation Grants, projects and grant activities would need to demonstrate how the efforts would advance actions in the County's Vision Zero Action Plan.

Infrastructure Investment and Jobs Act

In November 2021, United States President Joe Biden signed into law the $1.2 trillion Infrastructure Investment and Jobs Act. In addition to the SS4A grant program described above, this law provides billions of dollars in additional funding for improvements and investment in the transportation sector nationwide. The law provides $30 billion in funding over five years for competitive RAISE grants for transportation projects, as well as additional funding for repair and environmental mitigation projects. As these grant programs continue to be developed, the County can position itself by identifying potential projects and programs to pursue. There are opportunities to pair this funding with local, independent funds, such as County capital expenditures, or during right-of-way maintenance activities.

8. CONCLUSION

The Corridor Traffic Safety Study was originated to reduce the volume and severity of collisions which have occurred on San Francisquito Canyon Road. This began with a review of existing conditions of safety features and collision data to provide a series of proven countermeasures that the County may implement to enhance the safety of the roadway. Extensive outreach was performed throughout the study to ensure any necessary feedback and local knowledge of the corridor were included to provide solutions best tailored to those who drive and live on San Francisquito Canyon Road.

The study identified three emphasis areas that would have the most impact to address collisions based on historical patterns and community knowledge. It was found that the County can concentrate its efforts on the following emphasis areas:

- Unsafe Speed
- Unsafe Passing
- Lane Departure Collisions

A comprehensive list of countermeasures was developed to provide the County with possible measures to reduce collisions based on the emphasis areas. As many of the countermeasures vary greatly in cost and labor, each one is further elaborated to include its probable cost, benefit/cost ratio, crash reduction factor, implementation schedule, warrant, and geometric feasibility.

The countermeasures in this report discuss some of the possible measures the County can take that would be beneficial in addressing these areas, but these improvements are dictated based on funding, available resources, and possible engineering restrictions. The suggestions discussed are only one potential method of mitigation presented for further review, and other mitigation strategies can be explored by the County where practicable.

By conducting this Corridor Traffic Safety Study, the County has ensured there is a path forward for future transportation improvements on San Francisquito Canyon Road. In addition to these improvements, the County can take additional action such as:

- Evaluate collision data after improvements are made for any trends or major changes, to ensure the efficacy of improvements and adjust strategies as needed.

- Maintain outreach with the community to ensure feedback with each implementation and ongoing support.
- Monitor available competitive funding resources, such as grants or cost-savings opportunities, including coordinating with maintenance schedules or grouping improvements for installation at one time.

APPENDIX A – EXISTING CONDITIONS ASSESSMENT

Existing Conditions Assessment

To: Stephen Dykstra, P.E., T.E., P.T.O.E, Los Angeles County Public Works

From: Jean Fares, T.E., Kimley-Horn and Associates, Inc.

Darryl DePencier, AICP, GISP, RSP_{2B}, Kimley-Horn and Associates, Inc.

Martin Phung, EIT, Kimley-Horn and Associates, Inc.

Date: September 10, 2024

Subject: San Francisquito Canyon Road – Existing Conditions

1. Introduction

Los Angeles County Public Works authorized a Corridor Traffic Safety Study to be conducted on San Francisquito Canyon Road from the City of Santa Clarita boundary to Elizabeth Lake Road. The 19-mile segment provides important connectivity to the local neighborhoods of Green Valley and for travelers between Santa Clarita and the southwestern region of the Antelope Valley. The corridor has experienced a series of high-profile collisions and community concern in recent years, leading to a Corridor Traffic Safety Study to identify potential road safety challenges and suggest countermeasures to mitigate those safety issues. **Figure 9** illustrates the study corridor in relation to the major roads surrounding it.

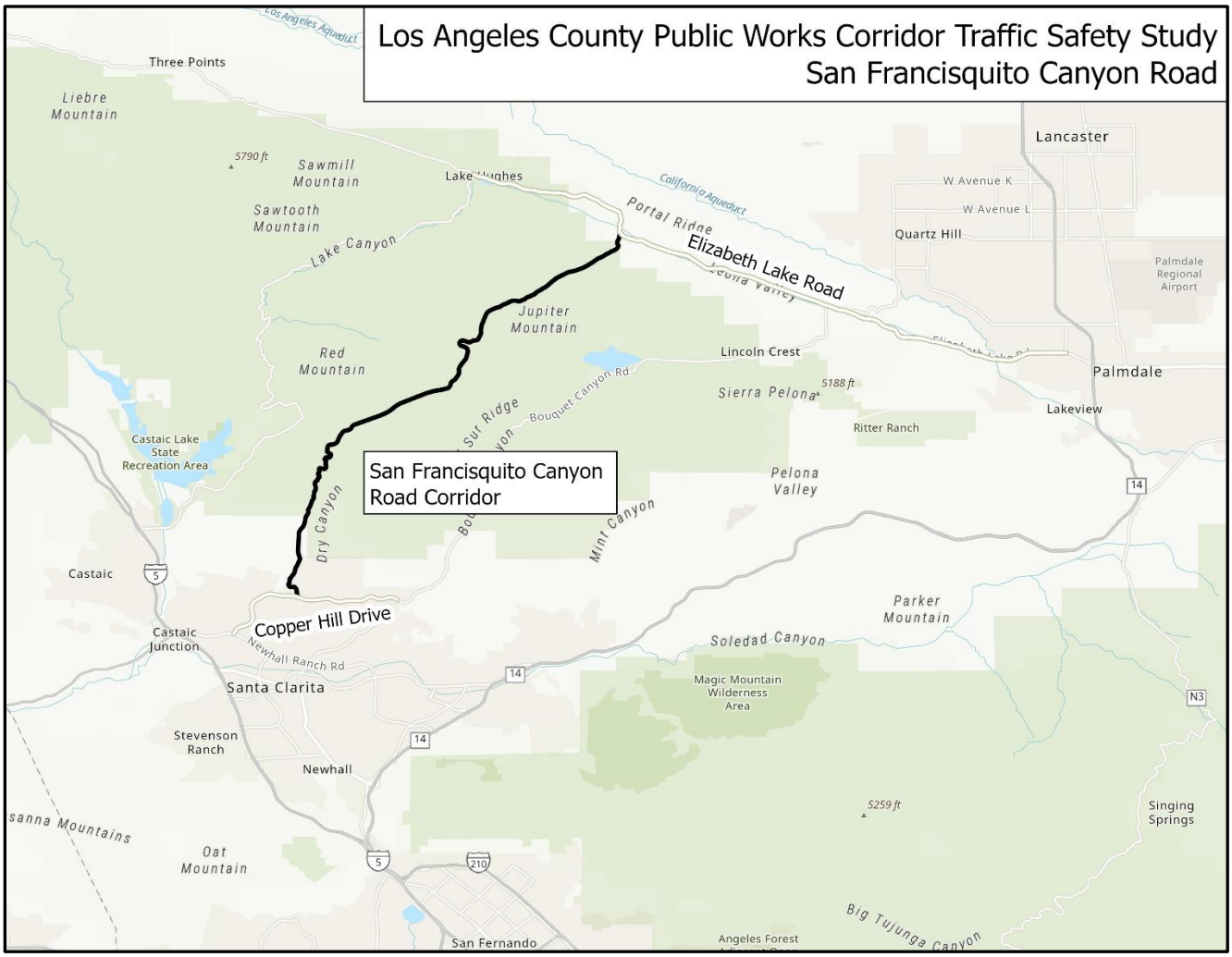


Figure 9 – Overview of San Francisquito Canyon Road from City of Santa Clarita boundary to Elizabeth Lake Road

