PROJECT STUDY REPORT-
PROJECT DEVELOPMENT SUPPORT (PSR-PDS)
(Corridor Improvements)

On Route 51, In Sacramento City and between J Street and Just North of Arden Way

I have reviewed the information contained in this PSR-PDS requesting Programming for Capital Support (Project Approval and Environmental Document Phase) in the 2016 STIP and find the data to be complete, current and accurate.

APPROVAL RECOMMENDED:
CLARK A. PERI
Project Manager

MARLÓN FLOURNOY
Deputy District Director, Planning, Local Assistance, and Sustainability, District 3

APPROVED BY:
RAY ZHANG
Acting District Director, District 3

Date 6-27-17
Date 6/29/17
Date 6/29/17
Vicinity Map

LOCATION MAP
BUS/CARPOOL, TRANSITION, & AUXILIARY LANES
CAPITAL CITY FREEWAY (SAC-51) PM 1.05 TO 4.4

END PROJECT

BEGIN PROJECT

Sacramento

EA 0H930
This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

[Signature]

REGISTERED CIVIL ENGINEER

6/26/2017

DATE

[Registration Seal]

Tou Y. Vang

No. C73726

Exp. 06/30/17

CIVIL

STATE OF CALIFORNIA
1. INTRODUCTION

Project Description:
This project proposes to make improvements on State Route (SR) 51 in Sacramento County from J Street (PM 1.05) to Arden Way (PM 4.4). Proposed work includes extending the Bus/Carpool lanes, constructing auxiliary lanes at various locations, improving ITS elements, constructing a new Class I bike path on the American River Bridge, and widening or replacing related structures within the project limits to accommodate the mainline widening.

<table>
<thead>
<tr>
<th>Project Limits</th>
<th>District 03 - SAC - 51 – PM 1.05/ 4.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Alternatives</td>
<td>3</td>
</tr>
<tr>
<td>Current Capital Outlay Support Estimate for PA&amp;ED</td>
<td>$12,400,000</td>
</tr>
<tr>
<td>Current Capital Outlay Construction Cost Range</td>
<td>$350,000,000 to $400,000,000</td>
</tr>
<tr>
<td>Current Capital Outlay Right-of-Way Cost Range</td>
<td>$14,000,000 to $18,000,000</td>
</tr>
<tr>
<td>Funding Source</td>
<td>STIP, Federal, Local, and Other</td>
</tr>
<tr>
<td>Type of Facility</td>
<td>Freeway</td>
</tr>
<tr>
<td>Number of Structures</td>
<td>8 Bridge Structures, 2 Pump Plants</td>
</tr>
<tr>
<td>Project Development Category</td>
<td>2A</td>
</tr>
</tbody>
</table>

The remaining capital outlay support, right-of-way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. Either a project report or a supplemental PID following the format of a PSR will serve as the programming document for the remaining components of the project. A project report will serve as approval of the “selected” alternative.

2. BACKGROUND

Within the City of Sacramento, SR 51 begins at the SR 51/US 50/SR 99 interchange and continues to the SR 51/I-80 junction. It serves multiple communities within Sacramento County including the City of Sacramento, Arden-Arcade, Fair Oaks, McClellan, North Highlands, and Carmichael communities. It also provides connectivity to local roads, transit, rail, SR 99, SR 160, US 50 and I-80 via local roads and freeways. It is designated a freeway and is included in the National
Highway System and Strategic Highway Network. SR 51 is also a part of the Surface Transportation Assistance Act (STAA) National Network, which permits larger trucks to traverse the route. It provides one of the few American River crossings in the Sacramento urban core, which is a main reason it is a heavily traveled facility and experiences significant congestion during peak periods.

In 2013, Caltrans District 3 released the SR 51 Preliminary Investigation (PI). The SR 51 PI addressed the need for operational and capacity improvements for the entire segment of SR 51 in the City of Sacramento. The SR 51 PI Project Development Team (PDT) was composed of representatives from Caltrans District 3 Planning, Right of Way, Environmental, and Traffic Operations, as well as the City of Sacramento, Sacramento Regional Transit District, and the Sacramento Area Council of Governments (SACOG). The PDT identified and prioritized improvement projects based on cost, location, and micro-simulation modeling. Projects proposed in the final SR 51 PI included Bus/Carpool lanes, intelligent transportation system (ITS) upgrades, auxiliary/transition lanes, ramp meters, and the widening of the American River Bridge.

Due to the magnitude of these improvements, right of way constraints, project costs, and local roadway and transit impacts, Caltrans recognizes that multimodal, multijurisdictional solutions would provide the best approach for improving mobility along the corridor. Caltrans has engaged in dialogue with local and regional stakeholders including local and state elected officials and bicycle and pedestrian advocacy groups to discuss the corridor. These discussions will establish the framework for engaging the public to explore multimodal solutions.

3. PURPOSE AND NEED

SR 51/CapCity experiences high travel demand, especially during peak commute periods. This has created severe traffic congestion and impaired mobility along the route. At various locations, travel demand has exceeded highway design capacity, resulting in bottlenecks. These bottlenecks have been created by multiple factors, including high traffic volumes, inadequate weaving and merging areas, lane drops, limited sight distances, inadequate intelligent transportation system (ITS) elements, and incomplete bus/carpool and auxiliary lane networks. Heavy congestion and stop-and-go traffic have contributed to increased vehicle emissions, increased travel costs, and reduced travel time reliability.

Purpose:
The purpose of the proposed project is to:

- Relieve current traffic congestion to improve traffic flow, mobility, and travel time reliability while at the same time reducing vehicle emissions and travel costs.
- Provide a transportation facility that functions for all users including bicyclists, pedestrians, local transit services, and freight.
Need:
The proposed project is needed for the following reasons:
- Recurring travel demand has exceeded the current design capacity of the highway resulting in severe traffic congestion and impaired mobility.
- The transportation network does not include adequate facilities for all modes of transportation.

4. DEFICIENCIES

SR 51 has exceeded its intended capacity, as stated in the 2015 SR 51 Corridor System Management Plan (CSMP), where analysis shows the corridor operating at Level of Service (LOS) F. LOS conditions on SR 51 would continue to be exacerbated in the No Build 20 year scenario. The 2015 Third Quarter District 03 Mobility Performance Report identified SR 51 as having five of the region's top 10 bottlenecks and is the most congested corridor in District 3 in terms of vehicle hours of delay.

Physical constraints such as lane drops, gaps in the Bus/Carpool lane network, incomplete auxiliary lane coverage, and heavy weaving/merging continue to cause minor and major bottlenecks at various locations. There is also a large gap in the bicycle/pedestrian network to cross the American River.

5. CORRIDOR AND SYSTEM COORDINATION

The scope of work in this project has been included in the 2015 Corridor System Management Plan (CSMP). The project is consistent with the strategies and concept facility identified in the CSMP which recognizes the mobility challenges of an incomplete network of Bus/Carpool lanes and incomplete freeway auxiliary lane coverage.

6. ALTERNATIVES

Due to limited availability of information and resources during the Project Initiation Document (PID) phase, it is recommended that all alternatives be evaluated during the Project Approval and Environmental Document (PA&ED) phase to establish which alternative has the best performance and benefit-cost ratio.

Three alternatives were identified for the project: Alternative 1 (No Build), Alternative 2 (Widen Existing SR 51 Alignment), and Alternative 3 (Realignment).
Alternative 1 (No Build)
This alternative does not meet the purpose and need of the project. However, it remains viable and should be advanced to the next phase of the project development process. Further studies and additional data during the PA&ED phase will be needed to validate this alternative.

Alternative 2 (Widen Existing SR 51 Alignment – Programmable Alternative)
This alternative proposes:

- Widen American River Bridge (Br. No. 24-0003) to include 3 mixed flow lanes in each direction, a bus/carpool lane in each direction, an auxiliary lane in each direction, shoulders for part time transit use and a new Class I bike path to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network and the American River Bike Trail.
- Widen Cal Expo Undercrossing (Br. No. 24-0133) to include 3 mixed flow lanes in each direction, an auxiliary lane in each direction, a bus/carpool lane in each direction and shoulders for part time transit use.
- Widen both SR 51/160 Separation (Br. No. 24-0130 R\L) structures to accommodate a bus/carpool lane in each direction.
- Construct a new HOV Flyover structure at Arden Way.
- Add bus/carpool lane in each direction from J Street to Arden Way.
- Add new auxiliary lanes at various locations.
- Replace several overhead structures to accommodate widening of the mainline (B Street Underpass (Br. No. 24-0023), A Street Overcrossing (Br. No. 24-0131), and Elvas Underpass (Br. No. 24-0031)).
- Construct a new retaining wall in front of Exposition Boulevard Overcrossing (Br. No. 24-0285), abutment 3 to accommodate the mainline widening.
- Remove vegetation (including removal of trees) along the mainline and ramps to accommodate widening of the mainline.
- Construct ITS elements at various locations.
- Provide shoulders for part time transit use.
- Provide bike/pedestrian/transit accessibility at onramp and off-ramp terminations.

