

City of Ridgecrest Systemic Safety Analysis Report and Local Roadway Safety Plan

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Nicolle Spann, T.E.
Traffic Engineer

Date

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City of Ridgecrest

Systemic Safety Analysis Report and Local Roadway Safety Plan

I. Executive Summary

The Systemic Safety Analysis and Local Roadway Safety Plan (LRSP) is a proactive safety approach that focuses on evaluating an entire roadway network. The Analysis uses a defined set of criteria to develop safety projects to submit for Highway Safety Improvement Program (HSIP) funding consideration. The Analysis looks at crash history across a roadway network to identify high-risk roadways and intersections. A Systemic Analysis acknowledges that crashes alone are not always sufficient to prioritize countermeasures across a roadway network. The data-driven Safety Analysis methodology was derived from the Caltrans *Local Roadway Safety Manual (Version 1.4)*.

Caltrans adopted an LRSP requirement for future HSIP cycles where an LRSP, or its equivalent such as a Systemic Safety Analysis Report will be preferred or required for an agency to be eligible to apply for federal HSIP funds. An LRSP provides a framework for organizing stakeholders to identify, analyze, and prioritize roadway safety improvements on local and rural roads. The LRSP addresses the 4 Es of traffic safety: Engineering, Enforcement, Education, and Emergency Services.

There were 907 Citywide crashes throughout the City of Ridgecrest reported in a 5-year study period between 2013 and 2017. The crashes were qualitatively analyzed using a crash severity weight to identify the problem intersections and roadways throughout the City. The City was quantitatively analyzed with regards to the City's concerns for roadway safety, projects lacking funding as well as school crossings that need improving to meet current California Manual on Uniform Traffic Control Devices (CA MUTCD) Standards.

The Systemic Safety Analysis derived 5 projects that are eligible for HSIP funding and 2 other prioritized safety projects shown in **Table 1** below. The Expected Life Benefit is a monetary value placed on the number and severity of crashes that would be mitigated with the proposed countermeasure. The Total Project Cost is the amount of funding that would be requested from HSIP. The B/C Ratio is the expected life benefit divided by the total project costs. The City has prioritized the 7 projects as shown. Some projects have alternative scopes, labeled as project numbers a and b. The City can choose which project alternative to apply for based on their current wants and needs, but should only apply for one, as they will have conflicting project limits and scopes.

Table 1- Summary of Prioritized List of Safety Project Scopes

No.	Project	Total Crashes (5-Year)	Expected Life Benefit	Total Project Costs	B/C Ratio
1	China Lake Systemic Pedestrian and Bicycle Improvements	R36, S22	\$11,855,710	\$247,800	47.84
2	Citywide Neighborhood Intersection Improvements	NS6, NS1	\$5,546,217	\$585,200	9.48

No.	Project	Total Crashes (5-Year)	Expected Life Benefit	Total Project Costs	B/C Ratio
3a	Signal Synchronization Adaptive Signals- 12 intersections	S3, S2	\$5,496,282	\$739,200	7.44
3b	Signal Synchronization Adaptive Signals- 6 intersections	S3, S2	\$2,646,220	\$369,600	7.16
4	Downs St and Las Flores Av Adaptive Traffic Signal Installation	NS3	\$2,736,050	\$490,000	5.58
5a	Downs St and Bowman Rd Roundabout	NS4A	\$8,768,000	\$980,000	8.95
5b	Downs St and Bowman Rd Traffic Signal Installation	NS3	\$879,500	\$490,000	1.79
6	Emergency Vehicle Preemption	S5	\$0	\$210,000	0.00
7	Downs St at Upjohn Av Traffic Signal Installation	NS3	\$234,484	\$490,000	0.48

By signing and stamping this Systemic Safety Analysis Report, the engineer is attesting to this report's technical information and engineering data upon which local agency's recommendations, conclusions, and decisions are made.

WILLDAN



Nicolle Spann, T.E.
Traffic Engineer



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.

II. Safety Data Utilized

When conducting the analysis, Willdan utilized several information sources to gain a better understanding of the safety issues throughout the City's roadway network. Crash data was obtained from the Statewide Integrated Traffic Record System (SWITRS) and from University of California (UC) Berkley's Transportation Injury Mapping System (TIMS). For the purpose this study, the latest 5 years of crash data from January 1, 2013 to December 31, 2017 was used for the safety analysis. In conjunction with the evaluation of crash data, field assessments were also performed to gain a clearer picture of the roadway safety issues. Citizen complaints of safety concerns were also used as an information source to identify problem areas.

SWITRS is an electronic database maintained by the California Highway Patrol (CHP) that serves as a means to collect and process data gathered from a crash scene. The SWITRS database contains all crashes that were reported to CHP from local and governmental agencies. The Internet SWITRS application is a tool by which CHP staff and members of its Allied Agencies throughout California can request various types of statistical reports in an electronic format. SWITRS is a comprehensive data source for conducting roadway safety analysis since it includes almost all public roads in the database.

The Safe Transportation Research and Education Center (SafeTREC) at UC Berkley, has developed the TIMS website with tools for local agencies to gather data for safety analyses. The TIMS website geocodes SWITRS crash data and displays the crash locations on a web-based map with analysis tools. However, there is a limitation to TIMS as SafeTREC is not able to incorporate all SWITRS crashes into the TIMS database due to poor crash location descriptions in the crash reports. Currently, TIMS only includes approximately 85% of California's fatal and injury crashes and does not include Property Damage Only crashes.

In conjunction with the gathering of crash data from SWITRS and TIMS, field assessments were performed to help identify problem locations. Informal field assessments were conducted by driving the City's roads and by virtually viewing the roadway network through Google Maps. Assessments were also made from discussing roadway characteristics and problem locations with City Staff. These assessments were used to identify evidence of crashes or deficiencies on the roadway or roadside, including: damaged trees or fences, skid marks, ruts on the shoulder, car parts on the shoulder, and/or missing guardrail.

During the analysis, notifications from local citizens regarding unsafe conditions were also reviewed to identify segments or corridors that featured multiple complaints. These public sources can serve as indicators that a safety issue may exist and warrants further review and analysis to determine the extent of the issue. However, citizen reports are informal data sources and were only used to supplement the primary data-driven analysis utilizing SWITRS and TIMS crash data.

III. Data Analysis Techniques and Results

A crash data analysis was performed on the safety data to determine the extent of the roadway safety issues and to select appropriate countermeasures. The analysis utilized a quantitative method to define the number of crashes occurring within the City's roadway network. The crash data from SWITRS and TIMS was combined into a master list of crashes that was summarized by attributes such as crash type, severity, and location to identify patterns in the crash data and the most significant problem locations. The 5-year crash list is found in **Appendix A**. The City's 5-year list of crashes included 907 total City crashes, not including crashes on state highways. There were 27 fatality and injury crashes and 72 pedestrian and bicycle crashes.

The Systemic Safety Analysis Report (SSAR) Guidelines discuss different ways local agencies can focus the scope of the SSAR. This depends on if the City or County has a large percentage of High Risk Rural Roadways or if the City or County has primarily urban roadways. City's with rural roadways may choose to focus on identifying High Risk Rural Road (HR3) funding and cities with primarily urban roadways may choose to focus on identifying future urban Highway Safety Improvement Program (HSIP) projects. The roadway network of the City of Ridgecrest primarily consists of urban roadways. Therefore, future urban HSIP projects were prioritized for determining SSAR scopes. HSIP allocates funding to project applicants based on crash severity. This means that both a quantitative and qualitative analysis was done to analyze and prioritize the 907 Citywide crashes.

A quantitative crash data analysis was used to determine the crash frequency at each intersection and each roadway segment. However, since HSIP places a greater emphasis on more severe crashes, weighted values were applied to different crash severities. The HSIP application uses a *Benefit Calculator Tool* to apply a monetary value to act as the project benefit using the crash severity. The *Benefit Calculator Tool* used is the HSIP Cycle 9 rendition and could have differing benefits for every iteration released. An example of the *Benefit Calculator Tool* is shown in **Appendix D**. The HSIP *Benefit Calculator Tool* applies a dollar value to each crash severity type in the project limits. Each crash severity has a weighted value that determines each crash's dollar value for the benefit. **Table 2** shows the weighted value used in both the *Benefit Calculator Tool* and this analysis. By applying these weighted values, quantitative analysis techniques were used to determine the best HSIP project locations.

Table 2- Crash Severity Weighted Values

Crash Severity	Weighted Value
<i>Property Damage Only</i>	1
<i>Injury (Complaint of Pain)</i>	6
<i>Injury (Other Visible)</i>	11
<i>Injury (Severe)</i>	126
<i>Fatality</i>	126

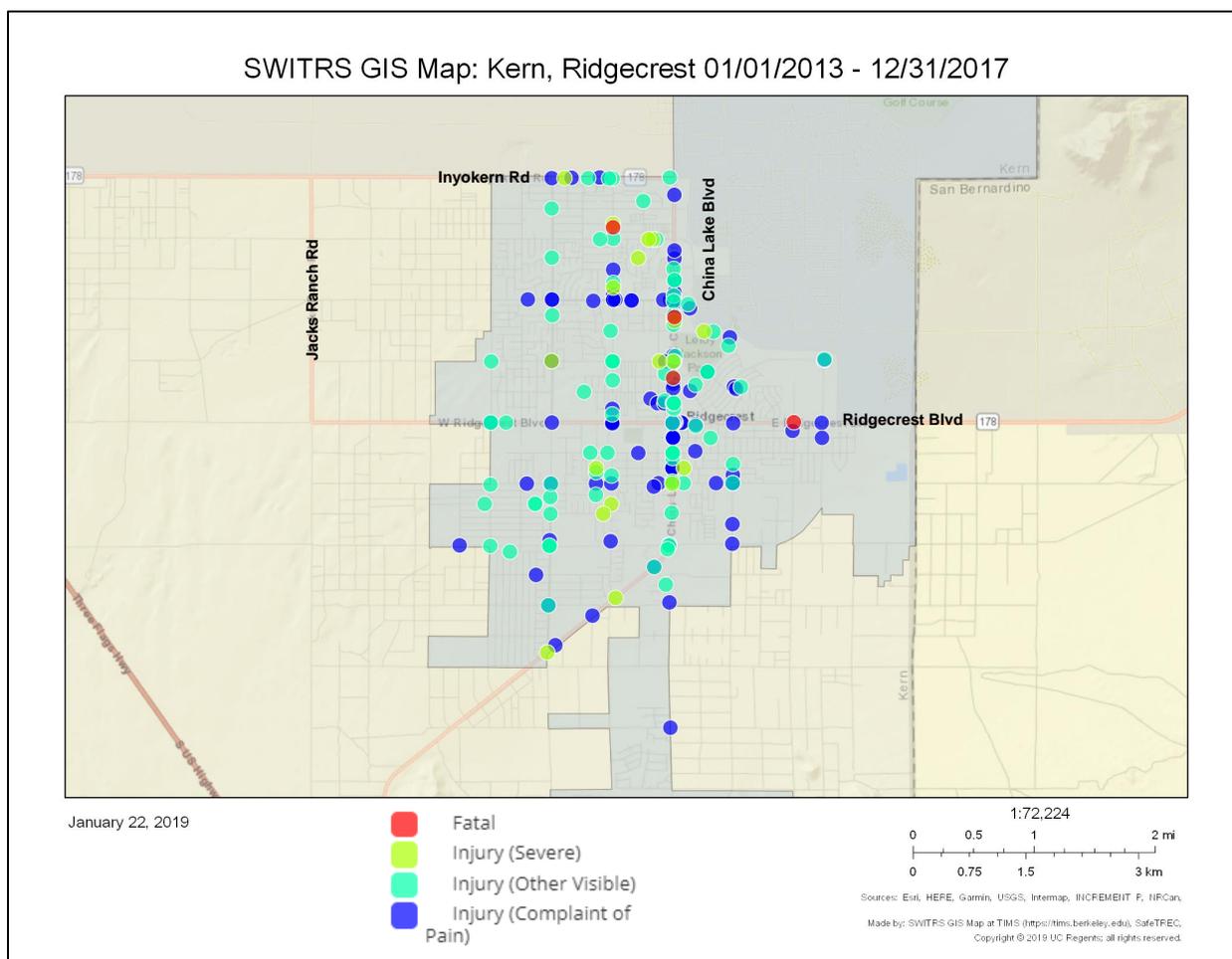
Qualitative analysis considers the physical characteristics of the roadway network. Roadways that are not compliant with the California Manual on Uniform Traffic Control Devices (CA MUTCD) standards as well as outdated infrastructure were checked in the qualitative analysis. The qualitative analysis is important to consider in cases where a project roadway or intersection doesn't have the highest quantitative crash data but has a low-cost project that could be a good candidate for a HSIP project.

From our informal field assessments and the City Staff's recommendations, a list of physical characteristics that could be the basis of an effective project scope was developed. The City has a lack of street lighting in the residential neighborhoods. There is also a stated need for adaptive signals along major roadway corridors. These characteristics were used to develop project scopes using the crash data from the quantitative analysis.

IV. Highest Occurring Crash Types

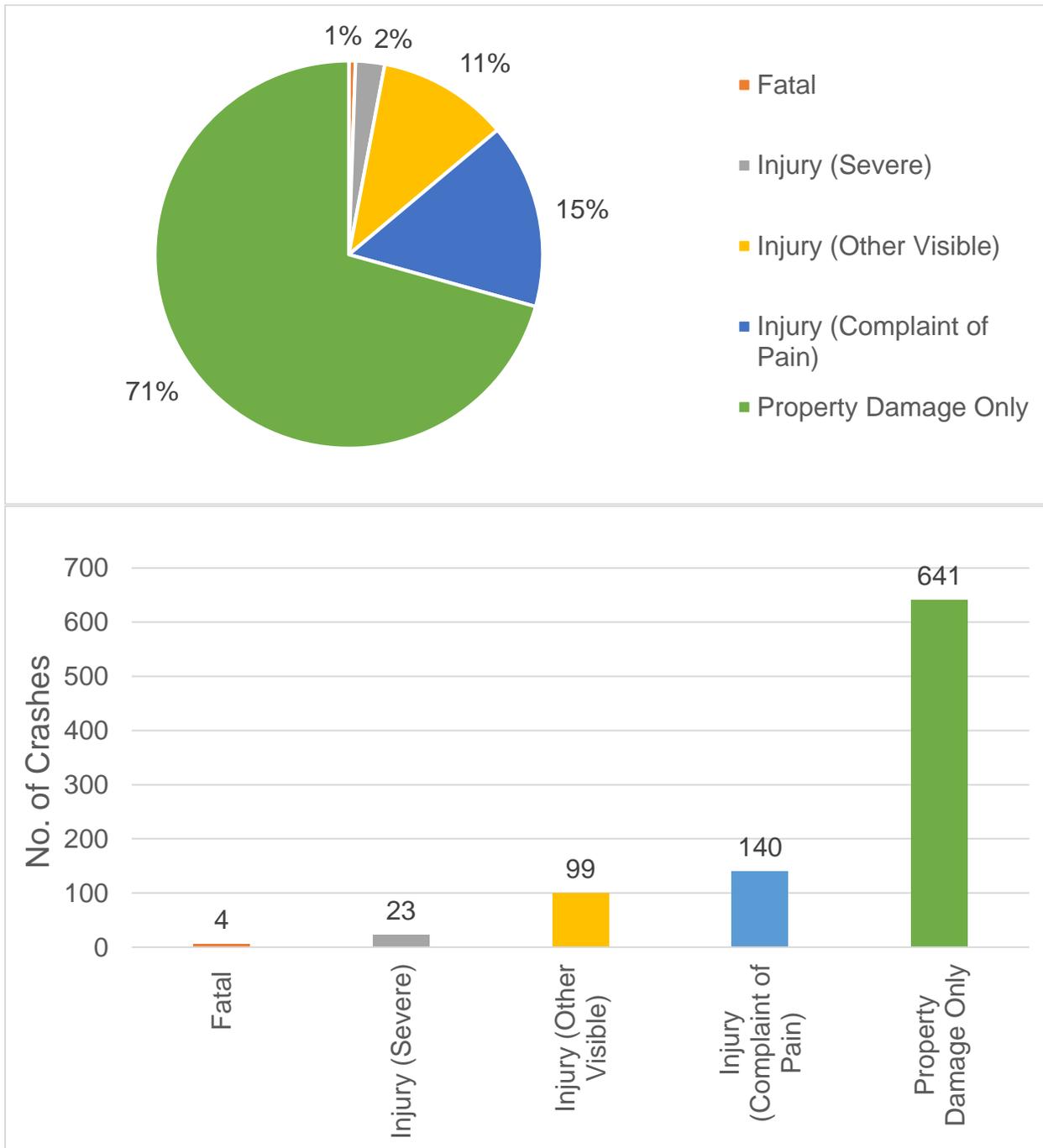
Using the TIMS “SWITRS GIS Map” and the TIMS “SWITRS Query & Map”, a snapshot of the Citywide fatality and injury crashes were assessed. The TIMS “SWITRS GIS Map” shown in **Figure 1** shows a map of the fatality and injury crashes throughout the City. **Figure 1** shows that most crashes occurred on China Lake Blvd. For the SSAR and LRSP in the City of Ridgecrest, crashes on the state highways, that are not under control of the City, were not analyzed. Some locations mapped and analyzed are Caltrans owned and operated roadways and intersections. However, for the purpose of evaluating all crashes Citywide, these locations remain included in the SSAR analysis.

Figure 1- GIS Map of Injury and Fatality Crashes in the City of Ridgecrest



In the 5-year study period (2013-2017), 27 of the 907 collisions were either injury or fatality crashes. **Figure 2** shows the number of crashes by crash severity. Crash severity is a very important factor when determining projects for the HSIP grant application in order to get a high benefit. As shown in **Figure 2**, there were 4 fatality crashes and 23 severe injury crashes throughout the City streets.

Figure 2- Number of Crashes by Crash Severity



The 27 crashes that resulted in fatalities and severe injuries in the 5-year study period are listed below in **Table 3**.

Table 3- Fatal and Severe Crashes

No.	Primary Rd	Secondary Rd	Distance	Severity
1	S China Lake Bl	Downs St	0	Severe Injury
2	S China Lake Bl	S Norma St	0	Severe Injury
3	W Ridgecrest Bl	W Ridgecrest 800	0	Severe Injury
4	Rt 178, N China Lake Bl	W Las Flores Av	0	Severe Injury
5	N Norma St	W Moyer Av	184' N	Fatal
6	W Ward Av	Palo Verde Dr	286' W	Severe Injury
7	W Ward Av	N Wayne Av	235' E	Severe Injury
8	N Norma St	Utility Pole 1702333e	10' S	Severe Injury
9	Rt 178, E Ridgecrest Bl	Gateway St	40' W	Fatal
10	Rt 178, N China Lake Bl	Coso Av	28' N	Fatal
11	W Las Flores Av	N Sanders	53' E	Severe Injury
12	Rt 178, N China Lake Bl	W Howell Av	206' S	Severe Injury
13	E Drummond Av	E French Av	1150' W	Severe Injury
14	S Norma St	Petris Av	0	Severe Injury
15	S Lenore St	E Wilson Av	0	Severe Injury
16	Larkspur St	S Richmond Rd	222' E	Severe Injury
17	S China Lake Bl	Light Pole 4177409e	25' N	Severe Injury
18	N Norma St	Light Pole 21712e	205' N	Severe Injury
19	Rt 178, N China Lake Bl	N Gordon St	40' W	Severe Injury
20	S Allen St	W Radar Av	0	Severe Injury
21	N Downs St	West Las Flores Av	12' N	Severe Injury
22	S China Lake Bl	Upjohn Av	21' S	Severe Injury
23	N Heritage Dr	Cobblestone Av	238' W	Severe Injury
24	S Sunset St	W Wilson Av	7' S	Severe Injury
25	N Norma St	W Drummond Av	530' N	Severe Injury
26	N Norma St	W Reeves Av	0	Severe Injury
27	Rt 178, N China Lake Bl	W Howell Av	38' S	Fatal

The TIMS “SWITRS Query & Map” summarized the severe injury and fatality crash data in the following 3 figures.

Figure 3 shows the types of crashes for the 27 fatal and severe injury crashes within the data set. Of the 27 fatal and severe injury crashes, 29.6% (8) were vehicle/ pedestrian crashes, 29.8% (8) were hit-object, 18.5% (5) broadside crashes, and the rest were distributed among head-on, rear end, overturned, and other crashes.

Figure 3- Number of Fatal and Severe Injury Crashes by Type of Crash

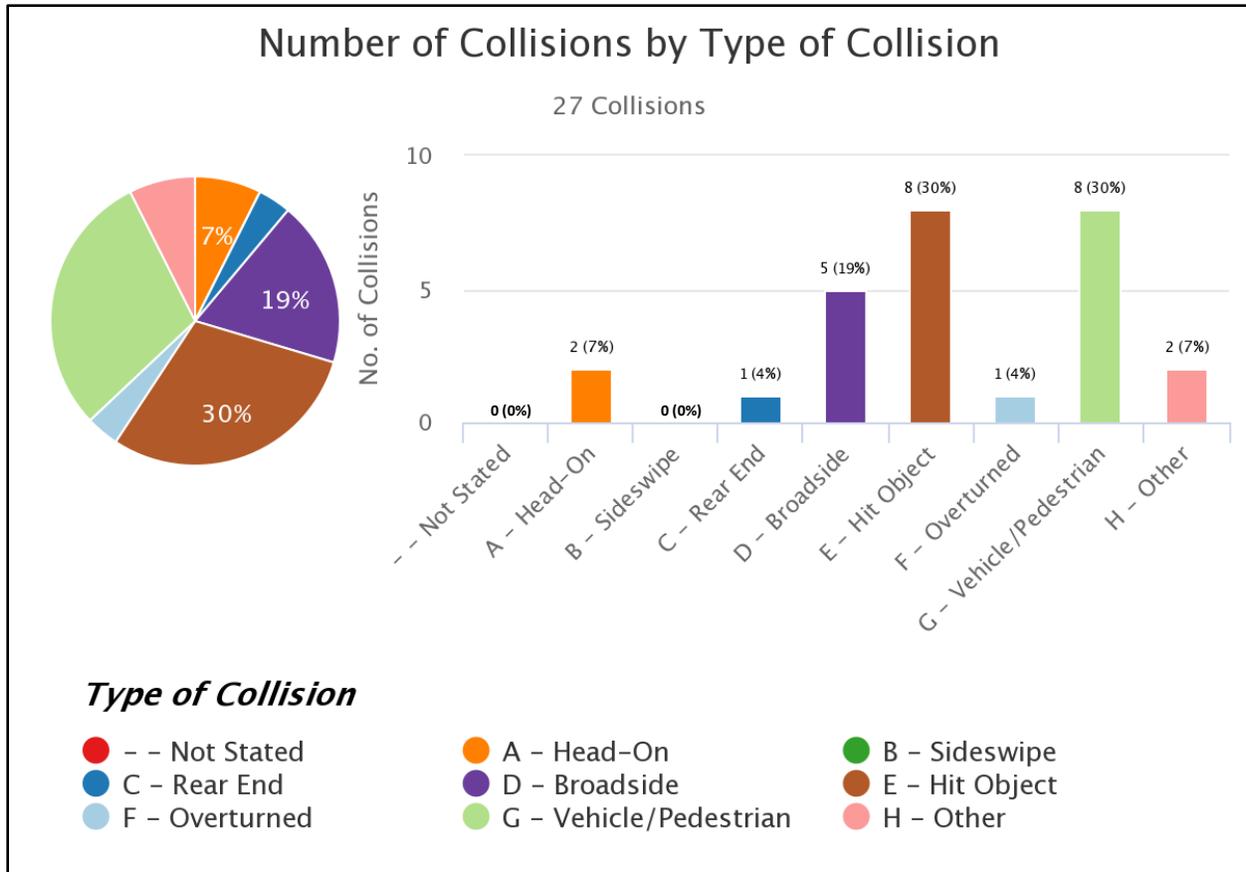
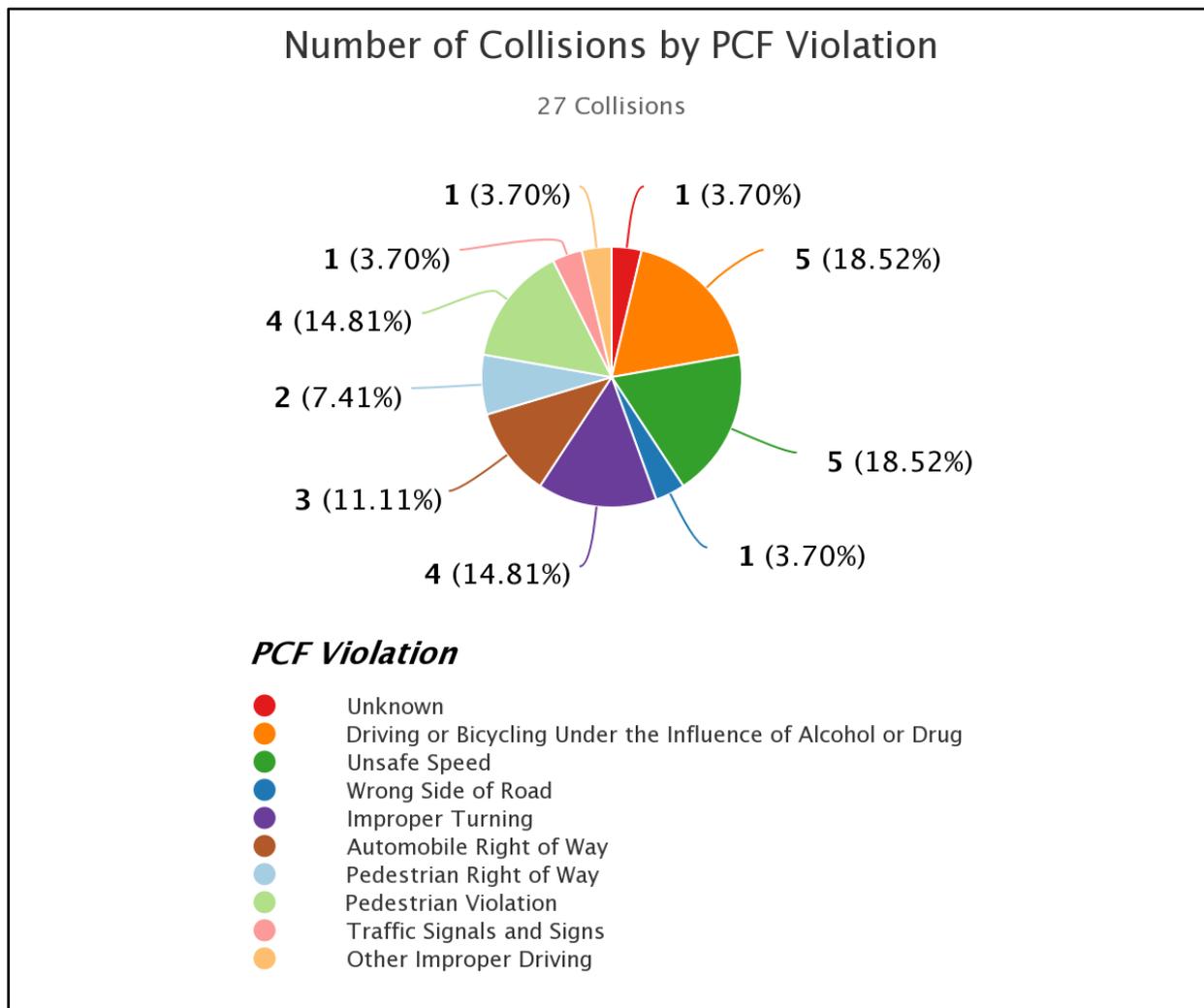


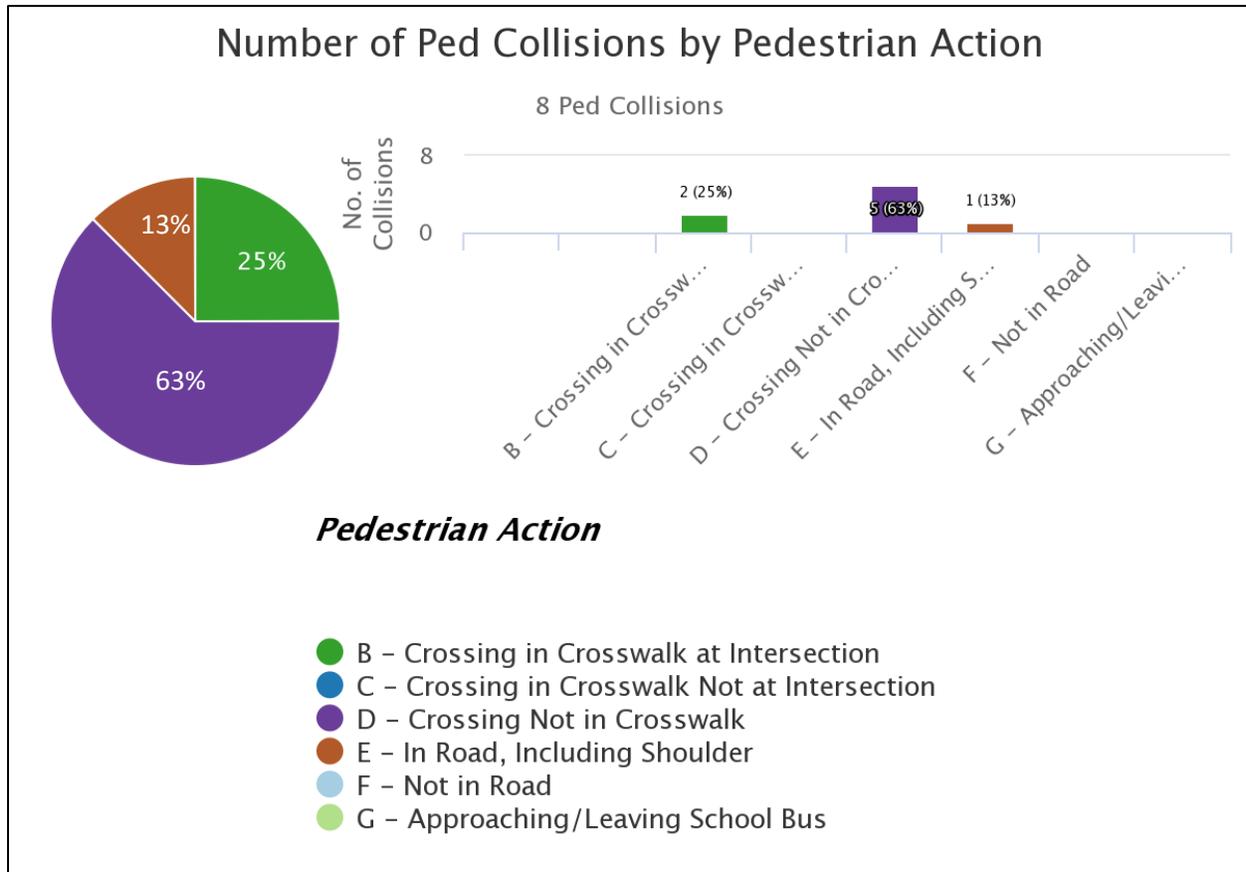
Figure 4 shows the 27 fatal and severe injury crashes categorized by primary collision factors. Of the 27 crashes, 18.5% (5) of the crashes were caused by a driver under the influence of drugs or alcohol (DUI), 18.5% (5) of the crashes were caused by unsafe speed, 14.8% (4) were caused by an improper turning, 14.8% (4) of the crashes were caused by pedestrian violations, 11.1% (3) of the crashes were caused by automobile right of way, and the other 22.2% were distributed amongst the other primary collision factors.

Figure 4- Number of Fatal and Severe Injury Crashes by Primary Collision Factor



Of the 27 Citywide fatality and injury crashes, 8 involved pedestrians. **Figure 5** shows a breakdown of the 8 injury and fatality crashes involving pedestrians. The data show that 63% (5) crossed not in the crosswalk, 25% (2) of the pedestrian involved crashes involved a pedestrian crossing in the crosswalk at the intersection, and 13% (1) were in the road, including the shoulder.

Figure 5- Citywide Pedestrian Crashes



V. High-Risk Corridors and Intersections

The sum of the weighted crash values found in **Table 2** were used on each City roadway segment and intersection to create a list of the City's highest-risk corridors and intersections.

A summary of the intersection crash list is shown in **Table 4**. These 20 intersections have the highest weighted crash severity in the City of Ridgecrest. These intersections and weighted crash severity provided the basis of the intersections to be considered for HSIP funding opportunities.

Table 4- Intersection Crash List

No.	Intersection	Total Crashes	Weighed Crash Severity
1	Rt 178, N China Lake Bl and W Howell Av ¹	14	279
2	S China Lake Bl and Upjohn Av	26	191
3	Rt 178, N China Lake Bl and Las Flores Av ¹	22	182
4	Rt 178, N China Lake Bl and Coso Av ¹	5	145
5	W Las Flores Av and Sanders St	4	139
6	Sunset St and Wilson Av	3	138
7	Downs St and Las Flores Av	8	138
8	S China Lake Bl and Downs St	4	129
9	S China Lake Bl and Norma St	3	128
10	Ward Av and Wayne St	2	127
11	Larkspur Ct/ Richmond Rd	2	127
12	Rt 178, E Ridgecrest Bl and Gateway Bl ¹	2	127
13	Norma St and Reeves Av	1	126
14	Allen St and Radar Av	1	126
15	Lenore St and Wilson Av	1	126
16	Norma St and Petris Av	1	126
17	Rt 178, Inyokern Rd and Gordon St ¹	1	126
18	Norma St and Moyer Av	1	126
19	Heritage Dr and Cobblestone Ln	1	126
20	Bowman Rd and Downs St	20	95

¹ These intersections are not owned by the City but were included in the analysis.

The roadway crash list is a list of mid-block collisions along the roadway limits listed in **Table 5**. The crashes analyzed include crashes that occurred outside of an intersection. These 10 roadway segments have the highest weighted crash severity in the City of Ridgecrest. These roadway corridors and weighted crash severity provided the basis of the corridors to be considered for HSIP funding opportunities.