2. Analysis & Summary of Data

The adjacent land uses on San Francisquito Canyon Road primarily consist of heavy agricultural, watershed, rural commercial, and single-family residence. The rural commercial and single-family zoning is concentrated in Green Valley. Heavy agricultural zoning is located by Elizabeth Lake Road, the surrounding region around Green Valley, and the southern end of the corridor bordering the City of Santa Clarita. The watershed zone, meant for conservation of natural resources and to protect areas subject to natural hazards, is the largest zoning group by area along the corridor and makes up the remainder of the zoning.

As-built and proposed striping plans for San Francisquito Canyon Road were provided by Los Angeles County Public Works. The plans have no notable discrepancies from existing conditions as noted during field visits and reviews of aerial mapping. The proposed striping plans detail a 100-foot-wide permit line per USFS Special Use Permit for the entirety of San Francisquito Canyon Road. The width is centered on the existing centerline of the roadway.

Five years of collision data for San Francisquito Canyon Road were obtained from the Transportation Injury Mapping System (TIMS) and verified with traffic collision data from Los Angeles County Public Works. Data was collected from January 1, 2018 to December 31, 2022 as these were the most recent years with datasets considered final.

From 2018 to 2022, there were a total of 128 collisions, five of which resulted in fatalities and 24 resulted in severe injuries. The TIMS database does not include property damage only (PDO) collisions, so it was not included in the analysis. **Table 2** contains a summary of the collisions along the corridor by severity.

Table 2 – Collisions by Severity

Collision Severity	2018	2019	2020	2021	2022	Grand Total	Percent
Fatal	2	0	0	1	2	5	3.9%
Severe Injury	4	4	7	3	6	24	18.8%
Minor or Visible Injury	13	9	4	11	11	48	37.5%
Complaint of Pain	11	10	13	11	6	51	39.8%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

Certain collisions resulted in more than one fatality or severe injury. **Table 3** summarizes the total fatalities and severe injury casualty by year. All nine victims of fatal collisions were either drivers or passengers. Twenty-five of those who suffered severe injury were drivers or passengers with the remaining injured parties listed as “other”. There were no collisions which resulted in a fatal or severe injury to any pedestrian or bicyclist although twelve (46.2%) of the severe injury collisions involved a motorcycle.

Table 3 – Casualty Per Year

Casualty	2018	2019	2020	2021	2022	Grand Total	Percent
Fatalities	3	0	0	1	5	9	24.3%
Severe Injuries	4	4	8	4	8	28	76.7%
Grand Total	**7**	**4**	**8**	**5**	**13**	**37**	**100%**

Collisions by type for San Francisquito Canyon Road are illustrated in **Table 4**. The most common collision type was "hit object," which represents over half of all cashes that occurred on the corridor. "Head-on" and "overturned" collisions made up the next most collisions with 14.8% and 11.7%, respectively.

Table 4 – Collisions by Type

Collision Type	2018	2019	2020	2021	2022	Grand Total	Percent
Broadside	5	0	2	1	0	8	6.3%
Head-On	2	4	4	3	6	19	14.8%
Hit Object	17	14	11	14	16	72	56.3%
Other	1	0	2	1	0	4	3.1%
Overturned	3	3	1	7	1	15	11.7%
Rear End	0	0	1	0	0	1	0.8%
Sideswipe	2	2	3	0	2	9	7.0%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

Table 5 details the collisions by weather conditions, showing clear conditions making up 82.8% of collisions. Only 3.1% of collisions occurred during raining conditions.

Table 5 – Collisions by Weather Condition

Weather Conditions	2018	2019	2020	2021	2022	Grand Total	Percent
Clear	27	14	22	23	20	106	82.8%
Cloudy	3	7	2	3	3	18	14.1%
Raining	0	2	0	0	2	4	3.1%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

60.9% of collisions occurred during daylight conditions while 28.1% of collisions occurred in the dark without any street lights present. **Table 6** provides a summary of collisions by lighting conditions.

Table 6 – Collisions by Lighting Conditions

Lighting Conditions	2018	2019	2020	2021	2022	Grand Total	Percent
Dark - No Street Lights	12	4	4	8	8	36	28.1%
Dark - Street Lights	2	0	4	0	0	6	4.7%
Dark - Street Lights Not Functioning	1	0	0	0	0	1	0.8%
Daylight	12	18	15	17	16	78	60.9%
Dusk-Dawn	3	1	1	1	1	7	5.5%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

Tuesday and Wednesday were the most common days for collisions at 17.2% and 20.3%, respectively. Monday and Thursday made up the days with the least collisions at 10.2% and 8.6% each. **Table 7** summarizes the collisions by the day of the week.

Table 7 – Collisions by Day of Week

Day of Week	2018	2019	2020	2021	2022	Grand Total	Percent
Sunday	3	1	1	4	10	19	14.8%
Monday	3	1	4	2	3	13	10.2%
Tuesday	7	3	3	5	4	22	17.2%
Wednesday	7	8	4	3	4	26	20.3%
Thursday	1	4	4	2	0	11	8.6%
Friday	6	2	2	5	1	16	12.5%
Saturday	3	4	6	5	3	21	16.4%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

The majority of collisions occurred during the peak hours of 6:00AM – 9:00AM and 3:00PM – 6:00PM at 16.4% and 19.5%, respectively. The collisions by time of day are outlined in **Table 8**.

Table 8 – Collisions by Time of Day

Time of Day	2018	2019	2020	2021	2022	Grand Total	Percent
12:00AM - 3:00AM	2	0	0	1	1	4	3.1%
3:00AM - 6:00AM	3	0	4	1	2	10	7.8%
6:00AM - 9:00AM	5	6	3	4	3	21	16.4%
9:00AM - 12:00PM	3	7	4	3	2	19	14.8%
12:00PM - 3:00PM	3	3	3	0	6	15	11.7%
3:00PM - 6:00PM	3	2	5	8	7	25	19.5%
6:00PM - 9:00PM	3	1	4	5	2	15	11.7%
9:00PM - 12:00AM	8	4	1	4	2	19	14.8%
Grand Total	**30**	**23**	**24**	**26**	**25**	**128**	**100%**

Figure 10 analyzes all collisions along San Francisquito Canyon Road to find locations with more collisions and a larger proportion of fatal/severe injuries. The figure also breaks down the collision type of all the high severity collisions. Most of these collision types are made up of "hit object" as discussed in **Table** 4.

