City of Wildomar

LOCAL ROADWAY SAFETY PLAN

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1.0 EXECUTIVE SUMMARY

The California Department of Transportation (Caltrans) has established a program for cities to prepare a Local Roadway Safety Plan (LRSP) to identify safety needs and recommend projects to address these needs. LRSPs are intended to help local roadway owners contribute to the goals of Caltrans' statewide Strategic Highway Safety Plan (SHSP) by focusing on local-level concerns. An LRSP provides a framework for organizing stakeholders to identify, analyze, and prioritize roadway safety improvements on local roads. This document serves as the LRSP for the City of Wildomar.

1.1 OVERVIEW

An LRSP analyzes collision data, assesses infrastructure deficiencies through an inventory of roadway system elements, and identifies roadway safety solutions on a citywide basis. The LRSP was created by the State to help local agencies develop safety projects that can be submitted for funding by the Highway Safety Improvement Program (HSIP). HSIP Cycle 11, announced in May 2022, requires an LRSP or equivalent plans such as a Vision Zero Plan or Systemic Safety Analysis Report (SSAR).

Although the City of Wildomar completed an SSAR in 2021, this LRSP document is meant to expand on the findings of the SSAR. While SSARs primarily follow an engineering-based approach, the LRSP takes a more holistic safe-systems approach through a framework of addressing the four "E"s of traffic safety: Engineering, Enforcement, Education, and Emergency Services.

This report has been prepared per Caltrans LRSP guidelines and the *Caltrans Local Roadway Safety Manual* (LRSM) version 1.6 dated June 2022. The general content of this LRSP report follows this outline:

- Safety emphasis areas
- Community outreach
- Engineering recommendations
- Non-engineering strategies
- Evaluation
- Implementation

The LRSP fulfills the following purposes:

- Propose safety countermeasures to address safety issues.
- Prioritize safety improvement projects based on a benefit/cost ratio and other considerations.

The findings in this LRSP are built on the findings of the 2021 Wildomar Systemic Safety Analysis Report (SSAR), attached as **Appendix B**. The SSAR contains a comprehensive collision history assessment, which informs the recommendations made in this LRSP.

1.2 SAFETY MEASURES

The following transportation safety emphasis areas were identified based on background information:

- Cross-jurisdictional collaboration
- Night collisions and hit objects
- Pedestrians and bicyclists
- Unsafe speeding
- Driving or bicycling under the influence

The emphasis areas provide the City of Wildomar areas to focus on when developing projects, programs, and safety strategies for the LRSP.

The LRSP recommends engineering and non-engineering countermeasures, which help to address the identified emphasis areas derived from the collision analysis. Concerns and recommended improvements were discussed with stakeholders which include the Riverside County Sheriff's Department, Cal FIRE/Riverside County Fire Department, Riverside Transit Agency, City of Lake Elsinore, and County of Riverside Department of Transportation. The City also held a community workshop for members of the public to participate in the process.

Some of the engineering countermeasures recommended for multiple locations in the City include:

- Signal timing adjustments
- New signals
- Lighting improvements
- Leading pedestrian intervals
- Flashing beacons

Funding for some of the engineering countermeasures listed in the LRSP may be available from the Highway Safety Improvement Program (HSIP).

In addition to the infrastructure improvements mentioned above, non-engineering safety measures address traffic safety concerns through education, encouragement, and enforcement. Several state and federal grant programs offer funds for non-engineering roadway safety projects, as shown below:

- Advanced Transportation and Congestion Management Technologies Deployment Program
- Active Transportation Program
- Sustainable Communities Grant Program
- Office of Traffic Safety Grants

2.0 INTRODUCTION

KOA Corporation (KOA) has been retained by the City of Wildomar to develop a Local Roadway Safety Plan (LRSP). The purpose of the LRSP is to provide a framework for traffic safety improvements through a collision history assessment, community outreach, and identification of safety emphasis areas. This LRSP proposes a series of countermeasures and improvements to address these issues at both the infrastructure and non-infrastructure level.

2.1 FOUR E'S OF SAFETY

The LRSP not only focuses on engineering improvements to mitigate crashes, but also addresses the other safety improvements in other areas such as enforcement, education, and emergency services. According to the Strategic Highway Safety Plan (SHSP) 2020-2024, two-thirds of all crashes are the result of aggressive driving. Male drivers are more likely to be at fault in aggressive driving-related crashes regardless of age. Making roadways safer requires the Four E's to be involved (Engineering, Enforcement, Education, and Emergency Services). Working together with the Four E's at the city level will help make city roads safer. Recently, Federal and State agencies have also considered Emerging Technologies and Equity as additional E's to improve traffic safety. For instance, considering the use of emerging technologies such as "smart" traffic signal equipment can serve to connect vehicles and traffic control systems to enhance traffic safety.

2.2 PURPOSE OF THE LRSP

The LRSP systematically identifies and analyzes safety problems and recommends improvements through both infrastructure and non-infrastructure approaches. The development of an effective LRSP requires the cooperation of community stakeholders. For this LRSP, the City of Wildomar cooperated with the Riverside County Sheriff's Department, Cal FIRE/Riverside County Fire Department, Riverside Transit Agency, City of Lake Elsinore, Lake Elsinore Unified School District, and Riverside County Deparmtent of Transportation. The results of the LRSP are summarized with a prioritized list of improvements and actions. The LRSP offers a proactive approach to addressing roadway safety needs in Wildomar.

2.2.1 ROLE OF SYSTEMIC SAFETY ANALYSIS REPORT (SSAR)

In January 2021, the City of Wildomar completed a Systemic Safety Analysis Report, also known as the SSAR (included in this report as **Appendix B**). The purpose of the SSAR is to identify the most common collision categories across a roadway network in order to target projects that address the factors associated with those categories. The 2021 Wildomar SSAR includes a comprehensive analysis of collisions within the City between December 2014 and December 2019. The findings from that report provide a substantial foundation for the work done in this LRSP document. Some elements found in the SSAR would typically be found in an LRSP document for cities that do not have an existing SSAR in place.

2.3 CITY OF WILDOMAR

Wildomar is a city in Riverside County. According to the 2020 US Census, Wildomar had a population of 36,875, a 14.6 percent increase from the 2010 population. Between December 2014 and December 2019, a total of 653 collisions occurred within the City (**Appendix B**).

2.3.1 EQUITY ANALYSIS

As part of this LRSP, the City of Wildomar was analyzed to identify potential equity concerns among residents, with program and project recommendations in the LRSP evaluated to improve these concerns. The completed findings of this equity analysis can be found in **Appendix A**.

Wildomar is located in the Inland Empire, which has long had poor air quality due to its sunny, dry climate and geographical features funnel air from the greater Los Angeles area. The Riverside County General Plan states that the South Coast Air Basin, which Wildomar falls under, contains the worst air quality in the nation.

The U.S. Department of Transportation has developed a metric for determining which census tracts can be considered historically disadvantaged. This USDOT metric combines multiple datasets from agencies such as the CDC, U.S. Census Bureau, and EPA to arrive at an aggregate score for individual census tracts, using a combination of environmental, economic, and social metrics. All but three census tracts in the City of Wildomar meet the threshold for a Historically Disadvantaged Community by USDOT.

Analysis from CalEnviroScreen 4.0 reveals that Wildomar's census tracts range from the 25th percentile to the 60th percentile (with higher percentiles indicating greater burden) among the state's census tracts. The Sedco Hills community in the northwest corner of the City is in the 60th percentile, meaning that it is more negatively burdened than 60 percent of California's census tracts.

2.3.2 SAFETY POLICY ANALYSIS

Existing planning documents in the City of Wildomar were analyzed to ensure congruity and help gauge the long-range direction of roadway safety policy in the City. The completed findings of this policy analysis can be found in **Appendix A**.

The Wildomar Active Transportation Plan and Wildomar Mobility Element contain several policies that promote roadway safety through pedestrian and bicycle improvements, lighting improvements, and signal upgrades. The documents also support outreach and education to encourage safe practices.

Other documents analyzed include the County of Riverside General Plan, the SCAG Connect SoCal Plan, the WRCOG Active Transportation Plan, and the City of Wildomar Old Town Vision. All of these documents make recommendations related to roadway safety and expansion of transportation mode options.

2.4 LRSP OVERVIEW

The following sections include a brief description of the tasks associated with the development of this LRSP, with a more detailed description of each task in subsequent sections of this document.

2.4.1 SAFETY EMPHASIS AREAS

Transportation safety emphasis areas provide a strategic framework for developing and implementing the LRSP. The emphasis areas provide the City of Wildomar areas to focus on when developing projects, programs, and safety strategies for the LRSP. Based on previous collision data, the following emphasis areas were identified:

- Cross-jurisdictional collaboration
- Night collisions and hit objects
- Pedestrians and bicyclists
- Unsafe speeding
- Driving or bicycling under the influence

2.4.2 COMMUNITY OUTREACH

The City of Wildomar conducted stakeholder outreach in January 2022 to solicit feedback on areas that could improve traffic safety in the City. This information was collected as a supplement to work done on emphasis areas analysis and previous collision analysis work performed for the 2021 Wildomar SSAR. The City received feedback from the Riverside County Sheriff's Department, Cal FIRE/Riverside County Fire Department, Riverside Transit Agency, City of Lake Elsinore, and County of Riverside Department of Transportation. Additionally, the City held a community workshop on April 13, 2022 for members of the public to provide feedback about traffic safety issues.

2.4.3 ENGINEERING RECOMMENDATIONS

Recommendations were developed for engineering countermeasures in line with the goals of the LRSP program. These safety projects and locations are all considered viable safety projects and are recommended for funding. These recommendations include countermeasure numbers found in the Caltrans Local Roadway Safety Manual (LRSM), anticipated Collision Reduction Factor (CRF), project lifespan, collision reduction benefits (in $) of installing the countermeasure, and maximum share of funding allowed if successful in an HSIP grant. Engineering recommendations supplement those found in the 2021 Wildomar SSAR.

2.4.4 NON-ENGINEERING STRATEGIES

This LRSP provides programs and strategies for education, enforcement, and emergency services. These measures intend to prevent and discourage unsafe road practices and use technological advancements to improve emergency response times.

2.4.5 EVALUATION

To measure the effectiveness and ensure the success of the safety measures proposed, this LRSP provides data sources and metrics which are to be used as indicators. Each safety emphasis area has one or more metrics particular to that area. These are primarily collision counts in which specific filters (collision type, parties involved, time of day, etc.) are applied.

2.4.6 IMPLEMENTATION

This LRSP identifies the time frame, responsible agencies, and measures of progress for each project and program. Projects were sorted into three categories: short (1-2 years), medium (2-3 years), and long (4-7

years). Low cost projects typically cost less than $100,000, medium cost projects range from $100,000 to $500,000, and high cost projects tend to be greater than $500,000.

3.0 SAFETY EMPHASIS AREAS

Transportation safety emphasis areas provide a strategic framework for developing and implementing the Local Roadway Safety Plan (LRSP). The emphasis areas provide the City of Wildomar areas to focus on when developing projects, programs, and safety strategies for the LRSP.

Based on the collision data analysis conducted for the City of Wildomar, KOA identified the following transportation safety emphasis areas:

- Cross-jurisdictional collaboration
- Night collisions and hit objects
- Pedestrians and bicyclists
- Unsafe speeding
- Driving or bicycling under the influence

The following section explains how each area was selected based on the collision analysis and how the emphasis areas should drive the development of projects and programs.

3.1 CROSS-JURISDICTIONAL COLLABORATION

Several significant corridors in the City of Wildomar are shared between Wildomar and neighboring cities. Most notably, portions of Mission Trail and Corydon Road are shared with the City of Lake Elsinore, and sit right at the border of the two cities. Small segments of Grand Avenue are also shared with both the City of Lake Elsinore, the City of Murrieta and the County of Riverside. The collision analysis showed that Mission Trail is the segment with the highest collision frequency and second highest collision rate, while Corydon Road has the fifth highest frequency and fourth highest collision rate. These corridors are important to the overall transportation network in the City of Wildomar (both Mission Trail and Corydon Road are considered Major Arterials in the recently adopted Wildomar Mobility Plan) and treatments are available that can improve safety on these corridors.

Coordination with neighboring cities, particularly Lake Elsinore, is crucial to successful development of projects and programs in this LRSP. Neighboring cities are considered essential stakeholders and partners when conducting outreach for the LRSP and in developing successful approaches to project implementation.

3.2 NIGHT COLLISIONS AND COLLISIONS WITH OBJECTS

A lack of street lighting in remote areas can lead to dangerous driving conditions at night. Overall, 34.2% of collisions in Wildomar took place at night, with 10.9% described specifically as occurring in areas with no street lights or where street lights were not functioning, a higher percentage than other cities of comparable size. According to the 2019 Office of Traffic Safety (OTS) rankings, Wildomar ranked 55 out of 94 peer cities for the number of collisions occurring between 9:00 pm and 3:00 am.

Another curious note in the collision patterns of Wildomar are the high number of collisions with fixed objects reported across the city. This collision type represents 21.8% of collisions reported, which represents the second highest collision type in the City (after broadsides). Collisions with fixed objects rarely make even the top three or four highest collision types in most comparable cities. There is

evidence that nighttime driving conditions in the City may be related to the high prevalence of collisions with fixed objects. Approximately 57% of all hit object collisions occur at night, suggesting that poor lighting conditions may contribute to these collision types.

One opportunity to install additional lighting throughout the City is to install lamps on existing SoCal Edison utility poles. Because of this, SoCal Edison should be considered an important stakeholder when considering the most efficient way to add additional lighting, particularly for roadway segments where there are not alternative installation locations such as on traffic signal poles. As mentioned above, lighting can help make it easier to see objects in or near the roadway before a collision with a fixed object may occur. On the other hand, it is important to try to avoid objects being present in the Clear Recovery Zone (including utility poles) that may pose a threat to motorists. Thus, communication with SoCal Edison is also important to ensure safe placement of any new utility poles and to develop plans to move any poles that may be too close to the roadway right-of-way.

3.3 PEDESTRIANS AND BICYCLISTS

Pedestrians and bicyclists are among the most vulnerable roadway users. People who frequently walk or bike are often too young or too old to drive or lack the means to purchase a car. Broad streets, narrow sidewalks, and limited crossing facilities can make walking not only uncomfortable but also unsafe. Pedestrian and bicycle involved collisions make up 5.1% of collisions overall in the City of Wildomar, but make up 19.5% of all fatal and severe injury (KSI) collisions. Wildomar ranked 45 out of 94 peer cities in the 2019 OTS rankings based on the number of pedestrian crashes, and 34 out of 94 cities based on crashes of pedestrians 65 and older. The amount of bicycle collisions are lower when compared to pedestrian collisions, which may reflect better bicycling conditions in Wildomar than comparable cities, or less ridership overall, or a combination of the two. Pedestrian and bicycle safety can be improved both through implementing infrastructure improvements catering to these modes throughout the City, as well as by better educating residents about safe walking and biking habits, and increasing awareness of these users for those driving motor vehicles.

3.4 SPEEDING

Unsafe travel speed was the second highest primary collision factor (PCF) for collisions in Wildomar. Unsafe speed accounted for 21.8% of collisions across the City. Wildomar ranked 53 out of 94 peer cities in the 2019 OTS rankings for speed related crashes. Speeding remains a concern among many cities in California, where roadways have often been designed to maximize vehicle flow and give less regard to encouraging safe driving behaviors. Design interventions in streets can sometimes help encourage drivers to travel more slowly or at least not exceed the posted speed limit. Furthermore, educational programs and targeted enforcement strategies can also help to reduce speeding.

3.5 DRIVING UNDER THE INFLUENCE (DUI)

Driving under the Influence (DUI) is the fourth-largest PCF in Wildomar, responsible for more than 12% of all collisions over the 5-year period, and responsible for 22% of KSI collisions. In the 2019 OTS rankings, Wildomar ranked 23 out of 94 peer cities for DUI arrests. These statistics are concerning as it suggests DUI collisions are more of an issue in Wildomar than many peer cities. Roadway infrastructure treatments are unlikely to affect DUI collisions, so most interventions must come from the side of educational programs, targeted campaigns, strategic enforcement strategies, and informed policymaking.

4.0 COMMUNITY OUTREACH

4.1 STAKEHOLDER MEETING

To supplement the analytical methods used to identify locations for treatments and recommendations in the SSAR, the LRSP focused on partnerships with the community to give input into this process and provide feedback on areas that could improve traffic safety in the City. Stakeholders were contacted after KOA completed the emphasis areas analysis and prior to developing non-infrastructure recommendations and infrastructure recommendations that supplement the SSAR. Stakeholders were asked to provide feedback about traffic safety issues they have observed through their work and possible approaches to resolving these issues.

Feedback was provided by the Riverside County Sheriff's Department, Cal FIRE/Riverside County Fire Department, Riverside Transit Agency, City of Lake Elsinore, and Riverside County Department of Transportation. These comments were provided during a stakeholder meeting, which took place on January 20, 2022. Comments were received from Lake Elsinore Unified School District via e-mail after the January 20, 2022 stakeholder meeting, as they were unable to attend during the original stakeholder meeting time.

4.1.1 RIVERSIDE COUNTY SHERIFF'S OFFICE

Items discussed with the Riverside County Sheriff's Office include the following:

- Areas in the City with a history of speeding.
- Intersections of concern and reasons for concern.
- Experience with newer traffic control devices such as Flashing Yellow Arrow (FYA), Rectangular Rapid Flashing Beacons (RRFB), Leading Pedestrian Intervals (LPI), and roundabouts.
- Enforcement strategies such as pedestrian crosswalk sting operations, DUI checkpoints, and other OTS funding.
- Traffic safety near schools, noted as main driver of pedestrian activity in the City.

4.1.2 CAL FIRE/RIVERSIDE COUNTY FIRE DEPARTMENT

Items discussed with the chiefs at Cal FIRE/Riverside County Fire Department included:

- Locations where paving roads may facilitate emergency vehicle access.
- Use of Opticom systems for emergency vehicle pre-emption, and GPS technology in limited cases from GTT communications.
- Other minor adjustments that may improve emergency response times.

4.1.3 LAKE ELSINORE UNIFIED SCHOOL DISTRICT

Lake Elsinore Unified School District provided feedback on the following items:

- How students travel to school, including walking, biking, and driving habits.
- Safety concerns, including those regarding current school bus operations.
- Location of school crossing guards (currently only provided at William Collier Elementary).

The school district confirmed that they do not currently have any educational campaigns supporting traffic safety.

4.1.4 RIVERSIDE TRANSIT AGENCY

During the meeting, issues discussed included safety concerns with bus accessibility at particular stations, bus stop location policy, and ideal roadway conditions for transit operation.

4.1.5 CITY OF LAKE ELSINORE

Issues discussed with Lake Elsinore included strategies for pursuing funding for improvements in locations shared between the two cities, differences in typical infrastructure used, and strategies to resolve inconsistencies between each city's respective general plans for the shared roadways.

4.1.6 RIVERSIDE COUNTY DEPARTMENT OF TRANSPORTATION

Issues discussed with the County of Riverside Department of Transportation included strategies for pursuing funding for improvements in locations shared between the two agencies, differences in typical infrastructure used, and strategies to resolve inconsistencies between each agency's respective general plans for the shared roadways.

4.2 COMMUNITY WORKSHOP

A community workshop took place on Wednesday, April 13, 2022. At the workshop, the approach taken by the City to develop the LRSP was discussed, and feedback was provided by community members. Feedback was expressed through multiple sources: during the in-person workshop, during the workshop via virtual meeting software, and after the workshop via email. Some of the topics that generated the most feedback included:

- Traffic operations near schools
- Biking and walking concerns
- Clinton Keith Road operations
- Speed limit concerns

Input from community members was directly influential to the projects developed in this plan. The comments provided were carefully evaluated and the Plan aims to address as many concerns as possible. Documentation related to this community meeting can be found in **Appendix C**, **Appendix D,** and **Appendix E**.

5.0 ENGINEERING RECOMMENDATIONS

Recommendations were developed for engineering countermeasures and non-engineering strategies and programs (education, enforcement, and emergency services) in line with the goals of the LRSP program. Engineering recommendations supplement those found in the earlier completed SSAR.

5.1 ENGINEERING PROJECTS

The following list of recommendations includes projects already in the SSAR that have been prioritized based on the emphasis areas of the LRSP and the stakeholder outreach performed, in addition to new projects developed during the stakeholder outreach process. These safety projects and locations are all considered viable projects and are recommended for funding opportunities. **Attachment A** at the end of this report summarizes the proposed safety projects, including the type of countermeasure they would fall under in the Local Roadway Safety Manual (LRSM), anticipated Collision Reduction Factor (CRF), project lifespan, collision reduction benefits (in $) of installing the countermeasure, and maximum share of funding allowed if successful in an HSIP grant. Crash history is not the only reason to recommend safety improvements, as safety should be proactive. **Attachment B** shows the location of these projects in the City of Wildomar.

5.1.1 SIGNAL TIMING ADJUSTMENT

The Deputy providing feedback from the Riverside County Sheriff's Department noted that it is difficult to enforce the "No Right on Red" restriction on the northbound right-turn pocket at the intersection of Clinton Keith Road and Hidden Springs Road. Based on analysis of the existing signal timing at this intersection, a northbound right-turn overlap phase can be added if applicable signal heads are replaced. It is recommended to re-optimize signal timing at the intersection with the addition of this right-turn overlap phase.

5.1.2 NEW SIGNALS

The Lake Elsinore Unified School District and the deputy providing feedback from the Riverside County Sheriff's Department noted that they have received safety complaints about the operation of Bundy Canyon Road and Almond Street in front of Elsinore High School. School buses have difficulty making a left-turn at this intersection out of the high school due to the high traffic volumes. There are also significant pedestrian volumes at Bundy Canyon Road and Almond Street. It is recommended to install a traffic signal at this intersection based on the potential risks to pedestrian safety at the intersection. The City confirmed that the intersection is warranted for a traffic signal and is included in the 5-Year CIP. However, the City is still seeking funds for this traffic signal.

Another location identified as benefitting from a signal during the community outreach process is at Grand Avenue and Gruwell Street. An emergency vehicle pre-emption system is recommended alongside this signal improvement per the recommendation of the Riverside County Fire Department. While the intersection awaits funding for a traffic signal, lighting improvements may help to make the intersection safer in the short-term. The community recommendation for a signal at this location is consistent with the 2020 Wildomar Mobility Plan, which also identifies a signal at this intersection in the future (2040) condition.

5.1.3 LIGHTING IMPROVEMENTS

Lighting improvements were one of the improvements identified in the SSAR as most likely to create safety benefits in the City of Wildomar. During conversations with the City of Lake Elsinore and County of Riverside during the stakeholder meeting, lighting improvements were among the countermeasures discussed where implementation would benefit from cross-jurisdictional collaboration. It is recommended to prioritize the installation of lighting in the following locations:

- Grand Avenue from Corydon Road to Richard Lane (shared with County of Riverside)
- Mission Trail from Malaga Road to Corydon Road (shared with City of Lake Elsinore)
- Mission Trail from Corydon Road to Bundy Canyon Road
- Clinton Keith Road from Wildomar Trail to Elizabeth Lane

The County of Riverside has been trying to secure funding for street lighting, sidewalks, and bike lanes on Grand Avenue from Corydon Road to the west boundary of Wildomar (Richard Lane). The remaining three projects were already developed in the SSAR. Lighting on Mission Trail has been separated into two portions. The first segment occurs along where Mission Trail shares a border with the City of Lake Elsinore. The second segment occurs where Mission Trail is completely located within the City of Wildomar.

5.2 OTHER ENGINEERING COUNTERMEASURES

In addition to the above projects, there were additional countermeasures identified during the stakeholder outreach process that were not a significant part of the SSAR but still have significant potential safety benefits. It is recommended to prioritize further study of these countermeasures to find locations throughout the City where the treatment can improve the existing location.

5.2.1 LEADING PEDESTRIAN INTERVAL (LPI)

A Leading Pedestrian Interval (LPI) is a signal adjustment that gives pedestrians a head start, of typically 3 or more seconds, on their walk signal before vehicles receive a green signal. LPIs increase pedestrian safety by allowing pedestrians to assert their presence in intersection spaces before vehicles have an opportunity to start their movement.

LPIs were considered as an improvement for a few intersections during the development of the SSAR. They are included as part of this LRSP based on a recommendation by a community member during the community workshop as well as inclusion of a recommendation in previously completed city plans, including the Wildomar Active Transportation Plan.

While this LRSP does not have a finalized list of LPI locations, different locations were evaluated to determine candidate locations where LPI installation should be considered. LPIs were evaluated for all signalized intersections falling along "District" or "Corridor" pedestrian routes as indicated by the Wildomar Active Transportation Plan. These intersections were further judged based on the following criteria:

- Existing pedestrian counts (as given in the Existing Conditions Report for the Wildomar Mobility Plan)
- Existing collision data
- Suitability to LPI based on intersection geometry and traffic volumes

Attachment C includes the list of LPI candidate locations selected as the result of this process. **Attachment D** includes a map showing the candidate locations. **Attachment E** includes all locations evaluated for LPI, the counts and collision information for each location, and the rationale as to why the location was included in the final list or not.

5.2.2 FLASHING BEACONS

Flashing beacons can increase visibility of upcoming signals or stop signs after a long stretch of road without these improvements. Both city staff members and community members identified these countermeasures as benefitting safety in the City. Currently, the City has beacons on both sides of David A. Brown Middle School and a beacon along southbound Mission Trail at Palomar Street, which can serve as models for further installations in the City. It is recommended that the City evaluate potential locations based on a combination of analyzing factors like speed and distance from other intersections as well as responses to citizen requests.

5.3 OTHER LOCATIONS OF CONCERN

Other concerns were discussed during the community workshop for the LRSP. For some concern areas, existing city projects are anticipated to address the concern and/or the projects that would address these concerns are not systemic safety improvements of the kind typically covered by an LRSP. These concerns are summarized below.

5.3.1 CLINTON KEITH ROAD

During the community workshop, several comments pertained to concerns about current conditions on Clinton Keith Road. According to the Wildomar Mobility Plan, Clinton Keith Road is an urban arterial road connecting to the Interstate 15 (I-15) and Interstate 215 (I-215) freeways and has the highest amount of average daily traffic in the City. Widening Clinton Keith Road is included in the Wildomar LRSP as CIP No. 025-1. The goal of the project is to provide four travel lanes and bike lanes through the project limits. The project primarily expands the roadway to four lanes from Wildomar Trail to the eastern city limits. This project is actively in development and seeking funding.

5.3.2 CLINTON KEITH ROAD & PALOMAR STREET

Some concerns were expressed during the community workshop about Clinton Keith Road and Palomar Street. CIP 059 is an active project in the City's 5-Year CIP and the goal of the project is to provide continuous bike and pedestrian facilities on both sides of Palomar Street from McVicar Street to Clinton Keith Road, provide missing sidewalks on the south side of Clinton Keith Road at Stable Lanes Road, and widen Palomar Street and Clinton Keith Road within the project limits. In addition, the City reviewed and updated the pedestrian crosswalk timing in April 2022 at Clinton Keith Road and Palomar Street to provide for longer pedestrian crossing times. These improvements began construction in July 2022.

6.0 NON-ENGINEERING STRATEGIES

The following non-engineering strategies were developed based on a combination of stakeholder input as well as best practices related to citywide safety programs. Programs and strategies are provided for education, enforcement, and emergency services.

6.1 EDUCATION

The following proposed education strategies help to meet safety goals in the City, as given by stakeholders and informed by the collision analysis of the SSAR. They are grouped by the emphasis area that each strategy falls under.

6.1.1 PEDESTRIANS AND BICYCLISTS

- Support adult bicycle rider skills classes to take place in the City, such as those offered by the League of American Bicyclists.
- Offer student pedestrian and bicycle traffic safety education in schools. Lessons related to walking can include the danger of walking with distractions, while bicycle lessons can include instructions on helmet and bicycle fit, and teaching how to ride safely on the roadway with motorists.
- Develop a traffic safety campaign. For instance, "walk and bike smart," or ride in the same direction as traffic.
- Offer free bicycle helmets or lights at schools or community centers.
- Organize festivities for and promote Bike to Work Month/Walk to School Day.
- Work with schools to determine no stopping/drop-off zones.

6.1.2 DRIVING UNDER THE INFLUENCE (DUI)

- With cooperation from Lake Elsinore Unified School District, incorporate education about driving under the influence into the high school curriculum, such as "Every 15 Minutes", a two-day program that challenges high school juniors and seniors to think critically about drinking and driving.

6.1.3 UNSAFE SPEED

- Install speed feedback signs near schools.

Table 6.1 summarizes the recommendations for educational programs and provides recommended funding sources.