Table 5- Roadway Crash List

No.	Roadway Segment	Total Crashes	Weighed Crash Severity
1	Norma St between Inyokern Rd and China Lake Blvd	52	642
2	Rt 178, and North and South China Lake Blvd between Inyokern Rd and Las Flores Av ¹	58	480
3	China Lake Blvd between Las Flores Av and Upjohn ¹	62	407
4	Ward Av between Sierra View St and China Lake Blvd	6	281
5	Drummond Av between Norma St and French Av	23	213
6	W Ridgecrest Blvd between Mahan St and China Lake Blvd	39	189
7	Downs St between Inyokern Rd and China Lake Blvd	21	181
8	S China Lake Blvd between Upjohn Av and Downs St	11	176
9	Sunset St between Ridgecrest Blvd and South End	7	157
10	Las Flores Av between Norma St and China Lake Blvd	8	153

¹ These roadways are not owned by the City but were included in the analysis.

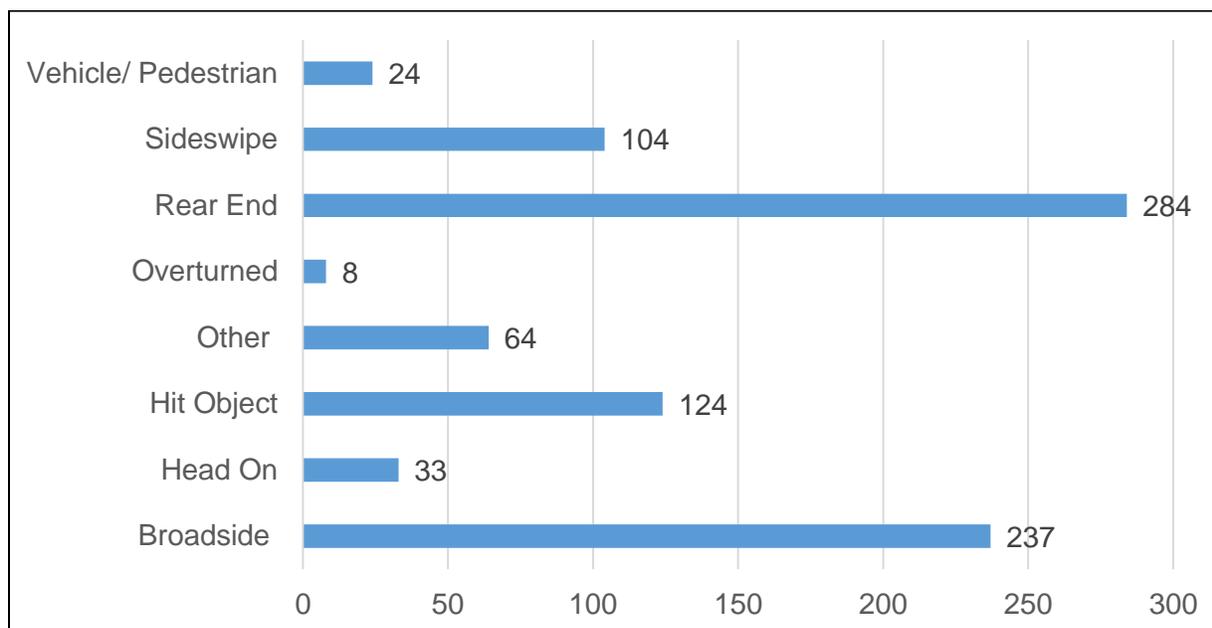
VI. Countermeasures Identified to Address Safety Issues

Caltrans' *Local Roadway Safety Manual* (LRSM) Version 1.4 was used to identify countermeasures to address qualitative and quantitative safety measures. The LRSM has 3 categories of countermeasures: countermeasures for signalized intersections (S), countermeasures for non-signalized intersections (NS), and countermeasures for roadways (R). The list of countermeasures from the LRSM are shown in **Appendix B**.

From our qualitative analysis, we found a trend in rear end and broadside crashes throughout the City. These crash types recorded over 521 crashes in the 5-year study period. **Figure 6** displays total crashes categorized by crash type. Rear end crashes typically occur when vehicles are driving at unsafe speeds. Broadside crashes typically occur at intersections and are due to right of way uncertainty. These crashes can be mitigated from the list of countermeasures, listed as "Rear End" and "Broadside" respectively in **Table 6**.

According to **Figure 3** in **Section IV** of this Report, Pedestrian involved collisions accounted for 30% of the severe injury and fatal crashes throughout the City in the 5-year study period. Pedestrian crashes typically occur when crossings are not visible to unfamiliar drivers. Pedestrian crashes can be mitigated from the list of countermeasures, listed as "Pedestrian" in **Table 6**.

24% of all collisions in the 5-year study period were night-time collisions. Night collisions occur when drivers do not have enough visibility in the dark to see and react to objects, pedestrians, or other vehicles. Night crashes can be mitigated from the list of countermeasures, listed as "Night" in **Table 6**.

Figure 6- Ridgecrest 5-Year Crashes by Crash Type**Table 6- Countermeasures Identified to Address Safety Issues**

No.	Countermeasure Name	Crash Type Mitigated
NS4A	Convert Intersection to Roundabout (from All-Way Stop Control)	Broadside, Rear-End
NS3	Install Signals	Broadside
NS6	Upgrade Intersection Pavement Markings	Broadside, Rear-End
NS1	Add Intersection Lighting	Night
S3	Improve Signal Timing	Broadside, Rear End
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	Broadside, Rear-End
S22	LPI (Leading Pedestrian Interval)	Pedestrian, Bicycle
R36	Install Bike Lanes	Pedestrian, Bicycle

VII. Viable Project Scopes

The HSIP program has a list of requirements to be eligible to compete for HSIP funding. These include:

- The total project costs must be greater than \$200,000.
- The Benefit-Cost (B/C) Ratio must be over 5.0.

The project benefit must be calculated using the *Benefit Calculator Tool* by inputting the crashes and their severity. The output of the *Benefit Calculator Tool* is a dollar value of the reductions in crashes from the proposed countermeasures.

A variety of methods to determine viable project scopes were used. Consideration was made of the locations of fatal and severe injury crashes, high-density crash locations, and the countermeasures identified to address the City's safety issues. A total of 5 project scopes were proposed to the City with a B/C Ratio over 5.0 and met the minimum requested project cost. Some projects have alternative scopes, labeled with their project numbers a and b. The City can choose which project alternative to apply for based on their current wants and needs, but should only apply for one, as they will have conflicting project limits and scopes. A description of the differences between alternatives is described in greater detail in the next report sections. **Table 7** summarizes the scope and cost of the projects.

Table 7- Summary of Project Scopes with B/C Ratio

No.	Project	Countermeasures ¹	Total Crashes	Expected Life Benefit	Total Project Costs	B/C Ratio
1a	Downs St and Bowman Rd Roundabout	NS4A	10	\$8,768,000	\$980,000	8.95
1b	Downs St and Bowman Rd Traffic Signal	NS3	10	\$879,500	\$490,000	1.79
2	Downs St and Las Flores Av Traffic Signal Installation	NS3	8	\$2,736,050	\$490,000	5.58
3	Citywide Neighborhood Intersection Improvements	NS6, NS1	52	\$5,546,217	\$585,200	9.48
4a	Signal Synchronization Adaptive Signals- 12 intersections	S3, S2	183	\$5,496,282	\$739,200	7.44
4b	Signal Synchronization Adaptive Signals- 6 intersections	S3, S2	67	\$2,646,220	\$369,600	7.16
5	China Lake Systemic Pedestrian and Bicycle Improvements	R36, S22	16	\$11,855,710	\$247,800	47.84

¹ See **Appendix B** for countermeasure descriptions

Downs St and Bowman Rd Roundabout

The Downs St and Bowman Rd Roundabout project scope includes Countermeasure NS4A, convert intersection to roundabout (from all-way stop control). The project limit is at an all-way stop controlled intersection of Downs St and Bowman Rd which received HSIP Cycle 8 funding in 2016 to install the all-way stop controls. The all-way stop control at this intersection was installed in late 2019. Before applying for additional HSIP funding for the roundabout, the crash history should be reanalyzed including the most recent crashes that occur with the all-way stop control.

The project intersection is an all-way stop on the minor road and has a crash trend that can be mitigated with a roundabout. This intersection has a high frequency of right-angle and left-turn type crashes because drivers from the minor road have difficulty entering traffic safely with oncoming traffic. Countermeasure NS4A, roundabout, can be used to address these kinds of crashes. Roundabouts provide an important alternative to signalized and all-way stop-controlled intersections because they allow traffic to enter the roundabout safely and to yield to the right-of-way traffic already in it. Roundabouts also serve moderate traffic volumes with less delay than all-way stop-controlled intersections and provide fewer conflict points, more specifically reducing it from 32 to 8 conflict points. The Orange Dot in **Appendix D-1a** shows the location of the intersection conversion to a roundabout for this project scope.

At Downs St and Bowman Rd, 8 out of 10 collisions identified “automobile right-of-way” as the primary collision factor within the 5-year study period. 24-hour directional volume counts were collected for this project scope to help determine the crash reduction factor. The crash data and the 24-hour counts calculate a crash reduction factor of 50% with the conversion of the intersection into a roundabout.

Within the project limits, there were 10 crashes in the 5-year study period. Analysis was made of the crashes and their severity to determine the total project benefit. Countermeasure NS4A, convert intersection to roundabout (from an all-way stop) can be applied to the crash types in the study area. **Table 8** shows the total number of crashes and their severity used for calculating the project benefit for each countermeasure. Using these countermeasures and crashes, the total benefit of the project is \$8,768,000. The Benefit Calculator Worksheets are attached in **Appendix D**.

Table 8- Crash Severity Table for Downs St and Bowman Rd Roundabout Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All (NS4A)	0	0	2	3	5	10

The construction costs for this project are shown in **Table 9**. The cost to convert an intersection into a roundabout is about \$700,000. Preliminary engineering and construction engineering are limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were used for this project estimate. The countermeasures for this project do not require local match from the City and are eligible to be 100% federally funded.

Table 9- Downs St and Bowman Rd Roundabout Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
NS4A	\$700,000	\$175,000	\$105,000	\$980,000	100% Federally Funded

Comparing the total project cost (\$980,000) with the project benefit (\$8,768,000), we get a competitive B/C ratio of 8.95 for this project. More information about the B/C ratio can be found in **Appendix D**.

Alternatively, the City of Ridgecrest wanted to identify the plausibility of installing a traffic signal at Downs St and Bowman Rd. The following section identifies the benefits and cost for installing a traffic signal at Downs St and Bowman Rd.

The Downs St and Bowman Rd Traffic Signal Installation project scope includes Countermeasure NS3, Install Signals. The project limit is at a non-signalized intersection of Downs St and Bowman Rd. The Orange Dot in **Appendix D-1b** shows the location of the intersection traffic signal for this project scope. This intersection has a high frequency of all types of crashes especially right-of-way crashes. Countermeasure NS3, Install Signals, can be used to address these kinds of crashes. The installation of new traffic signals can be used to prevent the most severe types of crashes, such as right-angle and left-turn crashes using this countermeasure.

The same number of crashes were applied to this countermeasure as the roundabout countermeasure, because both measures will prevent the same type of crashes. Within the project limits, there were 10 crashes in the 5-year study period. Refer to **Table 8** for the total number of crashes and their severity used for calculating the project benefit for this countermeasure to install a traffic signal at the study location. The project benefit for installing a traffic signal at Downs St and Bowman Rd is \$879,500. The Benefit Calculator Worksheets are attached in **Appendix D**.

The construction cost for this project is shown in **Table 10**. The cost to install new traffic signals at the intersection is \$350,000. Preliminary engineering and construction engineering are limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were used for this project estimate. The countermeasures for this project do not require local match from the City and are eligible to be 100% federally funded.

Table 10- Downs St and Bowman Rd Traffic Signal Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
NS3	\$350,000	\$87,500	\$52,500	\$490,000	100% Federally Funded

Comparing the total project cost (\$490,000) with the project benefit (\$879,500), a low B/C ratio of 1.79 was calculated for this project. More information about the B/C ratio can be found in **Appendix D**.

Table 11 shows the comparison of the two alternative traffic control devices at Downs St at Bowman Rd. The roundabout alternative will generate a higher B/C ratio than the traffic signal alternative. The crash reduction factor determined by Caltrans in the Local Roadway Safety Manual is 25% for installing a new traffic signal and is 50% for installing a roundabout at this location. Although both projects use the same crashes in the B/C calculation, the crash reduction factor significantly affects the B/C value when comparing the two projects. The traffic signal alternative generates a low B/C ratio and would not qualify for HSIP funding. Therefore, it is recommended to use the roundabout countermeasure for this intersection. However, HSIP Cycle 8 funds recently helped the City of Ridgecrest install an all-way stop at this intersection, so the City should wait until 2023 to reevaluate this intersection and countermeasures.

Table 11- Downs St and Bowman Rd Roundabout vs Traffic Signal Project Comparison

Countermeasure	Total Project Costs	Project Benefit	B/C Ratio	City's Local Match
NS4A (Roundabout)	\$980,000	\$8,768,000	8.95	100% Federally Funded
NS3 (Traffic Signal)	\$490,000	\$879,500	1.79	100% Federally Funded

Downs St and Las Flores Av Adaptive Traffic Signal Installation

The Downs St and Las Flores Av Traffic Signal Installation project scope includes Countermeasure NS3, Install Signals. The project limit is at a non-signalized intersection of Downs St and Las Flores Av.

The project intersection is currently an all-way stop and has no traffic signals installed. This intersection has a high frequency of all types of crashes especially right-of-way crashes occurring. Countermeasure NS3, Install Signals, can be used to address these kinds of crashes. The installation of new traffic signals can be used to prevent the most severe types of crashes, such as right-angle and left-turn crashes using this countermeasure. The Orange Dot in **Appendix E-1** shows the location of the new traffic signal installation.

At the intersection of Downs St and Las Flores Av, 6 out of 8 reported collisions identified “automobile right-of-way” and “traffic signs” as the primary collision factor within the 5-year period. 24-hour directional volume counts were collected for this project scope to analyze CA MUTCD traffic signal warrants.

Within the project limits, there were 8 crashes in the 5-year study period. Analysis was made of the crashes and their severity to determine the total project benefit. Countermeasure NS3, Install Signals can be applied to the crash types in the study area.

Table 12 shows the total number of crashes and their severity used for calculating the project benefit for this countermeasure. Using this countermeasure and these crashes, the total benefit of the project is \$2,736,050. The Benefit Calculator Worksheets are attached in **Appendix E**.

Table 12- Crash Severity Table for Downs St and Las Flores Av Adaptive Traffic Signal Installation Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All (NS3)	0	1	0	1	6	8

The construction costs for this project are shown in **Table 13**. The cost to install new traffic signals at the intersection is \$350,000. Preliminary engineering and construction engineering are limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were used for this project estimate. The countermeasures for this project do not require local match from the City and are eligible to be 100% federally funded.

Table 13- Downs St and Las Flores Av Adaptive Traffic Signal Installation Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
NS3	\$350,000	\$87,500	\$52,500	\$490,000	100% Federally Funded

Comparing the total project cost (\$490,000) with the project benefit (\$2,736,050), a B/C ratio of 5.58 was calculated for this project. More information about the B/C ratio can be found in **Appendix E**.

Citywide Neighborhood Intersection Improvements

The Citywide Neighborhood Intersection Improvements project scope includes Countermeasure NS6, Upgrade Intersection Pavement Markings, and Countermeasure NS1, Add Intersection Lighting.

About 200 unsignalized intersections in the City of Ridgecrest have “Stop” markings and Stop Bars that are missing or faded, and not effectively visible to approaching motorists. Some of these intersections only have Stop Bars and stop signs, and are missing “Stop” markings, leading to broadside and rear-end crashes. Installing “Stop” markings and Stop bars on road approaches can help drivers’ awareness of the presence of the intersection, and therefore let them safely approach the intersection. These intersections would benefit from Countermeasure NS6, Upgrade Intersection Pavement Markings.

A total of 52 collisions occurred in the City of Ridgecrest neighborhood intersections. These crashes are systemic and lack adequate “Stop” markings. Therefore, the City’s approximate 200 neighborhood intersections are good candidates for Countermeasure NS6, Upgrade Intersection Pavement Markings. Countermeasure NS6 would upgrade all intersection pavement markings in Ridgecrest neighborhood streets to include adequate “Stop” markings and Stop bars. **Appendix F-1** shows a map of the City of Ridgecrest with a picture of a typical neighborhood street that is included in this systemic project.

There are 7 intersections in the City of Ridgecrest that do not provide lighting at the intersection and the approaches. The intersections are listed below.

1. Downs St and Dolphin Av
2. Downs St and Bowman Rd
3. Ridgecrest Blvd and Mahan St
4. Las Flores Av and Mahan St
5. Drummond Av and Mahan St
6. Ward Av and Mahan St
7. Downs St and Ward Av

A total of 9 collisions occurred at the 7 intersections above during the night. Therefore, these intersections are good candidates for Countermeasure NS1 since the intersections do not provide lighting. Countermeasure NS1 would provide lighting at these intersections helping drivers see the intersection and the surroundings better, and it can improve drivers sight distance and visibility at night. Countermeasure NS1 will also benefit non-motorized users by helping the drivers see them better at night. **Appendix F-1** shows the location of the intersections that do not currently provide lighting.

Table 14 shows the total number of crashes and their severity that was used for calculating the project benefit for both NS6 and NS1 countermeasures. The total benefit of the project is \$5,546,217. The Benefit Calculator Worksheets are attached in **Appendix F**

Table 14- Crash Severity Table for Citywide Neighborhood Intersection Improvements Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All (NS6) ¹	0	2	9	9	32	52
Night (NS1) ²	0	0	0	3	6	9

¹ Upgrade Intersection Pavement Markings

² Add Intersection Lighting

The construction costs for this project are shown in **Table 15**. The cost to install pavement markings and street lighting is estimated to cost \$585,200. Preliminary engineering and construction engineering are limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were used for this project's estimate. The Intersection Pavements Markings Countermeasure (NS6) and the Intersection Lighting Countermeasure (NS1) for this project are eligible to be 100% federally funded.

Table 15- Citywide Neighborhood Intersection Improvements Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
NS6	\$30,000	\$104,500	\$62,700	\$585,200	100% Federally Funded
NS1	\$350,000				

A B/C ratio of 9.48 was calculated for this project using the total project cost (\$585,200) compared to the project benefit (\$5,546,217). More details about the B/C ratio can be found in **Appendix F**.

Signal Synchronization-Adaptive Signals

The Signal Synchronization-Adaptive Signals project scope consists of Countermeasure S3 – Improve Signal Timing and Countermeasure S2 – Signal Upgrades. These countermeasures are proposed along China Lake Blvd at the 12 following signalized intersections. The first 6 intersection signals are not owned or operated by the City of Ridgecrest and would require coordination with Caltrans.

1. Inyokern Rd, Caltrans
2. Ward Av, Caltrans
3. Drummond Av, Caltrans
4. Las Flores Av, Caltrans
5. French Av, Caltrans
6. Ridgecrest Blvd, Caltrans
7. California Av, City of Ridgecrest
8. Church Av, City of Ridgecrest
9. Upjohn Av, City of Ridgecrest
10. Rader Av, City of Ridgecrest
11. Bowman Rd, City of Ridgecrest
12. College Heights Blvd, City of Ridgecrest

The 12 project intersections are good candidates to be upgraded as they have injury crashes that can be mitigated with Improved Signal Timing (Countermeasure S3) and Signal Upgrades (Countermeasure S2). **Appendix G-1a** shows the intersections for this project scope.

There were 183 crashes in the 5-year study period within the project limits. To get the total project benefit, the total crashes and their severity were analyzed. Countermeasure S3, Improve Signal Timing, and Countermeasure S2, Signal Upgrades use all crash types to calculate the project benefit. **Table 16** shows the total number of crashes and their severity used to calculate the project benefit for the countermeasures. The total benefit of the project is \$5,496,282. The Benefit Calculator Worksheets are attached in **Appendix G**.

Table 16- Crash Severity for Signal Synchronization-Adaptive Signals Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All (S3) ¹	0	2	21	32	128	183
All (S2) ²	0	2	21	32	128	183

¹ Improve Signal Timing

² Signal Upgrades

The construction costs for this project are shown in **Table 17**. The total cost of this project is \$480,000. Preliminary engineering and construction engineering limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were applied to this project's estimate. The countermeasures for this project require local match from the City and are eligible to be 50% federally funded.

Table 17- Signal Synchronization-Adaptive Signals Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
S3	\$76,800	\$132,000	\$79,200	\$739,200	\$369,600
S2	\$403,200				

Comparing the total project cost (\$739,200) with the project benefit (\$5,496,282), a B/C ratio of 7.44 is calculated for this project. More details about the B/C ratio can be found in **Appendix G**.

Historically, Caltrans has not shown interest in partnering with the City of Ridgecrest to synchronize the signals on China Lake Blvd with adaptive signals. The following discussion identifies an alternative project scope for the Signal Synchronization-Adaptive Signals Project along China Lake Blvd at only the 6 signalized intersections that are owned and operated by the City of Ridgecrest.

1. California Av, City of Ridgecrest
2. Church Av, City of Ridgecrest
3. Upjohn Av, City of Ridgecrest
4. Rader Av, City of Ridgecrest
5. Bowman Rd, City of Ridgecrest
6. College Heights Blvd, City of Ridgecrest

The 6 project intersections are analyzed using the same two countermeasures as they have injury crashes that can be mitigated with Improved Signal Timing (Countermeasure S3) and Signal Upgrades (Countermeasure S2). **Appendix G-1b** shows the intersections for this project scope.

There were 67 crashes in the 5-year study period within the project limits. To get the total project benefit, the total crashes and their severity were analyzed. Countermeasure S3, Improve Signal Timing, and Countermeasure S2, Signal Upgrades use all crash types to calculate the project benefit. **Table 18** shows the total number of crashes and their severity used to calculate the

project benefit for the countermeasures. The total benefit of the project is \$2,646,220. The Benefit Calculator Worksheets are attached in **Appendix G**.

Table 18- Crash Severity for Signal Synchronization-Adaptive Signals Alternative Limits Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All (S3) ¹	0	1	10	10	46	67
All (S2) ²	0	1	10	10	46	67

¹ Improve Signal Timing

² Signal Upgrades

³ LPI (Leading Pedestrian Interval)

The construction costs for this project are shown in **Table 19**. The total cost of this project is \$240,000. Preliminary engineering and construction engineering limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were applied to this project's estimate. The countermeasures for this project require local match from the City and are eligible to be 50% federally funded.

Table 19- Signal Synchronization-Adaptive Signals Alternative Limits Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
S3	\$38,400	\$66,000	\$39,600	\$369,600	\$184,800
S2	\$201,600				

Comparing the total project cost (\$369,600) with the project benefit (\$2,646,220), a B/C ratio of 7.16 is calculated for this project. More details about the B/C ratio can be found in **Appendix G**.

Table 20 shows the comparison of the two alternative project limits for this project proposing traffic signal improvements including Countermeasure S3- Improve Signal Timing and Countermeasure S2- Signal Upgrades. The first alternative (Alternative A) proposes signal improvements at 12 intersections owned and operated by both Caltrans and the City of Ridgecrest along China Lake Boulevard. The second alternative (Alternative B) proposes signal improvements at 6 intersections owned and operated only by the City of Ridgecrest along China Lake Boulevard. Both alternatives have very similar B/C ratios, so it is up to the City to decide to include 12 intersections or 6 intersections in this project application.

Table 20- Signal Synchronization- Adaptive Signals Alternative Comparison

Alternative	Total Project Costs	Project Benefit	B/C Ratio	City's Local Match
A- 12 intersections (Ridgecrest and Caltrans owned signals)	\$739,200	\$5,496,282	7.44	\$369,600
B- 6 intersections (Ridgecrest owned signals only)	\$369,600	\$2,646,220	7.16	\$184,800

China Lake Systemic Pedestrian and Bicycle Improvements

The China Lake Systemic Pedestrian and Bicycle Improvements project scope consists of Countermeasure R36 – Install bike lanes and Countermeasure S22 – Leading Pedestrian Interval (LPI).

The bike lane countermeasure is proposed on 2 roadway segments listed below:

1. Drummond Av between N Downs St and N China Lake Blvd
2. Ward Av between N Mahan St and N China Lake Blvd

The LPI countermeasure is proposed along China Lake Blvd at the 6 following signalized intersections owned by the City of Ridgecrest.

1. California Av, City of Ridgecrest
2. Church Av, City of Ridgecrest
3. Upjohn Av, City of Ridgecrest
4. Rader Av, City of Ridgecrest
5. Bowman Rd, City of Ridgecrest
6. College Heights Blvd, City of Ridgecrest

The 6 project intersections and two roadway segments are good candidates for bike and pedestrian improvements as they have injury crashes that can be mitigated with Bike Lanes (Countermeasure R36) and LPIs at signalized intersections (Countermeasure S22). **Appendix H-1** shows the intersections for this project scope.

There were 6 midblock pedestrian and bicycle crashes within the project limits and 10 pedestrian and bicycle crashes at the signalized project intersections in the 5-year study period. To get the total project benefit, the total crashes and their severity were analyzed. Countermeasure R36, Install Bike Lanes and Countermeasure S22, LPI use pedestrian and bicycle crashes within the intersections or roadway to calculate the project benefit. **Table 21** shows the total number of crashes and their severity used to calculate the project benefit for the countermeasures. The total benefit of the project is \$11,855,710. The Benefit Calculator Worksheets are attached in **Appendix H**.

Table 21- Crash Severity for China Lake Systemic Pedestrian and Bicycle Improvements Project

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
P&B (R36) ¹	0	2	3	1	0	6
P&B (S22) ²	0	0	5	2	3	10

¹ Install Bike Lanes² LPI (Leading Pedestrian Interval)

The construction costs for this project are shown in **Table 22**. The total cost of this project is \$247,800. Preliminary engineering and construction engineering limited to 25% and 15% of the construction costs, respectively. Those maximums for preliminary engineering and construction engineering costs were applied to this project's estimate. The countermeasures for this project require local match from the City and are eligible to be 90% federally funded.

Table 22- China Lake Systemic Pedestrian and Bicycle Improvements Project Cost Estimate

Countermeasure	Construction Costs	Total Preliminary Engineering Cost	Total Construction Engineering Cost	Total Project Costs	City's Local Match
R36	\$130,800	\$44,300	\$26,600	\$247,800	\$24,780
S22	\$30,000				

Comparing the total project cost (\$247,800) with the project benefit (\$11,855,710), a B/C ratio of 47.84 is calculated for this project. More details about the B/C ratio can be found in **Appendix H**.

VIII. Other Project Scopes- LRSP Recommended

The following projects were identified by the City of Ridgecrest, but do not have a crash history to be competitive in HSIP applications. These projects, however, are identified by the City to increase roadway safety. **Table 23** summarizes the Local Roadway Safety Plan (LRSP) Recommended project scopes. These projects are included in the City of Ridgecrest's LRSP in case the City acquires funding elsewhere or if future crash patterns require these improvements.

Table 23- Summary of LRSP Recommended Project Scopes (Not HSIP Eligible at this time)

No.	Project	Countermeasures ¹	Total Crashes	Expected Life Benefit	Total Project Costs	B/C Ratio
1	Emergency Vehicle Preemption	S5	0	\$0	\$210,000	0
2	Downs at Upjohn Traffic Signal Installation	NS3	5	\$234,484	\$490,000	0.48

¹ See **Appendix B** for countermeasure descriptions

Emergency Vehicle Preemption

As a part of the LRSP, the City is highly interested in installing emergency vehicle preemption on all of the City's traffic signals. Although this project is a safety priority to the City, there has been no reported crash history involving emergency-vehicles over the last 5-years. The approximate construction cost to install emergency vehicle preemption is \$10,000 per intersection. The cost to upgrade all 15 traffic signals in the City including preliminary engineering and construction engineering costs would be \$210,000. Because there is no crash history involving emergency vehicles, the project benefit is \$0, and the B/C Ratio is 0.00. There is not enough crash history to make this project eligible for HSIP funding at this time, but this project remains a safety priority to the City.

Downs St at Upjohn Av Traffic Signal Installation

As a part of the LRSP, the City is highly interested in installing a traffic signal at the intersection of Downs St at Upjohn Av. Although this project is a safety priority to the City, there has been minimal reported crash history the last 5-years. The approximate construction cost to install a traffic signal is \$350,000 per intersection. The cost to install a traffic signal including preliminary engineering and construction engineering costs would be \$490,000. Because there are only 5 reported crashes at this intersection, the project benefit is \$234,484, and the B/C Ratio is 0.48. There is not enough crash history to make this project eligible for HSIP funding at this time, but this project remains a safety priority to the City. Additionally, a traffic signal warrant must be conducted in order

IX. Prioritized List of Safety Projects

The City of Ridgecrest reviewed the project scope list and determined an advised prioritized list of safety projects. The China Lake Systemic Pedestrian and Bicycle Improvements, Citywide Neighborhood Intersection Improvements and Signal Synchronization- Adaptive Signals Projects are prioritized at numbers 1, 2, and 3 due to their high B/C ratio. The Downs St and Bowman Rd Roundabout project is prioritized below the Downs St and Las Flores Av Adaptive Traffic Signal Installation because the Roundabout project will need to be reevaluated in 2023 to review crash history with the all-way stop control at Downs St and Bowman Rd. Emergency Vehicle preemption is number 6 because it is a City priority. The Downs St at Upjohn Av Traffic Installation Project is prioritized at number 7 because of its low BC ratio. The prioritized list of safety project scopes is

shown in **Table 24**. This is the advised order that the City will apply for HSIP funding.

