Citywide Comprehensive Safety Action Plan

City of Colton

June 12, 2025

Submitted to:

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1. PROJECT OVERVIEW

The Citywide Comprehensive Safety Action Plan (CCSAP) is a traffic safety planning document developed to proactively address safety needs and challenges in the City of Colton. The document develops a systemic framework to identify a prioritized list of improvements and actions to address defined needs and will allow eligibility for funding of these improvements in future Caltrans Highway Safety Improvement Program (HSIP) calls-for-projects cycles and other funding sources. A Safety Action Plan (or an equivalent Vision Zero Action Plan) is required starting HSIP Cycle 12. Furthermore, the City of Colton's Safety Action Plan includes elements for the Federal Safe Streets and Roads for All Program to allow the City to self-certify its eligibility for Safe Streets for All (SS4A) Implementation grants.

Understanding transportation system safety to prevent life-changing injuries or loss of life is of the utmost importance to the City of Colton, the City prepared this plan to facilitate the development of local agency partnerships and collaboration, resulting in a prioritized list of improvements and actions that can demonstrate a defined need and contribute to California's Strategic Highway Safety Plan (SHSP) overall vision and goals.

The CCSAP focuses on reducing fatal and severe injury collisions (FSI collisions) with focused challenge areas adopting the Five "E's" of Traffic Safety, as illustrated in **Figure 1** and summarized below.

Figure 1: The Five E's of Traffic Safety

1. **Education**: Educate all road users on safe behaviors
2. **Enforcement**: Enforce actions that reduce high-risk behavior
3. **Engineering**: Apply effective and/or innovative countermeasures
4. **Emergency Response**: Improve emergency response times and actions
5. **Emerging Technologies**: Apply emerging technologies to roadway, vehicle, and user

This plan aims to prevent serious injuries and fatalities on the roads, supporting the US Department of Transportation's (US DOT) objective of having no traffic fatalities across the country. The Safe Systems Approach, often known as Vision Zero, is the strategy that the US DOT has chosen to accomplish the transportation safety objective. Building a transportation system with the understanding "humans make mistakes and that humans have limited ability to tolerate crash impacts" is the goal of the safe system approach. The Safe System Approach develops plans to reduce human mistakes in advance of it happening. Principles and elements of the Safe System Approach can be seen in **Figure 2**.

Figure 2: Safe System Approach

A Safe System Approach provides a safety net for the user by adhering to the following principles:

1. **Death/serious injury is unacceptable**: While no crashes are desirable, the Safe System Approach prioritizes crashes that result in death and serious injuries, since no one should experience either when using the transportation system.
2. **Humans make mistakes**: People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.
3. **Humans are vulnerable**: People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.
4. **Responsibility is shared**: All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes do not lead to fatal or serious injuries.
5. **Safety is proactive**: Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards.
6. **Redundancy is crucial**: Reducing risks requires that all parts of the transportation system are strengthened, so if one part fails, the other parts still protect people.

Achieving a zero-death target requires addressing all accident risk factors using the five components of a safe system, illustrated in **Figure 3**.

Figure 3: Safe System Elements

In addition to supporting the City's transportation goals, the plan gives the City the ability to apply for grants and federal funding. Specifically, projects must be included in an approved safety action plan in order to be eligible for implementation money under the Safe Streets for All (SS4A) program.

2. BACKGROUND REVIEW

In developing the City of Colton's CCSAP, other related transportation planning efforts were reviewed. This section presents key takeaways from multiple documents.

2.1 Local Roadway Safety Plan

The City of Colton Local Roadway Safety Plan (LRSP), adopted in January 2023, identified the safety needs and recommended projects to address these needs in the City. An LRSP analyzed crash data, identified infrastructure deficiencies, and provided safety countermeasures for high-risk corridors and intersections. The following is a summary of relevant portions of the LRSP that provides background information for the preparation of the Citywide Comprehensive Safety Action Plan:

- A total of 2,649 crashes were recorded from 2016 to 2020, with 55 crashes resulting in fatal or severe injuries.
    - Most common collision types were broadside, rear-end, and sideswipe.
    - Bicycle-related and pedestrian-related crashes accounted for approximately 3% of total collisions, but about 29% of fatal and severe injury collisions.
    - Colton has a higher collision rate than the greater San Bernardino County, but a lower rate of pedestrian and bicycle collisions compared to San Bernardino County.
- Engineering countermeasures recommended for multiple locations in the City include:
    - Installation of nearside signals at signalized intersections
    - Installing a new traffic signal at non-signalized intersections with a collision history
    - Adding bike lanes to major roadway segments
- To help prevent wrong side of road collisions, mid-block corridors and intersections with a high number of wrong side of road collisions should be targeted for specific improvements, including median construction/expansion, edge line or centerline striping and rumble strips, traffic calming or speed reducing measures, additional lighting, and improved warning signage.
- The focus area should target locations with high frequencies of pedestrian collisions, especially at locations (or along corridors) adjacent to attractors such as schools, retail destinations, or parks. Potential pedestrian protection improvements may include high visibility crosswalks, sidewalks, leading pedestrian intervals, bicycle facilities, or improved lighting.
- Nineteen intersections were identified as having opportunities for roadway safety countermeasures:

2.2 Engineering and Traffic Survey

The City of Colton Engineering and Traffic Survey (E&TS) Final Report, prepared in December 2022, provided the City with a basis for updating and validating the currently posted speed limits on citywide streets. This study recommended the establishment and renewal of valid posted speed limits for 44 street segments on 26 citywide streets within the City of Colton. In establishing the appropriate posted speed limits, the analysis took into consideration the analysis of prevailing speeds, the collision history, and other traffic and road factors not readily apparent to the driver. The following is a summary of relevant portions of the E&TS that provides background information for the preparation of the Citywide Comprehensive Safety Action Plan:

- All 44 surveyed street segments were recommended to remain at their currently established speed limits as documented and would not require any changes to the existing posted regulatory signage or speed limit pavement markings.
    - Spot radar speed surveys were conducted to determine the prevailing speed of drivers on each of the 44 segment locations during March 2022. The surveys were performed during typical weekdays between 9:00 a.m. and 2:00 p.m. with a minimum sample size of 100 vehicles.
    - 34 out of 44 segments had collision rates that exceeded those of the expected collision rates.

2.3 General Plan Mobility Element

The City of Colton General Plan Mobility Element, adopted in August 2013, establishes long-term goals and policies designed to improve the local transportation system and create options for residents to move about the City. The Mobility Element balances the need for efficient traffic operations with the desire to maintain Colton as a safe and attractive community, one with walkable neighborhoods, successful business districts, and distinctive streets. The following is a summary of relevant portions of the Mobility Element:

- In Colton, particularly along historical rail lines that support industrial uses, many residential properties abut industrial uses, either sharing property lines or facing on opposite street frontages. Many industrial uses generate substantial truck traffic which can adversely impact the adjoining residential properties.
- Some commercial areas and neighborhoods lack sidewalks or have sidewalks in poor condition. These circumstances limit the ability of people—particularly folks who have personal mobility challenges—to walk in comfort and security.
- Certain residential neighborhoods in Colton experience significant traffic impacts, including speeding, excessive volumes, truck traffic, and cut-through traffic during peak hours of the day. Local streets directly adjacent to schools experience traffic impacts as well, such as cut-through traffic (vehicles and buses) and speeding, and pickup and drop-off trips during morning and mid-afternoon hours. In south Colton, errant truck traffic on M Street impacts residential neighborhoods.
- The planned bike network is not a contiguous network, and efforts should be made to expand the network to provide continuity within the City, and to the networks of adjacent jurisdictions and existing bicycle amenities.
- To improve pedestrian safety and encourage walking, specific improvements can be made based on site-specific issues:
    - Widening of sidewalks
    - Use of special paving or markings at pedestrian/vehicle interfaces
    - Improve signal phasing and pedestrian flow patterns at intersections
    - Provide sidewalk curb cuts for the physically challenged
    - Use auditory crosswalk signals for the hearing impaired
    - Increase the number of street trees with large canopies along sidewalks to provide shade
    - Provide for safe, well lighted rest areas such as shaded benches or planter boxes
- Colton supports proactive integration of pedestrian-oriented improvements and amenities within the City's circulation system to improve walkability. Primary additional locations for incorporating these features include Valley Boulevard, La Cadena Drive, Colton Avenue, Mount Vernon Avenue,

and Washington Street. Within the developing West Valley area, good pedestrian connections will be important to create an integrated mixed-use district. However, these principles should also be applied to other roadways within Colton, where feasible and appropriate.

- At a minimum, the following roadways will continue to serve as truck routes to support industrial business activity: (designated truck routes were not included in the Mobility Element)
    - Valley Boulevard
    - Pepper Avenue
    - Mount Vernon Avenue
    - Colton Avenue
    - Fairway Drive
    - La Cadena Drive
    - Rancho Avenue (south of Valley Boulevard)
    - Washington Street
- Two specific policies were noted as relevant to the CCSAP preparation:
    - Policy M-2.11: Pursue funding to create and maintain safe routes to schools, as well as similar access to parks and recreational facilities.
    - Policy M-2.12: Develop a prioritization program that lists sidewalks that are missing and the level of importance of replacing the missing sidewalks.

3. METHODOLOGY

The Citywide Comprehensive Safety Action Plan focuses on identifying opportunities to implement safety improvements on local roadways based on analysis of traffic and collision data within the City, as well as guidelines set forth in the Caltrans Strategic Highway Safety Plan and by the Federal Highway Administration (FHWA). This project will provide the City with a strategic plan for implementation which will strive to reduce fatalities and serious injuries on public roads, consistent with the goal of the SS4A program.

The following items were the primary steps used to create this plan:

1. **Identify Stakeholders**
    a. *City staff identified relevant stakeholders and interested representatives that could have input in the CCSAP development process.*
2. **Use Safety Data**
    a. *Past six (6) years of collision data was used for the analysis. Collision data from January 2018 through December 2023 was used for the analysis.*
3. **Choose Proven Solutions**
    a. *FHWA Proven Countermeasures and Caltrans safety countermeasures were used in mitigation collision trends and risk characteristics.*
4. ***Implement Solutions***
    a. *Projects were identified for specific locations.*

3.1 Stakeholder Identification and Engagement

A project such as this requires establishing the leadership and stakeholders responsible for contributing to the plan. Involving stakeholders in the decision-making process is essential because it enables thoughtful consideration and input from interested parties. Stakeholders can provide local authorities with insightful thoughts, observations, and relevant viewpoints regarding the needs and performance of the transportation system because they are regular users of it. Stakeholders may be able to identify important hotspots and safety zones by participating in the CCSAP development process.

An established working group with important players from the "5E's" of highway safety, engineering, enforcement, education, emergency response, and emerging technologies—is emphasized as being crucial by the FHWA. During the process, Iteris met with representatives from Fire, Police, and School

District to gain feedback on safety concerns. In addition, Iteris initially presented a preliminary project update at and gained feedback from the Traffic Safety Committee (which is a publicly attended meeting) on March 3, 2025 and came back to present the draft report on June 2, 2025. Obtaining support from the stakeholders on the plan's implementation is crucial, as many safety countermeasures involve engineering, enforcement, and emergency response. The following stakeholders have been notified in the development of the CCSAP:

- City of Colton (Lead Agency)
- Caltrans District 8
- City of San Bernardino
- County of San Bernardino
- City of Rialto
- City of Grand Terrace
- City of Riverside

3.2 Use Safety Data

As mentioned, relevant background information, data and documents were gathered during the background review and safety data analysis effort.

Following gathering of the data from the City and relevant data sources, the data was collated and organized to locate the City's collision "hot spots" or emphasis areas (i.e. corridors, intersections, etc.).

This analysis narrowed down the data to key emphasis areas which were then analyzed with much finer detail to determine collision causes and other collision factors contributing to the safety of the location. The approach to the data review is illustrated by the simple flowchart shown in **Figure 4**.

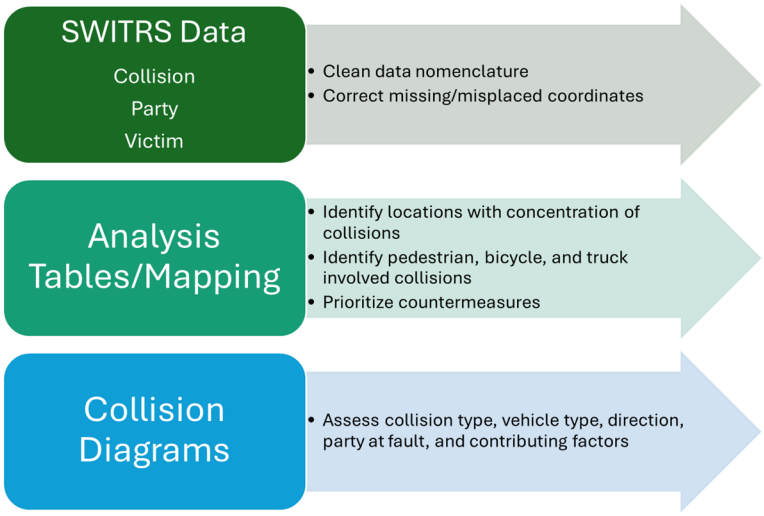


Figure 4: Collision Data Analysis Process

4. COLLISION DATA ANALYSIS

The City of Colton collision data was gathered using collisions from the SWITRS collision database. The data set contains six complete years' worth of collisions spanning from January 2018 through December 2023. During this period, a total of 3,177 collisions were reported in the City. These collisions were classified based on location: intersection and corridor segment.

4.1 Collision Trends (Annual/by Severity and Mode)

Figures 5 and **6** illustrate the annual collisions in the City during the data evaluation period by severity and mode of travel, with the highest number of collisions recorded in 2021 with 13 severe injury collisions and 4 fatal collisions.

There were 90 pedestrian-related and 39 bicycle-related collisions during the data analysis period.