Table 6.1: Education Funding Sources

DESCRIPTION	RESPONSIBLE AGENCY	FUNDING SOURCE
PEDESTRIANS AND BICYCLISTS		
Support adult bicycle riding skills classes.	City of Wildomar, League of American Bicyclists	OTS Grants

DESCRIPTION	RESPONSIBLE AGENCY	FUNDING SOURCE
Offer student pedestrian and bicycle traffic safety education.	Lake Elsinore Unified School District	OTS Grants
Develop a traffic safety campaign.	City of Wildomar	OTS Grants
Offer free bike helmets or lights.	City of Wildomar	OTS Grants
Bike to Work Month/Walk to School Day	City of Wildomar, Lake Elsinore Unified School District	OTS Grants
Work with schools to determine no stopping zones.	City of Wildomar, Lake Elsinore Unified School District	OTS Grants
DRIVING UNDER THE INFLUENCE (DUI)		
High school educational program.	Lake Elsinore Unified School District	OTS Grants, California Highway Patrol
UNSAFE SPEED		
Install speed feedback signs near schools.	City of Wildomar, Riverside County Sheriff's Department	OTS Grants, California Highway Patrol

6.2 ENFORCEMENT

The following proposed enforcement strategies help to meet safety goals in the City as given by stakeholders and informed by the collision analysis of the SSAR. They are grouped by the emphasis area that each strategy falls under.

6.2.1 UNSAFE SPEED

- Install radar speed feedback signs or portable trailers at periodic intervals along arterials with reported speeding. These technologies display passing drivers' travel speed below a sign with the posted speed limit, thus showing whether drivers are traveling over the speed limit.
- Re-evaluate funding a second motor vehicle officer with available tax funds.

6.2.2 DRIVING UNDER THE INFLUENCE (DUI)

- Monitor local liquor stores and bars suspected of selling alcohol to minors.

Table 6.2 summarizes the recommendations for enforcement programs above and provides recommended funding sources.

Table 6.2: Enforcement Funding Sources

DESCRIPTION	RESPONSIBLE AGENCY	FUNDING SOURCE
UNSAFE SPEED		
Install Active Speed Monitors or Speed Trailers at periodic intervals along arterials with reported speeding.	City of Wildomar	OTS Grants, Advanced Transportation and Congestion Management Technologies Deployment Program
Add a second motor vehicle officer for enforcement.	City of Wildomar	Incoming tax funds or other funds available to Wildomar
DRIVING UNDER THE INFLUENCE (DUI)		
Monitor local liquor stores and bars suspected of selling alcohol to minors.	Riverside County Sheriff's Department	OTS Grants

6.3 EMERGENCY RESPONSE

The City has contracted with CalFIRE/Riverside County Fire Department to provide all fire and emergency medical service needs. Emergency Vehicle Preemption (EVP) systems are currently provided in the City via Opticom systems. Signal preemption allows emergency vehicles to interrupt a normal signal cycle in order to proceed through the intersection more quickly and under safer conditions. An EVP system may assist emergency vehicles traveling through traffic prone areas when responding to an emergency call. If there are issues with EVP due to a lack of line of sight, Cal FIRE/Riverside County Fire Department has previously used GPS technology through GTT Communications to resolve these difficulties.

Based on feedback from chiefs, the following recommendations were provided to improve emergency response in the City:

- Implement GPS technology on Clinton Keith Road.
- Connect Refa Street and Charles Street to Palomar Street to improve response times (streets currently do not connect).
- Install a traffic signal with Opticom at Grand Avenue and Gruwell Street to help the engine and squad transition quicker. *Note: This signal is being currently upgraded by CIP 028-2 (Palomar Widening, Phase 2)*
- Connect and pave Elizabeth Lane to Prielipp Road so response times decrease to Gable Oaks Apartments (alternatively, pave Jana Lane to Prielipp Road). *Note: Both roads are currently being improved by development projects.*
- There is a secondary road that intersects with Waite Street also called Waite Street. It forms the south leg of a three-way intersection, between Bonnie Lane and Linda Vista Lane. This is confusing,

therefore, change the north/south Waite Street to either " Waite Drive" or "Waite Lane" to better improve address recognition.

- Pave any public dirt road that could potentially provide connectivity to other public paved roads, such as White Street.
- Fix the current Opticom to an all red at Mission Trail and Bundy Canyon Road.

While specific dedicated funding sources are not available for many of these improvements, the Highway Safety Improvement Program (HSIP) does provide funding for emergency vehicle pre-emption systems. While the City currently does utilize these systems on many signals, the request above to install a new signal with an emergency pre-emption system can be considered eligible for HSIP funding. This project is included in the list of HSIP eligible projects in the engineering section in **Attachment A.**

7.0 EVALUATION

Since the Local Roadway Safety Plan aims to reduce collision risk, performance effectiveness for the Plan may be evaluated through collision reduction. To this end, the City of Wildomar should download collision data from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) via RoadSafe on an annual basis. The collision trends following the LRSP's adoption provide indicators of the plan's success. The collision analysis should break out collisions by the following categories, as defined by the emphasis area.

- Overall: Total collisions, KSI collisions.
- Cross-Jurisdictional Collaboration: Collisions occurring on Mission Trail (Malaga Road to Corydon Road), Corydon Road (whole extent), and Grand Avenue (Richard Lane to Corydon Road).
- Night Collisions and Collisions with Objects: Collisions that occurred at night, collisions with objects, collisions with objects that occurred at night.
- Pedestrians and Bicyclists: Pedestrian collisions, Bicyclist collisions.
- Speeding: Collisions caused by unsafe speed.
- Driving Under the Influence (DUI): Collisions that are caused by drivers under the influence of alcohol.

Table 7.1 lists the safety projects discussed in previous sections of this report and identifies specific collision types to track after implementation of the project based on the countermeasure implemented:

Table 7.1: Collision Types to Monitor for Each Safety Project

#	Improvement Type	Location Type	No.	Location	Collision Type Reduced
1	Signal Timing Adjust	Signalized Intersection	S03	Clinton Keith Road & Hidden Springs Road	Right-angle
2	Install new traffic signal	Non-signalized intersection	NS03	Bundy Canyon Road & Almond Street	Right-angle, left-turn, pedestrian
3	Install new traffic signal	Non-signalized intersection	NS03	Grand Avenue & Gruwell Street	Right-angle, left-turn, pedestrian
	Add intersection lighting	Non-signalized intersection	NS01		Night
	Install emergency vehicle pre-emption system	Signalized Intersection	S05		Emergency Vehicle
4a	Add segment lighting	Roadway segment	R01	Grand Avenue from Corydon Road to Richard Lane	Night
4b				Mission Trail from Malaga Road to Corydon Road	Night
4c				Mission Trail from Corydon Road to Bundy Canyon Road	Night
4d				Clinton Keith Road from Stable Lanes Road to Elizabeth Lane	Night

The City can also check collision statistics published by the Office of Traffic Safety (OTS). For each of the categories, consider calculating an average for the most recent three years every year. The City can then plot the three-year average against the averages for past years to derive a general trend line. A downward-sloping trend line indicates that the LRSP is working. An upward sloping trend line suggests that LRSP programs do not have their intended outcomes. In the latter instance, the City should conduct further review and update the plan.

The City should also evaluate the internal safety process. The City can ask the following questions:

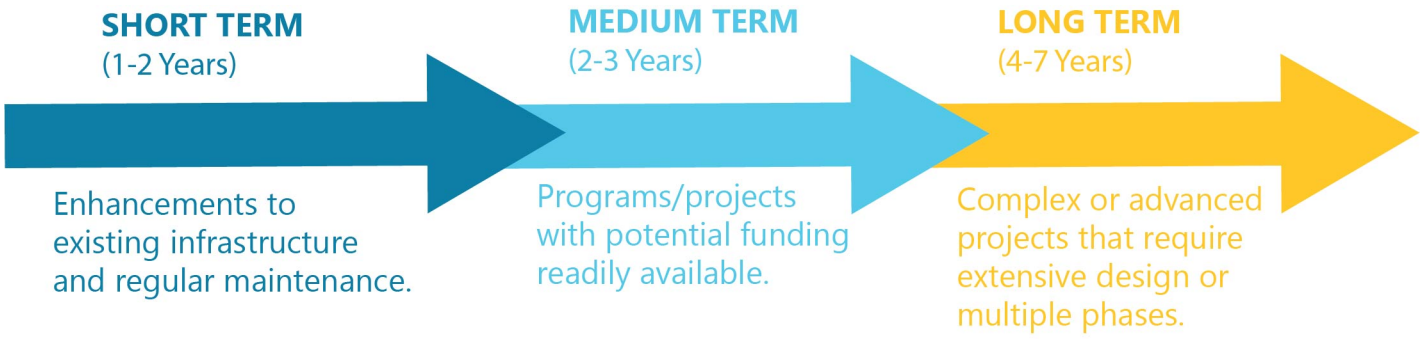
- Who is responsible for implementing safety programs?
- What are the roles and responsibilities of different departments of the City?
- What is the regularity of monitoring and updating performance data?
- How are safety projects prioritized?
- How is progress measured on longer-term projects?

8.0 IMPLEMENTATION

This section presents program implementation – identifying the time frame, responsible agencies, and measures of progress for each project and program. The metrics for evaluating the overall effectiveness and equity of the emphasis areas are summarized in this section.

8.1 ENGINEERING PROJECT IMPLEMENTATION

Projects are sorted into three categories: short, medium, and long. The graphic below summarizes what these three terms mean.



Short-term projects are projects that can typically be done from general city funding and maintenance, and are not recommended as candidates for external funding. Medium-term projects are projects that should be prioritized for the near future as soon when funding is available. Long-term projects are not easy to implement and may require several steps before implementation is possible. This LRSP mostly recommends short and medium term projects, as the focus is not on major public works projects that would typically fit into the long-term category.

For cost, low cost projects typically cost less than $100,000, medium cost projects range from $100,000 to $500,000, and high cost projects tend to be greater than $500,000.

Table 8.1 below breaks down each engineering project in the LRSP by whether the project can be considered short-, medium-, or long-term, and whether they are low, medium, or high cost.

Table 8.1: Implementation Categories for LRSP Safety Projects

#	Improvement Type	Location Type	No.	Location	Term	Cost
1	Signal Timing Adjust*	Signalized Intersection	S03	Clinton Keith Road & Hidden Springs Road	Short	Low
2	Install new traffic signal	Non-signalized intersection	NS03	Bundy Canyon Road & Almond Street	Medium	Medium
3	Install new traffic signal	Non-signalized intersection	NS03	Grand Avenue & Gruwell Street	Long	Medium
	Add intersection lighting	Non-signalized intersection	NS01		Short	Low
	Install emergency vehicle pre-emption system	Signalized Intersection	S05		Long	Medium
4a	Add segment lighting	Roadway segment	R01	Grand Avenue from Corydon Road to Richard Lane	Medium	High
4b				Mission Trail from Malaga Road to Corydon Road	Medium	High
4c				Mission Trail from Corydon Road to Bundy Canyon Road	Medium	High
4d				Clinton Keith Road from Stable Lanes Road to Elizabeth Lane	Medium	High

8.2 NON-INFRASTRUCTURE PROGRAM IMPLEMENTATION GUIDANCE

Different non-infrastructure programs and strategies are also included in the LRSP. To facilitate implementation of these programs, guidance on first steps for each strategy discussed above is included in the table below. Both education and enforcement programs and strategies are included, and they are separated by the target emphasis area in **Table 8.2**.

Table 8.2: Implementation Guidance for LRSP Non-engineering Programs

DESCRIPTION	FIRST STEPS	FUNDING SOURCE
PEDESTRIANS AND BICYCLISTS		
Support adult bicycle riding skills classes.	- Determine what kind of adult bicycle riding skills classes are currently offered. - Identify any existing adult bicycle riding skills classes in the Wildomar community (check-in with the Community Services Department and Community-Based Organizations since they sometimes offer bicycle riding courses). - Retain a consultant to develop a customized curriculum based on the community's needs and collaborate with Community-Based Organizations/ Community Partners to host the events to better promote the classes to a broader audience.	OTS Grants
Offer student pedestrian and bicycle traffic safety education.	- Coordinate with Lake Elsinore Unified School District and individual schools in the City to gain an understanding of existing traffic safety activities/ Safe Routes to School activities. - With the help of a consultant, collaborate with the school district/ schools to develop traffic safety activities.	OTS Grants
Develop a traffic safety campaign	-Determine a behavioral challenge (for instance, texting while driving) to highlight. -Develop a branding and a marketing strategy. (SCAG offers free traffic safety co-branding material and assistance for hosting traffic safety campaigns through the Go Human program).	OTS Grants
Offer free bike helmets or lights.	-Apply for an OTS grant to fund a giveaway. -Identify locations or events where the giveaway can take place.	OTS Grants

DESCRIPTION	FIRST STEPS	FUNDING SOURCE
Organize festivities for and promote Bike to Work Month/Walk to School Day	-Coordinate with Lake Elsinore Unified School District and individual schools in the city to promote walking and biking through popular nationwide encouragement events such as Bike to Work Month or Walk to School Day.	OTS Grants
Work with schools to determine no stopping zones.	-Conduct a walk audit at schools with concerned parents and identify locations where there may be pick-up/drop-off issues. -Confirm locations for no stopping zones with City engineering staff.	OTS Grants
DRIVING UNDER THE INFLUENCE (DUI)		
Establish an interactive simulation program for high school students – Every 15 Minutes. The interactive simulation program aims to challenge high school juniors and seniors about drinking, driving, and mature decision-making.	-Review what alcohol related education is currently taking place in schools in Wildomar. -Determine if there are any recent programs that would be helpful to add to the curriculum.	OTS Grants, California Highway Patrol
Monitor local liquor stores and bars suspected of selling alcohol to minors.	-Identify liquor stores located near DUI collisions and citations. -Determine existing enforcement policy regarding sales to minors and identify ways to target areas where infractions occur.	OTS Grants
UNSAFE SPEED		
Install speed feedback signs near schools.	-Conduct a walk audit with parents or teachers and determine issues where speeding is occurring. -Determine where collisions have occurred near schools and develop an OTS application.	OTS Grants, California Highway Patrol
Install Active Speed Monitors or Speed Trailers at periodic intervals along arterials with	-Work with Riverside County Sheriff's Department to identify locations with speeding issues.	OTS Grants, Advanced Transportation and Congestion Management

DESCRIPTION	FIRST STEPS	FUNDING SOURCE
reported speeding.	-Apply for an OTS grant to fund speed trailers. Develop a deployment strategy.	Technologies Deployment Program

8.2.1 FUNDING INFORMATION

The U.S. Department of Transportation's Safe Streets for All (SS4A) program offers grants to jurisdictions with roadway safety projects. To be eligible for Implementation Plan grants through SS4A, jurisdictions must have an Action Plan that meets a set of requirements, which this LRSP, with its appendices, is intended to satisfy.

California Office of Traffic Safety (OTS) grants are offered on a regular basis, typically annually. The most recent request for grant applications closed on January 31, 2022. The grant funds programs related to the following primary program areas:

- Alcohol Impaired Driving
- Distracted Driving
- Drug-Impaired Driving
- Emergency Medical Services
- Motorcycle Safety
- Occupant Protection
- Pedestrian and Bicycle Safety
- Police Traffic Services
- Public Relations, Advertising, and Marketing Program
- Roadway Safety and Traffic Records

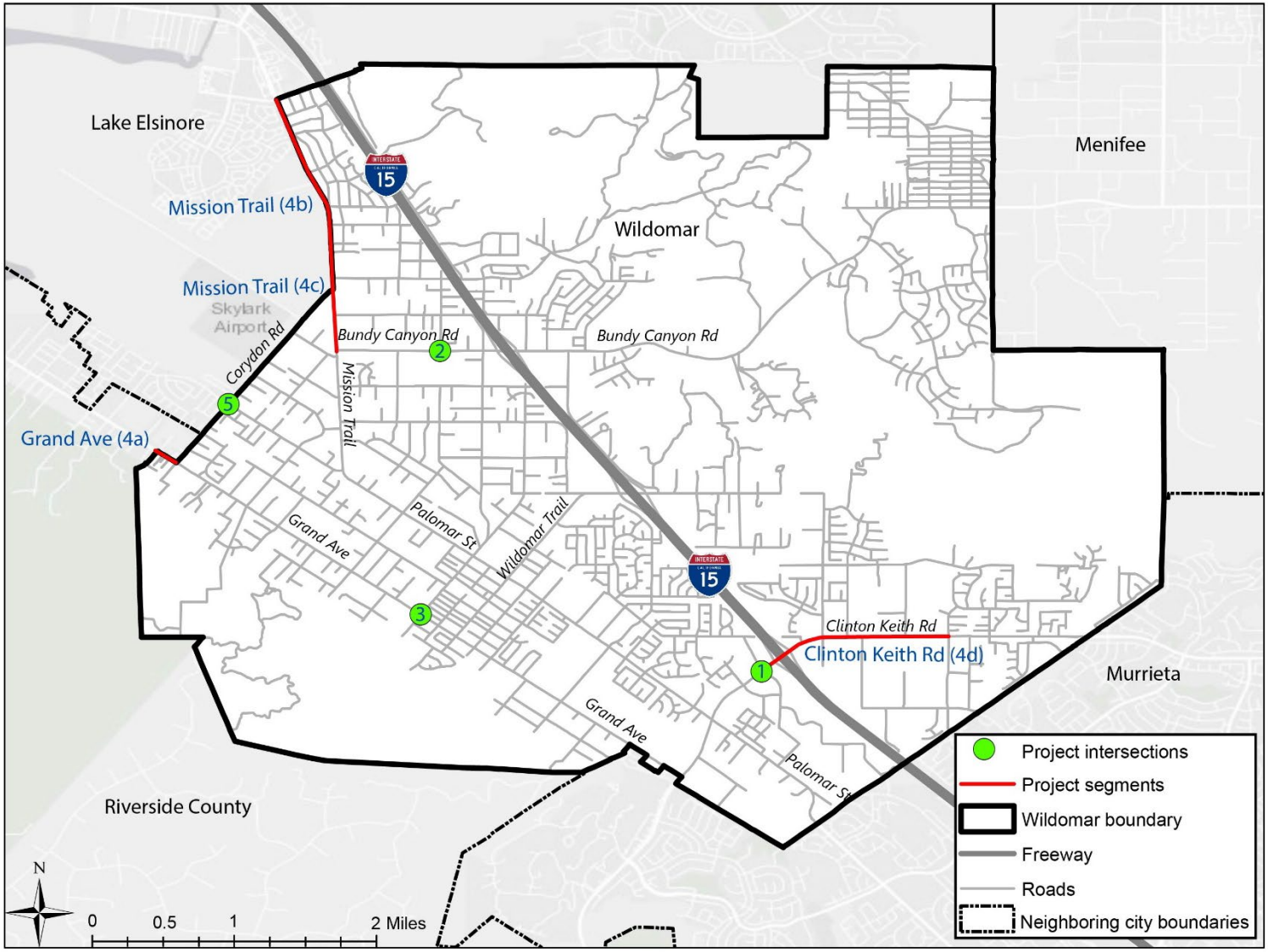
Grant applications should establish a problem to be addressed in the respective city via documented traffic safety data and propose non-engineering strategies to address this problem. More information on the grants can be found at https://www.ots.ca.gov/grants/.

ATTACHMENTS

Attachment A: Wildomar LRSP Safety Projects Eligible for HSIP Funding

#	Improvement Type	Location Type	No.	Location	Collision Type	Collision Costs	Collision Reduction Benefits	CRF	Project Life (years)	HSIP Max Share
1	Signal Timing Adjust	Signalized Intersection	S03	Clinton Keith Road & Hidden Springs Road	All	$39,900	$11,970	15%	10	50%
2	Install new traffic signal	Non-signalized intersection	NS03	Bundy Canyon Road & Almond Street	All	$147,400	$176,880	30%	20	100%
3	Install new traffic signal	Non-signalized intersection	NS03	Grand Avenue & Gruwell Street	All	$297,900	$357,480	30%	20	90%
	Add intersection lighting	Non-signalized intersection	NS01		Night	$0	$0	40%	20	90%
	Install emergency vehicle pre-emption system	Signalized Intersection	S05		Emergency Vehicle	$0	$0	55%	20	90%
4a	Add segment lighting	Roadway segment	R01	Grand Avenue from Corydon Road to Richard Lane	Night	$94,200	$131,880	35%	20	90%
4b				Mission Trail from Malaga Road to Corydon Road	Night	$1,279,800	$1,791,720	35%	20	90%
4c				Mission Trail from Corydon Road to Bundy Canyon Road	Night	$2,566,800	$3,593,520	35%	20	90%
4d				Clinton Keith Road from Stable Lanes Road to Elizabeth Lane	Night	$3,423,700	$4,793,180	35%	20	90%

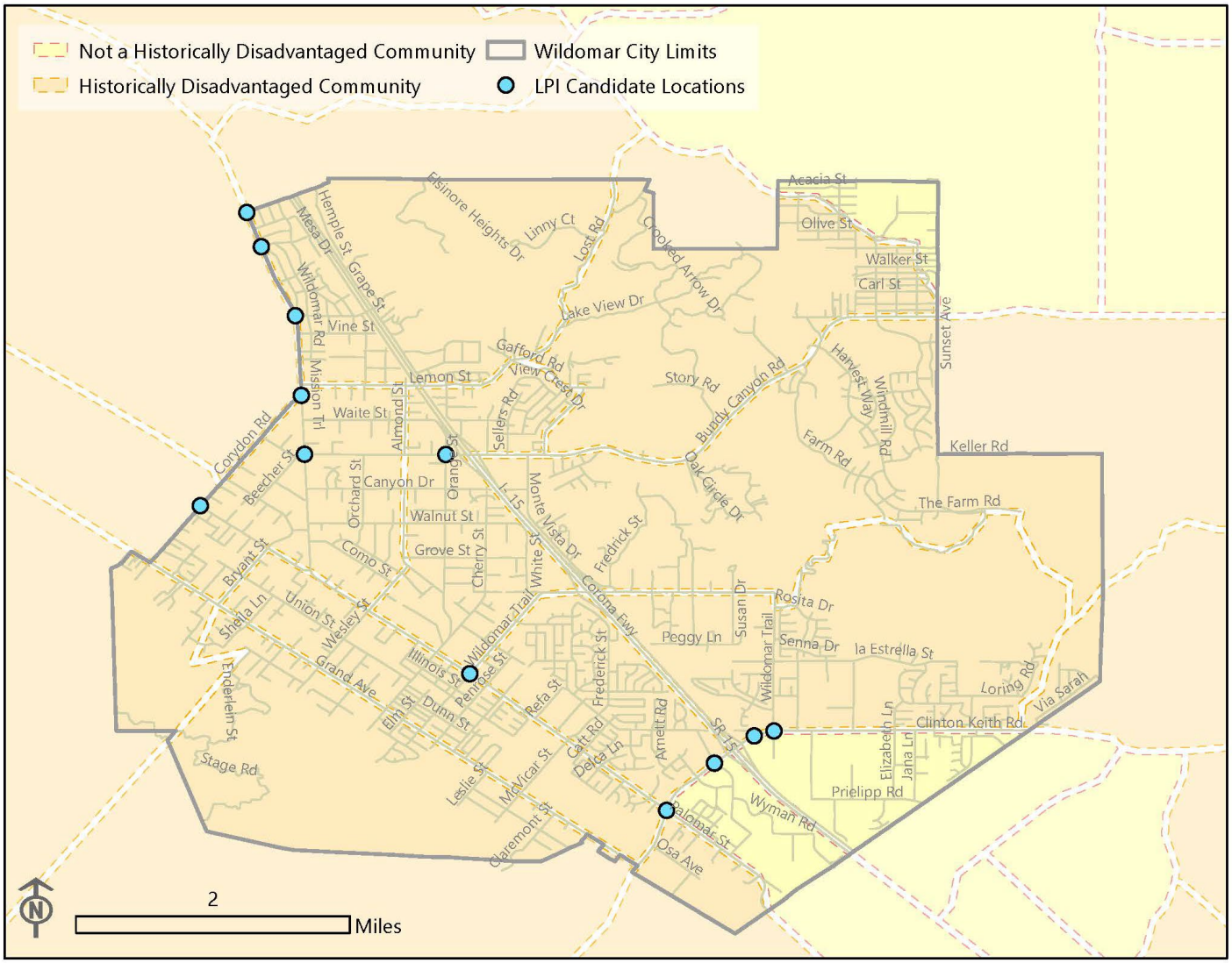
Attachment B: Location of Safety Projects Eligible for HSIP Funding



Attachment C: Leading Pedestrian Interval (LPI) Candidate Projects

Improvement Type	Location Type	No.	Description	Location	Collision Type	Collision Costs	Collision Reduction Benefits	CRF	Project Life (years)	HSIP Max Share
Leading Pedestrian Interval	Signalized Intersection	S21PB	Add leading pedestrian interval to east and west crosswalk.	Clinton Keith Road & Palomar Street	P&B	$142,300	$170,760	60%	10	90%
			Add leading pedestrian interval to north and south crosswalk.	Clinton Keith Road & Hidden Springs Road	P&B	$223,200	$267,840	60%	10	90%
			Add leading pedestrian interval to west crosswalk	Clinton Keith Road & Arya Road	P&B	$0	$0	60%	10	90%
			Add leading pedestrian interval to east and west crosswalk.	Clinton Keith Road & Wildomar Trail	P&B	$0	$0	60%	10	90%
			Add leading pedestrian interval to north crosswalk.	Mission Trail & Malaga Road	P&B	$1,590,000	$1,908,000	60%	10	90%
			Add leading pedestrian interval to north and south crosswalk	Mission Trail & Elberta Road	P&B	$13,300	$15,960	60%	10	90%
			Add leading pedestrian interval to south crosswalk.	Mission Trail & Olive Street	P&B	$0	$0	60%	10	90%
			Add leading pedestrian interval to south crosswalk.	Mission Trail & Corydon Road	P&B	$0	$0	60%	10	90%
			Add leading pedestrian interval to north crosswalk.	Mission Trail & Bundy Canyon Road	P&B	$0	$0	60%	10	90%
			Add leading pedestrian interval to east and west crosswalk.	Bundy Canyon Drive & Orange Street	P&B	$284,600	$341,520	60%	10	90%
			Add leading pedestrian interval to east and west crosswalk.	Corydon Road & Palomar Street	P&B	$1,590,000	$1,908,000	60%	10	90%
			Add leading pedestrian interval to east and west crosswalk.	Wildomar Trail & Palomar Street	P&B	$0	$0	60%	10	90%

Attachment D: Leading Pedestrian Interval (LPI) Candidate Locations



Attachment E: Leading Pedestrian Interval (LPI) Candidate Evaluation

Location	AM Peak Hour Ped Count	PM Peak Hour Ped Count	Fatal Collisions	Severe Injury Collisions	Visible Injury Collisions	Complaint of Pain Collisions	PDO Collisions	Notes
Clinton Keith Road & Palomar Street	1-10	5-11			1			Include- high travel corridor
Clinton Keith Road & Hidden Springs Road	1-10	1-2			1	1		Include- high travel corridor
Clinton Keith Road & Arya Road	N/A	N/A						Include- high travel corridor
Clinton Keith Road & Wildomar Trail	11-20	5-11						Include- high travel corridor
Mission Trail & Malaga Road	11-20	12-17	1				1	Include- high travel corridor
Mission Trail & Elberta Road	N/A	N/A						Include- high travel corridor
Mission Trail & Olive Street	N/A	N/A						Include- high travel corridor
Mission Trail & Corydon Road	21-80	5-11						Include- high travel corridor
Mission Trail & Bundy Canyon Road	11-20	1-2						Include- high travel corridor
Mission Trail & Canyon Drive	N/A	N/A						Include- high travel corridor
Bundy Canyon Drive & Orange Street	81-125	12-17			2			Include- high count and collision rate
Wildomar Trail & Palomar Street	81-125	5-11						Include- high count
Corydon Road & Palomar Street	1-10	1-2		1				Include- high future travel corridor*
Wildomar Trail & Cervera Road	N/A	N/A						Remove, few destinations
Wildomar Trail & Grand Avenue	1-10	1-2						Remove, two major streets, short crossing
Corydon Road & Grand Avenue	1-10	0						Remove, two major streets, short crossing
Corydon Road & Union Street	N/A	N/A						Remove, few destinations
Palomar Street & Gruwell Street	1-10	1-2						Remove, few destinations
Clinton Keith Road & Grand Avenue	1-10	1-2						Remove, low volume
Clinton Keith Road & Smith Ranch Road	N/A	N/A						Remove, low volume

**The Corydon Road and Palomar Street intersection will connect to the Murrieta Creek Trail extension in the future.*

APPENDIX A – EQUITY AND SAFETY POLICY ANALYSIS

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1.0 EXECUTIVE SUMMARY

This document is built upon the City of Wildomar's Local Roadway Safety Plan (LRSP), which is intended to identify, analyze, and prioritize roadway safety improvements in the City. The LRSP and accompanying Systemic Safety Analysis Report (SSAR) collectively serve the function of examining collision patterns, incorporating stakeholder input, evaluating potential programming measures, and making a set of engineering recommendations for improvement projects. This report is intended to serve as an addendum to the LRSP by providing findings related to equity and policy to inform safety program and project recommendations.