This alternative could significantly reduce the delay experienced along the corridor by increasing weaving/merging lengths and extending the Bus/Carpool lanes. However, environmental impacts could be significant due to a former landfill that is adjacent to the existing freeway. Right of Way impacts to the McKinley Village development could be significant. Further studies and additional data analysis during the PA&ED phase would be needed to evaluate this alternative. Part Time Shoulder Use or more limited Transit Only Part Time Shoulder Use should also be included for further study in the right of way limited areas of this project. As a minimum Transit Only Part Time Shoulder Use should be considered for the section from E Street to Exposition Blvd. Currently, there is statewide interest in instituting Part Time Shoulder Use to decrease congestion and increase Transit schedule reliability.
Alternatives 3 (Realignment of SR 51)

This alternative proposes:

- Realign SR 51 from B St Underpass across the American River to Exposition Blvd Overcrossing.
- Realignment to include to include 3 mixed flow lanes in each direction, a bus/carpool lane in each direction, an auxiliary lane in each direction, shoulders for part time transit use and a new Class I bike path to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network and the American River Bike Trail.
- Widen Cal Expo Undercrossing (Br. No. 24-0133) to include 3 mixed flow lanes in each direction, an auxiliary lane in each direction, a bus/carpool lane in each direction and shoulders for part time transit use.
- Widen both SR 51/160 Separation (Br. No. 24-0130 R\L) structures to accommodate a bus/carpool lane in each direction.
- Construct a new HOV Flyover structure at Arden Way.
- Add bus/carpool lane in each direction from J Street to Arden Way.
- Add new auxiliary lanes at various locations.
- Replace two overhead structures to accommodate widening of the mainline (B Street Underpass (Br. No. 24-0023) and A Street Overcrossing (Br. No. 24-0131)).
- Construct a new retaining wall in front of Exposition Boulevard Overcrossing (Br. No. 24-0285), abutment 3 to accommodate the mainline widening.
- Remove vegetation (including removal of trees) along the mainline and ramps to accommodate widening of the mainline.
- Construct ITS elements at various locations.
- Provide shoulders for part time transit use.
- Provide bike/pedestrian/transit accessibility at onramp and off-ramp terminations.

This alternative could also significantly reduce the delay experienced along the corridor by increasing weaving/merging lengths and extending the Bus/Carpool lanes. This alternative would improve sight distance around the American River Bridge curve and improve the radius from 1500’ to 5500’. This alternative alignment would most likely be on an aerial structure in order to clear the railroad and the levee at the American River.

However, this alternative will require Right of Way acquisition of land that was formerly used as a landfill which could have significant environmental impacts and mitigation costs. Potential mitigation measures could include removal of waste material from the alignment footprint, drainage improvements, and redesign of the landfill gas collection system. Caltrans and the contractor could also become a party to the liability associated with possible future groundwater contamination if an amendment is made to the City of Sacramento’s existing landfill closure plan to allow for constructing a structure on the former landfill.
Further studies and additional data analysis during the PA&ED phase would be needed to evaluate this alternative. Part Time Shoulder Use or more limited Transit Only Part Time Shoulder Use should also be included for further study in the right of way limited areas of this project. As a minimum Transit Only Part Time Shoulder Use should be considered for the section from E Street to Exposition Blvd. Currently, there is statewide interest in instituting Part Time Shoulder Use to decrease congestion and increase Transit schedule reliability.

7. **RIGHT-OF-WAY**

**Utilities:**
Overhead electric and communication lines could require relocation. The project site review revealed 13 SMUD transmission poles that will need to be relocated. Widening and replacement of bridge structures will require positive location of underground utilities.

**Railroad:**
Union Pacific Railroad (UPRR) has two structures within the project limits (B St. Underpass (Br. No. 24-0023) and Elvas Underpass) that will need to be replaced with longer spans. Construction and Maintenance Agreements, Right of Way Agreements for engineering, Right of Way Agreements for flagging, easements, and California Public Utilities Commission applications will be required for each location.

**Acquisition:**
This project will require full and partial acquisition of commercial, residential, industrial, and special use properties. There is local infrastructure that will require relocation, along with relocation of businesses and residential residences.

8. **STAKEHOLDER INVOLVEMENT**

Due to the magnitude of these improvements, right of way constraints, project costs, and local roadway and transit impacts, Caltrans recognizes that multimodal, multijurisdictional solutions will provide the best approach for improving mobility along the corridor.

Caltrans has been working with the City of Sacramento, Sacramento County, Sacramento Regional Transit, Walk Sacramento, Sacramento Area Bicycle Advocates (SABA), and the Sacramento Metropolitan Air Quality Management District (SMAQMD), as well as local and state elected officials; to identify issues and opportunities within the corridor. The outreach process will educate the public and stakeholders about current conditions, proposed projects, surface concerns about the projects and related issues within the corridor. The community outreach will also collect community members’ input about their experiences in the corridor to help inform this project and future Caltrans and partner projects in the SR 51 Corridor.
Caltrans and agency partners will continue working together during the development of this project. During construction, Caltrans will coordinate with agency partners to design, arrange, and communicate detours. This approach will help Caltrans to understand and limit impacts to adjacent roadways, transit routes, riders, pedestrians, and bicyclists and will help establish safe alternate routes for all modes.

9. ENVIRONMENTAL DETERMINATION/DOCUMENT

In order to identify environmental issues, constraints, costs, and resource needs, a Mini-Preliminary Environmental Analysis Report (Mini-PEAR) was prepared for the project. Potential disposal, staging, and borrow sites will need to be identified in the PA&ED phase for complete environmental review. Field studies were not conducted and technical studies have been deferred to the PA&ED phase. Some key environmental issues and technical studies include biology and cultural surveys, air and noise monitoring, hazardous materials site investigation, floodplain impacts, water quality impacts, Environmental Justice, relocation impacts to residences and businesses, visual impacts, and air quality studies.

The anticipated environmental document for the proposed project is an Environmental Impact Report/Environmental Assessment (EIR/EA); however, depending upon the conclusions of the environmental studies, the document may be elevated to an Environmental Impact Statement (EIS) under National Environmental Policy Act (NEPA). The California Department of Transportation would act as the lead agency in the preparation of a joint NEPA/California Environmental Quality Act (CEQA) environmental document. Caltrans will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U. S. Code 327. The estimated time to obtain environmental approval is 36-48 months (per phase and assuming project scope is complete and final) from the start of environmental studies.

See Mini-PEAR, Attachment F, for more information.

10. COMPLETE STREETS

Pedestrian needs within the Caltrans Right of Way are addressed through upgrades to the sidewalks and curb ramps at interchanges to meet ADA standards.

A new Class 1 bike path adjacent to the Northbound (NB) lanes on the American River Bridge will be constructed to provide a north-south connection for both bicyclists and pedestrians between the City of Sacramento street network and the American River Bike Trail.
11. CLIMATE CHANGE

**Preserve Prime Habitat Species**
This project is located in a highly urban environment with high traffic volumes in both directions and does not provide habitat for the majority of animal species. There does not appear to be any significant wildlife crossing location areas within the project limits. No impacts to habitat connectivity/wildlife crossings are anticipated.

**Protect Wetlands and Surface Water**
The American River and Arcade Creek are located within the project limits. The widening of bridge structures over these water bodies will seek to maintain the integrity and allow for natural functions of the American River and Arcade Creek.

**Preserve Floodplain Functions**
The American River floodplain is located with the project limits. This project will seek to maintain the natural function of the floodplain.

**Reduce Greenhouse Gas Emissions**
The scope of this project will improve operations and reduce traffic congestion that will lead to greenhouse gas reduction. The extension of the Bus/Carpool lanes and allowing Transit Only Part Time Shoulder Use will also promote ridesharing/carpooling and transit use that will reduce vehicle miles travel (VMT).

The Greenhouse Gas (GHG) Analysis is deferred to future Environmental phase (PA&ED) since an in-depth GHG Analysis will be performed with the Environmental Document.

**Manage Heat Island Effects**
This project will decrease the ratio of permeable surfaces to impermeable surfaces by adding Bus/Car lanes in each direction and auxiliary/transition lanes at various locations within the project limits. Highway plantings that are removed or damaged by the construction activities of this project will be replaced to maintain green infrastructure.

12. FUNDING

It has been determined that this project is eligible for Federal-aid funding.

**Capital Outlay Project Estimate**

<table>
<thead>
<tr>
<th>Fund Source</th>
<th>Range of Total Project Outlay Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1</td>
<td>$0</td>
</tr>
<tr>
<td>STIP/Measure/Federal Demo/Tiger Grants</td>
<td></td>
</tr>
<tr>
<td>Alternative 2</td>
<td>$350,000,000 to $400,000,000</td>
</tr>
</tbody>
</table>
The level of detail available to develop these capital outlay project estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds.

**Capital Outlay Support Estimate**

Capital outlay support estimate for programming PA&ED for this project is $12,400,000.

Due to 2016 State Transportation Improvement Program (STIP) cuts, Caltrans is working with Sacramento Area Council of Governments (SACOG) to look for other funding sources. SACOG has agreed to provide $4M of Regional Surface Transportation Program (RSTP) funds to start PA&ED work in the 16/17 fiscal year. District 3 will continue to look for any funds available to complete PA&ED.

### 13. DELIVERY SCHEDULE

<table>
<thead>
<tr>
<th>Segment 1 Project Milestones</th>
<th>Scheduled Delivery Date (Month/Day/Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM PROJECT</td>
<td>M015</td>
</tr>
<tr>
<td>BEGIN ENVIRONMENTAL</td>
<td>M020</td>
</tr>
<tr>
<td>CIRCULATE DED EXTERNALLY</td>
<td>M120</td>
</tr>
<tr>
<td>PA &amp; ED</td>
<td>M200</td>
</tr>
</tbody>
</table>

The anticipated funding fiscal year for construction is 2022/23.


