APPLICATION FORM FOR CYCLE 9 HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

Application ID 03-West Sacramento-3

Print Form

APPLICATION SUMMARY

This summary page is filled out automatically once the application is completed.

After the application is finalized, please save this PDF form using the exact "Application ID" (shown below) as the file name.

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Important: Review and follow the **Application Form Instructions** step-by-step as you complete the application. Completing an application without referencing the instructions will likely result in an incomplete application or an application with fatal flaws that will be disqualified from the ranking and selection process.

Submitted By (Agency)
West Sacramento

Application Category
Common BCR Application

Caltrans District	Application Number	Out of
03	3	4

Project Location

Various locations throughout the City of West Sacramento:
(1) Jefferson Blvd/11th St (2) C St/6th St
(3) Sacramento Ave/Solano St (4) Sacramento Ave/Simon Terrace

Project Description

(1) Add crossing with RRFB and refuge island
(2) Add crossing with RRFB, refuge island, and NE corner curb extension
(3) Add marked crosswalk and RRFB
(4) Add RRFB across Jefferson; curb extensions, crosswalk, and crossing improvements on east leg

Total Project Cost	HSIP Funds Requested
$704,200	$633,780

Countermeasure No. 1	NS16: Install raised medians / refuge islands (NS.I.)
Countermeasure No. 2	NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features / curb-extensions)
Countermeasure No. 3	

Project Benefit	Benefit Cost Ratio (BCR)
$6,438,907	9.14

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I. Basic Project Information

Date: Aug 31, 2018 | Caltrans District: 03 | MPO: SACOG

Agency: West Sacramento | County: Yolo

Total number of applications being submitted by your agency: 4

Application Number (each application must have a unique number): 3

Contact Person Information

Name (Last, First): Strand, Sarah

Position/Title of Contact Person: Associate Transportation Planner

Email: sarahs@cityofwestsacramento.org | Telephone: (916) 617-5310 | Extension:

Address: 1110 West Capitol Avenue, 1st Floor

City: West Sacramento | Zip Code: CA 95691 (Enter only a 5-digit number)

Application Category: Common BCR Application

Project Information

Project Location:
-Be Brief (Limited to 250 Characters)
-See Application Form Instructions

Various locations throughout the City of West Sacramento:
(1) Jefferson Blvd/11th St (2) C St/6th St
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Functional Classification: Other Principal Arterial (For Functional Classification and CRS Maps, Visit: http://www.dot.ca.gov/hq/tsip/hseb/crs_maps/)

CRS Map ID (e.g. 08E14): 06J25, 06J35 | Urban/Rural Area: Urban

High-Risk-Rural-Roads (HR3) Eligibility: No

If this project is not entirely HR3 eligible, what is the approximate total cost percentage that is HR3 eligible? 0 %

Work on the State Highway System

Does the project include improvements on the State Highway System? No

Warrant Studies

☐ Check if the project includes new installation of certain traffic control devices (e.g., traffic signals, pedestrian signals, etc.). If yes, Traffic Signal Warrant 4, 5 and/or 7 must be met (CA MUTCD Chapter 4C). Please provide the warrants as Attachment #8 in Section V.

Additional Information

1. Is the project focused primarily on “spot location(s)” or “systemic” improvements? Systemic

   The primary type of the "systemic" improvements: Pedestrian Countdown Heads/Crossing Upgrades

2. Which of the California's Strategic Highway Safety Plan (SHSP) Challenge Areas does the project address primarily? (For more information on the SHSP and its Challenge Areas, see: http://www.dot.ca.gov/SHSP/)

   9: Pedestrians

3. How were the safety needs and potential countermeasures for this project first identified?

   Jurisdiction-wide safety analysis

4. California established Systemic Safety Analysis Report Program (SSARP) in 2016. Was this project identified through the SSARP program?