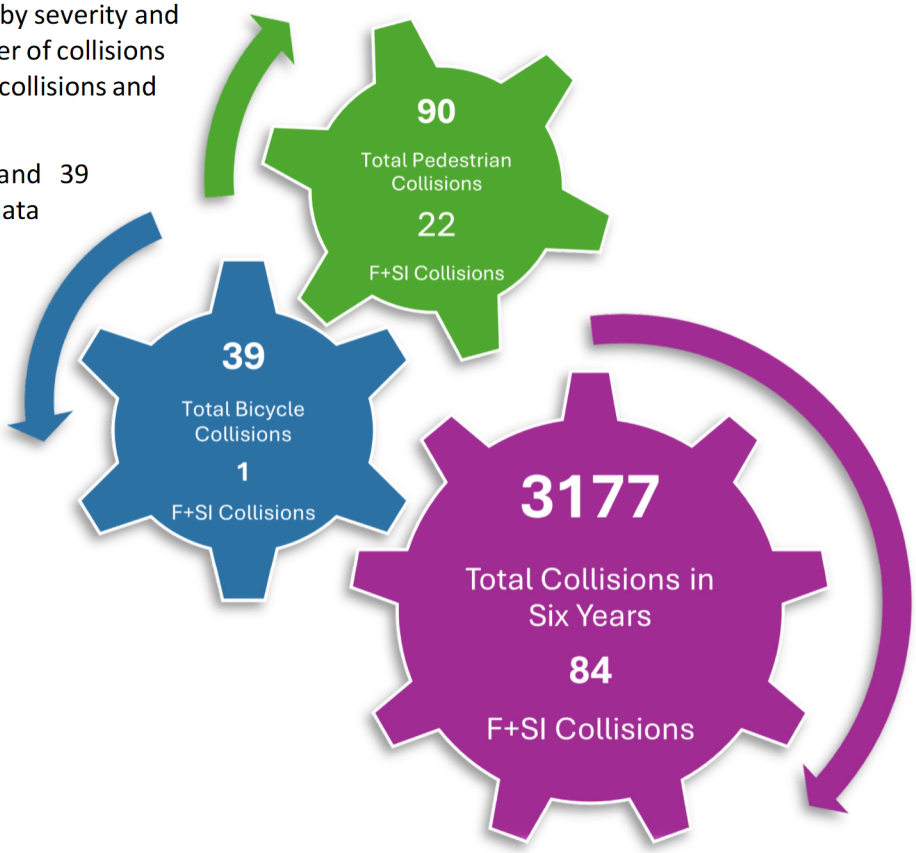
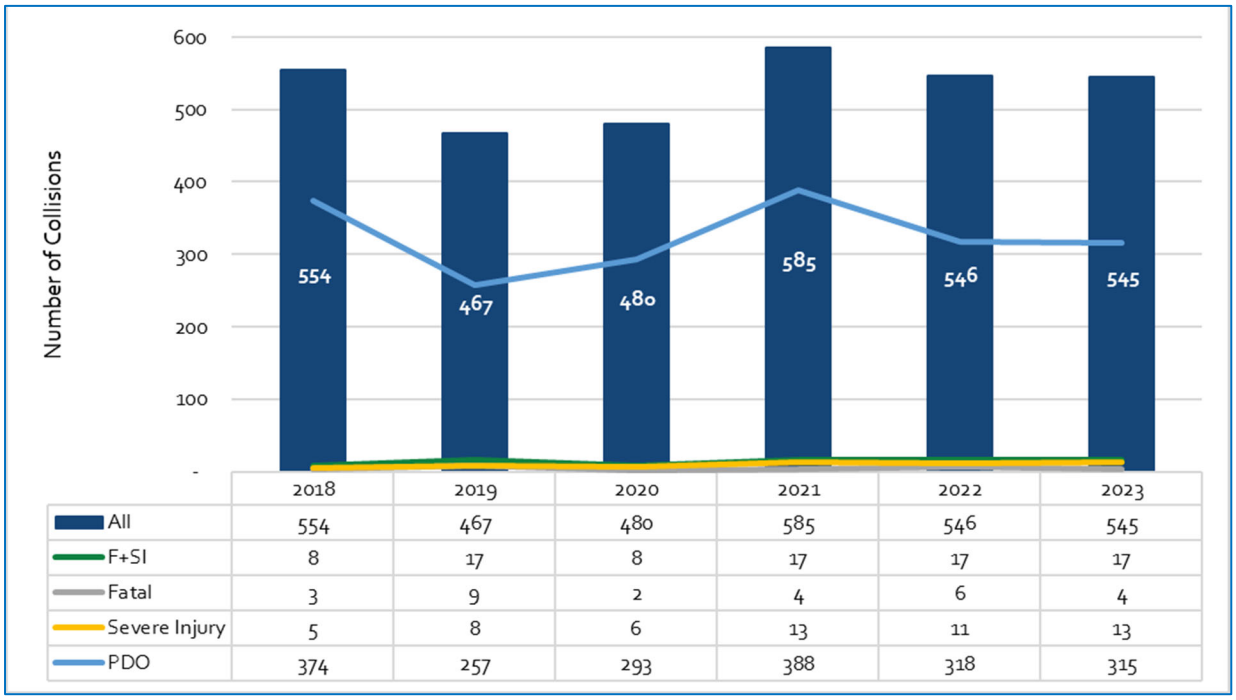
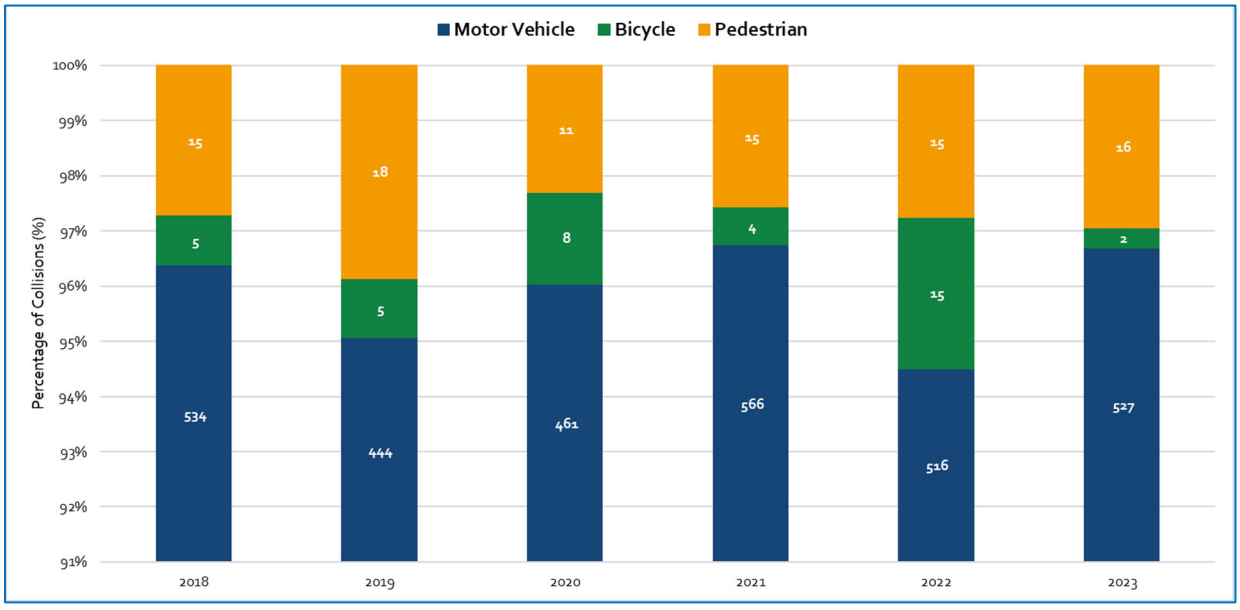


Figure 5: Annual Collisions by Year (January 2018 – December 2023)



	2018	2019	2020	2021	2022	2023
All	554	467	480	585	546	545
F+SI	8	17	8	17	17	17
Fatal	3	9	2	4	6	4
Severe Injury	5	8	6	13	11	13
PDO	374	257	293	388	318	315

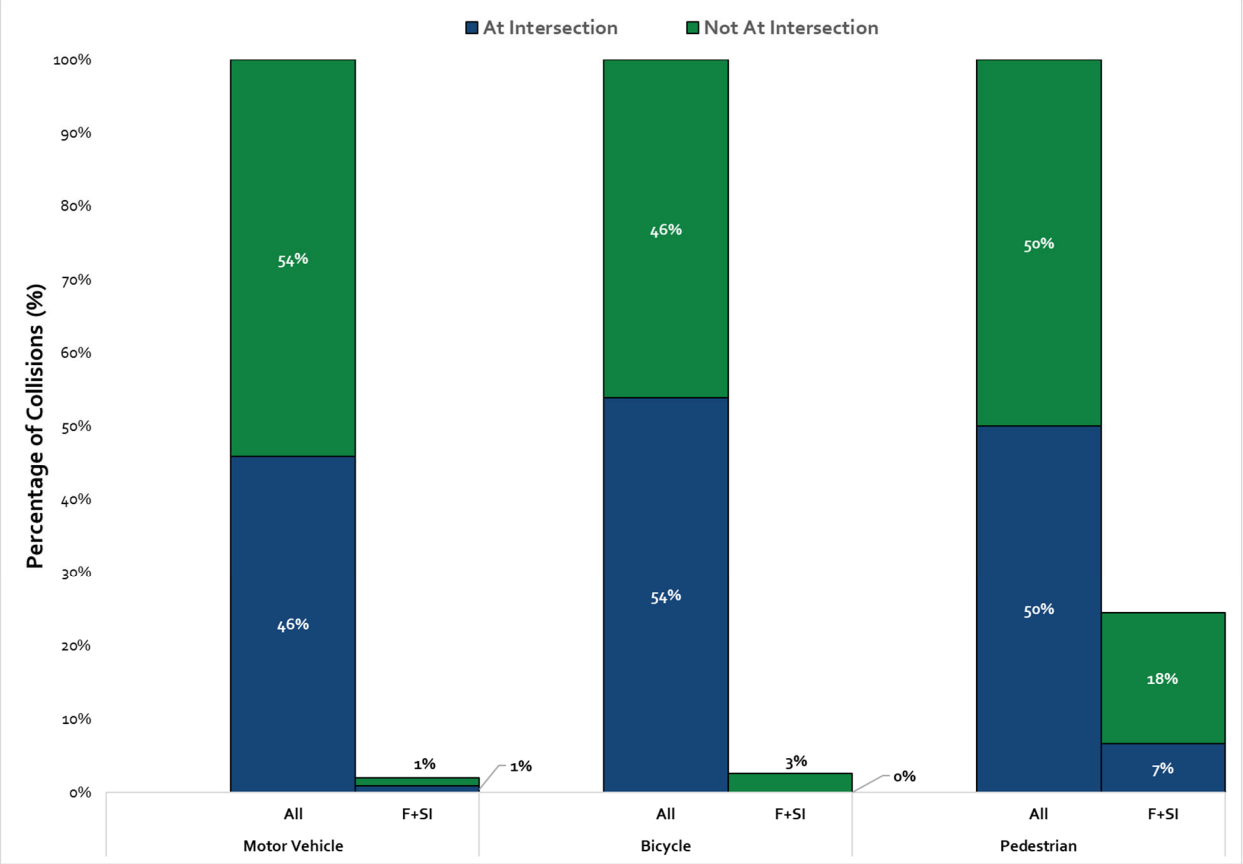
Figure 6: Annual Collisions by Year and Mode (January 2018 – December 2023)



A total of 1,463 collisions (or 46%) occurred at intersections, a total of 1,074 collisions (or 34%) occurred near intersections, and a total of 640 collisions (or 20%) occurred at corridors (midblock, driveways or traffic/light poles). For the purposes of categorizing the collisions, a collision was considered to be associated with an intersection if it was recorded within 200 feet of an intersection. Outside of that distance, a collision was considered to be a midblock/corridor-related collision. **Figure 7** illustrates collisions by location and mode.

Of the 1,463 collisions at intersections, 45 involved pedestrians and 21 involved bicycles. Of the 1,714 collisions that did not occur at intersections, 45 involved pedestrians and 18 involved bicycles.

Figure 7: Collisions by Location and Mode

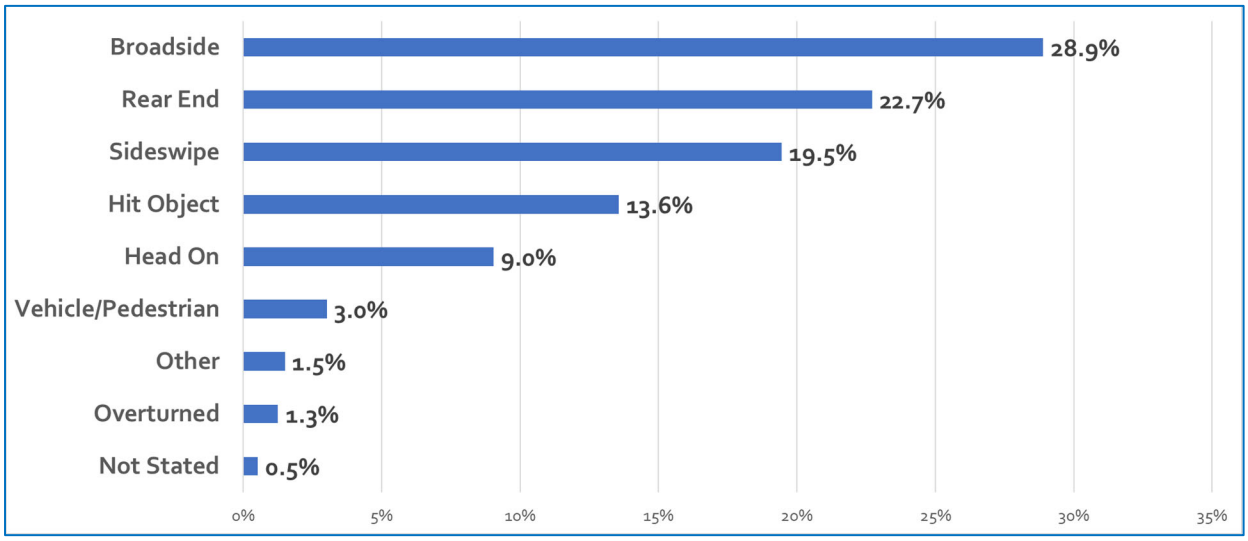


4.2 Type of Collisions

Evaluation of the type of collisions helps identify collision patterns and traffic/travel behavior in the City which will lead to effective safety countermeasures. High number of rear-end collisions indicate speeding within the City, whereas high number of broadside collisions would nonadherence to existing traffic control devices, improper turning decisions and/or insufficient traffic signal timing settings. Sideswipe collisions could be attributed to distracted or aggressive driving, merging and lane switching, and driving under influence.

As illustrated in **Figure 8,** broadside collisions were the most common type of collisions within the City, followed by rear end collisions and sideswipe collisions.

Figure 8: Type of Collisions (January 2018 – December 2023)



4.3 High Collision Intersections by PCF

The collision data was further analyzed to identify intersections with the highest number of collisions by primary collision factor (PCF). **Table 1** summarizes the 10 intersections with the highest number of collisions citywide between January 2018 and December 2023, along with the most prevalent PCFs at each intersection. This analysis includes collisions that occurred at or near an intersection at a distance less than 200 feet. **Appendix A** summarizes all collision data by intersection by PCF.

Traffic signals and signs (which refers to drivers disregarding traffic signals or signs) and unsafe speed were generally the most prevalent causes of collisions at the 10 high-collision intersections.