### 14. RISKS

A Risk Register was prepared to identify potential risks that this project may be exposed to.

See Risk Register, *Attachment L*, for more information.

### 15. FHWA COORDINATION

Due to the cost of the project and the substantial improvements proposed, a Stewardship and Oversight Agreement between Caltrans and the Federal Highway Administration will be required. The agreement will be developed during the PA&ED phase of the project.
16. PROJECT REVIEWS

District Traffic Safety Engineer  Mike Hagen  Date 01-13-2016
Project Manager  Clark Peri  Date 07-09-2015
Constructability Review  Jason Miller  Date 12-24-2015

17. PROJECT PERSONNEL

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>Clark Peri</td>
<td>916-825-8168</td>
</tr>
<tr>
<td>Design Engineer</td>
<td>Isam Tabshouri</td>
<td>530-741-5749</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>Tou Vang</td>
<td>530-741-5736</td>
</tr>
<tr>
<td>Right of Way Agent</td>
<td>Wendy Ratajczak</td>
<td>530-741-5136</td>
</tr>
<tr>
<td>Environmental</td>
<td>Ken Lastufka</td>
<td>916-274-0586</td>
</tr>
<tr>
<td>Traffic Operations</td>
<td>Bojana Gutierrez</td>
<td>916-859-7940</td>
</tr>
<tr>
<td>Transportation Planning</td>
<td>Larry Brohman</td>
<td>916-224-0627</td>
</tr>
</tbody>
</table>

18. ATTACHMENTS

A. Location map
B. Typical Cross Section
C. Structure PSR-PDS Cost Estimate for Bridge Structures
D. Structure PSR-PDS Cost Estimate for Pump Plants
E. Right of Way Data (RWDS)
F. Mini-Preliminary Environmental Analysis Report (Mini-PEAR)
G. Initial Site Assessments (ISA)
H. Storm Water Data Report (SWDR) - signed cover sheet
I. Landscape Architecture Assessment Sheet (LAAS)
J. Cost Estimate
K. Programming Sheet
L. Risk Register
ATTACHMENT A
LOCATION MAP
LOCATION MAP
BUS/CARPOOL, TRANSITION, & AUXILIARY LANES
CAPITAL CITY FREEWAY (SAC-51) PM 1.1 TO 4.4

BEGIN PROJECT

END PROJECT

Sacramento

0 0.5 1 2 3 4 5
Miles

To Roseville
To I-80
To South Lake Tahoe
To Stockton
To Lodi
To Jackson
To Woodland
ATTACHMENT B
TYPICAL CROSS-SECTIONS
1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.

ROUTE 51
PM 1.05 to 4,4
Memorandum

To: ISAM TABSHOURI
Advance Planning
District 03

From: JOHN FUJIMOTO
Technical Liaison Engineer
Office of Bridge Design North/Central
Division of Engineering Services

Subject: Structure PSR-PDS Cost Estimate Transmittal

Date: December 3, 2015

File: 03-SAC-51-PM 1.06/4.4
SR51 Widen-J Street to
N/O Arden Way
03-0H930K (0316000033)

In response to the initial October 8, and additional November 4, 5 and 12, 2015, email requests from Tou Vang, District 03-Advance Planning, for a PSR-PDS cost estimate to widen and replace multiple bridges along SR 51, between J Street and north of Arden Way, in the City of Sacramento, the following information is provided.

The estimated structure cost and working days to widen the following bridges, including time related overhead, mobilization and contingencies are as follows:

<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>Bridge Number</th>
<th>Construction Cost</th>
<th>Bridge Removal Cost</th>
<th>Working Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Street UP (Replace)</td>
<td>24-0023</td>
<td>$8,900,000 - $9,700,000</td>
<td>$130,000</td>
<td>270*</td>
</tr>
<tr>
<td>A Street OC (Replace)</td>
<td>24-0131</td>
<td>$3,400,000-$3,700,000</td>
<td>$140,000</td>
<td>440</td>
</tr>
<tr>
<td>Elvas UP (Replace)</td>
<td>24-0031</td>
<td>$15,000,000-$16,500,000</td>
<td>$180,000</td>
<td>400*</td>
</tr>
<tr>
<td>American River Bridge (Widen)</td>
<td>24-0003</td>
<td>$102,400,000-$112,900,000</td>
<td></td>
<td>1100*</td>
</tr>
<tr>
<td>Cal Expo UC (Widen)</td>
<td>24-0133</td>
<td>$350,000-$385,000</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Exposition Blvd. OC (Retaining Wall, Abutment 3)</td>
<td>24-0285</td>
<td>$410,000-$450,000</td>
<td></td>
<td>95</td>
</tr>
<tr>
<td>HOV Flyover Arden Way (New)</td>
<td>TBD</td>
<td>$10,700,000-$11,800,000</td>
<td></td>
<td>260</td>
</tr>
<tr>
<td>SR51/SR160 Separation (Widen)</td>
<td>24-0130RL</td>
<td>$3,500,000-$3,900,000</td>
<td></td>
<td>320</td>
</tr>
</tbody>
</table>

*Excludes fabrication time for structural steel members

The cost and working day estimates are based on the following assumptions:

B Street UP (Replace)
1. The scope of work includes staged construction to replace existing underpass while maintaining rail traffic.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"
a. Two spans of steel through trusses constructed parallel to existing alignment on temporary supports will serve as shoofly while existing underpass is demolished and permanent foundations constructed. Trusses will be slid into final position.
b. Assumed truss width of 45’ to accommodate 3 tracks.

**A Street OC (Replace)**
1. The scope of work includes staged construction to replace existing overcrossing while maintaining local traffic.
   a. Two span overcrossing constructed using precast, prestressed, concrete I-Girders on tall, cantilevered abutments.
   b. 52’ wide typical section width provides for 2-12’ lanes, 2-8’ shoulders and 2-5’ sidewalks.

**Elvas UP (Replace)**
1. The scope of work includes staged construction to replace existing underpass (East and West) while maintaining rail traffic.
   a. Two spans of steel through trusses constructed parallel to existing alignment on temporary supports will serve as shoofly while existing underpass is demolished and permanent foundations constructed. Trusses will be slid into final position.
   b. Assumed truss width of 45’ to accommodate 3 tracks (West structure).
   c. Assumed truss width of 33’ to accommodate 2 tracks (East structure).

**American River Bridge (Widen)**
1. The scope of work includes widening existing bridge to the outside along both sides.
   a. Widen in kind using structural steel girder.
   b. Construction over American River may require work platform/trestle and cofferdams for pier construction.
   c. 177’ wide typical section width provides for 10-12’ lanes, 4-10’ shoulders and separated 10’ bicycle lane.

**Cal Expo UC (Widen)**
1. The scope of work includes widening existing bridge to the outside along both sides.
   b. 177’ wide typical section width provides for 8-12’ lanes, 2-12’ Ramp/Auxiliary lanes and 4-10’ shoulders.

**Exposition Boulevard OC-Abutment 3 (Retaining Wall)**
1. The scope of work includes a retaining wall in front of Abutment 3, to enable widening of mainline SR51.
   a. Assumed wall height of 19’ and 135’ length.
   b. Existing tall cantilevered abutment precludes use of horizontal ground anchors for retaining wall.
   c. Type 7 retaining wall assumed.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"
HOV Flyover Arden Way (New)
1. The scope of work includes new multispans, cast-in-place, prestressed concrete box girder, elevated structure in the median of SR51, crossing Arden Way and Arden Way On-Ramp.
   a. Assumed length 570’.
   b. 59’ wide typical section width provides for 2-12’ lanes, 2-6’ shoulders and 2-10’ shoulders.

SR51/160 Separation (Widen)
1. The scope of work includes widening existing Left (inside widen) and Right (outside widen) bridges.
   b. 141’ wide typical section width provides for 8-12’ lanes and 4-10’ shoulders.

1. Cost estimates are based on dollar per square foot unit cost and include 10% TRO, 10% mobilization and 30% contingency.
2. The construction dollar cost varies due to range in unit cost data.

The above cost should only be used to determine resources required up to the Project Approval and Environmental Document stage and should not be used for programming capital costs.

During the Project Report phase, District should request formal Advance Planning Studies (APS) to better define structure scope and to determine structure cost for capital programming purposes. The APS can consider alternative structure types as well as the merits of Accelerated Bridge Construction (ABC) for this project.

If you have any questions regarding the information provided, please contact me at (916) 227-8757.

c: Eskinder Taddese, Project Liaison Engineer
   Tou Vang, D03-Advance Planning
   Clark Peri, D03-Project Manager

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"
Memorandum

To: ISAM TABSHOURI
   Advance Planning
   District 03

From: JOHN FUJIMOTO
   Technical Liaison Engineer
   Office of Bridge Design North/Central
   Division of Engineering Services

Date: December 18, 2015

File: 03-SAC-51-PM 1.06/4.4
   SR51 Widen-J Street to N/O Arden Way
   Pump Plants
   03-0H930K (0316000033)

Subject: Structure (Pump Plant) PSR-PDS Cost Estimate Transmittal

As a supplement to the previous transmittal of Structure PSR-PDS cost estimate, dated December 3, 2015, to widen and replace multiple bridges along SR 51, between J Street and north of Arden Way, in the City of Sacramento, the following information for impacted pump plants is provided.

