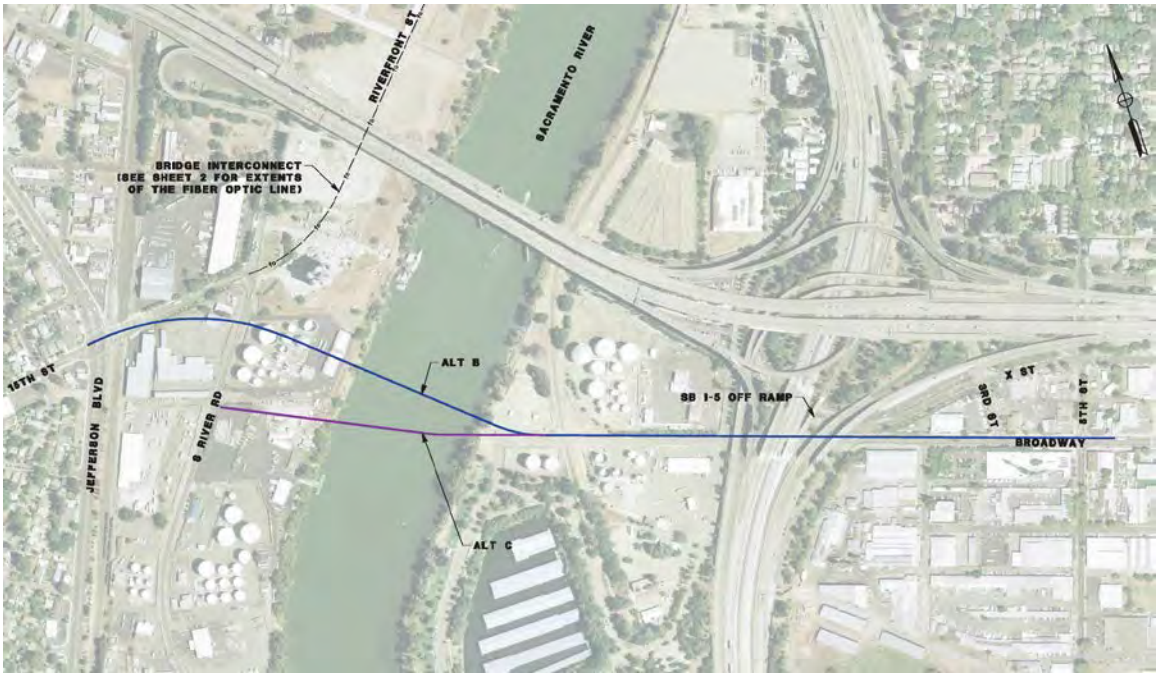


Visual Impact Assessment

Broadway Bridge Project

California Department of Transportation, District 3,
City of West Sacramento and City of Sacramento, California

Federal Project No.: TGR2DGL 5447(043)

Prepared by: ICF
Jennifer Ban, Project Landscape Architect
CA License # 5155

Prepared for: City of West Sacramento, City of Sacramento, and Caltrans

March 2020

Statement of Compliance: Produced in compliance with National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements, as appropriate, to meet the level of analysis and documentation that has been determined necessary for this project.

TABLE OF CONTENTS Page

LIST OF FIGURES

Page

LIST OF KEY VIEWS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

AASHTO	American Association of State Highway and Transportation Officials
BMPs	best management practices
BRWL	blue-rich white light lamps
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CVFPB	Central Valley Flood Protection Board
FHWA	Federal Highway Administration
freeways	I-5, Business I-80/US 50, and the I-5/Business I-80/US 50 interchange
I-5	Interstate 5
I-80	Interstate 80
K	Kelvin
LED	light-emitting diode
LID	low impact development
MTP/SCS	*Metropolitan Transportation Plan/Sustainable Communities Strategy*
NEPA	National Environmental Policy Act
NES	Natural Environment Study
OHWM	ordinary high water mark
PG&E	Pacific Gas and Electric
river	Sacramento River
RSP	Rock slope protection
SACOG	Sacramento Area Council of Governments
SEL	sound exposure level
TCE	temporary construction easement
TIGER	Transportation Investment Generating Economic Recovery
TMP	Transportation Management Plan
TMP Guidelines	Caltrans' Transportation Management Plan Guidelines
US 50 bridge	existing Pioneer Bridge
USC	United States Code
USCG	United States Coast Guard
VAU	visual assessment unit
VIA	Visual Impact Assessment

VISUAL IMPACT ASSESSMENT
Broadway Bridge Project

I. PURPOSE OF STUDY

The purpose of this Visual Impact Assessment (VIA) is to document potential visual impacts caused by the proposed project and propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the project area, measuring the amount of change that would occur as a result of the project, and predicting how the affected public would respond to or perceive those changes.

II. INTRODUCTION

The City of West Sacramento, in cooperation with the City of Sacramento and the California Department of Transportation (Caltrans), proposes to construct a new bridge over the Sacramento River south of the existing Pioneer Bridge (US 50 bridge) to provide local interconnectivity across the river and between neighborhoods. The new connection would serve multiple modes of transportation and comply with current American Association of State Highway and Transportation Officials (AASHTO), Caltrans, and local agency design standards.

The project is subject to state and federal environmental review requirements because of use of 2014 Transportation Investment Generating Economic Recovery (TIGER) discretionary grants funds from the Federal Highway Administration (FHWA). Accordingly, project documentation is being prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City of West Sacramento is the lead agency under CEQA, with the City of Sacramento as a responsible agency, and Caltrans is the lead agency under NEPA. The FHWA's responsibilities for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project will be carried out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327 and the Memorandum of Understanding dated December 23, 2016, executed by FHWA and Caltrans.

This project is included in the Sacramento Area Council of Governments (SACOG) 2016 *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS).

The project also is identified in the 2003 *Sacramento Riverfront Master Plan*, the 2011 *Sacramento River Crossings Alternatives Study*, the 2014 *Pioneer Bluff Transition Plan*, the 2015 *Broadway Bridge Feasibility Study*, the West Sacramento *General Plan 2035*, the I-5 Subregional Corridor Mitigation Program, and two plans currently being prepared–West Sacramento's *Pioneer Bluff and Stone Lock Reuse Master Plan* and Sacramento's *West Broadway Specific Plan*.

Project Location

The project would be located over the Sacramento River between the cities of West Sacramento and Sacramento, approximately 1,000 feet south of the existing Pioneer Bridge (Figure 1). The project limits include the combined area of each of the proposed project alternatives. In general, the project limits start in West Sacramento, along 15th Street at Jefferson Boulevard, continuing east and over the Sacramento River into the City of Sacramento along Broadway to the 5th Street intersection. The project limits also extend along Jefferson Boulevard approximately 1,300 feet south of the 15th Street intersection to Alameda Boulevard, along South River Road approximately 1,300 feet south and 650 feet north of

15th Street, along Marina View Drive approximately 400 feet south of Broadway, along Front Street approximately 350 feet north and south of Broadway, along 3rd Street approximately 350 feet north of Broadway to X Street, and along 5th Street approximately 200 feet north and south of Broadway. The project limits include proposed improvements to the northbound Interstate 5 (I-5) off-ramp to Broadway.

The limits of the installation of a proposed fiber optic line that would be placed in West Sacramento to connect communications of Broadway Bridge with the proposed replacement for the I Street Bridge–the future connection over the river between C Street and Railyards Boulevard–and the existing Tower Bridge are depicted in Figure 1 as extending north along Riverfront Street to Tower Bridge Gateway and 3rd Street, ending at the intersection of 3rd Street and C Street. Last, staging areas that would be accessed via South River Road in West Sacramento and Front Street in Sacramento also are proposed and included in the project limits.

III. PROJECT DESCRIPTION

This section describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purpose(s) while minimizing environmental impacts where feasible. The purpose of the project is to increase the number of river crossings over the Sacramento River between West Sacramento and Sacramento. The project is needed because of the existing limited connectivity and longer trip lengths currently required. The new connection would serve multiple modes of transportation and comply with current AASHTO, Caltrans, and local agency design standards.

Project Alternatives

The build alternatives under consideration are two alignments for the new bridge and approach roadways. The lettering of each build alternative reflects its similarity to alignments considered in the feasibility study. Figure 2 depicts the location of the build alternatives. Appendix A includes preliminary plan view drawings, by phase. A No Build (No-Project) alternative also is considered. The proposed project is located over the Sacramento River and between the Cities of Sacramento and West Sacramento.

- Alternative B would realign 15th Street to connect to Jefferson Boulevard in West Sacramento and connect to Broadway at 5th Street in Sacramento. This alignment would require modification to the planned mobility network for South River Road and 15th Street in Pioneer Bluff.
- Alternative C (a modified Alignment C from the *Broadway Bridge Feasibility Study*) would connect as a "T" intersection to South River Road in West Sacramento and connect to Broadway at 5th Street in Sacramento. This alignment would require modification to the planned mobility network for South River Road in Pioneer Bluff.
- The No Build (No Project) Alternative would *not* build a bridge across the Sacramento River from the Pioneer Bluff area of West Sacramento to Broadway in Sacramento. The future no-project conditions planned by both cities would be developed as proposed.

NO BUILD (NO PROJECT) ALTERNATIVE

Under the No Build Alternative, a bridge across the Sacramento River from the Pioneer Bluff area of West Sacramento to Broadway in Sacramento would not be built. In West Sacramento, the redevelopment of Pioneer Bluff would continue as Riverfront Mixed-Use following the City's General Plan and the guidance in the *Pioneer Bluff Transition Plan (*approved in 2014), the *Pioneer Bluff and Stone Lock Reuse Master Plan* (pending approval) and the approved mobility network (as approved by the West Sacramento City Council in 2018).

FIGURE 1. Project Location

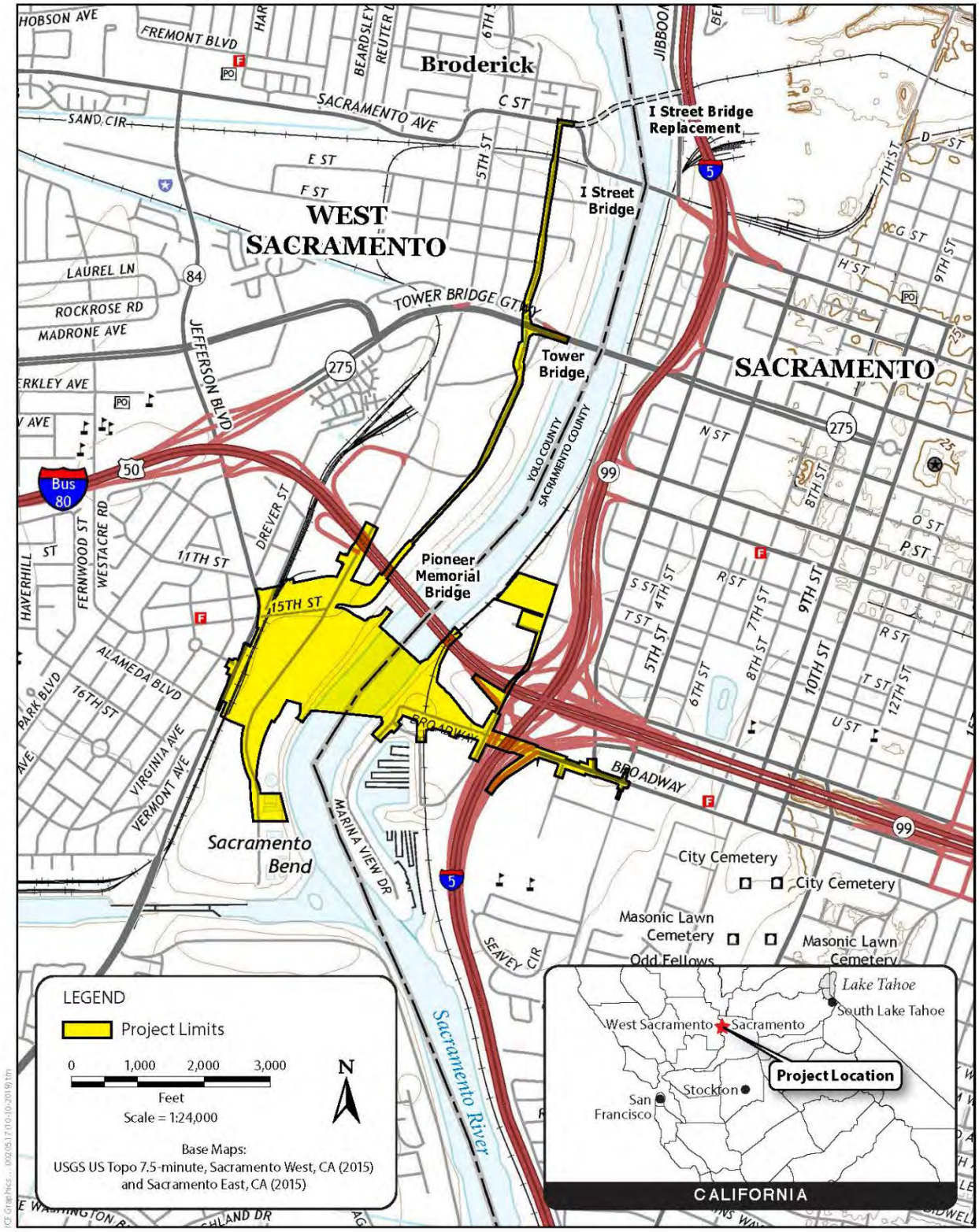
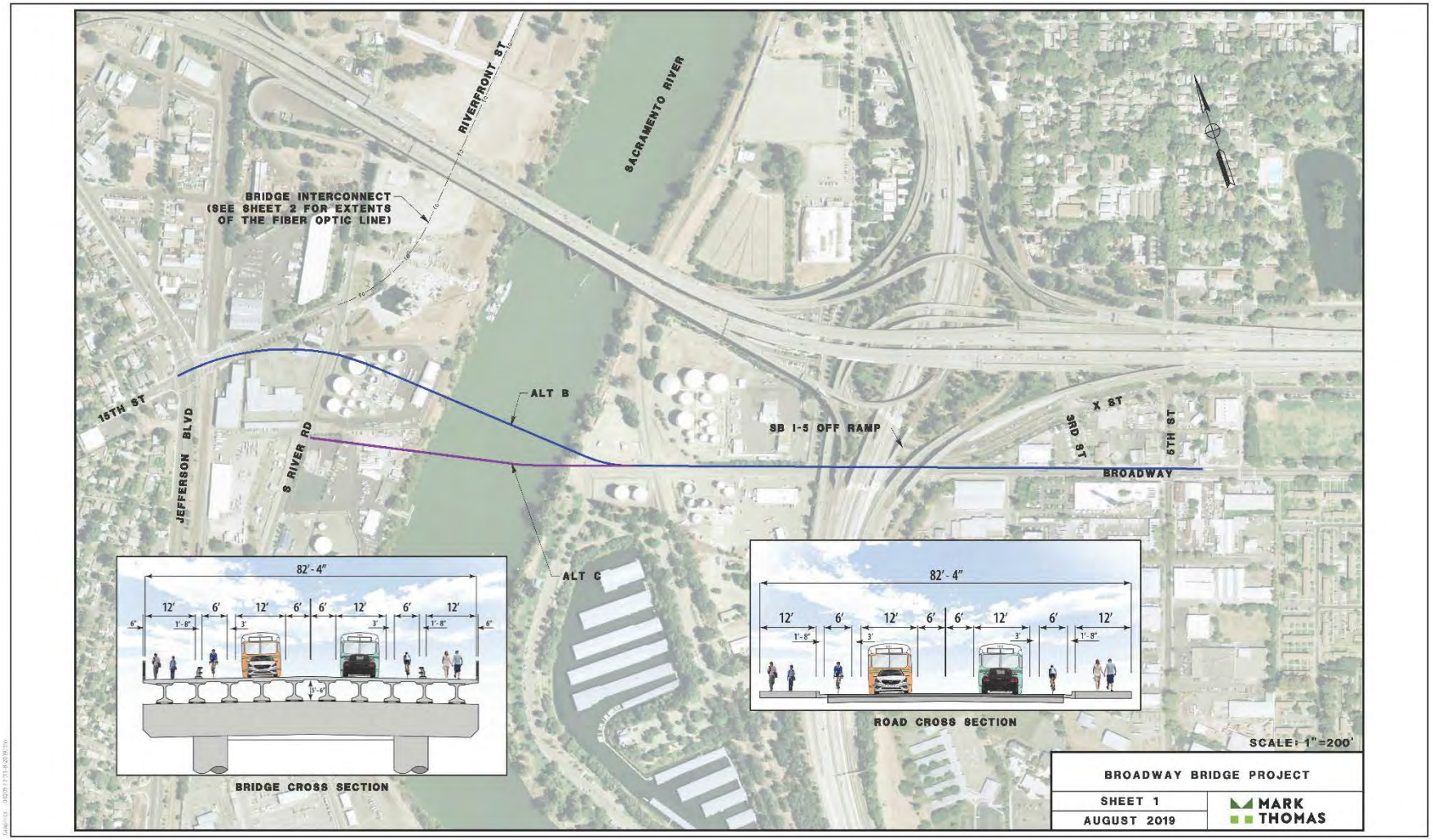
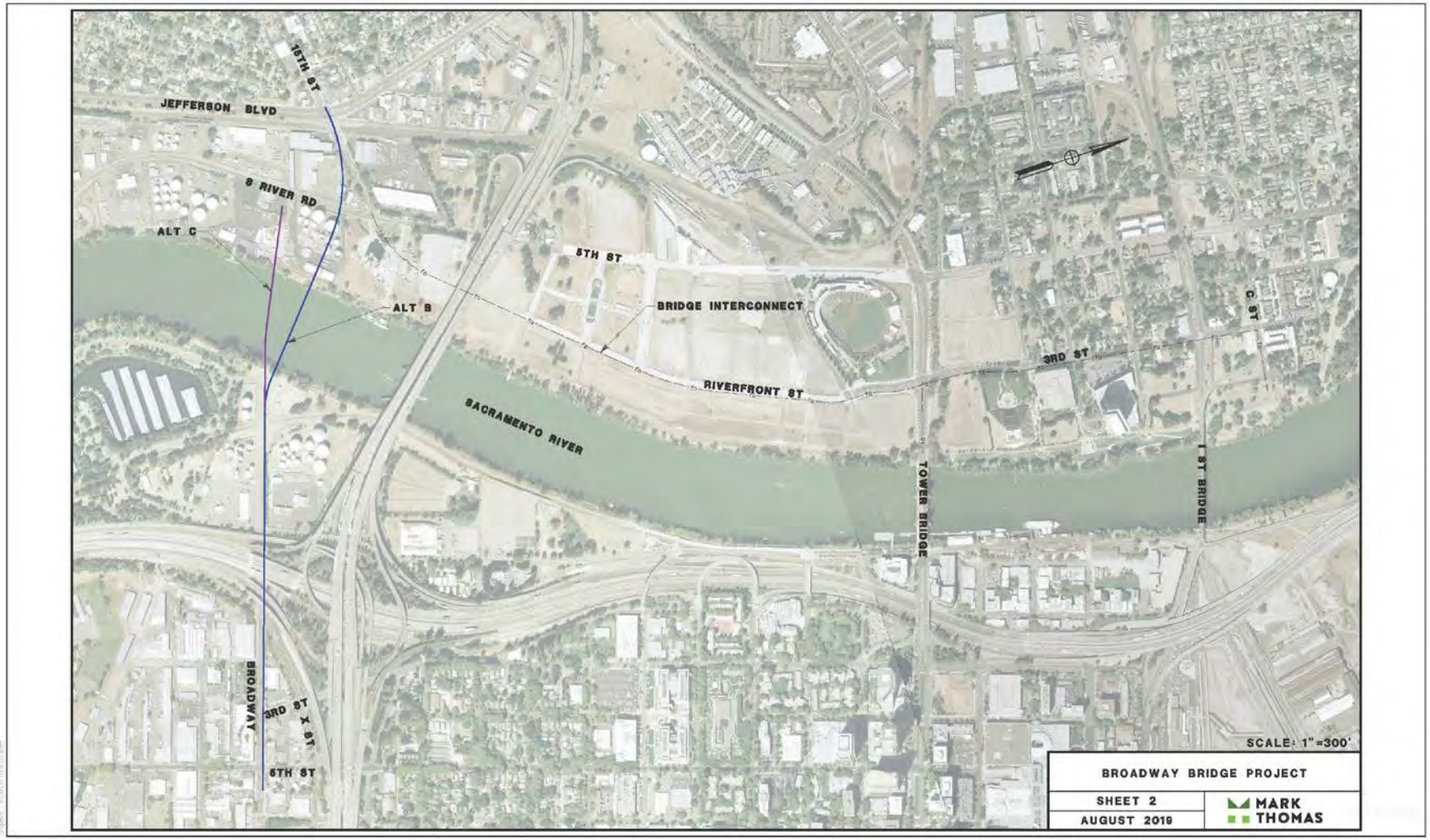


FIGURE 2. Project Alternatives




15TH ST
JEFFERSON BLVD
S RIVER RD
ALT C
ALT B
5TH ST
BRIDGE INTERCONNECT
RIVERFRONT ST
3RD ST
C ST
SACRAMENTO RIVER
TOWER BRIDGE
I ST BRIDGE
BROADWAY
3RD ST X ST
6TH ST
SCALE: 1"=300'
BROADWAY BRIDGE PROJECT
SHEET 2
AUGUST 2019
MARK THOMAS

In Sacramento, plans for, and implementation of, roadway improvements and redevelopment would continue consistent with the *West Broadway Specific Plan* (in preparation) and the *Broadway Complete Streets Plan* (City of Sacramento 2016).

BUILD ALTERNATIVES

The two build alternatives proposed to satisfy the purpose and need for the project are discussed in this section. Each alternative includes design features common to all build alternatives, such as construction of a new bridge across the Sacramento River and roadway modifications in West Sacramento and Sacramento. The common design features are discussed first, followed by the unique features of each alternative.