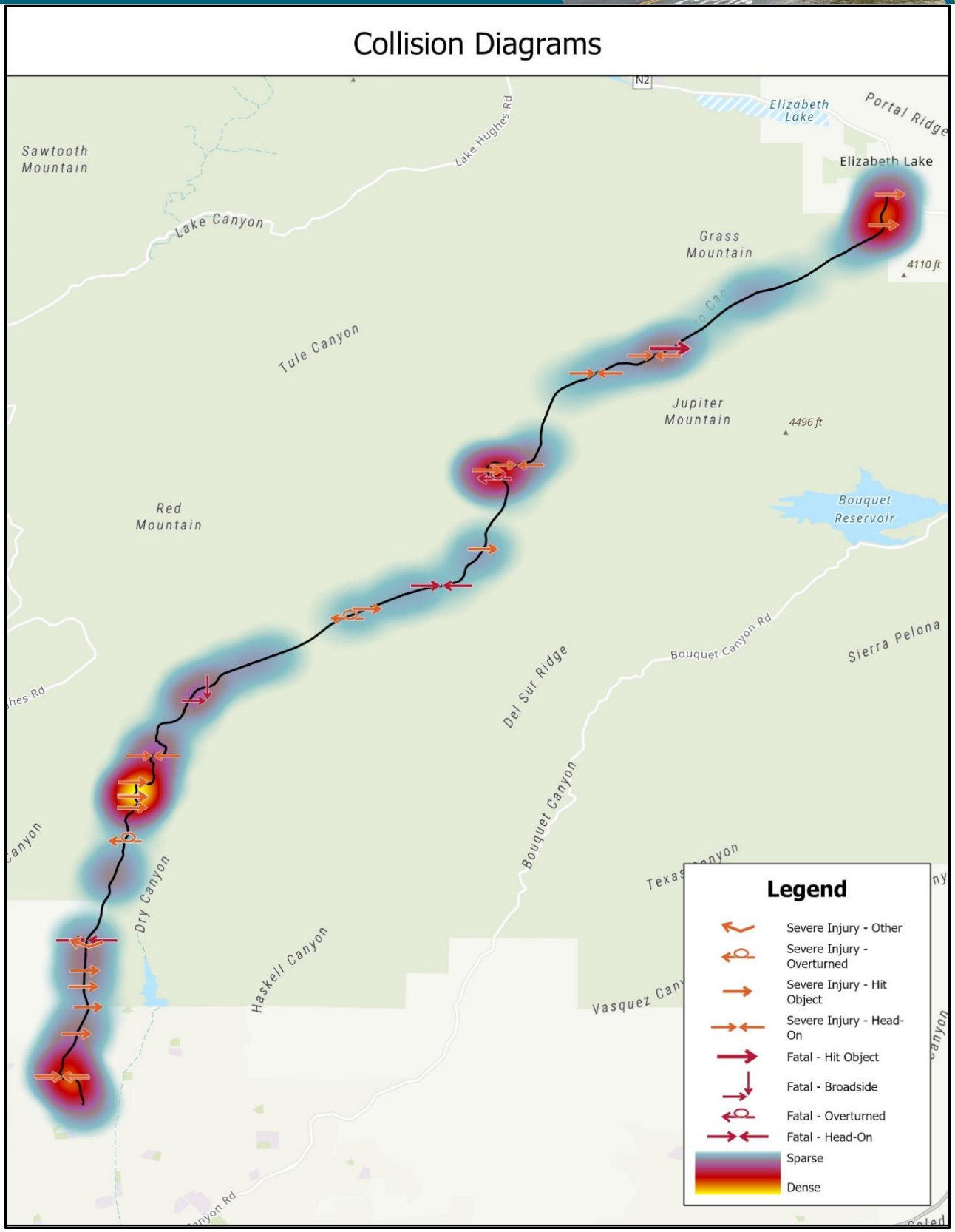


Figure 10 – Collision Diagram along Study Corridor

The existing speed limit along the study corridor is mostly 55 mph except for a 35-mph segment in Green Valley, a 40-mph segment in the middle of the study corridor near San Francisquito Fire Station, a 45-mph zone at the south end of the study corridor, and a 50-mph zone at the north end of the study corridor. To analyze driving habits along the corridor, the County of Los Angeles provided speed and volume measurements gathered across several days in October 2023. The data compiled in **Table 9** shows excessive speed at the south end of the study segment bordering the City of Santa Clarita north of Copper Hill Drive and north of Cherokee Canyon Lane. Speed data south of Spunky Canyon Road also has over 20% of vehicles exceeding 55 mph despite the nearby vicinity of Green Valley.

Table 9 – Speed and Volume Data

	Daily Volume (vehicles)	Average Speed (mph)	85th Percentile (mph)	Percent of Vehicles > 55mph
N/O Copper Hill Drive	8,188	47	58	20.0%
N/O Cherokee Canyon Lane	6,099	52	73	47.4%
N/O San Francisquito Motorway	5,693	42	48	1.9%
N/O Spunky Canyon Road	6,073	37	43	1.1%
N/O Stator Lane	5,319	42	48	1.2%
S/O Elizabeth Lake Rd	5,935	47	53	6.2%
S/O Spunky Canyon Road	6,049	48	58	20.8%

There are multiple speed advisories ranging from 20 to 40 mph depending on the curvature of the roadway along the corridor. The County of Los Angeles provided ball bank data which measures lateral and overturning forces on a vehicle to determine adequate advisory speeds on curves. The data was collected and presented in a proposed signing plan for San Francisquito Canyon Road. The study corridor has several curves where the plans show potential enhancements with additional chevron alignment signs, horizontal alignment signs, and speed advisory signs based on the curve radius and length noted from the ball bank data. The existing speed limits and speed advisory signs are depicted on **Figure 11** to assist in further analysis of the proposed plans.

The curve radii along San Francisquito Canyon Road were measured for curves up to a radius 1,500 feet and are depicted in **Figure 12**. The radius affects the speed at which a driver is able to safety negotiate a curve as a smaller radius indicates a sharper turn that needs to be taken at a lower speed. The road alignment, ball bank data, and curve radii were considered together to ensure that the speed advisory signs display a safe speed needed to navigate the curves along the roadway.