Table 1: High Collision Intersections by PCF

Intersection	Total Collisions	F+SI	Prevalent PCFs
La Cadena Dr/Valley Blvd	110	4	Automobile ROW, Traffic Signals/Signs
Pepper Ave/San Bernardino Ave	77	4	Traffic Signals/Signs, Unsafe Speed
Mt Vernon Ave/Washington St	67	0	Unsafe Speed, Wrong Side of Road
Rancho Ave/Valley Blvd	57	1	Traffic Signals/Signs, Unsafe Speed
Pepper Ave/Valley Blvd	49	0	Traffic Signals/Signs, Automobile ROW
Cooley Dr/Washington St	49	2	Traffic Signals/Signs, Wrong Side of Road
Reche Canyon Dr/Washington St	48	0	Unsafe Speed, Traffic Signals/Signs
Rancho Ave/Mill St	47	0	Automobile ROW, Traffic Signals/Signs
Mt. Vernon Ave/Fairway Dr	40	0	Automobile ROW, Wrong Side of Road
Bluff Rd/Washington St	36	2	Unsafe Speed

As shown, the La Cadena Drive/Valley Boulevard, Pepper Avenue/San Bernardino Avenue, and Mount Vernon Avenue/Washington Street intersections experienced the highest collision frequency over the data collection period.

4.4 High Collision Corridors by PCF

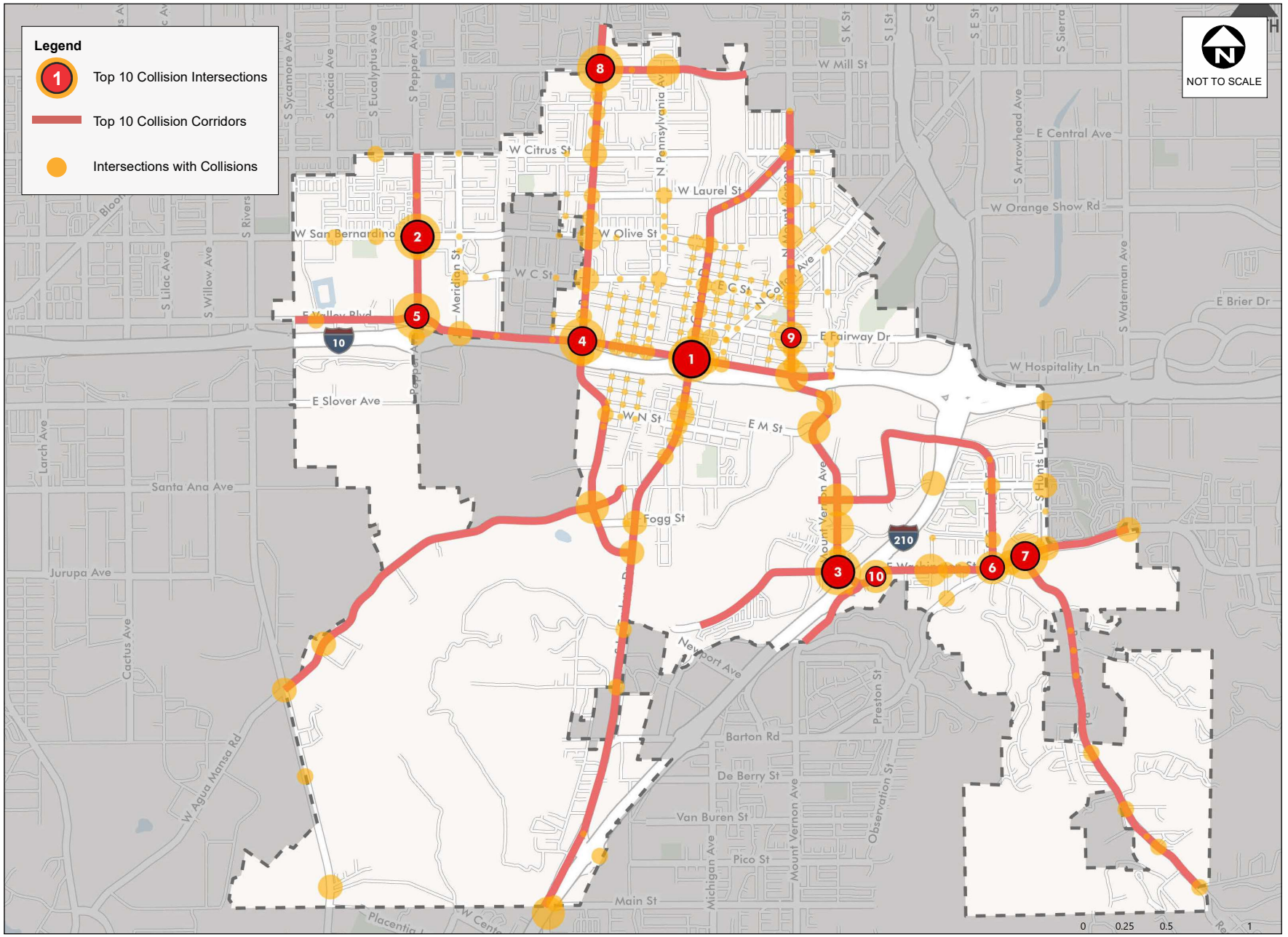
Similar to the intersection analysis, the collision data was further analyzed to identify corridors with the highest number of collisions by PCF. This analysis includes collisions that occurred along a corridor at a distance greater than 200 feet from an intersection and collisions with utilities and at driveways. Identifying collisions along the corridor by PCF allows us to recommend corridor-specific countermeasures. **Appendix B** summarizes all collision data by corridor by PCF. In addition, the Southern California Association of Government's (SCAG) Regional High Injury Network (HIN) was reviewed within the City. The HIN is intended to show a subset of the street network where most (65%) fatal and serious injuries are occurring. This dataset, completed in 2022, is used by SCAG to emphasize the need for local safety interventions on local roadways. The SCAG HIN in the Colton area is provided within **Appendix B**.

Table 2 summarizes corridors with the highest number of collisions citywide (greater than five collisions) between January 2018 and December 2023, noting whether the corridor is part of SCAG's HIN. Unsafe speed and wrong side of road were the most prevalent causes of corridor collisions in the City.

Table 2: High Collision Corridors by PCF

Corridor (City Limits)	Total Collisions	F+SI	Located in SCAG High Injury Networks (HINs)?	Prevalent PCFs
Washington St	65	2	Yes	Unsafe Speed, Wrong Side of Road
Mt Vernon Ave	63	1	Yes	Wrong Side of Road, Unsafe Speed
Reche Cyn Rd	55	0	No	Wrong Side of Road, Unsafe Speed
Rancho Ave	54	1	Yes	Wrong Side of Road, Unsafe Speed
La Cadena Dr	45	4	Yes	Wrong Side of Road, Unsafe Speed
Agua Mansa Rd	41	5	No	Wrong Side of Road, Unsafe Speed
Mill St	30	0	Yes	Wrong Side of Road, Automobile ROW
Pepper Ave	23	1	Yes	Unsafe Speed, Wrong Side of Road
Cooley Dr	18	1	No	Unsafe Speed, Wrong Side of Road, Automobile ROW
Valley Blvd	18	2	Yes	Unsafe Speed

Figure 9 shows the locations of all intersection collisions, the top 10 most frequent intersection collision locations, and the top 10 most frequent corridor collision locations.


Legend
Top 10 Collision Intersections
Top 10 Collision Corridors
Intersections with Collisions
NOT TO SCALE
W Mill St
E Central Ave
W Orange Show Rd
E Brier Dr
W Hospitality Ln
E Fairway Dr
W Citrus St
W Laurel St
W Olive St
W San Bernardino
W C St
E B St
E Slover Ave
W N St
E M St
Fogg St
Santa Ana Ave
Jurupa Ave
Newport Ave
Barton Rd
De Berry St
Van Buren St
Pico St
Main St
Meridian St
N Pennsylvania Ave
S Sycamore Ave
S Acacia Ave
S Eucalyptus Ave
S Pepper Ave
S Lilac Ave
S Willow Ave
S Rivers
Larch Ave
Cactus Ave
W Agua Mansa Rd
Michigan Ave
Mount Vernon Ave
Observation St
Preston St
S Arrowhead Ave
S Waterman Ave
S Sierra
S K St
S I St
S E St
S Hunts Ln
10
210
0
0.25
0.5
1

5. DEMOGRAPHICS

The City of Colton will give equitable solutions for road safety first priority, considering the higher risk of traffic-related injuries and fatalities that marginalized and underprivileged communities experience. In order to better inform the solutions that will be proposed through the plan, the equity analysis in this chapter provides information on the location and size of marginalized populations. The American Community Survey (ACS) provided the data used in this equity analysis. Data was collected for the topics in **Figure 10** and summarized in this section. In order to establish fair solutions, it is imperative to identify groups of concern and solicit public feedback. For example, due to budgetary constraints, low-income groups could need more transportation accommodation. This is especially crucial if a sizable portion of households in this area don't own any vehicles.

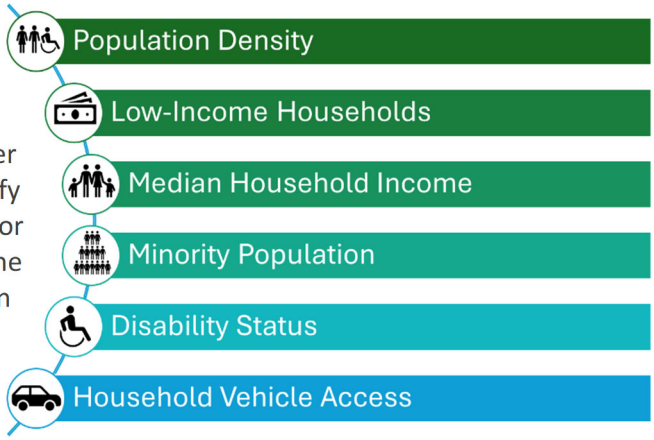


Figure 10: Equity Index Factors

5.1 Population Density

The total population of City of Colton per the 2020 Decennial Census was 53,909. The median age range in Colton is 33 to 34 years of age. Around 11 percent of the population in Colton is older than 65 years of age. The majority of those 65 years of age and over live in the northern and southern part of the city.

5.2 Household-Income

15.3% of all households in Colton fall under low-income households with the majority being people under 18 years. Most low-income households are located at the northern and southern side of the City.

The median household income in Colton is $69,581 which is 27.2 percent below the California median household income of $95,521. The federal poverty line for single person households is approximately $15,650 and for a family of three, which is the average family size in Colton, it is approximately $26,650.

5.3 Minority Population

Senate Bill 535 (De León, Statutes of 2012) directed that at least a quarter of the proceeds from the California Climate Investments go to projects that provide a benefit to disadvantaged communities and at least 10 percent of the funds go to projects located within those communities. The minority population in Colton is mostly concentrated on the western, northern and southern side of the City, based on the SB 535 Disadvantaged Communities (2022 Update), and illustrated in **Figure 11**.

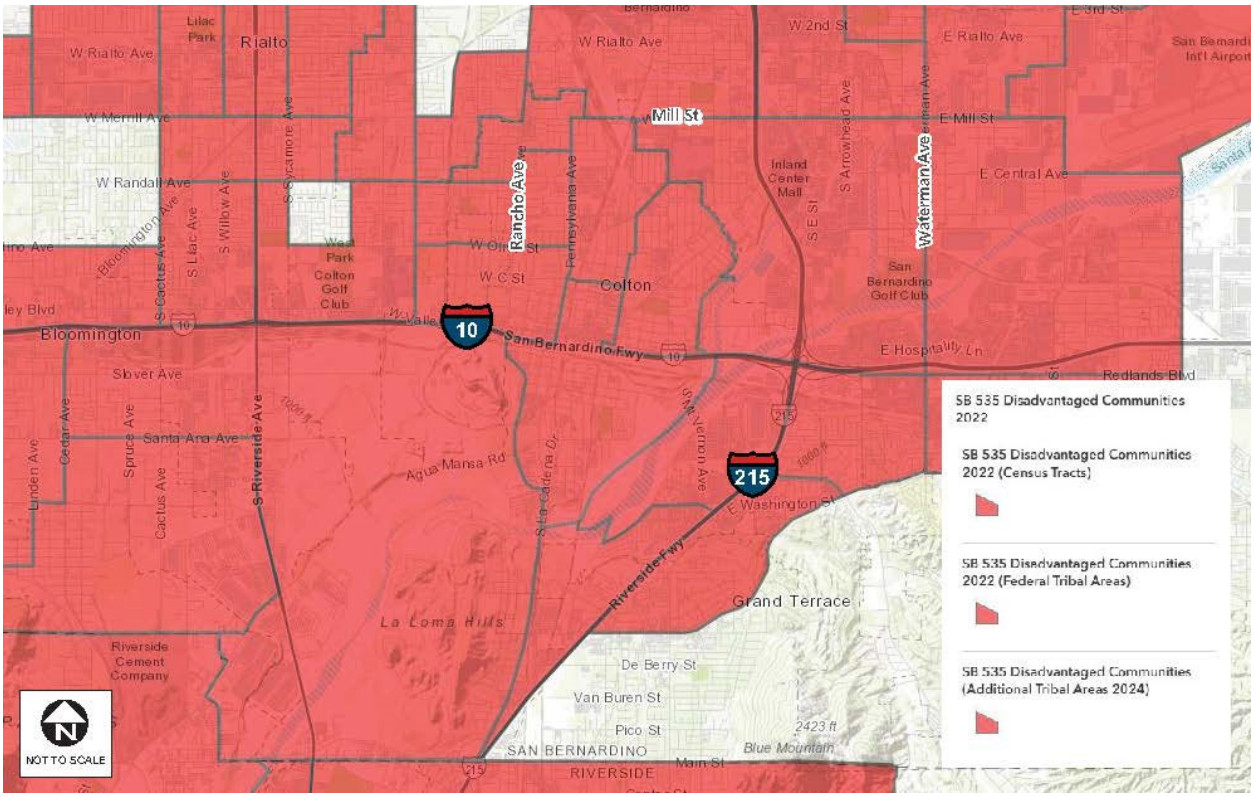


Figure 11: SB 535 Disadvantaged Communities (2022 Update)

5.4 Disability Status

Nearly 11.9 percent of the total population in Colton has some form of disability, with the majority having some form of ambulatory difficulty.

5.5 Household Vehicle Access

Households that do not have access to a vehicle are located towards the center and south of the City between C Street and Fogg Street. Most households in other parts of the city have access to at least one vehicle.

5.6 Designations

There are Federal, State and regional designations for communities based on US Census Data and other relevant sources. The federal Historically Disadvantaged Communities and Areas of Persistent Poverty defines the majority of Census Tracts in the northern and eastern part of the City as being Areas of Persistent Poverty (APP). **Figure 12** illustrates Areas of Persistent Poverty in the City of Colton.