Table 24- Prioritized List of Safety Projects

Priority No.	Project	Countermeasures	Expected Life Benefit	Total Project Costs	B/C Ratio
1	China Lake Systemic Pedestrian and Bicycle Improvements	R36, S22	\$11,855,710	\$247,800	47.84
2	Citywide Neighborhood Intersection Improvements	NS6, NS1	\$5,546,217	\$585,200	9.48
3	Signal Synchronization-Adaptive Signals (6 Intersections)	S3, S2	\$2,646,220	\$369,600	7.16
4	Downs St and Las Flores Av Adaptive Traffic Signal Installation	NS3	\$2,736,050	\$490,000	5.58
5	Downs St and Bowman Rd Roundabout	NS4A	\$8,768,000	\$980,000	8.95
6	Emergency Vehicle Preemption	S5	\$0	\$210,000	0.00
7	Downs St at Upjohn Av Traffic Signal Installation	NS3	\$234,484	\$490,000	0.48

APPENDIX A

Ridgecrest 5-Year Crash List

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
N NORMA ST	W DRUMMOND AV	530	N	Injury (Severe)	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	1/22/2016	1820	126 Dark - Street Lights
N NORMA ST	W DRUMMOND AV	730	N	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	5/22/2017	1644	11 Daylight
BALSAM ST	COSO AV	130	N	Injury (Other Visible)	Not Stated	Rear End	Parked Motor Vehicle	6/5/2014	1345	11 Daylight
BALSAM ST	W STATION AV	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	8/3/2013	1730	1 Daylight
Bennett Av	Sierra View St	200	W	PDO	Not Driver	Rear End	Parked Motor Vehicle	5/3/2013	1128	1 Daylight
BETH LN	REESE ST	67	E	PDO	Improper Turning	Rear End	Other Motor Vehicle	1/7/2014	843	1 Daylight
BETH LN	S HENRY ST	142	E	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	5/19/2014	709	1 Daylight
BOWMAN RD	S CHINA LAKE BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/9/2017	1005	6 Daylight
Bowman Rd	S DOWNS ST	10	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/19/2013	1305	1 Daylight
CALIFORNIA AV	FIRE OPAL	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	9/5/2013	1504	11 Daylight
N NORMA ST	W DRUMMOND AV	248	N	Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/20/2013	1018	6 Daylight
CHINA LAKE BL	DOWNS ST	0		Injury (Severe)	Unsafe Speed	Hit Object	Fixed Object	3/16/2013	1724	126 Daylight
CHINA LAKE BL	W COSO AV	14	S	Injury (Other Visible)	Unsafe Speed	Head-On	Fixed Object	7/26/2015	30	11 Dark - Street Lights
CHINA LAKE BL	LIGHT POLE # 2489	65	N	Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	4/16/2017	1111	6 Daylight
China Lake Bl	E RIDGECREST BL	0		PDO	Other Improper Driving	Other	Other Motor Vehicle	2/21/2013	2010	1 Dark - Street Lights
China Lake Bl	E French Av	45	S	PDO	Not Stated	Broadside	Other Motor Vehicle	2/12/2013	1700	1 Daylight
China Lake Bl	RIDGECREST BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/20/2014	1024	1 Daylight
China Lake Bl	RIDGECREST BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/3/2014	2018	1 Dark - Street Lights
China Lake Bl	CALIFORNIA AV	120	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/10/2015	1524	1 Daylight
China Lake Bl	CHURCH AV	7	N	PDO	Unsafe Speed	Hit Object	Other Object	5/11/2015	1240	1 Daylight
China Lake Bl	DRUMMOND AV	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/5/2015	1052	1 Daylight
China Lake Bl	DRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/3/2015	1843	1 Daylight
China Lake Bl	FELSPAR AV	188	S	PDO	Following Too Closely	Rear End	Non Collision	2/19/2015	1710	1 Daylight
RT 178	W LAS FLORES AV	720	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/8/2015	1314	1 Daylight
China Lake Bl	LAS FLORES AV	100	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/11/2015	1641	1 Daylight
China Lake Bl	RIDGECREST BL	40	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/4/2015	715	1 Daylight
China Lake Bl	RIDGECREST BL	155	N	PDO	Unsafe Lane Change	Sideswipe	Other Motor Vehicle	5/19/2015	1440	1 Daylight
China Lake Bl	W LAS FLORES AV	159	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/1/2015	1620	1 Daylight
CHINA LAKE BL	RADER AV	0		PDO	Following Too Closely	Rear End	Other Motor Vehicle	10/29/2017	1751	1 Daylight
RT 178	W HOWELL AV	216	S	Injury (Complaint of Pain)	Improper Turning	Broadside	Other Motor Vehicle	10/25/2016	1530	6 Daylight
CHINA LAKE BL	UPJOHN AV	36	N	PDO	Improper Turning	Broadside	Other Motor Vehicle	3/6/2017	1628	1 Daylight
CHINA LAKE BLV	UPJOHN AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	12/6/2017	1919	11 Dark - Street Lights
CHURCH AV	S CHINA LAKE BL	0		Injury (Other Visible)	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	4/13/2014	1210	11 Daylight
CHURCH AV	POWER LINE	3	E	PDO	Improper Turning	Rear End	Parked Motor Vehicle	6/2/2016	2220	1 Daylight
DOWNS ST	BOWMAN RD	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	1/2/2013	1450	6 Daylight
DOWNS ST	BOWMAN RD	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	7/9/2017	1530	6 Daylight
Downs St	W Coral Av	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/9/2013	1246	1 Daylight
Downs St	DRUMMOND AV	103	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/6/2014	2123	1 Dark - Street Lights
Downs St	FELSPAR AV	0		PDO	Not Stated	Broadside	Other Motor Vehicle	11/11/2015	1810	1 Dark - Street Lights
Downs St	RIDGECREST BL	92	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/8/2016	1732	1 Daylight
Downs St	WEST	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	3/5/2016	910	1 Daylight
DRUMMOND AV	RT 178	185	W	Injury (Complaint of Pain)	Wrong Side of Road	Other	Bicycle	11/7/2014	830	6 Daylight
RT 178	W HOWELL AV	210	S	PDO	Improper Turning	Broadside	Other Motor Vehicle	1/13/2015	952	1 Daylight
E Beth Ln	Light Pole	15		PDO	Improper Turning	Head-On	Parked Motor Vehicle	12/7/2013	204	1 Dark - Street Lights
E BOWMAN AV	S SUNLAND ST	3	W	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	3/15/2017	1735	6 Daylight
E Bowman Rd	S Gateway Bl	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/22/2013	1310	1 Daylight
RT 178	W HOWELL AV	315	S	PDO	Improper Turning	Hit Object	Fixed Object	8/17/2015	1431	1 Daylight
E BOWMAN RD	S SUNLAND ST	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	1/19/2017	1335	1 Daylight
E CALIFORNIA AV	S CHINA LAKE BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/2/2013	1452	6 Daylight
E CALIFORNIA AV	S SPRINGSIDE ST	0		PDO	Not Stated	Rear End	Other Motor Vehicle	1/22/2014	2359	1 Dark - Street Lights
E CALIFORNIA AV	S CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/23/2015	1245	1 Daylight
E Church Av	Lenore St	32	W	PDO	Improper Turning	Broadside	Other Motor Vehicle	4/23/2013	740	1 Daylight
E Church Av	S BROADWAY	75	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Parked Motor Vehicle	10/17/2015	143	1 Dark - Street Lights
E COMMERCIAL AV	S GATEWAY BL	77	W	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	6/30/2017	1120	6 Daylight
RT 178	W HOWELL AV	220	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	9/23/2016	1430	1 Daylight
RT 178	W HOWELL AV	228	S	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/7/2016	1650	1 Daylight
E DRUMMOND AV	N CHELSEA ST	0		Injury (Other Visible)	Improper Turning	Other	Bicycle	9/7/2017	650	11 Daylight
RT 178	W HOWELL AV	311	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	11/23/2016	1820	1 Dark - Street Lights
E DRUMMOND AV	RT 178	30	E	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	6/26/2015	1604	6 Daylight
E DRUMMOND AV	N CHINA LAKE BL	128	E	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	1/12/2015	1233	6 Daylight
E DRUMMOND AV	N CHELSEA ST	200	E	Injury (Complaint of Pain)	Unsafe Speed	Hit Object	Other Object	8/24/2016	2200	6 Dark - Street Lights
E DRUMMOND AV	Chelsea Av	164	W	PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/23/2013	729	1 Daylight
S SUNSET ST	W WILSON AV	235	S	PDO	Improper Turning	Rear End	Other Motor Vehicle	1/26/2014	1629	1 Daylight
E DRUMMOND AV	Power Pole	130	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	12/7/2013	1823	1 Dark - Street Lights
E DRUMMOND AV	E FRENCH AV	30	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/7/2015	757	1 Daylight
E DRUMMOND AV	Chelsea Av	28	S	PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/14/2016	250	1 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
E DRUMMOND AV	E FRENCH AV	1150	W	Injury (Severe)	Unsafe Speed	Hit Object	Fixed Object	10/20/2014	Daylight	1009	126 Daylight
E DRUMMOND AV	N CHELSEA ST	200	E	PDO	Unsafe Speed	Hit Object	Other Object	8/24/2016	Daylight	2200	1 Dark - Street Lights
E DRUMMOND AV	E French Av	1199	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	3/11/2013	Daylight	150	1 Dark - No Street Lights
E DRUMMOND AV	E FRENCH AV	1622	W	PDO	Unsafe Speed	Hit Object	Fixed Object	7/14/2016	Daylight	1845	1 Daylight
E FRENCH AV	E LAS FLORES AV	12	W	Injury (Other Visible)	Unsafe Speed	Rear End	Other Motor Vehicle	4/3/2013	Daylight	1450	11 Daylight
N CHINA LAKE BL	HOWELL AV	206	S	Injury (Severe)	Automobile Right of Way	Broadside	Other Motor Vehicle	9/7/2014	Daylight	929	126 Daylight
E FRENCH AV	E LA MIRAGE LN	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	2/1/2017	Daylight	1220	11 Daylight
E FRENCH AV	E LA MIRAGE LN	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	9/14/2015	Daylight	1453	6 Daylight
E FRENCH AV	E LA MIRAGE LN	0		Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	5/7/2015	Daylight	736	6 Daylight
N CHINA LAKE BL	HOWELL AV	206	S	PDO	Automobile ROW	Broadside	Other Motor Vehicle	9/7/2014	Daylight	929	1 Daylight
E French Av	La Mirage LN	0		PDO	Not Stated	Rear End	Other Motor Vehicle	11/12/2013	Daylight	1500	1 Daylight
N CHINA LAKE BL	HOWELL AV	400	W	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	1/27/2017	Daylight	1449	1 Daylight
LARKSPUR ST	S RICHMOND RD	222	E	Fatal	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	2/5/2015	Daylight	211	126 Dark - Street Lights
E FRENCH AV	E Drummond AV	100	N	PDO	Other Improper Driving		Other Motor Vehicle	9/26/2014	Daylight	1205	1 Daylight
W WARD AV	N WAYNE AV	235	E	Injury (Severe)	Unsafe Speed	Rear End	Bicycle	9/21/2015	Daylight	1741	126 Daylight
E FRENCH AV	E LA MIRAGE LN	0		PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	1/23/2014	Daylight	1345	1 Daylight
E FRENCH AV	E LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/12/2014	Daylight	1245	1 Daylight
E FRENCH AV	E French Av 400	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	10/16/2016	Daylight	1849	1 Dark - Street Lights
E FRENCH AV	E LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/2/2015	Daylight	1145	1 Daylight
E FRENCH AV	E Drummond AV	45	S	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	7/5/2016	Daylight	1845	1 Daylight
N HERITAGE DR	COBBLESTONE AV	238	W	Injury (Severe)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	5/29/2016	Dusk - Dawn	500	126 Dusk - Dawn
E FRENCH AV	N CHINA LAKE BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/1/2016	Daylight	726	1 Daylight
E FRENCH AV	E FRENCH AV 300	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/7/2017	Daylight	1445	1 Daylight
E FRENCH AV	E FRENCH AV 500	0		PDO	Unsafe Speed	Hit Object	Fixed Object	2/1/2017	Daylight	1000	1 Daylight
E FRENCH AV	RT 178	62	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/13/2017	Daylight	1457	1 Daylight
E GARNET AV	S GEMSTONE ST	0		PDO	Driving or Bicycling Under the Influence of Alcohol	OTHER	Parked Motor Vehicle	12/3/2017	Daylight	148	1 Dark - Street Lights
E KASHMIR LN	N PALM DR	0		PDO	Unsafe Speed	Hit Object	Fixed Object	5/1/2016	Daylight	1749	1 Daylight
E LA MIRAGE LN	E FRENCH AV	0		Injury (Other Visible)	Unsafe Speed	Broadside	Other Motor Vehicle	9/30/2017	Daylight	711	11 Daylight
E LA MIRAGE LN	E FRENCH AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	11/28/2016	Daylight	705	1 Daylight
E LAS FLORES AV	LAS FLORES AV 100	0		Injury (Other Visible)	Unsafe Speed	Hit Object	Other Object	8/21/2015	Daylight	2236	11 Dark - Street Lights
E NADEAU ST	CISCO ST	97	N	Injury (Complaint of Pain)	Unknown	Vehicle/Pedestrian	Pedestrian	1/13/2015	Dusk - Dawn	1757	6 Dusk - Dawn
E RADAR AV	S LUMILL ST	78	E	Injury (Other Visible)	Other Hazardous Violation	Hit Object	Other Object	3/20/2014	Daylight	1100	11 Daylight
E RADAR AV	S CHINA LAKE BL	178	E	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/20/2016	Daylight	1345	1 Daylight
E RIDGECREST BL	GATEWAY ST	40	W	Fatal	Unsafe Speed	Vehicle/Pedestrian	Pedestrian	10/4/2014	Dusk - Dawn	1822	126 Dusk - Dawn
E RIDGECREST BL	GEMSTONE ST	58	W	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	4/11/2013	Daylight	900	6 Daylight
E RIDGECREST BL	RICHMOND RD	32	W	Injury (Complaint of Pain)	Unsafe Speed	Broadside	Other Motor Vehicle	11/12/2014	Daylight	1300	6 Daylight
N NORMA ST	LIGHT POLE 21712E	205	N	Injury (Severe)	Improper Turning	Hit Object	Fixed Object	12/30/2016	Dusk - Dawn	31	126 Dark - Street Lights
E Ridgecrest Bl	E RIDGECREST BL	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	6/27/2013	Daylight	1200	1 Daylight
E Ridgecrest Bl	Gemstone St	58	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/11/2013	Daylight	900	1 Daylight
E Ridgecrest Bl	S Gemstone St	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/8/2013	Daylight	1153	1 Daylight
E Ridgecrest Bl	S Sunland	10	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/9/2013	Daylight	714	1 Daylight
E Ridgecrest Bl	S Sunland	20	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/7/2013	Daylight	224	1 Dark - Street Lights
E Ridgecrest Bl	China Lake Bl	0		PDO	Pedestrian ROW	VEHicle/Pedestrian	Pedestrian	11/11/2014	Dusk - Dawn	1724	1 Dusk - Dawn
WARD AV	PALO VERDE DR	286	W	Injury (Severe)	Improper Turning	Vehicle/Pedestrian	Pedestrian	11/4/2015	Daylight	1733	126 Dark - Street Lights
E Ridgecrest Bl	S BROADWAY	0		PDO	Unsafe Speed	Hit Object	Fixed Object	4/5/2015	Daylight	2127	1 Dark - Street Lights
E Ridgecrest Bl	S FIRE OPAL ST	91	W	PDO	Improper Turning	Broadside	Other Motor Vehicle	9/14/2015	Daylight	1101	1 Daylight
E Ridgecrest Bl	EDISON POLE	110	E	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	11/19/2016	Daylight	600	1 Daylight
E Ridgecrest Bl	N CHINA LAKE BL	49	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	8/13/2016	Daylight	2039	1 Dark - Street Lights
E RIDGECREST BL	S GATEWAY ST	6	E	PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	10/20/2017	Daylight	1343	1 Daylight
E RIDGECREST BL	S SUNLAND ST	0		PDO	Improper Turning	Hit Object	Fixed Object	7/24/2017	Daylight	1023	1 Daylight
E UPJOHN AV	S SUNLAND ST	0		Injury (Other Visible)	Automobile Right of Way	Other	Bicycle	4/14/2017	Dusk - Dawn	650	11 Dusk - Dawn
E UPJOHN AV	S SUNLAND AV	0		Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	1/13/2015	Daylight	431	6 Dark - Street Lights
E UPJOHN AV	S DESERT CANDLES ST	66	W	Injury (Complaint of Pain)	Improper Turning	Broadside	Other Motor Vehicle	6/5/2017	Daylight	1918	6 Daylight
E Upjohn Av	S Fountain St	90	W	PDO	Improper Turning	Head-On	Fixed Object	9/2/2013	Daylight	750	1 Daylight
E Upjohn Av	S CHINA LAKE BL	15	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/13/2015	Daylight	1628	1 Daylight
E Upjohn Av	S CHINA LAKE BL	44	E	PDO	Automobile ROW	Rear End	Other Motor Vehicle	5/10/2016	Daylight	1302	1 Daylight
E Upjohn Av	S KARIN ST	24	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/16/2016	Daylight	1840	1 Dark - Street Lights
E UPJOHN AV	RENEE CT	86	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	8/1/2017	Daylight	2500	1 Daylight
RT 178	DRUMMOND AV	857	S	Injury (Other Visible)	Automobile Right of Way	Other	Fixed Object	11/13/2013	Daylight	1047	11 Daylight
RT 178	DRUMMOND AV	912	N	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	8/17/2016	Daylight	1050	11 Daylight
E WARD AV	N CHINA LAKE BL	20	E	Injury (Complaint of Pain)	Improper Turning	Sideswipe	Other Motor Vehicle	11/14/2014	Dusk - Dawn	1730	6 Dusk - Dawn
E WILSON AV	S DESERT	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/17/2017	Daylight	2230	1 Dark - Street Lights
E WILSON AV	SUNLAND ST	94	S	PDO	Not Stated	Rear End	Other Motor Vehicle	10/1/2017	Daylight	2500	1 Dark - Street Lights
FAIRVIEW ST	W FRENCH AV	198	N	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Vehicle/Pedestrian	Pedestrian	11/20/2015	Daylight	2246	6 Dark - Street Lights
RT 178	DRUMMOND AV	913	N	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	5/18/2016	Daylight	1125	11 Daylight
French Av	E Drummond AV	100	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/16/2013	Daylight	1151	1 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
French Av	French Av 500	0		PDO	Other Improper Driving	Rear End	Other Motor Vehicle	5/7/2013	1451	1 Daylight
RT 178	DRUMMOND AV	375	W	Injury (Complaint of Pain	Automobile Right of Way	Other	Bicycle	1/25/2015	1400	6 Daylight
RT 178	DRUMMOND AV	911	N	Injury (Complaint of Pain	Wrong Side of Road	Other	Bicycle	5/17/2016	940	6 Daylight
Gold Canyon DR	WILSON AV	40	N	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	2/28/2015	2246	1 Dark - Street Lights
GORDON ST	W RADAR AV	27	N	PDO	Unsafe Speed	Hit Object	Fixed Object	4/13/2017	103	1 Dark - Street Lights
RT 178	DRUMMOND AV	843	S	PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/19/2016	1100	1 Daylight
HERITAGE DR	N NORMA ST	100	E	PDO	Automobile ROW		Other Motor Vehicle	8/19/2015	1409	1 Daylight
INYO KERN RD	N NORMA ST	20	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/24/2017	1130	1 Daylight
RT 178	FRENCH AV	290	S	Injury (Other Visible)	Unsafe Speed	Other	Other Object	9/14/2016	1500	11 Daylight
LA MIRAGE LN	N OASIS DR	0		PDO	Wrong Side of the Road	Hit Object	Fixed Object	2/12/2014	1800	1 Dusk - Dawn
LA MIRAGE LN	FRENCH AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Head-On	Fixed Object	6/18/2014	1428	1 Daylight
LA MIRAGE LN	E FRENCH AV	19	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/18/2015	720	1 Daylight
RT 178	FRENCH AV	362	S	PDO	Improper Passing	Broadside	Other Motor Vehicle	2/13/2016	1237	1 Daylight
S CHINA LAKE BL	W BOWMAN RD	436	S	PDO	Wrong Side of the Road	Head-On	Fixed Object	11/16/2016	1436	1 Daylight
LAS CRUCES AV	INYO ST	122	N	PDO	Wrong Side of the Road	Head-On	Other Object	5/27/2013	1020	1 Daylight
LAS FLORES AV	NORMA ST	25	W	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	8/15/2014	1424	1 Daylight
LAS FLORES AV	N BALSAM ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	12/8/2016	1630	1 Daylight
N BALSAM ST	W FRENCH AV	120	N	Injury (Other Visible)	Automobile Right of Way	Rear End	Other Motor Vehicle	12/11/2014	1254	11 Daylight
N BALSAM ST	N BALSAM ST	0		PDO	UNKNOWN	Sideswipe	Other Motor Vehicle	11/2/2016	830	1 Daylight
N BALSAM ST	W PANAMINT AV	53	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	6/17/2016	100	1 Dark - Street Lights
N BALSAM ST	W STATION AV	54	N	PDO	Unsafe Speed	Hit Object	Fixed Object	8/4/2017	1716	1 Daylight
N BROADWAY ST	NORTH AMERICAN	74	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Parked Motor Vehicle	8/31/2014	1554	1 Daylight
N CHELSEA AV	DRUMMOND AV	0		Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	11/22/2013	1915	11 Dark - Street Lights
N CHELSEA ST	E DRUMMOND AV	42	N	PDO	Unsafe Speed	Hit Object	Fixed Object	6/7/2017	1600	1 Daylight
N CHINA LAKE BL	COSO AV	28	N	Fatal	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	10/6/2015	956	126 Daylight
N CHINA LAKE BL	FELSPAR AV	15	S	Injury (Other Visible)	Wrong Side of Road	Vehicle/Pedestrian	Pedestrian	8/3/2013	1140	11 Daylight
N CHINA LAKE BL	E SYDNOR AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	6/27/2013	2252	11 Dark - Street Lights
N CHINA LAKE BL	LAS FLORES AV	0		Injury (Other Visible)	Unsafe Speed	Broadside	Other Motor Vehicle	4/13/2013	1025	11 Daylight
N CHINA LAKE BL	W RIDGECREST BL	0		Injury (Other Visible)	Traffic Signals and Signs	Other	Bicycle	10/24/2015	1736	11 Daylight
N CHINA LAKE BL	E FRENCH AV	24	S	Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	7/28/2017	2120	11 Dark - Street Lights
N CHINA LAKE BL	FRENCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/13/2017	1802	11 Dark - Street Lights
N CHINA LAKE BL	ARGUS AV	51	W	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	2/21/2013	1805	6 Dark - Street Lights
E FRENCH AV	E LAS FLORES AV	384	W	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	11/17/2017	1500	6 Daylight
N CHINA LAKE BL	W ARGUS AV	158	N	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	4/13/2015	1218	6 Daylight
N CHINA LAKE BL	WARD AV	30	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	1/28/2015	1000	6 Daylight
N CHINA LAKE BL	W COSO AV	105	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	2/13/2015	1809	6 Dark - Street Lights
N CHINA LAKE BL	UPJOHN AV	0		Injury (Complaint of Pain	Pedestrian Right of Way	Other	Bicycle	4/13/2017	750	6 Daylight
N CHINA LAKE BL	LAS FLORES AV	0		Injury (Complaint of Pain	Pedestrian Right of Way	Other	Bicycle	8/11/2016	1830	6 Daylight
N CHINA LAKE BL	SC&E POLE #4177470E	26	W	Injury (Complaint of Pain	Not Stated	Rear End	Other Motor Vehicle	6/8/2016	1439	6 Daylight
N CHINA LAKE BL	W DRUMMOND AV	0		Injury (Complaint of Pain	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/30/2016	1000	6 Daylight
N CHINA LAKE BL	RIDGECREST BL	15	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	1/28/2016	805	6 Daylight
N CHINA LAKE BL	E COSCO AV	0		PDO	Not Stated	Rear End	Other Motor Vehicle	5/31/2013	1720	1 Daylight
N CHINA LAKE BL	FRENCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/4/2013	835	1 Daylight
N CHINA LAKE BL	FRENCH AV	10	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/24/2013	922	1 Daylight
N CHINA LAKE BL	W DRUMMOND AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/23/2013	1045	1 Daylight
N CHINA LAKE BL	W DRUMMOND AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/7/2013	1500	1 Daylight
N CHINA LAKE BL	W LAS FLORES AV	25	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/30/2013	1347	1 Daylight
N CHINA LAKE BL	W LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/3/2013	1836	1 Dusk - Dawn
N CHINA LAKE BL	ARGUS AV	10	N	PDO	Not Stated	Rear End	Other Motor Vehicle	11/7/2014	1743	1 Dark - Street Lights
N CHINA LAKE BL	E SYDNOR AV	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	2/1/2014	1352	1 Daylight
S CHINA LAKE BL	E CHURCH AV	220	S	Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	7/11/2014	2230	11 Dark - Street Lights
N NORMA ST	W LAS FLORES AV	256	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/27/2015	805	1 Daylight
E FRENCH AV	E DRUMMOND AV	589	S	Injury (Other Visible)	Improper Turning	Sideswipe	Other Motor Vehicle	9/25/2017	1229	11 Daylight
N CHINA LAKE BL	W WARD AV	100	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/14/2014	1339	1 Daylight
N CHINA LAKE BL	China Lake Bl	42	S	PDO	Improper Turning	OTHER	Other Object	2/6/2015	2343	1 Dark - Street Lights
N CHINA LAKE BL	E FRENCH AV	20	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/23/2015	1420	1 Daylight
N CHINA LAKE BL	LAS FLORES AV	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/6/2015	1204	1 Daylight
N CHINA LAKE BL	N CHINA LAKE BL	0		PDO	Unsafe Speed	Hit Object	Other Object	7/15/2015	215	1 Daylight
N CHINA LAKE BL	W FRENCH AV	63	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/10/2015	1245	1 Daylight
N CHINA LAKE BL	LIGHT POLE 4528465E	55		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/1/2016	1539	1 Daylight
N CHINA LAKE BL	DRUMMOND AV	0		PDO	Unsafe Starting or Backing	Hit Object	Fixed Object	1/18/2016	1801	1 Dark - Street Lights
E French Av	E Drummond AV	400	N	PDO	Improper Turning	Sideswipe	OTHER Motor Vehicle	5/21/2014	1450	1 Daylight
E FRENCH AV	E Drummond AV	700	S	PDO	Other Than Driver (or Ped)		Fixed Object	9/3/2014	230	1 Dark - Street Lights
N CHINA LAKE BL	W WARD AV	180	S	PDO	Unsafe Speed	Rear End	MOTOR VEHICLE ON THE C	1/18/2016	720	1 Daylight
N CHINA LAKE BL	COSO AV	50	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/21/2017	1354	1 Daylight
N CHINA LAKE BL	DRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/19/2017	713	1 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
E FRENCH AV	E Drummond AV	808	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/17/2014	1445	1 Daylight
N CHINA LAKE BL	FRENCH AV	200	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/8/2017	1913	1 Daylight
E FRENCH AV	E Drummond AV	950	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/7/2016	1440	1 Daylight
RT 178	RIDGECREST BL	400	N	PDO	Improper Turning	Head-On	Other Motor Vehicle	10/4/2013	1007	1 Daylight
RT 178	RIDGECREST BL	238	N	PDO	Unknown	Sideswipe	Other Motor Vehicle	12/19/2013	1320	1 Daylight
RT 178	RIDGECREST BL	378	N	PDO	Improper Turning	Hit Object	Fixed Object	11/4/2014	1931	1 Dark - Street Lights
N CISCO ST	E NADEAU AV	200	N	Injury (Other Visible)	Improper Turning	Hit Object	Fixed Object	8/10/2016	2030	11 Dark - Street Lights
N DOWNS ST	W LAS FLORES AV	12	N	Injury (Severe)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	6/13/2016	1834	126 Daylight
N DOWNS ST	W TAMARISK ST	32	N	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	9/22/2013	2149	11 Dark - Street Lights
N DOWNS ST	W GRAAF AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/8/2015	953	11 Daylight
N DOWNS ST	W DRUMMOND AV	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/19/2014	1011	6 Daylight
RT 178	RIDGECREST BL	420	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/3/2017	1516	1 Daylight
N DOWNS ST	W DRUMMOND AV	0		Injury (Complaint of Pain	Traffic Signals and Signs	Head-On	Other Motor Vehicle	7/7/2017	1038	6 Daylight
N DOWNS ST	WARD AV	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/3/2014	2016	1 Dark - Street Lights
N DOWNS ST	W DRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/19/2014	1011	1 Daylight
N DOWNS ST	N DOWNS ST 100	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/2/2015	1715	1 Dark - Street Lights
N DOWNS ST	W WARD AV	38	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/7/2015	656	1 Daylight
N DOWNS ST	W WARD AV	39	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/9/2015	1752	1 Daylight
N DOWNS ST	W WARD AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/7/2015	2131	1 Dark - Street Lights
N DOWNS ST	WEST	133	N	PDO	Not Stated	Rear End	Other Motor Vehicle	3/23/2015	1221	1 Daylight
N DOWNS ST	W LAS FLORES AV	140	N	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	11/2/2016	1909	1 Dark - Street Lights
N DOWNS ST	W LAS FLORES AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/12/2016	2027	1 Dark - Street Lights
N DOWNS ST	W LAS FLORES AV	34	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/26/2017	904	1 Daylight
N DOWNS ST	W PERDEW AV	5	N	PDO	Unsafe Speed	Sideswipe	Fixed Object	9/19/2013	1205	1 Daylight
N DOWNS ST	W VICKI AV	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	3/15/2013	1157	1 Daylight
N DOWNS ST	W DRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/5/2013	1709	1 Daylight
N DOWNS ST	W LAS FLORES AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/4/2013	1634	1 Daylight
N DOWNS ST	W LAS FLORES AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/17/2013	1107	1 Daylight
N DOWNS ST	DOWNS ST	18	W	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/5/2014	1448	1 Daylight
N DOWNS ST	RT 178	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/5/2014	1448	1 Daylight
N DOWNS ST	RT 178	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/3/2014	1638	1 Dusk - Dawn
N DOWNS ST	W GRAAF AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/15/2014	1855	1 Dusk - Dawn
N DOWNS ST	W DRUMMOND AV	0		PDO	Following Too Closely	Rear End	Other Motor Vehicle	5/3/2015	1920	1 Dusk - Dawn
N EL PRADO ST	N EL PRADO ST	0		PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	6/19/2016	2500	1 Dark - Street Lights
N FAIRVIEW ST	W COSO AV	100	N	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	9/4/2015	1820	1 Dark - Street Lights
N FLORENCE ST	UTILITY POLE	69	E	PDO	Improper Turning	Rear End	Parked Motor Vehicle	3/11/2015	2147	1 Dark - Street Lights
N GOLD CANYON DR	RICHMOND RD	23	E	Injury (Complaint of Pain	Unsafe Speed	Other	Fixed Object	5/27/2016	233	6 Dark - No Street Lights
N GOLD CANYON DR	RT 178	26	N	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	1/15/2013	1543	1 Daylight
N GOLD CANYON DR	E KASHMIR LN	163	N	PDO	Not Stated	Rear End	Parked Motor Vehicle	1/25/2014	1635	1 Daylight
N GOLD CANYON DR	E RIDGECREST BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/22/2014	1610	1 Daylight
N GOLD CANYON DR	SAND DUNE LN	134	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	8/14/2015	843	1 Daylight
N GOLD CANYON DR	SAND DUNE LN	197	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	8/14/2015	950	1 Daylight
N GOLD CANYON ST	LIGHT POLE #4177772E	58	N	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	3/15/2013	2040	11 Dark - Street Lights
N CHINA LAKE BL	E FRENCH AV	235	S	PDO	Not Stated	Rear End	Other Motor Vehicle	9/11/2014	1320	1 Daylight
N INYO ST	N INYO ST 1500	87	W	Injury (Other Visible)	Unsafe Speed	Hit Object	Fixed Object	7/29/2016	2025	11 Dark - No Street Lights
N INYO ST	R CIRCLE DR	0		PDO	Improper Turning	Hit Object	Fixed Object	7/8/2017	850	1 Daylight
N JESSICA ST	W DRUMMOND AV	41	N	PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	8/9/2013	913	1 Daylight
N LUNA ST	W HERMOSA AV	0		PDO	Unsafe Speed	Hit Object	Fixed Object	10/10/2013	2140	1 Dark - Street Lights
N LUNA ST	W VICKI AV	190	N	PDO	Unsafe Speed	Sideswipe	Fixed Object	12/3/2016	720	1 Dark - Street Lights
N MAHAN ST	WEST	8	N	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	1/14/2016	1611	1 Dark - Street Lights
N NORMA ST	W MOYER AV	184	N	Fatal	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	12/16/2015	1925	126 Dark - Street Lights
N NORMA ST	UTILITY POLE 1702333E	10	S	Injury (Severe)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	10/22/2015	1845	126 Dark - Street Lights
N CHINA LAKE BL	FELSPAR AV	330	N	PDO	Not Stated	Rear End	Other Motor Vehicle	11/28/2014	1554	1 Daylight
N NORMA ST	W COSO AV	215	S	PDO	Unsafe Speed	Head-On	Other Motor Vehicle	1/28/2017	1021	1 Daylight
N NORMA ST	W REEVES AV	0		Injury (Severe)	Wrong Side of Road	Other	Bicycle	1/16/2016	1946	126 Dark - Street Lights
N NORMA ST	W LAS FLORES AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/5/2013	2107	11 Dark - Street Lights
N NORMA ST	RT 178	0		Injury (Other Visible)	Unknown	Broadside	Other Motor Vehicle	2/16/2014	1810	11 Dark - Street Lights
N NORMA ST	W WARD AV	19	N	Injury (Other Visible)	Unsafe Speed	Head-On	Other Motor Vehicle	4/2/2015	1251	11 Daylight
W RIDGECREST BL	N ALVORD ST	285	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/1/2013	1651	1 Daylight
N NORMA ST	W COSO AV	159	S	Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	7/19/2017	1736	11 Daylight
N NORMA ST	JEAN AV	53	N	Injury (Other Visible)	Improper Turning	Rear End	Parked Motor Vehicle	1/1/2017	2135	11 Dark - No Street Lights
W WARD AV	N NORMA ST	572	W	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	2/24/2016	735	11 Daylight
N NORMA ST	W DRUMMOND AV	2	S	Injury (Complaint of Pain	Wrong Side of Road	Broadside	Bicycle	10/21/2015	1445	6 Daylight
N NORMA ST	LIGHT STANDARD #2172210 E	24	N	Injury (Complaint of Pain	Improper Turning	Rear End	Other Motor Vehicle	5/7/2014	919	6 Daylight
N NORMA ST	W DRUMMOND AV	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/10/2017	1845	6 Daylight
N NORMA ST	W VERA AV	20	S	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	5/3/2017	545	6 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
N NORMA ST	N HERITAGE DR	0		Injury (Complaint of Pain	Automobile Right of Way	Sideswipe	Other Motor Vehicle	5/31/2016	2140	6 Dark - Street Lights
N NORMA ST	ELECTRICAL POLE 1997702E	65 E		Injury (Complaint of Pain	Improper Turning	Head-On	Other Motor Vehicle	5/1/2016	2247	6 Dark - Street Lights
E DRUMMOND AV	CHINA LAKE BL	408 E		Injury (Other Visible)	Improper Turning	Sideswipe	Other Motor Vehicle	12/1/2017	1505	11 Daylight
N NORMA ST	LIGHT POLE	19 S		PDO	Improper Turning	Hit Object	Fixed Object	4/7/2017	1820	1 Daylight
N NORMA ST	W VERA AV	15 N		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	9/6/2013	735	1 Daylight
N NORMA ST	W DRUMMOND AV	50 S		PDO	Not Stated	Rear End	Other Motor Vehicle	11/22/2013	1216	1 Daylight
N NORMA ST	W DRUMMOND AV	13 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/28/2014	1240	1 Daylight
N NORMA ST	W WARD AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/10/2014	1425	1 Daylight
N NORMA ST	W DRUMMOND AV	0		PDO	Following Too Closely	Rear End	Other Motor Vehicle	2/3/2014	1942	1 Daylight
N NORMA ST	W LAS FLORES AV	102 S		PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	6/4/2014	1135	1 Daylight
N NORMA ST	W LAS FLORES AV	0		PDO	Traffic Signals and Signs	Rear End	Other Motor Vehicle	9/18/2014	1156	1 Daylight
N NORMA ST	EDISON POLE	6 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/5/2015	1845	1 Dusk - Dawn
N NORMA ST	COSO AV	70 S		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	1/9/2015	1205	1 Daylight
N NORMA ST	W DRUMMOND AV	200 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/28/2015	1519	1 Daylight
E DRUMMOND AV	FRENCH AV	732 W		Injury (Other Visible)	Automobile Right of Way	Other	Bicycle	8/23/2017	755	11 Daylight
N NORMA ST	W LAS FLORES AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	3/21/2015	1946	1 Dark - Street Lights
N NORMA ST	W LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/20/2015	1407	1 Daylight
RT 178	SIERRA VIEW ST	350 E		Injury (Other Visible)	Unsafe Speed	Head-On	Parked Motor Vehicle	11/12/2017	1815	11 Dark - Street Lights
N NORMA ST	DRUMMOND AV	174 S		PDO	Automobile ROW	NO UNSUAL COND	Other Motor Vehicle	4/8/2016	814	1 Daylight
N NORMA ST	ELECTRICAL POLE 26-A4-80	195 S		PDO	Unsafe Lane Change	Sideswipe	Other Motor Vehicle	3/2/2016	1050	1 Daylight
N NORMA ST	RIDGECREST BL	0		PDO	Automobile ROW	OTHER	Other Motor Vehicle	7/28/2016	1148	1 Daylight
N NORMA ST	RIDGECREST BL	16 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/11/2016	740	1 Daylight
N NORMA ST	W LAS FLORES AV	110 S		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	1/15/2016	914	1 Daylight
N NORMA ST	W WARD AV	78 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/8/2016	1715	1 Daylight
N NORMA ST	W DRUMMOND AV	0		PDO	Driving or Bicycling Under the Influence of Alco	Rear End	Other Motor Vehicle	4/4/2016	1047	1 Daylight
N NORMA ST	W DRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/3/2016	858	1 Daylight
N NORMA ST	W LAS FLORES AV	15 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/4/2016	1700	1 Daylight
RT 178	TRIANGLE DR	814 W		Injury (Other Visible)	Improper Turning	Broadside	Other Motor Vehicle	8/21/2014	1720	11 Daylight
RT 178	S GORDON ST	375 N		Injury (Other Visible)	Improper Turning	Overtured	Non Collision	7/15/2017	550	11 Daylight
N NORMA ST	LAS FLORES AV	120 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/27/2017	720	1 Daylight
W CHURCH AV	S SUNSET ST	270 W		Injury (Other Visible)	Driving or Bicycling Under the Influence of Alco	Hit Object	Fixed Object	4/18/2015	350	11 Dark - Street Lights
N NORMA ST	W GRAAF AV	191 S		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/31/2017	1727	1 Daylight
N NORMA ST	WARD AV	20 W		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/29/2017	1640	1 Daylight
N NORMA ST	WEST	24 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/11/2017	835	1 Daylight
N NORMA ST	NORMA ST	0		PDO	Unsafe Starting or Backing	Hit Object	Fixed Object	10/10/2017	1602	1 Daylight
N NORMA ST	Vera Av	75 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/24/2015	1203	1 Daylight
N NOTMA ST	N FELSPAR AV	15 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/17/2015	1308	1 Daylight
N OASIS DR	LIGHT POLE #2343123	46 W		Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alco	Hit Object	Fixed Object	7/27/2013	447	6 Dark - Street Lights
W ST GEORGE AV	MAHAN ST	250 W		Injury (Other Visible)	Driving or Bicycling Under the Influence of Alco	Rear End	Parked Motor Vehicle	8/8/2017	0	11 Dark - Street Lights
WATKINS AV	SIERRA VIEW ST	400 W		Injury (Other Visible)	Unsafe Speed	Head-On	Pedestrian	1/21/2017	2300	11 Dark - Street Lights
N CHINA LAKE BL	W DRUMMOND AV	374 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/16/2016	1706	1 Dark - Street Lights
RT 178	W FELSPAR AV	225 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/2/2016	1111	1 Daylight
N PALM ST	E SAND DUNE LN	75 S		PDO	Improper Turning	Head-On	Other Motor Vehicle	12/19/2015	1000	1 Daylight
N PALM ST	LIGHT POLE	109 S		PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	12/5/2016	1610	1 Daylight
N PEG ST	W LAS FLORES AV	45 N		PDO	Unknown	Sideswipe	Other Motor Vehicle	12/14/2013	930	1 Daylight
N RANDALL ST	N RANDALL ST 701	0		PDO	Driving or Bicycling Under the Influence of Alco	Hit Object	Other Object	9/4/2013	19	1 Daylight
N RICHMOND RD	N GOLD CYN ST	0		Injury (Other Visible)	Automobile Right of Way	Head-On	Other Motor Vehicle	6/12/2013	704	11 Daylight
N RICHMOND RD	N GOLD CANYON	132 S		PDO	Unsafe Speed	Overtured		5/12/2013	404	1 Dark - No Street Lights
N RICHMOND RD	N GOLD CANYON	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/22/2013	1220	1 Daylight
N CHINA LAKE BL	W LAS FLORES AV	262 N		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	7/2/2015	1038	6 Daylight
N ROBALO ST	E NADEAU AV	9 E		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	12/2/2014	330	6 Dark - Street Lights
N SAHARA DR	LIGHT STANDARD	95 E		PDO	Driving or Bicycling Under the Influence of Alco	Rear End	Other Motor Vehicle	8/6/2013	1038	1 Daylight
N SANDERS ST	W FRENCH AV	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	5/28/2015	2007	6 Dark - Street Lights
N SANDERS ST	W COSO AV	61 S		PDO	Driving or Bicycling Under the Influence of Alco	Hit Object	Fixed Object	10/4/2014	159	1 Dark - Street Lights
N SANDERS ST	WEST	59 N		PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	11/24/2014	639	1 Dark - Street Lights
N SANDERS ST	HOWELL AV	160 W		PDO	Unsafe Starting or Backing	OTHER	Parked Motor Vehicle	12/17/2015	837	1 Daylight
N SANDERS ST	W FELSPAR AV	0		PDO	Automobile ROW	Broadside	MOTOR VEHICLE ON THE C	1/26/2016	749	1 Daylight
N SANDERS ST	W FELSPAR AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/28/2016	1200	1 Daylight
N SANDERS ST	W LAS FLORES AV	0		PDO	Improper Turning	OTHER	Fixed Object	12/8/2016	723	1 Daylight
N SIERRA	LIGHT POLE	9 S		PDO	Improper Turning	Rear End	Other Motor Vehicle	7/9/2013	810	1 Daylight
N SIERRA VIEW ST	W MARY ANN AV	51 S		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/5/2015	1614	1 Daylight
N SIERRA VIEW ST	W BENNETT ST	58 S		PDO	Driving or Bicycling Under the Influence of Alco	Hit Object	Fixed Object	5/10/2016	1500	1 Daylight
N SUNLAND ST	N SUNLAND ST	67 N		PDO	Unsafe Speed	Hit Object	Fixed Object	7/2/2016	1955	1 Daylight
N TRIANGLE DE	RT 395	121 N		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	12/19/2016	1650	1 Dark - Street Lights
N TRIANGLE DR	N CHINA LAKE BL	150 N		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	3/21/2015	1257	6 Daylight
N WARNER ST	W COSO AV	25 S		PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	9/26/2014	727	1 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
N WARNER ST	W COSO AV	80	S	PDO	Unknown	OTHER	Other Motor Vehicle	4/17/2015	1900	1	Dark - Street Lights
N WAYNE ST	W PERDEW AV	1	N	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	12/6/2014	2135	11	Dark - Street Lights
N WAYNE ST	W MOYER AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Head-On	Other Object	2/8/2014	1500	1	Daylight
NORMA ST	DRUMMOND AV	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/28/2016	1005	6	Daylight
Norma ST	RIDGECREST BL	0		PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	6/1/2013	1430	1	Daylight
Norma ST	W JEAN AV	175	N	PDO	Improper Turning	Rear End	Other Motor Vehicle	9/16/2014	55	1	Dark - Street Lights
NORMA ST	W LAS FLORES AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/24/2014	827	1	Daylight
NORMA ST	W WARD AV	0		PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	6/19/2015	1130	1	Daylight
RT 178	China Lake Bl	414	E	PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/20/2015	959	1	Daylight
S CHINA LAKE BL	RIDGECREST BL	270	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/3/2015	834	1	Daylight
NORTH BALSAM ST	W ARGUS AV	200	S	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	8/13/2016	1916	1	Daylight
W UPROHN AV	S SANDERS ST	204	E	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Rear End	Parked Motor Vehicle	7/25/2015	841	6	Daylight
PILGRIM CIR	MAYFLOWER CIR	82	E	PDO	Improper Turning	Broadside	Other Motor Vehicle	8/9/2013	1100	1	Daylight
S NORMA ST	W BOWMAN RD	659	N	Injury (Complaint of Pain)	Improper Turning	Rear End	Other Motor Vehicle	5/31/2016	2130	6	Dark - Street Lights
RADAR AV	W RADAR AV	5	N	PDO	UNKNOWN	Hit Object	Fixed Object	10/13/2015	114	1	Dark - Street Lights
RADER AV	S CHINA LAKE BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/28/2017	1812	1	Daylight
W LAS FLORES AV	N CHINA LAKE BL	325	W	Injury (Complaint of Pain)	Unsafe Speed	Other	Non Collision	9/23/2017	1115	6	Daylight
RICHMOND RD	UPOHVN AV	90	N	PDO	Improper Turning	Broadside	Other Motor Vehicle	6/3/2015	1259	1	Daylight
W RIDGECREST BL	S CHINA LAKE BL	210	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/13/2013	1215	1	Daylight
RIDGECREST BL	CHINA LAKE BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Other	Bicycle	12/5/2015	2104	6	Dark - Street Lights
RIDGECREST BL	CHINA LAKE BL	0		Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	12/17/2016	1919	6	Dark - Street Lights
RIDGECREST BL	N GOLD CANYON	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	4/12/2016	803	1	Daylight
RT 178	W LAS FLORES AV	0		Injury (Severe)	Driving or Bicycling Under the Influence of Alcohol	Broadside	Other Motor Vehicle	10/7/2017	2013	126	Dark - Street Lights
RT 178	N GORDON ST	40	W	Injury (Severe)	Other Improper Driving	Overtuned	-	12/19/2016	1610	126	Dusk - Dawn
RT 178	W HOWELL AV	38	S	Fatal	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	2/23/2017	2100	126	Dark - Street Lights
RT 178	DRUMMOND AV	0		Injury (Other Visible)	Unsafe Speed	Rear End	Other Motor Vehicle	6/12/2013	1336	11	Daylight
FRENCH AV	W DRUMMOND AV	214	S	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	3/4/2015	720	6	Daylight
RT 178	BRADY ST	62	W	Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	7/20/2016	115	11	Dark - No Street Lights
RT 178	BRADY ST	100	E	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Overtuned	Non Collision	7/20/2016	110	11	Dark - No Street Lights
N CHINA LAKE BL	W WARD AV	455	S	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	6/28/2017	746	6	Daylight
N DOWNS ST	W BOWMAN RD	244	N	Injury (Complaint of Pain)	Unsafe Speed	Head-On	Parked Motor Vehicle	9/17/2014	1400	6	Daylight
RT 178	W LAS FLORES AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/10/2014	618	11	Daylight
S CHINA LAKE BL	S DOWNS ST	457	N	Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	7/22/2016	1321	6	Daylight
S NEVADA ST	W UPOHVN AV	612	S	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	6/4/2016	644	6	Daylight
S SUNLAND ST	E BOWMAN RD	857	N	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	4/8/2016	39	6	Dark - No Street Lights
RT 178	FRENCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Overtuned	Other Motor Vehicle	8/3/2016	1610	11	Daylight
RT 178	SILVER RIDGE ST	17	E	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	5/24/2016	930	11	Daylight
W DRUMMOND AV	N SANDERS ST	201	E	Injury (Complaint of Pain)	Automobile Right of Way	Sideswipe	Other Motor Vehicle	2/27/2016	2048	6	Dark - Street Lights
RT 178	S GEMSTONE ST	90	W	Injury (Complaint of Pain)	Improper Turning	Sideswipe	Other Motor Vehicle	9/27/2013	1150	6	Daylight
RT 178	CHINA LAKE BL	18	E	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	11/13/2015	1110	6	Daylight
RT 178	W LAS FLORES AV	41	N	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	8/28/2015	1643	6	Daylight
RT 178	GOLD CANYON RD	26	N	Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	12/10/2014	1735	6	Dark - Street Lights
RT 178	RIDGECREST BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/15/2014	1519	6	Daylight
RT 178	DRUMMOND AV	34	N	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	8/21/2014	1851	6	Daylight
RT 178	HOWELL AV	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	4/2/2014	2012	6	Dark - Street Lights
RT 178	N CHINA LAKE BL	58	N	Injury (Complaint of Pain)	Wrong Side of Road	Broadside	Bicycle	5/15/2014	1354	6	Daylight
RT 178	SCE LIGHT POLE #4248911E	57	N	Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	2/18/2014	1642	6	Daylight
CHINA LAKE BL	RIDGECREST BL	212	S	PDO	Unsafe Speed	Hit Object	Fixed Object	3/3/2017	1200	1	Daylight
RT 178	DRUMMOND AV	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/3/2015	1612	6	Daylight
RT 178	N DOWNS ST	0		Injury (Complaint of Pain)	Automobile Right of Way	Other	Bicycle	9/7/2017	557	6	Dusk - Dawn
RT 178	HOWELL AV	62	S	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	3/1/2017	1215	6	Daylight
W RIDGECREST BL	DOWNS ST	300	W	PDO	Improper Turning	Hit Object	Fixed Object	9/25/2013	1040	1	Daylight
RT 178	W FELSPAR AV	28	S	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	8/29/2016	1226	6	Daylight
RT 178	RIDGECREST BL	0		Injury (Complaint of Pain)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	5/5/2016	1600	6	Daylight
W RIDGECREST BL	DOWNS ST	270	E	PDO	Improper Turning	Broadside	Other Motor Vehicle	3/20/2015	1522	1	Daylight
RT 178	COLLEGE AV	0		PDO	Not Stated	Broadside	Motor Vehicle on Other Rc	8/7/2013	1435	1	Daylight
RT 178	COSO AV	0		PDO	Automobile ROW	Broadside	Motor Vehicle on Other Rc	6/25/2013	1741	1	Daylight
RT 178	E LAS FLORES AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/18/2013	1435	1	Daylight
RT 178	FRENCH AV	0		PDO	Not Driver	Broadside	Other Motor Vehicle	3/28/2013	1200	1	Daylight
RT 178	HOWELL AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	4/21/2013	1200	1	Daylight
RT 178	LAS FLORES AV	0		PDO	Following Too Closely	Rear End	Other Motor Vehicle	7/11/2013	1505	1	Daylight
RT 178	LAS FLORES AV	0		PDO	Wrong Side of the Road	Hit Object	Fixed Object	12/5/2013	745	1	Daylight
RT 178	N CHINA LAKE BL	50	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/1/2013	2100	1	Dark - Street Lights
RT 178	N GATEWAY	170	E	PDO	Improper Turning	Rear End	Parked Motor Vehicle	8/4/2013	235	1	Dark - Street Lights
China Lake Bl	FELSPAR AV	403	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/21/2015	1222	1	Daylight
E French Av	N CHINA LAKE BL	666	E	PDO	Not Stated	Rear End	Other Motor Vehicle	8/19/2013	2500	1	Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
RT 178	W HOWELL AV	40	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	1/9/2013	1314	1	Daylight
RT 178	E RIDGECREST BL	18	N	PDO	Improper Turning	Hit Object	Fixed Object	11/23/2014	2500	1	Dark - Street Lights
E Ridgecrest Bl	China Lake Bl	210	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/8/2013	2015	1	Dark - Street Lights
RT 178	S BROADWAY	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	4/24/2014	715	1	Daylight
E Ridgecrest Bl	N CHINA LAKE BL	220	E	PDO	Not Stated	Sideswipe	Other Motor Vehicle	8/20/2015	1250	1	Daylight
RT 178	DRUMMOND AV	47	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/4/2015	1553	1	Daylight
RT 178	DRUMMOND AV	36	N	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	10/7/2015	1608	1	Daylight
RT 178	E Drummond AV	170	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/30/2015	800	1	Daylight
RT 178	E WARD AV	0		PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	9/23/2015	847	1	Daylight
RT 178	FRENCH AV	187	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	1/8/2015	1256	1	Daylight
RT 178	LAS FLORES AV	150	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/11/2015	916	1	Daylight
RT 178	N TRIANGLE DR	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/8/2015	659	1	Daylight
RT 178	N CHINA LAKE BL	51	N	PDO	Improper Turning	Broadside	Other Motor Vehicle	1/31/2015	1811	1	Dark - Street Lights
RT 178	N CHINA LAKE BL	0		PDO	Improper Passing	Sideswipe	Other Motor Vehicle	10/16/2015	745	1	Daylight
RT 178	S VALLEY ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	7/21/2015	953	1	Daylight
RT 178	W ARGUS AV	100	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/5/2015	1240	1	Daylight
RT 178	W HALOID AV	80	E	PDO	Unsafe Speed	Rear End	MOTOR VEHICLE ON THE C	8/2/2015	2032	1	Dark - Street Lights
N CHINA LAKE BL	W FRENCH AV	282	S	PDO	Driving or Bicycling Under the Influence of Alcoh	Hit Object	Fixed Object	3/4/2017	2011	1	Dark - Street Lights
RT 178	W LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/8/2015	1340	1	Daylight
N NORMA ST	DRUMMOND AV	225	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/15/2013	1240	1	Daylight
NORMA ST	W LAS FLORES AV	335	N	PDO	Driving or Bicycling Under the Influence of Alcoh	Rear End	Other Motor Vehicle	8/12/2015	948	1	Daylight
RT 178	W LAS FLORES AV	27	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/26/2015	2000	1	Dark - Street Lights
RT 178	China Lake Bl	72	E	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	11/7/2016	1530	1	Daylight
RT 178	W HOWELL AV	246	S	PDO	Unknown	Broadside	Other Motor Vehicle	11/1/2013	1210	1	Daylight
RT 178	DRUMMOND AV	30	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	6/30/2016	1825	1	Daylight
RT 178	DRUMMOND AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/3/2016	1635	1	Daylight
RT 178	FRENCH AV	233	S	PDO	Improper Turning	Hit Object	Fixed Object	4/10/2014	2324	1	Dark - Street Lights
RT 178	LAS FLORES AV	391	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/4/2015	1435	1	Daylight
RT 178	FRENCH AV	90	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/30/2016	1125	1	Daylight
W BOWMAN	S CHINA LAKE BL	606	W	PDO	Unsafe Lane Change	Hit Object	Fixed Object	5/21/2013	1940	1	Dusk - Dawn
W MIGUEL CT	S CHINA LAKE BL	294	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	12/7/2016	1100	1	Daylight
W MIGUEL CT	S CHINA LAKE BL	229	W	PDO	Automobile ROW	Sideswipe	Parked Motor Vehicle	10/5/2016	820	1	Daylight
W ROBERTSON AV	S SANDERS ST	258	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/30/2014	1308	1	Daylight
RT 178	W FELSPAR AV	0		PDO	Traffic Signals and Signs	OTHER	BICYCLE	8/24/2016	1219	1	Daylight
W ST GEORGE AV	NEVADA ST	355	W	PDO	Driving or Bicycling Under the Influence of Alcoh	Head-On	Other Motor Vehicle	5/12/2014	2344	1	Dark - Street Lights
RT 178	W LAS FLORES AV	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/2/2016	1800	1	Dark - Street Lights
RT 178	E SYDNOR AV	100	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/18/2017	1902	1	Dark - No Street Lights
RT 178	E FRENCH AV	62	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/7/2017	1150	1	Daylight
RT 178	FRENCH AV	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/19/2017	1150	1	Daylight
RT 178	FRENCH AV	115	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/27/2017	1355	1	Daylight
RT 178	FRENCH AV	0		PDO	UNKNOWN	Broadside	Other Motor Vehicle	9/18/2017	915	1	Daylight
RT 178	N NORMA ST	180	W	PDO	Improper Passing	Sideswipe	Other Motor Vehicle	3/8/2017	1450	1	Daylight
RT 178	RIDGECREST BL	70	N	PDO	Improper Turning	Rear End	Other Motor Vehicle	9/15/2017	1634	1	Daylight
W ST GEORGE AV	NEVADA ST	333	W	PDO	Driving or Bicycling Under the Influence of Alcoh	Head-On	Other Motor Vehicle	5/12/2014	2345	1	Dark - No Street Lights
RT 178	SYDNOR AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/24/2017	1302	1	Daylight
RT 178	W FELSPAR AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/23/2017	1050	1	Daylight
RT 178	W LAS FLORES AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	12/13/2017	1327	1	Daylight
RT 178	China Lake Bl	25	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/4/2013	1700	1	Daylight
RT 178	DRUMMOND AV	126	N	PDO	Improper Turning	Rear End	Other Motor Vehicle	10/29/2013	1830	1	Dark - Street Lights
RT 178	TRIANGLE DR	80	S	PDO	Improper Turning	Head-On	Other Motor Vehicle	9/21/2013	1250	1	Daylight
W WILSON AV	S CHINA LAKE BL	266	W	PDO	Driving or Bicycling Under the Influence of Alcoh	Hit Object	Fixed Object	11/27/2014	1335	1	Daylight
RT 178	W LAS FLORES AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/1/2013	1640	1	Daylight
RT 178	China Lake Bl	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	5/29/2014	1040	1	Daylight
RT 178	DRUMMOND AV	34	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/21/2014	1851	1	Daylight
RT 178	DRUMMOND AV	150	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/21/2014	1626	1	Daylight
1000 E CHURCH AV	RICHMOND RD	256	W	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	2/14/2014	1717	1	Dusk - Dawn
RT 178	GATEWAY BL	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	5/8/2014	1555	1	Daylight
RT 178	GATEWAY BL	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/18/2014	1555	1	Daylight
RT 178	LAS FLORES AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/18/2014	830	1	Daylight
RT 178	LIGHT STANDARD	64	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/20/2014	1700	1	Daylight
RT 178	S CHINA LAKE BL	50	E	PDO	Improper Turning	Broadside	Other Motor Vehicle	1/14/2014	1500	1	Daylight
RT 178	SUNLAND ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/16/2014	1143	1	Daylight
RT 178	W ARGUS AV	198	S	PDO	Following Too Closely	Rear End	Other Motor Vehicle	4/16/2014	1634	1	Daylight
RT 178	WARD AV	15	N	PDO	Not Stated	Rear End	Other Motor Vehicle	3/21/2014	1310	1	Daylight
900 N HERITAGE DR	DRUMMOND AV	300	N	PDO	Improper Turning	Hit Object	Fixed Object	2/25/2014	1050	1	Daylight
CALIFORNIA AV	S LUMILL ST	504	E	PDO	Driving or Bicycling Under the Influence of Alcoh	Head-On	Fixed Object	1/24/2015	150	1	Dark - Street Lights