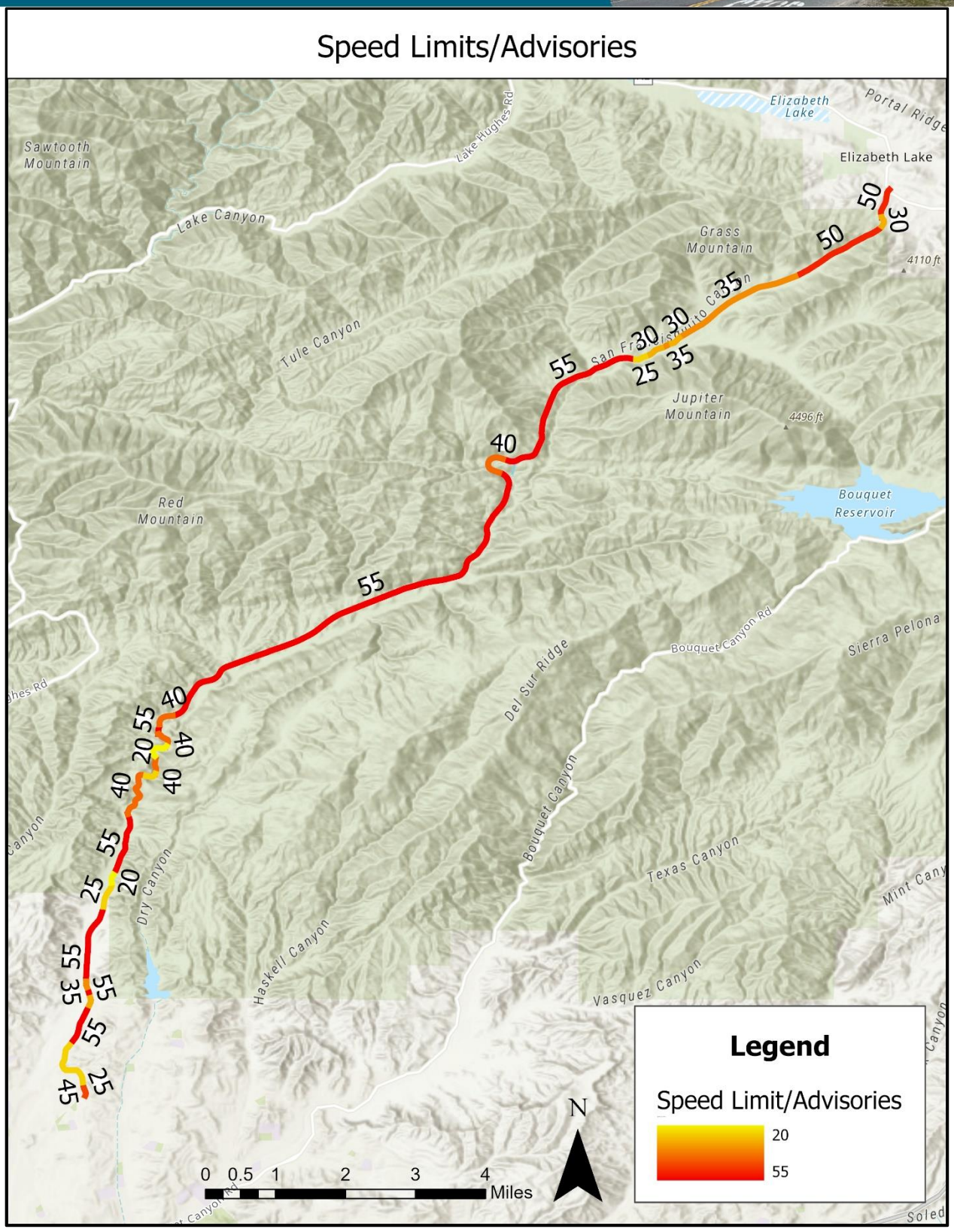


Figure 11 – Speed Limit and Advisories along San Francisquito Canyon Road

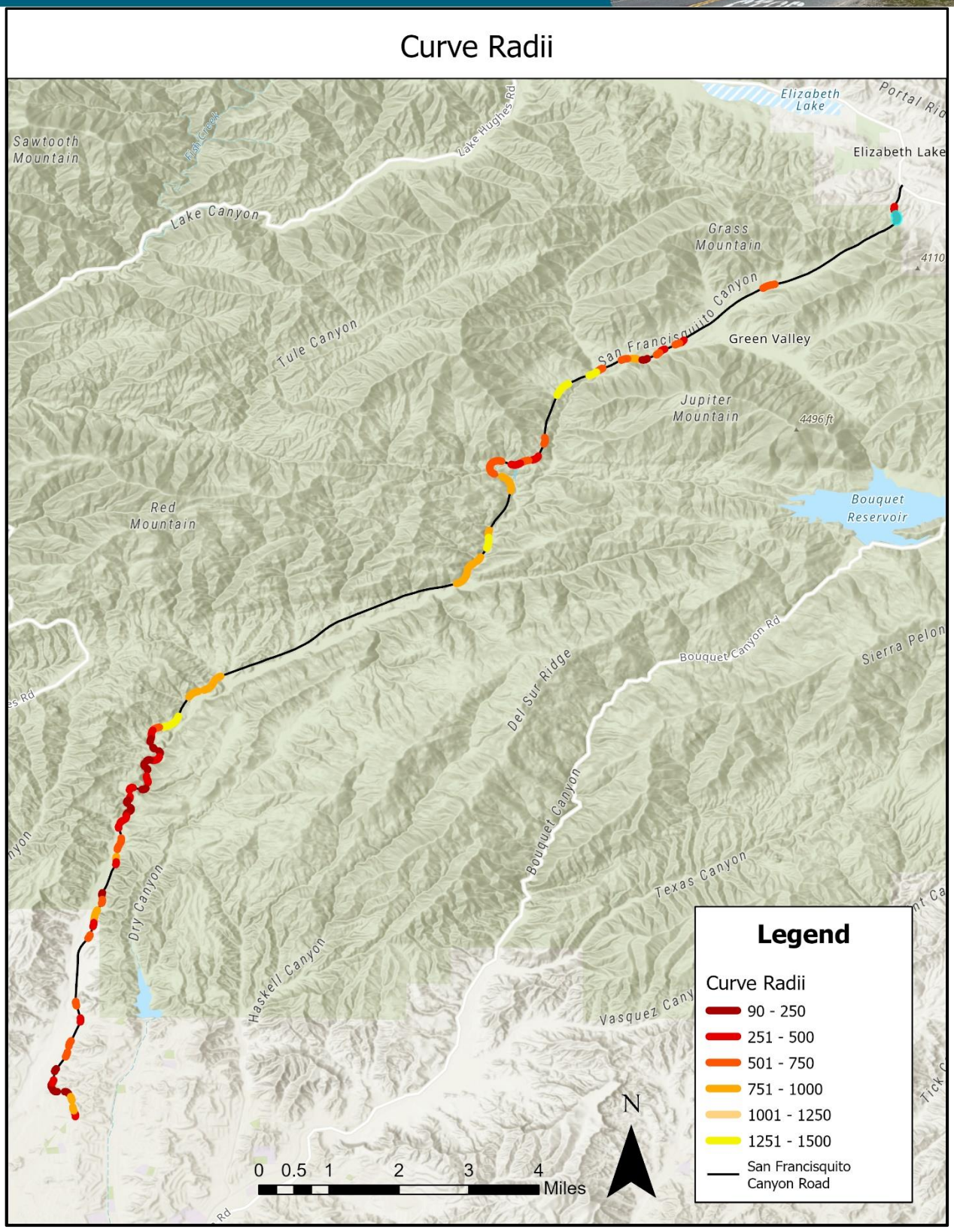


Figure 12 – Curve Radii along San Francisquito Canyon Road

3. Field Visit

A field review was conducted in the morning of Thursday, February 27, 2024. This visit provided the opportunity to see observations not available otherwise.

Observation #1 – Rainfall has led to erosion along the edge of the roadway.