2.0 EQUITY ANALYSIS

The purpose of this equity analysis is to analyze demographic patterns, identify community needs and areas of historic underinvestment, and identify how proposed projects and strategies incorporate improvements to these communities. This equity analysis is built on the previous work of the Wildomar Active Transportation Plan (ATP). Equity analysis is a core element of the SS4A program.

2.1 BACKGROUND CONCERNS

Wildomar is located in the Inland Empire, which has long had poor air quality due to its sunny, dry climate and geographical features that funnel air from the greater Los Angeles area. The Riverside County General Plan states that the South Coast Air Basin, which Wildomar falls under, contains the worst air quality in the nation.

Transportation equity within the City of Wildomar is adversely affected by a limited set of transportation options made available. The City currently has limited pedestrian and bicycle options; however, the city's Active Transportation Plan and Mobility Element do contain plans to expand this network.

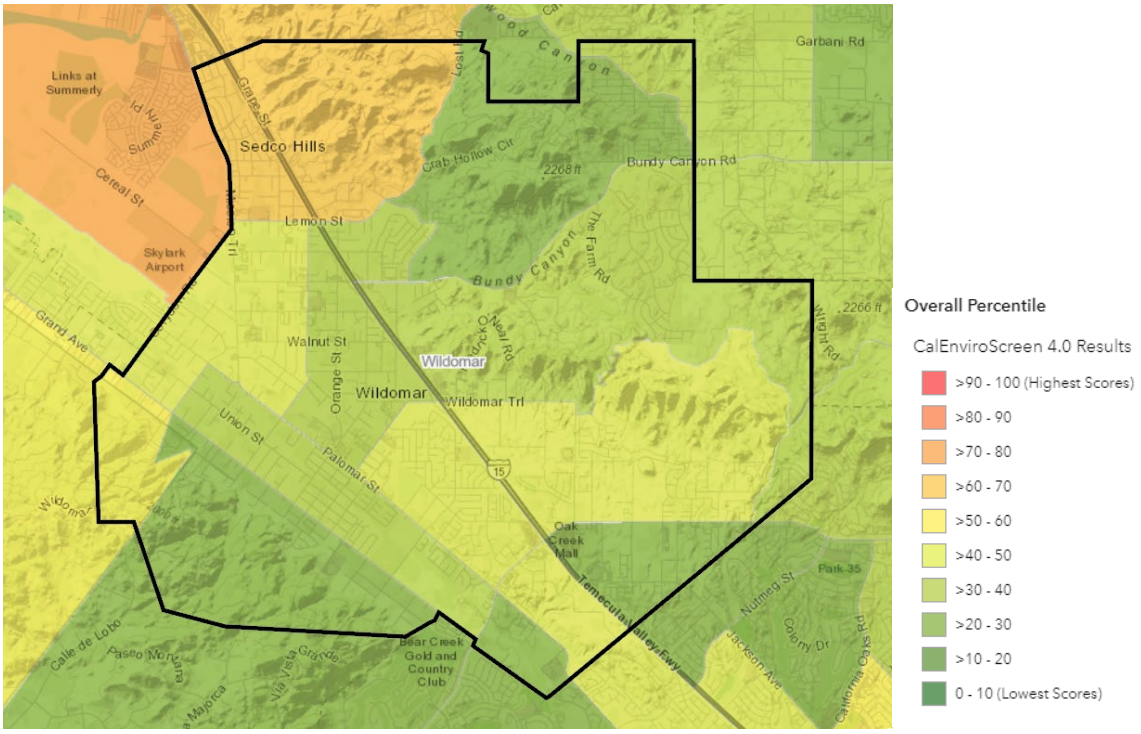
2.2 DATA FINDINGS

Data was analyzed from CalEnviroScreen, an equity mapping tool from the California Office of Environmental Health Hazard Assessment (OEHHA), the U.S. Department of Transportation's Historically Disadvantaged Communities metric, and information on transportation mode share and transportation mode access among Wildomar's residents.

2.2.1 CalEnviroScreen 4.0

CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution. It uses a variety of metrics to produce a composite score that indicates the amount of burden faced by a community due to environmental factors. Wildomar's census tracts range from the 25th percentile to the 60th percentile, with the Sedco Hills community in the northern edge of the city having the highest percentile. This percentile means that Sedco Hills is more adversely affected by CalEnviroScreen indicates than 60 percent of California's census tracts.

Figure 2.1: CalEnviroScreen 4.0 Index in Wildomar



Source: California OEHHA

CalEnviroScreen takes a number of metrics into account. Wildomar, like the rest of the Inland Empire, has substantially high ozone concentration levels, with all census tracts at least being in the 70th percentile or higher (among the state) for ozone concentration. In addition, multiple census tracts in the City are above the 60th percentile for diesel particulate matter concentraction.

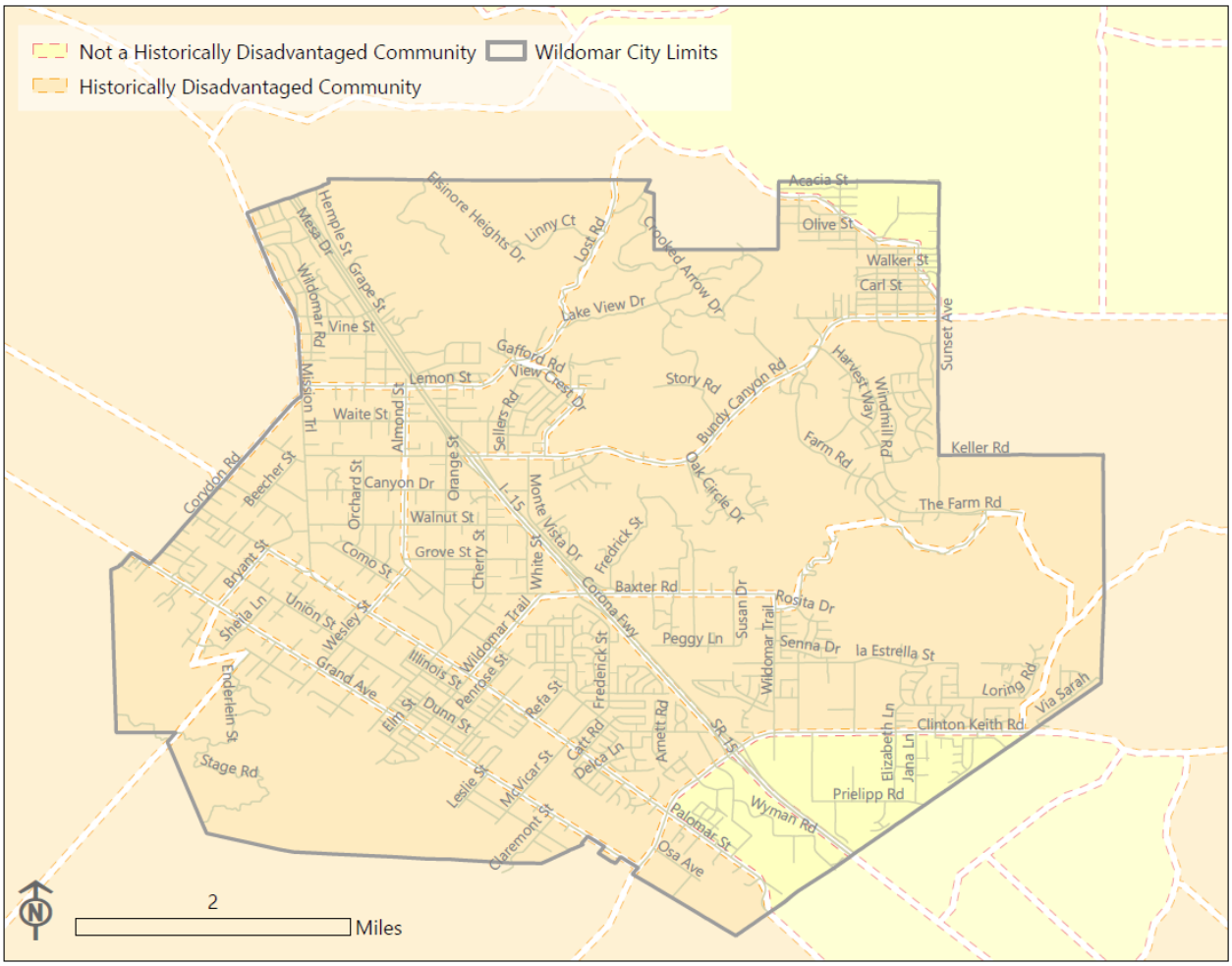
2.2.2 USDOT Historically Disadvantaged Communities

The U.S. Department of Transportation has developed a metric for determining which Census tracts can be considered historically disadvantaged. This USDOT metric combines multiple datasets from agencies such as CDC, US Census Bureau, and EPA to arrive at an aggregate score for individual Census tracts. This score is an aggregate of the following categories:

1) Transportation access
2) Health
3) Environmental (pollution)
4) Economic
5) Resilience (vulnerability to climate change)
6) Equity (including language proficiency)

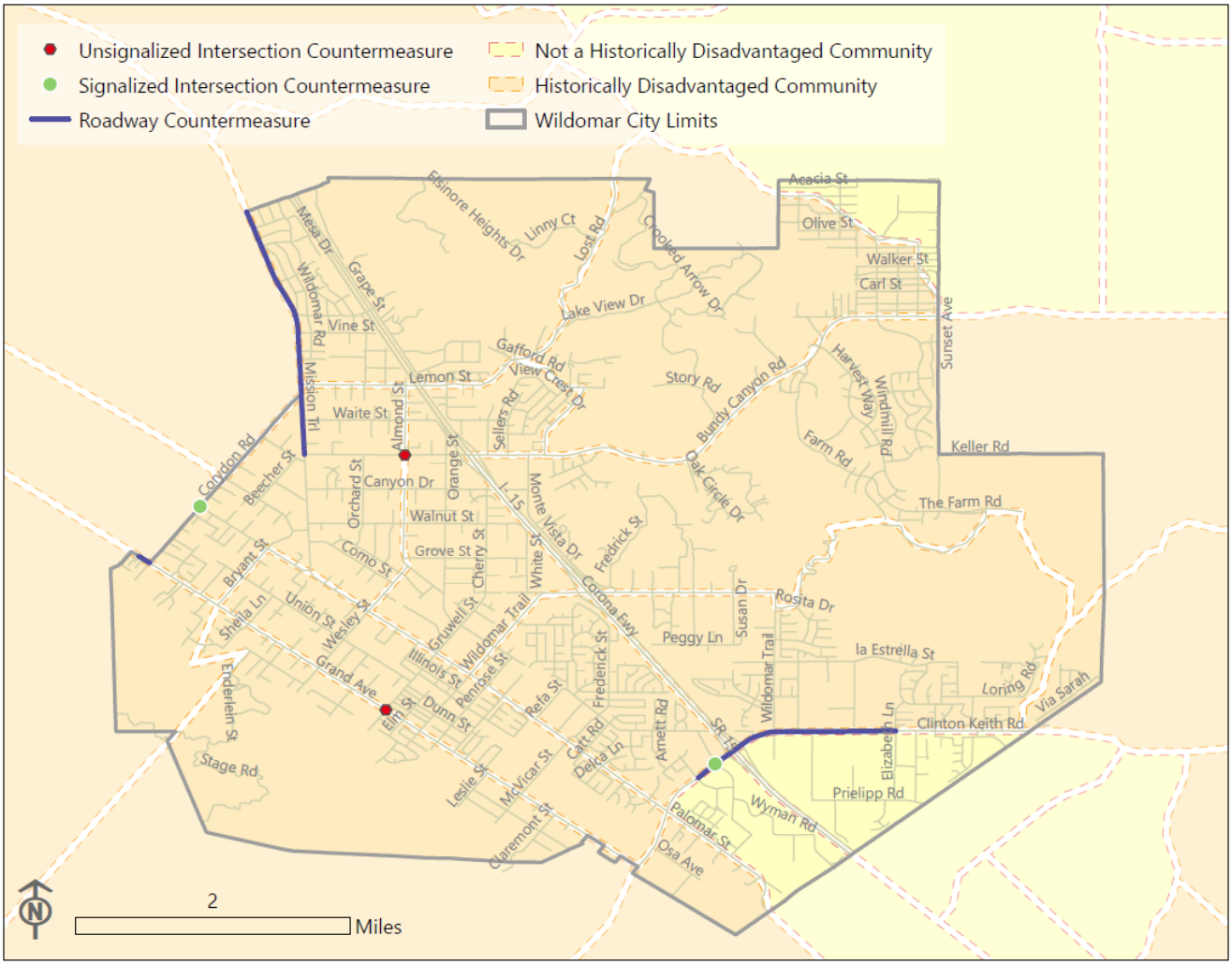
According to USDOT, disadvantaged Census tracts have scores exceeding the 50th percentile (75th percentile for resilience) in at least four of these individual categories.

Figure 2.2: USDOT Historically Disadvantaged Communities in Wildomar



All but three census tracts in the City of Wildomar meet the threshold for a Historically Disadvantaged Community by USDOT.

Figure 2.3: USDOT Historically Disadvantaged Communities and Recommended Countermeasures

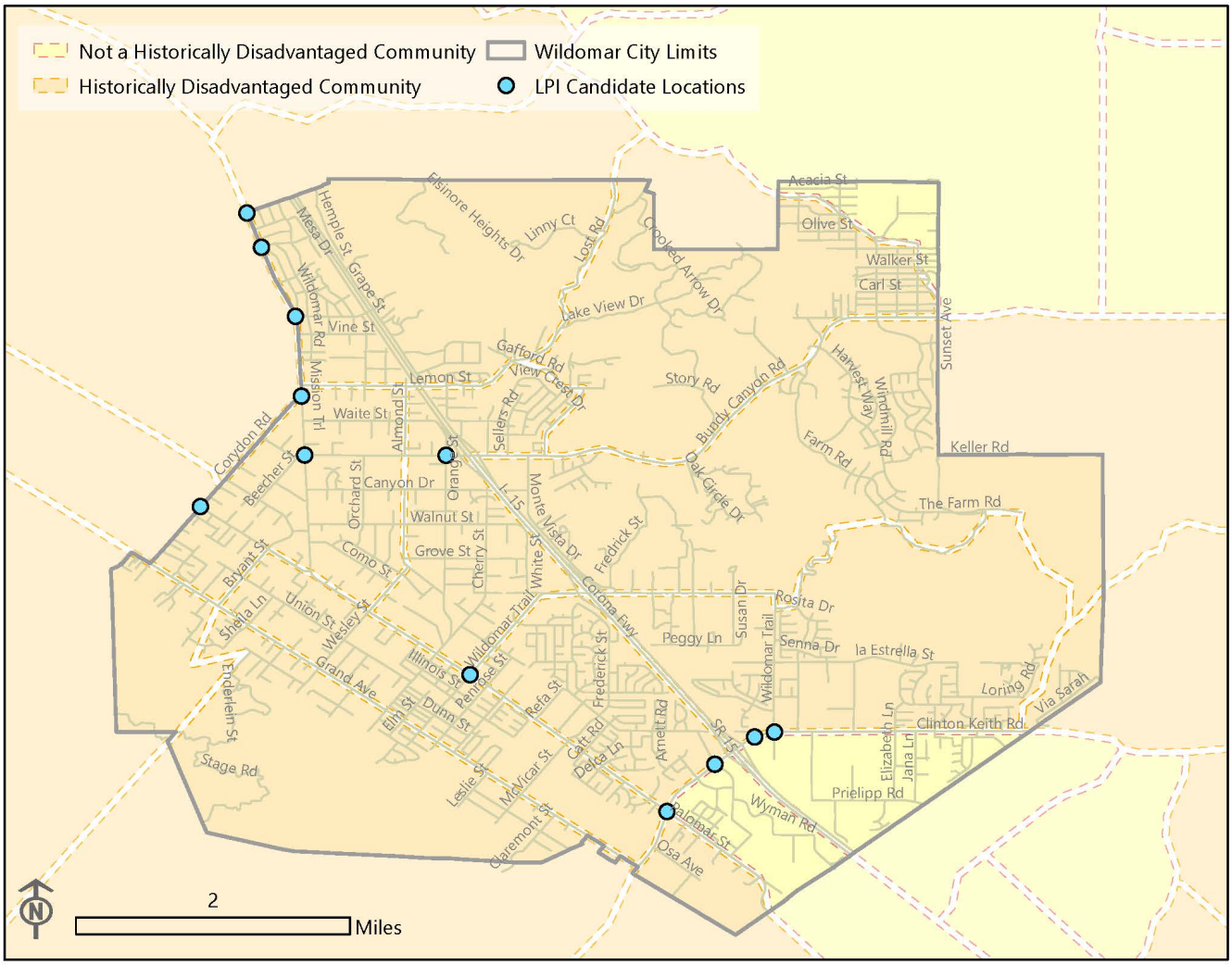


All recommended projects in this LRSP are in some part contained in a Historically Disadvantaged census tract.

Table 2.1: Recommended Countermeasures in Historically Disadvantaged Communities

#	Improvement Type	Location Type	No.	Location	Historically Disadvantaged Community?
1	Signal Timing Adjust	Signalized Intersection	S03	Clinton Keith Road & Hidden Springs Road	Y (partially)
2	Install new traffic signal	Non-signalized intersection	NS03	Bundy Canyon Road & Almond Street	Y (fully)
3	Install new traffic signal	Non-signalized intersection	NS03	Grand Avenue & Gruwell Street	Y (fully)
	Add intersection lighting	Non-signalized intersection	NS01		Y (fully)
	Install emergency vehicle pre-emption system	Signalized Intersection	S05		Y (fully)
4a	Add segment lighting	Roadway segment	R01	Grand Avenue from Corydon Road to Richard Lane	Y (fully)
4b				Mission Trail from Malaga Road to Corydon Road	Y (fully)
4c				Mission Trail from Corydon Road to Bundy Canyon Road	Y (fully)
4d				Clinton Keith Road from Stable Lanes Road to Elizabeth Lane	Y (partially)

Figure 2.4: USDOT Historically Disadvantaged Communities and LPI Candidate Locations



All Leading Pedestrian Interval (LPI) candidate locations are located, at least in some part, in a Historically Disadvantaged Community.

Table 2.2: LPI Candidate Locations in Historically Disadvantaged Communities

Improvement Type	Location Type	No.	Location	Historically Disadvantaged Community?
Leading Pedestrian Interval	Signalized Intersection	S21PB	Clinton Keith Road & Palomar Street	Y (partially)
			Clinton Keith Road & Hidden Springs Road	Y (partially)
			Clinton Keith Road & Arya Road	Y (partially)
			Clinton Keith Road & Wildomar Trail	Y (partially)
			Mission Trail & Malaga Road	Y (fully)
			Mission Trail & Elberta Road	Y (fully)
			Mission Trail & Olive Street	Y (fully)
			Mission Trail & Corydon Road	Y (fully)
			Mission Trail & Bundy Canyon Road	Y (fully)
			Bundy Canyon Drive & Orange Street	Y (fully)
			Corydon Road & Palomar Street	Y (fully)
			Wildomar Trail & Palomar Street	Y (fully)

2.2.3 Vulnerable Population Groups

Wildomar has a heavily car-dependent transportation network. The Wildomar Active Transportation Plan contains information about vehicle availability by household. Information on vehicle availability and primary transportation modes in the City can reveal vulnerabilities that affect residents' ability to access their needs. **Table 2.3** shows vehicle availability by household, while **Table 2.4** shows means of transportation to work.

Table 2.3: Vehicle Availability by Household

Vehicles Available	Households	Percent of Total
No Vehicle Available	366	3.7%
1 Vehicle Available	2,001	20.1%
2 Vehicles Available	3,734	37.6%
3 or more Vehicles Available	3,834	38.6%
Total Occupied Housing Units	**9,935**	**100%**

Source: City of Wildomar Active Transportation Plan

Table 2.4: Means of Transportation to Work

Means of Transportation to Work	Wildomar	Riverside County
Drove Alone	78.9%	77.2%
Carpooled	14.7%	12.9%
Public Transportation	0.7%	1.3%
Walked	0.6%	1.6%
Bicycle	0.2%	0.3%
Other	1.5%	1.4%
Worked from Home	3.4%	5.2%
Total	**100%**	**100%**

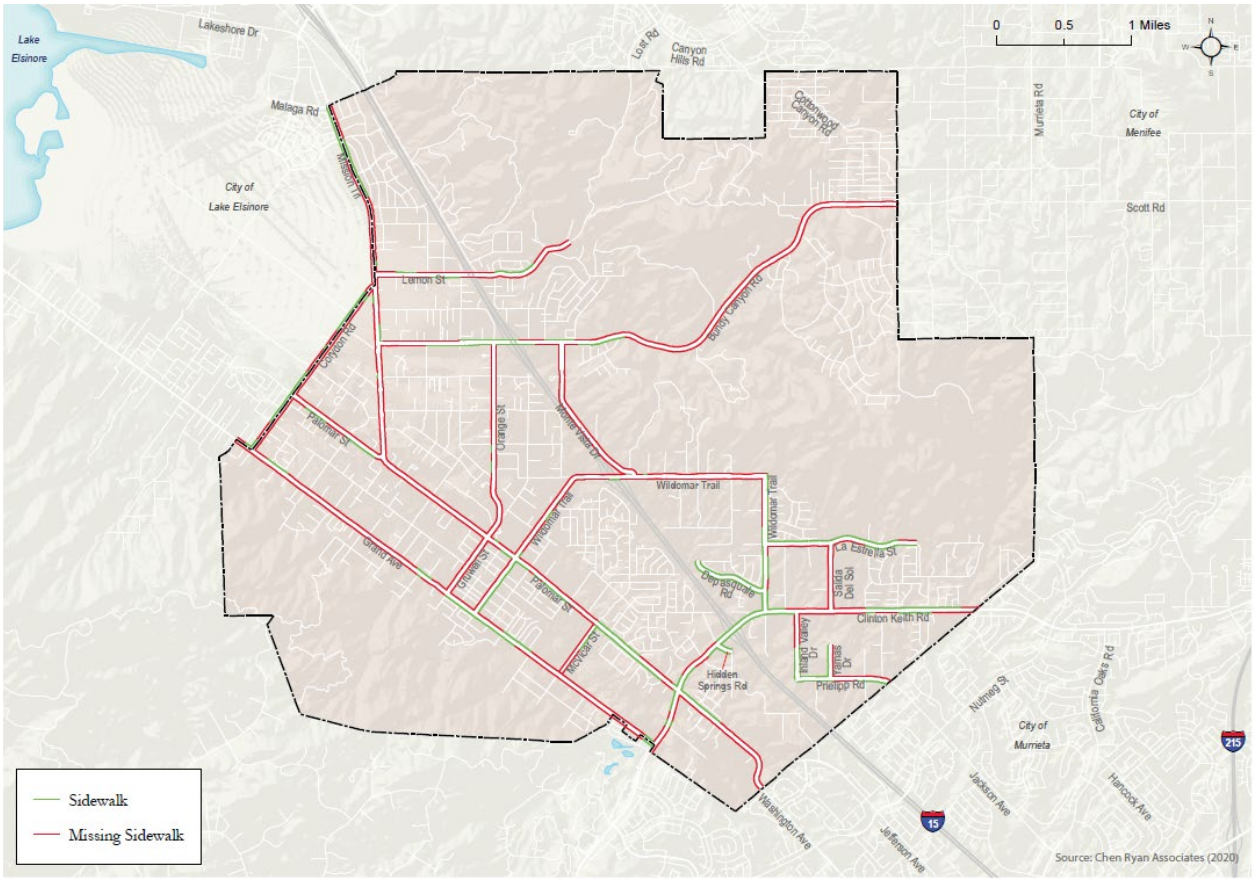
Source: City of Wildomar Active Transportation Plan

These findings illustrate a lack of non-driving options in Wildomar. With 20 percent of households owning one vehicle, this leaves a vulnerability in the event that car access is temporarily or permanently disrupted. In total, nearly 1 in 4 households in Wildomar have access to one vehicle or no vehicles. Only 3.4 percent of Wildomar residents work from home, which may be indicative of employment types in the City that require in-person attendance.

2.1.4 Active Transportation Network Gaps

The City of Wildomar contains approximately 62.9 linear miles when counting both directions of roadways. Of these 62.9 miles, there are approximately 18 miles of existing sidewalk and approximately 45 miles (72%) of missing sidewalks. Sidewalk infill will become an important step toward building a robust pedestrian mobility network. Missing sidewalks create gaps that result in potential safety challenges for youth, people traveling in wheelchairs, people using mobility assistive devices, and for people pushing strollers. Providing residents with a safer and more comfortable pedestrian environment by building more sidewalks with Americans with Disability Act (ADA) compliant curb ramps will be critical to improving walkability in Wildomar. **Figure 2.5** shows missing sidewalks in the City of Wildomar.

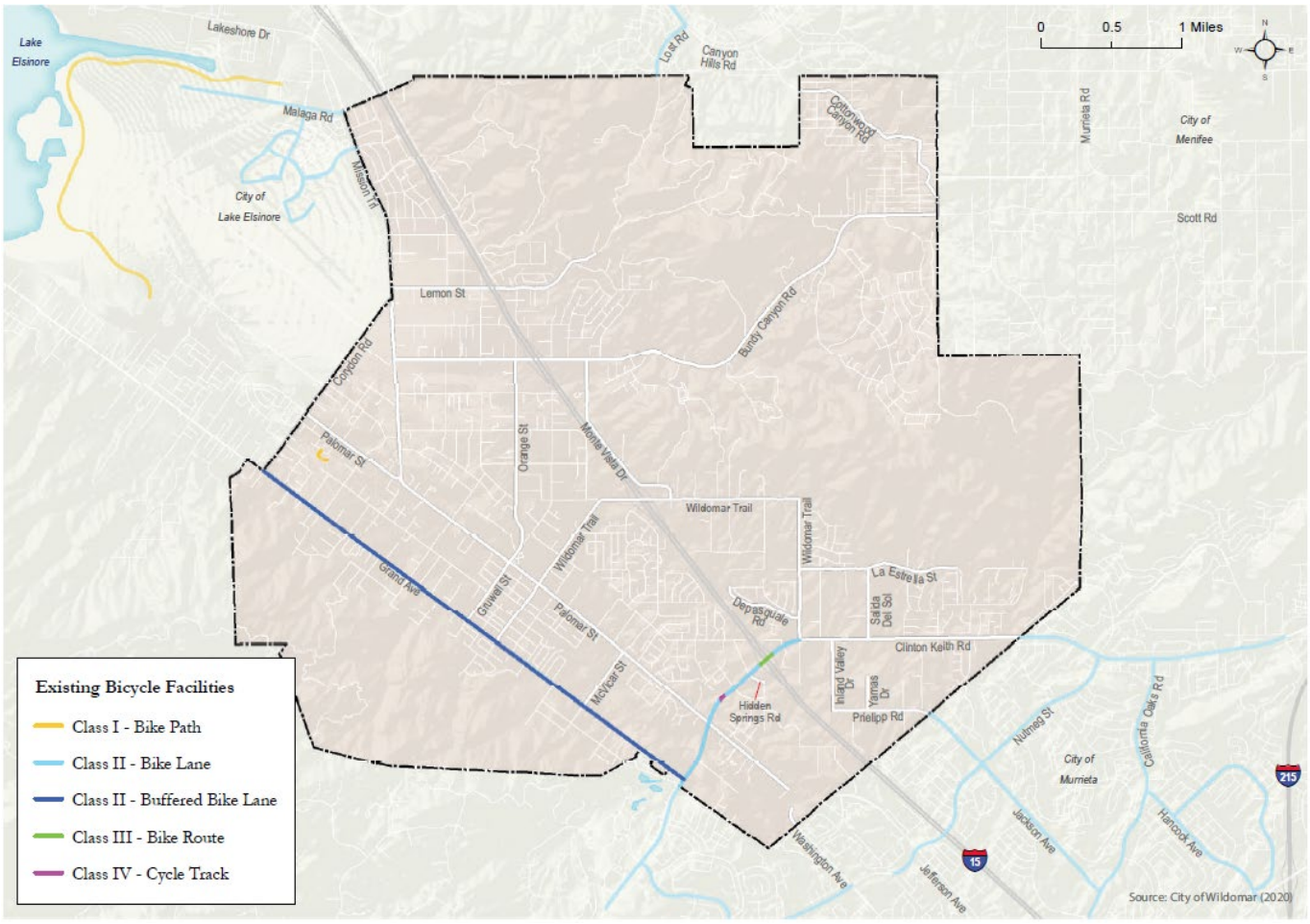
Figure 2.5: Missing Sidewalk Inventory



Source: City of Wildomar Active Transportation Plan

Existing bicycle facilities are displayed in **Figure 2.6**. The existing bicycle network in the City of Wildomar consists primarily of Class II bike lanes, though there is a small section of a Class III bike route, and a block of a Class IV cycle track. Bike lanes are found along Grand Avenue from the northern city limits to Clinton Keith Road, and along Clinton Keith Road from Grand Avenue to Wildomar Trail. The Clinton Keith Road bridge deck over I-15 is a Class III bike route. Clinton Keith Road has an approximately one-block segment of a Class IV cycle track facility. This facility is located on eastbound Clinton Keith Road in front of the northern end of Renaissance Plaza (approximately 400 feet south of the intersection of Clinton Keith Road and Stable Lanes Road). It is evident in **Figure 2.6** that there are major needs for expansion in the City's bicycle network.