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
RT 178	W HOWELL AV	0		PDO	Improper Turning	Hit Object	Fixed Object	8/8/2015	1035	1	Daylight
RT 178	FRENCH AV	0		PDO	Traffic Signals and Signs	Overturned	Other Motor Vehicle	8/3/2016	1610	1	Daylight
RT 178	S CHINA LAKE BL	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	4/25/2016	750	1	Daylight
RT 178	W GRAAF AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	11/29/2016	800	1	Daylight
S ALLEN ST	W RADAR AV	0		Injury (Severe)	Unsafe Speed	Head-On	Fixed Object	8/21/2016	223	126	Dark - Street Lights
Drummond Av	China Lake Bl	386 E		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/8/2013	1404	1	Daylight
S ALVORD ST	LIGHT STANDARD	77 S		PDO	Not Stated	Head-On	Parked Motor Vehicle	6/17/2017	1200	1	Dark - Street Lights
E Bowman Rd	COUNTY LINE RD	1352 E		PDO	Improper Turning	Hit Object	Fixed Object	10/20/2014		1	
S BOSTON AV	S MAHAN AV	94 W		PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	9/30/2013	1532	1	Daylight
S CHINA LAKE BL	S NORMA ST	0		Injury (Severe)	Driving or Bicycling Under the Influence of Alcol	Head-On	Other Motor Vehicle	6/5/2013	1935	126	Dark - Street Lights
S CHINA LAKE BL	LIGHT POLE 4177409E	25 N		Injury (Severe)	Automobile Right of Way	Other	Bicycle	3/12/2017	1936	126	Dark - Street Lights
S CHINA LAKE BL	UPJOHN AV	21 S		Injury (Severe)	Unknown	Hit Object	Fixed Object	4/16/2016	2159	126	Dark - Street Lights
S CHINA LAKE BL	W BOWMAN RD	0		Injury (Other Visible)	Traffic Signals and Signs	Vehicle/Pedestrian	Pedestrian	3/12/2013	2130	11	Dark - Street Lights
S CHINA LAKE BL	W CHURCH AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/18/2015	1729	11	Dusk - Dawn
S CHINA LAKE BL	E BOWMAN RD	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/6/2014	2047	11	Dark - Street Lights
E DRUMMOND AV	S CHELSEA BL	818 S		PDO	Unsafe Speed	Hit Object	Fixed Object	4/22/2016	958	1	Daylight
S CHINA LAKE BL	W CHURCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	5/20/2015	705	11	Daylight
S CHINA LAKE BL	UPJOHN AV	70 N		Injury (Other Visible)	Pedestrian Violation	Broadside	Pedestrian	4/7/2017	1017	11	Daylight
S CHINA LAKE BL	RADER AV	35 N		Injury (Other Visible)	Unsafe Speed	Rear End	Other Motor Vehicle	8/2/2017	1510	11	Daylight
S CHINA LAKE BL	W BOWMAN RD	165 S		Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcol	Head-On	Other Motor Vehicle	7/5/2017	1819	11	Daylight
S CHINA LAKE BL	CHURCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Overturned	Other Motor Vehicle	7/10/2016	745	11	Daylight
S CHINA LAKE BL	UPJOHN AV	0		Injury (Complaint of Pain	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	12/20/2013	1923	6	Dark - Street Lights
S CHINA LAKE BL	W WILSON AV	20 W		Injury (Complaint of Pain	Automobile Right of Way	Sideswipe	Motor Vehicle on Other Rc	8/25/2015	2010	6	Dark - Street Lights
S CHINA LAKE BL	CHURCH AV	0		Injury (Complaint of Pain	Unknown	Broadside	Other Motor Vehicle	6/24/2015	730	6	Daylight
S CHINA LAKE BL	RIDGECREST BL	2 S		Injury (Complaint of Pain	Following Too Closely	Rear End	Other Motor Vehicle	6/23/2015	1017	6	Daylight
S CHINA LAKE BL	UPJOHN AV	15 N		Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcol	Rear End	Other Motor Vehicle	2/23/2015	751	6	Daylight
S CHINA LAKE BL	RADEMACHER WY	15 E		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	6/15/2017	2340	6	Dark - No Street Lights
S CHINA LAKE BL	RT 178	34 S		Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcol	Rear End	Other Motor Vehicle	3/1/2017	2314	6	Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	25 N		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	8/31/2016	1450	6	Daylight
S CHINA LAKE BL	COLLEGE HEIGHTS BL	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/1/2016	1902	6	Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	12/5/2016	945	6	Daylight
S CHINA LAKE BL	WILSON AV	11 N		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	8/17/2016	2050	6	Dark - Street Lights
E DRUMMOND AV	CHELSEA ST	980 S		PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	1/25/2017	1449	1	Daylight
S CHINA LAKE BL	E CHURCH AV	0		Injury (Complaint of Pain	Improper Turning	Head-On	Other Motor Vehicle	7/20/2016	934	6	Daylight
S CHINA LAKE BL	W WILSON AV	0		Injury (Complaint of Pain	Automobile Right of Way	Rear End	Non Collision	1/24/2016	1430	6	Daylight
S CHINA LAKE BL	BOWMAN RD	21 S		PDO	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	9/1/2013	330	1	Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	10 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/3/2013	1349	1	Daylight
S CHINA LAKE BL	E BOWMAN RD	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/16/2013	1440	1	Daylight
S CHINA LAKE BL	E PARKVIEW ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/19/2013	1155	1	Daylight
S CHINA LAKE BL	E UPJOHN AV	15 N		PDO	Improper Turning	Broadside	Other Motor Vehicle	2/11/2013	930	1	Daylight
S CHINA LAKE BL	S NORMA ST	0		PDO	Automobile ROW	Broadside	BICYCLE	12/2/2013	1407	1	Daylight
S CHINA LAKE BL	UPJOHN AV	0		PDO	Automobile ROW	Head-On	Other Motor Vehicle	5/7/2013	1550	1	Daylight
S CHINA LAKE BL	UPJOHN AV	0		PDO	Unsafe Speed	Other Motor Vehicle	Other Motor Vehicle	12/2/2013	1145	1	Daylight
S CHINA LAKE BL	UPJOHN AV	0		PDO	Pedestrian ROW	VEHicle/Pedestrian	Pedestrian	12/20/2013	1923	1	Dark - Street Lights
S CHINA LAKE BL	W BOWMAN RD	0		PDO	Pedestrian ROW	VEHicle/Pedestrian	Pedestrian	3/12/2013	2130	1	Dark - Street Lights
S CHINA LAKE BL	W CALIFORNIA AV	0		PDO	Unsafe Speed	Hit Object	Fixed Object	6/4/2013	1626	1	Daylight
S CHINA LAKE BL	W UPJOHN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/18/2013	1300	1	Daylight
S CHINA LAKE BL	W UPJOHN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/25/2013	840	1	Daylight
S CHINA LAKE BL	W WILSON AV	0		PDO	Improper Turning	Broadside	Motor Vehicle on Other Rc	10/12/2013	2322	1	Dark - Street Lights
S CHINA LAKE BL	WILSON AV	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	10/29/2013	2250	1	Dark - Street Lights
S CHINA LAKE BL	CHURCH AV	25 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/16/2014	735	1	Daylight
S CHINA LAKE BL	E BOWMAN RD	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/5/2014	1240	1	Daylight
S CHINA LAKE BL	RADER AV	45 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/4/2014	1805	1	Dark - Street Lights
S CHINA LAKE BL	S COLLEGE	16 N		PDO	Driving or Bicycling Under the Influence of Alcol	Hit Object	Fixed Object	12/31/2014	1645	1	Dusk - Dawn
S CHINA LAKE BL	UPJOHN AV	50 N		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	1/17/2014	1230	1	Daylight
S CHINA LAKE BL	UPJOHN AV	25 N		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/27/2014	1246	1	Daylight
S CHINA LAKE BL	W BOWMAN RD	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	12/16/2014	902	1	Daylight
S CHINA LAKE BL	W CHURCH	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/5/2014	1700	1	Daylight
S CHINA LAKE BL	W CHURCH AV	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/25/2014	1430	1	Daylight
S CHINA LAKE BL	W CHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/24/2014	2140	1	Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	150 N		PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	11/5/2015	1441	1	Daylight
S CHINA LAKE BL	CHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	BICYCLE	11/12/2015	1014	1	Daylight
S CHINA LAKE BL	E CHURCH AV	0		PDO	Improper Turning	Hit Object	Fixed Object	6/23/2015	1855	1	Daylight
S CHINA LAKE BL	E CHURCH AV	75 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/29/2015	1409	1	Daylight
S CHINA LAKE BL	GRANDE WY	119 S		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/28/2015	1702	1	Daylight
S CHINA LAKE BL	RIDGECREST BL	200 S		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	8/14/2015	1445	1	Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
E UPJOHN AV	S GATEWAY	456	W	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	12/4/2017	810	1	Daylight
S CHINA LAKE BL	S YORKTOWN ST	0		PDO	Unsafe Speed	Hit Object	Other Object	2/5/2015	1645	1	Dusk - Dawn
S CHINA LAKE BL	UPJOHN AV	0		PDO	Traffic Signals and Signs	Rear End	Other Motor Vehicle	3/27/2015	1530	1	Daylight
S CHINA LAKE BL	UPJOHN AV	10	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/9/2015	1146	1	Daylight
S CHINA LAKE BL	W HALOID AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/7/2015	1454	1	Daylight
S CHINA LAKE BL	W ROBERTSON AV	0		PDO	Improper Turning	Hit Object	Fixed Object	8/15/2015	850	1	Daylight
S CHINA LAKE BL	W UPJOHN AV	0		PDO	Traffic Signals and Signs	Broadside	MOTOR VEHICLE ON THE C	8/22/2015	1449	1	Daylight
S CHINA LAKE BL	CHURCH AV	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	3/15/2016	1800	1	Daylight
S CHINA LAKE BL	CHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/31/2016	1350	1	Daylight
S CHINA LAKE BL	E RIDGECREST BL	16	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/22/2016	1737	1	Daylight
S CHINA LAKE BL	RT 178	22	S	PDO	Improper Turning	Hit Object	Fixed Object	7/28/2016	1230	1	Daylight
S CHINA LAKE BL	S NORMA ST	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	10/22/2016	1802	1	Dusk - Dawn
S CHINA LAKE BL	UPJOHN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/16/2016	738	1	Daylight
E UPJOHN AV	S GATEWAY ST	426	W	PDO	Unsafe Starting or Backing	OTHER	Other Motor Vehicle	5/30/2017	1220	1	Daylight
S CHINA LAKE BL	W HALOID AV	25	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/31/2016	1810	1	Daylight
S CHINA LAKE BL	UPJOHN AV	2	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	8/10/2016	1020	1	Daylight
S CHINA LAKE BL	BOWMAN RD	44	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/23/2017	1415	1	Daylight
S CHINA LAKE BL	CHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	8/12/2017	1535	1	Daylight
S CHINA LAKE BL	S COLLEGE	0		PDO	UNKNOWN	Sideswipe	Other Motor Vehicle	11/6/2017	1120	1	Daylight
S CHINA LAKE BL	W WILSON AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	12/1/2017	1551	1	Daylight
S CHINA LAKE BL	WILSON AV	0		PDO	Unsafe Speed	Broadside	MOTOR VEHICLE ON THE C	1/7/2017	1606	1	Daylight
S CHINA LAKE BL	E BOWMAN RD	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/28/2017	2125	1	Dark - Street Lights
S CHINA LAKE BL	W CALIFORNIA AV	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/15/2017	1834	1	Dark - Street Lights
S COLLEGE	E HARTLEY AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/26/2014	1305	1	Daylight
S COLLEGE	W FRANKLIN AV	0		PDO	Following Too Closely	Sideswipe	Other Motor Vehicle	10/1/2015	1716	1	Daylight
S COLLEGE BL	ESPERANEA AV	12		PDO	Improper Passing	Sideswipe	Other Motor Vehicle	8/29/2016	1013	1	Daylight
S COLLEGE HEIGHTS BL	S CHINA LAKE BL	19	N	Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	9/18/2014	1758	11	Daylight
S COLLEGE HEIGHTS BL	NANCY AV	0		Injury (Other Visible)	Improper Turning	Broadside	Other Motor Vehicle	10/10/2017	1922	11	Dark - Street Lights
S COLLEGE HEIGHTS BL	E KENDALL AV	0		Injury (Complaint of Pain Automobile Right of Way)		Broadside	Other Motor Vehicle	8/10/2015	752	6	Daylight
S COLLEGE HEIGHTS BL	SCE LIGHT POLE #4177555E	9	W	Injury (Complaint of Pain Unsafe Speed)		Rear End	Other Motor Vehicle	1/24/2015	1131	6	Daylight
S COLLEGE HEIGHTS BL	W DOLPHIN AV	88	N	Injury (Complaint of Pain Unsafe Speed)		Rear End	Other Motor Vehicle	10/21/2016	1110	6	Daylight
S COLLEGE HEIGHTS BL	S CHINA BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/23/2013	1845	1	Daylight
S DESERT CASSIA	W MOJAVE ROSE	44	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Sideswipe	Parked Motor Vehicle	7/23/2014	1623	1	Daylight
S DOWNS ST	W RADAR AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	8/1/2013	1702	11	Daylight
S DOWNS ST	W DOLPHIN AV	0		Injury (Other Visible)	Automobile Right of Way	Head-On	Other Motor Vehicle	10/26/2014	1511	11	Daylight
S DOWNS ST	KINNETT AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	11/10/2014	1558	11	Daylight
S DOWNS ST	W BOWMAN RD	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/17/2017	1555	11	Daylight
S DOWNS ST	W LANGLEY AV	4	N	Injury (Other Visible)	Wrong Side of Road	Head-On	Bicycle	5/11/2017	1227	11	Daylight
S DOWNS ST	W BOWMAN AV	0		Injury (Other Visible)	Improper Turning	Broadside	Other Motor Vehicle	1/20/2016	1649	11	Daylight
S DOWNS ST	W UPJOHN AV	0		Injury (Complaint of Pain Traffic Signals and Signs)		Broadside	Other Motor Vehicle	7/31/2013	1917	6	Daylight
S DOWNS ST	W BOWMAN RD	0		Injury (Complaint of Pain Automobile Right of Way)		Broadside	Other Motor Vehicle	3/31/2014	1000	6	Daylight
S DOWNS ST	UTILITY POLE #4175840B	57	S	Injury (Complaint of Pain Automobile Right of Way)		Broadside	Other Motor Vehicle	4/16/2017	1223	6	Daylight
S DOWNS ST	RIDGECREST BL	18	W	Injury (Complaint of Pain Unsafe Speed)		Rear End	Other Motor Vehicle	9/25/2016	1748	6	Daylight
S DOWNS ST	W BOWMAN RD	0		Injury (Complaint of Pain Automobile Right of Way)		Broadside	Other Motor Vehicle	7/15/2016	1931	6	Daylight
S DOWNS ST	W BOWMAN AV	0		Injury (Complaint of Pain Automobile Right of Way)		Broadside	Other Motor Vehicle	2/15/2016	1450	6	Daylight
S DOWNS ST	W FRANKLIN AV	31	N	PDO	Not Driver	Hit Object	Fixed Object	11/26/2013	216	1	Dark - Street Lights
S DOWNS ST	W LANGLEY AV	67	N	PDO	Unsafe Speed	Hit Object	Fixed Object	11/23/2013	815	1	Daylight
S DOWNS ST	W SULLIVAN AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	8/10/2013	2300	1	Dark - Street Lights
S DOWNS ST	W VULCAN AV	71	W	PDO	Unsafe Speed	Hit Object	Fixed Object	12/22/2013	1800	1	Dark - Street Lights
S DOWNS ST	W BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/9/2014	1303	1	Daylight
S DOWNS ST	W BOWMAN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/16/2014	1703	1	Daylight
S DOWNS ST	W DOLPHIN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/6/2014	1534	1	Daylight
S DOWNS ST	KINNETT AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/10/2014	1558	1	Daylight
S DOWNS ST	BOWMAN RD	80	S	PDO	Unsafe Speed	Hit Object	Other Object	8/26/2015	2302	1	Dark - Street Lights
S DOWNS ST	W BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/3/2016	1620	1	Daylight
S DOWNS ST	W BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	7/15/2016	1931	1	Daylight
S DOWNS ST	W CHURCH AV	0		PDO	Traffic Signals and Signs	OTHER	Other Motor Vehicle	9/5/2016	1213	1	Daylight
S DOWNS ST	WEST	50	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/6/2016	1140	1	Daylight
S DOWNS ST	W SPRINGER	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	4/2/2016	1325	1	Daylight
S DOWNS ST	W BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	1/13/2016	931	1	Daylight
S DOWNS ST	N DOLPHIN AV	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	12/15/2017	2343	1	Dark - Street Lights
S DOWNS ST	S CHINA LAKE BL	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	7/23/2017	2330	1	Dark - Street Lights
S DOWNS ST	W BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/1/2017	1340	1	Daylight
S GATEWAY BL	E RIDGECREST BL	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	9/15/2017	1830	1	Dusk - Dawn
S GATEWAY ST	S GATEWAY ST	36	S	PDO	Unsafe Starting or Backing	Rear End	Fixed Object	4/26/2013	1935	1	Daylight
S GATEWAY ST	E WALKER LN	0		PDO	Wrong Side of the Road	Broadside	BICYCLE	4/17/2014	1449	1	Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
Gold Canyon DR	NADEAU ST	242	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	4/24/2013		703	1 Daylight
S GEMSTONE ST	E RIDGECREST BL	149	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	10/9/2016		205	1 Dark - Street Lights
S GOLD CANYON	E CHURCH ST	83	N	Injury (Complaint of Pain)	Other Than Driver (or Pedestrian)	Other	Non Collision	9/2/2013		1544	6 Daylight
S GOLD CANYON DR	E RIDGECREST BL	81	S	Injury (Complaint of Pain)	Other Hazardous Violation	Sideswipe	Other Motor Vehicle	3/2/2016		1125	6 Daylight
S GOLD CANYON DR	UTILITY POLE	43	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Head-On	Fixed Object	7/16/2014		1650	1 Daylight
S GOLD CANYON ST	RIDGECREST BL	140	S	Injury (Other Visible)	Improper Passing	Sideswipe	Bicycle	9/1/2017		1400	11 Daylight
S GUAM ST	W IOWA AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/7/2016		1700	1 Dusk - Dawn
S LENORE ST	E WILSON AV	0		Injury (Severe)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	6/2/2014		1452	126 Daylight
S LENORE ST	E UPJOHN AV	0		Injury (Other Visible)	Unsafe Speed	Hit Object	Fixed Object	2/20/2015		1704	11 Daylight
S LILAC ST	E CALIFORNIA AV	37	S	PDO	Unsafe Speed	Broadside	Parked Motor Vehicle	5/30/2016		1604	1 Daylight
S MAHAN AV	W UPJOHN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/10/2016		1030	1 Daylight
S MAHAN ST	W UPJOHN AV	38	S	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	3/5/2016		847	11 Daylight
S MAHAN ST	W RIDGECREST BL	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	8/20/2013		800	6 Daylight
S MAHAN ST	WEST	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/4/2016		1921	1 Dark - No Street Lights
S MAHAN ST	W IOWA AV	0		PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	9/8/2017		2019	1 Dark - No Street Lights
Gold Canyon DR	SANDORA AV	209	N	PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	11/30/2015		1240	1 Daylight
S NEVADA ST	W RADAR AV	89	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	9/29/2015		638	1 Daylight
S NORMA ST	PETRIS AV	0		Injury (Severe)	Automobile Right of Way	Broadside	Other Motor Vehicle	4/27/2014		1629	126 Daylight
S NORMA ST	W HALOID AV	10	N	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	1/2/2017		2350	11 Dark - Street Lights
S NORMA ST	W CHURCH AV	0		Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	10/6/2016		700	11 Daylight
S NORMA ST	W BOWMAN AV	150	N	Injury (Complaint of Pain)	Automobile Right of Way	Vehicle/Pedestrian	Pedestrian	10/8/2013		1700	6 Dusk - Dawn
S NORMA ST	W RIDGECREST BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Other	Other Motor Vehicle	4/19/2015		1859	6 Daylight
S NORMA ST	W RIDGECREST BL	36	S	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	5/11/2016		1030	6 Daylight
HEATHER CT	W RADAR AV	521	N	PDO	Unsafe Starting or Backing	OTHER	Other Motor Vehicle	12/18/2015		1222	1 Daylight
S NORMA ST	W UPJOHN AV	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	1/3/2016		1751	6 Dark - Street Lights
S NORMA ST	NEVADA AV	15	N	PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	7/30/2014		1747	1 Daylight
S NORMA ST	W DEWALT AV	0		PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	10/22/2014		1234	1 Daylight
S NORMA ST	W UPJOHN AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Broadside	Other Motor Vehicle	12/4/2015		925	1 Daylight
Kashmir Ln	GOLD CANYON RD	345	W	PDO	Unsafe Speed	Hit Object	Other Object	11/29/2015		1220	1 Daylight
S NORMA ST	DEWALT AV	0		PDO	Improper Passing	Broadside	Other Motor Vehicle	8/13/2016		1123	1 Daylight
S NORMA ST	W PERCH AV	102	S	PDO	NOT DRIVER	Hit Object	Other Object	6/2/2016		1500	1 Daylight
S NORMA ST	W UPJOHN AV	50	S	PDO	Unsafe Speed	Hit Object	Fixed Object	8/21/2016		220	1 Dark - Street Lights
S NORMA ST	W UPJOHN AV	0		PDO	UNKNOWN	Broadside	Other Motor Vehicle	1/15/2016		1911	1 Daylight
S NORMA ST	W BOWMAN RD	25	N	PDO	Improper Turning	Head-On	Fixed Object	4/16/2017		942	1 Daylight
S NORMA ST	W CHURCH AV	100	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/14/2017		1431	1 Daylight
S NORMA ST	W UPJOHN AV	7	S	PDO	Unsafe Speed	Head-On	Fixed Object	5/25/2017		746	1 Daylight
S RANGER ST	W DOLPHIN AV	183	S	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	9/25/2013		2045	1 Dark - No Street Lights
S RANGER ST	DOLPHIN	13	W	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/1/2014		1358	1 Daylight
S RICHMOND RD	E CALIFORNIA AV	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	5/10/2017		1115	6 Daylight
S RICHMOND RD	RT 178	10	S	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	4/30/2013		1500	1 Daylight
N BALSAM ST	W COSO AV	415	S	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	6/23/2017		1405	1 Daylight
N CHINA LAKE BI	W HOWELL AV	236	S	PDO	Improper Turning	Broadside	Other Motor Vehicle	7/15/2016		1348	1 Daylight
S SANDERS ST	W IOWA AV	31	N	Injury (Complaint of Pain)	Improper Turning	Rear End	Other Motor Vehicle	1/5/2017		1035	6 Daylight
S SANDERS ST	W ST GEORGE AV	26	S	PDO	Improper Turning	Rear End	Parked Motor Vehicle	2/5/2015		1853	1 Dark - No Street Lights
S SIERRA VIEW ST	EDISON POLE	6	S	PDO	Unsafe Speed	Hit Object	Fixed Object	10/28/2016		1147	1 Daylight
S SILVER RIDGE ST	E CALIFORNIA AV	22	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	5/12/2017		450	1 Dusk - Dawn
S SUNLAND ST	E RIDGECREST BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/19/2014		1925	6 Dark - Street Lights
S SUNLAND ST	HEATHERGLEN AV	42	S	Injury (Complaint of Pain)	Automobile Right of Way	Other	Bicycle	3/24/2017		1910	6 Dark - Street Lights
N CHINA LAKE BL	E LAS FLORES AV	630	N	PDO	Other Hazardous Violation	Sideswipe	Other Motor Vehicle	7/8/2017		1211	1 Daylight
S SUNLAND ST	E UPJOHN AV	18	S	Injury (Complaint of Pain)	Improper Turning	Sideswipe	Other Motor Vehicle	1/11/2016		1743	6 Dusk - Dawn
S SUNLAND ST	E CALIFORNIA AV	32	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/20/2015		1455	1 Daylight
S SUNLAND ST	E UPJOHN AV	151	N	PDO	Not Stated	Hit Object	Fixed Object	7/18/2015		1750	1 Daylight
S SUNLAND ST	E WILSON AV	17	S	PDO	Unsafe Speed	Broadside	Other Motor Vehicle	12/4/2016		409	1 Dark - Street Lights
S SUNLAND ST	E COMMERCIAL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/27/2017		733	1 Daylight
S SUNSET PL	SCE POLE 1561218E	29	S	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	10/16/2016		322	6 Dark - No Street Lights
S SUNSET ST	W WILSON AV	7	S	Injury (Severe)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	1/11/2016		422	126 Dark - Street Lights
S SUNSET ST	UTILITY POLE #1615834E	6	S	Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	10/17/2015		2039	11 Dark - No Street Lights
S SUNSET ST	W WILSON AV	184	S	Injury (Other Visible)	Improper Turning	Other	Bicycle	10/18/2017		1148	11 Daylight
S SUNSET ST	W GINGER AV	0		Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	5/14/2016		648	11 Daylight
S SUNSET ST	CHURCH AV	181	N	PDO	Improper Turning	Hit Object	Fixed Object	5/16/2014		900	1 Daylight
N CHINA LAKE BL	WHOWELL AV	215	S	PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	5/9/2017		1325	1 Daylight
N NORMA ST	ARGUS ST	403	S	PDO	Improper Turning	Rear End	Parked Motor Vehicle	3/20/2016		2257	1 Dark - Street Lights
S WARNER ST	W IOWA AV	140	S	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	7/24/2015		2044	1 Dark - Street Lights
S WARNER ST	W ROBERTSON AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol	OTHER	Other Motor Vehicle	9/25/2016		1849	1 Dusk - Dawn
SAND DUNE LN	208 E SAND DUNE	51	N	PDO	Improper Turning	Broadside	Parked Motor Vehicle	2/3/2013		1930	1 Dark - Street Lights
N NORMA ST	W SYDNOR AV	301	S	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	6/13/2016		1704	1 Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
SANQUIST RD	RT 178	12	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/16/2015	1100	1 Daylight
SIERRA VIEW ST	WARD AV	32	N	PDO	Improper Turning	Hit Object	Fixed Object	1/9/2015	1209	1 Daylight
SILVER RIDGE ST	BENSON AV	10	S	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	6/1/2015	1934	1 Dusk - Dawn
N NORMA ST	HERITAGE DR	490	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	3/7/2017	1735	1 Daylight
SUNLAND ST	TERRY LN	0		Injury (Other Visible)	Improper Turning	Rear End	Parked Motor Vehicle	4/22/2014	1420	11 Daylight
SUNLAND ST	E BOWMAN RD	0		PDO	Unsafe Speed	Hit Object	Fixed Object	7/14/2015	2316	1 Dark - No Street Lights
SYDNOR AV	N SHERRI ST	9	W	PDO	Unsafe Speed	Sideswipe	Parked Motor Vehicle	11/16/2017	1722	1 Dark - No Street Lights
TRIANGLE DR	RT 178	20	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	1/31/2015	1136	1 Daylight
TRIANGLE DR	RT 178	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/3/2014	1645	1 Daylight
UPOHNS AV	S SUNSET ST	0		Injury (Complaint of Pain	Wrong Side of Road	Other	Bicycle	3/7/2017	1430	6 Daylight
UPOHNS AV	S CHINA LAKE BL	0		Injury (Complaint of Pain	Pedestrian Violation	Other	Bicycle	5/12/2016	925	6 Daylight
UPOHNS AV	China Lake Bl	185	W	PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	12/13/2014	1645	1 Daylight
UPOHNS AV	SANDERS ST	0		PDO	Improper Turning	Rear End	Other Motor Vehicle	5/7/2015	1530	1 Daylight
W ALENE AV	N SIERRA VIEW ST	20	W	PDO	Unsafe Speed	Hit Object	Fixed Object	2/7/2017	1951	1 Dark - Street Lights
W ARGUS AV	TRACI LN	56	W	Injury (Other Visible)	Unsafe Speed	Hit Object	Fixed Object	12/30/2017	800	11 Dark - No Street Lights
W ARGUS AV	N FLORENCE ST	113	E	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	11/9/2017	130	1 Dark - Street Lights
W ATKINS AV	W ATKINS AV 518	0		Injury (Complaint of Pain	Unsafe Speed	Sideswipe	Parked Motor Vehicle	11/5/2015	1414	6 Daylight
W ATKINS AV	Sierra View St	85	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	4/3/2016	1306	1 Daylight
W BATAAN AV	S RANGER ST	0		Injury (Complaint of Pain	Unknown	Rear End	Parked Motor Vehicle	8/24/2017	356	6 Dark - No Street Lights
W BATAAN AV	S SIMS ST	0		PDO	Improper Turning	OTHER	Other Motor Vehicle	10/3/2014	1638	1 Daylight
W BATAAN AV	S SIERRA VIEW ST	17	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	10/27/2016	1310	1 Daylight
W BENSON AV	N INVO ST	144	E	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	12/19/2016	1730	1 Dark - Street Lights
N OASIS DR	LIGHT POLE	209	E	PDO	Improper Turning	Rear End	Other Motor Vehicle	8/9/2014	500	1 Dark - Street Lights
N OASIS DR	E LA MIRAGE LN	385	N	PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	9/14/2015	1729	1 Daylight
W BOWMAN	S DOWNS ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/3/2014	913	1 Daylight
W BOWMAN	S NORMA ST	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	3/30/2015	1938	1 Dark - Street Lights
W BOWMAN	S CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/18/2015	1812	1 Dark - Street Lights
W BOWMAN	S GARTH ST	0		PDO	Traffic Signals and Signs	OTHER	Other Motor Vehicle	1/5/2015	1811	1 Dark - No Street Lights
W BOWMAN	LIGHT POLE	39	W	PDO	Unsafe Starting or Backing	HIT OBJECT	Fixed Object	2/7/2015	1209	1 Daylight
W BOWMAN AV	S CHINA LAKE BL	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	3/8/2016	1330	1 Daylight
N OASIS RD	LA MIRAGE LN	688	N	PDO	Other Improper Driving	Rear End	Parked Motor Vehicle	2/15/2017	2228	1 Dark - Street Lights
W BOWMAN AV	S MAHAN AV	0		PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	10/25/2016	2202	1 Dark - No Street Lights
W BOWMAN RD	S MAHAN ST	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Bicycle	6/8/2015	1935	11 Daylight
W BOWMAN RD	S DOWNS ST	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	8/11/2017	1632	11 Daylight
W BOWMAN RD	S DOWNS ST	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	5/5/2016	1740	11 Daylight
W BOWMAN RD	S DOWNS ST	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	9/1/2015	1220	6 Daylight
W BOWMAN RD	W GUAM ST	3	W	Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	4/10/2015	1301	6 Daylight
N PALM ST	SANDUNE AV	366	W	PDO	Improper Turning	Rear End	Other Motor Vehicle	12/5/2013	1620	1 Daylight
W CALIFORNIA AV	S CHINA LAKE BL	200	W	PDO	Unsafe Speed	Hit Object	Fixed Object	10/2/2014	1003	1 Daylight
W CALIFORNIA AV	S CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Head-On	BICYCLE	11/12/2014	1414	1 Daylight
W CECIL AV	S REEDY ST	100	E	PDO	Unsafe Speed	OTHER	Fixed Object	8/4/2014	831	1 Daylight
N RICHMOND RD	RT 178	2552	N	PDO	Automobile ROW	Rear End	Other Motor Vehicle	3/26/2015	1308	1 Daylight
W CHURCH AV	S CHINA LAKE BL	0		Injury (Other Visible)	Other Hazardous Violation	Other	Bicycle	9/24/2016	1349	11 Daylight
W CHURCH AV	S WARNER ST	168	W	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	5/16/2014	1354	6 Daylight
W CHURCH AV	S CHINA LAKE BL	0		PDO	Automobile ROW	Head-On	Other Motor Vehicle	9/9/2013	623	1 Dusk - Dawn
W CHURCH AV	S CHINA LAKE BL	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	7/15/2014	1420	1 Daylight
W CHURCH AV	S GORDON ST	24	W	PDO	Improper Turning	Hit Object	Fixed Object	7/23/2015	30	1 Dark - No Street Lights
NORMA ST	W BOWMAN RD	314	N	PDO	Unsafe Speed	Broadside	Other Motor Vehicle	5/15/2016	1457	1 Daylight
W CHURCH AV	GOLD CANYON RD	40	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Parked Motor Vehicle	9/24/2016	32	1 Dark - Street Lights
W CHURCH AV	S CHINA LAKE BL	0		PDO	Automobile ROW	Broadside	MOTOR VEHICLE ON THE C	6/13/2016	1757	1 Daylight
W CHURCH AV	S CHINA LAKE BL	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/24/2016	745	1 Daylight
PERDEW AV	N NORMA ST	256	W	PDO	Unsafe Starting or Backing	Sideswipe	Parked Motor Vehicle	12/13/2015	1518	1 Daylight
W CHURCH AV	S SIERRA VIEW ST	0		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	12/7/2016	1310	1 Daylight
W CHURCH AV	W CHURCH AV 339	40	S	PDO	Unsafe Starting or Backing	OTHER	Parked Motor Vehicle	4/5/2017	1813	1 Daylight
W CORONA AV	S GUAM ST	93	E	Injury (Complaint of Pain	Unsafe Speed	Rear End	Parked Motor Vehicle	1/13/2017	558	6 Daylight
PRIVATE RD	RIDGECREST BL	241	S	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Other Object	6/23/2017	652	1 Daylight
REEVES AV	N SIERRA VIEW ST	502	W	PDO	Unsafe Speed	Sideswipe	Parked Motor Vehicle	9/20/2015	923	1 Daylight
W COSO AV	N TRACIE LN	55	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Broadside	Parked Motor Vehicle	10/10/2016	109	1 Dark - Street Lights
W COSO AV	N TRACI ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/31/2017	1814	1 Daylight
W DOLPHIN AV	S DOWNS ST	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/14/2017	2022	6 Dark - Street Lights
W DOLPHIN AV	S FARRAGUT	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	12/23/2014	1802	1 Dark - No Street Lights
RICHMOND RD	RT 178	760	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/30/2016	702	1 Daylight
W DRUMMOND AV	N CHINA LAKE BL	185	W	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	10/1/2015	645	11 Daylight
W DRUMMOND AV	N HERITAGE DR	0		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	8/30/2013	1443	6 Daylight
W DRUMMOND AV	N HERITAGE DR	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	11/18/2013	1306	6 Daylight
W DRUMMOND AV	N CIMARRON CT	63	W	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Other Object	4/10/2015	33	6 Dark - Street Lights