The estimated structure cost and working days to modify or replace the following pump plants, including time related overhead, mobilization and contingencies are as follows:

PM 1.06 to 4.4

<table>
<thead>
<tr>
<th>Structure Name</th>
<th>Bridge Number</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Street PP (Modify)</td>
<td>24-0237W</td>
<td>$500,000</td>
</tr>
<tr>
<td>Elvas UP PP (Modify)</td>
<td>24-0031W</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

Total Working Days......200

The above cost should only be used to determine resources required up to the Project Approval and Environmental Document stage and should not be used for programming capital costs.

During the Project Report phase, District should request formal Advance Planning Studies (APS) to better define structure scope and to determine structure cost for capital programming purposes.

If you have any questions regarding the information provided, please contact me at (916) 227-8757.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability"
c: Eskinder Taddese, Project Liaison Engineer
    Tou Vang, D03-Advance Planning
    Clark Peri, D03-Project Manager
    Jack Wheeler, Mechanical
    Michelle Pellegrini, OTA-PDSS
MEMORANDUM

To: ISAM TABSHOURI
Design Engineer
Department of Transportation

Attention: TOU VANG
Project Engineer

Date: December 12, 2016

From: DOUGLAS BORTZ
Acting Assistant Chief
North Region Right of Way
Marysville

File: 03-SAC-51 PM 1.05/4.4
EFIS No.: 03 1600 0033
EA: OH930K

REVISION

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

Project Description: Add Auxiliary and Carpool Lanes and Widen American River Bridge from J St to north of Arden Way

We have completed an estimate of the right of way costs for the above referenced project based on information received from you on December 8, 2016.

Right of Way Lead Time will require a minimum of 48 months after receipt of appraisal maps, utility conflict maps, environmental clearances (HMDD) and Certificate of Sufficiency (COS). A minimum of 33 months prior to certification will be required from submittal of the last map or revision. Shorter lead times will require additional support resources and can adversely affect delivery of Right of Way Certification.

Attachment:
Right of Way Data Sheet

cc. Clark Peri

"Provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability"
1. Right of Way Cost Estimate:

<table>
<thead>
<tr>
<th>Description</th>
<th>Current Value</th>
<th>Future Use</th>
<th>Escalation Rate</th>
<th>Escalated Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Total Acquisition Cost</td>
<td>$12,226,776</td>
<td></td>
<td>5%</td>
<td>$16,098,476</td>
</tr>
<tr>
<td>B. Appraisal Fees Estimate</td>
<td>$95,000</td>
<td>N/A</td>
<td></td>
<td>$95,000</td>
</tr>
<tr>
<td>C. Mitigation Acquisition &amp; Credits</td>
<td>$420,000</td>
<td>5%</td>
<td></td>
<td>$552,996</td>
</tr>
<tr>
<td>D. Project Development Permit Fees</td>
<td>$53,500</td>
<td>5%</td>
<td></td>
<td>$70,441</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$12,795,276</td>
<td></td>
<td></td>
<td>$18,816,914</td>
</tr>
<tr>
<td>E. Utility Relocation (State's Share)</td>
<td>$120,000</td>
<td>5%</td>
<td></td>
<td>$157,999</td>
</tr>
<tr>
<td>(Owner's Share: ___<em>)$10,000</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Relocation Assistance (RAP)</td>
<td>$20,000</td>
<td>5%</td>
<td></td>
<td>$26,333</td>
</tr>
<tr>
<td>G. Clearance/Demolition</td>
<td>$110,000</td>
<td>5%</td>
<td></td>
<td>$144,832</td>
</tr>
<tr>
<td>H. Title &amp; Escrow</td>
<td>$60,000</td>
<td>5%</td>
<td></td>
<td>$78,999</td>
</tr>
<tr>
<td>I. Total Estimated Right of Way Cost</td>
<td>$13,105,276</td>
<td></td>
<td></td>
<td>Rounded $17,225,000 *</td>
</tr>
<tr>
<td>J. Phase 4 estimated expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Railroad</td>
<td>$37,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Contract Work</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Current Date of Project Approval (PA&ED)       | November 1, 2019 |

3. Current Date of Right of Way Certification | August 1, 2022 |

3. Parcel Data:

<table>
<thead>
<tr>
<th>Type</th>
<th>Dual/Appr</th>
<th>Utilities</th>
<th>Railroad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>0</td>
<td>U4 - 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2</td>
<td>Service Contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3</td>
<td>Easements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 4</td>
<td>Rights of Entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>U5 - 7</td>
<td>Clauses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 9</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Excess 1

Areas:

- R/W 504413 SF
- TCE 11000 SF
- Excess 9824 SF
- Mitigation N/A

Mitigation

- Impacts 2
- Parcels 0
- Credits 2
- Env PTE 20

Misc. R/W Work

- RAP Displaces 1
- Clear/Demo 1
- PTE Construct N/A
- Condemnation 4
- USA Involvement No
4. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).
This project will require full and partial acquisition of commercial, residential, industrial, and special use properties. There are local infrastructures which will require relocation, along with relocation of businesses and residential residences, creating one excess land parcel, TCFp's are determined for some locations for the construction of the sound wall. There will be about 30 property management parcels, of which 12 are residential. There will also be 20 PTEs required for mitigation purposes. It is anticipated that rights will be required from State Lands Commission for the widening of the bridge.

5. Are any properties acquired for this project expected to be rented, leased, or sold?

   Yes  X  No

One excess land parcel generated from this project will need to be sold.

6. Are RAP displacements required?

   Yes  X  No

   No. of single family 0  No. of business/nonprofit 1

   No. of multi-family 0  No. of farms 0

   Based on Draft/Final Relocation Impact Statement/Study dated N/A

   X Sufficient replacement housing will be available without last resort housing.

   Sufficient replacement housing will not be available without last resort housing.

7. Is there an effect on assessed valuation?

   Yes  No  X  Not Significant

8. Are there any items of Construction Contract Work?

   Yes  No  X

   There is no Construction Contract Work associated with the project.

9. Are utility facilities or rights of way affected?

   Yes  X  No

   Names of Utility Companies requiring verification only.
   ATT (PacBell), Ca. American Water, Consolidated Communication (Surewest), Comcast, Sac Area Sewer District (SASD), County Sac. Water, Waste Water, and Sewer, Integra Telecom, Level 3, MCI, Net360, Sac Suburban Water District, SMUD (electric), Qwest, XO Comm., and PGE (gas).

   Names of Utility Companies requiring involvements.
   SMUD Oh and ATT Oh (possibly joint poles).

   Additional information concerning Utility Involvement on this project.
   11/2016 Revision - Project site review revealed overhead electrical & communication lines (~PM's 2.0, 2.42, and 2.92) could require involvement depending on clearance issues and scope of bridge widening. Widening of the four railroad bridges (~PM's 1.76, 1.78 & two at 4.2/2.44) would require an extensive number of pos-locs. If bridge decking is also expanded then underground facilities at or near the base of the decks would need pos-locs along with all other utilities crossing transversely throughout the densely populated area. Moving utilities for the railroad requires a very long lead time. State's total cost is based 100% for relocating SMUD's joint 69Kv at $60,000 & 50/50 for relocating ATT's telephone lines at $20,000 near PM 2.0.

10. Are railroad facilities or rights of way affected?

   Yes  X  No

   Union Pacific Railroad has two structures within the project limits that will need to be replaced. Two Construction and Management Agreements, two Right of way agreements for Engineering, two Right of way agreements for Flagging, two easements, and two California Public Utilities Commission applications will be required for the project.

11. Are USA Lands or Rights Affected?

   Yes  No  X  Phase 4 Capital $37,000,000

   There are no Federal Lands on this project.

12. Is an RE Office required for the project?

   Yes  X  No

13. Were any previously unidentified sites with hazardous waste and/or material found?

   Yes  None Evident  X

14. Are there material borrow and/or disposal sites required?

   No  Optional  X  Mandatory

   The contractor will be responsible to acquire, if needed.

15. Are there potential relinquishments and/or abandonments?

   Yes  No  X
16. Are there any existing and/or potential airspace sites?
   Yes [X]  No

17. What type of mitigation is required for the project?
    Permits, mitigation and PTEs will be required for this project. The amounts reflected don't include $100,000 for Archaeological resources and $50,000 for historical resources that are noted in the Environmental PEAR, since they are not 9 phase eligible.

18. Is it anticipated that Caltrans will perform all Right of Way work?
    Yes [X]  No

19. Indicate the anticipated Right of Way schedule and lead time requirements.
    Right of Way Lead Time will require a minimum of 48 months after we receive first appraisal maps, utility conflict maps, necessary environmental clearances and freeway agreements have been approved and obtained. Additionally a minimum of 33 months will be required after receiving the last appraisal map to Right of Way for certification.