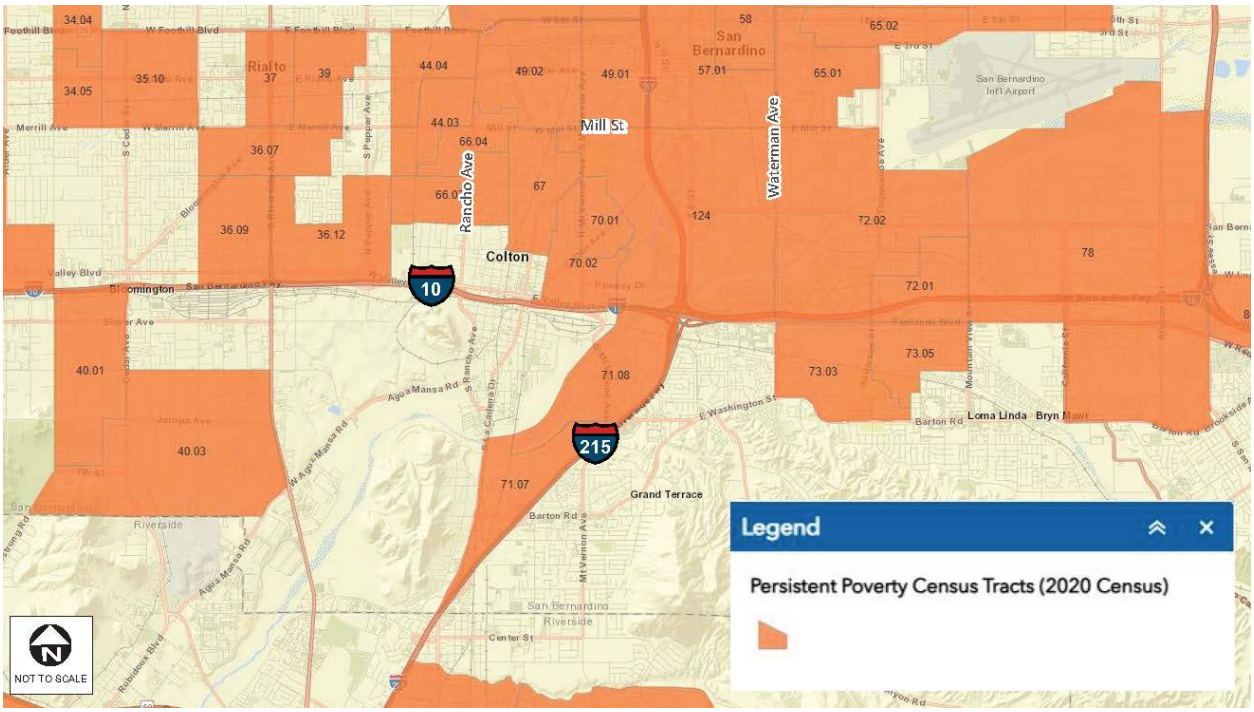


Figure 12: Areas of Persistent Poverty

The State of California Office of Environmental Health and Hazard Assessment developed a Communities Environmental Health Screening Tool: CalEnviroScreen 4.0 was released in October 2021. CalEnviroScreen is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution. The tool defines the Census Tracts in southern and northeastern part of the City as in the high pollution burden percentile and defines most Census Tracts in the city as an SB 535 Disadvantaged Community.

The San Bernardino County Transportation Authority (SBCTA) and the San Bernardino Council of Governments (SBCOG) adopted Senate Bill 1000 (SB 1000) Equity Toolkit to identify Priority Equity Communities (PECs) that would benefit from equitable investments as part of the SB 1000 process. SB 1000 requires using multiple data sources to identify PECs and better understand what unique or compounded health risks they face as a result of disproportionate exposure to pollution and environmental effects. There are 13 PECs in the City of Colton. **Figure 13** illustrates the locations of PECs in the City.

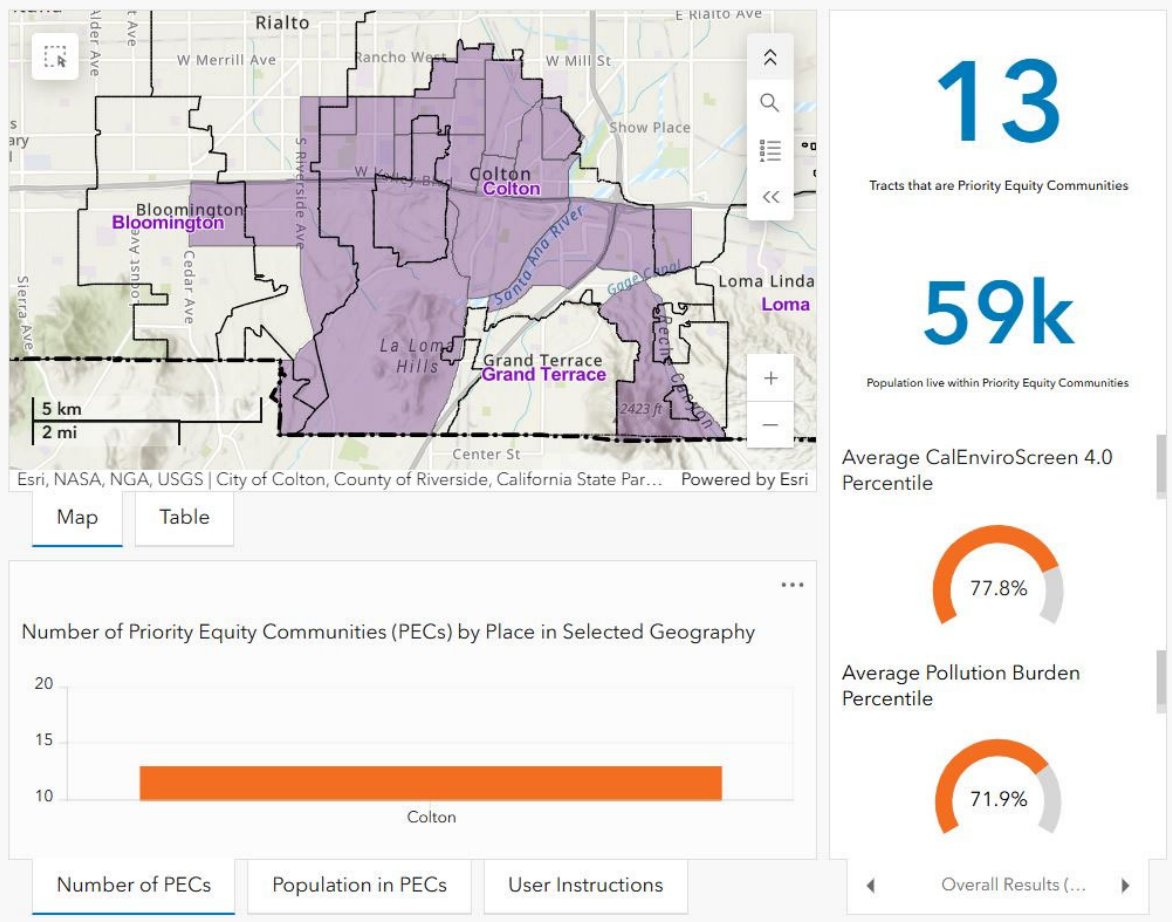


Figure 13: Areas of Priority Equity Communities

6. COUNTERMEASURES

With the thorough evaluation of available collision data, Iteris has a solid understanding of the most common collision locations, roads, and significant collision trends and issues, along with the hotspots for collisions involving bicycles and pedestrians. In order to accomplish the goal of eradicating collisions resulting in fatalities and serious injuries, countermeasures can be put in place to make roadways safer for all forms of transportation. Physical changes are frequently undertaken to address hazardous intersections, vehicle speeds, and pedestrian and bicyclist safety. Simple, low-cost adjustments like decreasing speed limit or more involved undertakings like rearranging a route or installing more facilities for bicyclists and pedestrians can be included in the alterations.

The Local Highway Safety Improvement Program (HSIP) Analyzer Manual, April 2024[1] and Crash Modification Factors (CMF) Clearinghouse[2] were utilized in the countermeasure identification process. Additionally, the US Department of Transportation, Federal Highway Administration released a list of

[1] HSIP Analyzer Manual, April 2024: https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/hsip/2024/hsip-analyzer-manual-bcr2024.pdf

[2] Crash Modification Factors (CMF) Clearinghouse: https://cmfclearinghouse.fhwa.dot.gov

twenty-eight proven safety countermeasures[3] that support the goal of eliminating fatalities and serious injuries. These countermeasures were also reviewed during the selection process. Countermeasures and spot improvements were developed for the identified hotspot locations with a history of collisions within the City.

A list of countermeasures were compiled, separated by types of collisions they can reduce, and sorted by effectiveness in terms of Crash Reduction Factor (CRF). The following is a list of countermeasures grouped with the applicable types of collisions they address and locations (signalized intersections, non-signalized intersections, and roadways). The corresponding countermeasure "code" is provided, where SI = signalized intersection, NS = non-signalized intersection, and R = roadway:

Lights and Night collisions:

- SI01NT/NS01NT: Add intersection lighting, CRF=0.40
- R01NT: Add segment lighting, CRF=0.35

Pedestrian right-of-way and Pedestrian collisions:

- SI19PB: Install pedestrian crossing, CRF=0.25
- NS23PB/R36PB: Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features), CRF=0.35
- SI22PB: Modify signal phasing to implement a Leading Pedestrian Interval (LPI), CRF=0.60
- NS25PB: Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK)), CRF=0.55
- NS24PB/R38PB: Install Rectangular Rapid Flashing Beacon (RRFB), CRF=0.35

Bike collisions:

- R33PB: Install bike lanes, CRF=0.35

Following too closely collisions:

- SI02: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number, CRF=0.15

Automobile right-of-way collisions:

- R22/NS08: Install/Upgrade signs with new fluorescent sheeting (regulatory or warning); Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs, CRF=0.15

Traffic signals and signs collisions (Note that this factor refers to drivers disregarding traffic signals or signs):

- SI03: Improve signal timing (coordination, phases, red, yellow, or operation), CRF=0.15
- SI07: Convert signal to mast arm (from pedestal-mounted), CRF=0.30
- R22/NS08: Install/Upgrade signs with new fluorescent sheeting (regulatory or warning); Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs, CRF=0.15

[3] Proven Safety Countermeasures, Federal Highway Administration:https://highways.dot.gov/safety/proven-safety-countermeasures

Improper turning collisions:

- SI06: Provide protected left turn phase (left turn lane already exists), CRF=0.30
- SI07: Convert signal to mast arm (from pedestal-mounted), CRF=0.30
- R23 (for Agua Mansa Road and Reche Canyon Road only): Install chevron signs on horizontal curves, CRF=0.40
- R24 (for Agua Mansa Road and Reche Canyon Road only): Install curve advance warning signs, CRF=0.25
- R04 (for Agua Mansa Road and Reche Canyon Road only): Install Guardrail, CRF=0.25
- R08/SI11: Install Raised Median, CRF=0.25
- R27: Install delineators, reflectors and/or object markers, CRF=0.15

Unsafe speed collisions:

- NS04RA: Convert intersection to roundabout (from all way stop), CRF=0.12
- NS09: Upgrade intersection pavement markings, CRF=0.25
- R28: Install edge-lines and centerlines, CRF=0.25
- R30: Install centerline rumble strips/stripes, CRF=0.20
- R32: Speed Safety Cameras, CRF=0.20
- Other: Speed Enforcement, CRF varies

Wrong side of road collisions:

- R23 (for Agua Mansa Road and Reche Canyon Road only): Install chevron signs on horizontal curves, CRF=0.40
- R24 (for Agua Mansa Road and Reche Canyon Road only): Install curve advance warning signs, CRF=0.25
- R04 (for Agua Mansa Road and Reche Canyon Road only): Install Guardrail, CRF=0.25
- R08/SI11: Install Raised Median, CRF=0.25
- R28: Install edge-lines and centerlines, CRF=0.25
- R30: Install centerline rumble strips/stripes, CRF=0.20
- R27: Install delineators, reflectors and/or object markers, CRF=0.15

Improper passing collisions:

- R23 (for Agua Mansa Road and Reche Canyon Road only): Install chevron signs on horizontal curves, CRF=0.40
- R24 (for Agua Mansa Road and Reche Canyon Road only): Install curve advance warning signs, CRF=0.25
- R04 (for Agua Mansa Road and Reche Canyon Road only): Install Guardrail, CRF=0.25
- R28: Install edge-lines and centerlines, CRF=0.25
- R30: Install centerline rumble strips/stripes, CRF=0.20
- R27: Install delineators, reflectors and/or object markers, CRF=0.15

Driving or bicycling under influence of alcohol or drug collisions:

Other: DUI Enforcement, CRF varies

7. PROJECT IDENTIFICATION AND PRIORITIZATION

Upon development of countermeasures for locations in the City of Colton with a history of collisions, projects and their prioritization for implementation of the recommended countermeasures were developed. Prioritization was built on the safety analysis to identify high-risk locations as well as those which will be most effectively addressed by feasible countermeasures and cost effectiveness.

7.1 Project Identification and Evaluation

The following safety improvement projects were identified based on the recommended countermeasures at the high collision frequency intersections, whereas a toolkit of applicable countermeasures was identified for high collision frequency corridors.

7.1.1 Intersection Improvements

Based on the countermeasures applicable to signalized intersections, a set of safety improvements at the intersections identified as having the highest collision frequency was developed, along with each project's total effectiveness to reduce collisions (as a percentage of all collisions recorded at that location). **Table 3** presents the proposed improvements at each intersection.