Common Design Features of the Build Alternatives

The proposed project would construct a new bridge over the Sacramento River between West Sacramento and Sacramento to facilitate vehicular and multimodal traffic over the river and reduce traffic congestion, improve multimodal transportation, and increase emergency options.

The Sacramento River is a navigable waterway of the United States. Under the provisions of the General Bridge Act of 1946, as amended, the United States Coast Guard (USCG) must approve the proposed location and plans for bridges over navigable waters of the United States prior to commencing construction.

New Bridge Construction and Roadway Modifications

Bridge Construction

The proposed project would construct a new bridge over the Sacramento River, south of the Pioneer Bridge. The total length of the new bridge would vary from approximately 800 to 1,020 feet, with an up to 83-foot-wide deck consisting of two vehicle lanes, a median, on-street Class II buffered bike lanes, and sidewalks along both sides of the bridge. The bridge would include two fixed-span approach structures that tie into the banks of the river; the structures would vary from approximately 200 to 300 feet in length on the West Sacramento bank and from 450 to 600 feet in length on the Sacramento bank. The center span of the bridge would be movable (see *Bridge Type* below for more information on the movable span). The bridge soffit elevation would be set a minimum of 3 feet above the 200-year water surface elevation to comply with the Central Valley Flood Protection Board (CVFPB) freeboard requirements. Rock slope protection (RSP) (assumed 1/4 ton stone weight, machine positioned [i.e., Method B]) would be installed on the river side of the bridge abutments both above and below the ordinary high water mark (OHWM) to stabilize approximately 400 linear feet of shoreline on each side of the river.

The two fixed-span approach structures would have a superstructure depth (or total bridge thickness) of approximately 4 to 10 feet, depending on the selected alternative. Each approach structure would be a one- to six-span bridge.

The required length of the movable span portion of the bridge was determined through coordination with the USCG. The movable span would provide a 170- to 230-foot clear channel opening (depending on the alignment alternative) that would line up with the western pier of the existing Pioneer Bridge (US 50 bridge) located upstream. The new bridge would have the same minimum vertical clearance of 59 feet above the maximum river elevation of 31 feet in the open position that the existing Pioneer Bridge provides (measured to the 29 National Geodetic Vertical Datum).

Bridge Type

One of three movable span types would be constructed: a vertical lift span, a swing span or a bascule span. Each bridge alignment alternative could be built as any one of the three types. To address the possible impacts of the bridge type that ultimately is built, the largest in- and over-water footprint and the greatest number of construction-related impacts of the three types were assumed for the analysis.

After an alignment alternative is selected and the project is approved, final aesthetic design criteria would be developed in cooperation with the selected bridge architect. Some of the guiding principles of the bridge aesthetics will be how the bridge fits within the surrounding setting and within the overall Sacramento region history, values, and vision. Selection of the type of movable span would be part of the aesthetic design of the bridge.

Regardless of the bridge type that is constructed over the Sacramento River as part of the proposed project, a bridge fender system would be installed around the movable span piers to protect the piers from errant watercrafts that are navigating along the river.

A brief description of each of the three movable span types follows.

Vertical lift span bridges have a movable span that is lifted vertically to permit passage of boats beneath it. The Tower Bridge over the Sacramento River upstream of the proposed Broadway Bridge is an example of a vertical lift span bridge.

Swing span bridges rotate the movable span on a center pivot pier, allowing navigational traffic to pass the bridge on either side of the center pier. Because of the span lengths required by the USCG for the proposed project and the requirement of creating a neighborhood-friendly river crossing with low vertical grades, the superstructure of a swing span most likely would be a through-truss design (the truss would be cross-braced above and below vehicular traffic). The existing I Street Bridge is an example of a swing span bridge.

Bascule span bridges operate by raising into the air one side of a counterweighted movable span while the other side rotates on a horizontal axis. The rotating axis could be fixed (like a hinge) or rolling (like a rocking chair). A bascule bridge can be designed with a single movable span or two movable spans (double bascule bridge). The Freeport Bridge over the Sacramento River in the town of Freeport is a double bascule span bridge.

Over-Water Construction-Site Access

Temporary trestles and barges would be used to provide the contractor with access to the river portion of the project area. Together, the trestles and barges would be used to stage construction materials, to provide a working platform for cranes, and for general construction support. The temporary trestles would consist of steel piles that would be driven into place with an impact hammer. Although the temporary work platforms would be removed at the end of the first construction season before the onset of winter, the temporary trestle piles could remain in place for the duration of construction. The barges would be anchored to the river bottom with piles that would be driven into place with an impact hammer. Up to two barges would be anchored in the river at one time. The barges would be repositioned in the channel throughout construction only as needed to complete the work. The barges and temporary piles would be removed after bridge construction is completed.

In-Water Construction Activities

In-water construction activities consist of those that would occur below the OHWM. The activities would be limited to the period of May 1 to November 30 during two construction seasons. The in-water construction window allows sufficient time for most in-water work to be completed within the first "in-water work season," thus limiting potential impacts on fish and other species from the activities to

primarily one construction season. The in-water work window was selected after consideration of agency in-water work restrictions, timing of the presence of multiple special-status fish species, timing of breeding seasons for other special-status species in the project area, and other constraints. Other construction activities occurring above the OHWM (e.g., work on the abutments and approach superstructure) would not be limited to the in-water window of May 1 to November 30. Additional information on sequencing of construction activities is provided in Figure 3.

Temporary falsework platforms would be required to construct the proposed bridge foundations and approach structures. The platforms would be constructed using temporary piles within the river. In addition, temporary cofferdams would be required to construct the bridge piers within the water. The cofferdams would consist of temporary sheetpiles installed around the individual piers. Dewatering inside the cofferdams would be required. In-water construction activities would include the following.

- Installation and removal of steel piles with a vibratory hammer and an impact hammer for the temporary falsework platforms (trestles).
- Installation and removal of steel piles with an impact hammer for anchoring barges.
- Installation of steel sheet piles with a vibratory driver for temporary cofferdams.
- Installation of steel piles with an impact hammer for the piers for the new bridge (although work would occur within dewatered cofferdams, underwater sound would propagate beyond the dewatered cofferdams).
- Installation of steel casings with a vibratory hammer or hydraulic oscillator/rotator system for the piers for the new bridge.
- Installation of concrete piles with an impact hammer for the new bridge fender system.

Above-Water Construction Activities
After the temporary cofferdams are installed around the piers, forms would be constructed and concrete poured in the dewatered cofferdams to construct the pile caps. Work then would focus on the pier column construction. After the casings are installed, a rebar cage would be placed into the pile and concrete would be poured into the steel shell. A cast-in-place concrete pier cap would be placed atop the columns to serve as the substructure.

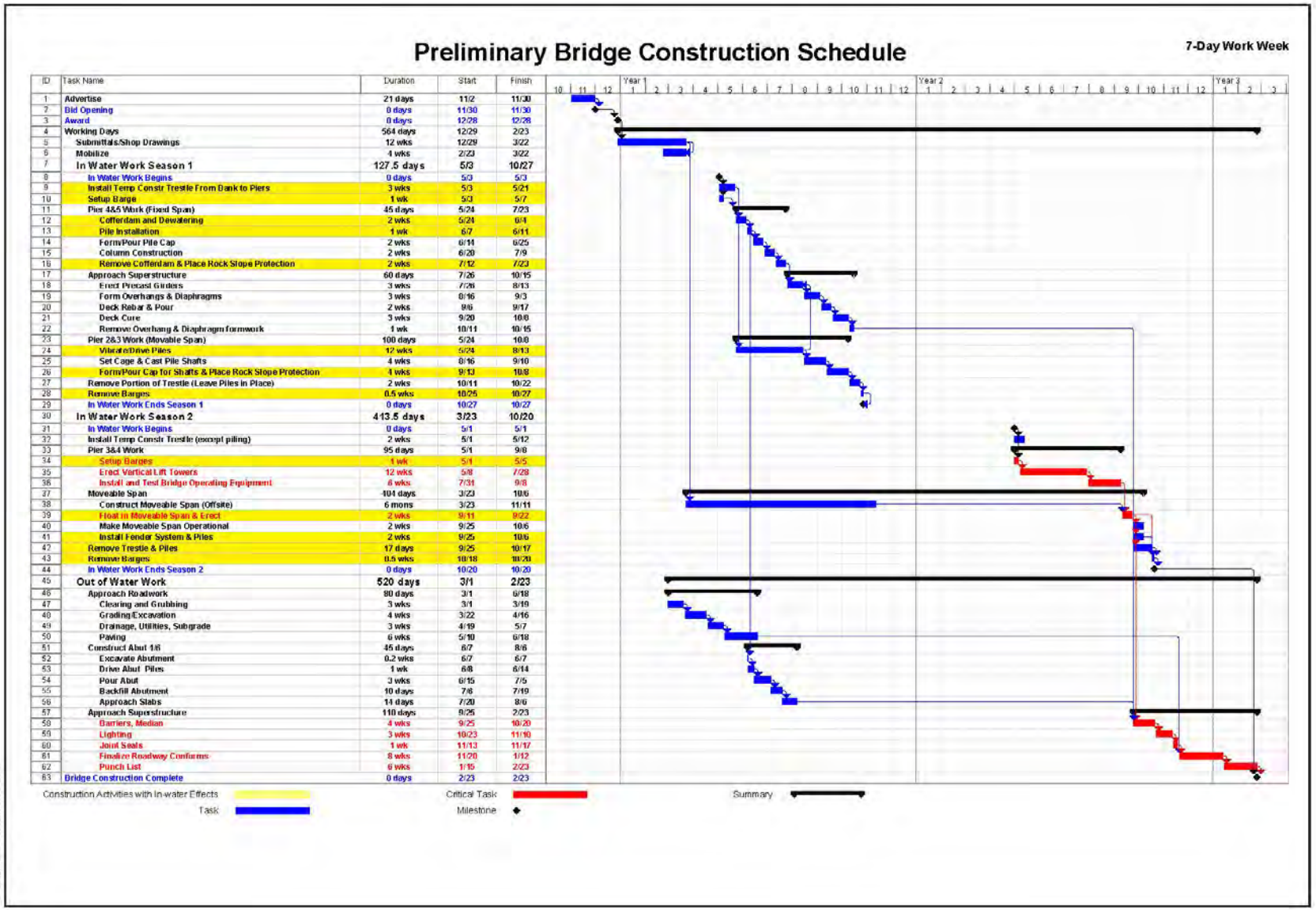
Work then would focus on constructing the approach superstructure. The movable span superstructure likely would be constructed offsite, floated in, and erected when construction of the foundations are completed.

Bridge Construction Sequence
Figure 3 shows the sequencing of construction activities. All in-water work would be conducted between May 1 and November 30.

Roadway Modifications
Proposed roadway modifications that would be part of all build alternatives are described below. Roadway modifications dependent on a specific alternative are described in Section 1.3.1.2, *Unique Features of Build Alternatives*.

City of West Sacramento
In West Sacramento, all build alternatives would include a new intersection for the bridge roadway at South River Road.

FIGURE 3. Construction Schedule



ID	Task Name	Duration	Start	Finish
1	Advertise	21 days	11/2	11/30
2	Bid Opening	0 days	11/30	11/30
3	Award	0 days	12/28	12/28
4	Working Days	564 days	12/29	2/23
5	Submittals/Shop Drawings	12 wks	12/29	3/22
6	Mobilize	4 wks	2/23	3/22
7	In Water Work Season 1	127.5 days	5/3	10/27
8	In Water Work Begins	0 days	5/3	5/3
9	Install Temp Constr Trestle From Bank to Piers	3 wks	5/3	5/21
10	Setup Barge	1 wk	5/3	5/7
11	Pier 4&5 Work (Fixed Span)	45 days	5/24	7/23
12	Cofferdam and Dewatering	2 wks	5/24	6/4
13	Pile Installation	1 wk	6/7	6/11
14	Form/Pour Pile Cap	2 wks	6/11	6/25
15	Column Construction	2 wks	6/20	7/9
16	Remove Cofferdam & Place Rock Slope Protection	2 wks	7/12	7/23
17	Approach Superstructure	60 days	7/26	10/15
18	Erect Precast Girders	3 wks	7/26	8/13
19	Form Overhangs & Diaphragms	3 wks	8/16	9/3
20	Deck Rebar & Pour	2 wks	9/6	9/17
21	Deck Cure	3 wks	9/20	10/8
22	Remove Overhang & Diaphragm formwork	1 wk	10/11	10/15
23	Pier 2&3 Work (Movable Span)	100 days	5/24	10/8
24	Vibrate/Drive Piles	12 wks	5/24	8/13
25	Set Cage & Cast Pile Shafts	4 wks	8/16	9/10
26	Form/Pour Cap for Shafts & Place Rock Slope Protection	4 wks	9/13	10/8
27	Remove Portion of Trestle (Leave Piles in Place)	2 wks	10/11	10/22
28	Remove Barges	0.5 wks	10/25	10/27
29	In Water Work Ends Season 1	0 days	10/27	10/27
30	In Water Work Season 2	413.5 days	3/23	10/20
31	In Water Work Begins	0 days	5/1	5/1
32	Install Temp Constr Trestle (except piling)	2 wks	5/1	5/12
33	Pier 3&4 Work	95 days	5/1	9/8
34	Setup Barges	1 wk	5/1	5/5
35	Erect Vertical Lift Towers	12 wks	5/8	7/28
36	Install and Test Bridge Operating Equipment	6 wks	7/31	9/8
37	Moveable Span	404 days	3/23	10/6
38	Construct Moveable Span (Offsite)	6 mons	3/23	11/11
39	Float in Moveable Span & Erect	2 wks	9/11	9/22
40	Make Moveable Span Operational	2 wks	9/25	10/6
41	Install Fender System & Piles	2 wks	9/25	10/6
42	Remove Trestle & Piles	17 days	9/25	10/17
43	Remove Barges	0.5 wks	10/18	10/20
44	In Water Work Ends Season 2	0 days	10/20	10/20
45	Out of Water Work	520 days	3/1	2/23
46	Approach Roadwork	80 days	3/1	6/18
47	Clearing and Grubbing	3 wks	3/1	3/19
48	Grading/Excavation	4 wks	3/22	4/16
49	Drainage, Utilities, Subgrade	3 wks	4/19	5/7
50	Paving	6 wks	5/10	6/18
51	Construct Abut 1/8	45 days	6/7	8/6
52	Excavate Abutment	0.2 wks	6/7	6/7
53	Drive Abut Piles	1 wk	6/8	6/14
54	Pour Abut	3 wks	6/15	7/5
55	Backfill Abutment	10 days	7/6	7/19
56	Approach Slabs	14 days	7/20	8/6
57	Approach Superstructure	110 days	9/26	2/23
58	Barriers, Median	4 wks	9/26	10/20
59	Lighting	3 wks	10/23	11/10
60	Joint Seals	1 wk	11/13	11/17
61	Finalize Roadway Conforms	8 wks	11/20	1/12
62	Punch List	6 wks	1/15	2/23
63	Bridge Construction Complete	0 days	2/23	2/23

City of Sacramento
In Sacramento, common roadway modifications include repaving and reconstructing the sidewalk along Broadway from the new bridge east to 5th Street. Roadway modifications also would include a modified intersection at Marina View Drive and Broadway; widening of the northbound I-5 off-ramp at Broadway to two left-turn lanes and one right-turn lane; and improvements at intersections of Broadway and Front Street, 3rd Street (south), 3rd Street (north), and 5th Street to transition bridge traffic into roadway network.

Class I Bikeway Improvements

City of West Sacramento
A future Class I River Walk trail extension is planned in West Sacramento. The trail is proposed within the levee setback. As part of the proposed project, the grade of the trail would be separated to allow it to pass under the proposed bridge structure. Cyclists and pedestrians approaching Broadway Bridge in either direction from the trail would have the option to continue along the trail under the new structure, avoiding the need to cross the roadway, or to connect to the structure and cross the river into Sacramento or travel westward in West Sacramento.

City of Sacramento
The existing Class I Sacramento River Bike Trail would be reconstructed approximately 1,000 feet north and 300 feet south of Broadway as part of the proposed project. In order to reconstruct the trail, permanent right-of-way acquisition from four adjacent private parcels would be necessary (acquisitions and easements are discussed in detail in Section 1.3.1.2, *Unique Features of Build Alternatives*, below.). The trail would be grade-separated under the proposed bridge structure. Cyclists and pedestrians approaching Broadway in either direction would have the option to continue along the trail under the new structure, avoiding the need to cross the roadway, or to connect to the structure and cross the river into West Sacramento or travel westward on Broadway in Sacramento.

Bridge Communication Fiber Optic Line
A fiber optic cable is proposed to interconnect operational communications of the proposed project (the new Broadway Bridge), the Tower Bridge, and the I Street Replacement bridge. The fiber optic line would be placed in West Sacramento under Riverfront Street. From the proposed project, the fiber optic line would run north until Riverfront Street turns into 3rd Street and would end at the intersection of 3rd Street and C Street (see Figure 2). The fiber optic line would be installed within an existing City of West Sacramento-owned conduit along Riverfront Street to Tower Bridge Gateway. North of Tower Bridge Gateway, a new conduit would be placed within the 3rd Street right-of-way north to the intersection of 3rd Street and C Street. To minimize ground disturbance, the construction method for the new fiber optic line would be jack and bore.

Storm Water Drainage Management
Stormwater and road runoff drainage for the proposed roadway would be conveyed in a new storm drain system installed approximately 5 feet below the finished road grade of South River Road, 15th Street, and Circle Street in West Sacramento and of Broadway in Sacramento. New storm drain outfalls into the Sacramento River would be constructed near each of the bridge abutments in West Sacramento and Sacramento.

Staging, Storage, and Proposed Access during Construction

Staging areas would be used to store materials and equipment during construction, such as pipe materials, precast manholes and drop inlets, steel girders, piles, and rebar—along with construction equipment when not in use. In West Sacramento, staging area options are the West Sacramento Corporation Yard (1951 South River Road) or the Shell property recently purchased by the Port of West Sacramento (1509 South River Road). Both staging areas in West Sacramento would be accessed via South River Road and are options on the condition that they are still available (have not been redeveloped) at the time the proposed project is constructed.

In Sacramento, one option for a staging area would be closing Broadway to traffic west of Front Street and using the road as a staging area with access via Broadway to the east. This option would require a traffic detour for continued access to Marina View Drive using Front Street and Miller Park Circle. Another staging area option in Sacramento is use of a vacant lot north of the California Automobile Museum with access via Front Street.

Staging areas would be in use throughout the construction duration; the areas would be returned to their pre-project conditions at completion of the project.

Utility Relocations

A number of public and private utilities would need to be relocated or adjusted to the new ground elevation as part of the project, including existing water, sewer, gas, overhead and underground electric, and communication facilities within Broadway, South River Road, 15th Street, and Jefferson Boulevard.

Two existing gas transmission lines, Kinder Morgan and Pacific Gas and Electric (PG&E), and a communication line run under the Sacramento River. The alternatives could conflict with the location of the utility lines and require the utilities to be relocated. Known conflict locations are discussed in Section 1.3.1.2, *Unique Features of the Build Alternatives*. Utility relocations and adjustments would be conducted prior to or during construction. As part of the final project design process, prior rights would be used to determine who is responsible for the utility relocations.

Traffic Management and Detours during Construction

While most of the project would be constructed outside of existing roadways, some project construction areas would require temporary detours or staged construction.

In West Sacramento, in order to construct the proposed project—including the new intersection at South River Road, a portion of South River Road would be closed to traffic. Closure of 15th Street also may be necessary. Travelers on South River Road south of the project area needing to get to South River Road north of the project area would be detoured around the project to the south and directed to travel over the Mike McGowan Bridge, turn right onto Locks Drive, right onto Jefferson Boulevard, right onto Tower Bridge Gateway, and then right onto 5th Street that becomes South River Road. The detour would be repeated in reverse for travelers on South River Road north of the project area with the desire to travel south on South River Road.

In Sacramento, construction of street widening and sidewalk improvements under the I-5 viaduct structures would be phased to allow traffic access to Front Street for the duration of construction. Miller Park and Sacramento Marina traffic would travel on westbound Broadway, turn left onto southbound Front Street, right onto Miller Park Circle, and then left onto Marina View Drive. About 3,400 feet of the Sacramento River Bike Trail would be closed north and south of Broadway and detoured to the bike lane on Front Street between the Sacramento Marina and where the Sacramento River Bike Trail meets the R Street bicycle/pedestrian bridge.

Project Construction Sequence

The project may be constructed in two phases or in a single phase. The decision to construct in one or two phases will be driven by the extent of redevelopment and implementation of the approved mobility network in the Pioneer Bluff area of West Sacramento at the time project construction starts. If constructed in two phases, an interim (opening day) design phase for the proposed project would include constructing the new bridge and approach roadways with temporary pavement transitions along the existing alignment of South River Road. Construction of this first phase is expected to take approximately 36 months, with two seasons of in-water work (Figure 4). A subsequent phase, the design year phase, would take approximately 6 months and would complete the remaining project roadway construction consistent with full buildout of the approved mobility network (Figure 5). The roadway connection to the bridge and all other project improvements in Sacramento would be constructed during the first phase. If the project is built in a single phase, construction is expected to take 36 months.

Environmental Commitments

Each project build alternative includes environmental commitments that are part of the project description. The environmental commitments, such as best management practices (BMPs), are to be considered in conducting the environmental analysis and determining effects and findings. The purpose of environmental commitments is to reflect and incorporate best practices into the project that avoid, minimize, or offset potential environmental effects. Note: The term "mitigation" is specifically applied in this document only to designate measures required to reduce environmental effects triggering a finding of significance. These BMPs tend to be relatively standardized and compulsory; they represent sound and proven methods to reduce the potential effects of an action. The rationale behind including environmental commitments is that the project proponent commits to undertake and implement these measures in good faith as part of the project in advance of effect findings and determinations in order to improve the quality and integrity of the project, streamline the environmental analysis, and demonstrate responsiveness and sensitivity to environmental quality.