Figure 2.6: Existing Bicycle Network



Source: City of Wildomar Active Transportation Plan

3.0 POLICY SUMMARY

3.1 WILDOMAR MOBILITY ELEMENT (2021)

The City of Wildomar Mobility Element is intended to establish a long-range vision for the City's transportation network. The Element is guided by principles of creating a "safe and active community" with quality infrastructure.

The Element contains the following policies that pertain to roadway safety:

- Policy 1.6: Regularly monitor and evaluate Citywide safety and usage trends for all travel modes. Additionally, as new infrastructure is implemented, such as bicycle facilities, pedestrian facilities, and traffic calming measures, pre- and post-project evaluations should be conducted to better understand project benefits.
- Policy 2.1: Improve pedestrian safety, comfort, and connectivity throughout the City, with an emphasis on implementing the various pedestrian route types, and connections serving schools, parks, and commercial/retail centers.
- Policy 2.3: Improve pedestrian crossing safety and efficiency through appropriate signal hardware and timing, installation of marked and high visibility crosswalks and accessible curb ramps, and other intersection design features, where relevant.
- Policy 2.6: Pursue funding to implement programs that promote bicycle and pedestrian education, safety and use in schools.
- Policy 2.8: Regularly review and monitor reports of pedestrian-involved collisions to identify potential safety issues and appropriate improvements.
- Policy 3.5: Enhance bicycle intersection crossing efficiency and safety through intersection design considerations, provisions of bicycle detection at signalized intersections, and other appropriate design features.

The Element also contains a set of treatments, some of which can be found in this LRSP:

- Pedestrian Countdown Signal Heads
- Lighting Improvements

3.2 WILDOMAR ACTIVE TRANSPORTATION PLAN (2020)

The purpose of the Wildomar Active Transportation Plan is to function as a foundation for bicycle and pedestrian improvements within the City. The Plan embodies a Complete Streets approach that balances the needs of all roadway users, with or without vehicles.

The document considers the safety and comfort of active transportation to be an important factor in establishing a robust mode share. Sidewalk gaps are considered safety issues that disproportionately affect youth, elderly populations, and people with disabilities. Improvements to pedestrian safety appear in policies that include:

- Policy A.1: Improve pedestrian safety, comfort, and connectivity throughout the City, with an emphasis on implementing the various pedestrian route types shown in Figure 4.1, and connections serving schools, parks, and commercial/retail centers. (Similar to Mobility Element Policy 2.1)

- Policy A.6: Pursue funding to implement programs that promote bicycle and pedestrian education, safety and use in schools. (Similar to Mobility Element Policy 2.6)
- Policy A.8: Regularly review and monitor reports of pedestrian-involved collisions to identify potential safety issues and appropriate improvements.

The Plan also looks at the current bicycle and pedestrian network and scores each corridor based on a needs assessment. Clinton Keith Road and Mission Trail both appear as locations in need of bicycle and pedestrian improvements. Grand Avenue is listed as a location in moderate need of pedestrian improvements.

3.3 COUNTY OF RIVERSIDE GENERAL PLAN (2003, LAST AMENDED IN 2020)

The General Plan manages overall patterns of development across the County more effectively, enhances community identity, and improves quality of life. It includes a Circulation Element, which identifies the transportation needs and issues within the County, proposes new circulation systems, considers mobility alternatives other than single-occupant vehicles, establishes policies for future decision-making, and develops implementation strategies. The Circulation Element's vision is to achieve new and expanded transportation corridors that connect growth centers at key locations throughout the County, especially with various forms of public transit. This is consistent with Riverside County's Vision.

As stated in the Riverside County Vision and Land Use Element, the County is moving away from sprawling growth toward a pattern of concentrated growth and increased job creation. The intent of these new land development patterns and mobility systems is to accommodate the transportation demands created by future growth and to provide mobility options that reduce automobile reliance, which may include active transportation modes.

Pertaining to roadway safety, the Plan notes the following policies:

- Allow innovative design solutions to manage traffic flow and improve safety when physically and economically feasible.
- Improve roadways in mountainous and rural areas to adequately meet safety requirements.
- Restrict on-street parking to decrease traffic congestion and improve safety.
- Design and construct trails that properly account for such issues as sensitive habitat areas, cultural resources, flooding potential, access to neighborhoods and open space, safety, alternate land uses, and usefulness for both transportation and recreation.
- All trails along roadways shall be appropriately signed to identify safety hazards, and shall incorporate equestrian crossing signals, mileage markers, and other safety features, as appropriate.
- Install special turning lanes whenever necessary to relieve congestion and improve safety.

3.4 SCAG CONNECT SOCAL 2020-2045 RTP/SCS

Connect SoCal is SCAG's long-range transportation plan and sustainable communities strategy for a 6-county region, which includes Los Angeles, Orange, Riverside, San Bernardino, Ventura and Imperial counties.

The purpose of the SCAG Connect SoCal Plan is to establish a long-term cohesive regional vision for the build-out of the transportation network within the SCAG region (which includes San Bernardino County). It notes the following about traffic safety:

- Unsafe speed is the primary collision factor in the SCAG region, accounting for about 30 percent of collisions.
- Approximately 90 percent of collisions are occurring in urban areas, with most taking place on local roads, not highways.
- 65% of fatalities and serious injuries occur on less than 1.5% of the region's roadway network.
- The active transportation investments in Connect SoCal are allocated across a range of active transportation strategies that address planning, policy making and implementation for both short and regional trips. Additionally, they are designed to improve environmental justice outcomes and enhance the safety and comfort of people walking and bicycling.

3.5 WRCOG WESTERN RIVERSIDE ACTIVE TRANSPORTATION PLAN (2018)

WRCOG adopted the Western Riverside Active Transportation Plan (ATP) in 2018. This ATP focuses on enhancing non-motorized infrastructure throughout the western Riverside region, in hopes of developing a robust network for people who walk and bike. The ATP is also intended to serve as a resource for WRCOG member jurisdictions and stakeholders to identify important active transportation facilities in their community.

The ATP provides an overview of the existing conditions in the region, with a focus on non-motorized modes of transportation. It presents an overview of the proposed active transportation regional network, with background information on the development process and its relation to other WRCOG projects.

Implementation and funding strategies relevant to the entire region are also included.

The goals for this ATP were set in conjunction with state and federal vehicle miles traveled reduction efforts, the WRCOG Sustainability Framework, and GHG reduction objectives outlined in Riverside County's Climate Action Plan. Of the five goals, one pertains to roadway safety:

- Enhance safety, remove barriers to access, and correct unsafe conditions in areas of traffic and bicycle/pedestrian activity.

Pertaining to roadway safety, the plan writes, "The safety of bicyclists and pedestrians is one of the most importance aspects of active transportation planning for the Western Riverside County", and considers "Improved Level of Traffic Stress and safety" as a potential outcome of the ATP implementation. Safety strategies include the following:

- Locate routes along high visibility corridors that contain a mix of commercial, civic/institutional (schools, hospitals), recreational, and community facilities and away from blighted structures or sites. This strategy, called "context-sensitive design", directly serves the needs of bicyclists and pedestrians and can enhance public safety for all through the related "eyes on the street" concept.
- Enforce proper and safe driving, bicycling, and walking practices and habits.
- Build bicycle and pedestrian infrastructure that is removed, separated, or buffered from automobiles.
- Provide adequate and consistent lighting along active transportation facilities.
- Install bicycle "fix-it" stations equipped with an emergency communication system on off-street, long-distance pathways.
- Update the infrastructure capital improvement project list to prioritize projects that would proactively address areas with substantial pedestrian or bicyclist-involved collision history.

- Conduct targeted enforcement efforts, with citations and educational materials that focus on safe and lawful behavior for all road users. Enforcement can be targeted at areas such as schools, public facilities, and locations with demonstrated collision history.
- Monitor, record, and regularly review bicyclist and pedestrian-involved collisions.
- Where bike theft occurs regularly (i.e., schools, downtown areas), consider additional law enforcement presence or a standard reporting and documenting process for bicycle theft.

3.6 COUNTY OF RIVERSIDE ELSINORE AREA PLAN (2011, LAST AMENDED IN 2019)

The Elsinore Area Plan is one of nineteen area plans developed by the Riverside County Integrated Project (RCIP) in conjunction with the Riverside County General Plan. The RCIP general vision for the County and incorporated areas is to achieve economic growth and long-term development in an environmentally sustainable manner. The RCIP also sets forth a vision for Riverside County as being "a family of special communities in a remarkable environmental setting".

The Elsinore Area Plan includes a circulation section with programs and policies specific to the area, but also coordinated with the goals of the General Plan Circulation Element. These policies include future recommendations for the following mobility components:

- *Vehicular Circulation System*. The plan proposes a circulation system comprised of six roadway typologies.
- *Trails System*. The plan recommends an extensive system of trails and bikeways to connect the various neighborhoods with recreational resources found in the Cleveland National Forest and along the regional trail system.
- *Scenic Highways*. The plan seeks to protect Interstate 15 and State Route 74, designated as Eligible State Scenic Highways, from changes that would diminish the aesthetic value of adjacent properties.
- *Community Environmental Transportation Acceptability Process (CETAP) Corridors*. The plan recommends consistency with CETAP, which has identified four priority corridors in the area: Winchester to Temecula, East-West CETAP, Moreno Valley to San Bernardino, and Riverside County – Orange County. They are envisioned to be developed in accordance with the CETAP section of the Riverside County General Plan Circulation Element.
- *I-15 Corridor*. The plan proposes enhancing this corridor by expanding automobile and truck capacity, as well as providing a critical north-south link for transit within and outside the County of Riverside.

3.7 WILDOMAR OLD TOWN VISION (2013)

The Wildomar City Council approved the Wildomar Old Town Vision in April 2013. The City identified the intersection of Central and Palomar streets as a site with historical community significance, known as the core of Wildomar Old Town.

The project began with an effort to guide private development and public investments in the historic core of the community. The project was funded by a grant from SCAG's Compass Blueprint Demonstration Project Program. Wildomar's vision for the Old Town is to enhance its role as the historic center of the community with the introduction of pedestrian-oriented development, places for gathering, and trails.

Three key objectives of the vision are as follows:

- Creating a walkable town center with gathering places.
- Providing economic opportunities.
- Strengthening a sense of history and community identity.

In order to achieve this vision, the document calls for streetscape amenities such as wide (up to 10') sidewalks and traffic calming measures. The document proposes pedestrian-friendly development along the project areas.

3.8 CITY OF WILDOMAR STRATEGIC VISIONING PLAN (2008)

The City of Wildomar conducted a strategic visioning session on October 25, 2008. Approximately 100 citizens participated in sharing their vision and brainstorming about the City's future. The attendees were divided into groups and assigned a topic. Facilitators were assigned to each group to record the discussion. Each group reported back at the end of the discussion period, sharing the ideas that emerged. The Visioning Plan concludes by summarizing the themes which were heard and calling upon the citizenry to stay involved.

One of the topics assigned was Traffic Enforcement. On the subject, the Plan writes:

- There are areas where speeding is an issue and the use of speed bumps may be required. Red light cameras could also be installed at selected sites to catch those in violation. Street racing is another area where enforcement will need to be monitored to [ensure] citizen safety.

APPENDIX B – 2021 WILDOMAR SYSTEMIC SAFETY ANALYSIS REPORT (SSAR)

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1.0 EXECUTIVE SUMMARY

The California Department of Transportation (Caltrans) established the Systemic Safety Analysis Report Program (SSARP) in 2016 to provide funding for local agencies to identify safety needs and recommend projects to address these needs. Systemic analysis is a proactive safety approach that focuses on evaluating an entire roadway network using a defined set of criteria. It looks at crash history on an aggregate basis to identify high-risk roadway characteristics, rather than looking at high-collision concentration locations through site analysis. Systemic analysis acknowledges that crashes alone are not always sufficient to prioritize countermeasures across a system.

An SSARP analyzes collision data, assesses infrastructure deficiencies through an inventory of roadway system elements, and identifies roadway safety solutions on a citywide basis. The SSARP was created to help local agencies develop safety projects that can be submitted to the Highway Safety Improvement Program (HSIP) for funding consideration.

The general content of this SSARP report follows this outline:

- Crash data source and analysis techniques
- Crash data analysis results and highest occurring crash types
- High risk corridor and intersection analysis and proposed safety countermeasures
- Safety project descriptions and estimated collision reduction benefits
- Cost estimates of recommended improvements
- Prioritization of projects based on cost-benefit ratio and effectiveness of safety improvement

This report was prepared in accordance with the Systemic Safety Analysis Report Program Guidelines dated February 2016 and Caltrans Local Roadway Safety Manual (LRSM) version 1.4 dated June 2018.

On August 5, 2019, Caltrans' Division of Local Assistance sent an email to all the agencies that have received SSARP funding, encouraging the possibilities of expanding the SSARP project to develop a Local Roadway Safety Plan (LRSP). An LRSP (or its equivalent, such as an SSARP or a Vision Zero Plan) was highly recommended but not required for an agency to apply for HSIP Cycle 10 (May 2020) grants; and will be required for agencies applying for HSIP Cycle 11 (around April 2022), and all funding cycles thereafter.

Per the SSARP guidelines, the following language from Section 148 of Title 23, United States Code [23 U.S.C. §148(h) (4)] is included as part of this report:

REPORTS DISCOVERY AND ADMISSION INTO EVIDENCE OF CERTAIN REPORTS, SURVEYS, AND INFORMATION—Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section, shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.

By signing and stamping this Systemic Safety Analysis Report, the engineer (Stephen Bise, P.E., KOA Corporation) is attesting to this report's technical information and engineering data upon which local agency's recommendation, conclusions, and decisions are made.

2.0 SYSTEMIC SAFETY ANALYSIS

KOA Corporation (KOA) has been retained by the City of Wildomar to develop a Systemic Safety Analysis Report (SSAR). Traditionally, agencies have selected safety projects based on historical crash records, focusing on sites with a concentration of recent severe collisions. By contrast, SSAR identifies the most common collision categories across a roadway network, so as to target projects that address the factors associated with those categories. By focusing on causal factors rather than collisions, SSAR allows agencies to assess risks before a collision occurs. Targeting a wider geography than the traditional site-based approach, systemic project selection favors the broad implementation of cost-effective countermeasures.

2.1 SAFETY DATA UTILIZED

Crash data analysis for this SSAR was completed using collision data from the City's CrossRoads system. CrossRoads is a software for reporting and analyzing traffic collisions. The collision records include a variety of information about each collision including the location, date, time of the day, crash type, crash severity, primary violation category, transportation mode of the involved parties, and movement of the involved parties prior to the collision. Per California state law, motor vehicle collisions must be reported when vehicle or property damage exceeds $1,000, or when any of the parties suffer an injury or fatality. Collisions with no injured parties or little property damage might not be reported and, therefore, are not included in the CrossRoads database.

The SSARP guidelines require analyzing at least three years of the most recent crash data. Five years of CrossRoads (December 2014 to December 2019) data was reviewed for the Wildomar SSARP. The usage of five years of crash data adheres to the maximum threshold permitted by the Highway Safety Improvement Program (HSIP) for a safety infrastructure project application for federal funding.

Ranking Function

A candidate intersection or roadway segment for safety improvements does not need to demonstrate a history of high or severe collisions to be considered for further evaluation. However, locations with high numbers of collisions are often good starting points for safety analysis due to the rich information provided by the collision history. Three ranking methods are utilized to identify high collision frequency intersections and roadway segments: Average Crash Frequency, Crash Rate, and Equivalent Property Damage Only (EPDO) scores. A brief introduction to each of the three methods is provided in the following sections.

Average Crash Frequency

Average Crash Frequency is the most basic method for assessing collision incidence. The analysis tallies the numbers of collisions at each location in the system, both in aggregation and by a category of interest (e.g., level of severity, and collision type). The analysis then ranks intersections or roadway segments based on the collisions' frequency. The method involves easy computation and little data collection. A crash database such as the CrossRoads usually suffices.

Crash Rate

The Crash Rate method goes a step beyond average crash frequency, normalizing facilities' crash frequencies by the amount of vehicle traffic or travel. This method divides the number of collisions (or collisions in a particular category) by the quantity of Million Entering Vehicles (for intersections) or 100 Million Vehicle Miles Traveled (for roadway segments). While the Crash Rate method accounts for differences in facilities' length and traffic volume, it could unduly favor low-volume and low-collision roadways where countermeasures produce lower net benefit for travelers.

EPDO Scores

Equivalent Property Damage Only (EPDO) scores are calculated by assigning weighting factors to crashes by severity relative to property damage only (PDO) crashes. The weights generally reflect an order of magnitude difference between the societal costs of fatal and severe injury crashes versus non-severe injury crashes. Below are the weights by crash severity, based on the 2020 HSIP manual:

- Fatal/Severe Injury
    - Signalized Intersection - $1,590,000
    - Non-signalized Intersection - $2,530,000
    - Roadway - $2,190,000
- Other Visible Injury - $142,300
- Complaint of Pain - $80,900
- Property Damage Only - $13,300

EPDO scores are useful for a benefit-to-cost analysis as collision costs can be translated into measurable benefits from installing improvements should the improvements prevent the collisions in question. However, they may place undue weight on the injury outcomes of previous collisions rather than overall trends suggested by collision patterns regardless of injury outcome. Furthermore, a location's EPDO score could be inflated by a fatal or severe collision caused by DUI.

2.2 DATA ANALYSIS RESULTS

According to the CrossRoads database, a total of 653 collisions occurred within the City of Wildomar between December 2014 and December 2019. In the following sections, the crash data are analyzed and discussed for three facility types:

- Signalized intersection: collisions that occurred within 250 feet of a signalized intersection
- Non-signalized intersection: collisions that occurred within 150 feet of a non-signalized intersection;
- Mid-block: the remaining are categorized as mid-block collisions.

Collision Severity

Table 2.1 shows the collision severity by facility type breakdown for collisions during the analysis period. Among all the collisions, more than half (335) resulted in Property Damage Only (PDO); 193 collisions resulted in complaint of pain; 41 collisions, or 6.3% of total collisions, were killed or severely injured (KSI) collisions. Non-signalized intersections experienced the most KSI

collisions (18). Mid-block locations had 15 KSI, reflecting almost 10% of the 152 collisions occurring at these locations of all severity levels.

Table 2.1: Collision Severity by Facility Type

Severity	Signalized Intersection		Non-signalized Intersection		Mid-block		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
Fatal	1	0.5%	8	2.6%	8	5.3%	17	2.6%
Severe Injury	7	3.6%	10	3.2%	7	4.6%	24	3.7%
Visible Injury	16	8.3%	44	14.2%	24	15.8%	84	12.9%
Complaint of Pain	63	32.8%	94	30.4%	36	23.7%	193	29.6%
Property Damage Only	105	54.7%	153	49.5%	77	50.7%	335	51.3%
Total	**192**		**309**		**152**		**653**	

Collision Type

Table 2.2 lists the collisions during the analysis period by crash type. Broadside was the most frequent collision type (24.4%) in Wildomar, with the usual primary collision factors associated with this crash type being traffic signals and signs and automobile right of way. Approximately one-third of the collisions at signalized intersections were broadside.

Hit-object was the second most frequent collision type in Wildomar (21.8%), and the most frequent collision type at mid-block locations (26.3%) and non-signalized intersections (23.3%).

Rear-end was the third most frequent collision type in Wildomar, and the second most frequent collision type for signalized intersections. This collision type was typically caused by unsafe speed.

Table 2.2: Collision Type by Facility Type

Type of Collision	Signalized Intersection		Non-signalized Intersection		Mid-block		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
Broadside	64	33.3%	67	21.7%	28	18.4%	159	24.4%
Head-On	13	6.8%	29	9.4%	13	8.6%	55	8.4%
Hit-Object	30	15.6%	72	23.3%	40	26.3%	142	21.8%
Not Stated	8	4.2%	11	3.6%	2	1.3%	21	3.2%
Other	4	2.1%	6	2.0%	4	2.6%	14	2.1%
Overturned	0	0.0%	8	2.6%	15	9.9%	23	3.5%
Rear-end	44	22.9%	67	21.7%	23	15.1%	134	20.5%
Sideswipe	26	13.5%	35	11.3%	21	13.8%	82	12.6%
Vehicle/ Pedestrian	3	1.6%	14	4.5%	6	3.9%	23	3.5%
Total	**192**		**309**		**152**		**653**	

Lighting Condition

Table 2.3 summarizes the lighting conditions under which collisions occurred during the analysis period by facility type. The majority of collisions (60.5%) occurred under daylight conditions. About 34% of the collisions occurred under dark conditions, with or without street lights. At Mid-block locations, more than 40% of the collisions occurred under various dark conditions.

Table 2.3: Collision Lighting Condition by Facility Type

Lighting	Signalized Intersection		Non-signalized Intersection		Mid-block		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
Dark - No Street Lights	1	0.5%	39	12.6%	30	19.7%	70	10.7%
Dark - Street Lights	49	25.5%	69	22.3%	34	22.4%	152	23.3%
Dark - Street Lights Not Functioning	0	0.0%	0	0.0%	1	0.7%	1	0.2%
Daylight	129	67.2%	188	60.8%	78	51.3%	395	60.5%
Dusk - Dawn	9	4.7%	10	3.2%	9	5.9%	28	4.3%
Not Stated	4	2.1%	3	1.0%	0	0.0%	7	1.1%
Total	**192**		**309**		**152**		**653**	

Involved Parties

Table 2.4 breaks down the number of collisions during the analysis period by involved parties. Motor vehicle only collisions accounted for approximately 54.7% of all the collisions in the City: 70% of collisions at signalized intersections, 53% at non-signalized intersections, and 39% at mid-block locations.

Pedestrians and bicyclists were involved in 3.4% and 1.7% of the collisions in Wildomar, respectively. Thirteen out of the 22 pedestrian collisions occurred at non-signalized intersections, and accounted for 4.2% of all the locations at this facility type. Among the eleven bicycle collisions, five occurred at signalized intersections and another five occurred at non-signalized intersections.

Table 2.4: Collision Involved Party by Facility Type

Motor Vehicle Involved With	Signalized Intersection		Non-signalized Intersection		Mid-block		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
Animal	0	0.0%	1	0.3%	0	0.0%	1	0.2%
Bicycle	5	2.6%	5	1.6%	1	0.7%	11	1.7%
Fixed Object	27	14.1%	74	23.9%	45	29.6%	146	22.4%
Motor Vehicle on Other Roadway	1	0.5%	1	0.3%	0	0.0%	2	0.3%
Non - Collision	1	0.5%	7	2.3%	8	5.3%	16	2.5%
Other Motor Vehicle	135	70.3%	163	52.8%	59	38.8%	357	54.7%
Other Object	3	1.6%	7	2.3%	3	2.0%	13	2.0%
Parked Motor Vehicle	2	1.0%	20	6.5%	24	15.8%	46	7.0%
Pedestrian	3	1.6%	13	4.2%	6	3.9%	22	3.4%
Not Mentioned	15	7.8%	18	5.8%	6	3.9%	39	6.0%
Total	**192**		**309**		**152**		**653**	

Primary Collision Factor (PCF)

Table 2.5 lists the number of collisions by the Primary Collision Factor (PCF) during the analysis period. Improper turning was the leading PCF in Wildomar (22.1%) and the most common PCF at mid-block locations (27.6%). Unsafe speed was the second most frequent collision type in the City (21.8%), and the prevailing PCF for signalized intersections (18.8%) and non-signalized intersections (23.3%). Driving under Influence (DUI) accounted for 12.3% of all the collisions and 15.1% of the collisions at mid-block locations.

Table 2.5: Primary Collision Factor by Facility Type

PCF	Signalized Intersection		Non-signalized Intersection		Mid-block		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
Auto R/W Violation	14	7.3%	28	9.1%	6	3.9%	48	7.4%
Driving Under Influence	20	10.4%	37	12.0%	23	15.1%	80	12.3%
Following Too Closely	4	2.1%	6	1.9%	2	1.3%	12	1.8%
Hazardous Parking	0	0.0%	0	0.0%	1	0.7%	1	0.2%
Impeding Traffic	0	0.0%	1	0.3%	0	0.0%	1	0.2%
Improper Passing	1	0.5%	2	0.7%	2	1.3%	5	0.8%
Improper Turning	33	17.2%	69	22.3%	42	27.6%	144	22.1%
Not Stated	32	16.7%	46	14.9%	18	11.9%	96	14.7%
Other Hazardous Movement	2	1.0%	0	0.0%	1	0.7%	3	0.5%
Other Improper Driving	2	1.0%	3	1.0%	1	0.7%	6	0.9%
Other Than Driver	0	0.0%	1	0.3%	1	0.7%	2	0.3%
Pedestrian R/W Violation	1	0.5%	0	0.00%	0	0.0%	1	0.2%
Pedestrian Violation	8	4.2%	10	3.2%	4	2.6%	22	3.4%
Traffic Signals and Signs	25	13.0%	6	1.9%	2	1.3%	33	5.1%
Unknown	9	4.7%	16	5.2%	4	2.6%	29	4.4%
Unsafe Lane Change	0	0.0%	2	0.7%	2	1.3%	4	0.6%
Unsafe Speed	36	18.8%	72	23.3%	34	22.4%	142	21.8%
Unsafe Starting or Backing	4	2.0%	5	1.6%	3	2.0%	12	1.8%
Wrong Side of Road	1	0.5%	5	1.6%	6	3.9%	12	1.8%
Total	**192**		**309**		**152**		**653**	

Based on the collision analysis, the prominent collision patterns within the City of Wildomar in the past five years include:

- Broadside collisions at signalized and non-signalized intersections
- Hit-object collisions at non-signalized intersections and mid-block locations
- Rear-end collisions at signalized and non-signalized intersections
- Collisions due to unsafe speed at all three facility types
- Collisions due to improper turning at mid-block locations and non-signalized intersections
- Collisions due to poor lighting conditions, especially at mid-block locations
- Collisions due to DUI

3.0 HIGH RISK CORRIDORS AND INTERSECTIONS

This chapter summarizes the proposed safety countermeasures for high collision risk intersections and roadway segments in City of Wildomar, with a focus on addressing the highest occurring crash types by location type.

KOA determines potential candidate locations for field investigation based on the following factors:

- High-risk locations based on collision history
- Typical locations for a prominent collision type in Wildomar
- Locations with a predominant collision pattern
- Challenging or unique geometry (skewed intersections, double right-turn lanes, triple left-turn lanes, horizontal/vertical curves, etc.)
- A variety of intersection control types
- Initial screening through previous fieldwork

KOA conducted a field investigation to identify roadway characteristics that might contribute to the collisions at the study locations. In addition, KOA infers other locations that share similar risk factors but may not have demonstrated significant crash patterns yet.

3.1 GENERAL METHODOLOGY

The recommended countermeasures for an identified candidate location are based on the following factors:

- Collision severity
- Lighting condition
- Collision involved parties (motor vehicles, pedestrians, bicyclists, etc.)
- Type of collision
- Primary collision factor

Caltrans developed the SSARP guidelines in consultation with the California Local HSIP Advisory Committee. As such, it is logical to utilize the tools for identifying potential countermeasures for candidate locations that are also used in the development of an HSIP application. The *Local Roadway Safety Manual* (LRSM) was developed by Caltrans to support the HSIP call-for-projects and provides lists of potential countermeasures that are deemed acceptable for implementation with federal-aid funding awarded through the HSIP. Countermeasures in the LRSM are categorized by facility type, including signalized intersection, non-signalized intersection, and roadway segments. The majority of, if not all, proposed countermeasures will be selected from the lists in the LRSM.