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
W DRUMMOND AV	NORMA ST	94	E	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	6/1/2017	1208	6	Daylight
W DRUMMOND AV	RT 178	0		Injury (Complaint of Pain	Traffic Signals and Signs	Other	Other Motor Vehicle	12/24/2016	1955	6	Dark - Street Lights
W DRUMMOND AV	W DRUMMOND AV 100	0		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	12/7/2016	1120	6	Daylight
W DRUMMOND AV	N SHERRI ST	0		Injury (Complaint of Pain	Wrong Side of Road	Other	Bicycle	9/21/2016	758	6	Daylight
W DRUMMOND AV	RT 178	0		Injury (Complaint of Pain	Unsafe Speed	Hit Object	Other Object	5/21/2016	1001	6	Daylight
RT 178	FELSPAR AV	600	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/13/2016	1858	1	Dark - Street Lights
W DRUMMOND AV	N WARNER ST	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	4/2/2013	1055	1	Daylight
W DRUMMOND AV	China Lake Bl	15	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	11/1/2013	1900	1	Dark - Street Lights
W DRUMMOND AV	N NORMA ST	12	W	PDO	Following Too Closely	Rear End	Other Motor Vehicle	1/9/2013	1222	1	Daylight
W DRUMMOND AV	N NORMA ST	0		PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	2/13/2013	1715	1	Daylight
W DRUMMOND AV	N NORMA ST	0		PDO	Unsafe Starting or Backing	Broadside	Motor Vehicle on Other Rc	12/11/2013	402	1	Dark - Street Lights
W DRUMMOND AV	NORMA ST	5	N	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	11/6/2013	1520	1	Daylight
W DRUMMOND AV	N DOWNS ST	34	E	PDO	Unsafe Speed	Hit Object	Fixed Object	7/13/2014	318	1	Dark - Street Lights
W DRUMMOND AV	N HERITAGE DR	26	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/31/2014	1215	1	Daylight
W DRUMMOND AV	N INYO ST	0		PDO	Automobile ROW	Head-On	Fixed Object	3/12/2014	710	1	Daylight
W DRUMMOND AV	N INYO ST	0		PDO	Not Stated	OTHER	Other Motor Vehicle	4/4/2014	1551	1	Daylight
W DRUMMOND AV	HERITAGE DR	0		PDO	Automobile ROW	Broadside	OTHER Motor Vehicle	9/21/2015	1226	1	Daylight
W DRUMMOND AV	N CHINA LAKE BL	30	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/13/2015	1212	1	Daylight
W DRUMMOND AV	N CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	2/28/2015	1950	1	Dark - Street Lights
W DRUMMOND AV	N DOWNS ST	0	E	PDO	Unsafe Speed	Hit Object	Fixed Object	6/20/2016	509	1	Dusk - Dawn
W DRUMMOND AV	SYLVIA ST	73	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Other Object	12/2/2016	204	1	Dark - Street Lights
W DRUMMOND AV	N DOWNS ST	40	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	1/10/2017	1520	1	Daylight
W FELSPAR AV	N NORMA ST	98	W	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	6/12/2013	1559	11	Daylight
W FELSPAR AV	N SANDERS ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/16/2016	1004	1	Daylight
W FRENCH AV	N BALSAM ST	19	W	Injury (Complaint of Pain	Unsafe Speed	Other	Other Object	10/14/2016	1529	6	Daylight
W FRENCH AV	N ALVORD ST	0		PDO	Automobile ROW		Other Motor Vehicle	5/17/2013	1131	1	Daylight
W FRENCH AV	China Lake Bl	10	W	PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	8/22/2014	1725	1	Daylight
W FRENCH AV	S SANDERS ST	0		PDO	Unsafe Speed	Broadside	Other Motor Vehicle	7/5/2014	910	1	Daylight
W FRENCH AV	N SANDERS ST	92	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	11/7/2015	1630	1	Dusk - Dawn
RT 178	W DRUMMOND AV	280	N	PDO	Improper Turning	OTHER	Other Motor Vehicle	6/2/2016	1120	1	Daylight
RT 178	WEST	339	N	PDO	Not Stated	Rear End	Other Motor Vehicle	7/31/2014	1700	1	Daylight
W GRAAF AV	N NORMA ST	0		PDO	Improper Turning	Hit Object	Other Object	7/27/2017	144	1	Dark - Street Lights
W GRAAF AV	RT 178	0		PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	6/9/2017	1648	1	Daylight
W HALOID	S WANER ST	24	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	8/17/2013	2355	1	Dark - Street Lights
W HALOID	S NORMA ST	53	E	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	4/25/2016	628	1	Daylight
S ALLEN ST	W UPIJOHN AV	300	S	PDO	Improper Turning	Rear End	Other Motor Vehicle	6/15/2013	1400	1	Daylight
W INYOKERN RD	N NORMA ST	0		Injury (Other Visible)	Not Stated	Hit Object	Animal	5/16/2017	1830	11	Daylight
W INYOKERN RD	N GORDON ST	200	E	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcohol	Sideswipe	Other Motor Vehicle	7/31/2015	1745	6	Daylight
W INYOKERN RD	N TRIANGLE DR	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	4/23/2016	1229	6	Daylight
W INYOKERN RD	N INYO ST	0		PDO	Unsafe Starting or Backing	Other	Other Motor Vehicle	3/25/2013	1320	1	Daylight
W INYOKERN RD	N DOWNS ST	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	7/17/2014	1205	1	Daylight
W INYOKERN RD	TRIANGLE DR	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/6/2014	1700	1	Daylight
W INYOKERN RD	N GRIFFIN ST	64	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/19/2017	1909	1	Dark - No Street Lights
W JEAN AV	N NORMA ST	132	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	5/7/2016	541	1	Daylight
S ALVORD ST	W STALLION AV	233	S	PDO	Other Hazardous Violation	Sideswipe	Parked Motor Vehicle	10/28/2017	937	1	Daylight
W LAS FLORES AV	N SANDERS ST	53	E	Injury (Severe)	Improper Turning	Broadside	Other Motor Vehicle	4/11/2015	1506	126	Daylight
W LAS FLORES AV	N MAHAN ST	0		Injury (Other Visible)	Improper Turning	Hit Object	Fixed Object	2/13/2013	1301	11	Daylight
W LAS FLORES AV	N NORMA ST	0		Injury (Other Visible)	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	12/13/2013	741	11	Daylight
W LAS FLORES AV	N NORMA ST	0		Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	11/11/2013	1429	11	Daylight
W LAS FLORES AV	N SANDERS ST	17	W	Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	1/4/2016	1721	11	Dark - Street Lights
W LAS FLORES AV	RT 178	24	W	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	7/27/2014	1742	6	Daylight
S GATEWAY ST	E UPIJOHN AV	446	S	PDO	Unknown	Hit Object	Fixed Object	12/16/2014	2245	1	Dark - Street Lights
W LAS FLORES AV	N BALSAM ST	0		Injury (Complaint of Pain	Automobile Right of Way	Other	Other Motor Vehicle	4/21/2017	1430	6	Daylight
W LAS FLORES AV	N DOWNS ST	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	7/10/2016	1500	6	Daylight
W LAS FLORES AV	FLORENCE ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/14/2013	1750	1	Daylight
W LAS FLORES AV	N NORMA ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/29/2013	1239	1	Daylight
W LAS FLORES AV	N NORMA ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/13/2013	811	1	Daylight
W LAS FLORES AV	N RANDALL ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/3/2013	1431	1	Daylight
W LAS FLORES AV	N DOWNS ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/18/2014	2016	1	Dark - Street Lights
W LAS FLORES AV	N NORMA ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/21/2014	955	1	Daylight
W LAS FLORES AV	N NORMA ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	6/14/2014	810	1	Daylight
W LAS FLORES AV	N NORMA ST	25	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/3/2014	1425	1	Daylight
W LAS FLORES AV	N FAIRVIEW	30	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/29/2015	1700	1	Daylight
W LAS FLORES AV	N CHINA LAKE BL	40	W	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/10/2015	1735	1	Dusk - Dawn
W LAS FLORES AV	N SANDERS ST	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	10/25/2016	1448	1	Daylight
W LAS FLORES AV	N BALSAM ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/17/2017	1215	1	Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted I	LIGHTING
S NORMA ST	WEST	348	S	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	11/29/2015	1032	1	Daylight
S RICHMOND RD	E CHURCH AV	587	S	PDO	Improper Turning	Hit Object	Other Object	11/19/2015	730	1	Daylight
W OLIVE AV	S SNORMA ST	55	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Sideswipe	Parked Motor Vehicle	11/5/2013	1900	1	Dark - Street Lights
W PERCH AV	S RANGE ST	148	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	7/8/2016	1421	1	Daylight
S RICHMOND RD	N GOLD CANYON	438	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/23/2016	703	1	Daylight
W RADER AV	S GORDON ST	0	PDO	Unsafe Speed	Unsafe Speed	Sideswipe	Parked Motor Vehicle	10/13/2014	920	1	Daylight
W REBECCA AV	N INYO ST	3	W	PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	11/11/2014	2043	1	Dark - Street Lights
W REEVES AV	LIGHT POLE	115	W	PDO	Not Stated	OTHER	Other Motor Vehicle	1/14/2017	30	1	Dark - Street Lights
S SUNSET ST	RADER AV	339	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Parked Motor Vehicle	2/12/2017	2345	1	Dark - Street Lights
W RIDGECREST BL	W RIDGECREST BL 800	0		Injury (Severe)	Improper Turning	other	bicycle	8/12/2013	2145	126	Dark - Street Lights
W RIDGECREST BL	N KERN AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Bicycle	8/7/2015	1708	11	Daylight
W RIDGECREST BL	N MAHAN ST	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	9/13/2017	1730	11	Daylight
W RIDGECREST BL	MAHAN ST	0		Injury (Other Visible)	Automobile Right of Way	Other	Other Motor Vehicle	3/29/2017	1420	11	Daylight
W RIDGECREST BL	N NORMA ST	3	E		Injury (Complaint of Pain Traffic Signals and Signs)	Other	Bicycle	7/8/2013	1215	6	Daylight
W RIDGECREST BL	N MAHAN ST	0			Injury (Complaint of Pain Automobile Right of Way)	Head-On	Other Motor Vehicle	3/11/2017	2020	6	Dark - Street Lights
W RIDGECREST BL	CHINA LAKE BL	0			Injury (Complaint of Pain Pedestrian Right of Way)	Other	Pedestrian	12/17/2016	1515	6	Daylight
W RIDGECREST BL	S CHINA LAKE BL	25	W		Injury (Complaint of Pain Unsafe Speed)	Rear End	Other Motor Vehicle	9/8/2016	709	6	Daylight
W RIDGECREST BL	S MAHAN ST	0			Injury (Complaint of Pain Automobile Right of Way)	Broadside	Other Motor Vehicle	3/19/2016	2032	6	Dark - Street Lights
W RIDGECREST BL	N ALVORD ST	8	E		Injury (Complaint of Pain Automobile Right of Way)	Broadside	Other Motor Vehicle	1/5/2016	1100	6	Daylight
W RIDGECREST BL	ALVORD ST	10	W	PDO	Wrong Side of the Road	Broadside	BICYCLE	5/15/2013	1200	1	Daylight
W RIDGECREST BL	China Lake Bl	10	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/21/2013	2332	1	Dark - Street Lights
SANDERS ST	LAS FLORES AV	365	S	PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	11/7/2016	1835	1	Dark - Street Lights
SPRINGSIDE ST	CHURCH AV	300	N	PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	5/19/2014	1924	1	Dusk - Dawn
W RIDGECREST BL	N ALVORD ST	90	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/16/2013	1205	1	Daylight
W RIDGECREST BL	N SANDERS ST	45	E	PDO	Not Driver	Hit Object	Other Object	12/7/2013	1400	1	Daylight
W RIDGECREST BL	N CHINA LAKE BL	25	W	PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/4/2013	900	1	Daylight
W RIDGECREST BL	RT 178	0		PDO	Driving or Bicycling Under the Influence of Alcohol	Head-On	Fixed Object	11/29/2013	1927	1	Dark - Street Lights
W BOSTON AV	NEVADA ST	278	W	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	3/10/2016	625	1	Daylight
W RIDGECREST BL	S MAHAN AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	11/20/2013	1550	1	Dusk - Dawn
W RIDGECREST BL	S WARNER	13	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/21/2013	1705	1	Daylight
W RIDGECREST BL	SUNSET AV	2	E	PDO	Improper Turning	Other	Other Motor Vehicle	4/12/2013	1130	1	Daylight
W RIDGECREST BL	W RIDGECREST BL	0		PDO	Improper Turning	Hit Object	Fixed Object	8/12/2013	2145	1	Dark - Street Lights
W BOWMAN AV	S DOWNS ST	584	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	7/19/2016	1515	1	Daylight
W RIDGECREST BL	NORMA ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/3/2014	1757	1	Dark - Street Lights
W RIDGECREST BL	S MAHAN AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	1/14/2014	1615	1	Daylight
W RIDGECREST BL	DOWNS ST	28	E	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	2/21/2015	1516	1	Daylight
W BOWMAN RD	S NORMA ST	1198	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/23/2017	1131	1	Daylight
W RIDGECREST BL	N ALVORD ST	5	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/21/2015	1206	1	Daylight
W RIDGECREST BL	N ALVORD ST	24	W	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	8/1/2015	1445	1	Daylight
W RIDGECREST BL	N ALVORD ST	12	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	11/8/2015	31	1	Dark - Street Lights
W RIDGECREST BL	N DOWNS ST	0		PDO	Traffic Signals and Signs	Broadside	MOTOR VEHICLE ON THE C	12/23/2015	1229	1	Daylight
W RIDGECREST BL	N NORMA ST	28	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/24/2015	1112	1	Daylight
W RIDGECREST BL	N SANDERS ST	42	W	PDO	Other Hazardous Violation	OTHER	BICYCLE	4/15/2015	1858	1	Daylight
W RIDGECREST BL	NORMA ST	15	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/23/2015	1541	1	Daylight
W RIDGECREST BL	N ALVORD ST	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	8/20/2015	250	1	Daylight
W CHURCH AV	S HELEN ST	300	E	PDO	Unsafe Speed	Broadside	Other Motor Vehicle	10/5/2015	1105	1	Daylight
W RIDGECREST BL	MAHAN ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/4/2016	2120	1	Dark - Street Lights
W RIDGECREST BL	N SANDERS ST	114	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	12/12/2016	244	1	Dark - Street Lights
W RIDGECREST BL	N NORMA ST	0		PDO	Following Too Closely	Rear End	Other Motor Vehicle	4/18/2016	855	1	Daylight
W RIDGECREST BL	DOWNS ST	15	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	8/17/2017	130	1	Dark - Street Lights
W RIDGECREST BL	LIGHT POLE	28	E	PDO	Improper Turning	Hit Object	Fixed Object	6/23/2017	620	1	Daylight
W RIDGECREST BL	NORMA ST	92	E	PDO	Improper Turning	Hit Object	Fixed Object	10/25/2017	613	1	Daylight
W RIDGECREST BL	S DOWNS ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/10/2017	1100	1	Daylight
W CHURCH AV	S DOWNS ST	216		PDO	Improper Passing	Sideswipe	Other Motor Vehicle	8/24/2016	740	1	Daylight
W ROBERTSON AV	S SANDERS ST	54	W	PDO	Not Stated	OTHER	Other Motor Vehicle	12/24/2015	1900	1	Daylight
W CORONADO AV	S GUAM ST	524	S	PDO	Improper Turning	Rear End	Other Object	5/27/2013	717	1	Daylight
W SHAMROCK	LIGHT POLE	15	E	PDO	Improper Turning	Rear End	Parked Motor Vehicle	8/1/2013	630	1	Daylight
W CORONADO AV	INYO ST	371	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Sideswipe	Parked Motor Vehicle	12/18/2014	200	1	Dark - Street Lights
W DOLPHIN AV	N DOWNS ST	703	W	PDO	Unsafe Speed	Hit Object	Fixed Object	9/21/2015	923	1	Daylight
W GRAAF AV	N DOWNS ST	245	W	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	2/20/2013	1613	1	Daylight
W ST GEORGE AV	S NEVADA	193	W	PDO	Unsafe Starting or Backing	Head-On	Other Motor Vehicle	9/11/2013	839	1	Daylight
W GRAAF AV	N ALENE AV	279	W	PDO	UNKNOWN	Broadside	Other Motor Vehicle	7/16/2016	1649	1	Daylight
W HOOD AV	S DOWNS ST	220	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	4/12/2014	2040	1	Dark - Street Lights
W SYNDOR AV	SCE LIGHT	72	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	1/30/2014	1430	1	Daylight
W UPJOHN AV	S DOWNS ST	0		Injury (Other Visible)	Improper Turning	Overturned	Non Collision	12/17/2016	650	11	Daylight
W LAS FLORES	N MONO	219	W	PDO	Unsafe Speed	Rear End		10/7/2016	1022	1	Daylight