   Yes

5. What is the primary mode of travel intended to be benefited by this project? Pedestrians

6. Approximate percentage of project cost going to improvements related to motorized travel: 0 %

7. Approximate percentage of project cost going to improvements related to non-motorized travel: 100 %

8. Provide the number of intersections and the length of roadways included in the project (enter 0 if not applicable):

   Number of Intersections: 4 Miles of Roadway: 0

9. Posted Speed Limit (mph): 40

10. Annual Average Daily Traffic (See Application Form Instructions)

AADT (Major Road)	AADT (Minor Road)	Year Collected/Estimated
30,460	8,124	2013

II. Narrative Questions (See Application Form Instructions)

These narrative questions are intended to provide additional project details for the application reviewers and project files. The reviewers will use the information in their "fatal flaw" assessment of the applications. Please make sure that:

1) The project scope is eligible for HSIP funding;
2) The countermeasures used in the Benefit Cost Ratio (BCR) calculation are appropriately applied based on the scope of the project;
3) The crash data used in the BCR calculation is appropriately applied based on the scope of the project and countermeasures used; and
4) The application data and attachments are reasonable and meet generally accepted traffic engineering and transportation safety principles.

If significant inconsistencies or errors are found in the application information, the reviewers may conclude that the application includes "fatal flaws" and the application will be dropped from further funding considerations. The applicant will not be notified of findings until after the selection process is complete.

1. Overall Identification of Need

Describe how the agency identified the project as one of its top safety priorities. Was a data-driven safety evaluation of their entire roadway network completed? Do the proposed project locations represent some of the agency's highest crash concentrations?
(Limited to 5,000 characters)

The City of West Sacramento has been making a concerted effort to improve safety on some of its major arterials. A review of city-wide crash data, funded through the Systemic Safety Analysis Report Program (SSARP), showed that West Capitol Avenue historically has the highest crash concentrations. However, improvements for that corridor were already funded through HSIP Cycle 7, so the City has turned its attention to additional locations with crash histories.
Through the data analysis, Sacramento Avenue/C St and Jefferson Boulevard were identified as focus corridors for bicycle and pedestrian safety, and a review of all unsignalized intersections was conducted to identify the four chosen for this application package. Three out of the four projects have a crash history crossing the mainline. Three out of the four projects are on 5-lane arterials with long distances between signalized crossing opportunities and the fourth is located on a curve with limited sight lines.
Each of the proposed projects in this application package contains recommendations to improve the walking or biking experience crossing the major roadway. The countermeasures used are NS16: Install raised medians / refuge islands and NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features / curb extensions). Specifically, the tools being used for each location are updated crosswalk markings, additional crossing signage, curb extensions (as applicable), center median islands, new ADA curb ramps, and Rectangular Rapid Flashing Beacons (RRFBs).

2. Potential for Proposed Improvements to Address the Safety Issues

Describe the primary causes of the collisions that have occurred within the project limits. Are there patterns in the crash types? Clearly demonstrate the connection between the problem and the proposed countermeasures utilized in the BCR calculations. Depending on the nature of the project, explain why the agency chooses to pursue "Spot location(s)" or "Systemic" improvements.
(Limited to 5,000 characters)

Note: *Safety improvements that do not have countermeasures and crash reduction factors identified in the HSIP Analyzer can be included in the project scope and cost estimate as "Other Safety-Related" improvement; they just won't be added to the project's BCR shown in the application.*

The common thread between the identified project locations is a combination of difficult crossing conditions across arterial roads and a history of pedestrian crossing-related crashes. Based on the similarity of roadway characteristics and identified safety needs, locations included in this application were identified with a systemic approach.
At Sacramento Avenue and Simon Terrace, there was one pedestrian crash where an eastbound driver proceeded straight and hit a southbound pedestrian crossing Sacramento Avenue. There were no relevant crashes at Sacramento Avenue and Solano Street; however, this location is similar to the Simon Terrace location in that it is a 5-lane crossing with long distances to the nearest signalized crossing, and trip generators and attractors on both sides of the street.
At Jefferson Boulevard and 11th Street, there was one pedestrian crash where a southbound driver proceeded straight and hit a westbound pedestrian crossing Jefferson Boulevard. At C Street and 6th Street, there was one pedestrian crash where an eastbound driver making a right turn hit a pedestrian entering traffic.
The proposed treatments at each of these locations are expected to reduce the type of collisions described above by increasing the visibility of the crossing pedestrian and alerting the driver of the pedestrians' presence. For the Jefferson Boulevard and C Street projects, the crossing distance will be shortened via the construction of curb extensions. This will reduce the exposure experienced by each pedestrian, while also visually narrowing the roadway to help reduce speeding. For the two Sacramento Avenue locations, sidewalk and curb ramps improvements will be made to the north side of the street to ensure safe access to the crossing locations.
The presence of RRFBs at each location will provide increased yielding and stopping by drivers. Because they remain dark unless