Identifying and analyzing the patterns in the crash data along with field observations allow for the most appropriate countermeasure to be selected to effectively address safety problems. When applied correctly, countermeasures and their corresponding Crash Reduction Factors (CRFs) can help the City identify the expected safety impacts of installing a combination of countermeasures to reduce crashes and injuries. The goal for the countermeasure selection process is to identify and implement various combinations of countermeasures to achieve the highest possible benefits. Countermeasures play important roles in the calculation of Benefit/Cost Ratios (BCR). The effectiveness of a countermeasure and how well it can maximize the BCR depend on the CRFs, expected life, and systemic approach opportunity.

Table 3.1 includes a list of safety countermeasures that were applied to this project. They were selected from the LRSM. The table provides information on the countermeasure number in the LRSM, a brief description, applicability to type of crash, the Crash Reduction Factor (CRF) used in the Caltrans local HSIP program associated with the countermeasure, the project life or length of time the measure will be effective, the maximum federal reimbursement ratio, and the degree that the countermeasure can be part of a systemic approach. For crash type applicability, "P&B" means the countermeasure applies to pedestrian and bicycle crashes.

This general process is followed for identifying candidate locations and potential countermeasures with small differences in execution for intersections and roadway segments. The following sections will elaborate further on the processes for analyzing the focus facilities and selecting potential countermeasures. Safety countermeasures are not proposed for all the top-ranked locations. Professional judgment was applied by KOA planners and engineers to determine whether appropriate countermeasures could be proposed to reduce high-risk situations.

Table 3.1: Major Safety Countermeasures Applied to Wildomar SSARP

No.	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility
S2	Improve Signal Hardware: Lenses, Back-Plates, Mounting, Size, and Number	All	15%	10	100%
S4	Provide Advanced Dilemma Zone detection	All	40%	10	100%
S6	Install left-turn lanes	All	55%	20	90%
S7	Install protected left turn phase	All	30%	20	100%
S17PB	Install pedestrian countdown signals	P&B	25%	20	100%
S21PB	Install leading pedestrian interval	P&B	60%	10	100%
NS1	Add lighting	Night	40%	20	100%
NS2	Convert to all-way STOP	All	50%	10	100%
NS3	Install signals	All	30%	20	100%
NS4	Convert intersection to roundabout	All	Varies	20	100%
NS6	Install signage	All	15%	10	100%
NS21PB	Install/upgrade pedestrian crossing	P&B	35%	20	100%
R1	Install segment lighting	Night	35%	20	100%
R4	Install guard rail	All	25%	20	100%
R8	Install raise median	All	25%	20	90%
R34PB	Install sidewalk/pathway	P&B	80%	20	90%
R35PB	Install/upgrade pedestrian crossing	P&B	35%	20	90%

3.2 INTERSECTION ANALYSIS METHOD

All intersections of City-owned public streets were reviewed based on the Crash Frequency method and the Equivalent Property Damage Only (EPDO) method. The following summarizes the procedure taken for recommending potential countermeasures at the selected intersections.

- Summarize collision data by intersection and rank by crash frequency and EPDO
- Select a list of candidate intersections for field visit and prepare collision diagrams
- Review field conditions through physical site visits in the City. Identify roadway characteristics that might contribute to the collisions. Assess the nature of prevalent crash types with respect to the intersection's control type, geometrical features, and signal phasing/timing.

- Take photos to document various features of the intersections including geometry and striping, access control, crosswalk, signage, pavement markings, and traffic signal controls.
- Review via Google Maps whenever necessary to check whether any geometry, striping or signage changes have been made in the past few years.
- Evaluate and screen countermeasures from LRSM or Crash Modification Factor (CMF) Clearinghouse (http://www.cmfclearinghouse.org/), a searchable database that can be easily queried to identify CMFs and Crash Reduction Factors (CRFs), which can be derived from the CMFs.
- Identify intersections that do not have a demonstrated crash history but resemble other intersections with documented crash history and risk factors.

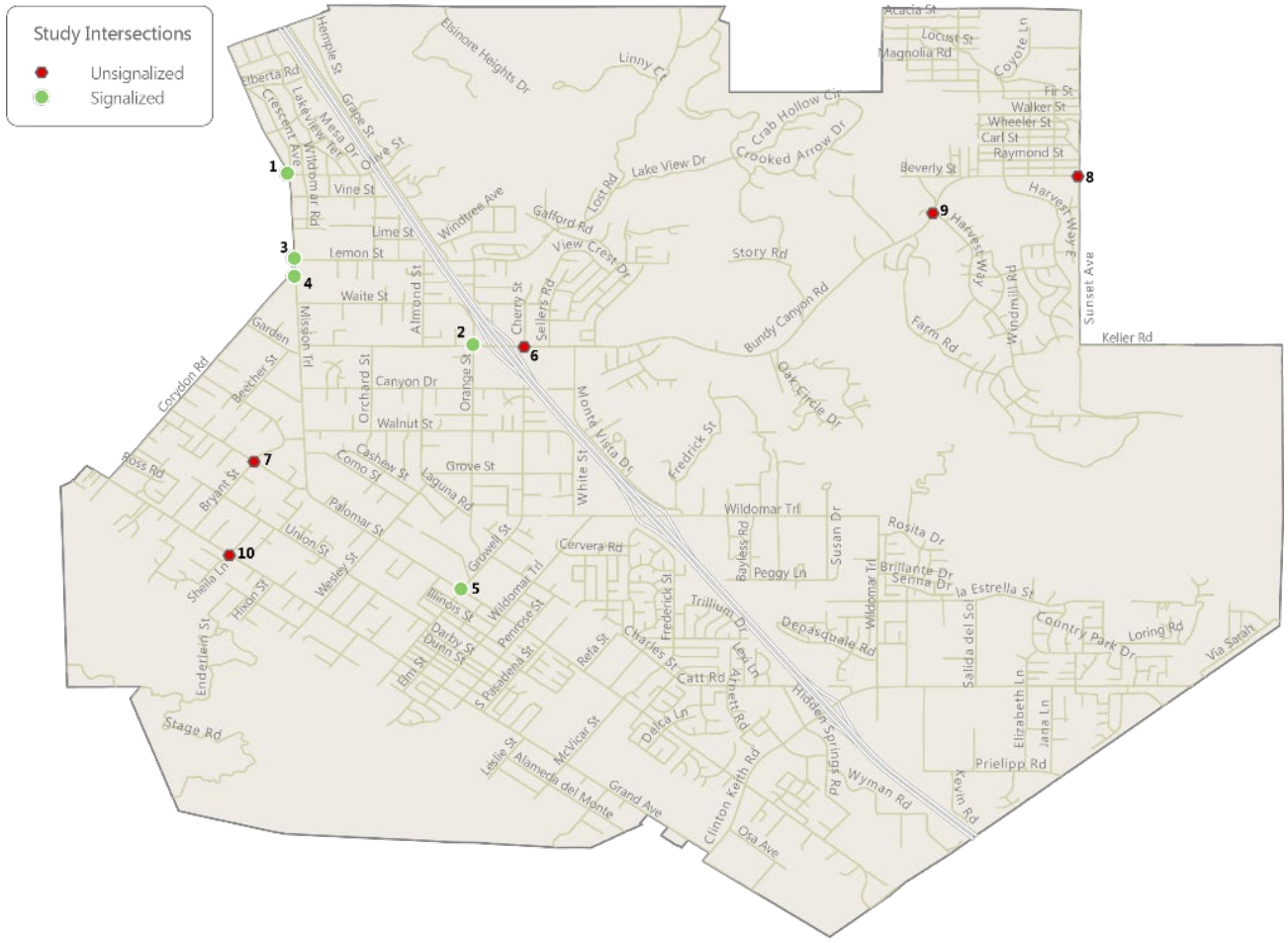
Ten intersections were chosen for potential countermeasure implementation:

1. Mission Trail and Olive Street (Signalized)
2. Bundy Canyon Road and Orange Street (Signalized)
3. Lemon Street and Mission Trail (Signalized)
4. Corydon Road and Mission Trail (Signalized)
5. Gruwell Street and Palomar Street (Signalized)
6. Bundy Canyon Road and Cherry Street (Two-way Stop)
7. Bryant Street and Palomar Street (Two-way Stop)
8. Bundy Canyon Road and Sunset Avenue (Two-way Stop)
9. Bundy Canyon Road and Harvest Way (Two-way Stop)
10. Grand Avenue and Sheila Ln (All-way Stop)

Intersections are not numbered in any particular order, numbering is only used as a means to reference the intersections throughout the report.

The location of the ten intersections is shown in Figure 3.1.

Figure 3.1: Intersections with Proposed Safety Countermeasures



The intersection rankings by Crash Frequency and EPDO scores are provided in Attachment A.1. Traffic counts collected for the selected intersections are provided in Attachment A.2. The collision diagrams for the selected intersections are provided in Attachment A.3.

1. Mission Trail and Olive Street

As shown in Figure 3.2, the intersection is joined by a minor street, Crescent Avenue, which intersects with Olive Street. Mission Trail is shared between the City of Wildomar and the City of Lake Elsinore down the Centerline. It has two lanes in each direction, with a speed limit of 50 miles per hour (mph). On the north leg, a left-turn pocket is provided; on the south leg, a two-way left-turn lane is used as a median. Olive Street has one travel lane on each direction with a speed limit of 25 mph. Standard crosswalks exist on the south leg of Mission Trail and on Olive Street. Residential housing exists along Olive Street, while the land west of Mission Trail (located in Lake Elsinore) is largely undeveloped at present.

Figure 3.2: An Aerial View of the intersection of Mission Trail and Olive Street

Source: Google (2020)

A total of 17 collisions occurred at the intersection of Mission Trail and Olive Street between December 2014 and December 2019. The intersection ranks 1st by total collision frequency and 23rd by the EPDO score method. Collision types consisted of hit-object (7), rear-end (4), broadside (3), and sideswipe (3). The most common primary collision factors were unsafe speed (6) and improper turning (5), although multiple collisions were also reported as caused by DUI and traffic signals and signs violations. Nine collisions occurring at this intersection took place under the dark – with street lights condition.

KOA recommends the following safety countermeasures at this location:

- R4: install additional guardrail to counteract the effects of the horizontal curve located at this intersection which could be leading to hit-object collisions. Specifically, the existing guardrail located southeast of the intersection should be extended north towards the intersection, between the Wildomar Council Center and the signal. KOA also recommends guard rail installation northwest of the intersection just north of the bus stop. These correspond to the locations of hit-object collisions at this intersection.

- S1: install additional safety lighting at this intersection. During fieldwork, KOA identified that lighting was insufficient at this intersection, especially considering the presence of the horizontal curve. This is supported by the collision history that nine out of the 17 collisions in the past five years occurred under the dark – with street lights condition.

- Finally, KOA recommends regularly refreshing crosswalks (see Figure 3.3) and adding an ADA compliant curb ramp at the southwest corner (Lake Elsinore boundary) to ensure safety and accessibility for pedestrians.

Figure 3.3: Faded Crosswalks at Mission Trail and Olive Street

Source: Google (2019)

Similar locations:

- NS1: Almond Street and Bundy Canyon Road

2. Bundy Canyon Road and Orange Street

As shown in Figure 3.4, the east leg of Bundy Canyon Road has two lanes in each direction with a left-turn lane at the intersection, while the west leg narrows down from two lanes in each direction to one lane in each direction. The northbound and southbound movements on Orange Street have a shared through-left lane and a dedicated right-turn lane. There are curb extensions at all four corners and high-visibility school crosswalks. The west leg of Bundy Canyon Road is within the school zone and has a speed limit of 25 mph, while Orange Street has a speed limit of 40 mph. There is a gas station on the northeast corner of the intersection and a retail plaza on the northwest corner; the two corners on the south consist of vacant land. On-street parking is allowed on the north leg. Current pedestrian push buttons are non-ADA compliant (see Figure 3.5) but will be replaced by a funded project in progress by the City.

Figure 3.4: An Aerial View of the Intersection of Bundy Canyon Road and Orange Street

Source: Google (2020)

A total of 14 collisions occurred at the intersection of Bundy Canyon Road and Orange Street from December 2014 to December 2019. The intersection ranks 4th by total collision frequency and 18th by the EPDO method. Almost half of all collisions (six out of 14) were broadside collisions.

KOA recommends the following safety countermeasures at this location:

- S6/S7: Restripe to create an exclusive left-turn lane for both the northbound and southbound directions on Orange Street. During field observations, KOA realized that the current lane geometry for northbound and southbound vehicles may be contributing to the high amount of broadside collisions at this intersection.

- For the northbound direction, there is enough space to re-stripe the approach to include both a dedicated right-turn lane and left-turn lane (there is about 34 feet of right-of-way available, which could be re-striped to a 10-foot left-turn lane, a 12-foot through lane, and a 12-foot dedicated right-turn lane). For the southbound approach, due to limited right-of-way, KOA recommends to re-stripe the approach to include a dedicated left-turn lane and through-right lane. As the I-15 freeway is located east of this intersection, KOA does not believe the re-striping will impede the flow of vehicle traffic.

- S2: Improve visibility by installing retro-reflective tape on backplate.

- Replace the faded "No U-Turn Sign" on the mast arm of the signal facing the southbound traffic on Orange Street (see Figure 3.6).

Figure 3.5: Non ADA-Compliant Pedestrian Push Buttons

Figure 3.6: Faded "No U-turn" Sign of Southbound Traffic on Orange Street

Similar Locations:

- S6: add southbound left-turn pocket on Mission Trail at the intersection of Mission Trail and Vine Street

3. Lemon Street and Mission Trail

As shown in Figure 3.7, Mission Trail has two lanes in each direction while Lemon Street has one lane in each direction. A right-turn pocket is provided on the south leg of Mission Trail while a left-turn pocket is provided on the north leg. ADA ramps and a standard crosswalk are provided for pedestrians to cross Lemon Street. The speed limit is 50 mph on Mission Trail and 25 mph on Lemon Street as the intersection is about 1,000 feet from Jean Hayman Elementary School. There is no development on the west side of Mission Trail (located in Lake Elsinore) or on the southeast corner; on the northeast corner, there is a truck rental agency (U-Haul).

Figure 3.7: An Aerial View of the Intersection of Lemon Street and Mission Trail

Source: Google (2021)

A total of 11 collisions occurred at the intersection of Mission Trail and Lemon Street from December 2014 to December 2019. The intersection ranks 8th by total collision frequency and 26th by the EPDO score. Four collisions were hit-object, three were rear-end, three were sideswipe, and one was a broadside collision. Some noteworthy primary collision factors include four collisions caused by DUI, two caused by traffic signals and signs violations, and two caused by unsafe speed. Five of the collisions occurred slightly east of the intersection or when turning to go east.

KOA recommends the following safety countermeasures at this location:

- KOA identified that there is a U-Haul lot located on the northeast corner of the intersection. The driveway for ingress and egress to this lot is located close to the intersection. Collisions may be caused by cars stopping suddenly to turn into the driveway or from large vehicles turning out of the driveway. KOA recommends that the City coordinate with U-Haul to move the driveway farther away from the intersection, near the east side of the lot.
- There is a STOP pavement marking that has not been completed removed on the east leg despite the presence of a signal at this intersection. KOA recommends removing this pavement marking.
- Repaint the faded existing crosswalk on Lemon Street (see Figure 3.8).

Figure 3.8: Non-Compliant STOP Pavement Marking Located at Mission Trail and Lemon Street

4. Corydon Road and Mission Trail

As shown in Figure 3.9, Mission Trail has two lanes in each direction. There is a left-turn pocket on the south leg and a right-turn pocket on the north leg. Corydon Road is shared between the City of Wildomar and the City of Lake Elsinore down the centerline. On the west leg, Corydon Road has two left-turn lanes and two right-turn lanes for eastbound traffic. It has two entry lanes that quickly narrow into one lane for westbound traffic. ADA ramps are provided on the northwest and southwest corners of the intersection; standard crosswalks are provided on the west and south legs. The speed limit is 50 mph on Mission Trail and 45 mph on Corydon Road. There is no development on the northwest (Lake Elsinore boundary) or southwest corner; on the east side of Mission Trail, there are some low-density industrial and commercial facilities.

Figure 3.9: An Aerial View of the Intersection of Corydon Road and Mission Trail

Source: Google (2021)

A total of ten collisions occurred at the intersection of Mission Trail and Corydon Road from December 2014 to December 2019. The intersection ranks 12th by total collision frequency and 25th by the EPDO score. Collision types include broadside (3), head-on (3), rear-end (2), and sideswipe (1). The common primary collision factors are automobile right of way (2), traffic signals and signs violations (2), and unsafe speed (2). All three broadside collisions were eastbound left-turning cars colliding with southbound through traffic.

KOA recommends the following safety countermeasures at this location:

- S4: There is existing video detection at this location. It would be beneficial to install advanced dilemma zone detection on all three legs, which would help reduce left-turn collisions due to red light violations.

- S2: All vehicle heads, which are currently worn down, should be replaced and include LED left turn arrow vehicle heads, which would increase vehicle head visibility.

- S21PB: Currently, there are two eastbound dedicated right-turn lanes which are required to yield to pedestrians in the crosswalk on the south leg. KOA recommends adding a leading pedestrian interval to improve safety in this arrangement.

- Eliminate the dual receiving lanes on the west leg of the intersection, as they quickly merge into one lane and require drivers to act quickly after turning.

The City has taken exploratory efforts with the City of Lake Elsinore to realign the intersection to more of a traditional "T" shaped intersection. During this effort, one or more of the above recommendations could be implemented.

Similar Location:

- S21PB: Clinton Keith Road and Hidden Spring Road (leading pedestrian interval for the northbound right-turn approach on Hidden Springs Road)

5. Gruwell Street and Palomar Street

As shown in Figure 3.10, both Gruwell Street and Palomar Street have one lane in each direction. Left-turn pockets are provided on both legs of Palomar Street. The left-turn phasing is permissive in all directions. Standard crosswalks are provided on three sides although ADA ramps are absent. The speed limit on Gruwell Street is 35 mph. There is no development around the intersection, except for the Wildomar Cemetery District on the east corner.

Figure 3.10: An Aerial View of the Intersection of Gruwell Street and Palomar Street

Source: Google (2020)

A total of ten collisions occurred at the intersection of Gruwell Street and Palomar Street from December 2014 to December 2019. The intersection ranks 12th by total collision frequency and 30th by the EPDO score. The most common collision type is broadside (6), followed by head-on (1), hit object (1), rear-end (1), and sideswipe (1). The leading primary collision factors are improper turning (3) and traffic signals and signs violations (3). The broadside collisions were primarily left-turning vehicles heading eastbound or westbound colliding with vehicles heading through the intersection northbound or southbound.

While collisions during left turns may be caused by red-light running, this intersection does not meet the warrant for dedicated left-turn protected-permissive phasing due to its low left-turn volumes.[1]

KOA recommends the following safety countermeasures at this location:

- S2: upgrade existing vehicle heads to LED vehicle heads and provide LED luminaires.
- S4: Install advanced dilemma zone detection
- Upgrade curb ramps to be ADA compliant to ensure accessibility for pedestrians.

[1] See MUTCD Section 4D.19, "for a traffic-actuated signal, 50 or more left turning vehicles per hour in one direction with the product of the turning and conflicting through traffic during the peak hour of 100,000 or more"

6. Bundy Canyon Road and Cherry Street

As shown in Figure 3.11, Bundy Canyon Road has two lanes in each direction while Cherry Street has one lane for each direction. The intersection is stop-controlled on Cherry Street. A left-turn pocket is provided on the west leg of Bundy Canyon Road. The speed limit on Bundy Canyon Road is 45 mph. There is no development immediately north of Bundy Canyon Road; on the south side, there is a gas station and a convenience shop.

Figure 3.11: An Aerial View of the Intersection of Bundy Canyon Road and Cherry Street

Source: Google (2020)

A total of seven collisions occurred at the intersection of Bundy Canyon Road and Cherry Street from December 2014 to December 2019. The intersection ranks 17th by total collision frequency and 45th by the EPDO score. The most common collision type is broadside (3), followed by head-on (2), and rear-end (2). The leading primary collision factors are improper turning (2) and automobile right of way (2). There are three collisions involving eastbound left-turning cars, and one collision involving a southbound right-turning car.

During field review, KOA noticed that existing striping is creating a confusing situation in the westbound direction at this intersection. The westbound direction splits into two lanes immediately prior to the intersection. Faded striping, the short distance between the change in the number of lanes and the intersection, and potential sight distance issues looking left from a car stopped at the north leg (see Figure 3.12) may all be contributing to a difficulty in recognizing the need to check for two approach lanes or a difficulty in seeing these approach lanes.

Figure 3.12: Sight Distance Blocked by Mud Mound for Vehicles Turning out of Cherry Street

The eastbound striping of lanes may also be creating confusion, though there is no evidence of this from collision history. A right-turn lane is added to two approach lanes immediately at this intersection. The second of the two through lanes begins to merge into one single through lane, with the first associated pavement marking located right at this intersection.

KOA recommends the following safety countermeasures at this location:

- Restripe Bundy Canyon Road to provide for only one westbound travel lane east of Cherry Ave.
- Restripe the second eastbound through lane to become a "trap" right-turn lane, meaning having it change directly into a right-turn lane instead of the existing situation, where a dedicated right-turn lane is added and the two through lanes merge together afterwards.

Note that a development project is funding a change to the alignment of this intersection due to a traffic impact study. This may resolve one or more of the issues that KOA encountered at this intersection.

7. Bryant Street and Palomar Street

As shown in Figure 3.13, Bryant Street and Palomar Street have one lane in each direction. The intersection is stop-controlled on Bryant Street. The speed limit is 25 mph on both streets. Being in a residential neighborhood, low-density single-family homes can be found on all four corners of the intersection.

Figure 3.13: An Aerial View of the Intersection of Bryant Street and Palomar Street

Source: Google (2020)

A total of five collisions occurred at the intersection of Bryant Street and Palomar Street from December 2014 to December 2019. The intersection ranks 24th by total collision frequency and 37th by the EPDO method. The most common collision type is broadside (3), followed by hit-object (1), and rear-end (1). One broadside collision involved a bicyclist traveling north making a left turn from Bryant Street and colliding with a vehicle traveling west on Palomar Street, causing property damage. The main primary collision factors are automobile right of way (2) and unsafe speed (1).

KOA believes the lack of a STOP sign on the north leg (see Figure 14) and sight distance insufficiencies for vehicles looking right and making a southbound left turn from this location likely contributed to two of the observed collisions.

Figure 3.14: Missing Stop Sign and Pavement Markings on the Bryant Street North of Palomar Street

KOA recommends the following safety countermeasures at this location:

- NS2: Conduct a warrant to make this intersection an all-way stop; while it is unlikely that the intersection will meet the volume threshold required for the warrant, an all-way stop can be justified under the additional consideration of a failure to meet sufficient corner sight distance required for a two-way stop.[2] It is likely that this intersection will meet the warrant. If not, at minimum the missing stop sign should be added.
- NS1: Add safety lighting at the intersection, as virtually none is present at this intersection currently.

Similar Locations:
Add missing stop signs:

- Bundy Canyon Road and Harvest Way E – missing stop sign north of the intersection
- Bundy Canyon Road and Club Avenue – missing stop sign north of the intersection
- Bundy Canyon Road and Raciti Road – missing stop sign north of the intersection

NS2: Convert to all-way STOP controlled intersection (from two-way controlled intersection)

- Mission Trail and Palomar Street

[2] See MUTCD Section 2B.07, "Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop"

8. Bundy Canyon Road and Sunset Avenue

As shown in Figure 3.15, Bundy Canyon Road and Sunset Avenue have one lane on each direction. The intersection is stop-controlled on Sunset Avenue. The south leg is unpaved while the north leg is unmarked. The speed limit is 45 mph on Bundy Canyon Road and 25 mph on Sunset Avenue. There is no development immediately around the intersection; Sunset Avenue is the entrance to some small residential communities.

Figure 3.15: An Aerial View of the Intersection of Bundy Canyon Road and Sunset Avenue

Source: Google (2020)

A total of five collisions occurred at the intersection of Bundy Canyon Road and Sunset Avenue from December 2014 to December 2019. The intersection ranks 24th by total collision frequency and 37th by the EPDO method. All collisions are rear-end collisions that happened to vehicles traveling east on Bundy Canyon Road, resulting one visible injury, two complaint of pain, and two property damage only cases. Four collisions were caused by unsafe speed, and one by following too closely.

Adding a left-turn pocket on Bundy Canyon Road would reduce the chance of rear-end collisions in the future. However, there is not sufficient right-of-way to add a dedicated left-turn lane.

KOA recommends the following safety countermeasures at this location:

- NS6: Add additional Side Road Symbol Sign (MUTCD W2-2) and Advance Street Name Sign (MUTCD D3-2) to help motorists better anticipate that an intersection is upcoming where a vehicle may slow down and turn.

W2-2 Sign

D3-2 Sign

Similar Locations:

- Bundy Canyon Road and Harvest Way E and Club Avenue
- Bundy Canyon Road and Raciti Road
- Albert Street and Corydon Road and Lakeside Drive

9. Bundy Canyon Road and Harvest Way

As shown in Figure 3.16, Bundy Canyon Road and Harvest Way have one lane on each direction. The intersection is stop-controlled on Harvest Way. The north leg of Bundy Canyon Road has a left-turn pocket and the south leg of Bundy Canyon Road has a right-turn lane. The speed limit is 45 mph on Bundy Canyon Road and 25 mph on Harvest Way. There is no development immediately around the intersection; Harvest Way is the entrance to some small residential communities.

Figure 3.16: An Aerial View of the Intersection of Bundy Canyon Road and Harvest Way

Source: Google (2021)

A total of 11 collisions occurred at the intersection of Bundy Canyon Road and Harvest Way from December 2014 to December 2019. The intersection ranks 8th by total collision frequency and 6th by the EPDO score. Six out of the 11 collisions were broadsides that were not caused by DUI. One out of the six collisions resulted in a fatality and the remaining five collisions resulted in Complain of Pain injuries.

KOA recommends the following safety countermeasures at this location:

- NS3: Signalize this intersection; the current traffic volumes will not meet the signal warrant. However, signalizing the intersection can bring significant benefits in reducing collisions in the future.
- NS6: Add W3-3 signal ahead sign on Bundy Canyon Road on both sides of the intersection

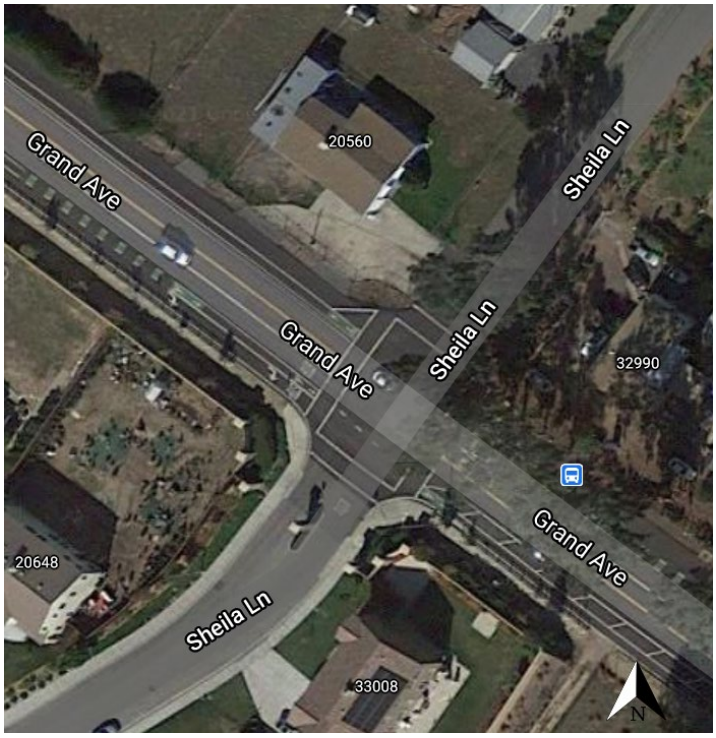
Similar Locations:

- NS3: Signalize the intersection of Bundy Canyon Road and Monte Vista Drive
- NS3: Signalize the intersection of Bundy Canyon Road and Orchard Street
- Add W3-3 signal ahead sign northeast of the intersection of Bundy Canyon Road & Farm Road
- NS6: For the intersection of Grape Street and Olive Street, add W3-1 stop sign ahead sign on Grape Street north of the intersection, and on Olive Street east of the intersection

10. Grand Avenue and Sheila Lane

As shown in Figure 3.17, the intersection of Grand Avenue and Sheila Lane is controlled by an all-way stop sign. Grand Avenue has one travel lane and one bike lane in each direction. There are a left-turn pocket and a right-turn lane on Grand Avenue at this intersection on both sides of Sheila Lane. There is also a multi-purpose trail on the south side of the roadway. Sheila Lane has one travel lane in each direction and the south leg leads into a single-family residential community. The speed limit is 45 mph on Grand Avenue and 25 mph on Sheila Lane.