Runoff and Erosion Control Practices

As is standard with all construction projects that disturb soil, the construction contractor would be required to install temporary BMPs to control any runoff or erosion from the project site into the surrounding storm drain systems and waterways to be compliant with local, state, and federal water quality regulations. Temporary BMPs would be installed prior to any construction operations and would be in place for the duration of the contract. Removal of the temporary BMPs would be the final operation, along with project site cleanup.

In-Water Sound and Shock Level Minimization

The following BMPs would be implemented during construction of pier columns for bridge and placement and driving of piles and temporary sheet piles for cofferdams (if needed). The cofferdams would be removed when pier column construction is completed.

- Install bubble curtains around piles during impact driving and proofing operations to dampen underwater sound shockwaves.
- Conduct several dry or dead blows with the hammer initially to frighten fish away from the pile before the pile is driven or proofed with an impact pile driver. Implementation of several dry or dead blows with the hammer to initially frighten fish away is being proposed because the use of a cushioning block or similar feature would result in more strikes being needed to drive the piles, thereby resulting in a greater chance of exceeding the cumulative sound exposure levels (SELs) without significantly reducing peak SELs.

FIGURE 4. Interim Construction Phase (2030)

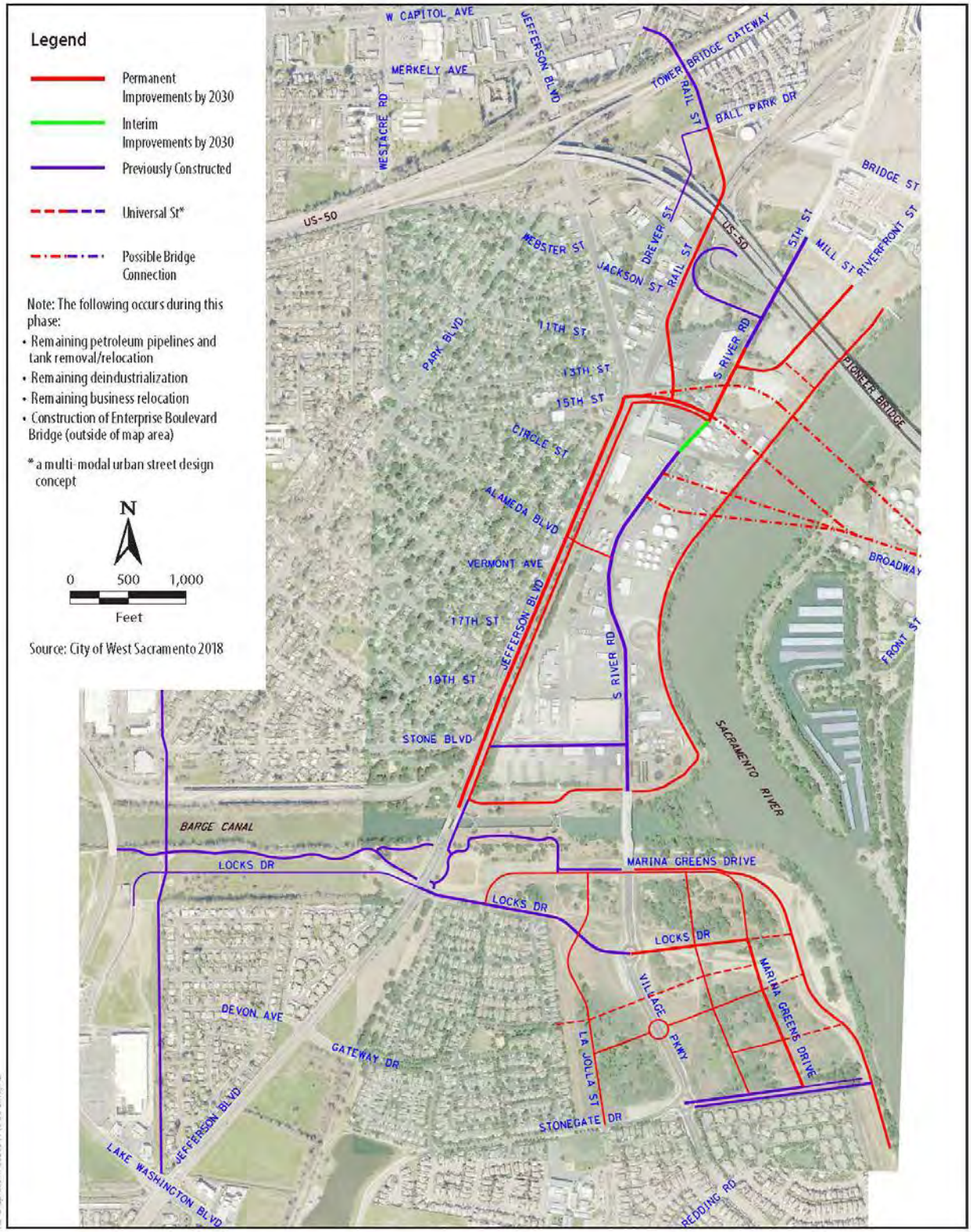
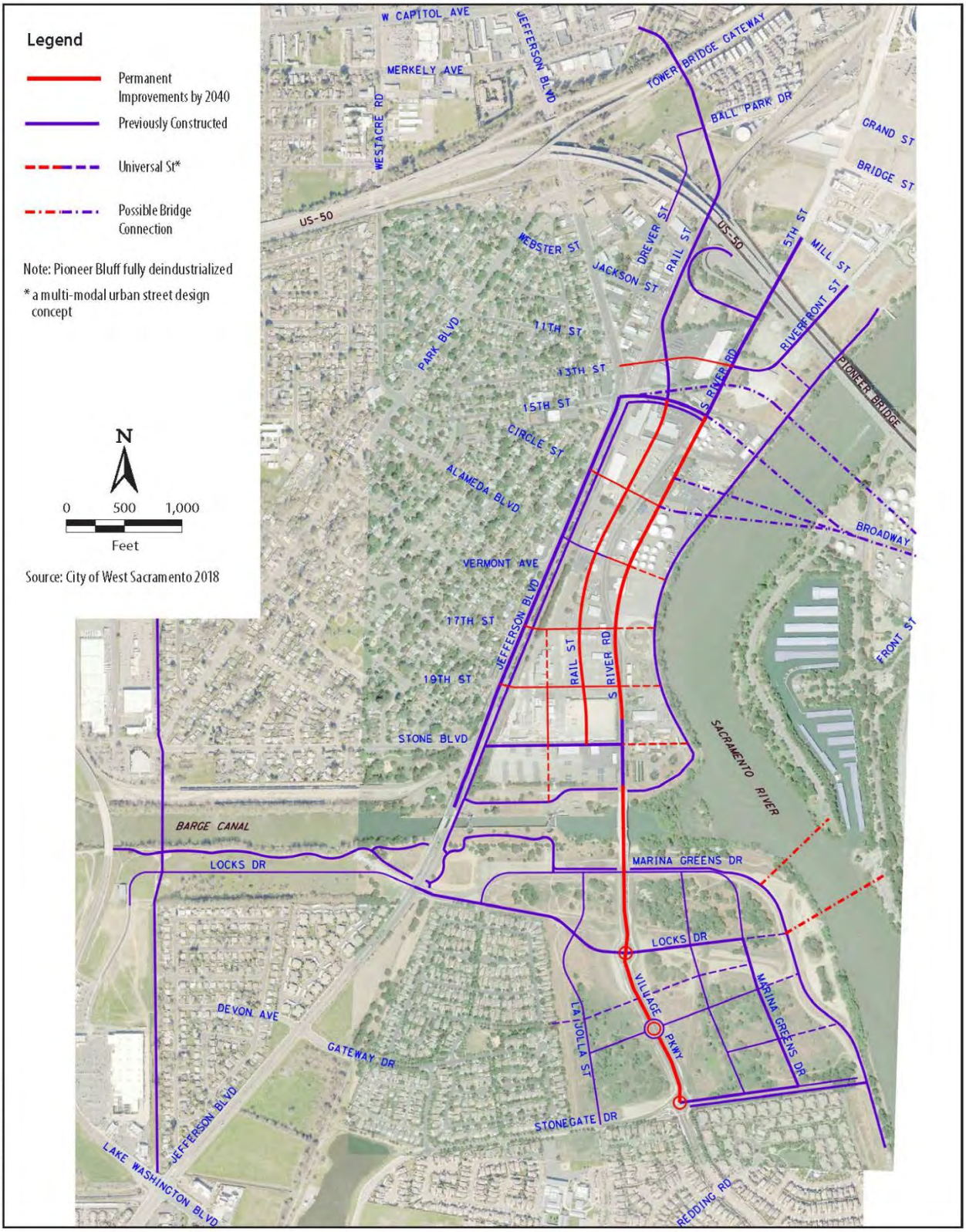


FIGURE 5. Subsequent Construction Phase (2040)



Transportation Management Plan

A Transportation Management Plan (TMP) would be developed for use during project construction. The TMP would implement strategies described in the *California Manual on Uniform Traffic Control Devices* (California Department of Transportation 2014) and Caltrans' *Transportation Management Plan Guidelines* (TMP Guidelines) (California Department of Transportation 2015), selected in accordance with the scale and scope of the project and the variety of transportation facility types and jurisdictions in the project area. The TMP would direct the process and procedures for dissemination of information to the public and motorists, provide guidance for implementation of incident management, describe construction strategies for traffic handling and guiding traffic through work zones, address traffic demand management during construction, and describe and direct the implementation of alternate routes or detours.

Environmental Stewardship

Construction and implementation of the proposed project would conform with applicable policies in the elements of the West Sacramento and Sacramento General Plans; requirements of the West Sacramento and Sacramento city codes; and Caltrans Standard Specification Section 14, Environmental Stewardship, (California Department of Transportation 2018:225–240). In addition to environmental protections established by state and federal law, City and Caltrans policies and standards address responsibilities for many environmental areas such as air pollution; noise limits; protection of lakes, streams, and other water bodies; use of pesticides; safety; sanitation; convenience for the public; and damage or injury to any person or property as a result of construction.

Unique Features of Build Alternatives

Two combined bridge and roadway alignment alternatives are being considered (Figure 2). While each alternative for the project could be constructed in a single phase, the discussion of each alternative's unique features is separated into the components that would be constructed as part of an interim (opening day) phase and the remaining components that would be constructed as part of the design year phase. At the interim year, the new bridge across the Sacramento River would be constructed and open to traffic. By the design year, the remaining improvements and roadway connections proposed as part of the project would be constructed to allow the full, final design of the proposed project to be operational. If the project is constructed in a single phase, the efforts needed to construct the new bridge and the ultimate (design year) roadway alignment configuration would be completed at the same time.

Appendix A includes preliminary plan view drawings for each alternative, by phase.

Deviations from the approved mobility network in West Sacramento that are part of the proposed project are noted by alternative in the subsections below.

Alternative B

Alternative B would realign 15th Street between Jefferson Boulevard and South River Road, consistent with the approved mobility network shown in Figure 4, to connect the new bridge to the roadway network in West Sacramento. The bridge would connect to Broadway on the Sacramento side.

Interim Year Features of Alternative B

Project features that would be constructed and in operation by 2030 include the following.

- New bridge and roadway modifications, including a redesigned intersection connection for the bridge at 15th Street and new turn pockets on South River Road to facilitate traffic turning movements at the bridge connection in West Sacramento.
- Storm water drainage management features.

- Utility relocations.
- Fiber optic cable installation for operational communications.

In West Sacramento, the following modifications to the approved mobility network would be necessary for construction of Alternative B.

- Constructing a northbound right-turn pocket on South River Road at 15th Street.
- Constructing a southbound right-turn pocket on South River Road at 15th Street.

In Sacramento, Alternative B requires the following modifications to the existing (or planned opening day) conditions.

- Reconstructing 350 feet of Marina View Drive to provide for a new connection to Broadway.
- Modifying property access along Broadway west of I-5.

The existing at-grade State Parks railroad crossing at Broadway would remain in the same location.

Construction of the interim year design of Alternative B would create 2.0 acres of new impervious surface.

RSP would be installed on the river side of the bridge abutments both above and below the OHWM to stabilize the shoreline on each side of the river. The estimated linear feet and area and volume above and below the OHWM are shown in Table 1.

TABLE 1.
Estimated Rock Slope Protection Needed for Alternative B

Location	Linear Feet of Shoreline	Area (square feet)	Area below OHWM (square feet)	Volume below OHWM (cubic yards)	Volume above OHWM (cubic yards)
West Sacramento shoreline	426	31,033	12,833	1,569	2,224
Sacramento shoreline	398	27,589	11,293	1,380	1,992
Total	**824**	**58,622**	**24,126**	**2,949**	**4,216**

OHWM = ordinary high water mark.

Design Year Features of Alternative B
Project features that would be constructed by 2040 include the following.

- Roadway alignment modifications in West Sacramento necessary to shift the alignment of South River Road and connection of the new bridge to the east to conform with the approved mobility network alignment of South River Road.
- Roadway striping and turn pocket additions on Jefferson Boulevard, South River Road, and Alameda Boulevard.

In both West Sacramento and Sacramento, no additional modifications to the assumed design year conditions without the project would be needed.

Construction of the design year features of Alternative B would not increase impervious surface area from that created during the interim year phase.

Utility Relocations, Alternative B

The proposed location of the eastern bridge abutment conflicts with the location of the Kinder Morgan gas transmission line. The under-river portion of the line can remain in place; however, Alternative B would require relocation of a portion of gas line located under Broadway. This alternative does not conflict with the location of the PG&E gas transmission line.

This alternative also conflicts with the location of a communication line at the eastern bridge abutment. Similar to the Kinder Morgan gas line, the under-river portion of the communication line can remain in place, but the project would require relocation of a portion of the communication line under Broadway.

Property Acquisitions, Alternative B

Permanent property acquisitions or permanent easements would be necessary for Alternative B. Temporary construction easements (TCEs) also would be needed. The acquisitions that would be needed for the interim and ultimate design years are identified in Table 2; these acquisitions assume that the project is constructed in two phases.

TABLE 2. Property Acquisitions Needed for Alternative B						
Parcel Number	**Total Parcel Size (acres)**	**Interim Year Permanent Acquisition (acres)**	**Design Year Permanent Acquisition (acres)**	**Interim Year TCE (acres)**	**Design Year TCE (acres)**	**Business Relocation Necessary? (Yes, No)**
West Sacramento						
058-027-006	2.579		0.023		0.013	No
058-027-014	7.568	0.120		0.015		No
058-028-003	3.530	1.005	0.056	0.089	0.012	No
058-028-005	6.010	2.920	0.200	0.325	0.065	No
058-028-006	0.473	0.056		0.055		Yes
058-028-007	0.911	0.177		0.027		Yes
843-57-5-7	6.477	0.064		0.019		No
Sacramento						
009-0012-008	1.598	0.220		0.074		Yes*
009-0012-038	0.033	0.033				No
009-0012-064	2.673	2.673				No
009-0012-065	0.793	0.793				No
009-0012-071	2.494	0.378		0.159		Yes*
009-0012-072	6.903	0.049		0.068		Yes*
009-0020-001	1.525	0.605		0.083		No
009-0030-054	5.616	0.657		0.274		Yes*

TCE = temporary construction easement.

* Assumes the fill slopes shown along realigned Broadway in Appendix A. No business relocation would be necessary if retaining walls are constructed instead of fill slopes to support the increase in elevation and the widening of Broadway between the bridge and Front Street.

Alternative C

Alternative C (modified from the feasibility study) would connect to South River Road at a new intersection between 15th Street and Circle Street on the West Sacramento side and would connect to Broadway on the Sacramento side.

Interim Year Features of Alternative C

Project features that would be constructed and in operation by 2030 include the following.

- New bridge and roadway modifications, including construction of a new "T" intersection on the existing alignment of South River Road.
- Storm water drainage management features.
- Utility relocations.
- Fiber optic cable installation for operational communications.

In West Sacramento, the following modifications to the approved mobility network shown in Figure 4 would be necessary for Alternative C.

- Creating a "T" intersection on South River Road between 15th Street and the future Circle Street location.
- Constructing an interim northbound right-turn pocket on the existing alignment of South River Road at Broadway.
- Constructing an interim southbound left-turn pocket on the existing alignment of South River Road at Broadway.

In Sacramento, Alternative C requires the following modifications to existing conditions.

- Reconstructing 350 feet of Marina View Drive to provide for a new connection to Broadway.
- Modifying property access along Broadway west of I-5.

The existing at-grade State Parks railroad crossing at Broadway would remain in the same location.

Construction of the interim year design of Alternative C would create 2.2 acres of new impervious surface.

RSP would be installed on the river side of the bridge abutments both above and below the OHWM to stabilize the shoreline on each side of the river. The estimated linear feet and area and volume above and below the OHWM are shown in Table 3.

TABLE 3.
Estimated Rock Slope Protection Needed for Alternative C

Location	Linear Feet of Shoreline	Area (square feet)	Area below OHWM (square feet)	Volume below OHWM (cubic yards)	Volume above OHWM (cubic yards)
West Sacramento shoreline	466	29,455	10,779	1,317	2,283
Sacramento shoreline	395	19,363	8,652	1,058	1,309
Total	**861**	**48,818**	**19,431**	**2,375**	**3,592**

OHWM = ordinary high water mark.

Design Year Features of Alternative C
Project features that would be constructed by 2040 include the following.

- Roadway alignment modifications in West Sacramento necessary to shift the alignment of South River Road and the "T" intersection connection of the new bridge approximately 100 feet to the east to conform with the approved mobility network alignment of South River Road.
- Roadway striping and turn pocket additions on Jefferson Boulevard, South River Road, and Alameda Boulevard.

In West Sacramento, additional modifications to the approved mobility network would be necessary to construct the design year components of Alternative C. Leading up to the design year, development in Pioneer Bluff will occur following a new alignment of South River Road (road shifting to the east as shown in Figure 5). After construction of the proposed project in the interim year, the new alignment of South River Road would require the proposed project to reconstruct the bridge's roadway connection to match. Modifications to the approved mobility network in West Sacramento include the following.

- Creating a new "T" intersection matching the new, more eastern alignment of South River Road between 15th Street and Circle Street.

- Constructing the final northbound right-turn pocket on South River Road at Broadway.
- Constructing the final southbound left-turn pocket on South River Road at Broadway.

In Sacramento, no additional changes from the interim design are needed.

Construction of the design year features of Alternative C would not increase impervious surface area from that created during the interim year phase.

Utility Relocations, Alternative C

The proposed location of the eastern bridge abutment conflicts with the location of the Kinder Morgan gas transmission line. The under-river portion of the line can remain in place; however, Alternative C would require relocation of a portion of gas line located under Broadway. This alternative does not conflict with the location of the PG&E gas transmission line or the under-river communication line.

Property Acquisitions, Alternative C

As with Alternative B, permanent property acquisitions or permanent easements will be necessary for Alternative C. TCEs also would be needed. The acquisitions that would be needed for the interim and ultimate design years are identified in Table 4; these acquisitions assume that the project is constructed in two phases.

TABLE 4.
Property Acquisitions Needed for Alternative C

Parcel Number	Total Parcel Size (acres)	Interim Year Permanent Acquisition (acres)	Design Year Permanent Acquisition (acres)	Interim Year TCE (acres)	Design Year TCE (acres)	Business Relocation Necessary? (Yes, No)
West Sacramento						
058-027-006	2.579	0.777	0.810	0.080	0.058	Yes
058-027-007	0.450	–	0.104	–	0.025	No
058-027-014	7.568	2.762	–	0.102	–	Yes
058-028-005	6.010	0.680	0.136	0.137	0.071	No
Sacramento						
009-0012-008	1.598	0.223	0.223	0.074	0.074	Yes*
009-0012-038	0.033	0.033	0.033	0.000	0.000	No
009-0012-064	2.673	2.673	2.673	0.000	0.000	No
009-0012-065	0.793	0.793	0.793	0.000	0.000	No
009-0012-071	2.494	0.394	0.394	0.158	0.155	Yes*
009-0012-072	6.903	0.063	0.063	0.074	0.069	Yes*
009-0020-001	1.525	0.682	0.682	0.082	0.081	No
009-0030-054	5.616	0.672	0.672	0.428	0.270	Yes*

TCE = temporary construction easement.
* Assumes the fill slopes shown along realigned Broadway in Appendix A. No business relocation would be necessary if retaining walls are constructed instead of fill slopes to support the increase in elevation and the widening of Broadway between the bridge and Front Street.

IV. PROJECT LOCATION AND SETTING

The project location and setting provide the context for determining the type and severity of changes to the existing visual environment. The terms *visual character* and *visual quality* are defined below and are used to further describe the visual environment. The project setting also is referred to as the *corridor* or *project corridor*, which is defined as the area of land that is visible from, adjacent to, and outside the roadway right-of-way. The project corridor is determined by topography, vegetation, and viewing distance.

Figure 1 identifies the proposed project vicinity. The project region lies in the Sacramento Valley of northern California, between the Cities of Sacramento and West Sacramento, crossing the Sacramento River. The easternmost portion of the region is characterized by the Greater Sacramento Metropolitan region. The westernmost portion of the region primarily consists of the growing city of West Sacramento and outlying agricultural lands, which include the Yolo Bypass. The landscape pattern is influenced by development sprawling from the cores of existing cities and the major roadways, such as Interstate 80 (I-80), US 50, I-5, and State Route 99. The region primarily supports developed, industrial, agricultural, and open space land uses. In addition to numerous creeks and irrigation channels, major water bodies in the region include Sacramento Ravine, American River, the Deep Water Ship Channel, and the Yolo Bypass when flooded.