Figure 13 – Steep Erosion along Roadway

Observation #2 – There are multiple equestrian crossings along the study corridor marked with signs and crosswalks. A few locations have transverse rumble strips that show signs of wear.

Figure 14 – Equestrian Crossings with Deteriorated Transverse Rumble Strips

Observation #3 – Centerline rumble strips exist on the northern 6-mile portion of the study corridor, including through Green Valley.

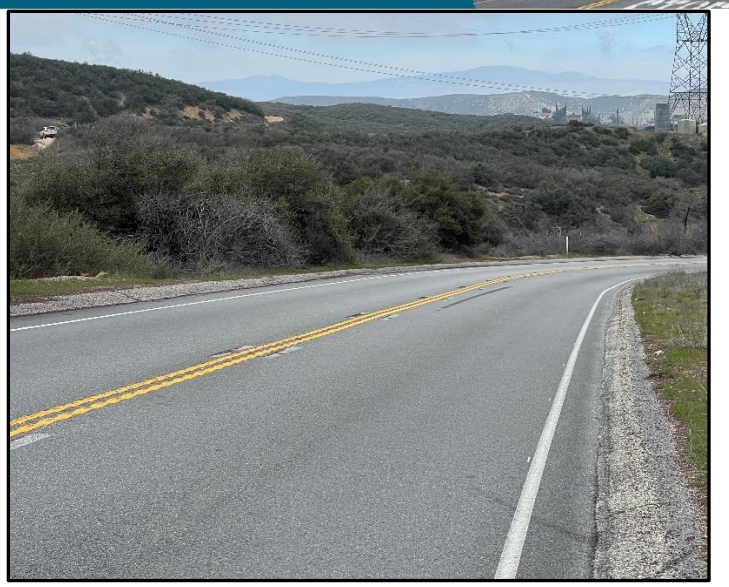


Figure 15 – Existing Centerline Rumble Strips

Observation #4 – There are some existing turnout lanes along the route.

Figure 16 – 200-Feet Turnout for Northbound Drivers located by MM 15.62

4. Focus Locations & Next Step

The observed data from the collision data, constituent feedback, and field visit led to several spot locations of which greater focus would result in the largest impact. **Figure 17** shows the initial five locations overlayed with collision data provided from TIMS.

Kimley»Horn

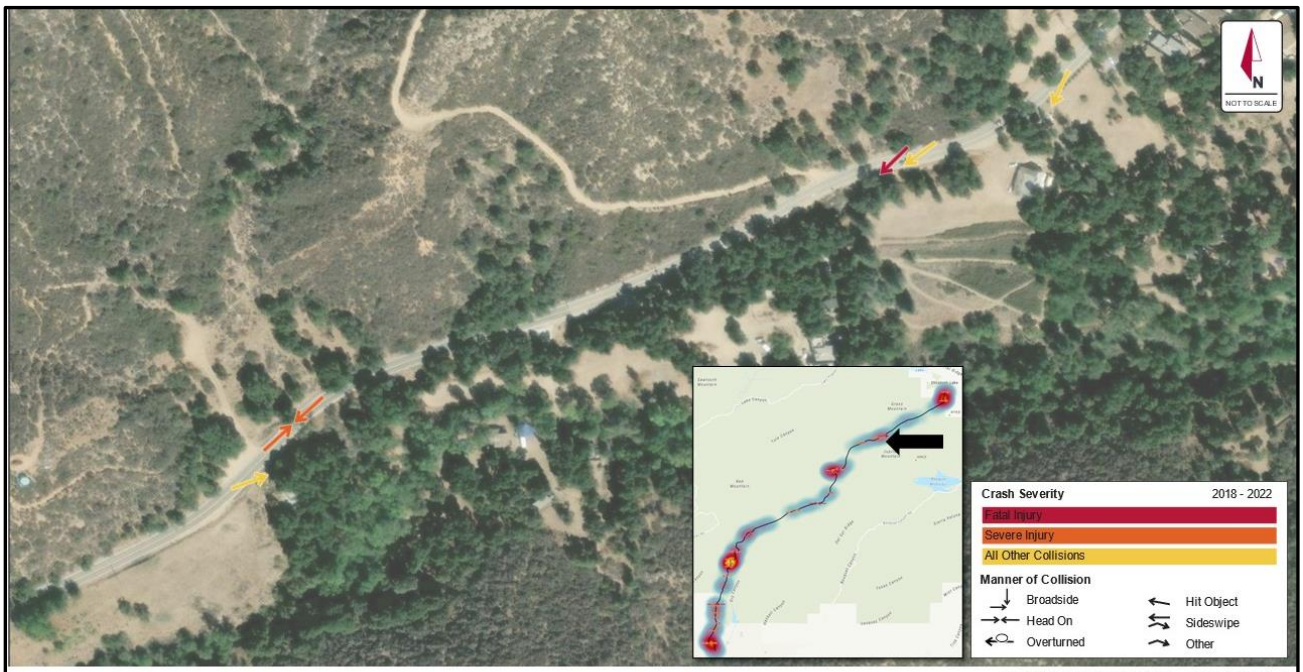
COLLISION DIAGRAM – LOCATION 1
SAN FRANCISQUITO CANYON ROAD

Kimley»Horn

COLLISION DIAGRAM – LOCATION 2
SAN FRANCISQUITO CANYON ROAD

Kimley»Horn

COLLISION DIAGRAM – LOCATION 3
SAN FRANCISQUITO CANYON ROAD



Kimley»Horn

COLLISION DIAGRAM – LOCATION 4
SAN FRANCISQUITO CANYON ROAD

Figure 17 – Five Focus Locations

Location 1 had a four "overturned" and three "head-on" collisions, two of which resulted in severe injuries. Location 2 had seven "hit object" collisions near MM 14.52. Location 3 had seven "hit object" collisions in the northbound direction. This location also had an "overturned" collision resulting in a fatality. Location 4 had a fatal "hit object" collision from a vehicle heading southbound near MM 3.53. Location 5 had a significant number of collisions showing drivers crossing the centerline onto the other side of the roadway and colliding with fixed objects. These five locations will serve as focus locations for further analysis.

A Corridor Traffic Safety Study will be made to include further additional potential improvements along the corridor. The study will build off the Existing Conditions Assessment and Focus Point Inventory**.** The study will provide high-level cost and collision reduction rates such that the County can prioritize the suggested improvements.