Table 3: Proposed Intersection Improvements

Intersection	Proposed Improvement Project	Total Effectiveness %
La Cadena Dr/ Valley Blvd[1]	• Change NB/SB to split phasing • Replace EB and WB left turn protective permissive 5-section head traffic signals with fully protected left turns, or flashing yellow arrow • Install permissive- protected left turn signal head with flashing yellow arrows for NB/SB direction • Install speed limit signs (R2-1) with fluorescent sheeting • Refresh striping of existing crosswalk • Modify signal phasing to implement an LPI	3.28%
Pepper Ave/ San Bernardino Ave	• Modify signal phasing to implement an LPI • Implement split phasing for EB and WB, or install protected left turn signal head with flashing yellow arrows for EB/WB direction • Improve intersection signal timing based on the new split phasing or protected left turn phasing for EB/WB direction • Install raised median on the west leg • Refresh striping of existing crosswalk	12.15%
Mt Vernon Ave/ Washington St[2]	• Modify signal phasing to implement an LPI • Implement right turn overlap phasing for EBR • Provide "cat track" striping to guide EB left movements • Install raised median on the west leg	9.42%
Rancho Ave/ Valley Blvd	• Modify signal phasing to implement an LPI • Install signal backplates with retroreflective borders • Improve signal timing • Install speed limit signs (R2-1) with fluorescent sheeting • Refresh striping of existing crosswalk • Install raised median on the west leg	9.67%

Intersection	Proposed Improvement Project	Total Effectiveness %
Pepper Ave/ Valley Blvd	• Modify signal phasing to implement an LPI • Install signal backplates with retroreflective borders • Improve signal timing • Install raised median on the west leg and east leg	12.17%
Cooley Dr/ Washington St	• Modify signal phasing to implement an LPI • Provide "cat track" striping to guide SB left and SB through movements • Install parallel crosswalk marking between the southwest corner and southwest corner refuge island • Add "Yield to Pedestrians" sign for EB right movements • Install signal backplates with retroreflective borders	12.92%
Reche Canyon Dr/ Washington St	• Modify signal phasing to implement an LPI • Install signal backplates with retroreflective borders • Provide "cat track" striping to guide NB left movements • Install speed limit signs (R2-1) with fluorescent sheeting • Refresh striping of existing crosswalk	6.35%
Rancho Ave/ Mill St[3]	• Modify signal phasing to implement an LPI • Install permissive-protected left turn signal head with flashing yellow arrows for NB/SB direction • Update signal timing with protected NB/SB left turn phases • Install raised median on the west leg and east leg • Refresh striping of existing crosswalk	13.73%
Mt. Vernon Ave/ Fairway Dr	• Modify signal phasing to implement an LPI • Install protected left turn signal head for NB/SB direction with new NB/SB left turn phasing • Update signal timing with protected NB/SB left turn phases • Install raised median on the east leg	13.08%
Bluff Rd/ Washington St	• Modify signal phasing to implement an LPI • Convert SB signal from pedestal-mounted to mast arm, install backplates with retroreflective borders • Improve signal timing by extending all-red time in the EB/WB direction • Install speed limit signs (R2-1) with fluorescent sheeting • Install raised median on the south leg	9.00%

1 = Note that this intersection was recently improved/upgraded, thus proposed improvements may require refinement.
2 = This intersection is operated by Caltrans and was recently improved/upgraded.
3 = This intersection is shared with City of San Bernardino and the traffic signal is maintained by City of San Bernardino.

Appendix C presents conceptual improvement plan "cut sheets" for the 10 intersections where safety improvements are proposed.

7.1.2 Corridor Improvements

As mentioned, corridor-related collisions represented a smaller share (20%) of total collisions as compared to intersection-related collisions. Corridor countermeasures were evaluated for collisions which were at a distance greater than 200 feet from an intersection, driveways, and utility poles. However, location-specific improvement projects are not recommended for corridors as part of this Plan. Rather, a set of countermeasures was identified, related to the PCF, noting where applicable as follows:

- Add segment lighting (effective at Washington Street, Mount Vernon Avenue, Reche Canyon Road, La Cadena Drive, Agua Mansa Road, Mill Street, and Valley Boulevard)
- Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features) (effective at Washington Street, Mount Vernon Avenue, Rancho Avenue, La Cadena Drive, Pepper Avenue, and Valley Boulevard)
- Install bike lanes (effective at Washington Street, Mount Vernon Avenue)
- Install chevron signs on horizontal curves (effective at Reche Canyon Road, Agua Mansa Road)
- Install curve advance warning signs (effective at Reche Canyon Road, Agua Mansa Road)
- Install guardrail (effective at Reche Canyon Road, Agua Mansa Road)

In addition, based on the collision types/factors, the following countermeasures should be considered at all of the high collision frequency corridors:

- Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)
- Install Raised Median
- Install edge-lines and centerlines
- Install centerline rumble strips/stripes
- Install delineators, reflectors and/or object markers
- Speed Safety Cameras

Unlike the intersection locations, detailed, site-specific improvement project concepts have not been prepared along the corridors. The reason for this is that intersections are the “chokepoints” of transportation networks, where vehicle, pedestrian, and bicycle conflicts mostly occur. Also, as mentioned, corridor-related collisions represented only 20% of the total collisions.

7.2 Intersection Improvement Project Prioritization

To effectively prioritize and improve safety with limited funds, the countermeasure projects at intersections were assessed by the following criteria:

- Readiness/Ease of Implementation,
- Cost of Construction,
- Effectiveness of the project to reduce collisions;
- Demographics/location

Cost estimates were prepared using planning-level unit costs. The cost estimate calculations are provided in **Appendix D**. Each intersection was generally assigned a “Low”, “Medium”, or “High” designation in each category with the exception of the Demographics category which was scored as Yes or No. Note that a “High” mark within the Cost of Construction category resulted in lowered priority, as opposed to High marks in the other categories. **Table 4** summarizes the results of the prioritization of improvement projects based on the criteria described.

Table 4: Improvement Projects Prioritization

Intersection Project (Highest to Lowest Priority)	Effectiveness of collision reduction	Readiness	Cost of Construction	Demographics Located in an APP?
Cooley Dr/Washington St	Medium/High	High	Low	No
Mt. Vernon Ave/Fairway Dr	High	Low/Medium	Medium/High	Yes
Rancho Ave/Mill St[3]	High	Low	High	Yes
Pepper Ave/Valley Blvd	Medium/High	Low	Medium/High	Yes
Mt Vernon Ave/ Washington St[2]	Low/Medium	Low/Medium	Low/Medium	Yes
Reche Canyon Dr/ Washington St	Low	High	Low	No
Rancho Ave/Valley Blvd	Medium	Low/Medium	Medium	No
Pepper Ave/San Bernardino Ave	Medium	Low/Medium	High	Yes
Bluff Rd/Washington St	Low/Medium	Low/Medium	Medium	No
La Cadena Dr/Valley Blvd[1]	Low	Medium	High	No

1 =Note that this intersection was recently improved/upgraded, thus proposed improvements may require refinement.
2 = This intersection is operated by Caltrans and was recently improved/upgraded.
3 = This intersection is shared with City of San Bernardino and the traffic signal is maintained by City of San Bernardino.

As shown, the Cooley Drive/Washington Street project ranked highest primarily because of the low cost of construction and ease of implementation/readiness. The Mount Vernon Avenue/Fairway Drive project ranked second primarily because of the high collision reduction effectiveness and location within an APP. The prioritization of the identified projects will be finalized upon the City of Colton's review and feedback.

7.3 Benefit-to-Cost Analysis

Another method to prioritize projects is using a Benefit-Cost Ratio (BCR) calculation. For the purposes of this report, the BCR was used as a metric to determine whether the proposed countermeasures are economically viable. A BCR greater than 1.0 indicates the safety benefit cost outweighs the construction cost for proposed countermeasures. A BCR less than 1.0 indicates the construction cost outweighs the safety benefit cost.

The safety benefit for intersections was calculated using USDOT's *Benefit-Cost Analysis Guidance for Discretionary Grant Programs (November 2024)*, which outlined the estimated safety cost for fatalities, injuries, and crashes. KABCO level indicates the seriousness of collisions, with K being the highest (killed), and O being the lowest (no injury). The safety benefit for each intersection was then multiplied by the countermeasure effectiveness to calculate the safety benefit that is eligible for countermeasures. The BCR for each intersection is the ratio of safety benefit that is eligible for countermeasures to the construction cost of those countermeasures.

Table 5 summarizes the results of benefit-to-cost analysis.

Table 5: Benefit-Cost Ratio Analysis

Intersection Project	Safety Benefit	Construction Cost	Benefit-Cost Ratio	Economically Viable?[1]
La Cadena Dr/Valley Blvd	$452,036	$506,215	0.89	No
Pepper Ave/San Bernardino Ave	$1,511,981	$394,380	3.83	Yes
Mt Vernon Ave/Washington St	$262,506	$58,977	4.45	Yes
Rancho Ave/Valley Blvd	$405,246	$129,473	3.13	Yes
Pepper Ave/Valley Blvd	$517,643	$217,433	2.38	Yes
Cooley Dr/Washington St	$2,214,657	$45,494	48.68	Yes
Reche Canyon Dr/Washington St	$149,183	$25,325	5.89	Yes
Rancho Ave/Mill St	$513,814	$394,380	1.30	Yes
Mt. Vernon Ave/Fairway Dr	$489,087	$288,480	1.70	Yes
Bluff Rd/Washington St	$379,755	$198,055	1.92	Yes

1 = While a Benefit-Cost Ratio greater than 1.0 is considered economically viable, HSIP funding eligibility requires a Benefit-Cost Ratio of greater than 3.5 (using the HSIP Analyzer tool).

As shown, all intersection projects were shown to be economically viable (i.e., safety benefit greater than construction cost), with the exception of the La Cadena Drive/Valley Boulevard project. It is understood that the La Cadena Drive/Valley Boulevard intersection was recently improved/upgraded, thus additional improvements may not be needed or considered desirable by the City as this time.

8. POLICY AND PROCESS CHANGES

In addition to physical improvements, policy and process changes are considered, which include assessment of current policies, plans, guidelines, and/or standards (i.e., manuals) to identify opportunities to improve how processes prioritize transportation safety. A list of potential policies developed by the National Highway Traffic Safety Administration to improve safety conditions as specific countermeasures for the City to consider are shown in **Table 6**, including each policy's potential effectiveness and rough cost range (low, medium, or high) which are described after the table.

Table 6: Policy Changes for Improved Safety

Policy Based Countermeasure Category	Countermeasure	Effectiveness (1 to 5)	Cost ($ to $$$)
Alcohol-Impaired Driving	Publicized Sobriety Checkpoints	5	$$$
	High-Visibility Saturation Patrols	4	$$
Drug-Impaired Driving	Enforcement of Drug-Impaired Driving	3	$$
Seat Belt and Child Restraints	Short-Term, High-Visibility Seat Belt Law Enforcement	5	$$$
	Sustained Seat Belt Enforcement	3	Varies
Speeding and Speed Management	Lower Speed Limits	5	$
	Speed Safety Camera Enforcement	5	Varies
	High-Visibility Enforcement	5	$$$
Distracted Driving	High-Visibility Cell Phone Enforcement	4	$$$
Motorcycle Safety	Motorcycle Rider Training	2	$$
	Strategies to Increase Rider Conspicuity and Use of Protective Clothing	1	Varies
	Alcohol-Impaired Motorcyclists: Detection, Enforcement, and Sanctions	3	Varies
Young Drivers	Enforcement of Graduated Driver Licensing (GDL)	2	$
	Hazard Perception Training	2	Varies
Pedestrian Safety	Lower Speed Limits	4	$
	High-Visibility Enforcement at Pedestrian Crossings	3	$$
	Pedestrian Safety Zones	4	$$$
	Elementary-Age Child Pedestrian Training	3	$
	Safe Routes to School	3	$
Bicycle Safety	Promote Bicycle Helmet Use with Education	3	$$$
	Safe Routes to School	3	$
	Bicycle Safety Education for Children	2	$
	Cycling Skills Clinics, Bike Fairs, Bike Rodeos	1	$

Source: National Highway Traffic Safety Administration *Countermeasures That Work*.

The evaluation metrics mentioned in **Table 6** are described as follows:

Effectiveness:

- 5: Demonstrated to be effective by several high-quality evaluations with consistent results.
- 4: Demonstrated to be effective in certain situations.
- 3: Likely to be effective based on balance of evidence from high-quality evaluations.
- 2: Limited evaluation evidence, but adheres to principles of human behavior and may be effective if implemented well.
- 1: No evaluation evidence, but adheres to principles of human behavior and may be effective if implemented well.

Cost to implement:

- $$$ Requires extensive new facilities, staff, equipment, or publicity, or makes heavy demands on current resources.
- $$ Requires some additional staff time, equipment, facilities, and/or publicity.
- $ Can be implemented with current staff, perhaps with training; limited costs for equipment or facilities.

The CCSAP is required to have a Leadership Commitment and Goal Setting component. This is an official public commitment (i.e., resolution, policy, ordinance) by a high ranking official and/or governing body (i.e., Mayor or City Council) to an eventual goal of zero roadway fatalities and serious injuries. The commitment must include a goal and timeline for eliminating roadway fatalities and serious injuries achieved through one, or both, of the following:

1. The target date for achieving zero roadway fatalities and serious injuries, or
2. A percentage reduction of roadway fatalities and serious injuries by a specific date with an eventual goal of eliminating roadway fatalities and serious injuries.

As part of the CCSAP, the City has committed to improving roadway safety by taking a safe system approach and the development and adoption of a zero fatalities and severe injuries from the transportation system resolution.

9. NEXT STEPS

For the next five years, the City's needs for road safety will be guided by this living comprehensive safety action plan. The objectives will be tracked and updated as necessary. While longer-term, more expensive projects will be included in the City of Colton's five-year Capital Improvement Program (CIP), low-cost, easily implemented projects will be given priority for implementation within the City. Comprehending the forthcoming funding opportunities is crucial for the effective execution of these safety initiatives. The majority of the suggested countermeasures would likely be funded by HSIP. Countermeasures, however, can be put into place using other financing sources, such as:

1. The ATP, or Active Transportation Program
2. The program for Congestion Mitigation and Air Quality (CMAQ)
3. Sustainable Communities' Sustainable Transportation Planning Grant
4. Sources of stimulus financing
5. Capital Improvement Program (CIP)

10. PROGRESS AND TRANSPARENCY

Progress and transparency is a method to measure progress over time after an action plan is developed. It is a means to ensure ongoing transparency is established with residents and other relevant stakeholders As mentioned, representatives from Fire, Police, and School District and stakeholders from the Traffic Safety Committee were engaged in the development process of the CCSAP. Feedback from stakeholders was incorporated into the final document.

After the adoption of the CCSAP, the City would continue engaging with stakeholders and local residents through different platforms, such as the Traffic Safety Committee meeting, public engagement events, City's accessible website, mail, etc. The City will provide updates and engage the public during the critical phase of the Plan, including adoption of the plan, open bid for construction, before construction, during construction, and post construction of safety improvement projects described within the Plan. The Plan would remain an active item on the Traffic Safety Committee's agenda, which is held every month and is open to the public. The City will provide accessible project progress reports on the City's website, and will update it regularly with the latest progress of the design, implementation, and construction of projects.