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted (LIGHTING
W UPJOHN AV	S THOMAS ST	28	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	8/12/2016	1408	6 Daylight
W UPJOHN AV	S CHINA LAKE BL	15	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/24/2013	2302	1 Dark - Street Lights
W UPJOHN AV	S NORMA ST	0		PDO	Unsafe Starting or Backing	Head-On	Other Motor Vehicle	8/29/2013	735	1 Daylight
W UPJOHN AV	S SUNSET ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/16/2016	1259	1 Daylight
W UPJOHN AV	S MAHAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/27/2014	750	1 Daylight
W UPJOHN AV	S ABIGAIL ST	0		PDO	NOT DRIVER	OTHER	ANIMAL	10/3/2015	710	1 Daylight
W UPJOHN AV	S MAHAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/30/2015	1130	1 Daylight
W UPJOHN AV	S WARNER	100	W	PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	7/8/2015	1650	1 Daylight
W UPJOHN AV	ASHTON AV	63	E	PDO	Improper Turning	Rear End	Other Motor Vehicle	6/6/2016	600	1 Daylight
W RADER AV	S CHINA LAKE BL	300	W	PDO	Automobile ROW	Broadside	Other Motor Vehicle	9/30/2014	1230	1 Daylight
W UPJOHN AV	S DOWNS ST	0		PDO	Unsafe Lane Change	Sideswipe	Other Motor Vehicle	2/22/2016	800	1 Daylight
W UPJOHN AV	S MAHAN AV	10	S	PDO	Improper Turning	Hit Object	Other Motor Vehicle	1/10/2016	340	1 Dark - Street Lights
W UPJOHN AV	S MAHAN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/20/2016	1743	1 Dark - Street Lights
W UPJOHN AV	S MAHAN AV	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/2/2016	1423	1 Daylight
W UPJOHN AV	S NORMA ST	0		PDO	UNKNOWN	OTHER	BICYCLE	9/8/2016	1435	1 Daylight
W UPJOHN AV	S SANDERS ST	102	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/29/2016	1053	1 Daylight
W UPJOHN AV	S SANDERS ST	150	W	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	12/4/2016	1540	1 Daylight
W UPJOHN AV	S SUNSET ST	134	W	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	6/22/2016	830	1 Daylight
W UPJOHN AV	S WARNER ST	112	W	PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/14/2017	1020	1 Daylight
W UPJOHN AV	S CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/17/2017	1712	1 Daylight
W VEADA AV	MARY ST	106	W	PDO	Improper Turning	Rear End	Other Motor Vehicle	9/6/2017	850	1 Daylight
W VICKI AV	LUNA AV	51	S	PDO	Traffic Signals and Signs	Head-On	Fixed Object	4/9/2014	2104	1 Dark - Street Lights
W REEVES AV	N DOWNS ST	270	E	PDO	Unsafe Speed	OTHER	Other Motor Vehicle	3/24/2017	1234	1 Daylight
W VULCAN AV	S SIMS ST	0		Injury (Other Visible)	Automobile Right of Way	Sideswipe	Other Motor Vehicle	10/22/2017	1022	11 Daylight
W RIDGECREST BL	N BALSAM ST	638	W	PDO	Not Stated	Rear End	Other Motor Vehicle	1/17/2014	1125	1 Daylight
W WARD AV	N PALO VERDE DR	140	W	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	12/19/2014	1330	11 Daylight
W RIDGECREST BL	S WARNER ST	240	E	PDO	Automobile ROW	Broadside	Other Motor Vehicle	9/16/2015	1450	1 Daylight
W WARD AV	N DOWNS ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/5/2014	1829	1 Dark - Street Lights
W WARD AV	N NORMA ST	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	5/26/2016	624	1 Daylight
W WARD AV	N WAYNE AV	20	S	PDO	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	8/19/2016	1339	1 Daylight
W WARD AV	N SIERRA VIEW ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/24/2017	2100	1 Dark - Street Lights
W WARD AV	N NORMA ST	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/19/2013	1109	1 Daylight
W ROBERTSON RD	S NORMA ST	222	E	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	6/27/2017	2349	1 Dark - Street Lights
W UPJOHN AV	China Lake Bl	400	W	PDO	Improper Turning	Broadside	Other Motor Vehicle	3/3/2016	830	1 Daylight
W VICTORIA CT	GORDON ST	312	W	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	12/12/2017	1151	1 Daylight
W WILSON AV	S CHINA LAKE BL	0		PDO	Improper Turning	Sideswipe	Other Object	8/23/2016	750	1 Daylight
W WILLOW AV	N INYO ST	275	W	PDO	Unsafe Speed	Sideswipe	Parked Motor Vehicle	9/14/2015	1130	1 Daylight
W WILLOW AV	S INYO ST	421	E	PDO	Unsafe Speed	Rear End	Parked Motor Vehicle	2/16/2016	1345	1 Daylight
WARD AV	N CHINA LAKE BL	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	2/4/2014	1300	1 Daylight
WARD AV	N PALO VERDE DR	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	12/1/2017	1720	1 Dark - Street Lights
WASP AV	S SIERRA VISTA	23	E	PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	7/1/2013	1220	1 Daylight
W WILSON AV	SANDERS ST	225		PDO	Not Stated	Sideswipe	Other Motor Vehicle	8/20/2017	2100	1 Dark - Street Lights
WEST END DR	SUNSET AV	150	W	PDO	Improper Turning	Rear End	Other Motor Vehicle	4/14/2013	100	1 Dark - Street Lights
WILDROSE AV	DOWNS ST	348	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/24/2015	720	1 Daylight
WILSON AV	S NORMA ST	364	E	PDO	Unsafe Starting or Backing	Broadside	Other Motor Vehicle	6/12/2013	2015	1 Dark - Street Lights
WILSON AV	GOLD CANYON RD	0		PDO	Automobile ROW	Broadside	OTHER	2/17/2014	825	1 Daylight

APPENDIX B

LRSB Countermeasures

Table 1. Countermeasures for Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility	Systemic Approach Opportunity?
S1	Lighting	Add intersection lighting (S.I.)	Night	40%	20	100%	Medium
S2	Signal Mod.	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	All	15%	10	100%	Very High
S3	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High
S4	Signal Mod.	Provide Advanced Dilemma Zone Detection for high speed approaches	All	40%	10	100%	High
S5	Signal Mod.	Install emergency vehicle pre-emption systems	Emergency Vehicle	70%	10	100%	High
S6	Signal Mod.	Provide protected left turn phase (left turn lane already exists)	All	30%	20	100%	High
S7	Signal Mod.	Convert signal to mast arm (from pedestal-mounted)	All	30%	20	100%	Medium
S8	Operation/ Warning	Install raised pavement markers and striping (Through Intersection)	All	10%	10	100%	Very High
S9	Operation/ Warning	Install flashing beacons as advance warning (S.I.)	All	30%	10	100%	Medium
S10	Operation/ Warning	Install cameras to detect red light running	N/A	N/A	N/A	N/A	N/A
S11	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	40%	10	100%	Medium
S12	Geometric Mod.	Install raised median on approaches (S.I.)	All	25%	20	90%	Medium
S13	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (S.I.)	All	50%	20	90%	Medium
S14	Geometric Mod.	Install right turn lane (S.I.)	N/A	N/A	N/A	N/A	N/A
S15	Geometric Mod.	Install left turn lane (signal has no left turn phase – before and after)	N/A	N/A	N/A	N/A	N/A
S16	Geometric Mod.	Install left turn lane (signal has a left turn phase – before and after)	N/A	N/A	N/A	N/A	N/A
S17	Geometric Mod.	Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low
S18	Geometric Mod.	Convert intersection to roundabout (from signal)	All	Varies	20	100%	Low
S19	Ped and Bike	Install pedestrian countdown signal heads	P & B	25%	20	100%	Very High
S20	Ped and Bike	Install pedestrian crossing (S.I.)	P & B	25%	20	100%	High
S21	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	100%	Very High
S22	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	100%	Very High
S23	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low

Struck-through countermeasures are not eligible in the current HSIP call for projects.

Table 2. Countermeasures for Non-Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility	Systemic Approach Opportunity?
NS1	Lighting	Add intersection lighting (NS.I.)	Night	40%	20	100%	Medium
NS2	Control	Convert to all-way STOP control (from 2-way or Yield control)	All	50%	10	100%	High
NS3	Control	Install signals	All	25%	20	100%	Low
NS4A	Control	Convert intersection to roundabout (from all way stop)	All	Varies	20	100%	Low
NS4B	Control	Convert intersection to roundabout (from stop or yield control on minor road)	All	Varies	20	100%	Low
NS5	Operation/ Warning	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	All	15%	10	100%	Very High
NS6	Operation/ Warning	Upgrade intersection pavement markings (NS.I.)	All	25%	10	100%	Very High
NS7	Operation/ Warning	Install Flashing Beacons at Stop-Controlled Intersections	All	15%	10	100%	High
NS8	Operation/ Warning	Install flashing beacons as advance warning (NS.I.)	All	30%	10	100%	High
NS9	Operation/ Warning	Install transverse rumble strips on approaches	All	20%	10	90%	High
NS10	Operation/ Warning	Improve sight distance to intersection (Clear Sight Triangles)	All	20%	10	90%	High
NS11	Geometric Mod.	Install splitter-islands on the minor road approaches	All	40%	20	90%	Medium
NS12	Geometric Mod.	Install raised median on approaches (NS.I.)	All	25%	20	90%	Medium
NS13	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (NS.I.)	All	50%	20	90%	Medium
NS14	Geometric Mod.	Install right-turn lane (NS.I.)	All	20%	20	90%	Low
NS15	Geometric Mod.	Install left-turn lane (where no left-turn lane exists)	All	35%	20	90%	Low
NS16	Ped and Bike	Install raised medians / refuge islands (NS.I.)	P & B	45%	20	90%	Medium
NS17	Ped and Bike	Install pedestrian crossing at uncontrolled locations (new signs and markings only)	P & B	25%	10	100%	High
NS18	Ped and Bike	Install pedestrian crossing at uncontrolled locations (with enhanced safety features)	P & B	35%	20	100%	Medium
NS19	Ped and Bike	Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))	P & B	55%	20	100%	Low
NS20	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	40%	10	100%	Medium

Struck-through countermeasures are not eligible in the current HSIP call for projects.

Table 3. Countermeasures for Roadways

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility	Systemic Approach Opportunity?
R1	Lighting	Add segment lighting	Night	35%	20	100%	Medium
R2	Remove/ Shield Obstacles	Remove or relocate fixed objects outside of Clear Recovery Zone	All	35%	20	90%	High
R3	Remove/ Shield Obstacles	Install Median Barrier	All	25%	20	100%	Medium
R4	Remove/ Shield Obstacles	Install Guardrail	All	25%	20	100%	High
R5	Remove/ Shield Obstacles	Install impact attenuators	All	25%	10	100%	High
R6	Remove/ Shield Obstacles	Flatten side slopes	All	30%	20	90%	Medium
R7	Remove/ Shield Obstacles	Flatten side slopes and remove guardrail	All	40%	20	90%	Medium
R8	Remove/ Shield Obstacles	Upgrade bridge railing	N/A	N/A	N/A	N/A	N/A
R9	Geometric Mod.	Install raised median	All	25%	20	90%	Medium
R10	Geometric Mod.	Install median (flush)	All	15%	20	90%	Medium
R11	Geometric Mod.	Install acceleration/ deceleration lanes	All	25%	20	90%	Low
R12	Geometric Mod.	Install climbing lane (where large difference between car and truck speed)	N/A	N/A	N/A	N/A	Low
R13	Geometric Mod.	Widen lane (initially less than 10 ft)	All	25%	20	90%	Medium
R14	Geometric Mod.	Add two-way left-turn lane (without reducing travel lanes)	All	30%	20	90%	Medium
R15	Geometric Mod.	Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes)	All	30%	20	90%	Medium
R16	Geometric Mod.	Widen shoulder (paved)	All	30%	20	90%	Medium
R17	Geometric Mod.	Widen shoulder (unpaved)	All	20%	20	90%	Medium
R18	Geometric Mod.	Pave existing shoulder	All	15%	20	90%	Medium
R19	Geometric Mod.	Improve horizontal alignment (flatten curves)	All	50%	20	90%	Low
R20	Geometric Mod.	Flatten crest vertical curve	All	25%	20	90%	Low
R21	Geometric Mod.	Improve horizontal and vertical alignments	All	60%	20	90%	Low
R22	Geometric Mod.	Improve curve superelevation	All	45%	20	90%	Medium
R23	Geometric Mod.	Convert from two-way to one-way traffic	All	35%	20	90%	Medium
R24	Geometric Mod.	Improve pavement friction (High Friction Surface Treatments)	All	40%	10	100%	High

Struck-through countermeasures are not eligible in the current HSIP call for projects.

Table 3. Countermeasures for Roadways (Continued)

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility	Systemic Approach Opportunity?
R25	Geometric Mod.	Provide Tapered Edge for Pavement Edge Drop-off	N/A	N/A	N/A	N/A	N/A
R26	Operation/ Warning	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	All	15%	10	100%	Very High
R27	Operation/ Warning	Install chevron signs on horizontal curves	All	40%	10	100%	Very High
R28	Operation/ Warning	Install curve advance warning signs	All	25%	10	100%	Very High
R29	Operation/ Warning	Install curve advance warning signs (flashing beacon)	All	30%	10	100%	High
R30	Operation/ Warning	Install dynamic/variable speed warning signs	All	30%	10	100%	High
R31	Operation/ Warning	Install delineators, reflectors and/or object markers	All	15%	10	100%	Very High
R32	Operation/ Warning	Install edge-lines and centerlines	All	25%	10	100%	Very High
R33	Operation/ Warning	Install no-passing line	All	45%	10	100%	Very High
R34	Operation/ Warning	Install centerline rumble strips/stripes	All	20%	10	100%	High
R35	Operation/ Warning	Install edgeline rumble strips/stripes	All	15%	10	100%	High
R36	Ped and Bike	Install bike lanes	P & B	35%	20	90%	High
R37	Ped and Bike	Install sidewalk/pathway (to avoid walking along roadway)	P & B	80%	20	90%	Medium
R38	Ped & Bike	Install pedestrian crossing (with enhanced safety features)	P & B	30%	10	90%	Medium
R39	Ped and Bike	Install raised pedestrian crossing	P & B	35%	10	90%	Medium
R40	Animal	Install animal fencing	Animal	80%	20	90%	Medium
R41	Truck	Install truck escape ramp	N/A	N/A	N/A	N/A	N/A
R42	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low

Struck-through countermeasures are not eligible in the current HSIP call for projects.

APPENDIX C

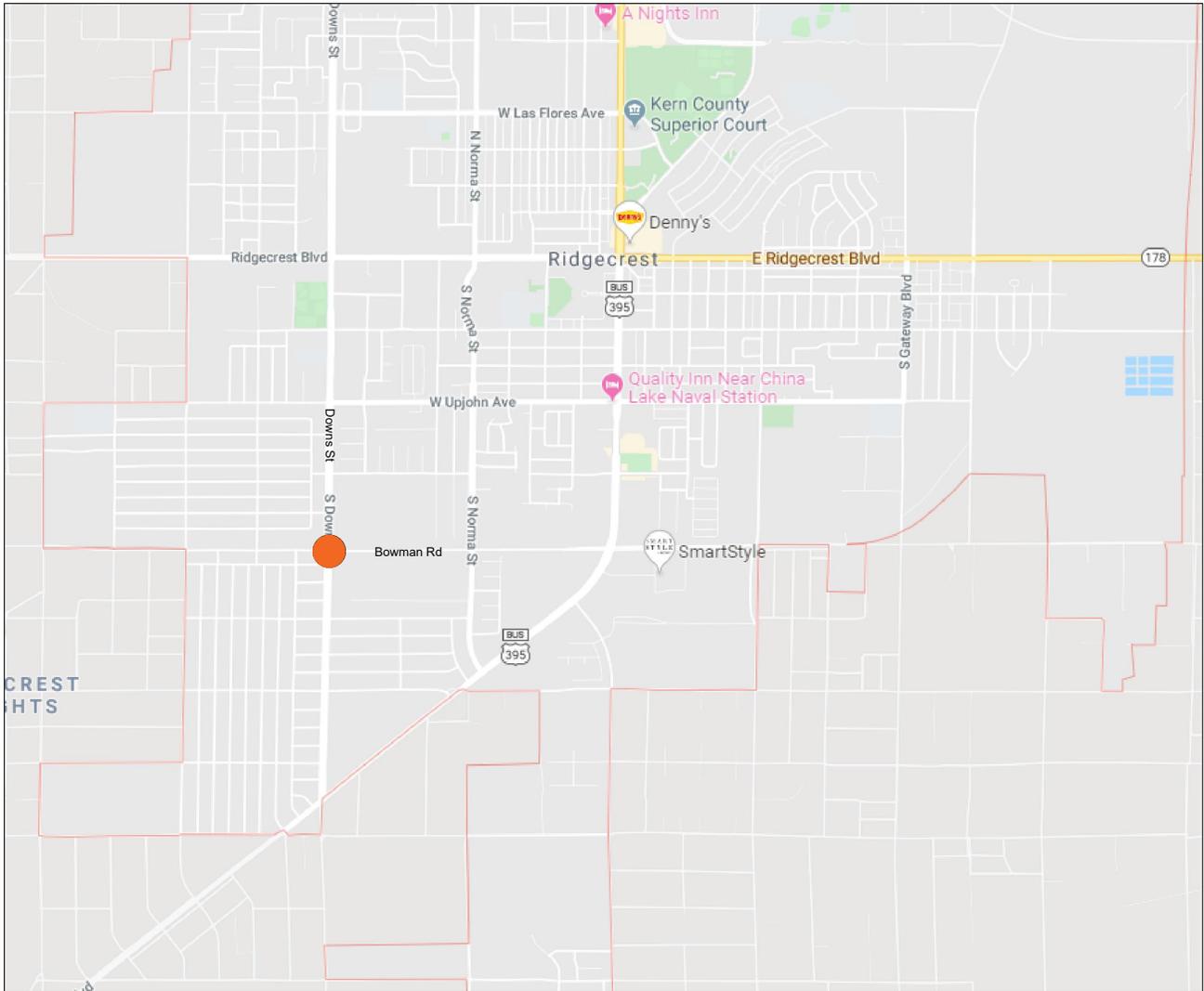
Project Scope List

**CITY OF RIDGECREST
SYSTEMIC SAFETY ANALYSIS REPORT
PRELIMINARY SAFETY PROJECT ANALYSIS
March 24, 2020**

Ranking	Project	Limits	Countermeasure #1	Countermeasure #2	Countermeasure #3	Total Collisions	Timeframe of Collision Analysis	Expected Life Benefit	Preliminary Engineering Costs (25% Max)	Construction Costs	Construction Engineering Costs (15% Max)	Total Project Costs	City's Local Match	B/C Ratio	Comments
-	Downs/Bowman Traffic Signal Installation	Downs/Bowman	NS3: Install signals			10	1/1/2015-12/31/2017	\$879,500.00	\$ 87,500	\$ 350,000	\$ 52,500	\$490,000.00	100% Federally Funded	1.79	Required to run MUTCD TS Warrant for eligibility
5	Downs/ Bowman Roundabout	Downs/ Bowman	NS4A: Convert intersection to roundabout (from all way stop)			10	1/1/2015-12/31/2017	\$8,768,000.00	\$ 175,000	\$ 700,000	\$ 105,000	\$980,000.00	100% Federally Funded	8.95	HSIP Cycle 8- funded to convert to all way stop, not yet installed. May not be able to analyze this countermeasure until 3 years after this has been installed.
4	Downs Las Flores Traffic Signal Installation	Downs/ Las Flores	NS3: Install signals			8	5/4/2013-10/26/2017	\$2,736,050.00	\$ 87,500	\$ 350,000	\$ 52,500	\$490,000.00	100% Federally Funded	5.58	Required to run MUTCD TS Warrant for eligibility
7	Downs/Upjohn Traffic Signal Installation	Downs/Upjohn	NS3: Install signals			5	5/4/2013-10/26/2017	\$234,484.00	\$ 87,500	\$ 350,000	\$ 52,500	\$490,000.00	100% Federally Funded	0.48	Required to run MUTCD TS Warrant for eligibility
1	China Lake Systemic Pedestrian and Bicycle Improvements	Drummond Avenue between Downs St & China Lake Blvd, Ward Avenue-Limit to Limit	R36:Install Bike Lanes	S22: LPI (Leading Pedestrian Interval)		16	11/7/2014-11/6/2017	\$11,855,710.00	\$ 44,300	\$ 176,900	\$ 26,600	\$247,800.00		47.84	General Plan future bicycle facilities- Bowman Rd, S China Lake Blvd, Jacks Ranch Road, Brady Street, Jarvis Ave , ADDED Ward Ave, Drummond Ave
6	Emergency Vehicle Preemption	15 signalized intersections citywide	S5: EVP			0	1/1/2013-12/31/2017	\$0.00	\$ 37,500	\$ 150,000	\$ 22,500	\$210,000.00		0.00	No Emergency Vehicle Related Crashes in the City of Ridgecrest in the 5 year study period
2	Citywide Neighborhood Intersection Improvements	around 200 intersections Citywide	NS6: Upgrade intersection pavement markings	NS1: Add intersection lighting		52	6/1/2014-10/31/2017	\$5,546,217.00	\$ 104,500	\$ 418,000	\$ 62,700	\$585,200.00	100% Federally Funded	9.48	Intersection pavement markings include striping stop legend and stop bar at neighborhood 2-way stop intersections. Intersection Street Lighting at Dolphin/Downs, Bowman/ Downs, Ward/Downs, Mahan/Las Flores, Mahan/Ridgecrest, Mahan/Drummond, Mahan/Ward
-	Signal Synchronization- Adaptive signals	China Lake Blvd at 12 signalized intersections	S3: Improve signal timing	S2: Signal Upgrades		192	3/12/2013-12/6/2017	\$5,496,282.00	\$ 132,000	\$ 528,000	\$ 49,200	\$709,200.00	\$ 354,600	7.75	Will require coordination with Caltrans
3	Signal Synchronization- Adaptive signals	China Lake Blvd at 6 signalized intersections	S3: Improve signal timing	S2: Signal Upgrades		67	10/2/2013-12/6/2017	\$2,646,220.00	\$ 66,000	\$ 264,000	\$ 39,600	\$369,600.00	\$ 184,800	7.16	Only on 6 City owned and operated signals on China Lake Blvd

APPENDIX D

Downs St at Bowman Rd Roundabout



Legend

- Location of Countermeasure NS4A: Convert intersection to roundabout (from all-way stop control)



CITY OF RIDGECREST		APPENDIX
Downs St and Bowman Rd Roundabout Location		D-1a
SHEET		1 OF 1

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted (LIGHTING
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	2/15/2016	1450	6 Daylight
S DOWNS ST	W BOWMAN RD	S DOWNS STW BOWMAN RD	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	7/15/2016	1931	6 Daylight
DOWNS ST	BOWMAN RD	DOWNS STBOWMAN RD	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	7/9/2017	1530	6 Daylight
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		Injury (Other Visible)	Improper Turning	Broadside	Other Motor Vehicle	1/20/2016	1649	11 Daylight
S DOWNS ST	W BOWMAN RD	S DOWNS STW BOWMAN RD	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/17/2017	1555	11 Daylight
S DOWNS ST	BOWMAN RD	S DOWNS STBOWMAN RD	80	S	PDO	Unsafe Speed	Hit Object	Other Object	8/26/2015	2302	1 Dark - Street Lights
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	1/13/2016	931	1 Daylight
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/3/2016	1620	1 Daylight
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	7/15/2016	1931	1 Daylight
S DOWNS ST	W BOWMAN AV	S DOWNS STW BOWMAN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/1/2017	1340	1 Daylight

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:

(limited to 250 characters)

Project Description:

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: NS4A: Convert intersection to roundabout (from all way stop)

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS4A)	% for OS*	% for NS**
+ -	1	Install Roundabout	LS	1	700,000	700,000	100%	%	0
Weighted Average (%)							100%		
Total (\$)						\$700,000			

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

\$0

Total Construction Cost (Con Items & Contingencies):
(Rounded up to the nearest hundreds)

\$700,000

I.3 Summary

1 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS4A	100%	100.00%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. if an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. "**Total Cost**": Round all costs up to the nearest hundred dollars.
- ii. "**HSIP/Total (%)**": The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. "**HSIP Funds**" and "**Local/Other Funds**" are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

100 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Set

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$87,500	100 %	\$87,500	\$0
PS&E	\$87,500	100 %	\$87,500	\$0
Subtotal - PE	\$175,000	100 %	\$175,000	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$105,000	100 %	\$105,000	\$0
Construction Items	\$700,000 <small>(Read only - from Section I)</small>	100 %	\$700,000	\$0
Subtotal - Construction	\$805,000	100 %	\$805,000	\$0
PROJECT TOTAL	\$980,000	100 %	\$980,000	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+" / "-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	NS (Non-signalized Intersections)
+	1	G1-1	Bowman Downs Intersection	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS4A: Convert intersection to roundabout (from all way stop)	NS	0.5	20	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Additional information is required:

Since Roundabout is selected, the below additional information is required for calculating Roundabout benefit.

Roundabout Location	Please select:	Rural				
Intersection Type	Please select:	Four-leg Intersection				
Roundabout Lanes	Please select:	2 Lanes				
ADT	Major Road:	7,406	Minor Road:	4,142	Total	11,548

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 3

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Bowman Downs Intersection	0	0	2	3	5	10
	Total	0	0	2	3	5	10

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 980000

1 countermeasures are eligible in benefit calculation. (NS4A)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (NS4A) Crash Data Information: Crash data period (years): 3 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,0,2,3,5	\$8,768,000	\$0	\$0	\$8,768,000
Sum		\$8,768,000	\$0	\$0	\$8,768,000

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS4A	\$8,768,000	\$980,000	8.9
2		\$0	\$0	0
3		\$0	\$0	0
	Entire Project	\$8,768,000	\$980,000	8.9

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 1 NS4A: Convert intersection to roundabout (from all way stop)
--

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$980,000
HSIP Funds Requested:	\$980,000
Max. Federal Reimbursement Ratio (FRR):	100%
Total Expected Benefit:	\$8,768,000
Benefit Cost Ratio:	8.95

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location: Downs/ Bowman

(limited to 250 characters)

Project Description: Install Traffic Signal at Downs/ Bowman

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

Common BCR Application

Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

Set-aside for Guardrail Upgrades

Set-aside for Horizontal Curve Signing

Set-aside for Pedestrian Crossing Enhancements

Set-aside for Tribes

Dual consideration?