Figure 1 also identifies the project location. The proposed project is located roughly parallel to and just south of the existing Pioneer Bridge (US 50) and north of the Barge Canal. The eastern terminus of the project travels under I-5 and intersects Broadway and 5th Street, within Sacramento. The western termini of the project curve to intersect with South River Road and Jefferson Boulevard in West Sacramento. The immediate project area is characterized by the Sacramento River (river), vegetated levee banks, and land uses on either side of the river. Primarily industrial, commercial, vacant, and residential land uses are located west of the river; and industrial, park, marina, transportation, and commercial land uses are located to the east. The project site is not located near a state scenic highway or other designated scenic corridor (California Department of Transportation 2017). In addition, although Pioneer Bridge offers views out and over the landscape toward the project area, this view is not considered a scenic vista view due to the dominance of industrial land uses in the foreground.

V. ASSESSMENT METHOD

This VIA generally follows the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* published by FHWA in March 1988.

The following steps were followed to assess the potential visual impacts of the proposed project.

A. Define the project location and setting.
B. Identify visual assessment units and key views.
C. Analyze existing visual resources, resource change, and viewer response.
D. Depict *(or describe)* the visual appearance of project alternatives.
E. Assess the visual impacts of project alternatives.
F. Propose measures to offset visual impacts.

Using the concepts and terminology described above and the criteria for determining significance (see Section VII*, Visual Resources and Resource Change* below), analysis of the visual effects of the proposed project was based on the following methods.

A. Observation from vantage points, including neighboring buildings, property, and roadways (conducted October 29, 2019).
B. Photographic documentation of key views of and from the project site.
C. Evaluation of the regional visual context.
D. Review of project construction drawings.
E. Review of the project regarding compliance with state and local ordinances and regulations, and professional standards pertaining to visual quality.
F. Evaluation of photo simulations.

VI. VISUAL ASSESSMENT UNITS AND KEY VIEWS

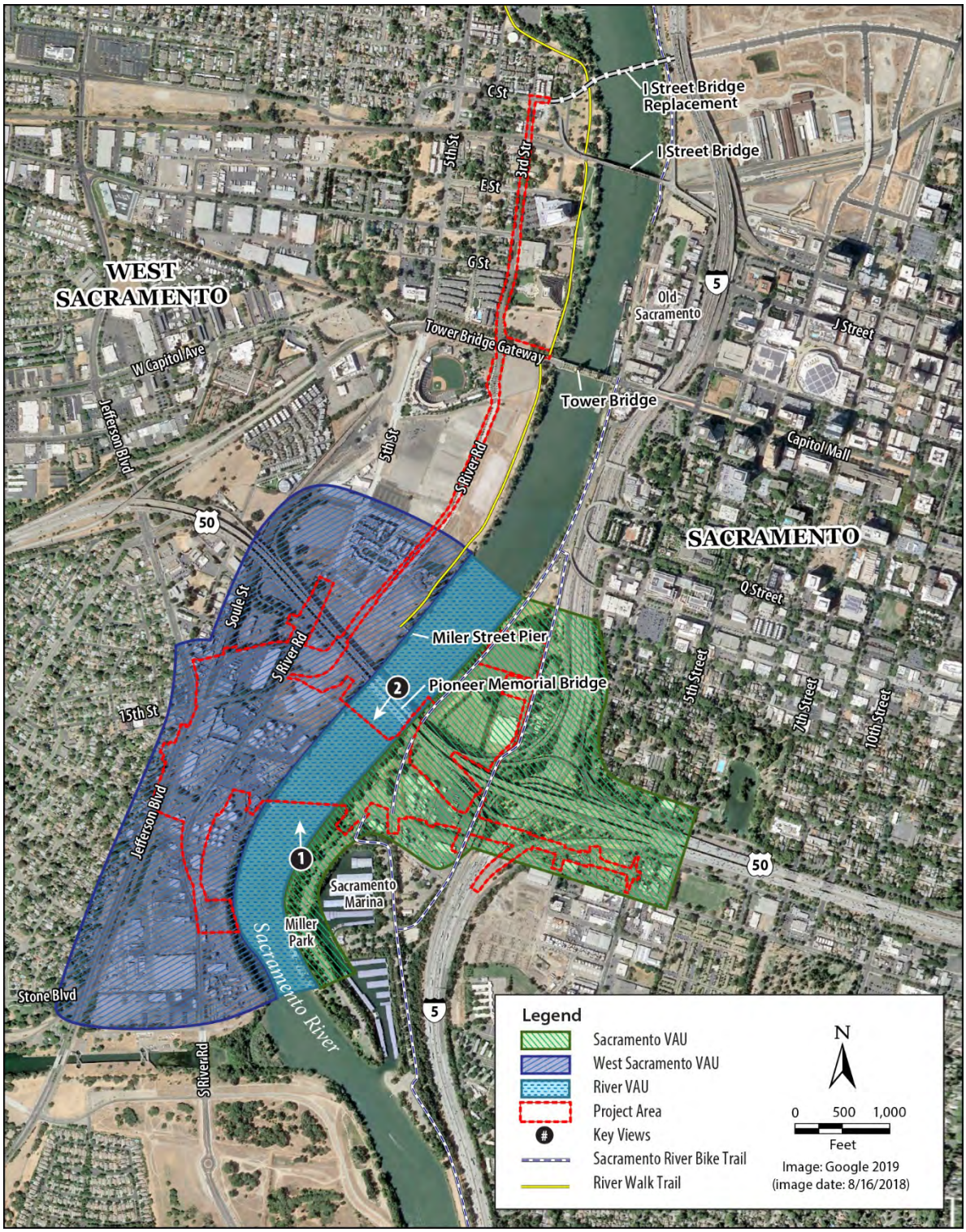
The area around the project corridor was divided into a series of "outdoor rooms" or *visual assessment units* (VAUs). Each VAU has its own visual character and visual quality, and typically is defined by the limits of a particular viewshed. The river provides a clear boundary between the industrial, commercial, and residential land uses on the western side of the river in West Sacramento; and the industrial, park, marina, transportation, and commercial land uses on the eastern side of the river in Sacramento. For this analysis, therefore, the project area was subdivided into three VAUs based on specific vantage points and differing sensitivities of those affected by the proposed project. The VAUs are shown in Figure 6. Key views (shown in Section IX, *Visual Impact*) have been chosen for their representation of the VAU within which they are located and the affected viewers. For this project, the following three VAUs and their associated key views have been identified.

- **West Sacramento VAU:** The West Sacramento VAU includes industrial and vacant land uses located between the river and Jefferson Boulevard. Residential and commercial land uses are located west of Jefferson Boulevard. Industrial land uses consist of warehouses and fuel storage facilities that line South River Road, between the river and Jefferson Boulevard. There are also some grassy and paved vacant lots in this VAU where industrial land uses have been removed. West of Jefferson Boulevard, older single-family residential development remains intact and is well-kept. Commercial land uses are scattered along Jefferson Boulevard, mostly located interspersed among the residences lining the west side of the road. These include S&S Realty, Whitey's Jolly Kone, Arco Gas Station, and Sail in Grotto. Access to the river is not available from the industrial areas lining the river. Access to the river is available to a small portion of the VAU north of the Pioneer Bridge, via the River Walk Trail and the Mill Street Pier, where redevelopment is occurring along the riverfront. Views of the approach roadway portions of the project are available from South River Road, Jefferson Boulevard, 15th Street, and Soule Street. However, these views of the proposed bridge locations would be obscured by mature trees and the built environment, such as by warehouses and storage tanks. Views of the project corridor also are available, in a more limited manner, from the Mill Street Pier that allows views under Pioneer Bridge toward the project. Aboveground utilities (e.g., roadway lights and utility lines and poles) also are prominent features in this viewshed. This VAU is well-lit by lighting associated with the industrial, residential, and commercial land uses; local roadways; vehicles; and parking areas.

- **Sacramento VAU:** Industrial, park, marina, transportation, and commercial land uses primarily are located east of the river. Much of this VAU is characterized by the open space lawn areas and riparian vegetation associated with the river, Miller Park, and the water and boat dock facilities associated with the Sacramento Marina. Industrial land uses are located west of I-5 and include fuel storage facilities, similar to those found in the West Sacramento VAU. Transportation facilities consist of I-5, Business I-80/US 50, and the I-5/Business I-80/US 50 interchange (freeways); the Sacramento River Bike Trail; State Parks railroad tracks; and Broadway, Front Street, and roadways associated with Miller Park and the Sacramento Marina. The I-5 freeway creates a physical and visual separation between the park, marina, and industrial land uses that lie west of I-5 and the commercial and residential land uses that lie east of I-5. The most prominent views of the proposed bridge locations are available from Miller Park (refer to Key View 1 in Section IX, *Visual Impact*) and the Sacramento River Bike Trail that parallel the river. The waterfront area of Miller Park offers limited views toward the project corridor and the river because of dense riparian vegetation along the riverbanks. However, views open up seasonally in the late fall and winter, when trees are dormant and without leaves. Views of the project site from the Sacramento River Bike Trail, south of Pioneer Bridge, are available between gaps in riparian vegetation. North of Pioneer Bridge, views of the project site are available from the trail when looking south through gaps between the Pioneer Bridge support columns. Views of the project from Business I-80/US 50, within this VAU, are not readily available except on close approach to the border of the River VAU. Views of the project are not available from I-5 due to vegetation and development along the freeway. East of I-5, views of the project along Broadway consist of the roadway and warehouse facilities and commercial land uses that line both sides of the road. Land uses along this portion of Broadway are somewhat disjointed and are slightly blighted. Aboveground utilities (e.g., roadway lights and utility lines and poles) also are prominent features in the viewshed of this VAU. The VAU is generally well-lit; lighting primarily is associated with the freeway and local roadways, vehicles, parking areas, and development along Broadway. The Sacramento River Bike Trail, Miller Park, and the Sacramento Marina and adjacent riverbanks are not well-lit.
- **River VAU:** The proposed project would cross the River VAU as does the existing Pioneer Bridge (refer to Key View 2 in Section IX, *Visual Impact*). Vegetated levee slopes line the river and limit views to the adjacent West Sacramento and Sacramento VAUs. Views from the river of the West Sacramento and Sacramento VAUs generally consist of the fuel storage tanks that can be seen above the levees and vegetation. There are no levees along Miller Park, however, and the park can be seen from the river between gaps in vegetation. Bridge structures also are common in this area of the river; these include the Pioneer Bridge and—while outside of the River VAU, the existing Tower Bridge and I Street Bridge. North of Pioneer Bridge, the Sacramento city skyline and multistory buildings along River Walk Trail can be seen rising above the canopies of trees along the riverbanks. Views of adjacent VAUs become more available in the late fall and winter after deciduous trees have lost their leaves, reducing the visual screening tree canopies provide in spring through early fall. This VAU is not well-lit because little lighting is associated with the river and adjacent riverbanks. Some lighting is associated with bridge crossings. Most of the lighting in this VAU comes from adjacent VAUs and includes lighting from the Sacramento skyline, adjacent roadways, traveling vehicles, and buildings along the river.

FIGURE 6. Visual Assessment Units

This map delineates three VAUs and their associated key views that were used to assess potential visual impacts of the proposed project. Each VAU is differentiated from other units both by its dimensions and its visual resources.



VII. VISUAL RESOURCES AND RESOURCE CHANGE

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources within the project corridor before and after construction of the proposed project. Resource change is one of the two major variables in the equation that determine visual impacts (the other is *viewer response*, discussed below in Section VIII, *Viewers and Viewer Response*).

With an establishment of the baseline (existing) conditions, a proposed project or other change to the landscape can be evaluated systematically for its degree of impact. The degree of impact depends both on the magnitude of change in the visual resource (i.e., the visual character and quality) and on viewers' responses to and concern about those changes. This general process is similar for all established federal procedures of visual assessment (Smardon et al. 1986) and represents a suitable method of visual assessment for other projects and areas.

The approach for this visual assessment is adapted from FHWA's visual impact assessment system (Federal Highway Administration 1988), in combination with other established visual assessment systems. The visual impact assessment process involves identification of the following.

- Relevant policies and concerns for the protection of visual resources.
- Visual resources (i.e., the visual character and quality) of the region, the immediate project area, and the project corridor.
- Important viewing locations (e.g., roads) and the general visibility of the project corridor, using descriptions and photographs.
- Viewer groups and their sensitivity.
- Potential impacts.

Visual Resources

Visual resources of the project corridor are defined and identified below by assessing visual character and visual quality in the project corridor.

VISUAL CHARACTER

Visual character includes attributes such as form, line, color, and texture. Visual character is used to describe, not evaluate, visual resources—that is, these attributes are considered neither good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. For this project, the following attributes were considered.

- **Form**—visual mass or shape.
- **Line**—edges or linear definition.
- **Color**—reflective brightness (light, dark) and hue (red, green).
- **Texture**—surface coarseness.
- **Dominance**—position, size, or contrast.
- **Scale**—apparent size as it relates to the surroundings.
- **Diversity**—a variety of visual patterns.
- **Continuity**—uninterrupted flow of form, line, color, or textural pattern.

The visual character of the proposed project would be somewhat compatible with the existing visual character of the project corridor and the surrounding pattern elements and pattern character of the project area.

The topography in the West Sacramento and Sacramento VAUs is generally flat, except for the raised levees that provide the greatest vertical relief in the project area. Industrial and commercial areas are larger in form and scale, compared to nearby single-family residential development. Within the River VAU, the river is lower than the adjacent land, and existing bridge crossings are a common visual element. Transportation facilities, including elevated structures (I-5, Business I-80/US 50, and the I-5/Business I-80/US 50 interchange), also are prominent. Grassland areas in all the VAUs grow to a low to medium height; these areas have a fine-textured appearance where manicured and a medium-textured appearance where not manicured. Trees along the river, and trees and shrubs associated with Miller Park and residential and commercial landscaping, provide visual interest and natural diversity against the built environment. Trees and shrubs also provide seasonal visual interest with fall colors, bare branches in winter, and when in leaf in spring through early fall. Similarly, the color of the grasslands generally changes seasonally in correspondence to the amount of rain in the region; colors range from tan in summer or dryer, warmer months to green in winter or when cool air and rain have been present. In addition, most trees in the VAUs are deciduous, so they provide for more views to surrounding areas when they are bare.

VISUAL QUALITY

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps to identify specific methods for addressing each potential visual impact of the project. The three criteria for evaluating visual quality are defined below.

- **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness** is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- **Unity** is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality of the existing corridor would not be altered by the proposed project. Section IX, *Visual Impact*, describes changes to the visual quality. The existing visual quality for each VAU is described below.

- **West Sacramento VAU:** The vividness of this VAU is moderate-low because the assortment of well-developed areas, industrial uses, and vacant lands creates a visually segmented area that is largely blighted compared to other established areas within the region. The intactness and unity are moderate-low because the area lacks smooth transition between residential land uses along Jefferson Boulevard and industrial areas to the east. In addition, transportation corridors segment residential and industrial areas from one another and create distinct land use pockets. However, these individual pocket areas are moderately intact and unified within and of themselves. The resulting visual quality of the West Sacramento VAU is moderate-low to moderate.
- **Sacramento VAU:** The vividness of this VAU is moderate-low to moderate because the assortment of industrial, park, and commercial land uses creates a visually segmented area. The intactness and unity are moderate-low because the area lacks smooth transition between park uses and the nearby industrial and commercial land uses. In addition, transportation corridors segment this VAU and create distinct land use pockets. However, these individual pocket areas are moderately

intact and unified within and of themselves. The resulting visual quality of the Sacramento VAU is moderate-low.

- **River VAU:** The vividness of this VAU is moderate-high because the river provides a visual amenity and recreational resource within a highly developed area that is highly used and accessed. The river is mostly free from development encroachments except for the existing river crossings. Even with these encroachments, the intactness and unity also are moderate-high because the crossings provide a visual and physical connection, and visual access, to the river within an urban environment. The resulting visual quality of the River VAU is moderate-high.

Resource Change

Resource change would be moderate-low. The proposed project would introduce a new bridge crossing where none presently exists. Other overcrossings are located within sight distance of the project corridor, two of which (Tower Bridge, I Street Bridge) are comparable in form and scale to the proposed bridge. Construction of the proposed bridge would require grading and a small amount of vegetation removal along each levee to accommodate the proposed roadway/bridge facility. The grading and loss of vegetation would be visible from all three VAUs. In addition, small portions of properties within the West Sacramento and Sacramento VAUs would be acquired to accommodate the bridge approaches. However, as identified under *Regulations* (see Section VIII), these acquisitions primarily would occur on industrial lands that are identified to be redeveloped to new land uses as part of the *Pioneer Bluff Transition Plan* (City of West Sacrament 2014) or proposed for redevelopment in the *West Broadway Specific Plan* being prepared by the City of Sacramento. The Sacramento River Bike Trail within the Sacramento VAU also would be realigned to accommodate the project and connect to the new river crossing. However, the changes that would result from construction of the proposed project can be accomplished easily without substantial visual impact on the resources in each VAU. Therefore, the visual resource changes proposed by the project would be moderate-low because, although a new visual feature would be introduced and a small amount of vegetation would be removed, the new bridge would be generally in keeping with the existing visual character.

VIII. VIEWERS AND VIEWER RESPONSE

The population affected by the project is composed of *viewers*. Viewers are people whose views of the landscape may be altered by the proposed project—either because the landscape itself has changed or their perception of the landscape has changed.

Viewers, or more specifically the response of viewers to changes in their visual environment, are one of two variables that determine the extent of visual impacts that would be caused by construction and operation of the proposed project. The other variable is the change to visual resources discussed earlier in Section VII, *Visual Resources and Resource Change*.

Types of Viewers

There are two major types of viewer groups for roadway projects: roadway neighbors and roadway users. Each viewer group has its own particular level of *viewer exposure* and *viewer sensitivity*, resulting in distinct and predictable visual concerns for each group that help to predict their responses to visual changes.

ROADWAY NEIGHBORS (Views *toward* the Road)

Roadway neighbors are people who have views *toward* a road in the project area. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate roadway neighbors

or viewer groups with distinct reasons for being in the roadway corridor and therefore with distinct responses to changes in visual resources. For this project, the following roadway neighbors were considered.

- Residents within the West Sacramento VAU.
- Workers within the West Sacramento and Sacramento VAUs, including construction workers within the West Sacrament VAU area.
- Patrons of local businesses in the West Sacramento and Sacramento VAUs.
- Roadway users within the West Sacramento and Sacramento VAUs and crossing the River VAU.
- Rail travelers within the Sacramento VAU.
- Boaters in and fishermen or recreationists on the edge of the River VAU.
- Recreationists using formal and informal trails within the West Sacramento and Sacramento VAUs.

ROADWAY USERS (Views *from* the Road)

Roadway users are people who have views *from* a road in the project area. They can be subdivided into different viewer groups in two ways—by mode of travel or by reason for travel. For example, subdividing roadway users by mode of travel may yield pedestrians, bicyclists, transit riders, car drivers and passengers, and truck drivers. Dividing roadway users or viewer groups by reason for travel creates categories like tourists, commuters, and haulers. It also is possible to use both mode and reason for travel simultaneously, creating a category like *bicycling tourists,* for example. For this project, the following users were considered.

- Recreational travelers
- Local commuters
- Haulers
- Pedestrians
- Bicyclists

COMPOSITE VIEWER GROUP

For analytical purposes, a composite viewer group was created for this project. A composite viewer group is made up of all roadway neighbors and users affected by the project. It is a proportional representation of the affected population. It not only represents a typical viewer but also includes the most critical attributes and concerns of the individual viewer groups from which it was assembled.

For this project, the viewer groups that most typify the composite viewer group include recreational travelers, local commuters, haulers, residents, workers, boaters, and patrons of local businesses. These groups represent the largest viewer groups in direct visual contact with the proposed project.

Viewer Response

Viewer response is a measure or prediction of a viewer's reaction to changes in the visual environment and, as previously mentioned, has two dimensions: viewer exposure and viewer sensitivity.

VIEWER EXPOSURE

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. *Location* relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure. *Quantity* refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. *Duration* refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will respond to a visual change.

Roadway neighbors are the largest number of viewers who come into direct visual contact with the proposed project. Roadway neighbors' views of the project vary based on their location within the landscape and distance from the project. The view of the majority of roadway neighbors within the West Sacramento and Sacramento VAUs generally are focused on the immediate surrounding development. Most roadway neighbors do not have immediate and direct views of the bridge crossing locations unless very close to the river because vegetation, development, and transportation facilities limit their views. The exception is within the River VAU, where the river corridor allows for more direct views. However, existing bridges create some visual disruption of views, depending on viewer location. Other neighbors would be in visual contact for shorter periods when passing by the site, in transit, or while working nearby. Therefore, viewer exposure for roadway neighbors is considered to be moderate-low.

Roadway users come into direct visual contact with the proposed project but only briefly and in passing as they travel by or through the project corridor. Therefore, viewer exposure for roadway users also is considered to be moderate-low.

VIEWER SENSITIVITY

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. *Activity* relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually observing their surroundings, the more sensitive viewers will be to changes to visual resources. *Awareness* relates to the focus of view—is the focus wide and the view general, or is the focus narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change. *Local values* and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps to predict that viewers will have a high concern for any visual change.

The proposed project is located in an area that is undergoing new land development, with existing uses slated for redevelopment. All viewer groups are familiar with maintenance and construction activities occurring in the vicinity and close to the project corridor. Roadway neighbors would have moderate-low sensitivity to visual changes resulting from the proposed project. Although they are adjacent to the proposed project, roadway neighbors do not have immediate and direct views of the entire project corridor and do not have long-term, stationary views. The project corridor is not a dominant focal point of their views. Roadway users would have low sensitivity to visual changes resulting from the proposed project because they come in direct visual contact with the proposed project only while travelling through the area; consequently, views would be intermittent, and construction activities are typical in the project vicinity.

REGULATIONS

No roadways within or near the project corridor are designated in federal or state plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (California Department of Transportation 2017).

City of West Sacramento

General Plan

The *City of West Sacramento, General Plan 2035 Policy Document* identifies the following goals and policies that are applicable to the project (City of West Sacramento 2016).