Figure 3.17: An Aerial View of the Intersection of Grand Avenue and Sheila Lane



Source: Google (2021)

A total of four collisions occurred at the intersection from December 2014 to December 2019. All four collisions were rear-end collisions. Two out of the four collisions resulted in injuries. The intersection ranks 32nd by total collision frequency and 42nd by the EPDO score.

KOA recommends the following safety countermeasures at this location:

- NS4: Convert intersection to a roundabout

Similar Locations:

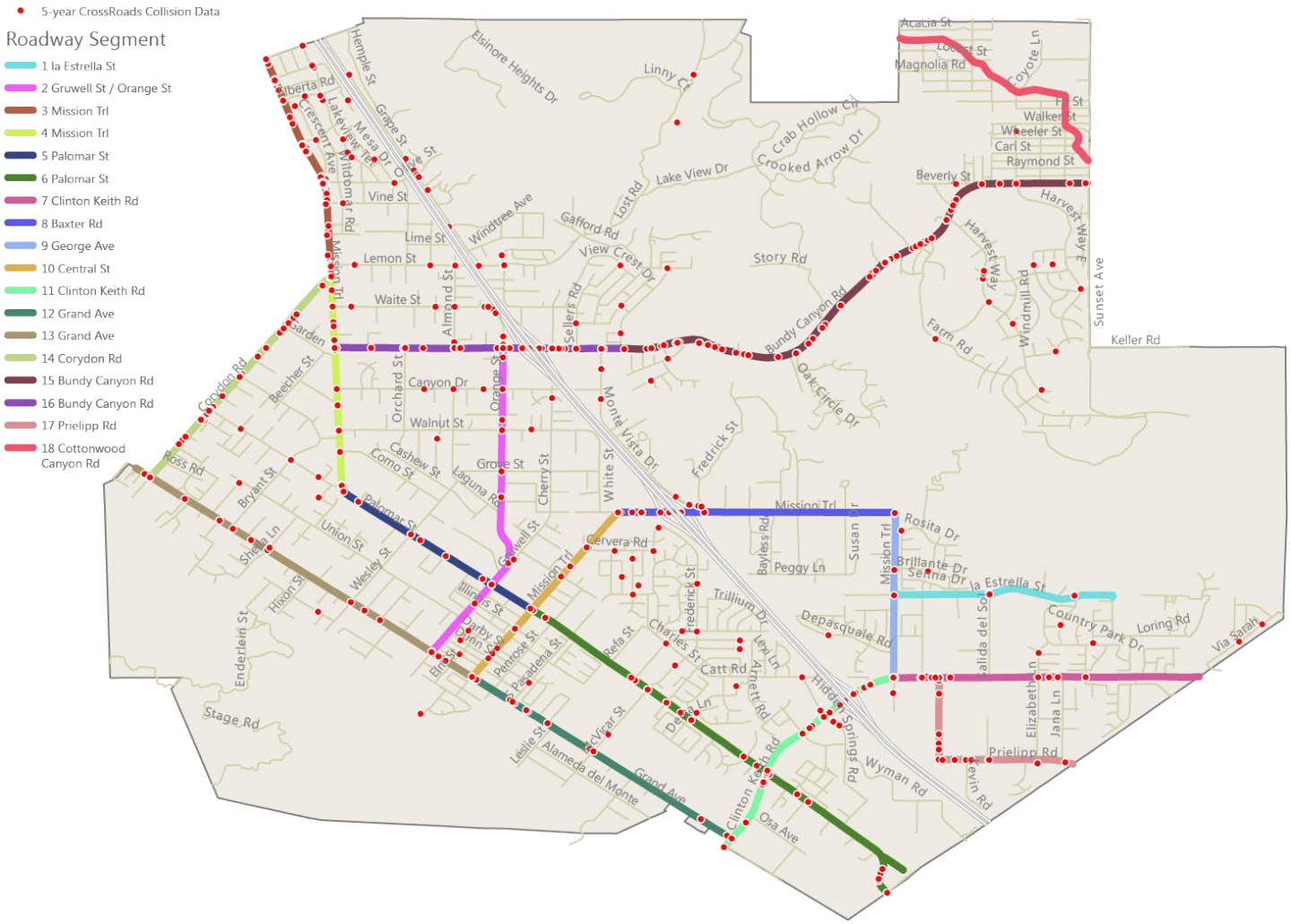
NS4:

- Wildomar Trail and I-15 South on and off ramps
- Wildomar Trail and I-15 North on and off ramps
- Bundy Canyon Road and Almond Street

3.3 ROADWAY SEGMENT ANALYSIS

According to the Multiple Species Habitat Conservation Plan (MSHCP) and Wildomar Mobility Plan – Existing Condition Review, all roadways within the City were classified into four categories of high traffic roadways: arterials, major roads, secondary roads, and collectors. KOA defined a total of 18 roadway segments that include all four categories in the City. Local streets are excluded due to their low traffic volumes and collision frequency. The definition of the roadway segments was primarily based on major barriers such as freeways and rail tracks, major cross streets, roadway configuration, and land use. The roadway segment map is provided in Figure 3.18.

Figure 3.18: City of Wildomar Roadway Segment Map



Each corridor segment was analyzed based on the total number of collisions, the number of non-intersection collisions, and collision severity. The following three ranking methods were used to rank the roadway segments:

- Collision frequency
- Collision rate
- Equivalent Property Damage Only (EPDO)

The completed roadway ranking tables are provided in Attachment A.4. The 24-hour traffic counts conducted by the City in 2019 were utilized for calculating crash rates. The counts are provided in Attachment A.5. The collision diagrams for the selected roadway segments are provided in Attachment A.6.

Ranking is a quantitative method used to evaluate a particular corridor segment and compare with various other segments. It is ultimately just a tool to streamline the crash analysis and selection process for candidate locations. High ranking segments shown at the top of the list are not necessarily ideal candidates for potential improvements and selecting locations to further review requires discernment.

After ranking the roadway segments, the next step is to view the various collision data that is included for each roadway segment. This process requires that all high collision segments in the City are reviewed to determine patterns or trends in crashes, with the objective of searching for segments with unusual crash rates and characteristics. Several steps are taken when a roadway segment is selected for review, as shown below:

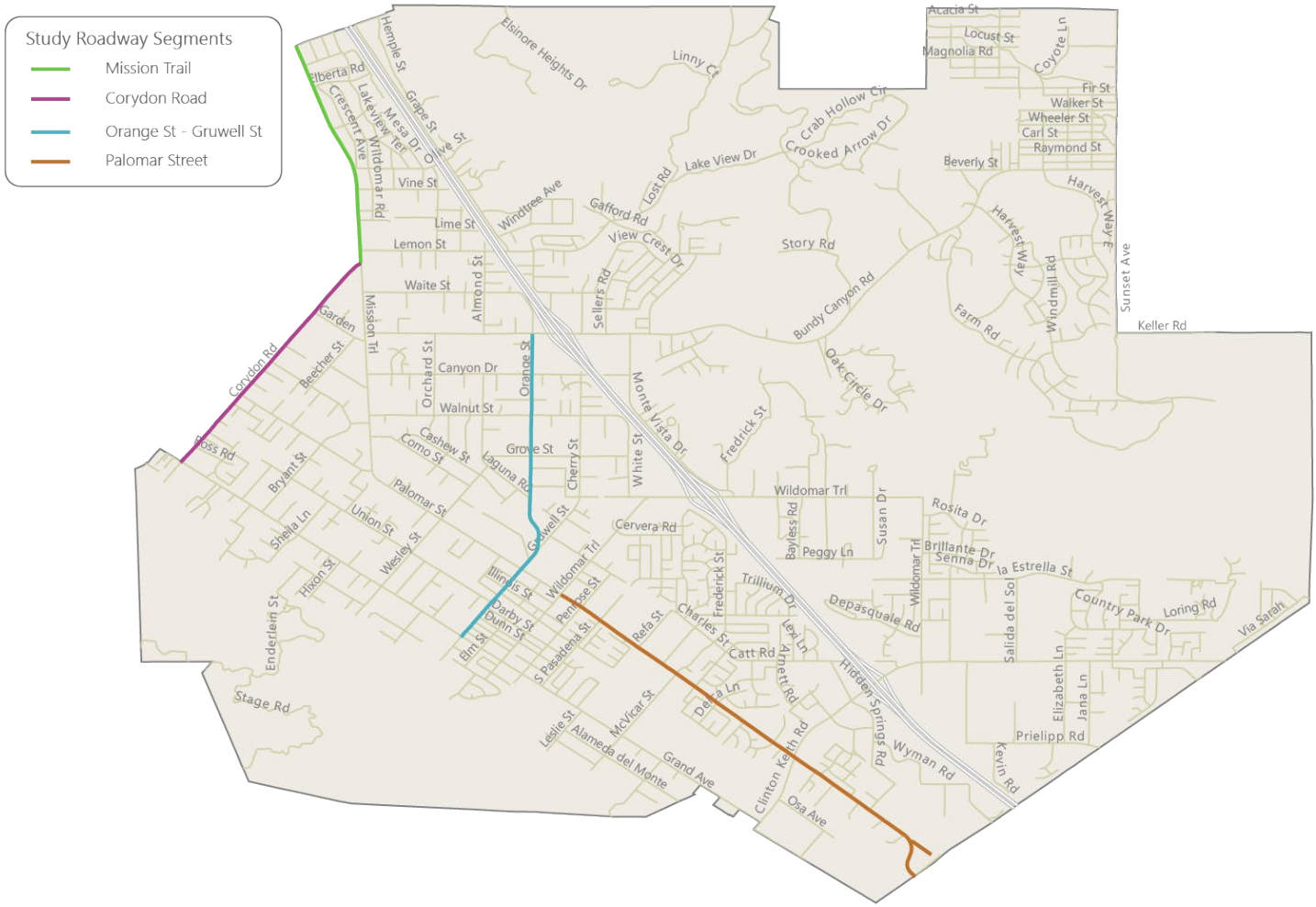
- Select a list of roadway segments for field visit and prepare collision diagrams.
- Review field conditions through physical site visits in the City. Identify roadway characteristics that might contribute to the collisions. Assess the nature of prevalent crash types with respect to the roadway segment's vertical/horizontal alignment, median type, lane width, shoulder, signing and striping, speed limit, and others.
- Take photos to document various features of the roadway segments including geometry and striping, medians, curbs, sidewalks, driveways, signage, pavement markings, and others.
- Review via Google Maps whenever necessary to check whether any geometry, striping or signage changes have been made in the past few years.
- Evaluate and screen countermeasures from LRSM or Crash Modification Factor (CMF) Clearinghouse (http://www.cmfclearinghouse.org/), a searchable database that can be easily queried to identify CMFs and Crash Reduction Factors (CRFs), which can be derived from the CMFs.
- Identify candidate roadway segments that do not have a demonstrated crash history but resemble other segments with documented crash history and risk factors. Once identified, the roadway segment is subjected to analysis through the aforementioned steps.

Four roadway segments were selected for analysis and recommendations are provided for roadway improvements. Again, numbering is only used as a reference, not an order of priority:

1. Corydon Road from Mission Trail to Grand Avenue
2. Mission Trail from Malaga Road to Corydon Road
3. Orange Street - Gruwell Street from Bundy Canyon Road to Grand Avenue
4. Palomar Street from Wildomar Trail (Central Street) to Southern City Limit

The locations of the four roadway segments are shown in Figure 3.19.

Figure 3.19: Roadway Segments with Proposed Safety Countermeasures



1. Corydon Road from Mission Trail to Grand Avenue

This segment on Corydon Road from Mission Trail to Grand Avenue is approximately one and a half miles long. It is shared between the City of Wildomar and City of Lake Elsinore down the centerline. The roadway width ranges from 25 to 60 feet with a posted speed limit of 45 mph. Between Grand Avenue and Union Street, Corydon Road has one lane in each direction with a two-way left-turn lane in the center. Between Union Street and Palomar Street, there are two lanes for southwest-bound traffic and one-lane for northeast-bound traffic, separated by a two-way left-turn lane. Between Palomar Street and Mission Trail, there is one lane in each direction; a two-way left-turn lane exists in a developed commercial area and is replaced by a double yellow line in the undeveloped rural area. The daily traffic volume was approximately 14,530 in 2019. This segment includes a total of four signalized intersections.

A total of 45 collisions occurred on this segment from December 2014 to December 2019, ranking 5th by collision frequency, 4th by crash rate, and 8th by EPDO score. The majority of the collisions occurred during the daytime. Rear-end, broadside, and hit-object were the most common collision types. 16 (36%) collisions were due to unsafe speed and 11 (24%) were caused by improper turning.

During the field visit to this segment, KOA noticed general issues such as speeding, lack of street lighting, insufficient pedestrian infrastructure, and sight distance issues.

The intersection of Corydon Road & Bryant Street is shown in Figure 3.20. There were three rear-end collisions at this intersection. KOA recommends the following improvements at this location:

- Pave 100 feet of Bryant Street immediately adjacent to Corydon Road
- R28: Add edge line striping on Corydon Road near the intersection
- NS1: Add intersection lighting

Figure 3.20: A Street View of Bryant Street and Corydon Road

Source: Google (2019)

The intersection of Corydon Road & Palomar Street is shown in Figure 3.21. There were two pedestrian collisions at this intersection. KOA recommends the following improvements at this location:

- Add high visibility crosswalks
- Add ADA compliant curb ramp at the southeast corner
- S17PB: Install pedestrian countdown signal heads

Figure 3.21: An Aerial View of Palomar Street and Corydon Road

Source: Google (2021)

Figure 3.22 shows the stretch of Corydon Road north of Union Street. There were three collisions of vehicles traveling in the southbound direction towards the intersection of Cordon Road and Union Street. KOA recommends the following improvement at this location:

- Increase the length of the dashed line indicating that the right lane will become a "trap" dedicated right-turn only lane to 775 feet, and move "right lane must turn right" sign back to the start of this dashed line[3] (these improvements are located on the Lake Elsinore boundary).

[3] See MUTCD Figure 3B-14 and Table 2C-4. The length of the elephant tracks should correspond to distance "d" in Figure 3B-14, and this distance is the same as the advance placement of a warning sign in Table 2C-4. In this situation, guidance should follow Condition A: Speed Reduction and Lane Changing in Heavy Traffic, which suggests a distance of 775 feet at 45 miles per hour

Figure 3.22: An Aerial View of Corydon Road North of Union Street

Source: Google (2021)

The intersection of Corydon Road and Grand Avenue is shown in Figure 3.23. As shown in Figure 3.24, the southbound signal for vehicles on Corydon Road turning to Grand Avenue currently features a right-turn overlap.

KOA recommends the following improvements at this intersection (located on the Lake Elsinore boundary):

- Remove right-turn overlap (this is not permissible as there is no dedicated right-turn pocket[4])
- S2: Add near side signal at north leg of Grand Avenue
- S4: Install advanced dilemma zone detection
- S7: Install protected left-turn phasing NB/SB (left-turn lane already exists)
- Add ADA compliant curb ramps at the northeast and southwest corners of the intersection.

[4] See MUTCD Section 4D.21, "A protected only mode right-turn movement that does not begin and terminate at the same time as the adjacent through movement shall not be provided on an approach unless an exclusive right-turn lane exists."

Figure 3.23: An Aerial View of Corydon Road and Grand Avenue

Source: Google (2020)

Figure 3.24: Street View of Southbound Corydon Road towards Grand Avenue

KOA also recommends narrowing the southwest bound dual receiving lane starting at the west leg of Mission Trail & Corydon Road, specifically by reducing the number of receiving lanes from two to one (see ***4. Corydon Road and Mission Trail*** under the intersection section). As the City is working on alignment changes with the City of Lake Elsinore, work on this re-alignment may help to improve this situation.

2. Mission Trail from Malaga Road to Corydon Road

This segment on Mission Trail from Malaga Road to Corydon Road is approximately 1.4 miles long. The roadway width ranges from 48 to 72 feet with a posted speed limit of 50 mph. The centerline of the roadway forms the boundary between Lake Elsinore and Wildomar. Between Malaga Road and Elberta Road/Hidden Trail, Mission Trail has two lanes for northbound traffic and three lanes for southbound traffic, separated by a two-way left-turn lane. Between Elberta Road/Hidden Trail and Olive Street, Mission Trail narrows down to two lanes in each direction with a two-way left-turn lane in the center. South of Olive Street, the roadway segment continues to narrow and the median becomes a double-yellow line. The daily traffic volume was approximately 20,587 in 2019. This segment includes a total of five signalized intersections.

A total of 79 collisions occurred on this segment from December 2014 to December 2019, ranking 1st by collision frequency, 2nd by crash rate, and 2nd by EPDO score. Thirty-six (46%) of the total collisions happened during nighttime. Rear-end, broadside, and hit-object were the most common collision types. Seventeen (22%) collisions were caused due to unsafe speed, 16 (20%) were by DUI, and 15 (19%) were caused by improper turning.

During the field visit, KOA observed issues consistent across the corridor, including high speeds, lack of street lighting, and poor sight distance in some locations. There were two fatalities with pedestrians at Mission Trail and Sylvester Road, which both occurred at night. As shown in Figure 3.25, there is a lack of adequate street lighting on Mission Trail.

Figure 3.25: Street View of Mission Trail near Vine Street

KOA recommends the following improvements along this roadway segment:

- R1: Add segment lighting along the entire roadway segment
- R8: Install raised median from Malaga Road to Lemon Street
- Add ADA compliant curb ramps at Mission Trail & Elberta Road

Similar Locations:

R1:

- Add intersection and segment lighting on Wildomar Trail between Baxter Road and Killarney Ln
- Add intersection and segment lighting on Bundy Canyon Road between Mission Trail and Sunset Avenue
- Add intersection and segment lighting on Mission Trail from Corydon Road to Bundy Canyon Road
- Enhance intersection and segment lighting on Clinton Keith Road between Stable Lanes Road and Elizabeth Lane

3. Orange Street - Gruwell Street from Bundy Canyon Road to Grand Avenue

This is segment of Orange Street is approximately two miles long. The Orange Street segment starts from Bundy Canyon Road, and merges into Gruwell Street and ends at Grand Avenue. The roadway width ranges from 24 to 48 feet with a posted speed limit of 50 mph. The daily traffic volume was approximately 2,769 in 2019. This segment includes a total of two signalized intersections.

A total of 34 collisions occurred on this segment from December 2014 to December 2019, ranking 6th by collision frequency, 1st by crash rate, and 9th by EPDO score. Eleven (32%) of the total collisions happened during nighttime. Broadside and head-on were the most common collision types. Five (15%) collisions were caused by improper turning, five by traffic signals and signs violation, and four (12%) by unsafe speed.

During fieldwork, KOA identified issues of speeding, lack of street lighting, and lack of pedestrian infrastructure on the corridor, which could contribute to the collisions with pedestrians and collisions occurring at night that have happened along the corridor.

KOA recommends the following improvements along the roadway segment:

- R1: Add street lighting along the entire segment
- R34PB: Add sidewalks from Bundy Canyon Road to Grove Street on the west side of the roadway
- R35PB: Add crosswalks at Grove Street on the West leg and Walnut Street on the West leg

4. Palomar Street from Wildomar Trail (Central Street) to Southern City Limit

The segment of Palomar Street from Wildomar Trail (Central Street) to the southern city limit is approximately 2.5 miles long. The daily traffic volume was approximately 9,802 in 2019. This segment includes a total of two signalized intersections.

A total of 29 collisions occurred on this segment from December 2014 to December 2019, ranking 7th by collision frequency, 13th by crash rate, and 5th by EPDO score. Ten (34%) of the total collisions happened during nighttime. Hit-object, rear-end, and overturned were the most common collision types. Seven (24%) collisions were caused by unsafe speed and five (17%) were due to DUI.

KOA recommends the following improvement on Palomar Street from Wildomar Trail (Central Street) to Frederick Street:

- Add striping and signage to better indicate that only one lane is present in each direction.

Similar Location:

- Bundy Canyon Road between Orange Street and I-15 northbound ramp

The intersection of Palomar Street & Frederick Street is shown in Figure 3.26. KOA recommends the following improvements at this intersection:

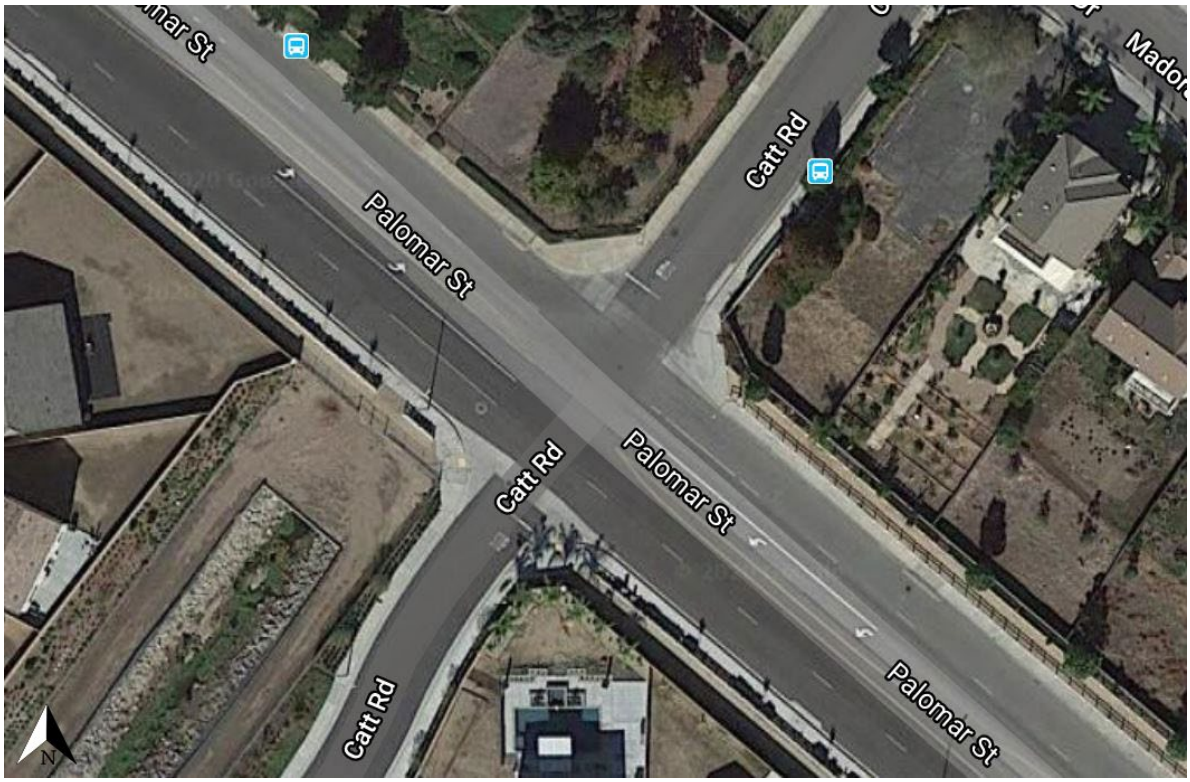
- Add delineators to tighten intersection at the southeast corner
- NS21PB: Add continental crosswalk

Figure 3.26: An Aerial View of the Intersection of Palomar Street and Frederick Street

Source: Google (2020)

The intersection of Palomar Street & Catt Road is shown in Figure 3.27. KOA noticed during the filed visit that the two left-turn pockets don't align well. The aerial view of the intersection confirms that.

Figure 3.27: An Aerial View of the Intersection of Palomar Street and Catt Road



Source: Google (2020)

KOA recommends:

- Re-align left-turn pockets in the eastbound and westbound direction

Similar locations:

- Clinton Keith Road at Elizabeth Lane
- Clinton Keith Road at Inland Valley Drive

As shown in Figure 3.28, a push-button for bike crossing is installed on the signal pole at the northwest corner of Palomar Street and Clinton Keith Road. However, there is a right-turn lane in between the bike lane and the signal pole, which makes it infeasible for bicyclists to push the button.

KOA recommends the following improvements at this intersection:

- Remove the push-button for bike crossing (the City already plans to do it)
- Add video or loop bike detection
- S1: Remove Type 1A signals and replace with Type 15 to provide more lighting

Figure 3.28: Push Button for Bike Crossing at the Intersection of Palomar Street and Clinton Keith Road

It is also noted that five collisions from overturning vehicles occurred on Palomar Street at the S-shaped curve near the eastern city limit (see Figure 3.29). However, this segment is currently being re-aligned with funding from a development project, which may include improvements to avoid collisions of this type in the future. KOA would recommend additional signage and guardrail if the current alignment was maintained.

Figure 3.29: An Aerial View of Palomar Street at the Eastern City Limit

Source: Google(2020)

4.0 SAFETY PROJECTS

Safety projects are proposed at 10 intersections and 4 roadway segments, based on the safety countermeasures proposed in the previous section, plus at 13 additional intersections and 7 additional roadway segments with similar characteristics as the intersections and segments discussed. This section provides the project scope, collision reduction benefits calculation, cost estimation and Benefit to Cost (B/C) ratio analysis. This section also discusses and summarizes the project prioritization for HSIP application.

4.1 PROJECT SCOPES AND BENEFIT CALCULATIONS

The development of project scopes involves identifying one or more specific countermeasures at potential locations for safety improvements. For each location, a general scope of the project(s) is described. The exhibits of the project concepts for selected projects are provided in Attachment A.7.

Expected benefits are derived by applying the proposed countermeasures and corresponding Crash Reduction Factors (CRFs) to the expected crashes. This involves:

- Identifying the current number of crashes without treatment
- Applying CRFs by type and severity
- Applying a benefit value by crash severity
- Calculating the annual collision reduction benefits and multiplying by the project life in years

Caltrans has established some key requirements and procedures for its calls-for-projects to allow agencies maximum flexibility in combining countermeasures and locations into a single project while ensuring all projects can be consistently ranked on a statewide basis. These include:

- Only a maximum of three (3) individual countermeasures can be utilized in the B/C ratio for a project.
- For a countermeasure to be utilized in the B/C ratio calculations, it must represent a minimum of 15%of the project's total construction cost. This is intended to ensure that minor and insignificant elements of the project are not misrepresented to be a major safety effort by the agency.

An engineer determining the benefits of newly installed infrastructure first determines the number of collisions with potential to be prevented by the improvement. The engineer then applies the CRF which gives the rough percentage of crashes that would actually be prevented. The next step in estimating the overall benefit of a proposed improvement project is to multiply the expected reduction in crashes by a generally accepted value for the "cost" of crashes. The expected "benefit" value for a project is the expected "reduction in costs" value from reducing future crashes. The source for the costs by collision severity level was taken from Attachment D of the Caltrans Local Roadway Safety Manual:

- Fatal - $5,579,400
- Severe Injury - $297,100
- Other Visible Injury - $108,600
- Complaint of Pain - $61,300
- Property Damage Only - $10,000

The final step in calculating the total safety project benefits is to divide the benefits by the number of years the collision data was collected (five years for this project), and then multiply this value by the project life in years.

For this SSAR, instead of calculating project benefits manually, project benefits were derived from entering collision data directly into the HSIP Analyzer tool. The tool auto-calculates project collision reduction benefits based on the method discussed above, and reduces benefits calculated if more than one project is included due to cumulative effects.

In Table 4.1 the project scopes are listed, including the applicable countermeasure category for each improvement and benefits calculated according to the method above. Project numbering references the intersection and roadway segment analysis in Chapter 3 above; they do not designate an order of priority. Projects beginning with an "A" are projects proposed at intersections that were not chosen for analysis in Chapter 3 but are similar or related intersections to at least one of the locations studied where similar treatments can be recommended. Note that projects A1 and A6 were deemed unsuitable and dropped during the process of developing the SSAR. The lack of inclusion is intentional.

Table 4.1: Safety Project Scopes

Project 1: Mission Trail & Olive Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R4	Install guard rail	The existing guardrail located southeast of the intersection should be extended north towards the intersection, between the Wildomar Council Center and the signal. Guard rail should also be installed northwest of the intersection just north of the bus stop.	All	25%	20	$1,215,300
CUSTOM	Pedestrian improvements	Repaint crosswalks and add an ADA compliant curb ramp at the southwest corner to ensure safety and accessibility for pedestrians.	N/A	N/A	N/A	N/A

An exhibit of the proposed safety projects is provided in Attachment A.7.

Project 2: Bundy Canyon Road & Orange Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S2	Improve signal hardware	Furnish and install retro-reflective tape on vehicle head backplate.	All	15%	10	$533,925
S4	Provide Advanced Dilemma Zone Detection	Install advanced dilemma zone detection	All	40%	10	$1,423,799
S7	Install left-turn lane	Restripe to create an exclusive left-turn lane for both the northbound and southbound directions on Orange Street.	All	30%	20	$2,479,470
CUSTOM	Replace sign	Replace the faded "No U-Turn Sign" on the mast arm of the signal facing the southbound traffic on Orange Street	N/A	N/A	N/A	N/A

An exhibit of the proposed safety project is provided in Attachment A.7.