APPENDIX A – INTERSECTION COLLISION PCF

Intersection Analysis by Primary Collision Factor (Violation Category)

Int ID	CROSS STREET A	CROSS STREET B	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
			Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
1	Riverside Av	Agua Mansa Rd	-	1	-	2	-	-	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	-	**9**
2	Riverside Av	Miguel Bustamante Pkwy	1	1	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
3	Riverside Av	Key St	-	2	-	2	-	8	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**14**
4	Miguel Bustamante Pkwy	Agua Mansa Rd	1	-	-	1	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	2	-	-	**8**
5	Wildrose Av	Valley Bl	-	-	-	1	-	1	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	1	**7**
6	Indigo Av	San Bernardino Av	-	1	-	1	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	**5**
7	Eucalyptus Av	San Bernardino Av	1	-	-	2	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	1	-	-	**9**
8	Eucalyptus Av	Randall Av	-	-	-	-	-	2	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	**8**
9	Pepper Av	Station Dr	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**2**
10	Pepper Av	San Bernardino Av	4	4	-	18	-	5	1	2	2	5	2	1	31	-	-	1	-	-	-	1	-	-	**77**
11	Pepper Av	Violet St	-	-	-	3	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	**6**
12	Pepper Av	Valley Bl	4	4	-	6	3	6	-	3	3	8	1	2	9	-	-	-	-	-	-	-	-	-	**49**
13	Pepper Av	RT 10	2	1	-	-	1	1	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
14	Meridian Av	Randall Av	1	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
15	Meridian Av	Olive St	-	1	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	**4**
16	Meridian Av	Violet St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17	Meridian Av	C St	1	1	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
18	Meridian Av	Valley Bl	1	2	-	2	-	-	-	-	2	7	-	-	2	-	-	-	-	1	-	1	-	-	**18**
19	Hermosa Av	C St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20	Hermosa Av	Valley Bl	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
21	Grand Av	Citrus St	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
22	Grand Av	Laurel St	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**2**
23	Grand Av	Stevenson St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24	Grand Av	Olive St	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
25	Grand Av	C St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26	Grand Av	G St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
27	Grand Av	H St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
28	Grand Av	Valley Bl	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
29	Rancho Av	Mill St	2	1	-	1	-	2	-	1	2	20	3	-	13	-	-	-	-	1	1	-	-	-	**47**
30	Rancho Av	Louise St	1	1	-	1	-	1	-	1	-	5	-	-	-	-	-	-	-	-	-	-	-	-	**10**
31	Rancho Av	Johnston St	2	-	-	-	-	2	-	1	-	-	-	1	2	-	-	-	-	-	-	-	-	-	**8**
32	Rancho Av	Peach St	-	-	-	2	-	1	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	**6**
33	Rancho Av	Citrus St	1	-	-	4	1	2	-	-	2	2	-	-	-	-	-	-	-	-	-	3	-	-	**15**
34	Rancho Av	Long Beach Dr	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
35	Rancho Av	Laurel St	-	-	-	1	-	1	-	-	2	-	-	-	3	-	-	-	-	1	1	-	-	-	**9**
36	Rancho Av	Stevenson St	-	-	1	3	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
37	Rancho Av	Olive St	1	1	-	-	-	6	-	-	1	7	-	2	4	-	-	-	-	-	-	-	-	-	**22**
38	Rancho Av	C St	-	-	1	4	-	6	-	-	2	5	-	-	6	-	-	-	-	-	-	-	-	1	**25**
39	Rancho Av	E St	-	1	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**4**
40	Rancho Av	F St	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	**5**
41	Rancho Av	G St	1	1	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**6**
42	Rancho Av	H St	-	-	-	-	-	1	-	-	-	3	-	-	1	-	-	-	-	-	-	-	-	-	**5**
43	Rancho Av	Valley Bl	1	1	1	16	1	4	1	1	6	6	-	-	17	-	-	-	-	1	-	-	-	1	**57**
44	Rancho Av	RT 10	3	-	-	2	-	1	-	-	1	-	-	-	12	-	-	-	-	-	-	-	-	-	**19**
45	Rancho Av	3rd St	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
46	Rancho Av	N St	1	-	-	3	-	1	1	1	-	1	-	-	1	-	-	-	-	-	1	-	-	-	**10**
47	Rancho Av	O St	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
48	Rancho Av	Agua Mansa Rd	-	-	-	5	-	7	1	-	-	9	-	-	4	-	-	-	-	-	-	1	-	-	**27**
49	Rancho Av	Fogg St	-	1	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	**4**
50	Rancho Av	La Cadena Dr	1	1	-	6	1	3	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	**17**
51	Michigan Av	Mill St	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
52	2nd St	Olive St	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
53	2nd St	C St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
54	2nd St	E St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
55	2nd St	F St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
56	2nd St	Valley Bl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
57	3rd St	E St	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
58	3rd St	F St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
59	3rd St	G St	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**

Intersection Analysis by Primary Collision Factor (Violation Category)

Int ID	CROSS STREET A	CROSS STREET B	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
			Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
60	3rd St	H St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61	3rd St	Valley Bl	1	2	-	1	-	-	-	1	2	-	1	-	1	-	-	-	-	-	-	-	-	-	9
62	3rd St	K St	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63	3rd St	L St	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
64	3rd St	M St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	4th St	C St	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
66	4th St	D St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	4th St	E St	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
68	4th St	F St	-	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	3
69	4th St	G St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2
70	4th St	H St	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
71	4th St	Valley Bl	-	2	-	-	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	1	-	-	8
72	4th St	K St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	4th St	L St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	4th St	M St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75	4th St	N St	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
76	5th St	K St	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
77	5th St	L St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
78	5th St	M St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	5th St	N St	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
80	5th St	Congress St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
81	5th St	Fogg St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	6th St	Olive St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	7th St	Olive St	1	1	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	6
84	7th St	Hanna St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
85	7th St	B St	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
86	7th St	C St	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	3
87	7th St	D St	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
88	7th St	E St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
89	7th St	F St	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
90	7th St	G St	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
91	7th St	H St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92	7th St	Valley Bl	-	-	-	1	-	1	-	-	1	8	2	-	-	-	-	-	-	-	-	-	-	-	13
93	Pennsylvania Av	Mill St	3	2	-	6	1	7	1	1	-	3	-	-	2	-	-	-	-	1	-	1	-	-	28
94	Pennsylvania Av	Johnston St	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
95	Pennsylvania Av	Citrus St	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	2
96	Pennsylvania Av	Laurel St	1	-	-	-	-	3	-	-	1	-	-	-	3	-	-	-	-	-	-	-	1	-	9
97	Pennsylvania Av	Oak St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	2
98	Pennsylvania Av	Acacia St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
99	Pennsylvania Av	Olive St	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
100	Pennsylvania Av	Hanna St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	Pennsylvania Av	C St	1	1	-	1	-	1	-	1	-	-	-	-	4	-	-	-	-	-	-	-	-	-	9
102	Pennsylvania Av	D St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	Pennsylvania Av	E St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	Pennsylvania Av	F St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	Pennsylvania Av	G St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
106	Pennsylvania Av	H St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
107	Pennsylvania Av	Valley Bl	-	-	-	-	1	2	-	-	2	6	-	-	-	-	-	-	-	-	-	-	-	-	11
108	La Cadena Dr	Mt Vernon Av	-	1	-	1	-	1	-	-	-	1	-	-	5	-	-	-	-	-	-	1	-	-	10
109	La Cadena Dr	Rialto Av	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
110	La Cadena Dr	Laurel St	-	-	-	-	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	4
111	La Cadena Dr	10th St	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
112	La Cadena Dr	9th St	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	3
113	La Cadena Dr	Olive St	-	-	-	-	-	1	-	1	-	-	-	-	6	-	-	-	-	1	-	-	-	-	9
114	La Cadena Dr	Hanna St	-	1	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
115	La Cadena Dr	B St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2
116	La Cadena Dr	C St	-	-	-	-	-	2	-	-	-	4	1	-	1	-	-	-	-	-	-	-	-	-	8
117	La Cadena Dr	D St	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	5
118	La Cadena Dr	E St	-	-	-	-	-	2	-	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	6

Intersection Analysis by Primary Collision Factor (Violation Category)

Int ID	CROSS STREET A	CROSS STREET B	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
			Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
119	La Cadena Dr	F St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120	La Cadena Dr	G St	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	4
121	La Cadena Dr	H St	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	1	4
122	La Cadena Dr	Valley Bl	10	4	2	6	4	5	-	3	6	53	-	-	10	-	-	-	-	6	-	1	-	-	110
123	La Cadena Dr	RT 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
124	La Cadena Dr	K St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125	La Cadena Dr	L St	-	-	-	1	-	1	-	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	7
126	La Cadena Dr	M St	-	1	-	6	-	1	-	-	-	1	2	-	2	-	-	-	-	1	-	6	-	-	20
127	La Cadena Dr	N St	1	1	-	2	-	2	-	-	1	1	-	-	3	-	-	-	-	-	-	-	-	-	11
128	La Cadena Dr	O St	-	-	-	-	-	2	-	1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	8
129	La Cadena Dr	7th St	-	-	-	2	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	5
130	La Cadena Dr	Fogg St	-	2	-	2	-	2	-	1	1	10	-	-	-	-	-	-	-	-	-	-	-	-	18
131	La Cadena Dr	Tropica Rancho Rd	1	2	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	7
132	La Cadena Dr	Litton Av	-	-	-	2	-	1	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	6
133	La Cadena Dr	RT 215	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
134	Iowa Av	RT 215	-	-	-	3	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	6
135	Iowa Av	Main St	-	1	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	1	-	-	5
136	Iowa Av	La Cadena Dr	1	4	1	5	1	6	3	2	1	2	-	-	-	-	-	-	-	1	-	1	-	-	28
137	9th St	Olive St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	3
138	9th St	Hanna St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	2
139	9th St	B St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
140	9th St	C St	-	-	-	1	-	1	1	-	-	-	-	-	4	-	-	-	-	1	-	-	-	-	8
141	9th St	D St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142	9th St	E St	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
143	9th St	F St	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
144	9th St	G St	-	1	-	-	-	-	-	-	-	6	-	-	3	-	-	-	-	-	-	-	-	-	10
145	9th St	H St	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
146	9th St	Valley Bl	-	1	-	1	1	2	1	1	3	-	1	-	8	-	-	-	-	1	-	1	-	-	21
147	10th St	Olive St	-	1	-	-	-	2	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	5
148	10th St	Hanna St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
149	10th St	B St	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
150	10th St	C St	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
151	10th St	D St	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
152	10th St	E St	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
153	10th St	F St	-	-	-	1	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	4
154	10th St	Colton Av	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
155	10th St	H St	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
156	10th St	Valley Bl	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	2	1	-	6
157	11th St	B St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
158	11th St	C St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
159	11th St	D St	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
160	12th St	B St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
161	12th St	C St	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
162	Colton Av	C St	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3
163	Colton Av	D St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
164	Colton Av	E St	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
165	Colton Av	F St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
166	Colton Av	G St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
167	13th St	C St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
168	13th St	E St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
169	13th St	F St	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
170	13th St	G St	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	2
171	13th St	H St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
172	Mt Vernon Av	Johnston St	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4
173	Mt Vernon Av	Citrus St	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
174	Mt Vernon Av	Hillcrest Av	-	1	-	-	-	1	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	5
175	Mt Vernon Av	Laurel St	-	2	-	3	-	4	-	1	1	3	1	-	1	-	-	-	-	1	-	-	-	-	17
176	Mt Vernon Av	Lemon St	-	-	-	1	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	4
177	Mt Vernon Av	Olive St	-	-	2	7	1	3	-	-	1	3	-	-	2	-	-	-	-	-	-	-	-	-	19

Intersection Analysis by Primary Collision Factor (Violation Category)

Int ID	CROSS STREET A	CROSS STREET B	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
			Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
178	Mt Vernon Av	Palm Dr	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	**4**
179	Mt Vernon Av	Colton Av	1	1	-	7	-	3	-	-	1	4	1	-	6	-	-	-	-	-	-	1	-	-	**25**
180	Mt Vernon Av	Shasta Dr	-	-	-	1	-	1	-	-	1	1	-	-	1	-	-	-	-	-	-	1	-	-	**6**
181	Mt Vernon Av	C St	-	-	-	2	-	1	-	-	-	3	-	-	1	-	-	-	-	-	-	-	-	-	**7**
182	Mt Vernon Av	Carreon Dr	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
183	Mt Vernon Av	D St	-	-	-	1	-	1	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	**5**
184	Mt Vernon Av	E St	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
185	Mt Vernon Av	Fairway Dr	-	-	2	3	-	7	2	-	5	16	-	1	2	-	-	-	-	-	-	1	1	-	**40**
186	Mt Vernon Av	G St	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**
187	Mt Vernon Av	H St	-	1	1	-	-	2	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	**8**
188	Mt Vernon Av	Valley Bl	-	2	-	15	2	3	-	1	5	2	-	-	2	-	-	-	-	-	-	1	-	-	**33**
189	Mt Vernon Av	RT 10	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
190	Mt Vernon Av	Mission St	-	1	2	6	-	2	1	1	1	-	-	-	2	-	-	-	-	-	-	-	-	-	**16**
191	Mt Vernon Av	M St	-	1	-	4	1	6	-	1	-	2	-	-	-	-	-	-	1	1	1	-	-	-	**18**
192	Mt Vernon Av	Cooley Dr	-	1	-	5	1	3	-	1	-	5	-	1	2	-	-	-	1	1	-	-	-	1	**22**
193	Mt Vernon Av	Santo Antonio Dr	-	1	1	-	-	2	-	1	2	2	3	-	5	-	-	-	-	-	1	-	-	-	**18**
194	Mt Vernon Av	Centerpointe Dr	-	-	-	3	1	1	-	1	1	-	-	2	3	-	-	-	-	-	-	-	-	-	**12**
195	Mt Vernon Av	Washington St	2	3	2	14	4	9	1	5	8	8	-	1	7	-	-	-	-	1	-	1	-	1	**67**
196	Mt Vernon Av	RT 215	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
197	Washington St	RT 215	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**3**
198	Fairview Av	Grant Av	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
199	Fairview Av	Hillcrest Av	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**2**
200	Fairview Av	Laurel St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
201	Fairview Av	Olive St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**2**
202	Fairview Av	Colton Av	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
203	Sperry Dr	Colton Av	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
204	Sperry Dr	Shasta Dr	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
205	Sperry Dr	Fairway Dr	-	2	1	2	-	3	-	-	-	2	-	-	3	-	-	-	-	-	-	-	-	-	**13**
206	Sperry Dr	G St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
207	Sperry Dr	H St	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
208	Sperry Dr	Valley Bl	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**4**
209	Sperry Dr	RT 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
210	Cooley Dr	Ashley Wy	-	1	-	6	-	4	-	2	2	1	-	-	1	-	-	-	-	1	-	-	-	-	**18**
211	Cooley Dr	Valleywood St	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
212	Cooley Dr	Cooley Ln	-	1	-	-	1	1	-	-	1	1	-	-	3	-	-	-	-	-	-	-	-	-	**8**
213	Cooley Dr	Old Ranch Rd	1	-	-	1	-	1	-	-	1	2	-	-	-	-	-	-	-	-	-	1	-	-	**7**
214	Cooley Dr	Washington St	2	3	1	9	2	10	-	1	4	4	1	-	11	-	-	-	-	1	-	-	-	-	**49**
215	Center Dr	Barton Rd	-	-	-	2	-	2	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**7**
216	Bluff Rd	Washington St	-	1	3	12	1	4	1	4	2	4	-	1	2	-	-	-	-	-	-	1	-	-	**36**
217	Meadow Ln	Old Ranch Rd	-	1	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
218	Meadow Ln	Washington St	-	1	2	8	3	1	-	3	3	8	-	2	3	-	-	-	-	-	-	-	-	-	**34**
219	Center Dr	Washington St	-	1	-	1	-	1	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	**6**
220	Walin St	Washington St	-	-	-	2	-	4	-	-	3	1	-	-	-	-	-	-	-	1	-	-	-	-	**11**
221	Mohave Dr	Washington St	-	1	1	5	1	5	-	1	1	-	-	-	4	-	-	-	-	2	-	-	-	-	**21**
222	Reche Canyon Rd	Washington St	2	5	1	19	2	3	-	3	2	1	-	-	10	-	-	-	-	-	-	-	-	-	**48**
223	Reche Canyon Rd	Placid Ln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
224	Reche Canyon Rd	Prado Ln	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
225	Reche Canyon Rd	Westwood St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
226	Reche Canyon Rd	Topanga Wy	-	-	-	7	-	2	-	-	1	1	-	-	2	-	-	-	-	-	1	-	-	-	**14**
227	Reche Canyon Rd	Shadid Dr	-	-	-	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	**6**
228	Reche Canyon Rd	Michelle Dr	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
229	Reche Canyon Rd	Shane Dr	-	-	-	3	-	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**8**
230	Reche Canyon Rd	Scotch Ln	-	-	-	1	-	5	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**8**
231	Hunts Ln	Steel Rd	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	**4**
232	Hunts Ln	Oliver Holmes Rd	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
233	Hunts Ln	Cooley Ln	1	1	-	2	-	1	-	-	1	4	-	-	5	-	-	-	-	-	-	-	-	-	**15**
234	Hunts Ln	Stewart St	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	**4**
235	Hunts Ln	Washington St	1	2	-	6	3	1	1	1	3	3	-	-	2	-	-	-	-	-	1	1	-	-	**25**
236	Waterman Av	Washington St	3	1	1	1	-	2	-	1	1	4	-	-	4	-	-	-	-	-	-	-	-	1	**19**