APPENDIX B – COMMUNITY COMMENT MATRIX

Line	Comment Method	Comment/Question	Comment Response
1	In person	How is a collision classified when you are ran off the road, at no fault to your own?	Discussed in Meeting. Fault does not affect how the causation of a collision is classified.
2	In person	When snow plows are being utilized in the winter, there is a slip hazard by Location 1 (pilot delineator location) due to icing. Suggestion for additional street cleaning.	Maintenance shall be informed of this concern.
3	In person	Will there be delineators blocking driveways? How far will it extend?	Discussed in Meeting. There will be no blocking of driveways.
4	In person	What are the delineators made of?	Discussed in Meeting. There are many potential types and standards, but typical designs will not cause major damage to vehicles while still providing a deterrent.
5	In person	Will the study look into installing speed cameras or stop sign cameras?	Discussed in Meeting. Impossible due to state law.
6	In person	Discussion on adding delineators around Spunky Canyon Road and San Francisquito Canyon Road to prevent vehicles from speeding around stop sign	Delineators may be infeasible due to driveways. Potential for T-intersection design with Spunky Canyon Road and closing direct access to Calle El Monte (without impacting access to others)
7	In person	When the County scours the side of the roadway to remove debris will it harm the Safety Edge?	Discussed in Meeting. Will not harm Safety Edge.
8	In person	Has the County thought about installing cameras for photo enforcement of speed or illegal passing?	Discussed in Meeting. Impossible due to state law.
9	In person	Where is location 3 relative to Green Valley? Concerning where the driver feedback sign will be installed.	Discussed in Meeting.
10	In person	Recommendation to install driver feedback signage when the speed limit changes just before entering Green Valley	This comment was analyzed as part of line 55.
11	In person	Discussion on exterior noise of rumble strips	Discussed in Meeting. It is known that an externality of rumble strips include noise.
12	In person	Has delineators been considered at the horseshoe curve?	This location has history with same direction run-off collisions and not where vehicles cross the centerline. Delineators can be considered another phase if collisions do not decrease with initial improvements

13	In person	Can the passing lane be eliminated from the horseshoe curve?	Removing a passing lane is not ideal as there is a high demand for passing. Issues with merging at the end of the passing lane will be addressed by potentially extending pavement.
14	In person	Can the merge lane be extended at the horseshoe curve due to driver's being cut off	Potential to extend pavement to provide extra buffer (while leaving edge line at existing location)
15	In person	Positive comment about adding additional pullouts	Discussed in Meeting. General agreement amongst most community members.
16	In person	Discussion about when the horseshoe curve passing lane was added	Discussed in Meeting. It has been there for the entirety of the analysis dates of collision history.
17	In person	Comment to add delineators at the horseshoe merge	This comment was analyzed as part of line 12.
18	In person	What size is a proper turnout?	Discussed in Meeting. This varies greatly depending on speed limit, sight distance, etc.
19	In person	Is there additional signage to clarify about turnout purpose?	Potential to add R4-12 to be more direct. R4-13 and R4-14 are also potential signs to implement
20	In person	Where is the location of the passing lane?	Discussed and shown in Meeting.
21	In person	Is there a possibility to add a red LED at the T-intersection?	This comment was analyzed as part of line 32.
22	In person	There is a fatality at the dip 5+ years ago. Is there plans to address the illegal passing there?	Based on collision data and elevation from Google Earth Pro, this location is around MM 9.05. There is potential near this location to install a passing lane for legal passing.
23	In person	Discussion on paved shoulder at T intersection to allow cars to legally pass while avoiding illegal parking	Discussed in Meeting; no major changes
24	In person	Is there any changes to the temporary bridge at the T-intersection?	Discussed in Meeting; no major changes
25	In person	Discussion about resident at 38735 San Francisquito Road having an issue with pulling into driveway safely while cars are passing	Potential for 6' shoulder near driveways for sight distance
26	In person	Are speed bumps being considered at the town of Green Valley?	Speed bumps are not ideal due to not meeting County standards (road classification, speed limit, road curvature, etc.)

27	In person	Can traverse rumble strips be installed at Green Valley?	Transverse rumble strips can lead to noise complaints as discussed during community outreach meeting and are typically not installed in advance of stop signs. The stop signs along San Francisquito Canyon Road in advance of Spunky Canyon Road are adequately marked with "Stop Ahead" signs and pavement markings in both north and south directions
28	In person	Has a roundabout been considered at the intersection of Spunky Canyon and San Francisquito?	Roundabout is significantly more expensive and will have R/W impacts; it was also not popular based on reaction at the meeting
29	In person	Suggestion to provide turnout south of Elizabeth Lake Road heading northbound	Potential to implement turnout although this location will not provide as much value as other locations due to short distance between intersections
30	In person	Question about implementing speed cameras	Discussed in Meeting. This is currently impossible due to state law
31	In person	Recommendation to install stop signs at San Francisquito and Elizabeth Lake Road (stop signs on Elizabeth Lake Road)	Stop signs can only be installed if warranted per MUTCD
32	Zoom	What about stop signs with lights?	This improvement is ideal for cars which run stop signs due to lack of visibility; data does not corroborate that collisions are occurring due to this issue
33	Zoom	The 35 mph radar sign coming into Green Valley from Elizabeth Lake road has its solar panels blocked by tree branches.	Maintenance has been informed of this concern.
34	Zoom	People are deliberately blowing through the stop signs after passing (across the double lines) with a number of cars that are stopped waiting their turn to go!	This comment was analyzed as part of line 6.
35	Zoom	Yes! That needs to be addressed. Possibly a light instead of stop sign?	Traffic lights can only be installed if warranted per MUTCD
36	Zoom	More turnouts. Including signs to let you know to turn out would help too!	Additional turnouts or lengthening turnouts being considered. Potential to add R4-12 or R4-13 prior to turnouts to encourage proper usage

37	Zoom	Is there anything that could be done to improve safety of residents that are trying to get out onto San Francisquito Canyon Road from Calle Manzanita? If you are heading towards Santa Clarita, making a left out of the neighborhood, you can look left, right and left again and by the time you are out on the road, someone is on your tail!	Potential for an intersection ahead sign which can be implemented prior to the intersection to warn drivers of vehicles pulling out
38	Zoom	A lot of people cut through Calle El Parado and speed thru to go towards Spunky Canyon Road. Can there be speed bumps added?	Speed bumps are not ideal due to not meeting County standards (road classification, speed limit, road curvature, etc.)
39	Zoom	The horseshoe curve is a problem with ice in the winter. I went off in 2008 with 3 other vehicles, including one that landed on top of my truck. There is a spring that causes this black ice when temperatures are very low. Also, there is a problem with the merging when headed towards Green Valley from Santa Clarita.	Maintenance has been informed of this concern.
40	Zoom	I've seen many people pass over double yellow on that big curve. Delineator should be there!	This comment was analyzed as part of line 12, 13, 14.
41	Zoom	It's been difficult to get onto San Francisquito Canyon Road from Calle El Parado as well! People get right on you within seconds! They blow the stop sign or are speeding instantly from the stop sign. 35 mph needs to be more enforced.	This comment was analyzed as part of line 37. Issues with staffing enforcement was discussed in meeting.
42	Zoom	A "Slower traffic keep right" sign would be good on northbound before the passing lane. I've seen people behind slower vehicles get stuck when slower vehicle blocks passing lane and that creates more aggression instead of defusing it.	Potential to add R4-3 ("Slower Traffic Keep Right")
43	Zoom	Need signs to tell people what the turnout is for!	This comment was analyzed as part of line 36.
44	Zoom	Great to hear expanding existing turnouts! But also making more turnouts would be helpful! Oh and with signs to let people know what a turnout is.	This comment was analyzed as part of line 36.
45	Zoom	Call boxes for stranded vehicles!	Call boxes are not considered to be a collision reduction improvement; it was also discussed in the meeting that cell service will be improved; County should review on their end if call boxes should be implemented