20. Assumptions and limiting Conditions: (Check boxes that apply.)
    - Transportation facilities have not been sufficiently designed to determine the damages to any of the remainder parcels affected by the project.
    - Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
    - Design will secure necessary encroachment permits from local agencies.
    - The Arden, Sac 51, and Sac 160 interchange will not require acquisition.
    - It is assumed that acquisition is not possible from Sutter’s Landing (as it was a landfill).
    - It is assumed that acquisition from McKinley Village is for land value only, and no homes will be impacted.
    - This estimate includes 11 temporary construction easements needed to construct sound walls.
    - The 48 month lead time for Railroads begins when they receive structure plan maps and funding.
    - Right of Way Certification is at risk. The current project schedule does not provide Right of Way with sufficient lead time.
    - If the contractor requires a staging area, Standard Specifications (Sections 5-1.32) indicates that the contractor will be responsible for securing locations for staging and storage.
    - There is airspace located between 25th and 30th Street. It is assumed there will be no impacts.

Evaluation Prepared By:
Right of Way: ________________________________  Date 12/1/16
HARDEEP PANNU
Associate Right of Way Agent

Recommended: ________________________________  Date 12/13/16
LEE ANN LAMBIRTH
Senior Right of Way Agent
Project Delivery Branch
North Region

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates and assumptions are reasonable and proper, subject to the limiting conditions set forth, and I find this Data Sheet to be complete and current.

DOUGLAS BORTZ
 Acting Assistant Chief
 North Region Right of Way
 Marysville

Reviewed By
RW Planning & Management: ________________________________  Date 12/13/16
PAUL SLOULIN
ATTACHMENT F
MINI PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT
**Project Information**

<table>
<thead>
<tr>
<th>District: 3</th>
<th>County: SAC</th>
<th>Route: 051</th>
<th>PM: 1.05/4.4</th>
<th>EA: 03-0H930</th>
<th>Proj ID: 0316000033</th>
</tr>
</thead>
</table>

Project Title: State Route 51 Improvements

<table>
<thead>
<tr>
<th>Project Manager</th>
<th>Clark Peri</th>
<th>Phone # 916-825-8168</th>
</tr>
</thead>
<tbody>
<tr>
<td>Env. Senior</td>
<td>Mike Bartlett</td>
<td>Phone # 530-635-3430</td>
</tr>
<tr>
<td>Planner</td>
<td>Dotrik Wilson</td>
<td>Phone # 530-741-4491</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>Tou Vang</td>
<td>Phone # 530-741-4156</td>
</tr>
</tbody>
</table>

**Project Description**

**Purpose and Need**

**Purpose:**
To eliminate the minor and major bottlenecks and fill in a wide gap in the bicycle/pedestrian network of crossings of the American River.

**Need:**
State Route (SR) 51 experiences high levels of congestion due to bottlenecks located at various locations along the route. This has caused demand to exceed capacity resulting in delays and reduced travel time reliability. The bottlenecks are created by multiple factors including high traffic volumes, inadequate weaving and merging areas, lane drops, auxiliary lanes, ITS elements, and incomplete bus/carpool network lanes. A bicycle and pedestrian path across the American River will provide connectivity to the existing bicycle/pedestrian network.

**Description of Work**

This project proposes to make improvements on State Route (SR) 51 in Sacramento County from J Street (PM 1.0) to Arden Way (PM 4.4). Proposed work includes extending the Bus/Carpool lanes, constructing auxiliary lanes at various locations, improving ITS elements, constructing a new Class I bike path on the American River Bridge, and widening or replacing related structures within the project limits to accommodate the mainline widening.

The type of work will include the following:

- Widen American River Bridge to include 4 mixed flow lanes in each direction, a bus/carpool lane in each direction, auxiliary lanes where needed, and a new Class I bike path to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network and the American River Bike Trail.
- Widen Cal Expo Undercrossing to including 4 mixed flow lanes in each direction and a bus/carpool lane in each direction.
- Widen both SR 51/160 Separation structures to accommodate a bus/carpool lane in each direction.
- Construct a new HOV Flyover structure at Arden Way.
- Add bus/carpool lane in each direction from J Street to Arden Way.
- Add new auxiliary lanes at various locations.
- Replace several overhead structures to accommodate widening of the mainline (B Street Underpass, A Street Overcrossing, and Elvas Underpass).
• Construct a new retaining wall in front of Exposition Boulevard Overcrossing abutment 3 to accommodate the mainline widening.
• Remove vegetation (including removal of trees) along the mainline and ramps to accommodate widening of the mainline.
• Construct ITS elements at various locations.
• Provide 12 foot shoulder for part time transit use.
• Provide bike/pedestrian/transit accessibility at onramp and offramp terminations.

Anticipated Environmental Approval

CEQA
EIR

NEPA
Complex EA

Estimated length of time (in months)
36-48 months per phase, assuming project scope is complete and final.

Summary Statement

In order to identify environmental issues, constraints, costs, and resource needs, a Mini-PPEAR was prepared for the project. Potential disposal, staging, and borrow sites will need to be identified in the PA&ED phase for complete environmental review. Field studies were not conducted and technical studies have been deferred to the PA&ED phase.

The anticipated environmental document for the proposed project is a EIR/EA; however, depending upon the conclusions of the environmental studies, the document may be elevated to an EIS under NEPA. The California Department of Transportation would act as the lead agency in the preparation of a joint NEPA/CEQA (National Environmental Policy Act/California Environmental Quality Act) environmental document. Caltrans will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U. S. Code 327. The estimated time to obtain environmental approval is 36-48 months (per phase and assuming project scope is complete and final) from the start of environmental studies.

Special Considerations

Land Use
See Community Impacts.

Community Impacts

J Street to Arden Way

Elvas OC to the American River Bridge (Layouts L-1 to L-4):
- New right of way (ROW) acquisition in both the NB and SB direction
- Impacts to McKinley Village, a new residential development
- Impacts to B Street UP, A Street OC and the Elvas UP (bridge replacement)
- Impacts to two UPRR bridges (bridge replacement); disruption to railroad operations
- Impacts to adjacent land uses from new ROW acquisition, including Sutter's Landing Regional Park
American River Bridge (Layout L-4, L-5):
- Impacts to the American River parkway (recreation, bike path)

American River Bridge to Arden Way (Layout L-5 to L-7):
- Impacts to Tribute Road UC (widen)

Visual/Aesthetics
- Because of freeway widening, structure replacement, sound walls, visual impacts (visual environment, viewer sensitivity) are anticipated. A VIA would be completed during PA&ED. Visual renderings would be needed.

Cultural Resources
- There is a sensitivity of buried archeological deposits along the corridor, especially from J Street to Arden Way.
- Consultation with State Historic Preservation Officer.

Hydrology and Floodplain
- Project may affect the American River, American River floodplain, and Arcade Creek.

Water Quality and Storm Water Runoff
- Water quality and storm water issues throughout corridor.
- Project may affect the American River, American River floodplain, and Arcade Creek.

Paleontology
- Parts of project are within high sensitivity of paleo resources.

Hazardous Waste/Materials
- Asbestos and lead based paint survey to all structures
- Aerially deposited lead (ADL) studies – Site Investigation
- Petroleum hydrocarbons investigations
- ROW entry permits for haz waste surveys/studies
- ROW Appraisal maps, HMDD and cert of sufficiency

Air Quality
- Air monitoring required as part of air quality studies.
- Current traffic information (speeds and volumes) needed for air quality studies.

Noise and Vibration
- Noise monitoring required as part of noise studies.
- Current traffic information (speeds and volumes) needed for air quality studies.

Biological Environment
- Vegetation removal along most of the corridor.
- Effect on terrestrial and aquatic wildlife throughout project limits.
- Impacts to the American River (in water).
- Impacts to the American River parkway (vegetation, wildlife).
The following permits are required:

- NMFS and USFWS Biological Opinions
- RWQCB Section 401 Permit
- USACE Section 404 Permit
- US Coast Guard permit
- CDFW 1600 permit

Section 4(f)
- Sutters Landing Regional Park and the American River Parkway will be affected by the project.
- Potential 4(f) cultural resources.

Disclaimer
This report is not an environmental document of determination. The above information and recommendations are based on the project description provided in this report. The discussion and conclusions provided by this Mini-PEAR are approximate and based on a cursory review of existing records, databases, and mapping tools to estimate the potential for probable environmental effects. The purpose of this report is to provide a preliminary level of environmental analysis to support the Project Initiation Document. Changes in project scope, alternatives, existing environmental conditions, and/or environmental laws or regulations will require a reevaluation of this report.

Preparers included in STEVE.

Approval

[Signature]
Mike Bartlett
Environmental Branch Chief

[Signature]
Clark Peri
Project Manager

12/7/6
Date

12-7-16
Date

[ ] Headquarters Coordinator's Class of Action Concurrence has been obtained (e-mail concurrence is attached) - required for environmental documents only and not CEIs

REQUIRED ATTACHMENTS:
Attachment B: Estimated Resources by WBS Code
Attachment D: PEAR Environmental Commitments Cost Estimate (Standard PSR)

OPTIONAL ATTACHMENTS:
Attachment A: PEAR Environmental Studies Checklist
Attachment C: Schedule (Gantt Chart)
ATTACHMENT G
INITIAL SITE ASSESSMENT
To: DOTRIK WILSON
Associate Environmental Coordinator

From: MARIA ALICIA BEYER-SALINAS
Office of Environmental Engineering South - Hazardous Waste

Subject: Hazardous Waste Initial Site Assessment (ISA)

This project proposes to make corridor improvements on State Route (SR) 51 in Sacramento County from J Street (PM 1.0) to Arden Way (PM 4.4). The proposed work includes extending the Bus/Carpool lanes, constructing auxiliary/transition lanes at various locations, constructing a new Class I bike path on the American River bridge adjacent to the north bound lanes, and widening or replacing related structures within the project limits to accommodate the widen mainline.