Intersection Analysis by Primary Collision Factor (Violation Category)

Int ID	CROSS STREET A	CROSS STREET B	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
			Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
Grand Total			66	102	26	316	42	287	23	71	128	341	23	17	280	-	-	1	2	31	16	43	5	7	1,827

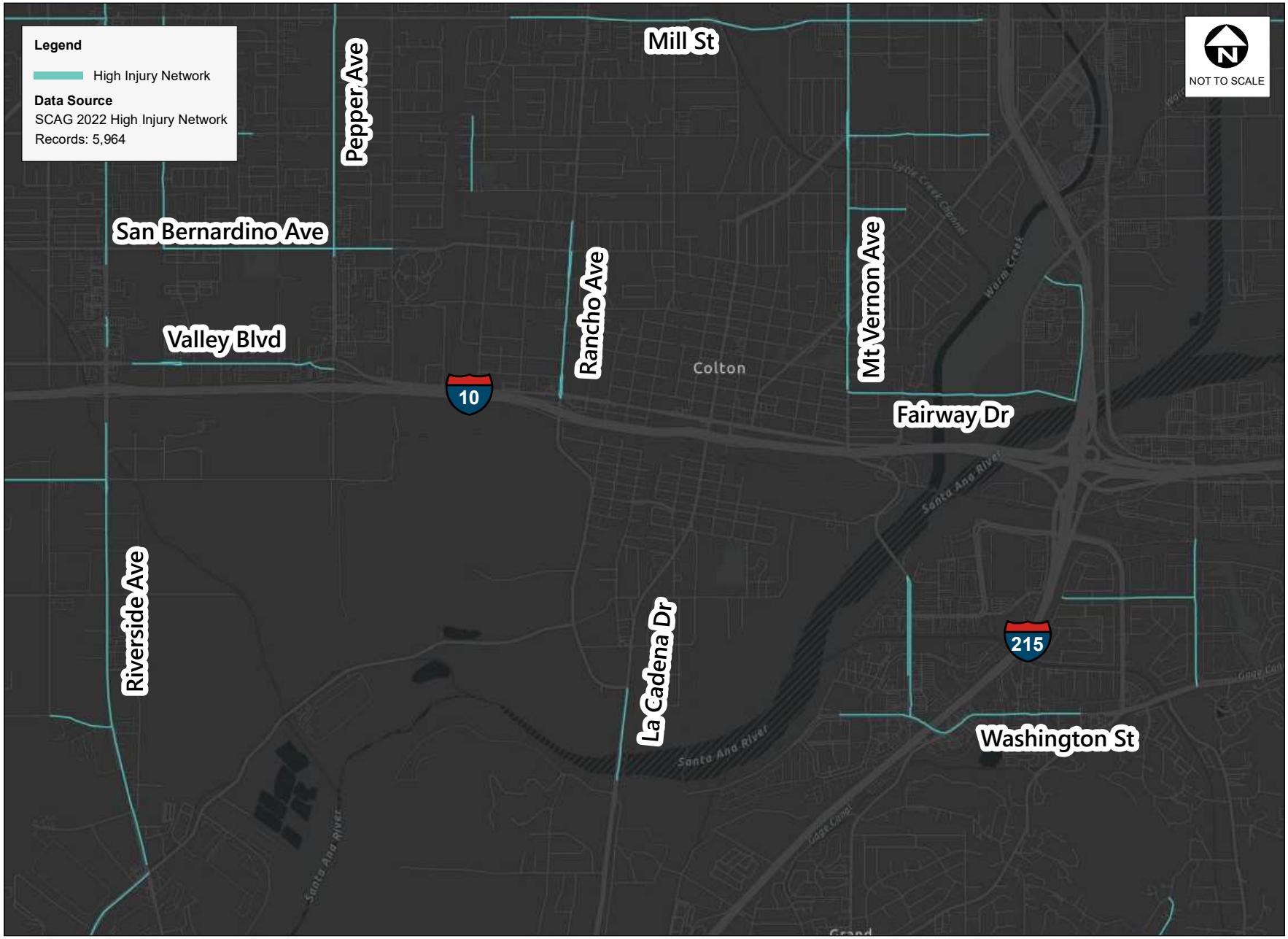
APPENDIX B – CORRIDOR COLLISION PCF

Corridor Analysis by Primary Collision Factor (Violation Category)

#	Corridor	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
		Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
1	Agua Mansa Rd	1	2	-	6	-	20	3	-	2	3	-	-	-	-	-	-	-	1	1	2	-	-	**41**
2	Auto Center Dr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
3	Barton Rd	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
4	C St	-	1	-	2	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**8**
5	Citrus St	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
6	Colton Av	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**4**
7	Congress St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
8	Center Dr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
9	Cooley Dr	-	1	-	6	-	4	-	-	-	4	-	-	-	-	-	-	-	-	1	1	-	1	**18**
10	D St	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
11	E St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
12	Eucalyptus Av	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
13	F St	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
14	Fairway Dr	1	4	-	3	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**12**
15	Fairview Av	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16	Fogg St	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**3**
17	G St	1	-	-	-	-	1	1	1	1	-	-	2	-	-	-	-	-	-	-	-	-	-	**7**
18	H St	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
19	Hunts Ln	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
20	Iowa Av	-	1	-	4	-	1	1	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	**12**
21	Johnston St	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
22	La Cadena Dr	1	6	-	11	1	13	-	6	2	2	-	2	-	-	-	-	-	-	-	-	-	1	**45**
23	Laurel St	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**
24	M St	-	-	-	1	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**4**
25	Meadow Ln	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
26	Meridian Av	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
27	Miguel Bustamante Pkwy	-	-	-	2	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	**8**
28	Mill St	2	2	1	2	-	8	-	1	2	6	-	-	-	1	-	-	-	4	-	-	-	1	**30**
29	Mt Vernon Av	2	5	1	13	1	19	3	4	4	6	-	2	1	-	-	-	-	1	-	-	1	-	**63**
30	N St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
31	O St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
32	Olive St	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
33	Pennsylvania Av	1	1	-	1	-	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**9**
34	Pepper Av	1	2	-	8	-	4	-	-	3	2	-	2	1	-	-	-	-	-	-	-	-	-	**23**
35	Rancho Av	2	5	-	10	2	19	1	5	2	5	1	1	-	-	-	-	-	-	-	1	-	-	**54**
36	Randall Av	-	-	-	-	-	1	-	-	1	3	-	-	-	-	-	-	-	-	-	1	-	-	**6**
37	Reche Canyon Rd	1	4	-	10	3	19	2	5	4	4	-	-	-	-	-	-	-	-	3	-	-	-	**55**
38	Rialto Av	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
39	Riverside Av	-	-	-	1	1	1	-	-	3	1	-	-	-	-	-	-	-	-	-	1	-	-	**8**
40	RV Center Dr	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
41	San Bernardino Av	-	-	-	2	-	1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	**7**
42	Santo Antonio Dr	-	2	-	2	-	4	1	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	**13**
43	Shasta Dr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
44	Sperry Dr	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**
45	Steel Rd	-	2	-	-	-	2	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	1	**9**
46	Valley Bl	-	2	-	4	-	3	-	3	1	3	-	1	-	-	-	-	-	-	-	1	-	-	**18**
47	Washington St	2	5	3	14	1	10	1	7	4	8	-	3	-	-	-	-	-	2	-	3	-	2	**65**
48	2nd St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
49	3rd St	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
50	4th St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
51	5th St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
52	7th St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**

Corridor Analysis by Primary Collision Factor (Violation Category)

#	Corridor	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	22	-	Grand Total
		Unknown	Driving Or Bicycling Under Influence Of Alcohol Or Drug	Impeding Traffic	Unsafe Speed	Following Too Closely	Wrong Side Of Road	Improper Passing	Unsafe Lane Change	Improper Turning	Automobile Right-Of-Way	Pedestrian Right-Of-Way	Pedestrian Violation	Traffic Signals And Signs	Hazardous Parking	Lights	Brakes	Other Equipment	Other Hazardous Violation	Other Than Driver	Unsafe Starting Or Backing	Other Improper Driving	NOT STATED	
53	8th St	-	2	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	1	-	**6**
54	9th St	1	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
55	10th St	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
56	11th St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
57	12th St	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
58	Iowa Av	-	1	-	4	-	1	1	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Grand Total		**17**	**52**	**5**	**118**	**10**	**167**	**17**	**35**	**39**	**69**	**1**	**14**	**2**	**1**	**-**	**-**	**-**	**8**	**5**	**15**	**3**	**7**	**585**



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City of Colton
Citywide Comprehensive Safety Action Plan

Figure B-1
SCAG Regional High Injury Network

APPENDIX C – CONCEPTUAL INTERSECTION IMPROVEMENT PLAN SHEETS

Figure C-1
Proposed Improvements at La Cadena Drive/Valley Boulevard

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City of Colton
Citywide Safety Action Plan

Figure C-2
Proposed Improvements at Pepper Avenue/San Bernardino Avenue

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City of Colton
Citywide Safety Action Plan