Land Use Element

The proposed project falls within land uses identified as River Mixed Use and Commercial east of and along Jefferson Boulevard. However, Low Density Residential land uses border the project corridor west of Jefferson Boulevard. In addition, the project falls within the Bridge and Pioneer Bluff Districts.

Policy LU-1.4: Land Use Transitions. In existing developed areas designated for new uses, the City shall ensure the orderly transition to new uses consistent with the adopted General Plan and phase out existing uses, during the transition period.

Policy LU-1.5: Compatible Infill. The City shall actively encourage infill development that is architecturally and environmentally sensitive and is compatible with surrounding land uses.

Policy LU-1.6: Infill and Refill Development. The City shall support infill and refill projects that enhance community character and optimizes City investments in infrastructure.

Policy LU-3.6: Neighborhood Transitions. The City shall preserve, protect, and enhance established neighborhoods by providing sensitive transitions between these neighborhoods and adjoining areas, and requiring new development, both private and public, to respect and respond to existing design, buildings, streetscapes, and open spaces that contribute to the overall character of the neighborhood.

Policy LU-4.3: Enhanced Street Character. The City shall encourage renovation, infill, and redevelopment of existing centers that reduces the visual prominence of parking lots, makes the centers more pedestrian-friendly, reduces visual clutter associated with signage, and enhances the definition and character of the street frontage and associated streetscape.

Policy LU-5.1: Diverse Districts and Corridors. The City shall encourage development of diverse mixed-use districts and corridors that address different community needs and market sectors, provide a variety of housing opportunities, and create distinct and unique areas of the city.

Policy LU-5.3: Cultural and Entertainment Uses. The City shall actively support the development of cultural, education, and entertainment uses and events within the city's districts and along its corridors to establish a unique identity for each area of the city and attract visitors.

Policy LU-5.6: Compatibility with Adjoining Uses. The City shall ensure that the development and redevelopment of higher-density mixed-use development within districts and along corridors is compatible with adjacent land uses, particularly residential uses.

Policy LU-5.11: Mixed-Use Districts. The City shall promote the development of a series of unique mixed-use districts along the Sacramento River, as designated on the Land Use Diagram, that create significant opportunities for housing, employment, and retail activities; complement existing neighborhoods; and enhance economic and social vitality.

Policy LU-5.15: Conversion of Uses. The City shall seek to minimize conflicts between existing incompatible uses in designated mixed-use districts and work with property-owners and businesses to relocate these uses to appropriate areas of the city.

Policy LU-5.17: Bridge District. The City shall encourage the development of the Bridge District as a series of urban neighborhoods that include a mixture of commercial, office, residential, and retail uses. The City shall continue to implement the West Sacramento Bridge District Specific Plan (2009a).

Policy LU-5.18: Pioneer Bluff. The City shall support efforts to redevelop the Pioneer Bluff mixed-use district and to relocate existing nonconforming uses to an appropriate area. Existing nonconforming uses shall be limited to ordinary repair and maintenance only.

Policy LU-6.7: Waterfront Industrial Uses. The City shall prohibit new industrial uses along the Sacramento River and promote, when appropriate, the redevelopment of exiting industrial uses into new mixed-use developments.

Policy LU-8.3: Connected Open Space System. The City shall ensure that new development does not create barriers to the connections among the various parts of the city's parks and open space systems.

Policy LU-8.4: Open Space Buffers. The City shall use traditional, developed parks and innovative uses of open space to "soften" the edges between urban areas and the natural environment.

Urban Structure and Design

Policy UD-1.3: Travel Experience. The City shall seek to ensure that the urban structure and design of the city contributes positively to the overall travel experience by automobile, rail, transit, boat, foot, and bicycle within and through the city.

Policy UD-1.4: Distinctiveness and Integrity. The City shall endeavor to maintain and enhance the distinctiveness and integrity of the various neighborhoods, districts, centers, and corridors within the city.

Policy UD-1.5: Urban Skyline. The City shall promote the development of a distinctive urban skyline that reflects the vision of West Sacramento with a prominent core that contains the city's tallest buildings, complemented by smaller urban centers with lower-scale mid- and high-rise development.

Policy UD-1.7: Complete Neighborhoods. The City shall promote the design of complete and well-structured neighborhoods that respect and respond to the physical characteristics, buildings, streetscapes, open spaces, and urban forms that contribute to their overall character and livability.

Policy UD-1.9: Street Patterns. The City shall protect well-defined existing street patterns and require new development and redevelopment projects to create walkable, pedestrian-scaled blocks, publicly-accessible mid-block and alley pedestrian routes where appropriate, and appropriately scaled sidewalks.

Policy UD-1.11: Open Space Features. The City shall promote an urban structure and design that incorporates the open space features of West Sacramento's waterfront, rural landscapes, and parks, including visual access, natural surveillance and development that complements the natural environment.

Policy UD-1.13: Design Review. The City shall require design review that focuses on achieving appropriate form and function for new development and redevelopment to promote creativity, innovation, safety and quality design.

Policy UD-2.1: Community Gateways and Entryways. The City shall maintain distinctive gateways and entryways that provide a sense of arrival and create a unique community identity for West Sacramento and the city's unique neighborhoods, districts, and corridors.

Policy UD-2.2: Contrast between Urban and Rural. The City shall strive to enhance the sense of arrival in West Sacramento as one enters the city by heightening the contrast between rural and natural areas and urban areas.

Policy UD-2.3: Unique & Individual Gateways. The City shall promote each gateway and entryway by protecting and enhancing their unique characteristics (e.g. historical and cultural features, landscapes, and natural environments) and developing new architectural and/or landscape treatments.

Policy UD-2.4: Features and Amenities. The City shall use a combination of streetscape, building orientation and placement, community art, and signage to create memorable entries to West Sacramento and the city's neighborhoods, districts, and corridors. Items that detract from the gateway image, such as attention-getting devices, outside storage, and off-premise commercial signs shall be discouraged or prohibited.

Policy UD-2.5: River-Crossings and Bridges. The City shall promote the enhancement of river-crossings and bridges to create strong, positive, and memorable gateways into West Sacramento and to reinforce the significance of historical bridges.

Policy UD-2.6: Capitol City Freeway (U.S. 50) and I-80. The City shall work with Caltrans and private property owners to improve the visual quality of traveling on the Capitol City Freeway (U.S. 50) and Interstate 80 in West Sacramento by improving the maintenance of the highway right-of-way and adjacent properties, enforcing city codes, reducing and/or consolidating billboards, encouraging new investment on visible sites, maintaining and improving landscaping and lighting, and screening industrial uses.

Policy UD-2.7: Districts and Neighborhoods. The City shall ensure that development or redevelopment projects located next to gateways and entryways include features and amenities (e.g., signs, public art, streetscape enhancements, and architectural styles) that clearly demonstrate to travelers that they are entering West Sacramento or a unique area of the city.

Policy UD-3.1: River City Image. The City shall promote development along the waterfront that establishes an image of West Sacramento as a river city.

Policy UD-3.2: Waterfront Urban Core. The City shall encourage development along the waterfront to include a range of high density and intensity urban uses that establish the waterfront as the city's urban core.

Policy UD-3.3: Waterfront Focused Development. The City shall require development along the waterfront to use the Sacramento River as a focal point to guide the scale, building orientation, and intensity of development.

Policy UD-3.4: Architectural Style and Building Design. The City shall encourage architectural styles and building designs that incorporate and feature the natural river environment as a guiding theme.

Policy UD-3.5: Connectivity. The City shall ensure that development along the waterfront provides for and strengthens connectivity through improved public open space, pedestrian and bicycle circulation, transportation systems, and visual corridors.

Policy UD-3.6: Removing Barriers. The City shall seek to overcome or remove barriers to connectivity along the waterfront that divides neighborhoods and districts (e.g., Pioneer Bridge, railroad).

Policy UD-3.7: Riverfront Parks and Open Spaces. The City shall require development along the waterfront to contribute to a world-class system of riverfront parks and open spaces that create a continuous riverfront "greenbelt" and provide a multitude of recreational opportunities, both passive and active.

Policy UD-3.8: Physical and Visual Access. The City shall require development along the waterfront to maximize visual and physical access to the Sacramento River.

Policy UD-3.9: Complementary. The City shall ensure that development along the waterfront complements the character and functions of adjacent neighborhoods and districts.

Policy UD-4.1: Overall Streetscape Design. The City shall ensure that streetscape design contributes to and defines the overall character of surrounding districts, neighborhoods, centers, and corridors.

Policy UD-4.2: Appropriate Features. The City shall ensure that streetscape design includes features (e.g., sidewalks, lighting, canopy trees, landscaping, public art, furniture) that are appropriate for the intended use of the street and adjacent land uses.

Policy UD-4.3: Compatible Design. The City shall ensure that streetscape design complements surrounding architecture, responds to the scale and proportion of the street, and brings coherence and unity through a consistent use of materials and features.

Policy UD-4.4: Consistent Detailing and Application. The City shall ensure that streetscape designs use materials and features consistently to create a distinct and continuous streetscape surface.

Policy UD-4.5: Appropriate Separation. The City shall encourage streetscape designs that result in clear separation between the pedestrian environment and roadway by placing street furniture, landscaping, and street trees at the edge of the sidewalk.

Policy UD-4.6: Unique Streetscape Features. The City shall encourage unique streetscape features such as special paving treatments and landscaping, street vendors and sidewalk cafes, distinct street and/or pedestrian lighting, public art, awnings, wayfinding signage, and banners.

Policy UD-4.7: Maintenance. The City shall strive to ensure streetscapes are managed and maintained to appropriate, safe, and serviceable standards.

Policy UD-4.8: Open Space and Trees. The City shall require that new roadways and roadway improvement projects include planting strips and landscaped medians sized for canopy trees.

Policy UD-4.9: Green Street Features. The City shall encourage streetscapes to include green street features that capture and absorb stormwater runoff and create attractive natural urban greenspaces.

Policy UD-4.10: Durable Materials and Construction. The City shall ensure that streetscape designs use durable materials and construction methods to ensure a long life span and minimal maintenance.

Policy UD-4.11: Reduce Clutter. The City shall strive to reduce and eliminate superfluous and redundant streetscape furniture and signage, and place new furniture and signs only where they are needed.

Economic Development

Policy ED-2.12: Revitalization. The City shall continue to encourage the revitalization and reuse of aging and underperforming commercial and industrial areas to eliminate blight and provide new economic opportunities.

Policy ED-3.9: Removal of Blight. The City shall strive to eliminate blight that may affect the attraction of new businesses and employees.

Policy ED-3.10: Gateways to the City. The City shall work with other government agencies, businesses, property-owners, and other business-support organizations to improve the visual appearance of gateways to the city, most notably highway interchanges, on-ramps, and exits.

Mobility

Policy M-2.6: Street Greening. The City shall require consistent landscaping, including street trees and landscaped medians and sidewalks, in street design that minimizes runoff and creates an inviting environment.

Policy M-2.11: Complete Bridges. The City shall ensure, to the extent that bridges and overpasses include infrastructure, features, and amenities to provide a continuous, unbroken system of complete streets within the city and to provide a welcoming entrance at the city's gateways.

Policy M-5.3: Bicycle Routes. The City shall develop, adopt and implement a safe and convenient network of identified bicycle routes connecting residential areas with recreation, parks, scenic areas, the riverfront, schools, the Central Business District, public facilities, shopping, and employment areas within the city.

Policy M-6.3: Pedestrian-Friendly Streets. The City shall ensure that new streets in areas of high pedestrian activity support safe and attractive travel by providing features and amenities such as separated sidewalks, bicycle lanes and separated paths, pedestrian signals, street trees, seats, and pedestrian-scale lighting.

Parks and Recreation

Policy PR-1.16: Drought-Tolerant Landscaping. The City shall emphasize the use of drought-tolerant and drought-resistant landscaping, as well as low impact development (LID) principles in the development of City parks.

Policy PR-1.18: Parks as Buffers. The City shall encourage the use of parks and recreational corridors as buffers between incompatible land uses.

Policy PR-2.1: Recreational Corridors along River. The City shall establish recreational corridors along the full length of the Sacramento River and Deep Water Ship Channel located within the city limits.

Policy PR-2.3: Connecting to Recreational Corridors. The City shall strive to ensure that pedestrian and bicycle pathways that cross the Sacramento River connect to the city's recreational corridors.

Policy PR-3.1: River Access. The City shall establish and maintain continuous public access to the Sacramento River for its full length within West Sacramento for fishing and other uses.

Natural and Cultural Resources

Policy NCR-2.3: Habitat Connectivity. The City shall preserve, enhance, and create interconnected open space and natural areas to provide for wildlife movement and protect biodiversity.

Policy NCR-2.5: Habitat Buffer. The City shall require the provision and maintenance of an adequate setbacks between significant habitat and adjacent development. The buffer shall be landscaped with native vegetation and may be used for passive recreation purposes.

Policy NCR-2.15: Landscaping with Native Plants. The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, medians, parks, and private properties. In particular, native plants should be used along the Sacramento River, in areas adjacent to riparian and wetland habitats, and in other open space and natural areas.

Policy NCR-3.1: Healthy Urban Forest. The City shall manage and maintain a vibrant, healthy urban forest through tree planting, pest control, scheduled pruning, and removal and replacement of dead or diseased trees.

Policy NCR-3.3: Tree Mitigation Ordinance. The City shall maintain and implement the tree mitigation ordinance, which regulates the removal of existing trees, preserves existing trees where possible, and requires mitigation where healthy trees must be removed either by planting on-site, planting in another location approved by the Tree Administrator, or a combination of planting and a contribution to a Tree Mitigation Fund.

Policy NCR-3.5: Planting in New Development. The City shall require the planting of street trees, parking lot canopy trees, screening trees, and other amenity trees and landscaping in all new development, consistent with City landscaping development guidelines, to minimize the heat island effect.

Policy NCR-3.6: Shading of New Development. The City shall require that new development achieve 50 percent shading of constructed and paved surfaces (e.g., parking lots) within five years of completing construction, and include a plan to maintain and replace trees. Exceptions may be considered for those parking lots containing solar installations. Urban uses shall employ urban greening techniques where feasible.

Policy NCR-3.7: City Property. The City shall continue to pursue opportunities to plant new trees on existing City-owned properties and, to the extent possible, work to preserve mature native trees.

Policy NCR-3.8: Property Owner Responsibility. The City shall encourage property owners to maintain and protect trees on their property as well as street trees adjacent to their property.

Policy NCR-3.9: Pruning. The City shall ensure street trees are pruned as necessary to maintain a healthy urban forest and to prevent hazards and provide street visibility.

Policy NCR-6.7: LED Street Lights. The City shall replace existing street lights with light emitting diode (LED) street lights, as financially feasible.

Policy NCR-8.1: Protecting Scenic Vistas. The City shall protect scenic vistas from obstructions and visual clutter where it would negatively affect the public's reasonable use and enjoyment of the resource.

Policy NCR-8.2: Complementary Site & Design. The City shall require new development to be sited and designed to visually complement the natural environment, which include features such as the Sacramento River, Sacramento Deepwater Ship Channel, agricultural fields, and other natural landscapes.

Policy NCR-8.3: Reducing Light Pollution. The City shall require project designs, lighting configurations, and operational practices that reduce light pollution and preserve views of the night sky.

Policy NCR-8.4: Minimize Obtrusive Lighting. The City shall minimize obtrusive light by limiting outdoor lighting that is not necessary for public safety, and/or is misdirected or excessive.

Policy NCR-8.5: Glare. The City shall require new development to incorporate design features that prevent excessive glare.

Pioneer Bluff Transition Plan

The Pioneer Bluff Transition Plan is a plan to transition industrial land uses along the Sacramento riverfront to an urban waterfront area that provides commercial, residential, and park facilities for the residents of West Sacramento (City of West Sacrament 2014). This plan identifies construction of Broadway Bridge. No policies within this document pertain to the proposed project or aesthetic and visual resources.

Bridge District Specific Plan

The proposed project falls within the Waterfront and Pioneer Edge neighborhoods identified in Volume I of *West Sacramento Bridge District, a Specific Plan for the Development of West Sacramento* (City of West Sacramento 2009a). The specific plan contains the following policies that may be applicable to the project.

Land Use Policy 9. The City shall require that all proposals for development protect or mitigate environmentally sensitive areas as set forth in the plan, in accordance with state and federal guidelines. Mitigation for protected trees unable to be preserved within development sites may be provided in park and open space areas and as street trees.

Urban Development Policy 1. The City will encourage development of an urban waterfront that appropriately celebrates West Sacramento's central riverfront.

Urban Development Policy 3. The City will invest in the development of streetscapes, landscaped open spaces and tree plantings as components of a coherent public open space system.

Urban Development Policy 4. The City will facilitate creation of an environment in which people feel comfortable and safe walking and sitting in public spaces during the day and after dark.

Waterfront Edge Policy 1. The City will ensure continuous public access to the entire length of the Sacramento River waterfront.

Waterfront Edge Policy 3. The City will promote complementary private development, open space and other facilities and opportunities consistent with public enjoyment of the waterfront during the day, evening and on weekends.

Waterfront Edge Policy 5. The City will develop and implement a landscape plan to maintain and improve native vegetation in concert with people oriented uses, consistent with federal flood protection requirements.

Pioneer Edge Policy 1. The City will encourage uses adjacent to Highway 50 that are not sensitive to freeway noise yet are compatible with adjacent areas in the Bridge District and that effectively buffer areas to the north.

Pioneer Edge Policy 2. The City will encourage uses, activities, and configurations that are compatible with the Core and neighborhoods to the west.

Pioneer Edge Policy 3. The City will promote transit infrastructure and usage, with the goal of extending the Downtown/Riverfront Streetcar into the Pioneer Edge and south to the Pioneer Bluff/Stone Lock.

Volume II of the Bridge District Specific Plan, *Urban Streetscape and Design Standards*, contains guidance for streetscape standards along the waterfront, along 5th Street, and local streets. Proposed roadway projects must comply with the design standards set forth in Volume II (City of West Sacramento 2009b).

West Sacramento Tree Preservation Ordinance

The Tree Preservation Ordinance provides standards for tree permits required for actions affecting trees; standards for identifying street, landmark, and heritage trees; measures to protect trees; and replacement requirements. Section 8.24.010, *Purpose*, of the ordinance identifies that the "preservation of trees enhances the natural beauty of the city, sustains long-term potential increases in property values, maintains the environment, tempers the affect of extreme temperatures, creates the identity and quality of the city which is necessary for successful business to continue, improves the attractiveness of the city to visitors and increases the oxygen output of the area which is needed to combat air pollution" (City of West Sacramento 2019).

City of Sacramento

General Plan

The City of Sacramento adopted the *Sacramento 2035 General Plan* on March 3, 2015 (City of Sacramento 2015). The project area also is covered by the Central City and Land Park Community Plans, which are a part of the 2035 general plan. No specific policies within the Land Park Community Plan apply to the proposed project. The following general plan policies are applicable to the project.

Land Use and Urban Design Element

Policy LU 2.2.1: World-Class Rivers. The City shall encourage development throughout the city to feature (e.g., access, building orientation, design) the Sacramento and American Rivers and shall develop a world-class system of riverfront parks and open spaces that provide a destination for visitors and respite from the urban setting for residents.

Policy LU 2.2.3: Improving River Development and Access. The City shall require new development along the Sacramento and American Rivers to use the natural river environment as a key feature to guide the scale, design, and intensity of development, and to maximize visual and physical access to the rivers, subject to the public safety requirements of the Local Maintaining Agencies (LMA) and the Central Valley Flood Protection Board (CVFPB).

Policy LU 2.3.2: Adjacent Development. The City shall require that development adjacent to parks and open spaces complements and benefits from this proximity by:

- Preserving physical and visual access
- Requiring development to front, rather than back, onto these areas
- Using single-loaded streets along the edge to define and accommodate public access
- Providing pedestrian and multi-use trails
- Augmenting nonaccessible habitat areas with adjoining functional parkland
- Extending streets perpendicular to parks and open space and not closing off visual and/or physical access with development
- Addressing the operations, maintenance, and public safety needs of the Local Maintaining Agencies (LMA).

Policy LU 2.4.1: Unique Sense of Place. The City shall promote quality site, architectural, and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including: walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.

Policy LU 2.4.3: Enhanced City Gateways. The City shall ensure that public improvements and private development work together to enhance the sense of entry at key gateways to the city.

Policy LU 2.5.1: Connected Neighborhoods, Corridors, and Centers. The City shall require that new development, both infill and greenfield, maximizes connections and minimizes barriers between neighborhoods corridors, and centers within the city.

Policy LU 2.5.2: Overcoming Barriers to Accessibility. The City shall strive to remove and minimize the effect of natural and manmade barriers to accessibility between and within existing neighborhoods, corridors, and centers.

Policy LU 2.7.1: Development Regulations. The City shall promote design excellence by ensuring city development regulations clearly express intended rather than prohibited outcomes and reinforce rather than inhibit quality design.

Policy LU 2.7.2: Design Review. The City shall require design review that focuses on achieving appropriate form and function for new and redevelopment projects to promote creativity, innovation, and design quality.

Policy LU 6.1.8: Corridor Transits. The City shall require design and development along mixed-use corridors that promotes the use of public transit and pedestrian and bicycle travel and maximizes personal safety through development features such as:

- Safe and convenient access for pedestrians between buildings and transit stops, parking areas, and other buildings and facilities.
- Roads designed for automobile use, efficient transit service as well as pedestrian and bicycle travel.