Project 3: Lemon Street & Mission Trail

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Move driveway	Coordinate with U-Haul to move the driveway farther away from the intersection, near the east side of the lot.	N/A	N/A	N/A	N/A
CUSTOM	Remove pavement marking	There is a STOP pavement marking that has not been completely removed on the east leg despite the presence of a signal at this intersection. Remove this pavement marking.	N/A	N/A	N/A	N/A
CUSTOM	Repaint crosswalk	Repaint the faded existing crosswalk on Lemon Street	N/A	N/A	N/A	N/A

An exhibit of the proposed safety project is provided in Attachment A.7.

Project 4: Corydon Street & Mission Trail

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S2	Improve signal hardware	All vehicle heads, which are currently worn down, should be replaced by LED left turn arrow vehicle heads, which would increase vehicle head visibility.	All	15%	10	$212,910
S4	Provide Advanced Dilemma Zone Detection	There is existing video detection at this location. Install advanced dilemma zone detection on all three legs	All	40%	10	$567,759
S21PB	Add leading pedestrian interval	Add leading pedestrian interval to improve safety with presence of two eastbound dedicated turn lanes.	P&B	60%	10	$0
CUSTOM	Remove lane	Eliminate the dual receiving lanes on the west leg of the intersection.	N/A	N/A	N/A	N/A

A typical exhibit of advanced dilemma zone detection installation is provided in Attachment A.7.

Project 5: Gruwell Street & Palomar Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S2	Improve signal hardware	Upgrade existing vehicle heads to LED vehicle heads and provide LED luminaries	All	15%	10	$107,818
S4	Provide Advanced Dilemma Zone Detection	Install advanced dilemma zone detection	All	40%	10	$287,515
CUSTOM	Pedestrian improvements	Upgrade *all* curb ramps to ADA compliant	N/A	N/A	N/A	N/A

A typical exhibit of advanced dilemma zone detection installation is provided in Attachment A.7.

Project 6: Bundy Canyon Road & Cherry Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Remove lane	Restripe Bundy Canyon Road to provide for only one westbound travel lane east of Cherry Ave.	N/A	N/A	N/A	N/A
CUSTOM	Restripe lane	Restripe the second eastbound through lane to become a "trap" right-turn lane, meaning having it change directly into a right-turn lane instead of the existing situation, where a dedicated right-turn lane is added and the two through lanes merge together afterwards.	N/A	N/A	N/A	N/A

Project 7: Bryant Street & Palomar Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS1	Add lighting	Add safety lighting at the intersection	Night	40%	20	$15,960
NS2	Convert to all-way STOP	Conduct a warrant to make this intersection an all-way stop	All	50%	10	$330,700

Project 8: Bundy Canyon Road & Sunset Avenue

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS6	Add signage	Add additional Side Road Symbol Sign (MUTCD W2-2) and Advance Street Name Sign (MUTCD D3-2) to help motorists better anticipate that an intersection is upcoming where a vehicle may slow down and turn.	All	15%	10	$99,211

Project 9: Bundy Canyon Road & Harvest Way

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS3	Install signals	Signalize this intersection	All	30%	20	$3,763,441
CUSTOM	Add signage	Add W3-3 signal ahead sign on Bundy Canyon Road on both sides of the intersection	N/A	N/A	N/A	N/A

An exhibit of the proposed safety project is provided in Attachment A.7.

Project 10: Grand Avenue & Sheila Lane

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS4	Convert to roundabout	Convert intersection to a roundabout	All	Varies	20	$835,940

An exhibit of the proposed safety project is provided in Attachment A.7.

Project 11: Corydon Road from Mission Trail to Grand Avenue

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S2	Improve signal hardware	Furnish and install retro-reflective tape on vehicle head backplate on Corydon Road & Grand Avenue.	All	15%	10	$27,415
S4	Provide Advanced Dilemma Zone Detection	Install advanced dilemma zone detection on Corydon Road & Grand Avenue.	All	40%	10	$73,106
S7	Install left-turn lane	Implement left-turn protected phasing for both the northbound and southbound directions on Grand Avenue.	All	30%	20	$127,309
S17PB	Install pedestrian countdown signals	Install pedestrian countdown signal heads at Palomar Street & Corydon Road	P&B	25%	20	$1,732,300
NS1	Add lighting	Add intersection lighting to Corydon Road & Bryant Street	Night	40%	20	$227,680
R28	Install edge-lines and centerlines	Add edge line striping on Corydon Road near the intersection of Corydon Road & Bryant Street	All	25%	10	$189,400
CUSTOM	Pave road	Pave 100 feet of Bryant Street immediately adjacent to Corydon Road	N/A	N/A	N/A	N/A
CUSTOM	Pedestrian improvements	Add high visibility crosswalks and ADA compliant curb ramp at southeast corner of Corydon Road & Palomar Street	N/A	N/A	N/A	N/A
CUSTOM	Relocate sign and extend striping	Increase the length of the dashed line at Corydon Road & Union Street indicating that the right lane will become a “trap” dedicated right-turn only lane to 775 feet, and move “right lane must turn right” sign back to the start of this dashed line.	N/A	N/A	N/A	N/A
CUSTOM	Remove lane	Remove right-turn overlap at Corydon Road & Grand Avenue	N/A	N/A	N/A	N/A
CUSTOM	Pedestrian improvements	Add ADA compliant curb ramps at northeast and southwest corners of Corydon Road and Grand Avenue	N/A	N/A	N/A	N/A

An exhibit of the proposed safety projects located at Corydon Road & Grand Avenue is provided in Attachment A.7.

Project 12: Mission Trail from Malaga Road to Corydon Road

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add segment lighting along the entire roadway segment	Night	35%	20	$10,896,480
R8	Install raised median	Install raised median from Malaga Road to Lemon Street	All	25%	20	$15,387,400
CUSTOM	Pedestrian improvements	Add ADA compliant curb ramps *at all corners* of Mission Trail & Elberta Road	N/A	N/A	N/A	N/A

An exhibit of the proposed safety projects is provided in Attachment A.7.

Project 13: Orange Street/Gruwell Street from Bundy Canyon Road to Grand Avenue

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add street lighting along the entire segment	Night	35%	20	$5,796,420
R34PB	Install sidewalk/pathway	Add sidewalks from Bundy Canyon Road to Grove Street on the west side of the roadway	P&B	80%	20	$1,080,677
R35PB	Install/upgrade pedestrian crossing	Add crosswalks at Grove Street on the West leg and Walnut Street on the West leg	P&B	35%	20	$472,796
CUSTOM	Add ADA ramp	Construct ADA ramp at Bundy Canyon Road & Grove Street	N/A	N/A	N/A	N/A

An exhibit of the proposed safety projects is provided in Attachment A.7.

Project 14: Palomar Street from Wildomar Trail to Southern City Limit

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S1	Add lighting	Remove Type 1A signals at Palomar Street & Clinton Keith Road and replace with Type 15 to provide more lighting	Night	40%	20	$42,560
NS21PB	Install/upgrade pedestrian crossing	Add continental crosswalk at Palomar Street & Frederick Street	P&B	35%	20	$113,261
CUSTOM	Add signage and striping	Add striping and signage to better indicate that only one lane is present in each direction from Wildomar Trail (Central Street) to Frederick Street	N/A	N/A	N/A	N/A
CUSTOM	Add delineators	Add delineators to tighten intersection of Palomar Street & Frederick Street at southeast corner	N/A	N/A	N/A	N/A
CUSTOM	Restripe lane	Re-align left turn pockets in the eastbound and westbound direction at Palomar Street & Catt Road	N/A	N/A	N/A	N/A
CUSTOM	Add detection	Add video or loop bike detection and Remove push button for bike crossing at Palomar Street & Clinton Keith Road	N/A	N/A	N/A	N/A

An exhibit of the proposed safety projects is provided in Attachment A.7.

Project A2: Bundy Canyon Road & Almond Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS1	Add lighting	Add safety lighting at the intersection	Night	40%	20	$172,000
NS4	Convert to roundabout	Convert intersection to a roundabout	All	Varies	20	$1,403,912

An exhibit of a typical roundabout installation is provided in Attachment A.7.

Project A3: Mission Trail & Vine Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S6	Install left turn phase	Add southbound left-turn pocket on Mission Trail	All	55%	20	$400,840

Project A4: Clinton Keith Road & Hidden Springs Road

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
S21PB	Leading pedestrian interval	Add leading pedestrian interval for northbound right -turn approach on Hidden Spring Road	P&B	60%	10	$267,841

Project A5: Bundy Canyon Road & Harvest Way E /Club Avenue

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Add missing stop sign	Add stop sign north of intersection	N/A	N/A	N/A	N/A
CUSTOM	Add signage	Add additional Side Road Symbol Sign (MUTCD W2-2) and Advance Street Name Sign (MUTCD D3-2) to help motorists better anticipate that an intersection is upcoming where a vehicle may slow down and turn.	N/A	N/A	N/A	N/A

Project A7: Bundy Canyon Road & Raciti Road

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Add missing stop sign	Add missing stop sign north of intersection	N/A	N/A	N/A	N/A
CUSTOM	Add signage	Add additional Side Road Symbol Sign (MUTCD W2-2) and Advance Street Name Sign (MUTCD D3-2) to help motorists better anticipate that an intersection is upcoming where a vehicle may slow down and turn.	N/A	N/A	N/A	N/A

Project A8: Mission Trail & Palomar Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS2	Convert to all-way STOP	Conduct a warrant to make this intersection an all-way stop.	All	50%	10	$344,000

An exhibit of the proposed safety project is provided in Attachment A.7.

Project A9: Albert Street and Corydon Road and Lakeside Drive

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Add signage	Add additional Side Road Symbol Sign (MUTCD W2-2) and Advance Street Name Sign (MUTCD D3-2) to help motorists better anticipate that an intersection is upcoming where a vehicle may slow down and turn.	N/A	N/A	N/A	N/A

Project A10: Bundy Canyon Road & Monte Vista Drive

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS3	Install signals	Signalize this intersection	All	30%	20	$379,561

Project A11: Bundy Canyon Road & Orchard Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS3	Install signals	Signalize this intersection	All	30%	20	$226,081

Project A12: Bundy Canyon Road & Farm Road

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Add signage	Add W 3-3 signal ahead sign northeast of the intersection	N/A	N/A	N/A	N/A

Project A13: Grape Street & Olive Street

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS6	Add signage	Add W3-1 stop sign ahead sign on Grape Street north of the intersection, and on Olive Street east of the intersection	All	15%	10	$40,231

Project A14: Baxter Road & I-15 South on and off ramps

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS4	Convert to roundabout	Convert intersection to a roundabout	All	Varies	20	$0

An exhibit of a typical roundabout installation is provided in Attachment A.7.

Project A15: Baxter Road & I-15 North on and off ramps

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
NS4	Convert to roundabout	Convert intersection to a roundabout	All	Varies	20	$0

An exhibit of a typical roundabout installation is provided in Attachment A.7.

Project A16: Baxter Road between Central Street and Killarney Lane

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add intersection and segment lighting	Night	35%	20	$557,620

Project A17: Bundy Canyon Road between Mission Trail and Sunset Avenue

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add intersection and segment lighting	Night	35%	20	$22,976,940

Project A18: Mission Trail between Corydon Road and Bundy Canyon Road

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add intersection and segment lighting	Night	35%	20	$3,593,521

An exhibit of the proposed safety project is provided in Attachment A.7.

Project A19: Clinton Keith Road between Stable Lanes Road and Elizabeth Lane

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
R1	Add lighting	Add intersection and segment lighting	Night	35%	20	$4,793,181

An exhibit of the proposed safety project is provided in Attachment A.7.

Project A20: Bundy Canyon Road between Orange Street and I-15 NB ramp

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Add signage and striping	Add striping and signage to better indicate that only one lane is present in each direction	N/A	N/A	N/A	N/A

Project A21: Clinton Keith Road & Elizabeth Lane

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Restripe lane	Re-align left turn pockets in the eastbound and westbound direction	N/A	N/A	N/A	N/A

Project A22: Clinton Keith Road & Inland Valley Drive

No.	Countermeasure Name	Work Description	Collision Type	CRF	Project Life (years)	Collision Reduction Benefits
CUSTOM	Restripe lane	Re-align left turn pockets in the eastbound and westbound direction	N/A	N/A	N/A	N/A

4.2 COST ESTIMATE

Planning-level cost estimates were developed for each countermeasure and project costs were estimated based on the countermeasures applied to the priority project locations. Cost estimates were prepared based on use of recent bid tabulations and estimates of current construction costs consisting of unit based cost estimates and contingencies. The costs include construction costs and also include engineering and administrative costs. A contingency is added to the construction cost of each project depending on the complexity of the scope. The engineering and administration cost is assumed to be 25% of the total construction cost, including the contingency. The cost estimates are included in the Attachment A.9.

4.3 BENEFIT/COST (B/C) RATIO

A BCR is the ratio of the benefits of a project relative to its costs, both expressed in monetary terms. The Benefit to Cost (B/C) ratio is calculated by taking a project's overall benefit and dividing it by the overall project cost. Projects with a BCR greater than one (1) have greater benefits than costs; hence, they have positive net benefits. A higher BCR means greater benefits relative to costs, while a lower BCR means fewer benefits relative to costs.

Based on Caltrans' need for a fair, data-driven, statewide project selection process for HSIP call-for-projects, the benefit and cost calculations were completed using the same process shown in the HSIP Analyzer to calculate the B/C ratio of the project. The B/C ratios were used to identify the projects with high cost effectiveness that have the greatest chance of receiving federal funding in a Caltrans call-for-projects. Table 4.2 summarizes the B/C ratio for all the 43 proposed safety projects.

Table 4.2: Benefits/Cost Ratio Analysis by Safety Project

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share*	HSIP Amount	Local Amount
1	Mission Trail & Olive Street	Install guard rail	R4	$1,215,300	$9,432	128.85	100%	$9,432	$0
		Pedestrian improvements	CUSTOM		$12,648				
		Total		$1,215,300	$22,080	55.04			
2	Bundy Canyon Road & Orange Street	Install left-turn lane	S7	$2,479,470	$8,249	300.58	90%	$7,424	$825
		Provide Advanced Dilemma Zone Detection	S4	$1,423,799	$34,322	41.48	100%	$34,322	$0
		Improve signal hardware	S2	$533,925	$1,415	377.33	100%	$1,415	$0
		Replace sign	CUSTOM		$1,565				
		Total		$4,437,194	$45,551	97.41			
3	Lemon Street & Mission Trail	Move driveway	CUSTOM		N/A				
		Remove pavement marking	CUSTOM		$131				
		Repaint crosswalk	CUSTOM		$1,565				
		Total			$1,696				
4	Corydon Street & Mission Trail	Provide Advanced Dilemma Zone Detection	S4	$567,759	$7,847	72.35	100%	$7,847	$0
		Improve signal hardware	S2	$212,910	$36,025	5.91	100%	$36,025	$0
		Add leading pedestrian interval	S21PB	$0	$7,926	0	100%	$7,926	$0
		Remove lane	CUSTOM		$1,513				
		Total		$780,669	$51,798	15.07			

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share*	HSIP Amount	Local Amount
5	Gruwell Street & Palomar Street	Provide Advanced Dilemma Zone Detection	S4	$287,515	$34,322	8.38	100%	$34,322	$0
		Improve signal hardware	S2	$107,818	$36,811	2.93	100%	$36,811	$0
		Pedestrian improvements	CUSTOM		$30,589				
		Total		$395,333	$101,722	3.89			
6	Bundy Canyon Road & Cherry Street	Remove lane	CUSTOM		$2,037				
		Restripe lane	CUSTOM		$4,074				
		Total			$6,111				
7	Bryant Street & Palomar Street	Convert to all-way STOP	NS2	$330,700	$11,299	29.27	100%	$11,299	$0
		Add lighting	NS1	$15,960	$55,020	0.29	100%	$55,020	$0
		Total		$346,660	$66,319	5.23			
8	Bundy Canyon Road & Sunset Avenue	Add signage	NS6	$99,211	$1,565	63.39	100%	$1,565	$0
9	Bundy Canyon Road & Harvest Way	Install signals	NS3	$3,763,441	$271,170	13.88	100%	$271,170	$0
		Add signage	CUSTOM		$1,605				
		Total		$3,763,441	$272,775	13.80			
10	Grand Avenue & Sheila Lane	Convert to roundabout	NS4	$835,940	$721,189	1.16	100%	$721,189	$0
11	Corydon Road from Mission Trail to Grand Avenue	Install edge-lines and centerlines	R28	$189,400	$8,810	21.50	100%	$8,810	$0
		Add lighting	NS1	$227,680	$81,679	2.79	100%	$81,679	$0
		Pave road	CUSTOM		$108,743				
		Pedestrian improvements	CUSTOM		$14,083				

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share*	HSIP Amount	Local Amount
		Install pedestrian countdown signals	S17PB	$1,732,300	$22,598	76.66	100%	$22,598	$0
		Relocate sign and extend striping	CUSTOM		$3,537				
		Remove lane	CUSTOM		$1,565				
		Improve signal hardware	S2	$27,415	$1,179	23.25	100%	$1,179	$0
		Provide Advanced Dilemma Zone Detection	S4	$73,106	$34,322	2.13	100%	$34,322	$0
		Install left-turn lane	S7	$127,309	$59,802	2.13	100%	$59,802	$0
		Pedestrian improvements	CUSTOM		$15,458				
		Total		$2,377,210	$351,776	6.76			
12	Mission Trail from Malaga Road to Corydon Road	Add lighting	R1	$10,896,480	$735,238	14.82	100%	$735,238	$0
		Install raised median	R8	$15,387,400	$1,194,196	12.89	90%	$1,074,776	$119,420
		Pedestrian improvements	CUSTOM		$30,589				
		Total		$26,283,880	$1,960,023	13.41			
13	Orange Street/Gruwell Street from Bundy Canyon Road to Grand Avenue	Add lighting	R1	$5,796,420	$1,299,651	4.46	100%	$1,299,651	$0
		Install sidewalk/pathway	R34PB	$1,080,677	$794,227	1.36	90%	$714,804	$79,423
		Install/upgrade pedestrian crossing	R35PB	$472,796	$943	501.37	90%	$849	$94
		Add ADA ramp	CUSTOM		$15,458				
		Total		$7,349,893	$2,110,279	3.48			
14	Palomar Street from Wildomar Trail to Southern City Limit	Add signage and striping	CUSTOM		$10,356				
		Add delineators	CUSTOM		$694				
		Install/upgrade pedestrian crossing	NS21PB	$113,261	$4,716	24.02	100%	$4,716	$0
		Restripe lane	CUSTOM		$4,395				

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share*	HSIP Amount	Local Amount
		Add lighting	S1	$42,560	$113,512	0.37	100%	$113,512	$0
		Add detection	CUSTOM		$3,131				
		Total		$155,821	$136,804	1.14			
A2	Bundy Canyon Road & Almond Street	Add lighting	NS1	$172,000	$42,575	4.04	100%	$42,575	$0
		Convert to roundabout	NS4	$1,403,912	$797,043	1.76	100%	$797,043	$0
		Total		$1,575,912	$839,618	1.88			
A3	Mission Trail & Vine Street	Install left turn phase	S6	$400,840	$3,603	111.25	90%	$3,243	$360
A4	Clinton Keith Road & Hidden Springs Road	Leading pedestrian interval	S21PB	$267,841	$7,827	34.22	100%	$7,827	$0
A5	Bundy Canyon Road & Harvest Way E /Club Avenue	Add missing stop sign	CUSTOM		$773				
		Add signage	CUSTOM		$1,565				
		Total			$2,338				
A7	Bundy Canyon Road & Raciti Road	Add missing stop sign	CUSTOM		$793				
		Add signage	CUSTOM		$1,565				
		Total			$2,358				
A8	Mission Trail & Palomar Street	Convert to all-way STOP	NS2	$344,000	$12,642	27.21	100%	$12,642	$0
A9	Albert Street and Corydon Road and Lakeside Drive	Add signage	CUSTOM		$1,565				
A10	Bundy Canyon Road & Monte Vista Drive	Install signals	NS3	$379,561	$271,170	1.40	100%	$271,170	$0

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share*	HSIP Amount	Local Amount
A11	Bundy Canyon Road & Orchard Street	Install signals	NS3	$226,081	$271,170	0.83	100%	$271,170	$0
A12	Bundy Canyon Road & Farm Road	Add signage	CUSTOM		$793				
A13	Grape Street & Olive Street	Add signage	NS06	$40,231	$1,565	25.71	100%	$1,565	$0
A14	Baxter Road & I-15 South on and off ramps	Convert to roundabout	NS4	$0	$641,772		100%	$652,722	$0
A15	Baxter Road & I-15 North on and off ramps	Convert to roundabout	NS4	$0	$641,772		100%	$652,722	$0
A16	Baxter Road between Central Street and Killarney Lane	Add lighting	R1	$557,620	$374,791	1.49	100%	$374,791	$0
A17	Bundy Canyon Road between Mission Trail and Sunset Avenue	Add lighting	R1	$22,976,940	$2,764,100	8.31	100%	$2,764,100	$0
A18	Mission Trail between Corydon Road and Bundy Canyon Road	Add lighting	R1	$3,593,521	$322,522	11.14	100%	$322,522	$0
A19	Clinton Keith Road between Stable Lanes Road and Elizabeth Lane	Add lighting	R1	$4,793,181	$577,448	8.30	100%	$577,448	$0
A20	Bundy Canyon Road between Orange Street and I-15 NB ramp	Add signage and striping	CUSTOM		$8,188				
A21	Clinton Keith Road & Elizabeth Lane	Restripe lane	CUSTOM		$4,716				
A22	Clinton Keith Road & Inland Valley Drive	Restripe lane	CUSTOM		$5,168				

** Note: HSIP guidelines state that a project will receive the lowest reimbursement rate of the applied countermeasures.*

4.4 PROJECT PRIORITIZATION

To develop a prioritized list of safety projects for the HSIP application and to maximize the City's opportunity of receiving funding, KOA further refined the BCR calculation by using the same process shown in the HSIP Analyzer. The B/C ratios were used to identify the projects with high cost-effectiveness that have the greatest chance of receiving federal funding in a Caltrans call-for-projects.

Because HSIP grants are competitive, it is typically appropriate to only apply for projects that have an estimated BCR that is high. For the purpose of this SSAR, all projects with BCRs of 8 or more were prioritized. A high BCR is not the only reason to apply for HSIP funding for a project. For instance, some projects that have very high BCRs (over 100) are low cost. As the minimum request for funding for an HSIP grant needs to be at least $100,000, enough projects and intersections need to be combined to reach this minimum amount if a project is low cost.

For projects under $15,000 at intersections or segments without other improvements, KOA recommends the City to consider implementing these projects using local funds. For other projects, KOA recommends the City consider applying for HSIP funding. Projects are divided into these two categories based on recommended funding source, and then ranked by BCR of the most beneficial countermeasure per location in Table 4.3 and Table 4.4. Some projects that do not have a BCR of 8 were included as they are easily grouped with other similar projects or other intersection treatments.

BCR is not the only reason to implement a countermeasure, and thus the prioritization list is only a recommendation, and the City may choose to move forward with any of these prioritized projects in any order. The City has already completed an application for HSIP Cycle 10 funding during the draft stage of this plan; projects included as part of the application are indicated with an asterisk. If the applications are successful, these projects should not be applied for in the future, but if unsuccessful, they can be considered for funding in future cycles. The City may use this list of projects to consider and determine which will be prioritized based on other considerations the City may have in selecting which projects to apply for funding.

Table 4.3: Prioritized Projects to Consider for HSIP Funding

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share	HSIP Amount	Local Amount
2	Bundy Canyon Road & Orange Street	Improve signal hardware*	S2	$533,925	$1,415	377.33	100%	$1,415	$0
		Install left-turn lane*	S7	$2,479,470	$8,249	300.58	90%	$7,424	$825
		Provide Advanced Dilemma Zone Detection*	S4	$1,423,799	$34,322	41.48	100%	$34,322	$0
4	Corydon Street & Mission Trail	Provide Advanced Dilemma Zone Detection*	S4	$567,759	$7,847	72.35	100%	$7,847	$0
		Improve signal hardware*	S2	$212,910	$36,025	5.91	100%	$36,025	$0
11	Corydon Road from Mission Trail to Grand Avenue	Install pedestrian countdown signals	S17PB	$1,732,300	$22,598	76.66	100%	$22,598	$0
		Improve signal hardware*	S2	$27,415	$1,179	23.25	100%	$1,179	$0
		Install edge-lines and centerlines	R28	$189,400	$8,810	21.50	100%	$8,810	$0
		Provide Advanced Dilemma Zone Detection*	S4	$73,106	$34,322	2.13	100%	$34,322	$0
		Install left-turn lane*	S7	$127,309	$59,802	2.13	100%	$59,802	$0
14	Palomar Street from Wildomar Trail to Southern City Limit	Install/upgrade pedestrian crossing	NS21PB	$113,261	$4,716	24.02	100%	$4,716	$0
12	Mission Trail from Malaga Road to Corydon Road	Add lighting*	R1	$10,896,480	$735,238	14.82	100%	$735,238	$0
		Install raised median	R8	$15,387,400	$1,194,196	12.89	90%	$1,074,776	$119,420

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share	HSIP Amount	Local Amount
9	Bundy Canyon Road & Harvest Way	Install signals*	NS3	$3,763,441	$271,170	13.88	100%	$271,170	$0
A18	Mission Trail between Corydon Road and Bundy Canyon Road	Add lighting*	R1	$3,593,521	$322,522	11.14	100%	$322,522	$0
5	Gruwell Street & Palomar Street	Provide Advanced Dilemma Zone Detection*	S4	$287,515	$34,322	8.38	100%	$34,322	$0
		Improve signal hardware*	S2	$107,818	$36,811	2.93	100%	$36,811	$0
A17	Bundy Canyon Road between Mission Trail and Sunset Avenue	Add lighting	R1	$22,976,940	$2,764,100	8.31	100%	$2,764,100	$0
A19	Clinton Keith Road between Stable Lanes Road and Elizabeth Lane	Add lighting*	R1	$4,793,181	$577,448	8.30	100%	$577,448	$0

**City applied for this project in HSIP Cycle 10, funding announcement pending*

Table 4.4: Prioritized Projects to Consider for Local Funding

#	Location	Countermeasure	No.	Benefits	Cost ($)	Benefit/Cost Ratio	HSIP Max Share	HSIP Amount	Local Amount
13	Orange Street/Gruwell Street from Bundy Canyon Road to Grand Avenue	Install/upgrade pedestrian crossing	R35PB	$472,796	$943	501.37	90%	$849	$94
1	Mission Trail & Olive Street	Install guard rail	R4	$1,215,300	$9,432	128.85	100%	$9,432	$0
A3	Mission Trail & Vine Street	Install left turn phase	S6	$400,840	$3,603	111.25	90%	$3,243	$360
8	Bundy Canyon Road & Sunset Avenue	Add signage	NS6	$99,211	$1,565	63.39	100%	$1,565	$0
A4	Clinton Keith Road & Hidden Springs Road	Leading pedestrian interval	S21PB	$267,841	$7,827	34.22	100%	$7,827	$0
7	Bryant Street & Palomar Street	Convert to all-way STOP	NS2	$330,700	$11,299	29.27	100%	$11,299	$0
A8	Mission Trail & Palomar Street	Convert to all-way STOP	NS2	$344,000	$12,642	27.21	100%	$12,642	$0
A13	Grape Street & Olive Street	Add signage	NS06	$40,231	$1,565	25.71	100%	$1,565	$0
14	Palomar Street from Wildomar Trail to Southern City Limit	Install/upgrade pedestrian crossing	NS21PB	$113,261	$4,716	24.02	100%	$4,716	$0

ATTACHMENT A.1 – INTERSECTION RANKING BY COLLISION FREQUENCY

ATTACHMENT A.2 – TRAFFIC COUNTS FOR SELECTED INTERSECTIONS

ATTACHMENT A.3 – COLLISION DIAGRAMS FOR SELECTED INTERSECTIONS

ATTACHMENT A.4 – ROADWAY SEGMENT RANKING BY COLLISION FREQUENCY (WITH AND WITHOUT COLLISIONS OCCURRING AT INTERSECTIONS)

ATTACHMENT A.5 – TRAFFIC COUNTS FOR SELECTED ROADWAY SEGMENTS

ATTACHMENT A.6 – COLLISION DIAGRAMS FOR SELECTED ROADWAY SEGMENTS

ATTACHMENT A.7 – CONCEPTS FOR SELECTED PROJECTS

ATTACHMENT A.8 – COLLISION REDUCTION OUTPUT FROM HSIP ANALYZER

ATTACHMENT A.9 – SAFETY PROJECT COST ESTIMATION

ATTACHMENT A.10 – SELECTED COLLISION HEAT MAPS

APPENDIX C – COMMUNITY MEETING PRESENTATION, APRIL 13, 2022

Local Roadway Safety Plan (CIP 051-1)

CITY OF WILDOMAR | City Council Workshop, April 13, 2022

CONSULTANT BACKGROUND

HAS LED OVER 30 LOCAL ROADWAY SAFETY PLANS ACROSS SOUTHERN CALIFORNIA SINCE 2017

BACKGROUND IN SAFETY, ENGINEERING, AND COMMUNITY PLANNING

GRANT-READY PROJECTS: WON OVER $150 MILLION IN GRANT FUNDING FOR CLIENTS

LRSP PURPOSE

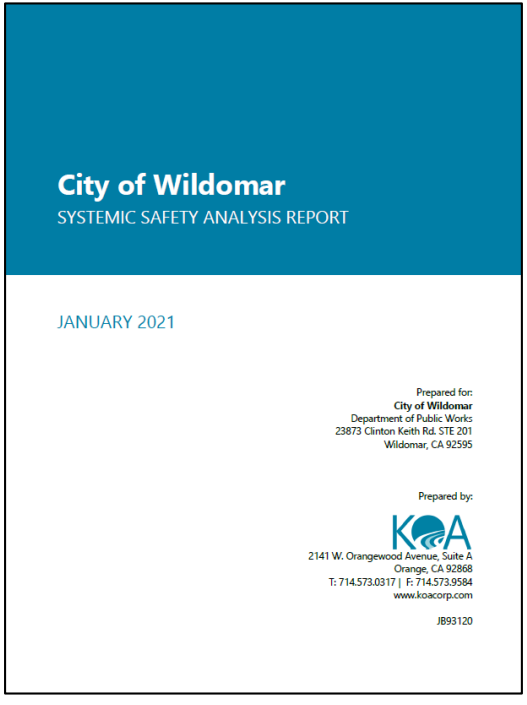
Goal:

Systematically analyze safety problems and develop recommended infrastructure and non-infrastructure improvements..