If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: NS3: Install signals

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS3)	% for OS*	% for NS**
+	1	Downs/Bowman Traffic signal Installation	LS	1	350,000	350,000	100%	%	0
-									
Weighted Average (%)							100%		
Total (\$)						\$350,000			

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

Total Construction Cost (Con Items & Contingencies):
(Rounded up to the nearest hundreds)

I.3 Summary

1 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS3	100%	100.00%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. "**Total Cost**": Round all costs up to the nearest hundred dollars.
- ii. "**HSIP/Total (%)**": The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. "**HSIP Funds**" and "**Local/Other Funds**" are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	100 %	\$0	\$0
PS&E	\$87,500	100 %	\$87,500	\$0
Subtotal - PE	\$87,500	100 %	\$87,500	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$52,500	100 %	\$52,500	\$0
Construction Items	\$350,000 <small>(Read only - from Section I)</small>	100 %	\$350,000	\$0
Subtotal - Construction	\$402,500	100 %	\$402,500	\$0
PROJECT TOTAL	\$490,000	100 %	\$490,000	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into 1 groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+" / "-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	NS (Non-signalized Intersections)
+	1	G1-1	Downs/Bowman	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS3: Install signals	NS	0.25	20	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 3

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Downs/Bowman	0		2	3	5	10
	Total	0		2	3	5	10

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 490000

1 countermeasures are eligible in benefit calculation. (NS3)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (NS3) Crash Data Information: Crash data period (years): 3 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,null,2,3,5	\$879,500	\$0	\$0	\$879,500
Sum		\$879,500	\$0	\$0	\$879,500

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS3	\$879,500	\$490,000	1.8
2		\$0	\$0	0
3		\$0	\$0	0
	Entire Project	\$879,500	\$490,000	1.8

*****Data to be transferred to the HSIP Application Form*****

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 1
NS3: Install signals

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$490,000
---------------------	-----------

HSIP Funds Requested:	\$490,000
-----------------------	-----------

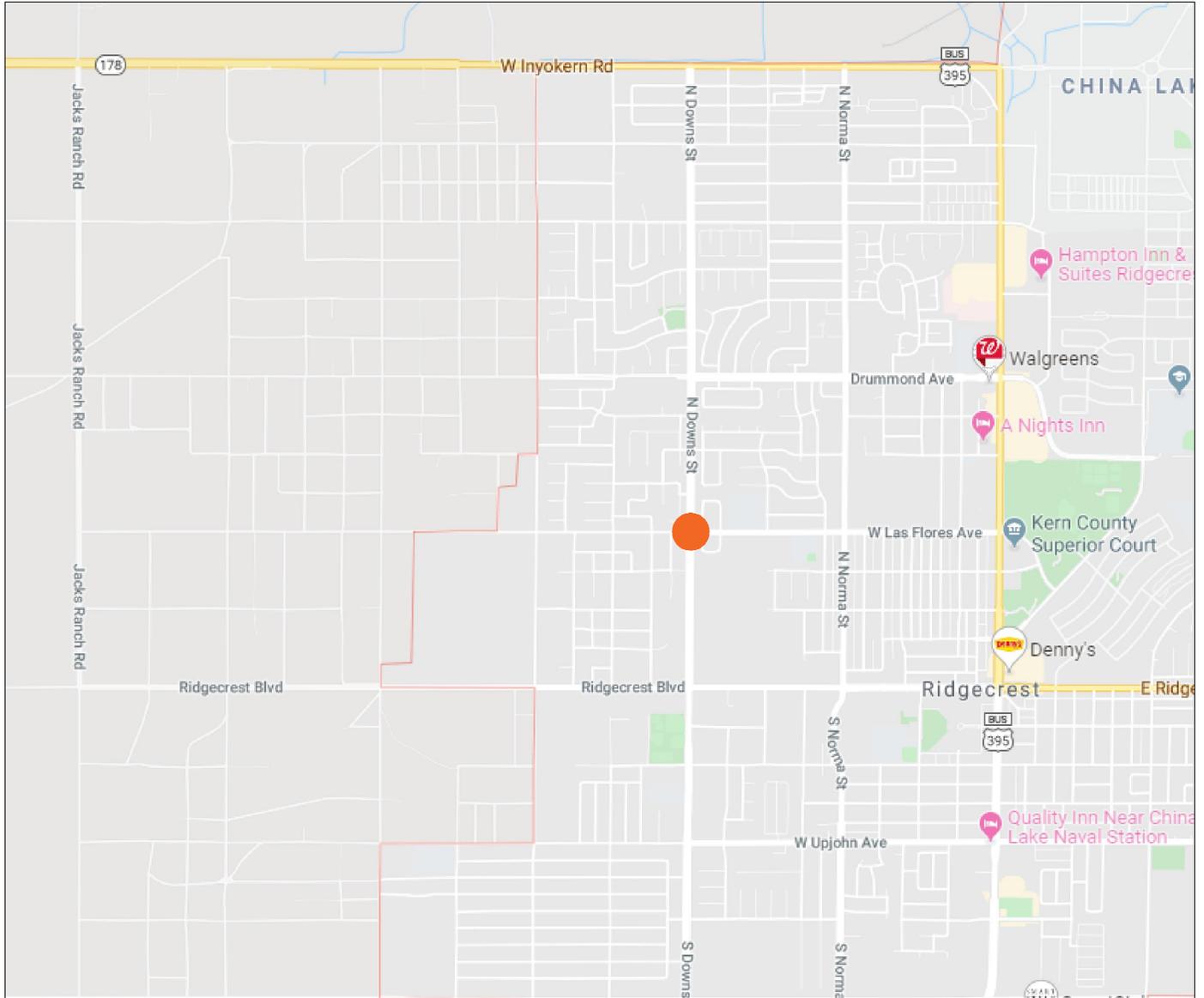
Max. Federal Reimbursement Ratio (FRR):	100%
--	------

Total Expected Benefit:	\$879,500
-------------------------	-----------

Benefit Cost Ratio:	1.79
---------------------	------

APPENDIX E

Downs St at Las Flores Ave Traffic Signal Installation



Legend

 Location of Countermeasure NS3: Install Signals



CITY OF RIDGECREST		APPENDIX
Downs St and Las Flores Ave Traffic Signal Installation Location		E-1
SHEET		1 OF 1

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted (LIGHTING
N DOWNS ST	W LAS FLORES AV	N DOWNS STW LAS FLORES A	12	N	Injury (Severe)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	6/13/2016	1834	126 Daylight
N DOWNS ST	W LAS FLORES AV	N DOWNS STW LAS FLORES A	140	N	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	11/2/2016	1909	1 Dark - Street Lights
N DOWNS ST	W LAS FLORES AV	N DOWNS STW LAS FLORES A	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/12/2016	2027	1 Dark - Street Lights
N DOWNS ST	W LAS FLORES AV	N DOWNS STW LAS FLORES A	34	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/26/2017	904	1 Daylight
N DOWNS ST	W LAS FLORES AV	N DOWNS ST W LAS FLORES A	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/4/2013	1634	1 Daylight
N DOWNS ST	W LAS FLORES AV	N DOWNS ST W LAS FLORES A	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	5/17/2013	1107	1 Daylight
S DOWNS ST	W UPJOHN AV	S DOWNS STW UPJOHN AV	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/31/2013	1917	6 Daylight
W LAS FLORES AV	N DOWNS ST	W LAS FLORES AVN DOWNS S	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	7/10/2016	1500	6 Daylight
W LAS FLORES AV	N DOWNS ST	W LAS FLORES AVN DOWNS S	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/18/2014	2016	1 Dark - Street Lights
W UPJOHN AV	S DOWNS ST	W UPJOHN AVS DOWNS ST	0		Injury (Other Visible)	Improper Turning	Overtaken	Non Collision	12/17/2016	650	11 Daylight
W UPJOHN AV	S DOWNS ST	W UPJOHN AVS DOWNS ST	0		PDO	Unsafe Lane Change	Sideswipe	Other Motor Vehicle	2/22/2016	800	1 Daylight

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location: Downs/ Las Flores

(limited to 250 characters)

Project Description: Install Traffic Signal at Downs/ Las Flores

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

Common BCR Application

Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

Set-aside for Guardrail Upgrades

Set-aside for Horizontal Curve Signing

Set-aside for Pedestrian Crossing Enhancements

Set-aside for Tribes

Dual consideration?

If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: NS3: Install signals

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS3)	% for OS*	% for NS**
+ -	1	Downs/Las Flores Traffic signal Installation	LS	1	350,000	350,000	100%	%	0
Weighted Average (%)							100%		
Total (\$)						\$350,000			

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

Total Construction Cost (Con Items & Contingencies):
(Rounded up to the nearest hundreds)

I.3 Summary

1 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS3	100%	100.00%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	100 %	\$0	\$0
PS&E	\$87,500	100 %	\$87,500	\$0
Subtotal - PE	\$87,500	100 %	\$87,500	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$52,500	100 %	\$52,500	\$0
Construction Items	\$350,000 <small>(Read only - from Section I)</small>	100 %	\$350,000	\$0
Subtotal - Construction	\$402,500	100 %	\$402,500	\$0
PROJECT TOTAL	\$490,000	100 %	\$490,000	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into 1 groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	NS (Non-signalized Intersections)
+	1	G1-1	Downs/Las Flores	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS3: Install signals	NS	0.25	20	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 4.48

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Downs/Las Flores	0	1		1	6	8
	Total	0	1		1	6	8

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 490000

1 countermeasures are eligible in benefit calculation. (NS3)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (NS3) Crash Data Information: Crash data period (years): 4.49 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,1,null,1,6	\$2,736,050	\$0	\$0	\$2,736,050
Sum		\$2,736,050	\$0	\$0	\$2,736,050

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS3	\$2,736,050	\$490,000	5.6
2		\$0	\$0	0
3		\$0	\$0	0
	Entire Project	\$2,736,050	\$490,000	5.6

*****Data to be transferred to the HSIP Application Form*****

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 1
NS3: Install signals

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$490,000
---------------------	-----------

HSIP Funds Requested:	\$490,000
-----------------------	-----------

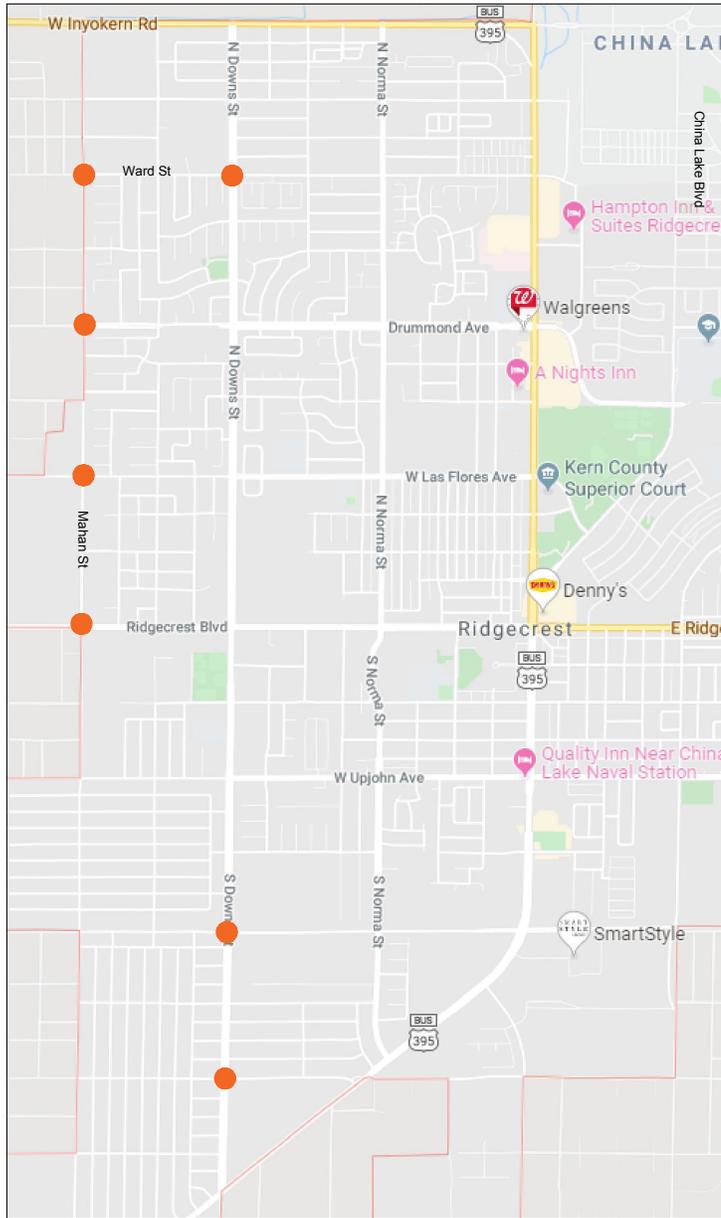
Max. Federal Reimbursement Ratio (FRR):	100%
---	------

Total Expected Benefit:	\$2,736,050
-------------------------	-------------

Benefit Cost Ratio:	5.58
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APPENDIX F

Citywide Neighborhood Intersection Improvements



Typical Intersection for Countermeasure NS6:
Upgrade intersection pavement markings

Legend

- Location of Countermeasure NS1: Add intersection lighting



N.T.S.

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
W RIDGECREST BL	S MAHAN ST	W RIDGECREST BLS MAHAN S	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	3/19/2016	2032	6 Dark - Street Lights
W RIDGECREST BL	N MAHAN ST	W RIDGECREST BLN MAHAN S	0		Injury (Complaint of Pain)	Automobile Right of Way	Head-On	Other Motor Vehicle	3/11/2017	2020	6 Dark - Street Lights
W DOLPHIN AV	S DOWNS ST	W DOLPHIN AVS DOWNS ST	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/14/2017	2022	6 Dark - Street Lights
W WARD AV	N DOWNS ST	W WARD AVN DOWNS ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	2/5/2014	1829	1 Dark - Street Lights
N DOWNS ST	WARD AV	N DOWNS STWARD AV	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/3/2014	2016	1 Dark - Street Lights
N DOWNS ST	W WARD AV	N DOWNS STW WARD AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/7/2015	2131	1 Dark - Street Lights
S DOWNS ST	BOWMAN RD	S DOWNS STBOWMAN RD	80	S	PDO	Unsafe Speed	Hit Object	Other Object	8/26/2015	2302	1 Dark - Street Lights
W RIDGECREST BL	MAHAN ST	W RIDGECREST BLMAHAN ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	6/4/2016	2120	1 Dark - Street Lights
S DOWNS ST	N DOLPHIN AV	S DOWNS STN DOLPHIN AV	0		PDO	Automobile ROW	Sideswipe	Other Motor Vehicle	12/15/2017	2343	1 Dark - Street Lights

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_Weighted	LIGHTING
N ROBALO ST	E NADEAU AV	9	E	Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	12/2/2014	330	6 Dark - Street Lights
E NADEAU ST	CISCO ST	97	N	Injury (Complaint of Pain)	Unknown	Vehicle/Pedestrian	Pedestrian	1/13/2015	1757	6 Dusk - Dawn
E FRENCH AV	E LA MIRAGE LN	0		Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	5/7/2015	736	6 Daylight
N SANDERS ST	W FRENCH AV	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	5/28/2015	2007	6 Dark - Street Lights
E FRENCH AV	E LA MIRAGE LN	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	9/14/2015	1453	6 Daylight
FAIRVIEW ST	W FRENCH AV	198	N	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol or Drug	Vehicle/Pedestrian	Pedestrian	11/20/2015	2246	6 Dark - No Street Lights
W FRENCH AV	N BALSAM ST	19	W	Injury (Complaint of Pain)	Unsafe Speed	Other	Other Object	10/14/2016	1529	6 Daylight
E COMMERCIAL AV	S GATEWAY BL	77	W	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	6/30/2017	1120	6 Daylight
W BATAAN AV	S RANGER ST	0		Injury (Complaint of Pain)	Unknown	Rear End	Parked Motor Vehicle	8/24/2017	356	6 Dark - No Street Lights
BALSAM ST	COSO AV	130	N	Injury (Other Visible)	Not Stated	Rear End	Parked Motor Vehicle	6/5/2014	1345	11 Daylight
N WAYNE ST	W PERDEW AV	1	N	Injury (Other Visible)	Driving or Bicycling Under the Influence of Alcohol or Drug	Hit Object	Fixed Object	12/6/2014	2135	11 Dark - Street Lights
N BALSAM ST	W FRENCH AV	120	N	Injury (Other Visible)	Automobile Right of Way	Rear End	Other Motor Vehicle	12/11/2014	1254	11 Daylight
S LENORE ST	E UPJOHN AV	0		Injury (Other Visible)	Unsafe Speed	Hit Object	Fixed Object	2/20/2015	1704	11 Daylight
N CISCO ST	E NADEAU AV	200	N	Injury (Other Visible)	Improper Turning	Hit Object	Fixed Object	8/10/2016	2030	11 Dark - Street Lights
E FRENCH AV	E LA MIRAGE LN	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	2/1/2017	1220	11 Daylight
E LA MIRAGE LN	E FRENCH AV	0		Injury (Other Visible)	Unsafe Speed	Broadside	Other Motor Vehicle	9/30/2017	711	11 Daylight
S SUNSET ST	W WILSON AV	184	S	Injury (Other Visible)	Improper Turning	Other	Bicycle	10/18/2017	1148	11 Daylight
W VULCAN AV	S SIMS ST	0		Injury (Other Visible)	Automobile Right of Way	Sideswipe	Other Motor Vehicle	10/22/2017	1022	11 Daylight
S LENORE ST	E WILSON AV	0		Injury (Severe)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	6/2/2014	1452	126 Daylight
S SUNSET ST	W WILSON AV	7	S	Injury (Severe)	Driving or Bicycling Under the Influence of Alcohol or Drug	Hit Object	Fixed Object	1/11/2016	422	126 Dark - Street Lights
LA MIRAGE LN	FRENCH AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	Head-On	Fixed Object	6/18/2014	1428	1 Daylight
W FRENCH AV	S SANDERS ST	0		PDO	Unsafe Speed	Broadside	Other Motor Vehicle	7/5/2014	910	1 Daylight
N BROADWAY ST	NORTH AMERICAN	74	S	PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	Rear End	Parked Motor Vehicle	8/31/2014	1554	1 Daylight
W BATAAN AV	S SIMS ST	0		PDO	Improper Turning	OTHER	Other Motor Vehicle	10/3/2014	1638	1 Daylight
N SANDERS ST	W COSO AV	61	S	PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	Hit Object	Fixed Object	10/4/2014	159	1 Dark - Street Lights
W RADER AV	S GORDON ST	0		PDO	Unsafe Speed	Sideswipe	Parked Motor Vehicle	10/13/2014	920	1 Daylight
S RANGER ST	DOLPHIN	13	W	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	11/1/2014	1358	1 Daylight
W REBECCA AV	N INYO ST	3	W	PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	11/11/2014	2043	1 Dark - Street Lights
Gold Canyon DR	WILSON AV	40	N	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	2/28/2015	2246	1 Dark - Street Lights
N SIERRA VIEW ST	W MARY ANN AV	51	S	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/5/2015	1614	1 Daylight
RICHMOND RD	UPJOHN AV	90	N	PDO	Improper Turning	Broadside	Other Motor Vehicle	6/3/2015	1259	1 Daylight
N FAIRVIEW ST	W COSO AV	100	N	PDO	Unsafe Starting or Backing	Sideswipe	Other Motor Vehicle	9/4/2015	1820	1 Dark - Street Lights
W FRENCH AV	N SANDERS ST	92	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	11/7/2015	1630	1 Dusk - Dawn
LA MIRAGE LN	E FRENCH AV	19	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/18/2015	720	1 Daylight
N SANDERS ST	HOWELL AV	160	W	PDO	Unsafe Starting or Backing	OTHER	Parked Motor Vehicle	12/17/2015	837	1 Daylight
W ROBERTSON AV	S SANDERS ST	54	W	PDO	Not Stated	OTHER	Other Motor Vehicle	12/24/2015	1900	1 Daylight
N SANDERS ST	W FELSPAR AV	0		PDO	Automobile ROW	Broadside	MOTOR VEHICLE ON THE OTHER ROADWAY	1/26/2016	749	1 Daylight
N SANDERS ST	W FELSPAR AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	3/28/2016	1200	1 Daylight
W ATKINS AV	Sierra View St	85	E	PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	Hit Object	Fixed Object	4/3/2016	1306	1 Daylight
S LILAC ST	E CALIFORNIA AV	37	S	PDO	Unsafe Speed	Broadside	Parked Motor Vehicle	5/30/2016	1604	1 Daylight
W PERCH AV	S RANGE ST	148	E	PDO	Unsafe Starting or Backing	Rear End	Parked Motor Vehicle	7/8/2016	1421	1 Daylight
W FELSPAR AV	N SANDERS ST	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	8/16/2016	1004	1 Daylight
S WARNER ST	W ROBERTSON AV	0		PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	OTHER	Other Motor Vehicle	9/25/2016	1849	1 Dusk - Dawn
E LA MIRAGE LN	E FRENCH AV	0		PDO	Improper Turning	Head-On	Other Motor Vehicle	11/28/2016	705	1 Daylight
W BENSON AV	N INYO ST	144	E	PDO	Improper Turning	Sideswipe	Parked Motor Vehicle	12/19/2016	1730	1 Dark - Street Lights
W ALENE AV	N SIERRA VIEW ST	20	W	PDO	Unsafe Speed	Hit Object	Fixed Object	2/7/2017	1951	1 Dark - Street Lights
GORDON ST	W RADAR AV	27	N	PDO	Unsafe Speed	Hit Object	Fixed Object	4/13/2017	103	1 Dark - Street Lights
S SILVER RIDGE ST	E CALIFORNIA AV	22	S	PDO	Driving or Bicycling Under the Influence of Alcohol or Drug	Hit Object	Fixed Object	5/12/2017	450	1 Dusk - Dawn
W WILSON AV	SANDERS ST	225		PDO	Not Stated	Sideswipe	Other Motor Vehicle	8/20/2017	2100	1 Dark - Street Lights
W COSO AV	N TRACI ST	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/31/2017	1814	1 Daylight
W VEADA AV	MARY ST	106	W	PDO	Improper Turning	Rear End	Other Motor Vehicle	9/6/2017	850	1 Daylight
S ALVORD ST	W STALLION AV	233	S	PDO	Other Hazardous Violation	Sideswipe	Parked Motor Vehicle	10/28/2017	937	1 Daylight

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:
(limited to 250 characters)

Citywide Neighborhood Intersection Improvements

Project Description:
(limited to 250 characters)

Intersection pavement markings include striping stop legend and stop bar at neighborhood 2-way stop intersections. Intersection street lighting at Dolphin/Downs, Bowman/Downs, Ward/Downs, Mahan/Las Flores, Mahan/Ridgecrest, Mahan/Drummond, Mahan/Ward

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: NS6: Upgrade intersection pavement markings (NS.I.)

CM No. 2: NS1: Add intersection lighting (NS.I.)

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS6)	% for CM#2 (NS1)	% for OS*	% for NS**
+	1	Paint stop bar and stop legend at about 200 intersections Citywide	LS	1	\$30000.00	30,000	100%	%	%	0
-										
+	2	Install intersection safety lighting at stop controlled intersections	LS	1	350,000	350,000	%	100%	%	0
-										
		Weighted Average (%)					8%	92%		
		Total (\$)				\$380,000				

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS6	100%	7.89%	Yes (<15% cost) (Exception being requested)	<input checked="" type="checkbox"/>
NS1	100%	92.11%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Citywide intersections will significantly benefit from Countermeasure NS6 since this countermeasure will improve the visibility of the intersection, and help drivers' awareness of the presence of the intersection.

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR) %
 (from Section I, rounded up to integer)

To set all "HSIP/Total (%)" in the below table to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	100 %	\$0	\$0
PS&E	\$104,500	100 %	\$104,500	\$0
Subtotal - PE	\$104,500	100 %	\$104,500	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$62,700	100 %	\$62,700	\$0
Construction Items	\$418,000 <small>(Read only - from Section I)</small>	100 %	\$418,000	\$0
Subtotal - Construction	\$480,700	100 %	\$480,700	\$0
PROJECT TOTAL	\$585,200	100 %	\$585,200	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle", and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into 1 groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	NS (Non-signalized Intersections)
+	1	G1-1	Citywide Intersections	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS6: Upgrade intersection pavement markings (NS.I)	NS	0.25	10	All	100%
<input checked="" type="checkbox"/>	2	NS1: Add intersection lighting (NS.I)	NS	0.4	20	Night	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 3.42

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All (2) Night

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Citywide Intersections	0	2	9	9	32	52
	Total	0	2	9	9	32	52

Crash Data Table for Crash Type: Night-time (Night)

No.	Location (from Table III.1)	Fatal (Night)	Severe Injury (Night)	Other Visible Injury (Night)	Complaint of Pain (Night)	PDO (Night)	Total
1	Citywide Intersections	0	0	0	3	6	9
	Total	0	0	0	3	6	9

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 585200

2 countermeasures are eligible in benefit calculation. (NS6 NS1)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (NS6 NS1) Crash Data Information: Crash data period (years): 3.42 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,2,9,9,32 Night: 0,0,0,3,6	\$4,959,672	\$586,545	\$0	\$5,546,217
Sum		\$4,959,672	\$586,545	\$0	\$5,546,217

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS6	\$4,959,672	\$46,200	107.4
2	NS1	\$586,545	\$539,000	1.1
3		\$0	\$0	0
	Entire Project	\$5,546,217	\$585,200	9.5

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

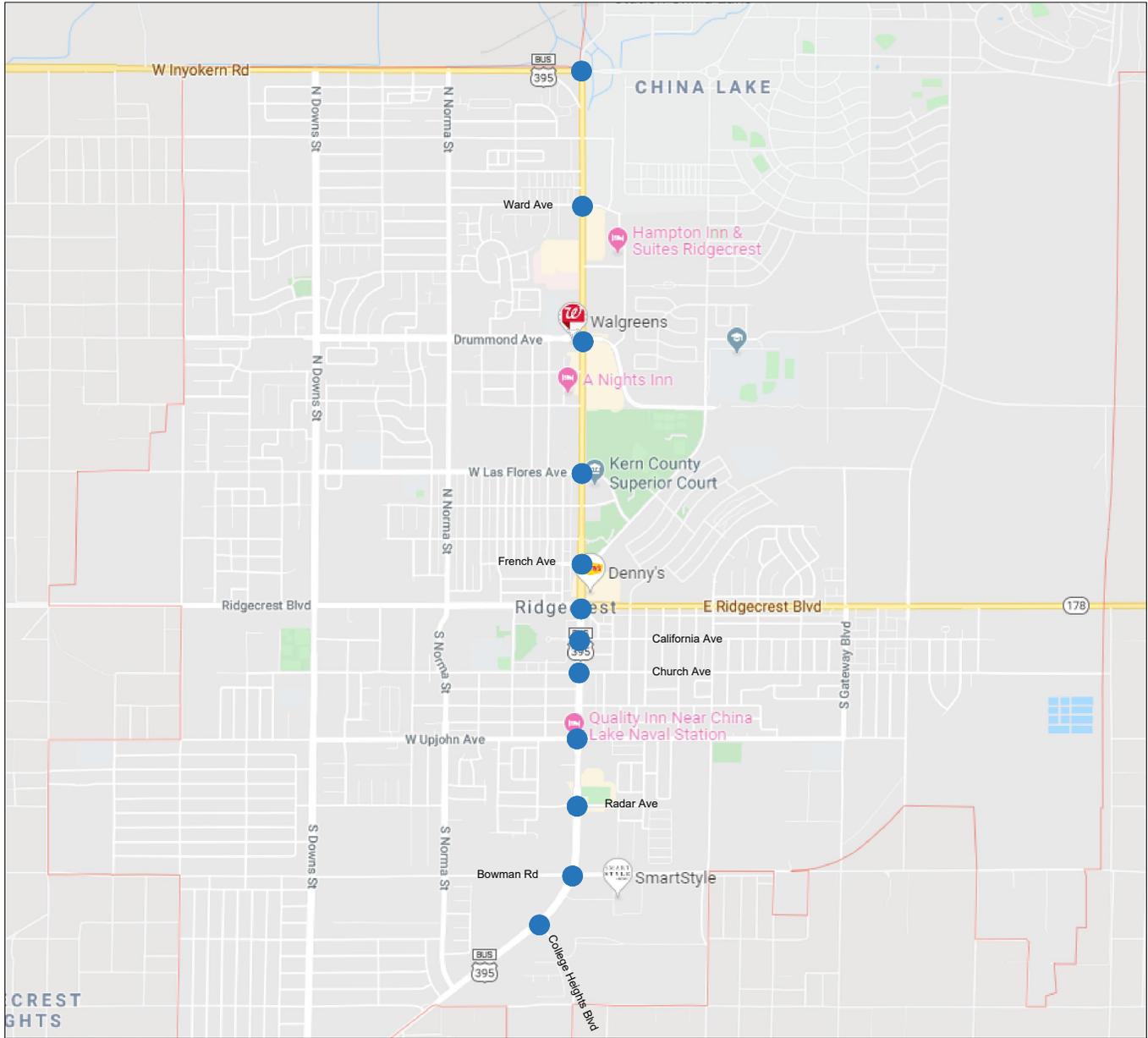
Number of countermeasures: 2 NS6: Upgrade intersection pavement markings (NS.I.) NSI: Add intersection lighting (NS.I.)

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$585,200
HSIP Funds Requested:	\$585,200
Max. Federal Reimbursement Ratio (FRR):	100%
Total Expected Benefit:	\$5,546,217
Benefit Cost Ratio:	9.48

APPENDIX G

Signal Synchronization-Adaptive Signals



Legend

- Location of Countermeasures S2: Signal upgrades and S3: Improve signal timing



N.T.S.



CITY OF RIDGECREST

Signal Synchronization-Adaptive
Signals Project Locations
Alternative A

APPENDIX

G-1a

SHEET 1 OF 1

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted LIGHTING
E CALIFORNIA AV	S CHINA LAKE BL	E CALIFORNIA AVS CHINA LAK	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/2/2013	1452	6 Daylight
W LAS FLORES AV	RT 178	W LAS FLORES AVRT 178	24	W	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	7/27/2014	1742	6 Daylight
E DRUMMOND AV	N CHINA LAKE BL	E DRUMMOND AVN CHINA LA	128	E	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	1/12/2015	1233	6 Daylight
N CHINA LAKE BL	WARD AV	N CHINA LAKE BLWARD AV	30	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	1/28/2015	1000	6 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	15	N	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	2/23/2015	751	6 Daylight
S CHINA LAKE BL	RIDGECREST BL	S CHINA LAKE BLRIDGECREST	2	S	Injury (Complaint of Pain	Following Too Closely	Rear End	Other Motor Vehicle	6/23/2015	1017	6 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		Injury (Complaint of Pain	Unknown	Broadside	Other Motor Vehicle	6/24/2015	730	6 Daylight
E DRUMMOND AV	RT 178	E DRUMMOND AVRT 178	30	E	Injury (Complaint of Pain	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	6/26/2015	1604	6 Daylight
N CHINA LAKE BL	RIDGECREST BL	N CHINA LAKE BLRIDGECREST	15	S	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	1/28/2016	805	6 Daylight
N CHINA LAKE BL	W DRUMMOND AV	N CHINA LAKE BLW DRUMMC	0		Injury (Complaint of Pain	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/30/2016	1000	6 Daylight
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA	25	N	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	8/31/2016	1450	6 Daylight
W RIDGECREST BL	S CHINA LAKE BL	W RIDGECREST BLS CHINA LAI	25	W	Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	9/8/2016	709	6 Daylight
S CHINA LAKE BL	COLLEGE HEIGHTS BL	S CHINA LAKE BLCOLLEGE HEI	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/1/2016	1902	6 Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA	0		Injury (Complaint of Pain	Automobile Right of Way	Broadside	Other Motor Vehicle	12/5/2016	945	6 Daylight
RIDGECREST BL	CHINA LAKE BL	RIDGECREST BLCHINA LAKE BI	0		Injury (Complaint of Pain	Unsafe Speed	Rear End	Other Motor Vehicle	12/17/2016	1919	6 Dark - Street Lights
BOWMAN RD	S CHINA LAKE BL	BOWMAN RDS CHINA LAKE BI	0		Injury (Complaint of Pain	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/9/2017	1005	6 Daylight
N CHINA LAKE BL	LAS FLORES AV	N CHINA LAKE BLLAS FLORES	0		Injury (Other Visible)	Unsafe Speed	Broadside	Other Motor Vehicle	4/13/2013	1025	11 Daylight
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN F	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/6/2014	2047	11 Dark - Street Lights
S COLLEGE HEIGHTS BL	S CHINA LAKE BL	S COLLEGE HEIGHTS BLS CHIN	19	N	Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	9/18/2014	1758	11 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	5/20/2015	705	11 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/18/2015	1729	11 Dusk - Dawn
N CHINA LAKE BL	FRENCH AV	N CHINA LAKE BLFRENCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/13/2017	1802	11 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	70	N	Injury (Other Visible)	Pedestrian Violation	Broadside	Pedestrian	4/7/2017	1017	11 Daylight
S CHINA LAKE BL	RADER AV	S CHINA LAKE BLRADER AV	35	N	Injury (Other Visible)	Unsafe Speed	Rear End	Other Motor Vehicle	8/2/2017	1510	11 Daylight
CHINA LAKE BLV	UPIOHN AV	CHINA LAKE BLVUPIOHN AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	12/6/2017	1919	11 Dark - Street Lights
S CHINA LAKE BL	W UPIOHN AV	S CHINA LAKE BLW UPIOHN A	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	3/18/2013	1300	1 Daylight
W RIDGECREST BL	China Lake Bl	W RIDGECREST BLChina Lake l	10	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	3/21/2013	2332	1 Dark - Street Lights
N CHINA LAKE BL	FRENCH AV	N CHINA LAKE BLFRENCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/4/2013	835	1 Daylight
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA	10	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/3/2013	1349	1 Daylight
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN F	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/16/2013	1440	1 Daylight
W UPIOHN AV	S CHINA LAKE BL	W UPIOHN AVS CHINA LAKE B	15	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/24/2013	2302	1 Dark - Street Lights
E Ridgecrest Bl	China Lake Bl	E Ridgecrest BlChina Lake Bl	210	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/8/2013	2015	1 Dark - Street Lights
S COLLEGE HEIGHTS BL	S CHINA LAKE BL	S COLLEGE HEIGHTS BLS CHIN	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/23/2013	1845	1 Daylight
N CHINA LAKE BL	W LAS FLORES AV	N CHINA LAKE BLW LAS FLORE	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/3/2013	1836	1 Dusk - Dawn
N CHINA LAKE BL	W DRUMMOND AV	N CHINA LAKE BLW DRUMMC	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/7/2013	1500	1 Daylight
N CHINA LAKE BL	W LAS FLORES AV	N CHINA LAKE BLW LAS FLORE	25	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/30/2013	1347	1 Daylight
W RIDGECREST BL	S CHINA LAKE BL	W RIDGECREST BLS CHINA LAI	210	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/13/2013	1215	1 Daylight
N CHINA LAKE BL	FRENCH AV	N CHINA LAKE BLFRENCH AV	10	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/24/2013	922	1 Daylight
W DRUMMOND AV	China Lake Bl	W DRUMMOND AVChina Lake	15	W	PDO	Unsafe Starting or Backing	Rear End	Other Motor Vehicle	11/1/2013	1900	1 Dark - Street Lights
S CHINA LAKE BL	W UPIOHN AV	S CHINA LAKE BLW UPIOHN A	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/25/2013	840	1 Daylight
S CHINA LAKE BL	W CHURCH	S CHINA LAKE BLW CHURCH	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/5/2014	1700	1 Daylight
China Lake Bl	RIDGECREST BL	China Lake BLRIDGECREST BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/20/2014	1024	1 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/24/2014	2140	1 Dark - Street Lights
China Lake Bl	RIDGECREST BL	China Lake BLRIDGECREST BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/3/2014	2018	1 Dark - Street Lights
N CHINA LAKE BL	W WARD AV	N CHINA LAKE BLW WARD AV	100	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/14/2014	1339	1 Daylight
N CHINA LAKE BL	E FRENCH AV	N CHINA LAKE BLE FRENCH AV	235	S	PDO	Not Stated	Rear End	Other Motor Vehicle	9/11/2014	1320	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/16/2014	735	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	25	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/27/2014	1246	1 Daylight
S CHINA LAKE BL	RADER AV	S CHINA LAKE BLRADER AV	45	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	12/4/2014	1805	1 Dark - Street Lights
S CHINA LAKE BL	W BOWMAN RD	S CHINA LAKE BLW BOWMAN	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	12/16/2014	902	1 Daylight
China Lake Bl	RIDGECREST BL	China Lake BLRIDGECREST BL	40	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/4/2015	715	1 Daylight
W BOWMAN	S CHINA LAKE BL	W BOWMANS CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/18/2015	1812	1 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	0		PDO	Traffic Signals and Signs	Rear End	Other Motor Vehicle	3/27/2015	1530	1 Daylight
N CHINA LAKE BL	W FRENCH AV	N CHINA LAKE BLW FRENCH A	63	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	4/10/2015	1245	1 Daylight
China Lake Bl	DRUMMOND AV	China Lake BLDRUMMOND AV	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/5/2015	1052	1 Daylight
China Lake Bl	LAS FLORES AV	China Lake BLAS FLORES AV	100	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/11/2015	1641	1 Daylight
China Lake Bl	CALIFORNIA AV	China Lake BLCALIFORNIA AV	120	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/10/2015	1524	1 Daylight
China Lake Bl	W LAS FLORES AV	China Lake BLW LAS FLORES A	159	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	7/1/2015	1620	1 Daylight
China Lake Bl	DRUMMOND AV	China Lake BLDRUMMOND AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/3/2015	1843	1 Daylight
E CALIFORNIA AV	S CHINA LAKE BL	E CALIFORNIA AVS CHINA LAK	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/23/2015	1245	1 Daylight
W DRUMMOND AV	N CHINA LAKE BL	W DRUMMOND AVN CHINA L	30	W	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	8/13/2015	1212	1 Daylight
S CHINA LAKE BL	W UPIOHN AV	S CHINA LAKE BLW UPIOHN A	0		PDO	Traffic Signals and Signs	Broadside	MOTOR VEHICLE ON THE C	8/22/2015	1449	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	10	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/9/2015	1146	1 Daylight
E Upjohn Av	S CHINA LAKE BL	E Upjohn AvS CHINA LAKE BL	15	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/13/2015	1628	1 Daylight
N CHINA LAKE BL	LAS FLORES AV	N CHINA LAKE BLAS FLORES	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/6/2015	1204	1 Daylight
N CHINA LAKE BL	E FRENCH AV	N CHINA LAKE BLE FRENCH AV	20	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/23/2015	1420	1 Daylight
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	75	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/29/2015	1409	1 Daylight
N CHINA LAKE BL	W WARD AV	N CHINA LAKE BLW WARD AV	180	S	PDO	Unsafe Speed	Rear End	MOTOR VEHICLE ON THE C	1/18/2016	720	1 Daylight
S CHINA LAKE BL	E RIDGECREST BL	S CHINA LAKE BLE RIDGECRES	16	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/22/2016	1737	1 Daylight
W BOWMAN AV	S CHINA LAKE BL	W BOWMAN AVS CHINA LAKE	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	3/8/2016	1330	1 Daylight
E Upjohn Av	S CHINA LAKE BL	E Upjohn AvS CHINA LAKE BL	44	E	PDO	Automobile ROW	Rear End	Other Motor Vehicle	5/10/2016	1302	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/31/2016	1350	1 Daylight