Policy LU 6.1.9: Enhanced Pedestrian Environment. The City shall require that sidewalks along mixed-use corridors are wide enough to accommodate significant pedestrian traffic and promote the transformation of existing automobile-dominated corridors into boulevards that are attractive, comfortable, and safe for pedestrians by incorporating the following:

- On-street parking between sidewalk and travel lanes
- Few curb cuts and driveways
- Enhanced pedestrian street crossings
- Building entrances oriented to the street
- Transparent ground floor frontages
- Street trees
- Streetscape furnishings
- Pedestrian-scaled lighting and signage

Policy LU 6.1.10: Visual and Physical Character. The City shall promote development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by:

- Enhancing the definition of the corridor by locating buildings at the back of the sidewalk, and establishing a consistent street wall
- Introducing taller buildings that are in scale with the wide, multi-lane street corridors
- Locating off-street parking behind or between buildings (rather than between building and street)
- Reducing visual clutter by regulating the number, size, and design quality of signs
- Removing utility poles and undergrounding overhead wires
- Adding street trees

Mobility Element

Policy M 1.3.2: Eliminate Gaps. The City shall eliminate "gaps" in roadways, bikeways, and pedestrian networks.

a. The City shall construct new multi-modal crossings of the Sacramento and American Rivers.
b. The City shall plan and seek funding to construct grade-separated crossings of freeways, rail lines, canals, creeks, and other barriers to improve connectivity.
c. The City shall construct new bikeways and pedestrian paths in existing neighborhoods to improve connectivity.

Policy M 2.1.3: Streetscape Design. The City shall require that pedestrian-oriented streets be designed to provide a pleasant environment for walking including shade trees; plantings; well-designed benches, trash receptacles, news racks, and other furniture; pedestrian-scaled lighting fixtures; wayfinding signage; integrated transit shelters; public art; and other amenities.

Utilities Element

Policy U 1.1.10: Safe, Attractive, and Compatible Utility Design. The City shall ensure that public utility facilities are designed to be safe, aesthetically pleasing, and compatible with adjacent uses.

Policy U 1.1.11: Underground Utilities. The City shall require undergrounding of all new publicly-owned utility lines, encourage undergrounding of all privately owned utility lines in new developments, and work with electricity and telecommunications providers to underground existing overhead lines.

Environmental Resources Element

Policy ER 7.1.1: Protect Scenic Views. The City shall seek to protect views from public places to the Sacramento and American Rivers and adjacent greenways, landmarks, and urban views of the downtown skyline and the State Capitol along Capitol Mall.

Policy ER 7.1.2: Visually Complementary Development. The City shall require new development be located and designed to visually complement the natural environment/setting when near the Sacramento and American Rivers, and along streams.

Policy ER 7.1.3: Lighting. The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and requiring light for development to be directed downward to minimize spill-over onto adjacent properties and reduce vertical glare.

Policy ER 7.1.5: Scenic Resources at River Crossings. The City shall require the style, scale, massing, color, and lighting of new bridges to complement the natural and/or community setting. Design considerations for river crossings will include the degree to which bridges minimize obstruction of scenic views of the river and riparian areas from publicly accessible open space areas, including from the river, and enhance the scenic setting by incorporating design features that complement the surrounding area and/or provide high quality and visually interesting design.

Central City Community Plan

Policy CC.LU 1.1: Visual Qualities. The City shall improve the visual qualities of improvements, especially signing, building and yard maintenance, commercial developments, and overhead utilities.

Specific Plans

West Broadway Specific Plan

The City of Sacramento is in the process of developing a specific plan for the West Broadway area of Sacramento, within which the project's improvements proposed for the south side of Broadway are located. Per the City's website, "the specific plan will stitch together seemingly disparate land-uses and disconnected circulation patterns into a vibrant cohesive fabric and remove barriers to increasing the supply of housing south of Broadway." The *West Broadway Specific Plan* is slated to be adopted in April 2020 and likely will include policies related to aesthetics and visual resources that will pertain to the proposed project (City of Sacramento 2019a). In addition, conceptual plans from the second community workshop identify construction of Broadway Bridge (City of Sacramento 2019b). The *West Broadway Specific Plan* is not yet adopted policy. The policies in the General Plan and *Central City Community Plan*, as described above apply. In addition, the project is within the boundaries of the *Central City Specific Plan*.

Central City Specific Plan

The proposed project is within the Central City Specific Plan's Riverfront and Broadway Districts (City of Sacramento 2018). The following related policies are applicable to the project.

Land Use and Urban Form

Policy LU.3.1: Pedestrian and Bicycle Facilities. Facilitate the installation and enhancement of safe, comfortable, convenient, and connected pedestrian and bicycle facilities to encourage walking and bicycling.

Policy LU.3.2: Street Tree Canopy. Preserve and enhance the urban street tree canopy. Allow for flexibility in building design and selection of appropriate species to avoid or minimize conflicts between trees with Policy transit facilities, buildings and utility infrastructure.

Policy LU.3.3: Street Furnishings and Amenities. Incorporate a variety of quality street furnishings and amenities, including restrooms, to create an attractive and comfortable environment for people to congregate.

Policy LU.3.6: Wayfinding and Branding. Establish a clear sense of identity and arrival to the Central City and its unique districts by providing a network of attractive and easily visible wayfinding, city branding and district branding signs, kiosks, banners, gateways, and other elements that are at the pedestrian level.

Policy LU.3.7: Lighting. Continually refine the City's lighting standards, to reflect the latest technology, for pedestrian areas and crossings to enhance visibility and safety, fill gaps in street lighting, and contribute to an attractive and inviting public environment.

Policy LU.4.1: Creative and Flexible Design Solutions. Allow for creative and flexible architectural and other design solutions that acknowledge contextual design through emulation, interpretation, or contrast in character.

Policy LU.4.2: High-Quality Materials. Encourage the use of high-quality building materials, detailing, and landscaping as defined by the Central City Design Guidelines.

Policy LU.4.3: Services, Access, and Parking. Promote functional and aesthetic integration of building services, vehicular access, and parking facilities.

Policy LU.4.4: Sustainable Design. Promote sustainability in building and landscaping design, construction, renovation, and operations.

Policy LU.4.5: Investment in Existing Buildings and Sites. Incentivize economic investment in existing buildings and sites, including facade improvements, new paint and signage, retrofitting, adaptive reuse, preservation of existing trees, and upgraded landscaping and paving.

Broadway District

Policy LU.7.9: Mixed Use District. Promote the development of the Broadway District as a viable commercial and residential mixed use district, while preserving its unique character.

Policy LU.7.10: Broadway Complete Streets Plan. Implement the Broadway Complete Streets Plan which introduces traffic calming, reduced roadway and intersection widths, reduced left-turn lanes, consistent curb treatments and street lighting, and additional on-street parking

Policy LU.7.11: Identity and Image. Support expansion of entertainment, restaurants, specialty businesses, landmarks and other elements to improve the identity and image of the corridor in the region.

Policy LU.7.12: Pedestrian Orientation. Create a unique character and pedestrian oriented urban form along the corridor and each of its distinct segments: the Lower Broadway or Riverside District, the Tower District, and Upper Broadway.

Riverfront District

Policy LU.9.1: Development and Revitalization. Support the development and revitalization of Old Sacramento and other areas west of Interstate 5.

Policy LU.9.5: West Sacramento Connections. Facilitate new surface and water connections to West Sacramento and continue to upgrade existing connections for pedestrian and bicycle access.

Policy LU.9.7: Backbone of Public Spaces. Secure and enhance a continuous "backbone" of public space along the riverfront to accommodate a variety of passive and active recreational, entertainment and educational uses, including reprogramming Waterfront Park to more active uses.

Policy LU.9.8: Public Assembly and Activities. Create places along the riverfront for public assembly to facilitate regional celebration of the Sacramento River.

Policy LU.9.9: River Resource and Access. Promote use of the Sacramento River as a recreational resource, including enhanced river access and launching areas for watercraft.

Policy LU.9.10: Upgraded Infrastructure. Improve and upgrade infrastructure to support both new development and the adaptive reuse of existing structures.

Policy LU.9.13: Use Transition. Discourage industrial uses along the Sacramento River and transition the area to commercial and residential uses.

Policy LU.9.14: Riverfront Lighting. Minimize lighting from City structures over waterways to reduce effects on aquatic species, if found to have a significant impact on species behavior and predation.

Sustainability

Policy SU.1.3: Green Streets. Preserve and enhance the tree canopy with species that can adapt to Sacramento's changing climate; encourage the incorporation of additional Green Street features into public right-of-way improvements where feasible.

Policy SU.1.4: Heat Island Effect. Reduce heat island effect through preservation and enhancement of existing tree canopy as well as site planning and selection of landscape and hardscape materials.

Mobility

Policy M.1.6: Riverfront Connections. Integrate the Riverfront into the grid through improved connections, emphasizing visibility, wayfinding, and enhanced pedestrian and bicycle routes that highlight the riverfront destination.

Policy M.5.1: Pedestrian Network Projects and Improvements. Pursue pedestrian network projects and improvements that accomplish the following objectives (which are mapped in Figure 3.9-2):

a. Streetscape projects for commercial/transit streets to improve conditions for walking.

b. Improve connections between the Central City and surrounding neighborhoods ("Connector Street Enhancements").

c. Provide new sidewalks where they don't currently exist ("Gap Projects").

d. Increase sidewalk capacity in areas with high pedestrian volumes ("Activity Center Enhancements").

e. Shaded sidewalks and improved street lighting.

Utilities

Policy U.1.11: Improved Street Lighting. Continue to pursue funding to fill in the gaps for street and corridor lighting, and connect "dark" streets to major amenities in order to provide better lighting and improved pedestrian safety.

Sacramento Tree Planting, Maintenance, and Conservation Ordinance

The Tree Planting, Maintenance, and Conservation Ordinance provides standards for tree permits required for actions affecting trees, removal of city trees as part of public projects, standards for identifying private protected trees, measures to protect private protected trees, and replacement requirements.

A city tree is defined as "any tree the trunk of which, when measured four and one-half feet above ground, is partially or completely located in a city park, on real property the city owns in fee, or on a pubic right-of-way, including any street, road, sidewalk, park strip, mow strip, or alley."

A private protected tree is defined as:

A. A tree that is designated by city council resolution to have special historical value, special environmental value, or significant community benefit, and is located on private property;

B. Any native Valley Oak (*Quercus lobata*), Blue Oak (*Quercus douglasii*), Interior Live Oak (*Quercus wislizenii*), Coast Live Oak (*Quercus agrifolia*), California Buckeye (*Aesculus californica*), or California Sycamore (*Platanus racemosa*), that has a DSH of twelve (12) inches or more, and is located on private property;

C. A tree that has a DSH of twenty-four (24) inches or more located on private property that:

    1. Is an undeveloped lot; or

    2. Does not include any single unit or duplex dwellings; or

D. A tree that has a DSH of thirty-two (32) inches or more located on private property that includes any single unit or duplex dwellings.

Section 12.56.010, *Findings and Purpose*, of the ordinance identifies that the "trees enhance the natural scenic beauty of the city; increase oxygen levels; promote ecological balance; provide natural ventilation and air filtration; provide temperature and erosion controls; increase property values; and improve the quality of life." (City of Sacramento 2019c.)

Sacramento River Bike Trail Plan

The *Sacramento River Bike Trail Plan* aims to preserve, protect, interpret, and improve resources of the Sacramento River Bike Trail in Sacramento. The following policies apply (City of Sacramento 1997).

Policy G6: The Parkway shall be protected from injurious or incompatible elements associated with adjacent land uses.

Policy G7: Land adjacent to the Parkway shall be protected from injurious or incompatible elements associated with Parkway land uses.

Policy R4: All recreational development including trails, signs, structures, and fences shall be constructed to prevent erosion, protect the structural integrity of the levee, and blend harmoniously with the surrounding landscape.

Policy SA2: Potentially hazardous areas in the Parkway, such as old industrial areas, pumping stations, steep waterward levee slopes, and dangerous swimming areas, should be clearly posted.

Policy SA3: Where necessary, separation barriers or fences should be installed to prevent Parkway users from entering into hazardous areas.

Policy N1: Although the Parkway is to be developed for human use, the natural environment shall be protected, preserved, and enhanced to the fullest extent possible, especially large aggregations of riparian vegetation and wildlife.

Policy N6: Non-native plant species may be removed in areas designated for habitat restoration.

Policy N7: Non-native species of vegetation should not be planted in the Parkway.

GROUP VIEWER RESPONSE

The narrative descriptions of viewer exposure and viewer sensitivity for each viewer group were merged to establish the overall viewer response of each group.

The composite viewer group is deemed to have moderate-low to low sensitivity to visual changes resulting from the proposed project. The composite viewer group is deemed to have moderate-low exposure to the proposed project. Roadway neighbors may view the project in a positive manner because of the improved connectivity it would provide. This response is attributed to the proposed project being largely in keeping with the visual character of adjacent roadways and highway structures and upstream bridges (except for the larger Pioneer Bridge). Therefore, the composite group viewer response would be moderate-low.

IX. VISUAL IMPACT

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations also are considered. A generalized visual impact assessment process is illustrated in the following diagram.

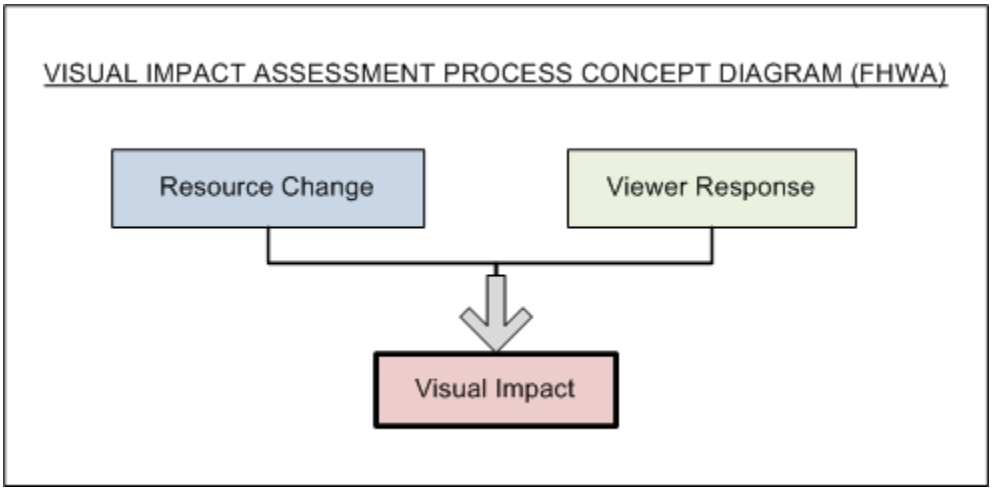


Table 5 provides a reference for determining levels of visual impact by combining resource change and viewer response.

TABLE 5.
Visual Impact Ratings Using Viewer Response and Resource Change

		Viewer Response (VR)				
		Low (L)	**Moderate-Low (ML)**	**Moderate (M)**	**Moderate-High (MH)**	**High (H)**
Resource Change (RC)	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

Visual Impacts by Visual Assessment Unit and Alternative

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key views associated with VAUs that most clearly demonstrate changes to visual resources in the project area. Key views also represent the viewer groups with the highest potential to be affected by the project, considering exposure and sensitivity. Key views are analyzed for each project alternative.

This VIA also considers the potential impacts of a No Build Alternative. Under the No Build Alternative, the project would not be constructed and there would be no visual impacts on the existing visual character, visual quality, or affected viewer groups from the proposed project. Visual changes resulting from planned development and redevelopment of industrial areas would occur according to the schedule for individual projects.

The following section describes and illustrates visual impacts by VAU, compares existing conditions to the project alternatives, and includes the predicted viewer response. Both build alternatives would result in similar visual impacts. Where impacts differ, they are called out. The project would be located entirely within an urbanized area, and no rural areas would be affected. As described in Section IV, *Project Location and Setting*, no scenic vistas or federal, state, or local scenic routes are associated with the project corridor. As such, scenic vistas and scenic routes would not be affected by the project, and these resources are not discussed further. Therefore, the analysis focuses on whether the project would conflict with applicable zoning and other regulations governing scenic quality and changes in light and glare.

WEST SACRAMENTO VISUAL ASSESSMENT UNIT

Construction

Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, cranes, and trucks, into the viewshed of all viewer groups. Underground installation of the fiber optic communication cable would result in minor street disturbances that would be restored to existing conditions once complete. Only access lids, similar to those for other underground utilities, would be visible after installation is complete.

Temporary falsework platforms would be required to construct the proposed bridge foundations and approach structures; these would be installed on or after May 1 and removed by November 30. In addition, temporary cofferdams would be required to construct the bridge piers within the water.

Temporary visual changes due to construction signaling, signage, and lighting also would occur. These changes are not considered adverse due to the short intervals of time that roadway users and neighbors would be in contact with the project corridor. Nighttime construction would not occur; therefore, high-intensity nighttime lighting would not be needed and there would be no substantial changes in light and glare during construction.

Future land use and deindustrialization plans for the Pioneer Bluff area of West Sacramento include removal or relocation of tank farms and pipelines. This study assumes that existing features, such as fuel storage tanks and warehouse facilities, associated with industrial land uses would no longer be present when construction of Broadway Bridge begins. As seen in Key Views 1 and 2, *Existing Views*, vegetation is present along the river corridor, and visual changes resulting from vegetation removal during construction would be isolated to the area immediately surrounding the proposed bridge. Overall, construction activities would create temporary visual impacts on views of and from the project corridor during the construction period by the visual presence of construction activities and equipment.

As identified under *Regulations* for the City of West Sacramento, the *Pioneer Bluff Transition Plan* and General Plan provide guidance and policies that support the transition of blighted industrial land uses along the Sacramento riverfront to an urban waterfront area that provides commercial, residential, and park facilities for the residents of West Sacramento. The *Pioneer Bluff Transition Plan* also identifies construction of Broadway Bridge. As identified under *Regulations* for the City of West Sacramento, the West Sacramento Tree Preservation Ordinance provides standards for tree permits required for actions affecting trees. The Natural Environmental Study (NES) prepared for the proposed project specifies Measure BIO-1, *Compensate for Temporary Effects to and Permanent Loss of Cottonwood Riparian Forest (including SRA Cover)*, which states that mitigation will be in the form of onsite and/or offsite restoration and/or enhancement along the Sacramento River and/or mitigation credits purchased from an approved mitigation bank (ICF 2019). Therefore, mitigation may occur on or near the project corridor or offsite.

Operation

The West Sacramento VAU includes industrial and vacant land uses between the river and Jefferson Boulevard and residential and commercial land uses just west of Jefferson Boulevard. Under both alternatives, operation of the new bridge structure would be the same. The distance between the two proposed bridge alignments over the river is not great enough to result in a notable visual change in the landscape between the two alternatives.

During the interim year, regardless of build alternative, the proposed bridge and roadway changes in West Sacramento would be visible primarily from adjacent commercial and industrial areas, and from local roadways that are directly next to the bridge and proposed roadway improvements. No major changes would be seen from residential areas because industrial (or redeveloped) land uses would block views, many residences are located south of or away from project changes, and the remaining residences are located behind commercial areas that would obscure views. The new bridge may be more visible during the design year as land uses east of Jefferson Boulevard change from industrial to more mixed-use development and a new roadway grid structure is installed, including roadways closer to the Sacramento River. However, the structures introduced as part of the redevelopment planned by the design year would replace existing industrial structures and would continue to block most views from Jefferson Boulevard.

The introduction of new roadway connections for the bridge at South River Road would occur under both build alternatives. And, consistent with the approved mobility network for Pioneer Bluff, in the interim

year, new roadways would be constructed and 15th Street would be realigned to connect to South River Road further south than its current location (see Figure 4). Minor changes to local roadways to accommodate new turn lanes for bridge access would result in negligible visual changes under both build alternatives.

The northern alignment of Alternative B would create a four-way intersection at 15th Street and South River Road. By the design year, the alignment of South River Road south of 15th Street would shift to the east. The intersection of 15th Street and South River Road would be adjusted to accommodate the change in roadway alignment to the south (see Appendix A). The proposed roadway changes would not greatly alter views because new and realigned roadways would be visually similar to adjacent roadways.

Alternative C would create a new "T" intersection at South River Road, south of 15th Street. In the design year, the intersection would be moved to the east, consistent with the planned realignment of South River Road. The introduction of the new "T" intersection would not greatly alter views, and the new roadway connections would be visually consistent with the planned redevelopment of existing land uses and the approved mobility network proposed for Pioneer Bluff.

The bridge would be visible from the Mill Street Pier, north of Pioneer Bridge, and while it would be smaller in scale and lower in elevation, the new river crossing would be visually compatible with existing river crossings.

Selection of one of the three different bridge types being considered would not affect visual resources. As part of a new moveable bridge structure that would allow for boat passage, each of the bridge types would add a new structure to the VAU, be similar in scale, and result in the same degree of visual change to the landscape. Although the bridge type has not yet been determined, it would be designed in a manner that carries forward elements from the nearby Tower and I Street Bridges or that creates a new visual focal point to facilitate creation of a new gateway between Sacramento and West Sacramento. Therefore, as a gateway between the two cities, the final bridge design has the potential to affect visual resources if residents of the two cities and affected viewers do not favor the look of the proposed design. Implementation of avoidance and minimization Measure 1 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure public engagement in the bridge design process, facilitating public acceptance of the proposed project. In addition, implementation of avoidance and minimization Measure 1 would aid in ensuring appropriate project aesthetics.

As noted earlier, the *Pioneer Bluff Transition Plan* and General Plan provide guidance and policies that support the transition of blighted industrial land uses along the Sacramento riverfront to an urban waterfront area that provides commercial, residential, and park facilities for the residents of West Sacramento. The *Pioneer Bluff Transition Plan* also identifies construction of Broadway Bridge. Implementation of avoidance and minimization Measure 1 would ensure that the proposed bridge design meets the expectations of the larger community within West Sacramento. However, neither build alternative includes landscaping to ensure that the roadway improvements meet the City of West Sacramento's streetscape standards. Mitigation Measure 1 would ensure that landscaping is installed in a manner that is consistent with the City of West Sacramento's streetscape standards. As a result of the City of West Sacramento's planned redevelopment of the Sacramento riverfront in this area, including construction of Broadway Bridge, neither build alternative would conflict with applicable zoning or other regulations governing scenic quality during operation with implementation of avoidance and minimization Measure 1 and mitigation Measure 1.