Figure C-3
Proposed Improvements at Mt Vernon Avenue/Washington Street

Figure C-4
Proposed Improvements at Rancho Avenue/Valley Boulevard

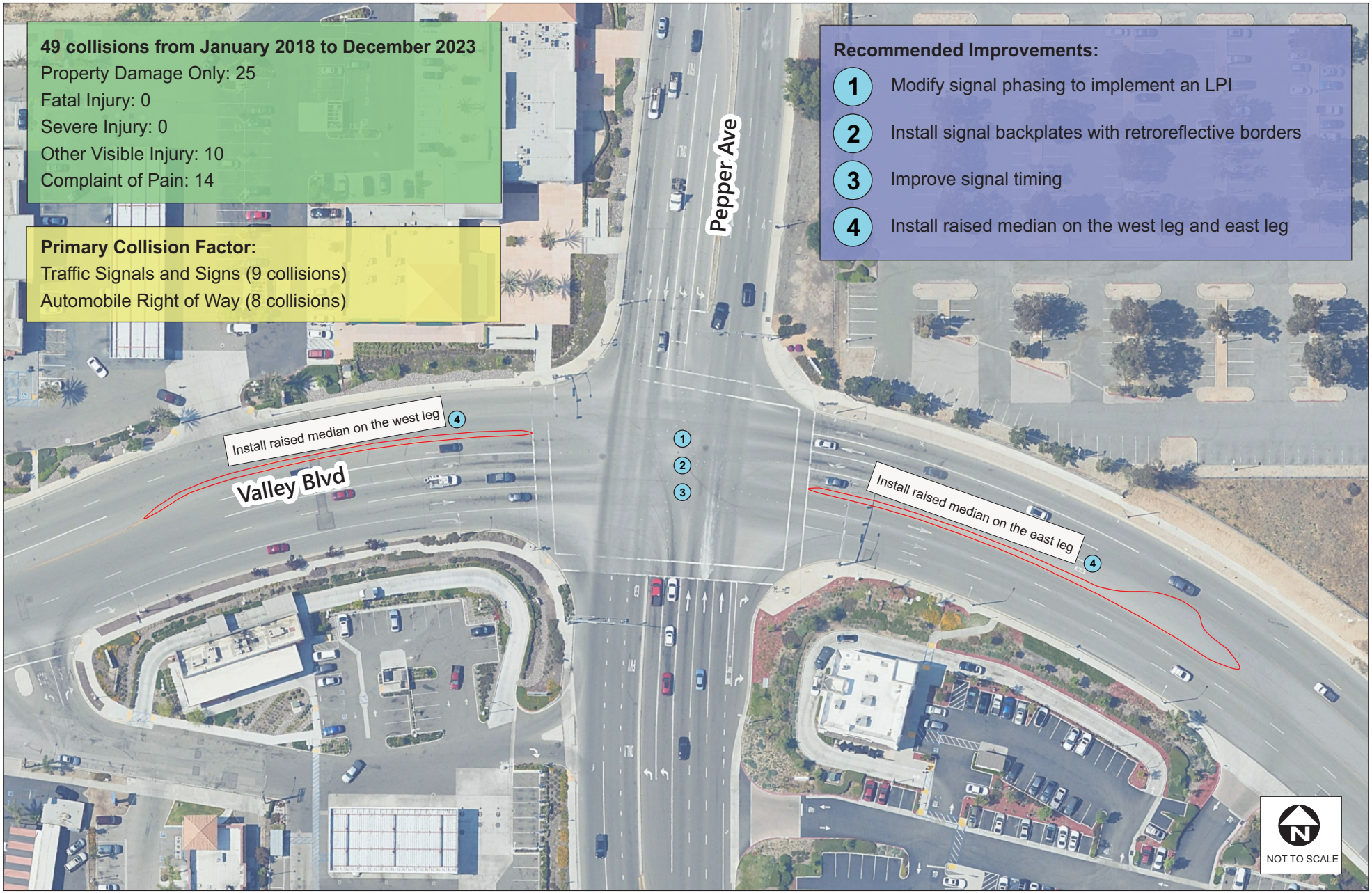

Figure C-5
Proposed Improvements at Pepper Avenue/Valley Boulevard

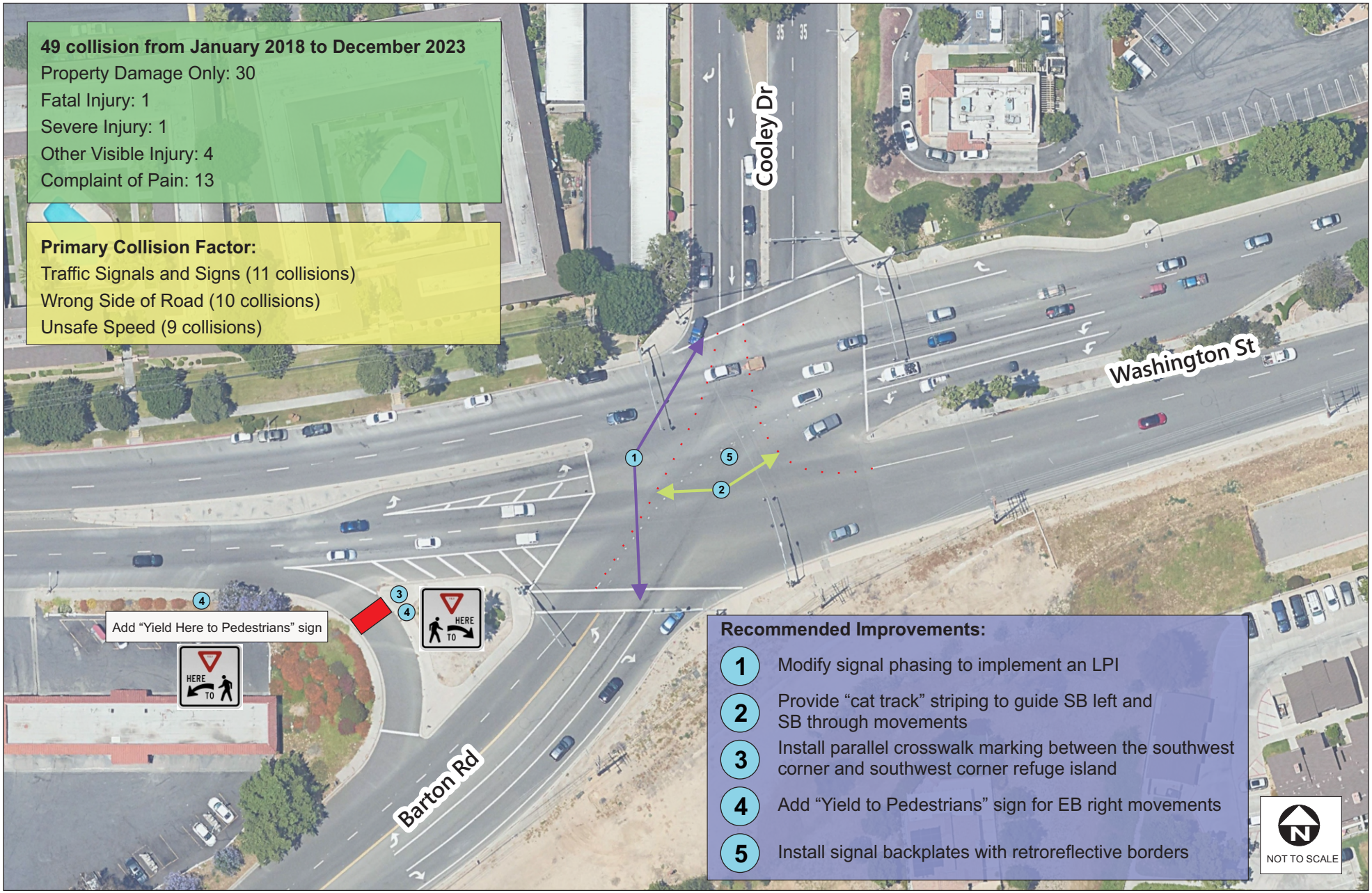

Figure C-6
Proposed Improvements at Cooley Drive/Washington Street

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City of Colton
Citywide Safety Action Plan

Figure C-7
Proposed Improvements at Reche Canyon Road/Washington Street

Figure C-8
Proposed Improvements at Rancho Avenue/Mill Street

Figure C-9
Proposed Improvements at Mt Vernon Avenue/Fairway Drive

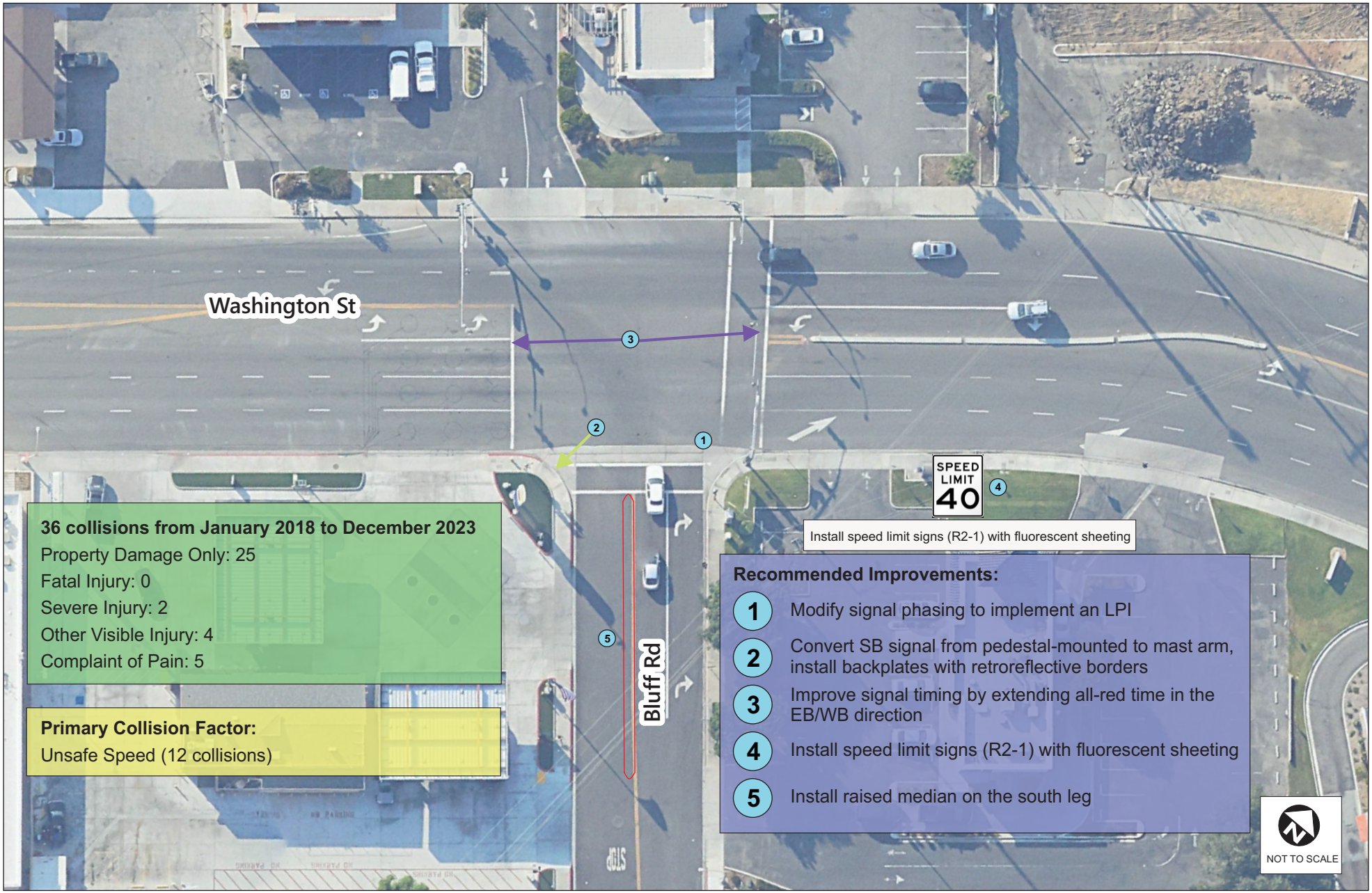

Figure C-10
Proposed Improvements at Bluff Road/Washington Street

APPENDIX D – INTERSECTION IMPROVEMENTS COST ESTIMATES

Table D-1: Cost Estimate for La Cadena Drive/Valley Boulevard

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Change NB/SB to split phasing	EA	1	$10,000	$10,000
2	Replace EB and WB left turn protective permissive 5-section head traffic signals with fully protected left turns, or flashing yellow arrow	EA	1	$200,000	$200,000
3	Install permissive- protected left turn signal head with flashing yellow arrows for NB/SB direction	EA	1	$200,000	$200,000
4	Install speed limit signs (R2-1) with fluorescent sheeting	EA	2	$598	$1,196
5	Refresh striping of existing crosswalk	LF	1000	$3.65	$3,650
6	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
			Total Construction Cost		$421,846
			Contingencies of Total Construction Cost	20%	$84,369
			Total Construction Cost (including contigencies)		$506,215

Table D-2: Cost Estimate for Pepper Avenue/San Bernardino Avenue

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Implement split phasing for EB and WB, or install protected left turn signal head with flashing yellow arrows for EB/WB direction	EA	1	$200,000	$200,000
3	Improve intersection signal timing based on the new split phasing or protected left turn phasing for EB/WB direction	EA	1	$10,000	$10,000
4	Install raised median on the west leg	SF	3000	$36	$108,000
5	Refresh striping of existing crosswalk	LF	1000	$3.65	$3,650
			Total Construction Cost		$328,650
			Contingencies of Total Construction Cost	20%	$65,730
			Total Construction Cost (including contigencies)		$394,380

Table D-3: Cost Estimate for Mt Vernon Avenue/Washington Street

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Implement right turn overlap phasing for EBR	EA	1	$20,000	$20,000
3	Provide “cat track” striping to guide EB left movements	LF	150	$3.65	$548
4	Install raised median on the west leg	SF	600	$36	$21,600
			Total Construction Cost		$49,148
			Contingencies of Total Construction Cost	20%	$9,830
			Total Construction Cost (including contigencies)		$58,977

Table D-4: Cost Estimate for Rancho Avenue/Valley Boulevard

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Install signal backplates with retroreflective borders	EA	16	$878	$14,048
3	Improve signal timing	EA	1	$10,000	$10,000
4	Install speed limit signs (R2-1) with fluorescent sheeting	EA	2	$598	$1,196
5	Refresh striping of existing crosswalk	LF	1000	$3.65	$3,650
6	Install raised median on the west leg	SF	2000	$36	$72,000
			Total Construction Cost		$107,894
			Contingencies of Total Construction Cost	20%	$21,579
			Total Construction Cost (including contigencies)		$129,473

Table D-5: Cost Estimate for Pepper Avenue/Valley Boulevard

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Install signal backplates with retroreflective borders	EA	23	$878	$20,194
3	Improve signal timing	EA	1	$10,000	$10,000
4	Install raised median on the west leg and east leg	SF	4000	$36	$144,000
			Total Construction Cost		$181,194
			Contingencies of Total Construction Cost	20%	$36,239
			Total Construction Cost (including contigencies)		$217,433

Table D-6: Cost Estimate for Cooley Drive/Washington Street

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Provide “cat track” striping to guide SB left and SB through movements	LF	350	$3.65	$1,278
3	Install between parallel crosswalk marking the southwest corner and southwest corner refuge island	EA	1	$10,000	$10,000
4	Add “Yield to Pedestrians” sign for EB right movements	EA	2	$598	$1,196
5	Install signal backplates with retroreflective borders	EA	21	$878	$18,438
			Total Construction Cost		$37,912
			Contingencies of Total Construction Cost	20%	$7,582
			Total Construction Cost (including contigencies)		$45,494

Table D-7: Cost Estimate for Reche Canyon Road/Washington Street

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Install signal backplates with retroreflective borders	EA	12	$878	$10,536
3	Provide “cat track” striping to guide NB left movements	LF	150	$3.65	$548
4	Install speed limit signs (R2-1) with fluorescent sheeting	EA	2	$598	$1,196
5	Refresh striping of existing crosswalk	LF	500	$3.65	$1,825
			Total Construction Cost		$21,105
			Contingencies of Total Construction Cost	20%	$4,221
			Total Construction Cost (including contigencies)		$25,325

Table D-8: Cost Estimate for Rancho Avenue/Mill Street

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Install permissive-protected left turn signal head with flashing yellow arrows for NB/SB direction	EA	1	$200,000	$200,000
3	Update signal timing with protected NB/SB left turn phases	EA	1	$10,000	$10,000
4	Install raised median on the west leg and east leg	SF	3000	$36	$108,000
5	Refresh striping of existing crosswalk	LF	1000	$3.65	$3,650
			Total Construction Cost		$328,650
			Contingencies of Total Construction Cost	20%	$65,730
			Total Construction Cost (including contigencies)		$394,380

Table D-9: Cost Estimate for Mt Vernon Avenue/Fairway Drive

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2	Install protected left turn signal head for NB/SB direction with new NB/SB left turn phasing	EA	1	$200,000	$200,000
3	Update signal timing with protected NB/SB left turn phases	EA	1	$10,000	$10,000
4	Install raised median on the east leg	SF	650	$36	$23,400
			Total Construction Cost		$240,400
			Contingencies of Total Construction Cost	20%	$48,080
			Total Construction Cost (including contigencies)		$288,480

Table D-10: Cost Estimate for Bluff Road/Washington Street

No.	Item Description	Unit	Quantity	Unit Cost	Total Cost
1	Modify signal phasing to implement an LPI	EA	1	$7,000	$7,000
2A	Convert SB signal from pedestal-mounted to mast arm	EA	1	$110,000	$110,000
2B	Install backplates with retroreflective borders	EA	16	$878	$14,048
3	Improve signal timing by extending all-red time in the EB/WB direction	EA	1	$10,000	$10,000
4	Install speed limit signs (R2-1) with fluorescent sheeting	EA	1	$598	$598
5	Install raised median on the south leg	SF	650	$36	$23,400
			Total Construction Cost		$165,046
			Contingencies of Total Construction Cost	20%	$33,009
			Total Construction Cost (including contigencies)		$198,055