activated, RRFBs reduce driver habituation through overexposure. By using a similar treatment at each of these locations, the City is taking steps towards systemic improvements throughout the area.
At Jefferson and 11th Street, Sacramento Avenue and Simon Terrace, and Sacramento Avenue and Solano Avenue, pedestrian refuge islands will also be employed because of the number of lanes being crossed. This countermeasure is well-suited to these conditions, as the presence of the center-turn lane facilitates the construction of an island without having to alter through-lanes, and has substantial benefits in terms of both pedestrian safety and comfort. Pedestrian islands allow people to cross the street as two discrete motions, where they only need to account for one direction of traffic at a time. This facilitates easier judgment of gaps in traffic, and provides similar traffic calming effects to the curb extensions due to visual narrowing.

3. Crash Data Evaluation

What is the source of the crash data? For each countermeasure, describe how the influence areas and the limits of the crash data were established to ensure only appropriate crashes were included in the Collision Diagrams, Collision Lists and used in the BCR calculation. (Limited to 5,000 characters)

Note: *If the project includes multiple locations and multiple countermeasures, group the locations so that within each group, the same countermeasures apply to all locations and their crash data. Describe the location groups. These location groups must be consistent with the grouping in using the HSIP Analyzer.*

Crash data used for project and countermeasure selection was provided by the City of West Sacramento Police Department, for the five year period spanning September 1, 2012-August 31, 2017. Given that all of these locations are unsignalized intersections, crashes were selected based on being within 250' of the intersection. Additionally, crashes were filtered to only include those involving non-motorized traffic crossing in the direction of the proposed improvements (i.e., across the arterial street). This crash identification method was used for all of the location groups in this application.
In addition to the crash history described in detail for the previous question, there were pedestrian or bicycle crashes at two of the locations that would not be explicitly addressed by the proposed treatment but are still worth noting to indicate the potential use of these improvements.
Sacramento Avenue and Simon Terrace saw a crash involving a pedestrian crossing Simon Terrace and a northbound driver making a left turn from Sacramento Avenue.
Jefferson Boulevard and 11th had a crash involving a northbound bicyclist proceeding straight through the intersection and an eastbound driver making a left turn.
Sacramento Avenue and Solano Avenue had a bicycle crash involving a southbound, right-turning driver and a westbound bicyclist proceeding straight.

4. Prior Attempts to Address the Safety Issue

List all other projects/countermeasures that have been (or are being) deployed at this location. Applicants must identify all federal funds that have been used or approved within or directly adjacent to the proposed project limits within the last 5 years. (HSIP funding cannot be used to construct the same general type of countermeasures within the same limits within 5 years to ensure agencies do not apply the same Crash Reduction Factors to the same crashes)

For projects proposing high cost improvements/countermeasures such as shoulder widening and horizontal/vertical realignments, applicants must document that they have installed and monitored low-cost improvements which have not adequately addressed the safety issue ("**incremental approach**"). (Limited to 5,000 characters)

Prior attempts to improve pedestrian crossing safety have not been made at these locations. A standard marked crosswalk as a standalone treatment would not be adequate at any of the location given the 5-lane configuration or the presence of a significant horizontal curve. The proposed treatments of high-visibility marked crosswalks, center refuge islands, and RRFBs will provide safe and comfortable crossing opportunities for all users.

5. Other Comments

Explain here if this project requests any exceptions to the rules (such as "PE no more than 25%", "ROW no more than 10%" and "CE no more than 15%" rules), or if you have any other comments. (Limited to 5,000 characters)

As noted in the calculator file, this proposal requests an exception to the 15% of cost rule for NS16: Install raised medians / refuge islands. While this treatment does not comprise a substantial portion of the costs in this application, it provides dramatic additional safety

benefits for the proposed locations. The estimated BCR for this countermeasure across the proposed projects is 66.1. The combination of these treatments will be the most effective for improving pedestrian safety at the locations that have been selected for pedestrian islands.