The bridge structure could be a source of glare, depending on the color and design selection for the structure. Addition of the new bridge structure and removal of vegetation would slightly increase glare in the project corridor, but glare associated with the river already is a prominent visual element in this VAU,

where gaps in vegetation allow views of the river. The new bridge structure would shade the river's surfaces, slightly reducing reflective glare from the river. New bridge, roadway, and intersection lighting could include LED lighting for security and safety purposes. Although the City of West Sacramento encourages the use of LED lights and the reduction of light pollution (refer to City of West Sacramento General Plan Policies NCR-6.7, NCR-8.3, NCR-8.4, and NCR-8.5), which would be enforced through design review, impacts associated with LED lighting could affect sensitive receptors if not properly designed. LED lights can negatively affect humans by increasing nuisance light and glare, in addition to increasing ambient light glow, if blue-rich white light lamps (BRWL) lamps are used (American Medical Association 2016; International Dark-Sky Association 2010a, 2010b, 2015). Studies have found that a 4000 Kelvin (K) white LED light causes approximately 2.5 times more pollution than high-pressure sodium lighting with the same lumen output, which would affect sensitive receptors and more than double the perceived brightness of the night sky (Aubé et al. 2013; Falchi et al. 2011, 2016). This would result in a substantial source of nighttime light and glare that could adversely affect nighttime views in the area. Implementation of mitigation Measure 2 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure that the lighting impacts are reduced.

Viewer Response

As described under *Group Viewer Response*, many roadway neighbors and users may view the project in a positive manner because of the improved connectivity it would provide. Viewers within the project area are familiar with existing bridges along this segment of the river, and the proposed bridge is in keeping with the existing visual environment. Therefore, the proposed bridge would not be an eyesore and would not greatly alter the existing visual character of the project corridor, as seen from the West Sacramento VAU; the composite viewer response would be moderate-low.

Resource Change

Construction

Construction would result in temporary visual impacts that would not affect the existing visual quality for an extended period of time. Although construction would affect a small number of native trees and vegetation located along the river in proximity to the bridge, trees in this area are somewhat sparse. Therefore, construction would result in a resource change to this VAU that is moderate-low. The resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low with implementation of the mitigation measures (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

Operation

The vividness of the West Sacramento VAU would not be greatly affected by the proposed project, and the rating would remain moderate-low. The intactness and unity also would remain moderate-low because the proposed bridge would introduce new structures and roadway features. These changes would be in keeping with the appearance of the project corridor. The resulting visual quality would not be greatly affected and would remain moderate-low with implementation of mitigation measures. Therefore, operation would result in a resource change to this VAU that is moderate-low; and the resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

SACRAMENTO VISUAL ASSESSMENT UNIT

Construction

As in West Sacramento, construction activities for either build alternative would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, cranes, and trucks, into the viewshed of all viewer groups. Temporary falsework platforms would be required to construct the proposed bridge foundations and approach structures; these would be installed on or after May 1 and removed by November 30. In addition, temporary cofferdams would be required to construct the bridge piers within the water.

Existing sidewalks would be reconstructed along Broadway from the new bridge east to 5th Street. The width of Broadway would be modified to merge with the roadway cross-section identified in the *Broadway Complete Streets Plan*.

Temporary visual changes due to construction signaling, signage, and lighting also would occur. These changes are not considered adverse because of the short intervals of time that roadway users and neighbors would be in contact with the project site. Nighttime construction would not occur; therefore, high-intensity nighttime lighting would not be needed and there would be no substantial changes in light or glare during construction.

As seen in Key Views 1 and 2, *Existing Views*, vegetation is present along the river corridor. Visual changes resulting from vegetation removal during construction would be isolated to the area immediately surrounding the proposed bridge and where sidewalks would be reconstructed and the cross-section modified along Broadway. Overall, construction activities and the visual presence of construction equipment would create temporary visual impacts on views of and from the project corridor.

As identified under *Regulations* for the City of Sacramento, the *Central City Community Plan, Central City Specific Plan,* and General Plan provide guidance and policies that support the improvement of areas along the Sacramento riverfront, improving the visual character and quality of areas within the city, improving streetscape design, enhancing city gateways, and creating attractive bridge crossings. The proposed *West Broadway Specific Plan* defines the City of Sacramento's intent to facilitate improvements at Miller Park and redevelop industrial land uses to residential and commercial uses, and identifies construction of Broadway Bridge. As listed under *Regulations* for the City of Sacramento, the Tree Planting, Maintenance, and Conservation Ordinance provides standards for tree permits required for actions affecting trees. The project's NES specifies Measure BIO-1, *Compensate for Temporary Effects to and Permanent Loss of Cottonwood Riparian Forest (including SRA Cover)*, which states that mitigation will be in the form of onsite and/or offsite restoration and/or enhancement along the Sacramento River and/or mitigation credits purchased from an approved mitigation bank (ICF 2019). Therefore, mitigation may occur on or near the project corridor or offsite.

Operation

The Sacramento VAU includes industrial park, marina, transportation, and commercial land uses east of the river. Under both build alternatives, operation of the new bridge structure and the proposed changes along Broadway and affected intersections would be the same. In addition, the bridge touchdowns in Sacramento would be located in approximately the same location; it is only as the bridge alternatives begin to leave the banks and cross the river that the alignments begin to diverge. Overall, the proposed alignments of the two build alternatives do not differ enough to result in different visual changes in the landscape.

All proposed changes within the Sacramento VAU would occur during the interim year, under both build alternatives. Existing industrial and commercial land uses, mature vegetation, and I-5 block views of the proposed project from existing residential areas. The proposed bridge and roadway changes in

Sacramento would be visible primarily from adjacent commercial and industrial areas, from local roadways that are directly next to the bridge, and from proposed roadway improvements. Under both build alternatives, reconstructing the sidewalks along Broadway and minor intersection changes at local roadways would result in negligible visual changes and would be in keeping with the existing visual landscape. The Sacramento River Bike Trail would be realigned to skirt along the river, instead of paralleling the State Parks railroad tracks. The connections of the realigned Sacramento River Bike Trail to Broadway would not deviate sufficiently, under either build alternative, to constitute a major visual change to the landscape.

The proposed bridge would be visible from Broadway, west of I-5; the westbound US 50/Business 80 ramp connection to southbound I-5; the eastbound US 50/Business 80 ramp connection to southbound I-5; the Sacramento River Bike Trail; and the riverbanks along Miller Park, where gaps in vegetation allow views. The simulation for Key View 1 depicts the proposed bridge from the riverbanks along Miller Park. The proposed bridge would obscure views toward Pioneer Bridge, as seen in Key View 1, *Simulated View,* and the design depicted in the simulation would appear visually similar to the existing Tower Bridge located upstream of the Pioneer Bridge. Views toward the river and its vegetated riverbanks would not be greatly altered compared to existing conditions, and the bridge would not appear to be visually intrusive.

Selection of one of the three different bridge types being considered would not affect visual resources. As part of a new moveable bridge structure that would allow for boat passage, each of the bridge types would add a new structure to the VAU, be similar in scale, and result in the same degree of visual change to the landscape. Although the bridge type has not yet been determined, it would be designed in a manner that carries forward elements from the nearby Tower and I Street Bridges or that creates a new visual focal point to facilitate creation of a new gateway between Sacramento and West Sacramento. Therefore, as a gateway between the two cities, the final bridge design has the potential to affect visual resources if residents of the two cities and affected viewers do not favor the look of the proposed design. Implementation of avoidance and minimization Measure 1 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure public engagement in the bridge design process, facilitating public acceptance of the proposed project. In addition, implementation of avoidance and minimization Measure 1 would aid in ensuring appropriate project aesthetics.

Overall, as described under *Construction* for this VAU, the City of Sacramento, the *Central City Community Plan, Central City Specific Plan,* and General Plan provide guidance and policies that support improvement of areas along the Sacramento riverfront, improving the visual character and quality of areas within the city, improving streetscape design, enhancing city gateways, and creating attractive bridge crossings. The proposed *West Broadway Specific Plan* would further define the City of Sacramento's intent to facilitate improvements at Miller Park and along Broadway, and identifies construction of Broadway Bridge. Implementation of avoidance and minimization Measure 1 would ensure that the proposed bridge design meets the expectations of the larger community within Sacramento. Vegetation removal would occur along the riverbanks and north of Broadway to accommodate the shifted sidewalks. However, neither build alternative includes landscaping to ensure that this landscaping is replaced and that the roadway improvements meet the City of Sacramento's streetscape standards. Mitigation Measure 1 would ensure that landscaping is installed in a manner that is consistent with the City of Sacramento's streetscape standards. As a result of the City of Sacramento's planned redevelopment of the West Broadway area, including construction of Broadway Bridge, neither build alternative would conflict with applicable zoning and other regulations governing scenic quality during operation with implementation of avoidance and minimization Measure 1 and mitigation Measure 1.

The bridge structure could be a source of glare, depending on the color and design selection for the structure. Addition of the new bridge structure and removal of vegetation would slightly increase glare in

the project corridor, but glare associated with the river already is a prominent visual element in this VAU, where gaps in vegetation allow views of the river. The new bridge structure would shade the river's surfaces, slightly reducing reflective glare from the river. New bridge, roadway, and intersection lighting could include LED lighting for security and safety purposes. Although the City of Sacramento encourages the reduction of light pollution (refer to City of Sacramento General Plan Policy ER 7.1.3, Central City Specific Plan Policy LU.3.7, and Riverfront District Policy LU.9.14), which would be enforced through design review, impacts associated with LED lighting could affect sensitive receptors if not properly designed. As described for the West Sacramento VAU, BRWL LED lamps can negatively affect humans by increasing nuisance light and glare, in addition to causing approximately 2.5 times more pollution than high-pressure sodium lighting with the same lumen output. This would affect sensitive receptors and more than double the perceived brightness of the night sky (Aubé et al. 2013; Falchi et al. 2011, 2016). This would result in a substantial source of nighttime light and glare that could adversely affect nighttime views in the area. Implementation of mitigation Measure 2 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure that the lighting impacts are reduced.

KEY VIEW 1. Existing View and Simulated Conditions—from Miller Park looking north.

Viewer Response

As described under *Group Viewer Response*, many roadway neighbors and users may view the project in a positive manner because of the improved connectivity it would provide. Viewers within the project area are familiar with existing bridges along this segment of the river, and the proposed bridge is in keeping with the existing visual environment. The proposed bridge would not be an eyesore and would not greatly alter the existing visual character of the project corridor, as seen from the Sacramento VAU; therefore, the composite viewer response would be moderate-low.

Resource Change

Construction

Construction would result in temporary visual impacts that would not affect the existing visual quality for an extended period of time. Construction would affect native trees and vegetation located along the river and the Sacramento River Parkway, in proximity to the bridge, and trees located north of Broadway. However, only a small area of trees would be affected along the river, and large areas of trees along the river and within Miller Park would remain untouched. Trees and shrubs along Broadway only slightly contribute to improving the aesthetics of the area. Therefore, construction would result in a resource change to this VAU that is moderate-low. The resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low with implementation of the mitigation measures (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

Operation

The vividness of the Sacramento VAU would not be greatly affected by the proposed project, and the rating would remain moderate-low. The intactness and unity also would remain moderate-low because the proposed bridge would introduce new structures and roadway features. These changes would be in keeping with the appearance of the project corridor. The resulting visual quality would not be greatly affected and would remain moderate-low with implementation of mitigation measures. Therefore, operation would result in a resource change to this visual assessment unit that is moderate-low; and the resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

RIVER VISUAL ASSESSMENT UNIT

Construction

Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, cranes, and trucks, into the viewshed of water-based viewers. Temporary falsework platforms would be required to construct the proposed bridge foundations and approach structures; these would be installed on or after May 1 and removed by November 30. In addition, temporary cofferdams would be required to construct the bridge piers within the water. Although construction activities would be visible, boat traffic would still be allowed to pass; therefore, visual access along the river would not be impeded by restricted river access.

Construction activities would create temporary visual impacts on views of and from the project corridor during the construction period by the visual presence of construction activities and equipment. This is not considered adverse due to the temporary nature of construction, transient nature of boaters passing by the project corridor or fishing along the banks, and viewers' familiarity with heavy equipment in areas adjacent to the project for recent development in the project vicinity.

Temporary visual changes due to construction signaling, signage, and lighting also would occur for boating safety. These are not considered adverse because of the short intervals of time that water-based viewers would be in contact with the project corridor. Nighttime construction would not occur; therefore, high-intensity nighttime lighting would not be needed.

In addition, as seen in Key Views 1 and 2, *Existing Views*, vegetation is present along the river corridor, and visual changes resulting from vegetation removal during construction would be confined to the area immediately surrounding the proposed bridge on both sides of the river. As identified under *Regulations,* the City of West Sacramento's West Sacramento Tree Preservation Ordinance and the City of Sacramento's Tree Planting, Maintenance, and Conservation Ordinance both provide standards for tree permits required for actions affecting trees. In addition, the NES specifies Measure BIO-1, *Compensate for Temporary Effects to and Permanent Loss of Cottonwood Riparian Forest (including SRA Cover)*, which states that mitigation will be in the form of onsite and/or offsite restoration and/or enhancement along the Sacramento River and/or mitigation credits purchased from an approved mitigation bank (ICF 2019). Therefore, mitigation may occur on or near the project site or offsite. Neither alternative would conflict with applicable zoning and other regulations governing scenic quality during construction.

Operation

The largest visual change associated with the proposed project that would be visible in the River VAU would be the introduction of a new bridge across the river. This VAU would have the most direct views toward the bridge. Views of the new bridge would be available to viewers standing at the water's edge, boaters on the river, and travels crossing the Pioneer Bridge.

The simulation for Key View 2 depicts representative views for road travelers on the existing Pioneer Bridge. The proposed bridge would be at a lower elevation than the Pioneer Bridge, because it would be constructed to have a moveable segment to allow for boat passage. Therefore, as seen in Key View 2, *Simulated View*, the proposed bridge would not obstruct views toward the river, vegetated levees, or the land uses on either side of the river. Views of the river downstream of the proposed bridge would remain present. While much of the bridge would be low profile, vertical elements of the bridge would make the bridge appear to be more visually prominent. However, the bridge design would appear visually similar to the existing Tower Bridge located upstream of the Pioneer Bridge.

Selection of one of the three different bridge types being considered would not affect visual resources. As part of a new moveable bridge structure that would allow for boat passage, each of the bridge types would add a similar in scale new structure to the VAU and would result in the same degree of visual change to the landscape. Although the bridge type has not yet been determined, it would be designed in a manner that carries forward elements from the nearby Tower and I Street Bridges or that creates a new visual focal point to facilitate creation of a new gateway between Sacramento and West Sacramento. Therefore, as a gateway between the two cities, the final bridge design has the potential to affect visual resources if residents of the two cities and affected viewers do not favor the look of the proposed design. Implementation of avoidance and minimization Measure 1 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure public engagement in the bridge design process, facilitating public acceptance of the proposed project. In addition, implementation of avoidance and minimization Measure 1 would aid in ensuring appropriate project aesthetics.

The bridge structure could be a source of glare, depending on the color selection for the structure. The new bridge structure and removal of vegetation would slightly increase glare in the project corridor, but glare associated with the river already is a prominent visual element in this VAU. The new bridge structure would shade the river's surfaces, slightly reducing reflective glare from the river. RSP would be added along the shoreline to prevent erosion near the bridge and initially would be a light color. However, the RSP would weather and darken, and would appear similar to other RSP installations along the river, with

which water-based viewers are familiar. The new bridge could include LED lighting for security and safety purposes. Although the Cities of West Sacramento and Sacramento encourage the reduction of light pollution, which would be enforced through design review, impacts associated with LED lighting could affect sensitive receptors if not properly designed. As described for the West Sacramento and Sacramento VAUs, BRWL LED lamps can negatively affect humans by increasing nuisance light and glare, in addition to causing approximately 2.5 times more pollution than high-pressure sodium lighting with the same lumen output. This would affect sensitive receptors and more than double the perceived brightness of the night sky (Aubé et al. 2013; Falchi et al. 2011, 2016). This would result in a substantial source of nighttime light and glare that could adversely affect nighttime views in the area. Implementation of mitigation Measure 2 (described under Section XII, *Avoidance, Minimization, and/or Mitigation Measures*) would ensure that the lighting impacts are reduced.

Viewer Response

As described under *Group Viewer Response*, the composite viewer response to the proposed project is likely to be moderate-low. Viewers within the project area are familiar with existing bridges along this segment of the river, and the proposed bridge is in keeping with the existing visual environment. Therefore, the proposed bridge would not be an eyesore and would not greatly alter the existing visual character of the project corridor, as seen from the River VAU.

Resource Change

Construction

Construction would result in temporary visual impacts that would not affect the existing visual quality for an extended period of time. However, construction would affect native trees and vegetation located along the shoreline, in proximity to the bridge. Construction would result in a resource change to this VAU that is moderate-low; the resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

Operation

The vividness of the River VAU would not be greatly affected by the proposed project because the bridge would be located and grouped with other similar structures and the rating would remain moderate-high. The intactness and unity would remain moderate because the proposed bridge would introduce a new structure that would be located and grouped with other similar structures. The resulting visual quality would remain moderate-high with implementation of mitigation measures. Therefore, operation would result in a resource change to this VAU that is moderate-low; the resulting visual impacts on scenic views, the existing visual character, and light and glare would be moderate-low (refer to Table 5 above and Table 6 under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*).

KEY VIEW 2. Existing View and Simulated Conditions—from Pioneer Bridge looking south.

Source: Mark Thomas & Company, October 2019.

Summary of Visual Impacts by Visual Assessment Unit and Alternative

Construction and operation impacts for the project are described above. Table 6 summarizes and compares the narrative ratings for visual resource change, viewer response, and visual impacts between alternatives for each key view.

TABLE 6.
Summary of Key View Narrative Ratings

Visual Assessment Unit	Key View	Impact Type	Build Alternatives*		
			Viewer Response	Resource Change	Visual Impact
West Sacramento	Not applicable	Construction	ML	ML	ML
		Operation	ML	ML	ML
Sacramento	1	Construction	ML	ML	ML
		Operation	ML	ML	ML
River	2	Construction	ML	ML	ML
		Operation	ML	ML	ML

* Both build alternatives are summarized in the same table because each would result in similar visual impacts.

Impacts from each build alternative would be comparable; therefore, the summary has been condensed into a singular discussion, and a detailed comparison is not provided. As identified and described earlier, all alternatives would include a new bridge, roadway improvements within West Sacramento and Sacramento, and minor trail relocations. Alternatives B and C essentially would be the same within Sacramento. The primary difference between Alternatives B and C is a different touchdown location in West Sacramento—both of which are close to one another. In West Sacramento, both build alternatives would provide new connections to existing streets, and the different intersection designs would not result in substantial visual differences from one another. Similarly, Alternatives B and C would affect buildings and structures in the same area of Sacramento, and both alternatives would cause similar visual impacts. As a whole, the project would introduce a new bridge near existing bridges and would be compatible with the existing visual character with implementation of avoidance, minimization, and mitigation measures.

X. PROJECT VISUAL IMPACT SUMMARY

The project visual impact summary is provided under *Summary of Visual Impacts by Visual Assessment Unit and Alternative*, above.

Temporary Construction Visual Impacts

Temporary visual impacts resulting from construction were described earlier. Please refer to Section IX, *Visual Impact* for more detail.

XI. CUMULATIVE VISUAL IMPACT

Cumulative impacts are those resulting from past, present, and reasonably foreseeable future actions, combined with the potential visual impacts of this project. For this project, it has been determined that cumulative visual impacts may occur. The combined visual effect of the proposed project and other development projects planned, recently in construction, or currently in construction would contribute to change in the visual character of the project area. Implementation of the City of Sacramento and West Sacramento general plans and associated specific plans will contribute to growth and development within and surrounding the project corridor. Once implemented, these plans will expand and improve existing, and create new, transportation corridors. They also will define the development and redevelopment of lands within Sacramento and West Sacramento along and near the river. The proposed project will contribute a new river crossing in addition to the approved I Street Bridge replacement and the existing Pioneer, Tower, and I Street Bridges.

The proposed project is driven by implementation of the general plans and specific plans described above, to provide local access, reduced trip lengths, and additional connectivity for future land uses in the vicinity. Both proposed build alternatives would contribute the same cumulative visual impacts. Temporary construction activities associated with the proposed project would not result in a cumulatively considerable contribution to visual impacts because of their relatively short-term duration and relatively limited visibility. The planned redevelopment in Pioneer Bluff and the proposed redevelopment for the *West Broadway Specific Plan* area would alter the existing visual character of the area in the long term and would be visible from the West Sacramento and Sacramento VAUs by changing existing land uses. The proposed project would contribute to the addition of river crossing infrastructure within and near the River VAU. Roadway users, residents, businesses, and recreationists will see undeveloped areas within the landscape gradually transition and infill to mixed-use, commercial, and residential development. This development will include the associated transportation and utility infrastructure needed to support it. Future development and roadway improvements also will increase ambient atmospheric lighting and glare in the area by developing unlit areas with lit buildings and roadways, and by adding reflective surfaces to areas that are currently undeveloped. The proposed project would contribute incrementally to these cumulative impacts related to planned and proposed development in the area though it would not substantially alter the existing visual landscape or degrade the visual quality of the project corridor. However, the contribution would be cumulatively considerable. Implementation of avoidance and minimization Measure 1 (*Work with Stakeholders to Determine Bridge Aesthetics*), mitigation Measure 1 (*Implement Project Landscaping*), and mitigation Measure 2 (*Apply Minimum Lighting Standards*) would reduce the Project's contribution to cumulative effects on visual resources to a less-than-cumulatively considerable level.

XII. AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

For NEPA compliance, Caltrans and the FHWA mandate that a qualitative/aesthetic approach be taken to address visual quality loss in the project area. The approach in this document fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality due to a project. The approach also results in avoidance, minimization, and/or mitigation measures that can lessen or compensate for a loss in visual quality under both NEPA and CEQA. This section describes avoidance, minimization, and/or mitigation measures to address the specific visual impacts described in the sections above.