W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE E	0	PDO	Automobile ROW	Broadside	MOTOR VEHICLE ON THE C	6/13/2016	1757	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPIOHN AV	0	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/16/2016	738	1 Daylight
E Ridgecrest Bl	N CHINA LAKE BL	E Ridgecrest BIN CHINA LAKE I	49 E	PDO	Driving or Bicycling Under the Influence of Alcoh	Rear End	Other Motor Vehicle	8/13/2016	2039	1 Dark - Street Lights
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE E	0	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/24/2016	745	1 Daylight
E FRENCH AV	N CHINA LAKE BL	E FRENCH AVN CHINA LAKE BI	0	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/1/2016	726	1 Daylight
N CHINA LAKE BL	DRUMMOND AV	N CHINA LAKE BLDRUMMONC	0	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	1/19/2017	713	1 Daylight
S CHINA LAKE BL	W CALIFORNIA AV	S CHINA LAKE BLW CALIFORNI	15 S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/15/2017	1834	1 Dark - Street Lights
W UPIOHN AV	S CHINA LAKE BL	W UPIOHN AVS CHINA LAKE B	0	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/17/2017	1712	1 Daylight
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN I	0	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/28/2017	2125	1 Dark - Street Lights
CHINA LAKE BL	UPIOHN AV	CHINA LAKE BLUPIOHN AV	36 N	PDO	Improper Turning	Broadside	Other Motor Vehicle	3/6/2017	1628	1 Daylight
S CHINA LAKE BL	BOWMAN RD	S CHINA LAKE BLBOWMAN RE	44 S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/23/2017	1415	1 Daylight
N CHINA LAKE BL	FRENCH AV	N CHINA LAKE BLFRENCH AV	200 N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	5/8/2017	1913	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0	PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	8/12/2017	1535	1 Daylight
RADER AV	S CHINA LAKE BL	RADER AVS CHINA LAKE BL	0	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/28/2017	1812	1 Daylight
CHINA LAKE BL	RADER AV	CHINA LAKE BLRADER AV	0	PDO	Following Too Closely	Rear End	Other Motor Vehicle	10/29/2017	1751	1 Daylight

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location: China Lake Boulevard- City limit to City Limit (12 intersections)
(limited to 250 characters)

Project Description: adaptive traffic signal improvements
(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: S3: Improve signal timing (coordination, phases, red, yellow, or operation)

CM No. 2: S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (S3)	% for CM#2 (S2)	% for OS*	% for NS**
+	1	Signal Upgrades	EA	12	\$40000.00	480,000	16%	84%	0%	0
-										
		Weighted Average (%)					16%	84%		
		Total (\$)				\$480,000				

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

\$48,000

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

\$528,000

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
S3	50%	16.00%	Yes (>=15% cost)	<input type="checkbox"/>
S2	100%	84.00%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

dd

Project's Maximum Federal Reimbursement Ratio = 50.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. "**Total Cost**": Round all costs up to the nearest hundred dollars.
- ii. "**HSIP/Total (%)**": The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. "**HSIP Funds**" and "**Local/Other Funds**" are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer) %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	50 %	\$0	\$0
PS&E	\$132,000	50 %	\$66,000	\$66,000
Subtotal - PE	\$132,000	50 %	\$66,000	\$66,000
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	50 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	50 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$79,200	50 %	\$39,600	\$39,600
Construction Items	\$528,000 <small>(Read only - from Section I)</small>	50 %	\$264,000	\$264,000
Subtotal - Construction	\$607,200	50 %	\$303,600	\$303,600
PROJECT TOTAL	\$739,200	50 %	\$369,600	\$369,600

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+" / "-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	S (Signalized Intersections)
+	1	G1-1	All Signalized Intersections on China Lake Boulevard	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	S3: Improve signal timing (coordination, phases, red, yellow, or operation)	S	0.15	10	All	50%
<input checked="" type="checkbox"/>	2	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S	0.15	10	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 4.74

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	All Signalized Intersections on China Lake Boulevard	0	2	21	32	128	183
	Total	0	2	21	32	128	183

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 709200

2 countermeasures are eligible in benefit calculation. (S3 S2)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (S3 S2) Crash Data Information: Crash data period (years): 4.74 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,2,21,32,128	\$2,748,141	\$2,748,141	\$0	\$5,496,282
Sum		\$2,748,141	\$2,748,141	\$0	\$5,496,282

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	S3	\$2,748,141	\$118,272	23.2
2	S2	\$2,748,141	\$620,928	4.4
3		\$0	\$0	0
	Entire Project	\$5,496,282	\$739,200	7.4

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

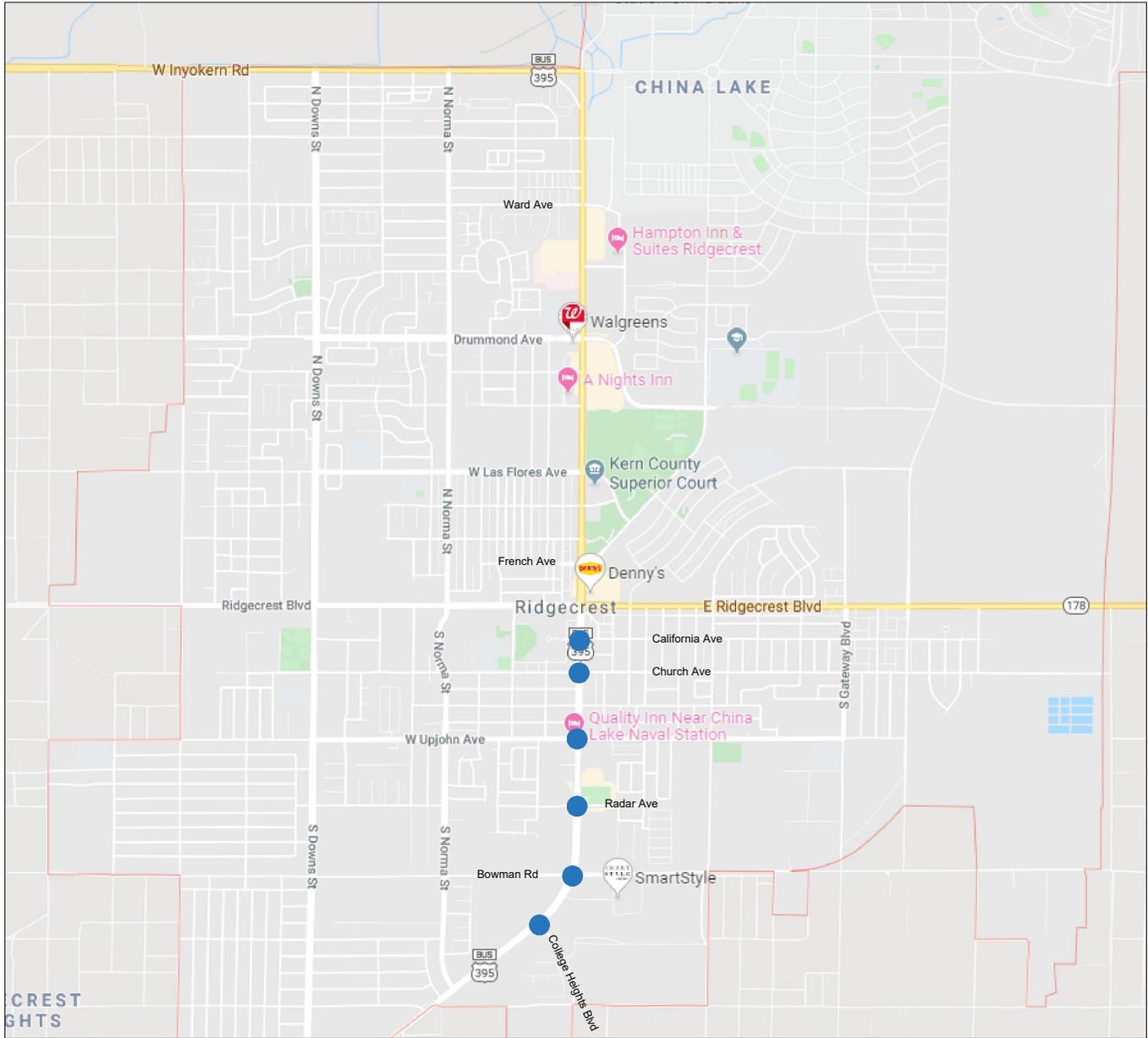
Number of countermeasures: 2

S3: Improve signal timing (coordination, phases, red, yellow, or operation)

S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$739,200
HSIP Funds Requested:	\$369,600
Max. Federal Reimbursement Ratio (FRR):	50%
Total Expected Benefit:	\$5,496,282
Benefit Cost Ratio:	7.44



Legend

- Location of Countermeasures S2: Signal upgrades and S3: Improve signal timing



N.T.S.



CITY OF RIDGECREST

Signal Synchronization-Adaptive
Signals Project Locations
Alternative B

APPENDIX

G-1b

SHEET 1 OF 1

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted (LIGHTING)
E CALIFORNIA AV	S CHINA LAKE BL	E CALIFORNIA AVS CHINA LAK	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/2/2013	1452	6 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	0		Injury (Complaint of Pain)	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	12/20/2013	1923	6 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	15	N	Injury (Complaint of Pain)	Driving or Bicycling Under the Influence of Alcohol	Rear End	Other Motor Vehicle	2/23/2015	751	6 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		Injury (Complaint of Pain)	Unknown	Broadside	Other Motor Vehicle	6/24/2015	730	6 Daylight
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	0		Injury (Complaint of Pain)	Improper Turning	Head-On	Other Motor Vehicle	7/20/2016	934	6 Daylight
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA AV	25	N	Injury (Complaint of Pain)	Unsafe Speed	Rear End	Other Motor Vehicle	8/31/2016	1450	6 Daylight
S CHINA LAKE BL	COLLEGE HEIGHTS BL	S CHINA LAKE BLCOLLEGE HEIK	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	10/1/2016	1902	6 Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA AV	0		Injury (Complaint of Pain)	Automobile Right of Way	Broadside	Other Motor Vehicle	12/5/2016	945	6 Daylight
N CHINA LAKE BL	UPIOHN AV	N CHINA LAKE BLUPJOHN AV	0		Injury (Complaint of Pain)	Pedestrian Right of Way	Other	Bicycle	4/13/2017	750	6 Daylight
BOWMAN RD	S CHINA LAKE BL	BOWMAN RDS CHINA LAKE BL	0		Injury (Complaint of Pain)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/9/2017	1005	6 Daylight
CHURCH AV	S CHINA LAKE BL	CHURCH AVS CHINA LAKE BL	0		Injury (Other Visible)	Traffic Signals and Signs	Sideswipe	Other Motor Vehicle	4/13/2014	1210	11 Daylight
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	220	S	Injury (Other Visible)	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	7/11/2014	2230	11 Dark - Street Lights
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN F	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Other Motor Vehicle	9/6/2014	2047	11 Dark - Street Lights
S COLLEGE HEIGHTS BL	S CHINA LAKE BL	S COLLEGE HEIGHTS BLS CHIN.	19	N	Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	9/18/2014	1758	11 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		Injury (Other Visible)	Traffic Signals and Signs	Broadside	Bicycle	5/20/2015	705	11 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	10/18/2015	1729	11 Dusk - Dawn
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		Injury (Other Visible)	Traffic Signals and Signs	Overtaken	Other Motor Vehicle	7/10/2016	745	11 Daylight
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE B	0		Injury (Other Visible)	Other Hazardous Violation	Other	Bicycle	9/24/2016	1349	11 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	70	N	Injury (Other Visible)	Pedestrian Violation	Broadside	Pedestrian	4/7/2017	1017	11 Daylight
CHINA LAKE BLV	UPIOHN AV	CHINA LAKE BLVUPIOHN AV	0		Injury (Other Visible)	Automobile Right of Way	Broadside	Other Motor Vehicle	12/6/2017	1919	11 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	21	S	Injury (Severe)	Unknown	Hit Object	Fixed Object	4/16/2016	2159	126 Dark - Street Lights
S CHINA LAKE BL	W UPIOHN AV	S CHINA LAKE BLW UPIOHN AV	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	11/25/2013	840	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	0		PDO	Unsafe Speed	Broadside	Other Motor Vehicle	12/2/2013	1145	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	0		PDO	Pedestrian ROW	VEHICLE/Pedestrian	Pedestrian	12/20/2013	1923	1 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	50	N	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	1/17/2014	1230	1 Daylight
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN F	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/5/2014	1240	1 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/5/2014	1700	1 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	2/25/2014	1430	1 Daylight
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH A	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	4/24/2014	2140	1 Dark - Street Lights
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE B	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	7/15/2014	1420	1 Daylight
W CALIFORNIA AV	S CHINA LAKE BL	W CALIFORNIA AVS CHINA LAI	200	W	PDO	Unsafe Speed	Hit Object	Fixed Object	10/2/2014	1003	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	25	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/16/2014	735	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	25	N	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/27/2014	1246	1 Daylight
W CALIFORNIA AV	S CHINA LAKE BL	W CALIFORNIA AVS CHINA LAI	0		PDO	Traffic Signals and Signs	Head-On	BICYCLE	11/12/2014	1414	1 Daylight
S CHINA LAKE BL	S COLLEGE	S CHINA LAKE BLS COLLEGE	16	N	PDO	Driving or Bicycling Under the Influence of Alcohol	Hit Object	Fixed Object	12/31/2014	1645	1 Dusk - Dawn
N CHINA LAKE BL	China Lake Bl	N CHINA LAKE BLChina Lake Bl	42	S	PDO	Improper Turning	OTHER	Other Object	2/6/2015	2343	1 Dark - Street Lights
W BOWMAN	S CHINA LAKE BL	W BOWMAN'S CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/18/2015	1812	1 Dark - Street Lights
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	0		PDO	Traffic Signals and Signs	Rear End	Other Motor Vehicle	3/27/2015	1530	1 Daylight
China Lake Bl	CHURCH AV	China Lake BICHURCH AV	7	N	PDO	Unsafe Speed	Hit Object	Other Object	5/11/2015	1240	1 Daylight
China Lake Bl	CALIFORNIA AV	China Lake BICALIFORNIA AV	120	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	6/10/2015	1524	1 Daylight
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	0		PDO	Improper Turning	Hit Object	Fixed Object	6/23/2015	1855	1 Daylight
E CALIFORNIA AV	S CHINA LAKE BL	E CALIFORNIA AVS CHINA LAK	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/23/2015	1245	1 Daylight
S CHINA LAKE BL	W UPIOHN AV	S CHINA LAKE BLW UPIOHN AV	0		PDO	Traffic Signals and Signs	Broadside	MOTOR VEHICLE ON THE G	8/22/2015	1449	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	10	N	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/9/2015	1146	1 Daylight
E Upjohn Av	S CHINA LAKE BL	E Upjohn AvS CHINA LAKE BL	15	E	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	10/13/2015	1628	1 Daylight
RADAR AV	W RADAR AV	RADAR AVW RADAR AV	5	N	PDO	UNKNOWN	Hit Object	Fixed Object	10/13/2015	114	1 Dark - Street Lights
S CHINA LAKE BL	CALIFORNIA AV	S CHINA LAKE BLCALIFORNIA AV	150	N	PDO	Unsafe Speed	Sideswipe	Other Motor Vehicle	11/5/2015	1441	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Traffic Signals and Signs		BICYCLE	11/12/2015	1014	1 Daylight
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	75	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	11/29/2015	1409	1 Daylight
W BOWMAN AV	S CHINA LAKE BL	W BOWMAN AVS CHINA LAKE	0		PDO	Improper Turning	Broadside	Other Motor Vehicle	3/8/2016	1330	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Improper Turning	Sideswipe	Other Motor Vehicle	3/15/2016	1800	1 Daylight
E Upjohn Av	S CHINA LAKE BL	E Upjohn AvS CHINA LAKE BL	44	E	PDO	Automobile ROW	Rear End	Other Motor Vehicle	5/10/2016	1302	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	5/31/2016	1350	1 Daylight
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE B	0		PDO	Automobile ROW	Broadside	MOTOR VEHICLE ON THE G	6/13/2016	1757	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	7/16/2016	738	1 Daylight
S CHINA LAKE BL	UPIOHN AV	S CHINA LAKE BLUPJOHN AV	2	S	PDO	Improper Turning	Sideswipe	Other Motor Vehicle	8/10/2016	1020	1 Daylight
E RADAR AV	S CHINA LAKE BL	E RADAR AVS CHINA LAKE BL	178	E	PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/20/2016	1345	1 Daylight
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE B	0		PDO	Automobile ROW	Broadside	Other Motor Vehicle	10/24/2016	745	1 Daylight
S CHINA LAKE BL	W CALIFORNIA AV	S CHINA LAKE BLW CALIFORNI	15	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	2/15/2017	1834	1 Dark - Street Lights
W UPIOHN AV	S CHINA LAKE BL	W UPIOHN AVS CHINA LAKE B	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/17/2017	1712	1 Daylight
S CHINA LAKE BL	E BOWMAN RD	S CHINA LAKE BLE BOWMAN F	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	2/28/2017	2125	1 Dark - Street Lights
CHINA LAKE BL	UPIOHN AV	CHINA LAKE BLUPJOHN AV	36	N	PDO	Improper Turning	Broadside	Other Motor Vehicle	3/6/2017	1628	1 Daylight
S CHINA LAKE BL	BOWMAN RD	S CHINA LAKE BLBOWMAN RD	44	S	PDO	Unsafe Speed	Rear End	Other Motor Vehicle	3/23/2017	1415	1 Daylight
W CHURCH AV	W CHURCH AV 339	W CHURCH AVW CHURCH AV	40	S	PDO	Unsafe Starting or Backing	OTHER	Parked Motor Vehicle	4/5/2017	1813	1 Daylight
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Traffic Signals and Signs	Broadside	Other Motor Vehicle	8/12/2017	1535	1 Daylight
RADER AV	S CHINA LAKE BL	RADER AVS CHINA LAKE BL	0		PDO	Unsafe Speed	Rear End	Other Motor Vehicle	9/28/2017	1812	1 Daylight
S CHINA LAKE BL	S COLLEGE	S CHINA LAKE BLS COLLEGE	0		PDO	UNKNOWN	Sideswipe	Other Motor Vehicle	11/6/2017	1120	1 Daylight

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:
(limited to 250 characters)

China Lake Boulevard- City limit to City Limit
California Av, Church Av, Upjohn Av, Rader Av, Bowman Rd, College Heights Blvd

Project Description:
(limited to 250 characters)

adaptive traffic signal improvements

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: S3: Improve signal timing (coordination, phases, red, yellow, or operation)

CM No. 2: S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (S3)	% for CM#2 (S2)	% for OS*	% for NS**
+	1	Signal Upgrades	EA	6	\$40000.00	240,000	16%	84%	0%	0
-										
		Weighted Average (%)					16%	84%		
		Total (\$)				\$240,000				

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
S3	50%	16.00%	Yes (>=15% cost)	<input type="checkbox"/>
S2	100%	84.00%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

dd

Project's Maximum Federal Reimbursement Ratio = 50.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	50 %	\$0	\$0
PS&E	\$66,000	50 %	\$33,000	\$33,000
Subtotal - PE	\$66,000	50 %	\$33,000	\$33,000
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	50 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	50 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$39,600	50 %	\$19,800	\$19,800
Construction Items	\$264,000 <small>(Read only - from Section I)</small>	50 %	\$132,000	\$132,000
Subtotal - Construction	\$303,600	50 %	\$151,800	\$151,800
PROJECT TOTAL	\$369,600	50 %	\$184,800	\$184,800

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	S (Signalized Intersections)
+	1	G1-1	All Signalized Intersections on China Lake Boulevard	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	S3: Improve signal timing (coordination, phases, red, yellow, or operation)	S	0.15	10	All	50%
<input checked="" type="checkbox"/>	2	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S	0.15	10	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 4.18

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	All Signalized Intersections on China Lake Boulevard	0	1	10	10	46	67
	Total	0	1	10	10	46	67

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 369600

2 countermeasures are eligible in benefit calculation. (S3 S2)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (S3 S2) Crash Data Information: Crash data period (years): 4.19 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,1,10,10,46	\$1,323,110	\$1,323,110	\$0	\$2,646,220
Sum		\$1,323,110	\$1,323,110	\$0	\$2,646,220

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	S3	\$1,323,110	\$59,136	22.4
2	S2	\$1,323,110	\$310,464	4.3
3		\$0	\$0	0
	Entire Project	\$2,646,220	\$369,600	7.2

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 2

S3: Improve signal timing (coordination, phases, red, yellow, or operation)

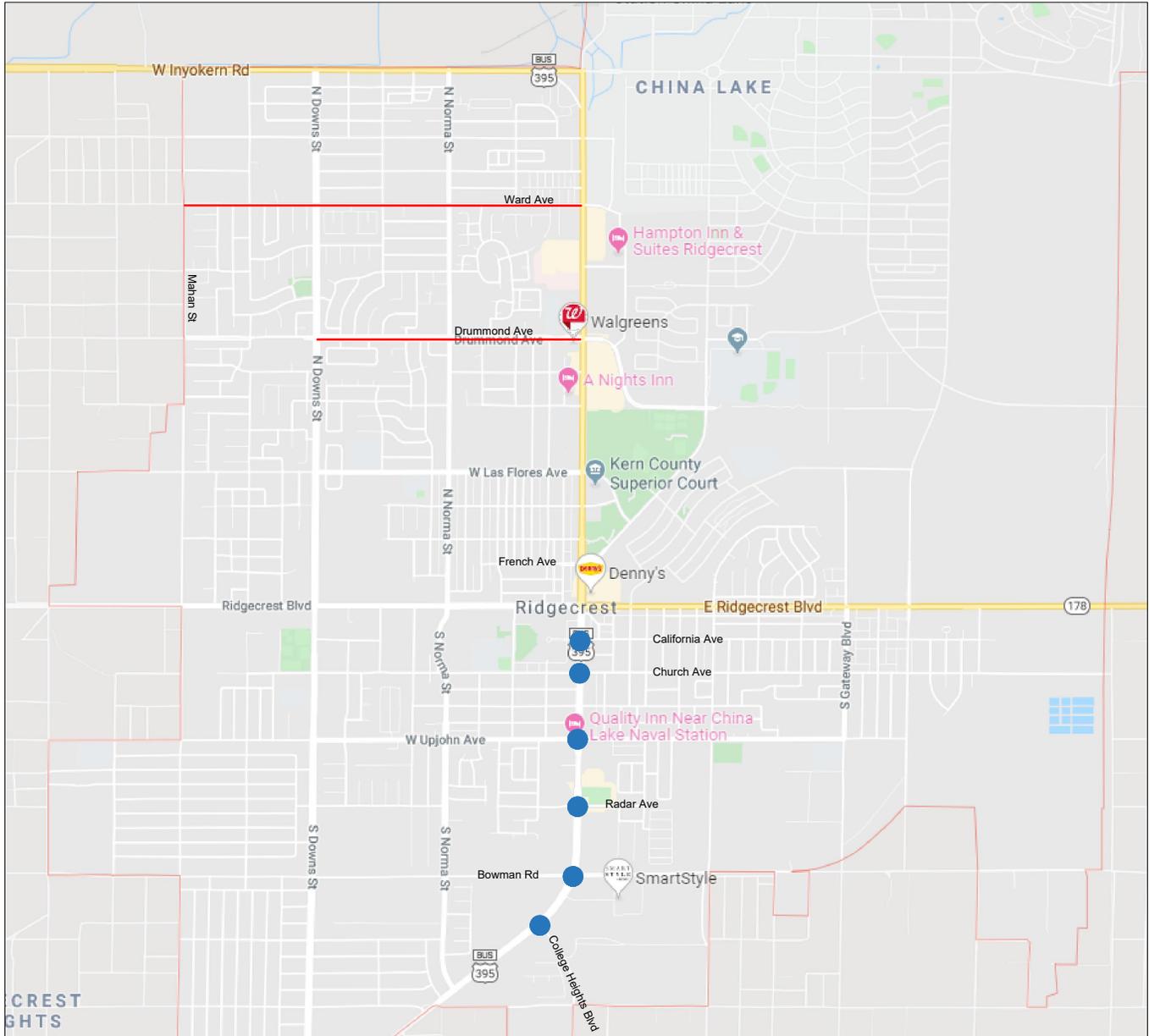
S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$369,600
HSIP Funds Requested:	\$184,800
Max. Federal Reimbursement Ratio (FRR):	50%
Total Expected Benefit:	\$2,646,220
Benefit Cost Ratio:	7.16

ATTACHMENT H

China Lake Systemic Pedestrian and Bicycle Improvements



Legend

- Location of Countermeasure S22: Leading Pedestrian Interval (LPI)
- Location of Countermeasure R36: Install Bike Lanes



N.T.S.



CITY OF RIDGECREST	APPENDIX
China Lake Systematic Pedestrian and Bicycle Improvements Project Locations	H-1
SHEET	1 OF 1

PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	COLLISION_SEVERITY	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION_TIME	Weighted (LIGHTING
E DRUMMOND AV	FRENCH AV	732	W	Injury (Other Visible)	Automobile Right of Way	Other	Bicycle	8/23/2017	755	11 Daylight
WARD AV	PALO VERDE DR	286	W	Injury (Severe)	Improper Turning	Vehicle/Pedestrian	Pedestrian	11/4/2015	1733	126 Dark - Street Lights
W DRUMMOND AV	N CHINA LAKE BL	185	W	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	10/1/2015	645	11 Daylight
W WARD AV	N WAYNE AV	235	E	Injury (Severe)	Unsafe Speed	Rear End	Bicycle	9/21/2015	1741	126 Daylight
W WARD AV	N PALO VERDE DR	140	W	Injury (Other Visible)	Wrong Side of Road	Other	Bicycle	12/19/2014	1330	11 Daylight
DRUMMOND AV	RT 178	185	W	Injury (Complaint of Pain)	Wrong Side of Road	Other	Bicycle	11/7/2014	830	6 Daylight

PRIMARY_RD	SECONDARY_RD	INTERSECTION	DISTANCE	DIRECTION	COLLISION	PCF_VIOL_CATEGORY	Type of Collision	MVIW	COLLISION_DATE	COLLISION Weighted	LIGHTING	Int BC
S CHINA LAKE BL	UPJOHN AV	S CHINA LAKE BLUPJOHN AV	0		Injury (Con	Pedestrian Right of Way	Vehicle/Pedestrian	Pedestrian	12/20/2013	1923	6 Dark - Stre	158
N CHINA LAKE BL	UPJOHN AV	N CHINA LAKE BLUPJOHN AV	0		Injury (Con	Pedestrian Right of Way	Other	Bicycle	4/13/2017	750	6 Daylight	6
S CHINA LAKE BL	E CHURCH AV	S CHINA LAKE BLE CHURCH AV	220	S	Injury (Oth	Pedestrian Violation	Vehicle/Pedestrian	Pedestrian	7/11/2014	2230	11 Dark - Stre	19
S COLLEGE HEIGHTS BL	S CHINA LAKE BL	S COLLEGE HEIGHTS BLS CHINA LAKE BL	19	N	Injury (Oth	Traffic Signals and Signs	Broadside	Bicycle	9/18/2014	1758	11 Daylight	11
S CHINA LAKE BL	W CHURCH AV	S CHINA LAKE BLW CHURCH AV	0		Injury (Oth	Traffic Signals and Signs	Broadside	Bicycle	5/20/2015	705	11 Daylight	24
W CHURCH AV	S CHINA LAKE BL	W CHURCH AVS CHINA LAKE BL	0		Injury (Oth	Other Hazardous Violation	Other	Bicycle	9/24/2016	1349	11 Daylight	15
S CHINA LAKE BL	UPJOHN AV	S CHINA LAKE BLUPJOHN AV	70	N	Injury (Oth	Pedestrian Violation	Broadside	Pedestrian	4/7/2017	1017	11 Daylight	158
S CHINA LAKE BL	UPJOHN AV	S CHINA LAKE BLUPJOHN AV	0		PDO	Pedestrian ROW	VEHicle/Pedestrian	Pedestrian	12/20/2013	1923	1 Dark - Stre	158
W CALIFORNIA AV	S CHINA LAKE BL	W CALIFORNIA AVS CHINA LAKE BL	0		PDO	Traffic Signals and Signs	Head-On	BICYCLE	11/12/2014	1414	1 Daylight	2
S CHINA LAKE BL	CHURCH AV	S CHINA LAKE BLCHURCH AV	0		PDO	Traffic Signals and Signs		BICYCLE	11/12/2015	1014	1 Daylight	22

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:
(limited to 250 characters)

China Lake Blvd
Drummond Ave
Ward Ave

Project Description:
(limited to 250 characters)

Install bike lanes on Drummond Ave and Ward Ave
Install LPI on China Lake Blvd at the 6 City-owned traffic signals

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1: S22: Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

CM No. 2: R36: Install bike lanes

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (S22)	% for CM#2 (R36)	% for OS*	% for NS**
+	1	Bike Lane Installation on Drummond Av	LF	10,440	\$5.00	52,200	0%	100%	%	0
-										
+	2	Bike Lane Installation on Ward Blvd	LF	15,720	\$5.00	78,600	0%	100%	%	0
-										
+	3	LPI Traffic Signal Upgrades	EA	6	\$5000.00	30,000	100%	%	%	0
-										
		Weighted Average (%)					19%	81%		
		Total (\$)				\$160,800				

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

\$16,080

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
S22	100%	18.66%	Yes (>=15% cost)	<input type="checkbox"/>
R36	90%	81.34%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

--

Project's Maximum Federal Reimbursement Ratio = 90.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. **This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).**

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

90 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Set

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$0	90 %	\$0	\$0
PS&E	\$44,300	90 %	\$39,870	\$4,430
Subtotal - PE	\$44,300	90 %	\$39,870	\$4,430
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	90 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	90 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$26,600	90 %	\$23,940	\$2,660
Construction Items	\$176,900 <small>(Read only - from Section I)</small>	90 %	\$159,210	\$17,690
Subtotal - Construction	\$203,500	90 %	\$183,150	\$20,350
PROJECT TOTAL	\$247,800	90 %	\$223,020	\$24,780

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into 2 groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
	GROUP 1		Select Location Type:	R (Roadways)
+	1	G1-1	Drummond Avenue and Ward Avenue	
-				
	GROUP 2		Select Location Type:	S (Signalized Intersections)
+	2	G2-1	China Lake Signalized Intersections	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: R (Roadways)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	R36: Install bike lanes	R	0.35	20	Ped & Bike	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 3

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) Ped & Bike

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	Drummond Avenue and Ward Avenue	0	2	3	1	0	6
	Total	0	2	3	1	0	6

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 2 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	S22: Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S	0.6	10	Ped & Bike	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 3.32

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) Ped & Bike

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	China Lake Signalized Intersections	0	0	5	2	3	10
	Total	0	0	5	2	3	10

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 247800

2 countermeasures are eligible in benefit calculation. (S22 R36)

Project location(s) are divided into 2 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: R (Roadways) Number of location(s): 1 Number of selected countermeasure(s): 1 (R36) Crash Data Information: Crash data period (years): 3 Number of crashes(F/SI/OVI/I-CP/PDO)*: Ped & Bike: 0,2,3,1,0	\$0	\$10,386,600	\$0	\$10,386,600
2	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (S22) Crash Data Information: Crash data period (years): 3.32 Number of crashes(F/SI/OVI/I-CP/PDO)*: Ped & Bike: 0,0,5,2,3	\$1,469,110	\$0	\$0	\$1,469,110
Sum		\$1,469,110	\$10,386,600	\$0	\$11,855,710

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	S22	\$1,469,110	\$46,231	31.8
2	R36	10,386,600	\$201,569	51.5
3		\$0	\$0	0
	Entire Project	11,855,710	\$247,800	47.8

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 2
 S22: Modify signal phasing to implement a Leading Pedestrian Interval (LPI)
 R36: Install bike lanes

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$247,800
HSIP Funds Requested:	\$223,020
Max. Federal Reimbursement Ratio (FRR):	90%
Total Expected Benefit:	11,855,710
Benefit Cost Ratio:	47.84