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III. Project Cost, Safety Countermeasures and Benefit Cost Ratio (BCR)

Please transfer the below from the HSIP Analyzer. Please make sure you have reviewed the HSIP Analyzer instructions and completed the HSIP Analyzer correctly.

For some funding set-asides, only the project cost information is required. Please review the Application Form Instructions for details.

Total Project Cost
$704,200

HSIP Funds Requested
$633,780

Project's Maximum Federal Reimbursement Ratio (e.g. enter 90 for 90%)
90%

Countermeasures

Number of Countermeasures Utilized (Max 3): 2

Countermeasure No. 1	NS16: Install raised medians / refuge islands (NS.I.)
Countermeasure No. 2	NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features / curb-extensions)

Project Benefit	Benefit Cost Ratio (BCR)
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IV. Implementation Schedule (See Application Form Instructions)

The local agency is expected to deliver the project per Caltrans Local Assistance Safety Program Delivery requirements.
In order for the milestones to be calculated correctly, all fields need to be filled in. For steps that are not applicable, enter "0".

Target Date for the Project's Amendment into the FTIP:	01/01/2019	
Time for agency to internally staff project and request PE authorization:	4	Month(s)
Typical time for Caltrans and FHWA to process and approve PE authorization:	2	Month(s)
Proposed PE Authorization Date:	07/01/2019	(PE Authorization Delivery Milestone)
Will external consultants be required to complete the PE phase of this project?	Yes	
Additional time needed to the Delivery Process for hiring PE consultant(s):	6	Month(s) (0 - 6)
Time to prepare environmental studies request:	1	Month(s)
Time to complete CEQA/NEPA studies/approvals:	1	Month(s)
See PES Form in the LAPM for Typical studies and permits		
Time to complete the Right of Way Acquisition (federal process):	0	Month(s)
Plan on 18 months minimum for federal process including a condemnation		
Time to complete final PS&E documentation:	6	Month(s)
Other:	0	Month(s)
Expected Completion Date for the PE Phase:	09/01/2020	
Time for agency to request CON authorization:	4	Month(s)
Typical time for Caltrans and FHWA to process and approve CON authorization:	3	Month(s)
Proposed CON Authorization Date:	04/01/2021	(CON Authorization Delivery Milestone)
Time included for the agency's workload-leveling or construction-window needs:	1	Month(s)
Time to award contract with CON contractor (following the federal process, including Board/Council approval, advertise, award, execute and mobilize):	5	Month(s)
Time to complete construction:	6	Month(s)
Time included for closing the CON contract:	2	Month(s)
Other:	0	Month(s)
Expected Completion Date for the CON Phase:	06/01/2022	
Time to complete the project close-out process:	1	Month(s)
Typical time for Caltrans and FHWA to process and approve project close-out:	3	Month(s)
Expected Completion Date for the project Close-Out:	10/01/2022	(Close-Out Delivery Milestone)

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V. Application Attachments (See Application Form Instructions)

Please attach all files as needed. Note: files may not be attachable if file is open. Close before attach.

1. Engineer's Checklist (Required for all projects) 03 - Engineers Checklist - Attachment 1.pdf	View Attachment **Remove Attachment**
2. Vicinity map/Location map (Required for all projects) 03-WestSacramento-03_Map.pdf	View Attachment **Remove Attachment**
3. Project maps/plans showing existing and proposed conditions (Required for all projects) 03-WestSacramento-03_Plans_NoMap.pdf	View Attachment **Remove Attachment**
4. Pictures of Existing Condition (Required for all projects) 03-WestSacramento-03Photos.pdf	View Attachment **Remove Attachment**
5. HSIP Analyzer (Required for all projects) 03-WestSacramento-03Calc.pdf	View Attachment **Remove Attachment**
6. Collision diagram(s) (Required for this project) 03_WestSacramento_03_CrashDiagrams.pdf	View Attachment **Remove Attachment**
7. Collision List(s) (Required for this project) 03_WestSacramento_03_CrashList.docx	View Attachment **Remove Attachment**
8. Warrant Studies (Not required for this project)	**Attach**
9. Letter/email of Support from Caltrans (No SHS involved - not required for this project)	**Attach**
10. Additional narration, documentation, letters of support, etc. (Optional)	**Attach**

Save and Submit