46	Zoom	More turnouts are good as lots of us use "unofficial " ones already. Those that are frequently used are roughed up along the "safety line" making them difficult to use. More maintenance on the road edge would help. For turnouts, please try to locate them in areas that are not too steep. There's an existing one rarely used, because it's on a steep downward incline.	Maintenance has been informed of this concern.
47	Zoom	There needs to be more stop signs on San Francisquito Canyon Road throughout the town to make it more safe to get out of our streets and curve speeding/passing in town!	Stop signs can only be installed if warranted per MUTCD
48	Zoom	When going down toward Santa Clarita, the bridge just after the water plant should be widened as people speed into it the opposing lane. I've almost been hit head-on multiple times there!	Location is under analysis and has proposal for optical speed bars and lane tapers
49	Zoom	Can you also take a look at the left turn into Quail Trl coming from Santa Clarita? There are many residents and horse boarders that need to make those turns. Cars are driving very fast and don't realize that ahead of them a car is stopped to make a left turn. They pass while you are making the left turn and it leads to many close calls.	Potential to make it appear more as a T- intersection with gap in centerline and edge line so drivers will be more aware
50	Zoom	There's a vertical blind spot a few miles north of the bridge by the powerplant. Needs a do not pass sign and maybe other safety improvements. Additionally there were 2 killed in a head-on a few years ago in the above location	This location has been selected for other improvements already, but adding additional "Do Not Pass" sign may be considered
51	Zoom	I agree that additional stop signs on San Francisquito Canyon Road might slow down some of the traffic heading into town. I am curious as to why there is only one stop sign from Elizabeth Lake Road to Spunky Canyon Road?	Stop signs can only be installed if warranted per MUTCD; stop signs should not be used for speed control
52	Zoom	There is a lack of stop signs from Spunky Canyon Road to the Powerhouse stop sign.	This comment was analyzed as part of line 51.
53	Zoom	How many new turnouts are you proposing between Elizabeth Lake Road and Copper Hill Drive?	Discussed in Meeting and in PowerPoint. New and expanded turnouts are proposed where feasible based on the constraints of the environment
54	Comment Card	The Northbound passing lane south of GV still seems unsafe. Almost everyone I know has been forced off the road there. Only limited accidents because of defensive driving. Better signage there too.	This comment was analyzed as part of line 42. Potential to add additional signage such as a R4-3 ("Slower Traffic Keep Right")

55	Comment Card	Please install driver feedback signage sign northbound on San Francisquito Canyon Road at the point before Green Valley where the speed limit changes from 55 to 35 before the sharp bend. I think it's 35mph at the point where houses begin? If not, can we have the 35 limit start there?	The speed limit is set to 35 mph at MM 3.8 and also already has a driver feedback signage. It is approximately 500' from the first house.
56	June 12 meeting	De-icing material causes vehicles to slip when snow dries up.	Maintenance has been informed of this concern.
57	June 12 meeting	Can cameras be installed near Spunky Canyon Road and San Francisquito Canyon Road?	This comment was analyzed as part of line 30.
58	June 12 meeting	Suggestion for driver feedback sign near areas with speed limit signs.	Driver feedback signs should be implemented with discretion to avoid driver fatigue and maintain their effectiveness. If the collision data and analysis warrants the installation of a driver feedback sign it could be installed, but it is not advised to systemically install these signs with all speed limit signs.
59	June 12 meeting	Suggestion for removal of passing lanes.	This comment was analyzed as part of line 13 and applies corridor-wide.
60	June 12 meeting	Why is there no delineator in area where the Safety Edge is proposed?	Discussed in Meeting. The initial pilot is to test out the delineator at one specific location to evaluate driver response and collision data. If there are positive results, there are additional locations the study is analyzing to ensure that delineators are installed at optimal locations where it will reduce collisions.
61	June 12 meeting	Resident asked for a different sign instead of "TURNOUT" sign. They also mentioned people not understanding " semi-trucks" or "big-rigs" on signs.	This comment was analyzed as part of line 19 & 36.
62	June 12 meeting	Resident was suggesting road widening due to the proximity of his driveway.	This comment was analyzed as part of line 25.
63	June 12 meeting	Suggestion for cell tower near San Francisquito Canyon Road.	Discussed in Meeting. The Town Council mentioned there has been interest from a company to install a cell tower. Note: this is separate and not a part of this study
64	June 12 meeting	Suggestion for TURNOUT at the end of pass near Elizabeth Lake Road for Northbound traffic.	This comment was analyzed as part of line 29.
65	June 12 meeting	Suggestion for a roundabout on Spunky Canyon Road and San Francisquito Canyon Road.	This comment was analyzed as part of line 28.

66	June 12 meeting	It is difficult to merge onto San Francisquito Canyon Road from Calle El Parado between 5:00 AM and 8:00 AM. An oak tree on the left side of Calle El Parado and San Francisquito Canyon Road blocks the existing stop sign and view of on-coming traffic.	Potential to make it appear more as a T- intersection, place proper stop bar, and improve sight distance with tree maintenance Noted. Maintenance has been informed of this concern.
67	June 12 meeting	Vehicles speeding during the weekday between 3:30 PM and 6:30 PM near Calle El Prado and San Francisquito Canyon Road. Will inform CHP for enforcement.	Discussed in Meeting. CHP is aware of issues that Green Valley is facing and there is more officers proportionally stationed here than other locations.
68	June 12 meeting	Why was an extra lane added at the horseshoe curve?	Discussed in Meeting
69	June 12 meeting	Requested delineators at north end of horseshoe curve where lanes merge.	This comment was analyzed as part of line 12.
70	June 12 meeting	There is a crest on San Francisquito Canyon Road between Calle El Parado and Calle Llano where it is difficult to see past the hill.	Potential to add shoulders near access points for additional sight distance
71	Traffic Safety Plan email	Hello. I attended the safety meeting last month for San Francisquito Canyon Road. I'm very concerned about this area. Approximately 1.25 miles north of the stop sign where the little bridge and the DWP housing is located. There was a woman and her child killed here a few years ago by a head on collision caused by a bad driver who survived the collision. Anyway, hopefully your team will address this area. It's a blind spot due to elevation. I've seen a lot of very foolish drivers nearly have head-on collisions with people being forced off the road. We love it up here in LE, but really are considering moving. Please help us! Thank you.	Based on location and injured parties, this collision occurred on April 29, 2017 (Report Number: 9540-2017-06537) which is prior to our 5-year analysis period. However, at this location the study is looking into the possibility of installing passing lanes on both northbound and southbound directions to allow faster drivers to pass without having to cross the centerline and lead into the possibility of a "head-on" collision.