Project builds on the City's adopted vision statement:

The City of Wildomar will be a safe and active community with responsible growth and quality infrastructure while keeping a hometown feel.

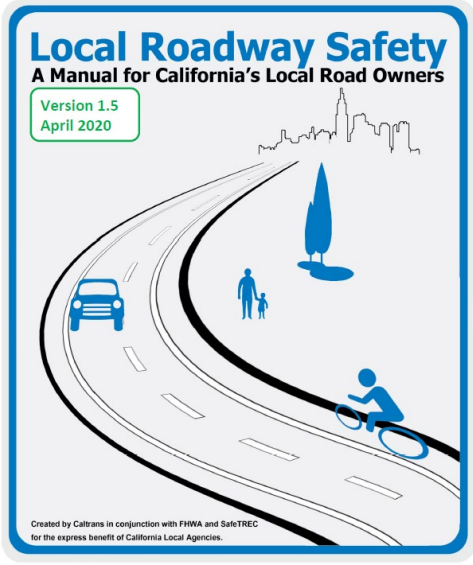
SSAR



- Systemic Safety Analysis Report (SSAR)- predecessor to the LRSP
  - Analyzed 11 high risk intersections and 4 high risk corridors
  - Developed 34 potential safety recommendations
  - Report finalized in January 2021
- City successfully applied for two Highway Safety Improvement Program (HSIP) grants
  - $272,900 for a new signal at Bundy Canyon Road and Harvest Way (West)
  - $375,200 for signal hardware improvements and left-turn lanes at four intersections
- Other recommendations have been incorporated into the City's CIP Program where applicable
- Some safety recommendations have been shared with Land Development projects for incorporation into their plans

LRSP BACKGROUND/SUMMARY

- Citywide collision analysis
- Stakeholder Outreach
- Four “E”s
  - Engineering
  - Enforcement
  - Education
  - Emergency Services
- Recommendations
  - Safety improvement projects (new infrastructure)
  - Strategies and policies (non-infrastructure)



OUTREACH APPROACH

- **Stakeholder meeting held on Thursday, January 20**
- Stakeholders
  - Riverside County Sheriff's Department
  - Lake Elsinore Unified School District
  - CalFIRE/Riverside County Fire Department
  - Riverside Transit Agency
  - City of Lake Elsinore
  - County of Riverside Dept. of Transportation
- **Today's Workshop**

NON-ENGINEERING STRATEGIES

EDUCATION

- School programs
- Adult bicycle skills courses
- Social media campaigns

ENFORCEMENT

- Speed trailers
- Checkpoints

EMERGENCY VEHICLES

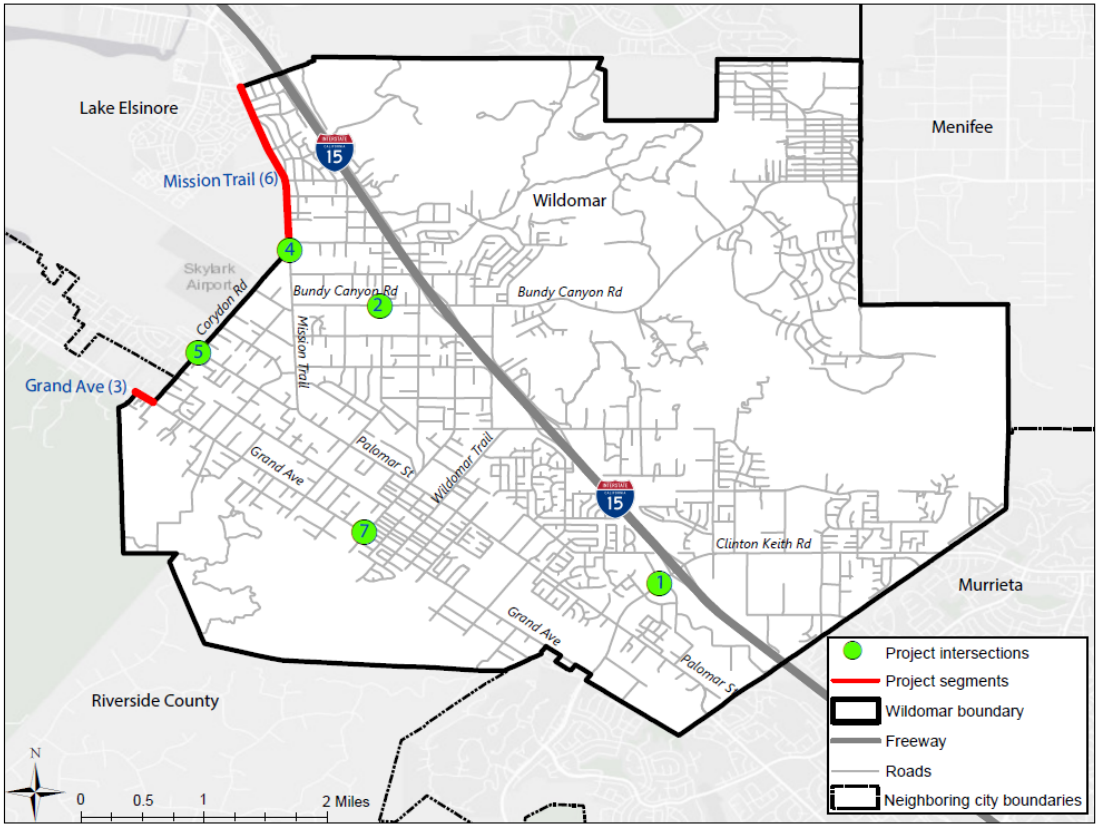
- Emergency Vehicle Pre-emption (EVP)
- GPS Opticom technology
- Response times to remote areas

ENGINEERING STRATEGIES

- New signals and signal operational improvements
- Pedestrian improvements on busy corridors and near schools
- New street lighting

DRAFT PROJECT LOCATIONS

No.	Location	Recommendation(s)
1	Hidden Springs Rd / Clinton Keith Rd	Modify Turn Phases
2	Almond St / Bundy Canyon Rd	Signalize Intersection
3	Grand Ave, Corydon Rd to City Limits	Street lighting, bike lanes, and sidewalks
4	Mission Trail / Corydon Rd	Modify Turn Phases, bike lanes, sidewalks
5	Palomar St / Corydon Rd	Bike lanes and sidewalks
6	Mission Trail, Corydon Rd to City Limits	Street lighting, bike lanes, and sidewalks
7	Gruwell St / Grand	Signalize Intersection



Questions / Comments?

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

- Seeks to fund countermeasures that will reduce traffic collisions and fatalities
- Cities must have an LRSP to apply
- Minimum project cost of $100,000
- Funds improvements in locations with a significant demonstrated collision history or as part of a broader citywide package
- Cycle 11 forthcoming

OFFICE OF TRAFFIC SAFETY (OTS)

- Funds programs related to the following:
  - Alcohol Impaired Driving
  - Distracted Driving
  - Drug-Impaired Driving
  - Emergency Medical Services
  - Motorcycle Safety
  - Occupant Protection
  - Pedestrian and Bicycle Safety
  - Police Traffic Services
  - Public Relations, Advertising, and Marketing Program
  - Traffic Records
- Most recent cycle closed January 31, 2022 (typically calls for projects are announced on an annual basis in December)
- An LRSP can provide evidence for traffic safety issues in the City

TIMELINE

Date	Milestone
Evaluation/implementation of the LRSP	4/29/2022
HSIP Call for Projects	5/9/2022
Draft LRSP	5/13/2022
Final LRSP	5/29/2022
HSIP Applications Due	9/12/2022

APPENDIX D – COMMUNITY MEETING MINUTES, APRIL 13, 2022

Participant 1:

- Use of cameras on Neighborhood Street Watch Watch program to identify offending vehicles, sending registered owners a courtesy letter that vehicle was observed speeding or running a stop sign.
- Remove stop signs, too many.
- Remove plants and improve line of sight.
- School programs are a waste of resources, as parents teach bad habits and schools can't correct.
- Social media is ineffective, "just a way for people to [complain]"
- Doing community service or jail time only real deterrent.

Participant 2:

- Supports light at Gruwell & Grand, due to lots of people walking and horses
- Consider 3 or 4 second light delay (LPI)
- Not enough bike trails, traffic doesn't pay attention to bikers.
- Need more enforcement of kids on scooters and e-bikes.

Participant 3:

- Complained about consultants
- Palomar & Clinton Keith- needs a cop on a corner or cameras, "accident waiting to happen." Problem is east to west on Clinton Keith, go past red lights.
- Kaiser development- pile of dirt, one side has rails, needs rails on both sides (Wildomar Trail)

Participant 4:

- Clinton Keith from Inland Valley Drive to (east) City Limits-
    - Wants updated traffic counts (claims they've "quadrupled")
    - EB on Clinton Keith at Inland Valley, "race" to get in the lane, jockeying back and forth all the way to Murrieta
    - WB on Clinton Keith, 2 lanes in Murrieta, jockeying back and forth. Add striping between (east) city line and Covington
    - May be in design phase, but participant is frustrated with lack of progress
    - Stores on Murrieta side increasing amount of traffic
    - Clinton Keith "on the list" for safety improvements
- Supports traffic signal at Gruwell & Grand, at least put up a light at this intersection
- Gruwell between Grand and Orange
    - 50 mph street, needs to be reduced
    - Put more speed limit signs, add signs saying speed checked by radar
    - Add speed enforcement zone sign (add to Clinton Keith)
- Sheila and Grand- stop sign with beacon exists
    - Add pole light

    - Temecula has stop ahead signs with yellow outline blinking, add these to this location
- Schools- streets in front are no drop off zones
    - Grand in front of David E. Brown school, drop offs are dangerous

Participant 5 (council):

- Also keep an eye on Palomar
- Palomar & Clinton Keith a wide intersection
- Clinton Keith & Hidden Springs- improvements now or when development comes in?
- Clinton Keith- freeway to Murrieta, motor cop does a lot of time and ticket writing

Cameron/Jason:

- Palomar & Clinton Keith- CIP Improvement project out to bid
- Wildomar completed pedestrian ped head countdown project
- Clinton Keith- still in design, working through environmental permitting and ROW acquisition, no construction date yet
- Gruwell speed limit- 85th percentile limits speed adjustment, consider traffic calming
- Sheila & Grand- go after grant funding for roundabout

APPENDIX E – WILDOMAR CITY COUNCIL MEETING MINUTES, APRIL 13, 2022

CITY OF WILDOMAR
CITY COUNCIL REGULAR MEETING MINUTES
APRIL 13, 2022

CALL TO ORDER – WORKSHOP- 3:00 P.M.

The Workshop of April 13, 2022, of the Wildomar City Council was conducted in-person at the Wildomar Council Chambers, 23873 Clinton Keith Road, Suite 106, Wildomar, California, and was called to order by Mayor Benoit at 3:02 p.m.

City Council Roll Call showed the following:

Members in attendance: Council Member DePhillippo, Mayor Pro Tem Morabito, Mayor Benoit

Council Member Nigg arrived at 3:44 p.m.

Members absent: Council Member Moore

Staff in attendance: Assistant City Manager York, City Attorney Jex, City Clerk Morales, Planning Director Bassi, Administrative Services Director Howell, Project Consultant Riley, Economic Development Director Davidson, Senior Engineer Farag, Development Manager Stadnik, Community Services Director Torres and Senior Project Manager Repke.

PUBLIC COMMENTS

There were no public comments.

0 WORKSHOP

0.1 Local Roadway Safety Plan (LRSP) Community Workshop, CIP 051-1

Mayor Benoit read the title.

Associate Engineer Luna presented staff report.

Kenneth Mayes, resident, provided public comment.
Speaker on Zoom presented public comment.
Gina Castanon, resident, provided public comment.
Don Saunders, resident, provided public comment.

It was the consensus of the City Council to receive and file the concepts presented for proposed traffic safety improvement projects throughout the City associated with the Local Roadway Safety Plan (LRSP), CIP 051-1.

ADJOURN WORKSHOP

There being no further business, Mayor Benoit adjourned the workshop at 3:49 p.m.

CALL TO ORDER – SPECIAL CLOSED SESSION - 4:00 P.M.

The Closed Session of April 13, 2022, of the Wildomar City Council was conducted in-person at the Wildomar Council Chambers, 23873 Clinton Keith Road, Suite 106, Wildomar, California, and was called to order by Mayor Benoit at 4:00 p.m.

City Council Roll Call showed the following:

Members in attendance: Council Member DePhillippo, Nigg, Mayor Pro Tem Morabito, Mayor Benoit

Members absent: Council Member Moore

Staff in attendance: City Attorney Jex, City Clerk Morales, and City Manager York.

PUBLIC COMMENTS

There were no public comments.

CLOSED SESSION

City Clerk Morales read the following:

The City Council will meet in closed session pursuant to the provisions of Government Code Section 54956.8 to confer with legal counsel and conference with real property negotiators as follows:

Property: 362-150-026 – Cross Streets: Clinton Keith Road / Salida Del Sol
Agency negotiators: Dan York
Negotiating parties: Roger Schultz, President, Mt. San Jacinto College
Under negotiation: Instruction regarding price and terms of payment.

Property: 380-050-025 – Cross Streets: Palomar Street/ South Pasadena
Agency negotiators: Dan York
Negotiating parties: Jeanne Weiler, CAFH Order at Wildomar
Under negotiation: Instruction regarding price and terms of payment.

Councilmember DePhillippo recused herself due to a conflict of interest.

The remaining City Council convened into closed session at 4:02 p.m.

CALL TO ORDER – SPECIAL SESSION - 5:00 P.M.

The Special Session of April 13, 2022, of the Wildomar City Council was conducted in-person at the Wildomar Council Chambers, 23873 Clinton Keith Road, Suite 106, Wildomar, California, and was called to order by Mayor Benoit at 5:01 p.m.

City Council Roll Call showed the following:

Members in attendance: Council Member DePhillippo, Moore, Nigg, Mayor Pro Tern Morabito, Mayor Benoit

Members absent: None

PRESENTATIONS

The Mayor, City Council, Regional Elected Officials, staff, and community recognized former Councilmember Marsha Swanson for her years of service

ADJOURN SPECIAL SESSION

There being no further business, Mayor Benoit adjourned the Special Session at 5:30 p.m.

RECONVENE INTO OPEN SESSION

The City Council reconvened into open session with all members present at 6:00 p.m.

ANNOUNCEMENTS

City Attorney Jex stated that the City Council met in Closed Session and there is no reportable action.

ADJOURN CLOSED SESSION

There being no further business, Mayor Benoit adjourned the Closed Session at 6:00 p.m.

CALL TO ORDER – REGULAR SESSION - 6:00 P.M.

The Regular meeting of April 13, 2022, of the Wildomar City Council was conducted in-person at the Wildomar Council Chambers, 23873 Clinton Keith Road, Suite 106, Wildomar, California, and was called to order by Mayor Benoit at 6:00 p.m.

City Council Roll Call showed the following:

Members in attendance: Council Member DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit

Members absent: None

Staff in attendance: City Manager York, City Attorney Jex, City Clerk Morales, Planning Director Bassi, Administrative Services Director Howell, Economic Development Director Davidson, Project Consultant Riley, Senior Engineer Farag, Administrative Assistant I Rosales, Development Manager Stadnik, Community Services Director Torres, Senior Project Manager Repke, code Enforcement Technician Baggio.

The flag salute was led by Councilmember DePhillippo

PRESENTATIONS

1. Mayor Benoit presented a proclamation to Eagle Scouts Carson Gray and Ethan Strong.
2. Mayor Benoit presented a proclamation for DMV Donate Life Month.
3. Director Fontneau presented a Cops for Kids update
4. President Larson presented the Reality Rally Inter-City Challenge fundraiser video.
5. Specialist Munson presented the Elsinore Valley Municipal Water District drought/rebate update.

DEPARTMENT REPORTS

1. Lt. Mack presented the Police Department Update
2. Chief Olsen presented the Fire Department Update
3. Library Manager Sandra Brautigam presented the Wildomar Library update

PUBLIC COMMENTS

The following individuals provided public comment on items not listed on the agenda:

1. Desmond Young
2. Miss Miller
3. Kenneth Mayes, resident

COUNCIL COMMUNICATIONS

The City Council Members spoke regarding the various committees, commissions, and boards that they serve on locally and regionally and community events, including:

1. Community events
2. Regional events
3. Chamber of Commerce
4. Riverside Transit Agency (RTA)
5. Riverside Conservation Authority (RCA)
6. Riverside County Transportation Commission (RCTC)
7. League of California Cities
8. Southern California Association of Governments (SCAG)
9. Riverside County Habitat Conservation Agency (RCHCA)
10. Western Riverside Council of Governments (WRCOG)
11. South Coast Air Quality Management District (SCAQMD)
12. Southwest Community Financing Authority (Animal Shelter)
13. Western Community Energy (WCE)
14. Ad Hoc & Subcommittees

APPROVAL OF THE AGENDA AS PRESENTED

No changes to the agenda.

1.0 CONSENT CALENDAR

City Manager York proposed changes to item #1.10 & 1.12.

Miss miller provided public comment in opposition of agenda item #1.13.

A **MOTION** was made by Mayor Pro Tem Morabito seconded by Councilmember Nigg to approve the Consent Calendar as amended.

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

1.1 Reading of Ordinances
Approved the reading by title only of all ordinances on this agenda

1.2 Minutes- February 9 2022 Regular Meeting
Approved the minutes as presented.

1.3 Warrant and Payroll Registers
Approved the following:

1. Warrant Registers dated 03-03-2022 in the amount of $921,111.21.
2. Warrant Register dated 03-10-2022 in the amount of $174,930.59.
3. Warrant Register dated 03-17-2022 in the amount of $482,126.76.
4. Warrant Register dated 03-24-2022 in the amount of $228,383.81.
5. Warrant Register dated 03-31-2022 in the amount of $764,945.68.
6. Wire Transfer Register dated 03-31-2022 in the amount of $42,937.96.
7. Payroll Register dated 04-01-2022 in the amount of $178,321.56.

1.4 Treasurer's Report
Approved the Treasurer's Report for February 2022.

1.5 2nd Reading of Ordinance No. 214 – The Bakery Retail Cannabis - Development Agreement No. 20-0086
Adopted an Ordinance entitled:

ORDINANCE NO. 214
AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, ADOPTING A CATEGORICAL EXEMPTION IN ACCORDANCE WITH SECTION 15301 (CLASS 1) OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), AND APPROVING DEVELOPMENT AGREEMENT NO. 20-0086, SUBJECT TO CONDITIONS, TO ESTABLISH A 6,345 SQUARE-FOOT RETAIL CANNABIS BUSINESS WITHIN AN EXISTING RETAIL LEASE SPACE IN THE C-1/C-P ZONE LOCATED AT 22812 PALOMAR STREET (SUITE #100 – 103)

1.6 **2022 First Quarter Update - Public Works/Engineering Department**
Received and filed the 2022 First Quarter Department Update for the Public Works/Engineering Department.

1.7 **Notice of Completion for CIP 026-2A (Bundy Canyon Rd. House Demolition Project)**
Adopted a Resolution entitled:

RESOLUTION NO. 2022-10
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, ACCEPTING THE HOUSE DEMOLITION FOR THE BUNDY CANYON ROAD IMPROVEMENT PROJECT, SEGMENT 2 (CIP 026-2A) AS COMPLETE, AND AUTHORIZING STAFF TO PREPARE AND FILE THE NOTICE OF COMPLETION WITH THE RIVERSIDE COUNTY RECORDER

1.8 **Inland Valley Medical Center Expansion - Precise Grading Agreement and Stormwater Management/BMP Facilities Agreement**
Authorized the City Manager to execute the Precise Grading Agreement and Stormwater Management/BMP Facilities Agreement with Universal Health Services of Rancho Springs, LLC.

1.9 **Award Services Agreement with Rogers Anderson Malody & Scott, LLP (RAMS) Auditing Services Contract**
Approved a three-year contract with external auditors Rogers Anderson Malody & Scott, LLP (RAMS) to provide for audit services and preparation of required reports for fiscal years 2021/22 through 2023/24 and authorized the City Manager to execute the contract.

1.10 **Consideration of Adoption of a City Flag Display Policy**
Adopted the City Flag Display Policy and added the Wildomar Cemetery, Fire Station #61 and Marna O'Brien Park to the list of locations under Section I.2. and II.3.

1.11 **Adopting an Administrative Policy: "Family Care & Medical Leave, and Pregnancy Disability Leave Policy."**
Approved the adoption of the City of Wildomar's "Family Care & Medical Leave, and Pregnancy Disability Leave Policy," and removed all references to the Family Medical Leave Act (FMLA) from the City's Personnel Rules.

1.12 **Establishment of Community Facilities District No. 2022-1 (Services)**
Adopted a Resolution entitled:

RESOLUTION NO. 2022 -11
RESOLUTION OF CITY COUNCIL OF THE CITY OF WILDOMAR DECLARING ITS INTENTION TO ESTABLISH COMMUNITY FACILITIES DISTRICT NO. 2022-1 (SERVICES) OF THE CITY OF WILDOMAR, TO AUTHORIZE THE LEVY OF A SPECIAL TAX ON PROPERTY WITHIN THE DISTRICT TO PAY THE COSTS OF PROVIDING CERTAIN PUBLIC SERVICES

1.13 Establishment of Community Facilities District No. 2022-2 (Horizon Place)

Adopted a Resolution entitled:

RESOLUTION NO. 2022 - 13
RESOLUTION OF INTENTION OF THE CITY COUNCIL OF THE CITY OF WILDOMAR TO ESTABLISH COMMUNITY FACILITIES DISTRICT NO. 2022-2 (HORIZON PLACE) OF THE CITY OF WILDOMAR, TO AUTHORIZE THE LEVY OF A SPECIAL TAX TO PAY THE COSTS OF ACQUIRING OR CONSTRUCTING CERTAIN FACILITIES AND TO PAY DEBT SERVICE ON BONDED INDEBTEDNESS

And

RESOLUTION NO. 2022 - 14
RESOLUTION OF INTENTION OF THE CITY COUNCIL OF THE CITY OF THE CITY OF WILDOMAR TO INCUR BONDED INDEBTEDNESS IN AN AMOUNT NOT TO EXCEED $10,000,000 WITHIN PROPOSED COMMUNITY FACILITIES DISTRICT NO. 2022-2 (HORIZON PLACE) OF THE CITY OF WILDOMAR

2.0 PUBLIC HEARINGS

2.1 Zoning Ordinance Amendment No. 2022-01: A proposed code amendment to require a conditional use permit for gasoline and diesel service stations with the concurrent sale of beer and wine for off-premises consumption

Mayor Benoit read the title.

Mayor Benoit opened the public hearing.

Planning Director Bassi presented the staff report.

There being no testimony, Mayor Benoit closed the public hearing.

A **MOTION** was made by Councilmember Nigg seconded by Councilmember DePhillippo to introduce and approve the first reading of an Ordinance entitled

ORDINANCE NO. 215
AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, ADOPTING A GENERAL RULE EXEMPTION IN ACCORDANCE WITH SECTION 15061(B)(3) OF CEQA AND APPROVAL OF ZONING ORDINANCE AMENDMENT NO. 2022-01 TO MODIFY CHAPTERS 17.88; 17.92; 17.96; 17.108; AND 17.248 OF THE WILDOMAR MUNICIPAL CODE REQUIRING A CONDITIONAL USE PERMIT FOR GASOLINE AND DIESEL SERVICE STATIONS WITH THE CONCURRENT SALE OF BEER AND WINE FOR OFF-PREMISES CONSUMPTION

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

3.0 GENERAL BUSINESS

3.1 Ordinance Repealing and Replacing Chapter 15.40 of the Wildomar Municipal Code – Adopting International Property Maintenance Code by reference

Mayor Benoit read the title.

Code enforcement supervisor Berroteran presented the staff report.

A **MOTION** was made by Councilmember Moore seconded by Mayor Pro Tem Morabito to introduce and waive further reading of an Ordinance entitled:

ORDINANCE NO. 216
AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, AMENDING THE WILDOMAR MUNICIPAL CODE BY REPEALING CHAPTER 15.40 "UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS" AND ADDING CHAPTER 15.40

"INTERNATIONAL PROPERTY MAINTENANCE CODE"

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

3.2 FY 2021-22 3rd Quarter Budget Report

Mayor Benoit read the tittle.

Administrative Service Director Howell presented staff report.

A **MOTION** was made by councilmember Moore seconded by councilmember Nigg to approve the Fiscal Year 2021-22 3rd Quarter Report and to adopt a Resolution entitled:

RESOLUTION NO. 2022 - 14
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, AUTHORIZING AMENDMENTS TO THE FY 2021-22 BUDGETED REVENUES AND EXPENSES

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

3.3 Extension of the Temporary Use Permit (TUP) regulations for outdoor commercial activities

Mayor Benoit read the title.

Planning Director Bassi presented the staff report.

Andy Morris provided public comment in favor.

A **MOTION** was made by Mayor Benoit and seconded by Mayor Pro Tem Morabito to adopt an Uncodified Urgency Ordinance entitled:

ORDINANCE NO. 217
AN UNCODIFIED URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF WILDOMAR, CALIFORNIA, REGARDING TEMPORARY USE PERMITS FOR OUTDOOR COMMERCIAL ACTIVITIES.

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

3.4 Draft Legislative Platform

Mayor Benoit read the title.

Economic Development Director Davidson presented the staff report.

City Council provided input for the Draft Legislative Platform.

3.5 Committees, Commissions, and Boards Appointment

Mayor Benoit read the tittle.

City Clerk Morales presented the staff report.

A **MOTION** was made by Mayor Benoit and seconded by Mayor Pro Tem. Morabito to:

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

3.6 Surveillance Camera Exchange and Installation

Mayor Benoit read the title.

Community Service director Torres presented the staff report.

A **MOTION** was made by Councilmember Moore and seconded by

Councilmember Nigg to approve:

1. Return procured surveillance cameras and use credited amount towards camera units with one year storage capacity.

2. The utilization of Infinity Technologies for the installation of new cameras

MOTION carried, 5-0, by the following vote:

YEA: DePhillippo, Moore, Nigg, Mayor Pro Tem Morabito, Mayor Benoit
NAY: None
ABSTAIN: None
ABSENT: None

MANAGER REPORT

City Manager York Presented the Staff report including COVID update and National Volunteer Week announcement.

FUTURE AGENDA ITEMS

Added:

1. Sidewalk vending policy - Moore
2. Speed reduction in the city- Benoit
3. Outdoor dining ordinance- Benoit

ADJOURN THE CITY COUNCIL MEETING

There being no further business, Chair Benoit declared the meeting adjourned at 8:05 p.m.

Submitted by:

Janet Morales, CMC
City Clerk

Approved by:

Ben J. Benoit
Mayor