The work scope involves but not limited to the following:
- Widen American River Bridge (Br. 24-0003) to including 4 mixed flow lanes in each direction, a bus/carpool lane in each direction, and a new Class I bike path adjacent to the NB lanes to provide a north-south connection for bicyclist and pedestrians between the City of Sacramento street network and the American River Bike Trail.
- Widen Cal Expo Undercrossing (Br. 24-0133) to including 4 mixed flow lanes in each direction and a bus/carpool lane in each direction.
- Widen SR 51/160 Separation structure (Br. 24-0130 L/R) to accommodate a bus/carpool lane in each direction.
- Construct a new HOV Flyover structure at Arden Way (Br. XXX) Add bus/carpool lane in each direction from J Street to Arden Way.
- Add new auxiliary/transition lanes at various locations.
- Replace several overhead structures to accommodate widening of the mainline (B St Underpass Br. 24-0023), A St Overcrossing (Br. 24-0131), Elvas Underpass (Br. 24-0031), Exposition Blvd. Overcrossing (Br. 24-0285).
- Remove vegetation (including removal of trees) along the mainline and ramps to accommodate widening of the mainline.

ISA Conclusions:

I. Petroleum Hydrocarbons
The hazardous waste assessment was limited to a review of the Photolog and records search. Based on this investigation and on the nature of the proposed work scope, hazardous materials are known to exist at the old City former landfill that is currently converted to a regional park.
A segment of the proposed alignment goes over what is called a Waste Management Unit A (WMUA), started in the early 1960's and therefore has no liner to prevent leaching of waste (called "leachate") into groundwater. The Site have an extensive on-going program to monitor and remediate leachate, and also have a clay cap that goes over the top to mitigate for the off-gassing of methane. In addition to the clay there is a flare system to slowly burn off the methane as it is emitted. The current remediation plan and permit does not allow for permanent structures on the cap due to gas and setting issues. The permit has to be modified and Caltrans would become a party to the liability associated with possible future groundwater contamination.

An at-grade option would likely include removal of waste from the portion of the alignment, drainage improvements, and redesign of the landfill gas collection system.

A preliminary site investigation (PSI) needs to be requested by the PE as soon as the project new realignment limits are determined (new R/W) and project phase "0" opens. It takes 4 to 6 months to complete since a task order has to be prepared, approved, and issued to a contractor. The PE to provide this office the R/W revised boundaries for this area entry permit for hazardous waste sampling.

The PSI estimated cost is $40,000.
Hazardous waste supplemental funds during construction $100,000.

As soon as the project development team is aware that it will be necessary to acquire contaminated property for the project and the Chief Engineer's approval is necessary, the Division of Environmental Analysis (DEA) HQ Hazardous Waste Office should be contacted. Discussions with DEA will ensure that the RACP is complete when submitted, thereby expediting the process. The District Project Engineer signs and submits the Form and other supporting information to the DEA, for further review. Allow at least 30 calendar days from DEA's receipt of the fully completed Form for DEA review and approval or denial by the Department's Chief Engineer.

II. Aerially Deposited Lead (ADL)

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of ADL on the state highway system right of way within the limits of the project will be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This Agreement allows such soils to be safely reused within the project limits as long as all requirements of the Agreement are met.

Based on ADL Site investigation conclusions and recommendations of the paved and unpaved median located between post miles (PM) 1.07 and 3.84, the total lead concentrations ranged from less than 5.0 to 2,540 mg/kg with an average concentration of 77 mg/kg total lead and soluble (WET) lead average concentration of 3.4 mg/l upon a 95% Upper Confidence Limit.
(Ref. Task Order No.152, Contract 03A0937, project EA 03-3C0201, July 2007, pg. 12-18).

Based on ADL Site investigation conclusions and recommendations, for segment between PM 4.1 and PM 4.4, the Total Lead concentrations ranged from 2.4 to 870 mg/kg with an average concentration of 73 mg/kg.
(Ref. Task Order No. 56, Contract 03A2132, project EA 03-4F9801, November 2015, pg. 12-16).

Both reports concluded that if the top 0.5 foot of soil were to be removed, the underlying soil, where excavated and managed separately, would not be classified as a California hazardous waste since the predicted WET soluble lead concentrations are less than the STLC value for lead of 5.0 mg/l.
Shoulders to be disturbed have to be analyzed for ADL. A PSI needs to be requested by the PE as soon as the project phase "0" opens. It takes 4 to 6 months to complete since a task order has to be prepared, approved, and issued to a contractor. The PE to provide this office the R/W revised boundaries for this area entry permit for hazardous waste sampling.

The PSI estimated cost is $30,000.

The project use SSP 7-1.02K96)(j)(iii)_earth material containing lead.

III. Yellow and or White Traffic Stripe Removal.
The Contractor is required to properly manage removed stripe and pavement marking and must implement a project specific lead compliance plan prepared by a Certified Industrial Hygienist (CIH) as required by Cal/OSHA.

Use SSP 14-11.12_remove yellow traffic stripe and pavement marking with hazardous waste residue.

Use SSP 36-4__grinding or cold planned the entire pavement surface, and the project will not require the paint or thermoplastic paint to be removed before grinding begins.

Use SSP 84-9.03C__new yellow paints and all other colors of paint.

IV. Treated Wood Waste (TWW).
TWW can occur as post along metal beam guard railing (MBGR), thrie beam barrier, piles, or roadside signs. These wood products are typically treated with preserving chemicals that may be hazardous (carcinogenic) and include but are not limited to arsenic, chromium, copper, creosote, and pentachlorophenol. The Department of Toxics Substances Control (DTSC) requires that TWW either be disposed as a hazardous waste, or if not tested, the generator may presume that TWW is a hazardous waste and must be disposed in an approved treated wood waste facility.

Use SSP 14-11.14_treated wood waste.

V. Asbestos cement pipe.
Disturbance, removal, transportation and disposal of asbestos cement pipe on the ground requires an Asbestos Compliance Plan.

Use N-SSP 14-11.11 ACM__Management of asbestos cement pipe

VI. Asbestos NESHAP Notification.
Per NESHAP regulation, all “rehabilitation, widening, and/or demolition activity” requires written notification even if there is no asbestos present, an asbestos survey should be conducted for all structural demolition or rehabilitation work. The asbestos survey and sampling report should be included in the project’s Information Handout and to be part of their Asbestos NESHAP regulation.

The surveys needs to be requested by the PE as soon as the project phase "0" opens. It takes 4 to 6 months to complete since a task order has to be prepared, approved, and issued to a contractor.
Asbestos containing materials (ACM's) and lead based paint (LBP) surveys are required for:

- American River Bridge (Br. 24-0003)
- Cal Expo Undercrossing (Br. 24-0133)
- SR 51/160 Separation structure (Br. 24-0130 L/R)
- B St Underpass (Br. 24-0023)
- A St Overcrossing (Br. 24-0131)
- Elvas Underpass (Br. 24-0031)
- Exposition Blvd. Overcrossing (Br. 24-0285).

The PSI estimated cost is $28,000.

Use SSP 14-9.02_asbestos NESHAP Notification
Use SSP 14-11.13_disturbance of paint on bridges
Use SSP 14-11.16_management of ACMs in bridges
Use N-SSP 14-11.17_management of ACMs in electrical conduit

If you have any question, please call me at (530) 741-4580.

cc:  Tou Vang - Project Engineer
     Clark Peri - Project Manager
     Mike L. Bartlett – Senior Environmental Plnr
ATTACHMENT H
STORM WATER DATA REPORT – SIGNED COVER SHEET
(03-SAC-51), (PM 1.05/4.4)             Long Form - Stormwater Data Report
(EA 03-OH930K)                       (November 2016)

Dist-County-Route: O3-SAC-51
Post Mile Limits: 1.05/4.4
Type of Work: Corridor Improvement
Project ID (EA): 031500033 (03-OH930K)
Program Identification:
Phase:     ☒ PID  ☐ PA/ED  ☐
PS&E

Regional Water Quality Control Board(s): Central Valley
Total Disturbed Soil Area: 81.4 acres   Post Construction Treatment Area: 17.4 acres
Alternative Compliance (acres):
Estimated Const. Start Date: 4/1/2023   Estimated Const. Completion Date: 10/1/2027
Risk Level:   RL 1  ☐  RL 2  ☐  RL 3  ☒  WPCP  ☐  Other:  ☐
Is the Project within a TMDL watershed?  Yes  ☒  No  ☐
TMDL Compliance Units (acres):
Notification of ADL reuse (if yes, provide date):  Yes  ☐  Date:___________  No  ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Tou Vang, Registered Project Engineer
1-17-2017

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Clark Perl, Project Manager
1-17-17

Jesus N. Gonzalez, Designated Maintenance Engineer, (Acting)
1-23-17

James Williamson, Designated Landscape Architect Representative  Robert A. Funk  1/30/17

Wesley Faubel, District/Regional Design SW Coordinator or Designee

1 of 7
TO: Tou Vang  
FROM: James Williamson  
Unit/Senior: 0301 / Isam Tabshouri  
Project Manager: Clark Peri

DISTRICT: 03  
DATE: 11/14/2016  
EA: 0H830K  
ID: 03160000033

CO: Sac  
RTE: 51  
PM: 1.05/4.4

CONTRACT SEPARATION:  
☐ Roadside work as part of roadway work EA  
☒ Roadside work for roadway project to follow under separate EA


PROJECT: SR 51 Corridor Improvements  
FUNDING SOURCE: STIP/LOCAL  
PROJECT MILESTONE: ☒ PID  ☐ PA&ED  ☐ PS&E

PROJECT COST (In thousands):  
$400,000 (Total District/Structures)

PROJECT DESCRIPTION

This project proposes to make corridor improvements on State Route (SR) 51 in Sacramento County from J Street (PM 1.0) to Arden Way (PM 4.4). Proposed work includes extending the Bus/Carpool lanes, constructing auxiliary/transition lanes at various locations, constructing a new Class I bike path on the American River bridge adjacent to the north bound lanes, and widening or replacing related structures within the project limits to accommodate the widen mainline.