72	Traffic Safety Plan email	I've been driving San Francisquito Canyon Road for 8 years and the worst offenses occur in the morning between 4am to 6am. My comments are: • More cops would help but we all know that won't happen • I hope you're going to set up a camera just to observe the reckless driver blowing through the wrong side of the stop sign intersection (Spunky & San Fran) just because they know they can + get away with it. Btw, in 8yrs I have never seen a cop in Green Valley, never! • You missed the 4 deaths in August 2022 and of course all of 2023 • If you're going to put delineator up, they'll need to have some type of raised curbing (continuous too) or they'll just get blown out once people start running over them, and they will. • Signage only works if people obey and respect the law and anyone who drives on San Francisquito Canyon Road know these people don't care, so basically new signage is nothing more then lipstick on a pig. • At coordinates 34.610780, -118.439078, the creek overflows onto the road and freezes	• CHP is aware of issues that Green Valley is facing and there is more officers proportionally stationed here than other locations. • Current state law prohibits the use of speed cameras • The collision analysis includes 4 deaths which occurred on August 28, 2022. Collisions were only analyzed up to the most recent, complete dataset which is 2022. Currently, it takes CHP 12-18 months to input data into the Statewide Integrated Traffic Records Systems (SWITRS) and some collisions may be missed if 2023 is included. • The initial pilot will reveal the effectiveness of the County's standard delineator. The study can use the results to evaluate how the impact of the delineator is working. • Noted. See CHP's already increased presence as part of the first bullet point • Noted. Maintenance has been informed of this concern.
73	Traffic Safety Plan email	The suggestions for better safety doesn't address the fact the traffic volume has increased tremendously. A lot of people are using San Francisquito Canyon Road as a short cut and speeding while ignoring the traffic laws in very dangerous manner.	This study is looking into methods of implementing improvements to address speeding and CHP is aware of needs for increased enforcement.
74	June 12 meeting	Will delineators cause issues for snowplows?	There will be some impacts. We will be proceeding with the pilot delineator project, but will be monitoring the operation and maintenance closely.
75	June 12 meeting	Centerline rumble strips are not significant enough. We should use better versions like they use in other states like Utah or Texas.	Discussed in Meeting. Centerline rumble strips have been tested by Caltrans to have a crash reduction factor of 20%. There is also possibility to install delineators at select locations based on the collision history and the effectiveness of centerline rumble strips if the delineator pilot performs well.

76	June 12 meeting	Would like to see documentation on why the stop sign on the south end of San Francisquito Canyon Road by the bridges was never removed. This was supposed to have a major upgrade, but for some reason the project to redo the bridge was stopped. It may have something to do with endangered species in the river (from discussions at the GVTC meeting). Look into what that project was and provide documentation on why the decision was made to stop it and who made the decision.	This is beyond the scope of the project and we do not have documentation for why the bridge was never removed. The stop sign was never removed as it assists with reducing "head-on" collisions. The study currently has potential improvements proposed at this intersection including 6-inch edge lines, tightened turning radius, and additional configuration to provide more of a standardized layout.
77	June 12 meeting	Pine Canyon Road from 3 Points to Lake Hughes has road maintenance issues. There are many locations with tree branches or bushes that are encroaching into the right-of-way that need to be trimmed and a lot of sand on the road that needs to be cleared.	Maintenance has been informed of this concern.
78	Traffic Safety Plan email	The suggestions for safety doesn't address the fact the traffic volume has increased tremendously. A lot of people are using San Francisquito Canyon Road as a short cut and speeding while ignoring the traffic laws in very dangerous manner.	This comment was analyzed as part of line 73.
79	Lakes Town Council	Wider turnouts are needed near Power Plant 2.	Potential to implement turnout although this location will not provide as much value as other locations due to short distance to intersection. Turnouts can be considered in a later phase if collisions do not decrease with initial improvements
80	Lakes Town Council	Delineators could be a problem for motorcycles.	Based on published research approved by FHWA on CMF Clearinghouse, the team is not aware of any known documentation/research showing delineators as a hazard to motorcycles.
81	Lakes Town Council	Delineators aren’t going to help much, but shouldn’t be a problem for snow plows, they have them in Buffalo and they work fine there.	Discussion noted. Delineators have been studied and found decrease collisions by 15% based on study posted in CMF Clearinghouse (CMF ID: 9727)

82	Lakes Town Council	There needs to be a passing lane at the straight uphill going past Green Valley if possible.	Based on the distance between Green Valley and Elizabeth Lake Road and the collision analysis, the addition of a passing lane at this location would result in minimal reduction of collisions.
83	Lakes Town Council	On the northbound direction of San Francisquito Canyon Road towards Elizabeth Lake Road, there is a lot of water buildup near the intersection. There needs to be better drainage.	Maintenance has been informed of this concern.

APPENDIX C – FREQUENTLY ASKED QUESTIONS

SAN FRANCISQUITO CANYON ROAD COMMUNITY OUTREACH MEETING

FREQUENTLY ASKED QUESTIONS (FAQ)

1) Can the County install delineators?

Pilot delineators on San Francisquito Canyon Road

   a. Pilot delineators have been installed on the curve ½ mile south of Elizabeth Lake Road. This pilot will serve as a demonstration to view how driver habits change and to receive community feedback.

2) Will the study look into installing speed cameras or stop sign cameras?

   a. Cameras are currently not permitted to be used for enforcement under state law. A new state law took effect on January 1, 2024 which initiated a pilot program for six cities to reimplement speed cameras. This will be monitored as the pilot runs to determine whether automated enforcement can be reauthorized by the state.

3) Will there be more turnouts or passing lanes installed?

   a. The study analyzed locations which could benefit from passing lanes or turnouts while balancing constraints with right-of-way and sight distance. This includes the examination of the length of existing turnouts to ensure that drivers have enough length to accelerate to a safe speed before merging back into the main road. Additional signage to instruct drivers on proper utilization of these features were reviewed as a part of the study.

4) Why aren't there more stop signs or traffic signals along the route?

   a. Stop signs and traffic signals are installed based on warrants established by the California Manual On Uniform Traffic Control Devices (CAMUTCD). Under the CAMUTCD, there must be a series of warrants (essentially tests) which an intersection must pass to have a stop sign installed. Stop signs are not an effective form of speed control if not otherwise warranted.

5) Are speed bumps being considered at Green Valley?

    a. Speed bumps are not appropriate for higher volume roadways and have potential to slow down emergency vehicle access. They also produce additional noise and vehicle wear and tear. There are other forms of speed control that are more effective on roadways like San Francisquito Canyon Road.

6) Have delineators been considered at the horseshoe curve?

    a. This location has a history with same direction run-off collisions and not where vehicles cross the centerline. As such delineators may not be as effective in this location as other improvements. However, delineators can be considered in another phase if collisions do not decrease with the initial set of improvements.

7) Will the installation of Safety Edge affect the use of snowplows during the winter?

    a. The Safety Edge and snowplows will have no adverse effects on each other.

8) Has the County considered stop signs with red flashing lights?

    a. This improvement is ideal for locations where the collision history shows a recurrence of collisions at the intersection due to motorists failing to stop at the stop sign. The collision data at intersections along San Francisquito Canyon Road is not indicative that stop sign compliance will be improve with enhanced visibility.

9) How can safety be improved at uncontrolled access points such as driveways?

    a. Safety can be improved with enhanced edge lines, installing Safety Edge, and shoulder space for more visibility for vehicles entering traffic. Other measures that reduce vehicle speeds will provide further benefit.