The type of work will include but not limited to the following:

• Widening of the American River Bridge to including 4 mixed flow lanes in each direction, a bus/carpool lane in each direction, and a new Class I bike path adjacent to the NB lanes to provide a north-south connection for bicyclist and pedestrians between the City of Sacramento street network and the American River Bike Trail.
• Widening of Cal Expo Undercrossing to including 4 mixed flow lanes in each direction and a bus/carpool lane in each direction.
• Widening of SR 51/160 Separation structure and Arcade Creek Bridge to accommodate a bus/carpool lane in each direction.
• Construct a new HOV Flyover structure at Arden Way and a new HOV Direct Connector with I-80.
• Add bus/carpool lane in each direction from J Street to I-80.
• Add new auxiliary/transition lanes at various locations.
• Replace several overhead structures to accommodate widening of the mainline (B St Underpass, A St Overcrossing, Elvas Underpass, Exposition Blvd Overcrossing).
• Vegetation removal (including removal of trees) along the mainline and ramps to accommodate widening of the mainline.

This project limits are from J Street (PM 1.05) to just past Arden Way (PM 4.4).

SCENIC HIGHWAY STATUS  
☐ Officially Designated  ☐ Eligible  ☒ Not Designated
(See: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm for Scenic Highway Mapping System)

HIGHWAY PLANTING/IRRIGATION BACKGROUND INFORMATION

LANDSCAPE FREEWAY STATUS  ☒ Yes  ☐ No
WARRANTED HIGHWAY PLANTING  ☒ Yes  ☐ No
(E) H20 & POWER AVAILABLE  ☒ Yes  ☐ No  Where: Throughout corridor
(E) IRRIGATION IMPACTED  ☒ Yes  ☐ No  Where: Throughout corridor
COOP. MAINT. AGREEMENTS  ☐ Yes  ☐ No  - Unknown at this time -
ADJ. TO OUTDOOR ADVERTISING  ☒ Yes  ☐ No

AREA (FT²/ACRE) FOR HIGHWAY PLANTING: 55 Acres
## Erosion Control Background Information

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Disturbance</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Concentrated Flow Areas</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Slope Locations</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Slopes &gt; 2:1</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Area (ft²/Acre) for Erosion Control:** 25 Acres

---

## Mitigation Background Information

**Unknown at this time**

<table>
<thead>
<tr>
<th>Project Biologist</th>
<th>Contact Date: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Reveg. Required</td>
<td>Yes ☐ No ☒</td>
</tr>
<tr>
<td>Visual Impact Mit. Required</td>
<td>Yes ☐ No ☒</td>
</tr>
<tr>
<td>Unit Tasked w/ BIO. Reveg.</td>
<td>Landscape Architecture ☒ Stewardship ☐</td>
</tr>
</tbody>
</table>

**Plant Count for Mitigation Planting:** TBD

---

## Roadside Maintenance Safety Needs

- ☒ Paving of Extended Gore Areas
- ☒ Paving of Narrow Areas
- ☒ Maintenance Vehicle Pullouts (MVPs)
- ☒ Other Slope Paving

(See: [http://www.dot.ca.gov/hq/LandArch/policy/pdf/design_for_safety.pdf](http://www.dot.ca.gov/hq/LandArch/policy/pdf/design_for_safety.pdf) for Roadside Paving Design Memo)

---

## Roadside Vegetation Management Treatment Needs

- ☒ Guardrails and Signs
- ☒ Side Slopes/Embankment Slopes

(See: [http://www.dot.ca.gov/hq/LandArch/roadside/index.htm](http://www.dot.ca.gov/hq/LandArch/roadside/index.htm) for potential treatment measures)

---

## Context Sensitivity

- ☒ It is determined that the project may involve consideration of community and local involvement.
- ☐ No foreseen issues with community and local involvement

(See: [http://www.dot.ca.gov/hq/oppd/context/index.htm](http://www.dot.ca.gov/hq/oppd/context/index.htm) for Context Sensitive Solutions guidance)

---

## Consider Additional Aesthetic Treatment For:

- ☒ Sound Wall
- ☒ Retaining Wall —If Needed—
- ☒ Bridge Structure
- ☒ Other Slope Paving, Contrasting Surface Treatment
HIGHWAY PLANTING COST INFORMATION:
- Highway Planting
- Irrigation
- 3-year Plant Establishment
- Inert Materials

$4,800,000

EROSION CONTROL COST INFORMATION:
- Soil Stabilization (BFM, Hydrosed, Compost, etc.)
- Sediment Control (RECP, Fiber Rolls, etc.)
- Soil Building (Incorporate Materials, Duff, etc.)
- Steep Slope (Wire Blanket, Cellular Confinement, etc.)

$500,000

MITIGATION PLANTING COST INFORMATION:
- Landscape Architecture Tasked Biological Reveg.
- Visual Impact Mitigation Planting

TBD

PREPARED BY: [Signature] DATE: 11/17/2015

CONCURRED BY: [Signature] DATE: 11/17/16
(Project Manager)

APPROVED BY: [Signature] DATE: 11/17/16
(Landscape Architecture or Engineering Services Branch Chief)

Comments:

- Due to time constraints, one alternative was analyzed. This one alternative will give a general cost for highway planting and erosion control that can be applied to all alternatives at this time. All viable alternatives will be analyzed during the Project Report phase.

- A comprehensive corridor master plan should be performed in order to ensure consistency with items including: structures, signage, unique features as well as maintaining general scenic and visual quality. This study should take place as early in the project development phase as possible and should include local stakeholders within the community as well as CT planning and environmental branches. In the absence of this plan, a strategy must be developed consistent with CSS/D policy guidance for maintain visual and scenic corridor context consistency along the route.

- Context sensitive strategies that visually and environmentally integrate the project with the surrounding built or natural environment and/or the specific highway segment must be included. This strategy may include but is not limited to soundwall, bridge, and retaining wall aesthetics.

- The limits of this project contain areas Landscaped Freeway as defined in Chapter 6, Title 4 of the California Code of Regulations.
- Per the Chapter 29 of the Project Development Procedures Manual (PDPM), highway planting which is damaged or removed by State highway construction activity will be replaced; including irrigation modification or replacement.
- Replacement highway planting projects related to parent highway construction projects must be programmed and funded as part of the parent project. The cost (capital and support) for the planting should be identified in the PSR for the parent project.
- Caltrans "Separate Contract Policy" states any replacement highway planting with a cost greater than $200,000 must be accomplished by separate contract. As stated above this highway planting project must be funded by the parent highway construction project and must be under contract within a two-year period following the completion of the highway project that damaged or removed the planting.

- During the Project Development and Environmental Document Phase, Landscape Architecture will work closely with the Caltrans Environmental Branch to determine if and how visual and biological mitigation will be performed.
PROJECT DESCRIPTION:

Limits: On Route 51, In Sacramento County Between J Street And Arden Way

Proposed Improvement (Scope): Construct HOV and Transition/Auxiliary Lanes

Alternate: Alternative 2 (Widen Existing Freeway)

SUMMARY OF PROJECT COST ESTIMATE

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL ROADWAY ITEMS</td>
<td>$233,000,000</td>
</tr>
<tr>
<td>TOTAL STRUCTURE ITEMS</td>
<td>$ 52,000,000</td>
</tr>
<tr>
<td>TOTAL ENVIRONMENTAL MITIGATION ITEMS</td>
<td>$</td>
</tr>
<tr>
<td>SUBTOTAL CONSTRUCTION COSTS</td>
<td>$285,000,000</td>
</tr>
<tr>
<td>TOTAL RIGHT-OF-WAY ITEMS</td>
<td>$ 15,000,000</td>
</tr>
<tr>
<td>TOTAL PROJECT CAPITAL OUTLAY COSTS</td>
<td>$300,000,000</td>
</tr>
</tbody>
</table>
I. ROADWAY ITEMS

<table>
<thead>
<tr>
<th>Average Cost per Lane Mile</th>
<th>Number of Lane Miles</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16,650,000</td>
<td>X 14</td>
<td>$233,000,000</td>
</tr>
</tbody>
</table>

Explanation:
The work included in the average cost per lane mile include: roadway excavation, hot mix asphalt (Type A), rubberized hot mix asphalt (Type O), class 2 aggregate base, overhead and roadway signs, signing and striping, traffic management plan, traffic electrical, traffic control system, retaining and sound walls, drainage work, storm water related work, work on local road interchanges, highway planting, and erosion control.

TOTAL ROADWAY ITEMS $233,000,000

II. STRUCTURES ITEMS

<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>Bridge Number</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Street UP (Replace)</td>
<td>24-0023</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>A Street OC (Replace)</td>
<td>24-0131</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>Elvas UP (Replace)</td>
<td>24-0031</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>Cal Expo UC (Widen)</td>
<td>24-0133</td>
<td>$500,000</td>
</tr>
<tr>
<td>Exposition Blvd OC (Retaining Wall @ Abutment 3)</td>
<td>24-0285</td>
<td>$500,000</td>
</tr>
<tr>
<td>HOV Flyover Arden Way (New)</td>
<td>TBD</td>
<td>$12,000,000</td>
</tr>
<tr>
<td>SR 51/SR 160 Separation (Widen)</td>
<td>24-0130R/L</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>C Street Pump Plant (Modify)</td>
<td>24-0237W</td>
<td>$500,000</td>
</tr>
<tr>
<td>Elvas UP Pump Plant (Modify)</td>
<td>24-0031W</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

Explanation:

TOTAL STRUCTURE ITEMS $52,000,000
III. ENVIRONMENTAL MITIGATION

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Item Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Mitigation</td>
<td>_____</td>
<td>_____ X</td>
<td>= ________</td>
</tr>
</tbody>
</table>

Explanation:

TOTAL ENVIRONMENTAL MITIGATION ITEMS $__________

IV. RIGHT-OF-WAY ITEMS

A. Acquisition, including excess lands, damages to remainder(s) and Goodwill $14,950,000

B. Utility Relocation (State share) $50,000

Anticipated Date of Right-of-Way Certification September 1, 2023
(Date to which values are escalated)

Explanation:

TOTAL RIGHT-OF-WAY ITEMS $15,000,000
PROGRAMMING SHEET

EFIS ID: 0316000033 EA:03-OH930 County: SAC Route: 051 PostMile: 1.05/8.90

Project Manager: PERR, CLARK A PM Assistant: LEWIS, LAURA E Project Nickname: SR 51 Corridor Improvements

Project Description - Long: J Street to I 80 Work Description - Long: Corridor Improvements

PPNO: 6409 Program: STIP Open for Time: Yes Subprogram: STIP - Other Programs

No STIP 2023

Program:

RTP:

PROGRAM YR: 10 Yr SHOPP:

AADD:

J Street to I 80 Project Description - Long:

Work Description - Long:

Corridor Improvements

STIP K-PHASE

Capital Cost Estimates

<table>
<thead>
<tr>
<th>Phase</th>
<th>PRIOR</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Future</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACT $</td>
<td>ETC</td>
<td>(4.20%)</td>
<td>(4.20%)</td>
<td>(4.20%)</td>
<td>(4.20%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15,543</td>
<td>25,174</td>
<td>20,886</td>
<td>61,603</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>511</td>
<td>1,879</td>
<td>4,057</td>
<td>6,448</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>76,989</td>
<td>76,989</td>
</tr>
</tbody>
</table>

TOTAL SUPPORT COSTS: 168,499 42.62%

TOTAL PROJECT COSTS: 583,828

Comments:
ATTACHMENT L
RISK REGISTER
**EA 03-0H930 03-0H930 SR 51 Corridor Improvements 0316000033 - ACTIVE RISK REGISTER**

**Risk 001 Cultural Resources**

RBS: EnvironmentalOwner: Ken Lastufka  
Updated: 1-26-2016

**Description:** Project located in extremely disturbed area of mixed residential, commercial, and recreational development. Construction may uncover the presence of surface and/or buried archaeological resources. As a result, there is a need to conduct additional surveys/excavations, which will lead to additional resources.

**Status:**

**Response Options:** If cultural resources are discovered, a Phase 1 identification Study, Phase II Evaluation Study, and/or Finding of Effect and memorandum of Agreement may be required. These studies would require additional staff resources.

**Impacts:**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>40%</td>
<td>$50,000,000</td>
</tr>
<tr>
<td>Most Likely</td>
<td>59%</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>Pessimistic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessment Notes:**  
- The western slope abutting SR 51 southbound was a previous landfill.  
- CT r/w versus McKinley Village r/w and completed housing on SR 51 northbound, north of E Street may be an issue.

**Risk 002 Environmental assessment, resource estimate**

RBS: EnvironmentalOwner: Ken Lastufka  
Updated: 1-26-2016

**Description:** As a result of further analysis, there is a change in project scope, which will lead to additional resources.

**Status:** Assume scope won't change or will decrease

**Response Options:** Keep scope change to a minimum.

**Impacts:**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>40%</td>
<td>$50,000,000</td>
</tr>
<tr>
<td>Most Likely</td>
<td>59%</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>Pessimistic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessment Notes:**  
- The scope is likely to change due to the funding availability.  
- There are still many alternatives that are being discussed with respect to the bridge crossing.
the American River

**Risk 003**  Inadequate staff/resource availability

RBS: Environmental Owner: Ken Lastufka  Updated: 1-19-2016

Description: There may not be enough experienced CT staff to conduct the studies and write up the necessary reports.

Status: Assume there will be enough CT staff to conduct studies and complete write ups.

Response Options: Insure staff levels are adequate, consider use of consultants.

<table>
<thead>
<tr>
<th></th>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>20%</td>
<td>$25,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>Most Likely</td>
<td>39%</td>
<td>$50,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Assessment Notes:**

**Risk 004**  Delay of RW Certification due to late delivery of final structures

RBS: R/W  Owner: Wendy Ratajczak  Updated: 1-21-2016

Description: Due to a lack of a standardized template for preliminary plan review and flagging and a lack of RW Lead Time, RW Certification may be delayed. RR review of the final structure plans typically takes 18 months. Final Structures PS&E Package needs to be delivered to RW 18 months prior to M410. If final structure plans are not available for delivery to the Railroad 18 months prior to RW certification, there may be schedule delays and additional costs.

Status: Final Structures Design Plans will be delivered to RW 18 months prior to RW Certification.

Response Options: Accept. Structures Design should provide final design plans to RW 18 months prior to RW Certification.

<table>
<thead>
<tr>
<th></th>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>60%</td>
<td>$25,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>Most Likely</td>
<td>100%</td>
<td>$50,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Assessment Notes:** Very High Probability is based on current schedule. RR lead time is based on past experience.

**Risk 005**  Additional RW requirements

RBS: R/W  Owner: Wendy Ratajczak  Updated: 1-21-2016

Description: Widening of the two railroad bridges would require extensive involvement. If bridge decking is also expanded then underground utilities at or near the base of the decks would need pos-loct along with all other utilities crossing transversely throughout the densely populated area. Relocating utilities for
the railroad would require a very long lead time and this could cause schedule delays and additional costs.

Status:
Response Options: Communicate early and often with design.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>60%</td>
<td>$50,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>Most Likely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>100%</td>
<td>$100,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

Assessment Notes:

**Risk 006** Condemnation and leadtime

RBS: R/W  Owner: Wendy Ratajczak  Updated: 1-21-2016

Description: Due to the extensive involvement concerning full and partial acquisitions of commercial, residential, industrial, special use properties, and Permit to Enters, including relocation of businesses and residences, there is a possibility property owners may object to the project or appraisal findings and resist acquisition. This could delay the project schedule and increase costs.

Status:
Response Options: Communicate with the public in the project development stage.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>20%</td>
<td>$25,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>Most Likely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>39%</td>
<td>$50,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

Assessment Notes:

**Risk 007** Certification #3W is rejected

RBS: R/W  Owner: Wendy Ratajczak  Updated: 1-21-2016

Description: Certification #3W allows for bids to be opened and contract awarded. However, they must be approved by HQ ROW and FHWA. If the unsecured parcels do not sufficiently allow for construction or if the reason for a cert 3W does not meet standards than it may be rejected causing further schedule delays.

Status:
Response Options:
### Risk 008 Railroad Involvement

**RBS:** R/W  
**Owner:** Wendy Ratajczak  
**Updated:** 1-20-2016

**Description:** As a result of extensive railroad involvement, project delays may occur, which would lead to additional costs and delayed milestones.

**Impact:**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>20%</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>Most Likely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>39%</td>
<td>$50,000,000</td>
</tr>
</tbody>
</table>

**Assessment Notes:**

---

### Risk 009 Excess Land and Relinquishment

**RBS:** Surveys  
**Owner:** Donald Vaughan  
**Updated:** 1-12-2016

**Description:** As a result of the need for excess lands and potential relinquishment's, schedule delays and increased costs may occur, which would lead to missed milestones and be [http://ctrprod.com/main/ctr.php#riskAssessmentCtg](http://ctrprod.com/main/ctr.php#riskAssessmentCtg) overruns.

**Impact:**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>20%</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>Most Likely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>39%</td>
<td>$50,000,000</td>
</tr>
</tbody>
</table>

**Assessment Notes:**
Risk 010  Utility Potholing

RBS: Surveys  Owner: Donald Vaughan  Updated: 1-12-2016

Description: As a result of anticipated potholing for utilities, more extensive potholing may be needed, which would lead to the need for additional resources.

Status:

Response Options:

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Probability</th>
<th>Costs (dollars)</th>
<th>Delays (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td>Support</td>
</tr>
<tr>
<td>Optimistic</td>
<td>20%</td>
<td>$25,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>Most Likely</td>
<td>39%</td>
<td>$50,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

Assessment Notes:

Prepared by Laura Lewis