The following avoidance and minimization measure is proposed.

1. **Work with Stakeholders to Determine Bridge Aesthetics.** The project proponent will conduct a focused outreach effort and will conduct a public meeting, charrette session, or similar public engagement method with public stakeholders to develop an aesthetic design approach to aid in reducing the visual impact of the proposed bridge. This measure will allow concerned viewers to assist in creating a bridge that is visually appealing to the general public, while balancing the need for increased circulation access at this location. Affected stakeholders will be able to provide input on the preferred architectural style and coloring of the proposed bridge.

The following mitigation measures to offset visual impacts will be incorporated into the project.

1. **Implement Project Landscaping.** The project proponent will install landscaping where space and safety considerations allow and in a manner that is consistent with the Cities of West Sacramento and Sacramento planning policies and directives to improve city streetscapes. Prior to approval of the roadway design, the City of West Sacramento and /or City of Sacramento project landscape architect will review project designs to ensure that the following elements are implemented in the project landscaping plan.

    - Design and implement low impact development (LID) measures that disperse and reduce runoff by using such features as vegetated buffer strips/medians between paved areas that catch and infiltrate runoff. Evaluate the use of pervious paving in the proposed project to improve infiltration and to reduce the amount of surface runoff from entering waterways and the storm water system. Do not use LID measures where infiltration could result in adverse environmental effects. Use LID measures, such as cobbled swales and aggregate mulching, as an aesthetic design element to create an attractive view while reducing water use.

    - Require construction contractors to incorporate native grass and wildflower seed into standard seed mixes, which may be non-native, for erosion control measures that will be applied to all exposed slopes. If appropriate for the surrounding habitat, use wildflowers to provide seasonal interest to areas where trees and shrubs are removed and grasslands are disturbed. Incorporate into seed mixes only wildflower and grass species that are native, and under no circumstances use any invasive grass or wildflower plant species as any component of any erosion control measure. Choose species that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, choose upland grass and wildflower species for drier, upland areas, and wetter species for areas that will receive more moisture. If not appropriate to the surrounding habitat, do not include wildflowers in the seed mix.

    - Require the species list to include trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Increase the effectiveness of roadside planting areas and reduce their susceptibility to disease by increasing plant variety—providing multiple layers, seasonality, and diverse habitat. Use evergreen groundcovers or low-growing plants, such as *Ceanothus* spp., in areas where taller vegetation could cause driving hazards by obscuring site distances. Use species native and indigenous to the project area and California. Use native plant species to create attractive spaces, high in aesthetic quality, that are not only drought tolerant but also attract more wildlife than traditional landscape plant palettes. Use native species to promote a visual character of California that is being lost through development and reliance on non-native ornamental plant species.

- Use vegetative accents and screening to reduce the perceived scale and mass of built features, while accentuating the design treatments that will be applied to those features. Pay special attention to plant choices near residences to ensure that species chosen are of an appropriate height and rely on evergreen species to provide year-round light screening from nuisance light, if applicable.
- Do not use any invasive plant species at any location.
- Plant vegetation within the first 6 months following project completion.
- Implement an irrigation and maintenance program during the plant establishment period and continue irrigation, as needed, to ensure plant survival. Design the landscaping plan to maximize the use of planting zones that are water efficient. Incorporate aesthetic features such as cobbling swales or shallow detention areas, as appropriate, to reduce or eliminate the need for irrigation in certain areas.
- If an irrigation system is required, use a smart watering system to evaluate the existing site conditions and plant material against weather conditions and avoid overwatering of such areas. To avoid undue water flows, manage the irrigation system in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days; or shut down the zone or system until it can be repaired.

2. **Apply Minimum Lighting Standards.** All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using the Illuminating Engineering Society's design guidelines . All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, and the amount of nighttime lights needed to light an area will be minimized to the highest degree possible. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing.

   Light-emitting diode (LED) lighting will avoid the use of blue-rich white light (BRWL) lamps and use a correlated color temperature that is no higher than 3,000 Kelvin. In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers.

   Lights along pathways and bridge safety lighting will use shielding to minimize offsite light spill and glare, and will be screened and directed away from adjacent uses to the highest degree possible. The amount of nighttime lights used along pathways will be minimized to the highest degree possible to ensure that spaces are not unnecessarily over-lit. For example, the amount of light can be reduced by limiting the amount of ornamental light posts to higher use areas and by using bollard lighting on travel way portions of pathways.

   Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the

technologies available at the time of project design to allow for the highest potential reduction in light pollution.

Summary of Avoidance, Minimization, and/or Mitigation Measures by Alternative

Table 7 summarizes the numbered avoidance, minimization, and/or mitigation measures for each alternative.

TABLE 7.
Summary of Avoidance, Minimization, and/or Mitigation Measures by Alternative

Alternative	Avoidance and Minimization Measures	Mitigation Measures
Alternative B	1. Work with stakeholders to determine bridge aesthetics.	1. Implement project landscaping. 2. Apply minimum lighting standards.
Alternative C	1. Work with stakeholders to determine bridge aesthetics.	1. Implement project landscaping. 2. Apply minimum lighting standards.

XIII. CONCLUSIONS

The proposed project would result in moderate-low visual changes to the project corridor that, with implementation of avoidance, minimization, and mitigation measures, would not result in adverse visual impacts or negatively affect existing viewer groups. It would not substantially increase light and glare in the project corridor with implementation of mitigation. The proposed project would be slightly detrimental by contributing to the cumulative visual impacts associated with construction and the presence of built features, when factored with the continued growth and development of the area surrounding the proposed project.

XIV. REFERENCES

American Medical Association. 2016. *Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting (CSAPH Report 2-A-16)*. Presented by: Louis J. Kraus, MD, Chair. Available: http://darksky.org/wp-content/uploads/bsk-pdf-manager/AMA_Report_2016_60.pdf. Accessed: November 7, 2019.

Aubé, M., J. Roby, M. Kocifaj. 2013. Evaluating Potential Spectral Impacts of Various Artificial Lights on Melatonin Suppression, Photosynthesis, and Star Visibility. July 5. *PLOS (Public Library of Science) ONE*. 8(7). Available: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0067798. Accessed: November 7, 2019.

California Department of Transportation. 2017. *List of Eligible and Officially Designated State Scenic Highways*. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Last updated: March 22, 2017. Accessed: October 24, 2019.

City of Sacramento. 2019a. *West Broadway Specific Plan*. Available: https://www.cityofsacramento.org/Community-Development/Planning/Major-Projects/West-Broadway-Specific-Plan. Accessed: November 4, 2019.

———. 2019b. *West Broadway Specific Plan, Community Workshop #2 Materials*. Available: https://www.cityofsacramento.org/Community-Development/Planning/Major-Projects/West-Broadway-Specific-Plan. Materials date: July 31, 2019. Accessed: November 4, 2019.

———. 2019c. *Chapter 12.56 Tree Planting, Maintenance, and Conservation*. Available: https://www.qcode.us/codes/sacramento/view.php?topic=12-12_56&showAll=1&frames=off. Accessed: November 4, 2019.

———. 2018. *Central City Specific Plan*. Adopted: April 19, 2018. Sacramento, CA.

———. 2016. *Broadway Complete Streets Plan – Final Recommendations.* Adopted: August 4, 2016. Sacramento, CA.

———. 2015. *Sacramento 2035 General Plan*. Adopted: March 3, 2015. Sacramento, CA.

———. 1997. *Sacramento River Bike Trail Plan*. City of Sacramento, Department of Neighborhoods, Planning and Development Services. Adopted: October 21, 1997. Sacramento, CA.

City of West Sacramento. 2019. *Chapter 8.24 Tree Preservation*. Available: http://qcode.us/codes/westsacramento/view.php?topic=8-8_24&showAll=1&frames=off. Accessed: November 4, 2019.

———. 2016. *City of West Sacramento, General Plan 2035 Policy Document*. Adopted: November 2016. West Sacramento, CA.

———. 2014. *Pioneer Bluff Transition Plan*. Adopted: December 17, 2014. West Sacramento, CA.

———. 2009a. Volume I: *West Sacramento Bridge District, a Specific Plan for the Development of West Sacramento*. Adopted: June 30, 1993. Last updated: November 18, 2009. West Sacramento, CA.

———. 2009b. Volume II: *West Sacramento Bridge District, a Specific Plan for the Development of West Sacramento - Urban Streetscape and Design Standards*. Adopted: November 10, 2009. West Sacramento, CA.

Falchi, F., P. Cinzano, D. Duriscoe, C. C. M. Kyba, C. D. Elvidge, K. Baugh, B. A. Portnov, N. A. Rybnikova, and R. Furgoni. 2016. The New World Atlas of Artificial Night Sky Brightness. June 10. *Science Advances*. 2(6). Available: http://advances.sciencemag.org/content/2/6/e1600377. Accessed: November 7, 2019.

Falchi, F., P. Cinzano, C. D. Elvidge, D. M. Keith, and A. Haim. 2011. Limiting the Impact of Light Pollution on Human Health, Environment and Stellar Visibility. *Journal of Environmental Management* (2011), doi:10.1016/j.jenvman.2011.06.029. Available: https://www.yumpu.com/en/document/view/6983159/limiting-the-impact-of-light-pollution-on-human-health-environment-. Accessed: November 7, 2019.

Federal Highway Administration. 1988. *Visual Impact Assessment for Highway Projects.* (FHWA-HI-88-054.) US Department of Transportation. March.

ICF. 2019. *Draft Natural Environmental Study*. December 2019. Sacramento, CA.

International Dark-Sky Association. 2015. IDA Issues New Standards on Blue Light at Night. April 2015. *Nightscape, The 2014 Annual Report. 94*: 10. Available: http://darksky.org/wp-content/uploads/2015/06/NS94.pdf. Accessed: November 7, 2019.

———. 2010a. Seeing Blue. April 2010. *Nightscape 80*: 8-12. Available: http://darksky.org/wp-content/uploads/bsk-pdf-manager/29_SEEINGBLUE(1).PDF. Accessed: November 7, 2019.

———. 2010b. *Visibility, Environmental, and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting*. May 4, 2010. Available: http://www.darksky.org/wp-content/uploads/bsk-pdf-manager/8_IDA-BLUE-RICH-LIGHT-WHITE-PAPER.PDF. Accessed: November 7, 2019.

Smardon, R. C., J. F. Palmer, and J. P. Felleman. 1986. *Foundations for Visual Project Analysis*. John Wiley & Sons, Inc. New York, NY.

Appendix A Plan View Drawings of Build Alternatives by Phase

MATCH LINE - SEE SHEET 4

MILL ST

SOULE ST

JEFFERSON BLVD

SACRAMENTO RIVER

SACRAMENTO RIVER BIKE TRAIL

13TH ST

15TH ST

S RIVER ROAD

PERMANENT EFFECT

TEMPORARY EFFECT

3RD ST

BROADWAY

MARINA VIEW DR

MILLER PARK CIR

FRONT ST

3RD ST

5TH ST

SCALE: 1"=200'

BROADWAY BRIDGE PROJECT

ALTERNATIVE B- INTERIM

SHEET 3

AUGUST 2019

MARK THOMAS

MATCH LINE - SEE SHEET 3

5TH STREET

BRIDGE STREET

BALLPARK DRIVE

TOWER BRIDGE GATEWAY

5TH STREET

4TH STREET

G STREET

F STREET

E STREET

D STREET

C STREET

RIVERFRONT STREET

3RD STREET

PULL BOX

PULL BOX

PULL BOX

PERMANENT EFFECT

PULL BOX

PULL BOX

PLACE FIBER OPTIC
IN EXISTING CONDUIT

PULL BOX

SACRAMENTO RIVER

TOWER BRIDGE

I STREET BRIDGE
REPLACEMENT

EXISTING I STREET BRIDGE

FRONT STREET

L STREET

K STREET

J STREET

SCALE: 1"=200'

BROADWAY BRIDGE PROJECT

ALTERNATIVE B- INTERIM

SHEET 4

AUGUST 2019

MARK THOMAS

MATCH LINE - SEE SHEET 4

MILL ST

SOULE ST

JEFFERSON BLVD

SACRAMENTO RIVER

SACRAMENTO RIVER BIKE TRAIL

13TH ST

15TH ST

RAIL STREET

S RIVER ROAD

PERMANENT EFFECT

TEMPORARY EFFECT

3RD ST

BROADWAY

MARINA VIEW DR

MILLER PARK CIR

FRONT ST

3RD ST

5TH ST

SCALE: 1"=200'

BROADWAY BRIDGE PROJECT

ALTERNATIVE B- ULTIMATE

SHEET 3

AUGUST 2019

MARK THOMAS

MATCH LINE - SEE SHEET 3

5TH STREET

BRIDGE STREET

BALLPARK DRIVE

TOWER BRIDGE GATEWAY

5TH STREET

4TH STREET

G STREET

F STREET

E STREET

D STREET

C STREET

PULL BOX

RIVERFRONT STREET

3RD STREET

PULL BOX

PULL BOX

PERMANENT EFFECT

PULL BOX

PULL BOX

PLACE FIBER OPTIC
IN EXISTING CONDUIT

PULL BOX

SACRAMENTO RIVER BIKE TRAIL

SACRAMENTO RIVER

TOWER BRIDGE

I STREET BRIDGE
REPLACEMENT

EXISTING I STREET BRIDGE

FRONT STREET

L STREET

K STREET

J STREET

SCALE: 1"=200'

BROADWAY BRIDGE PROJECT

ALTERNATIVE B- ULTIMATE

SHEET 4

AUGUST 2019

MARK THOMAS

MATCH LINE - SEE SHEET 6

MILL ST

SOULE ST

JEFFERSON BLVD

SACRAMENTO RIVER

SACRAMENTO RIVER BIKE TRAIL

S RIVER ROAD

13TH ST

15TH ST

PERMANENT EFFECT

TEMPORARY EFFECT

3RD ST

BROADWAY

MARINA VIEW DR

MILLER PARK CIR

FRONT ST

3RD ST

5TH ST

SCALE: 1"=200'

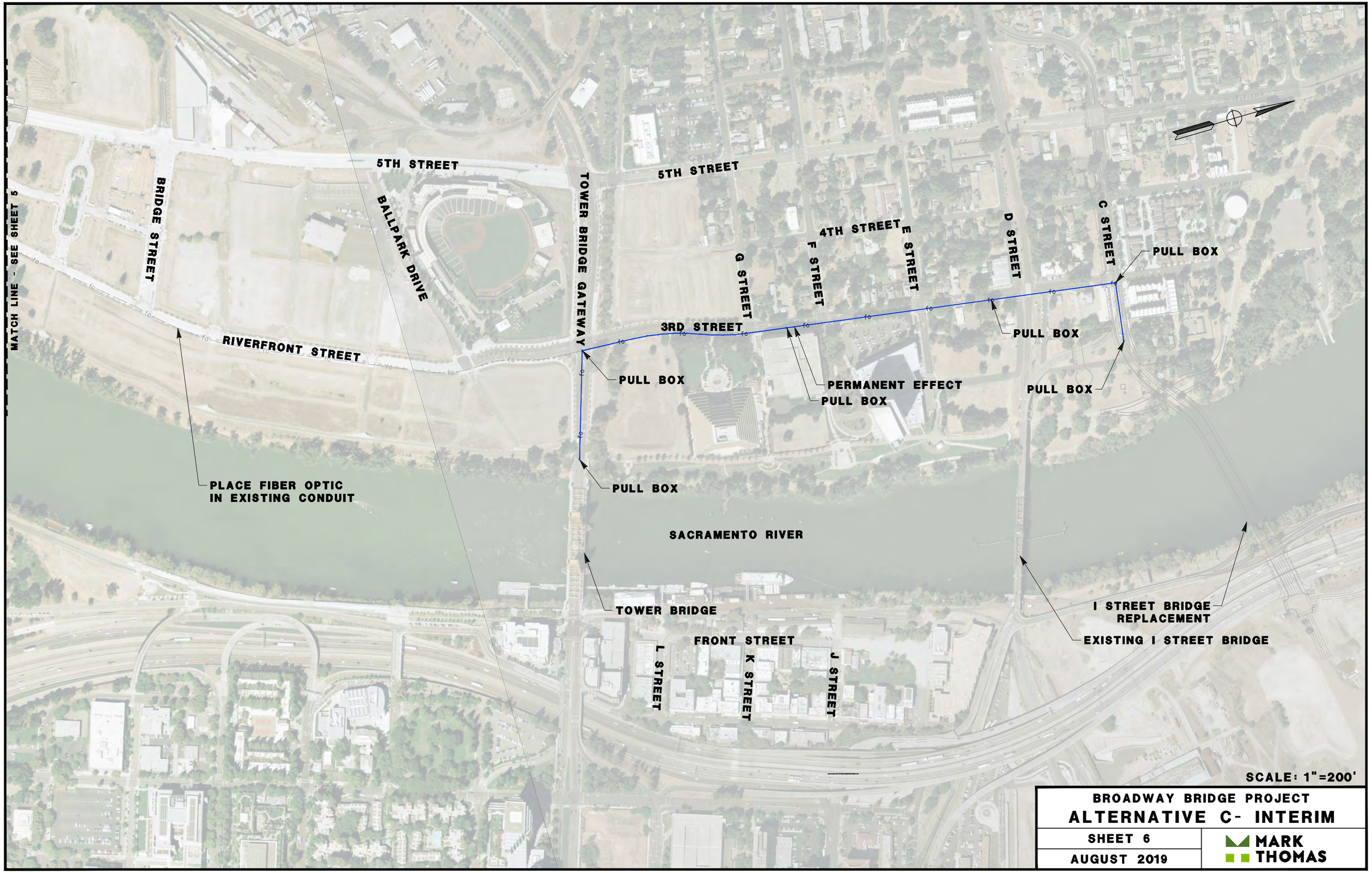
BROADWAY BRIDGE PROJECT

ALTERNATIVE C- INTERIM

SHEET 5

AUGUST 2019

MARK THOMAS



SCALE: 1"=200'

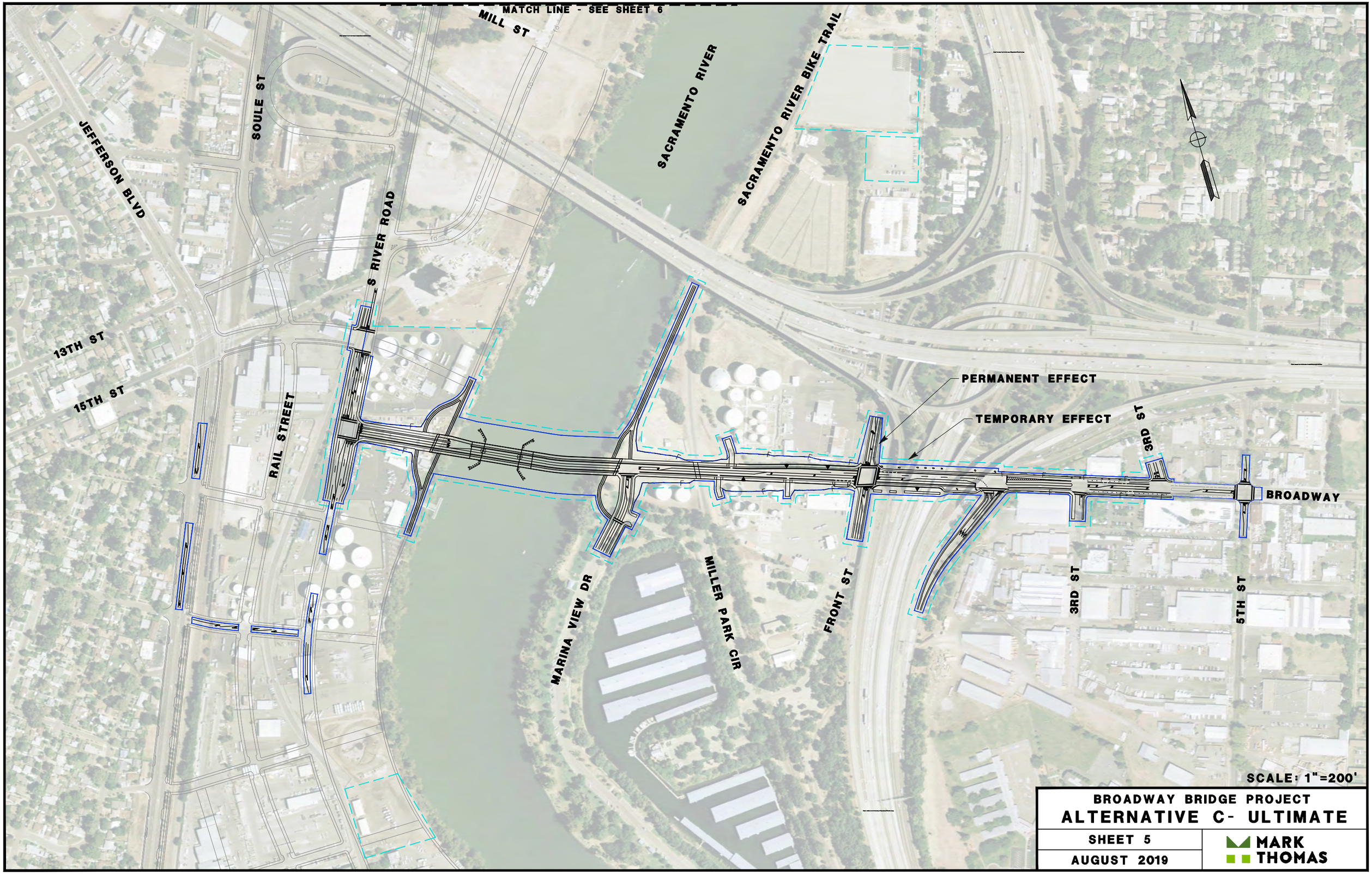
BROADWAY BRIDGE PROJECT

ALTERNATIVE C- INTERIM

SHEET 6

AUGUST 2019

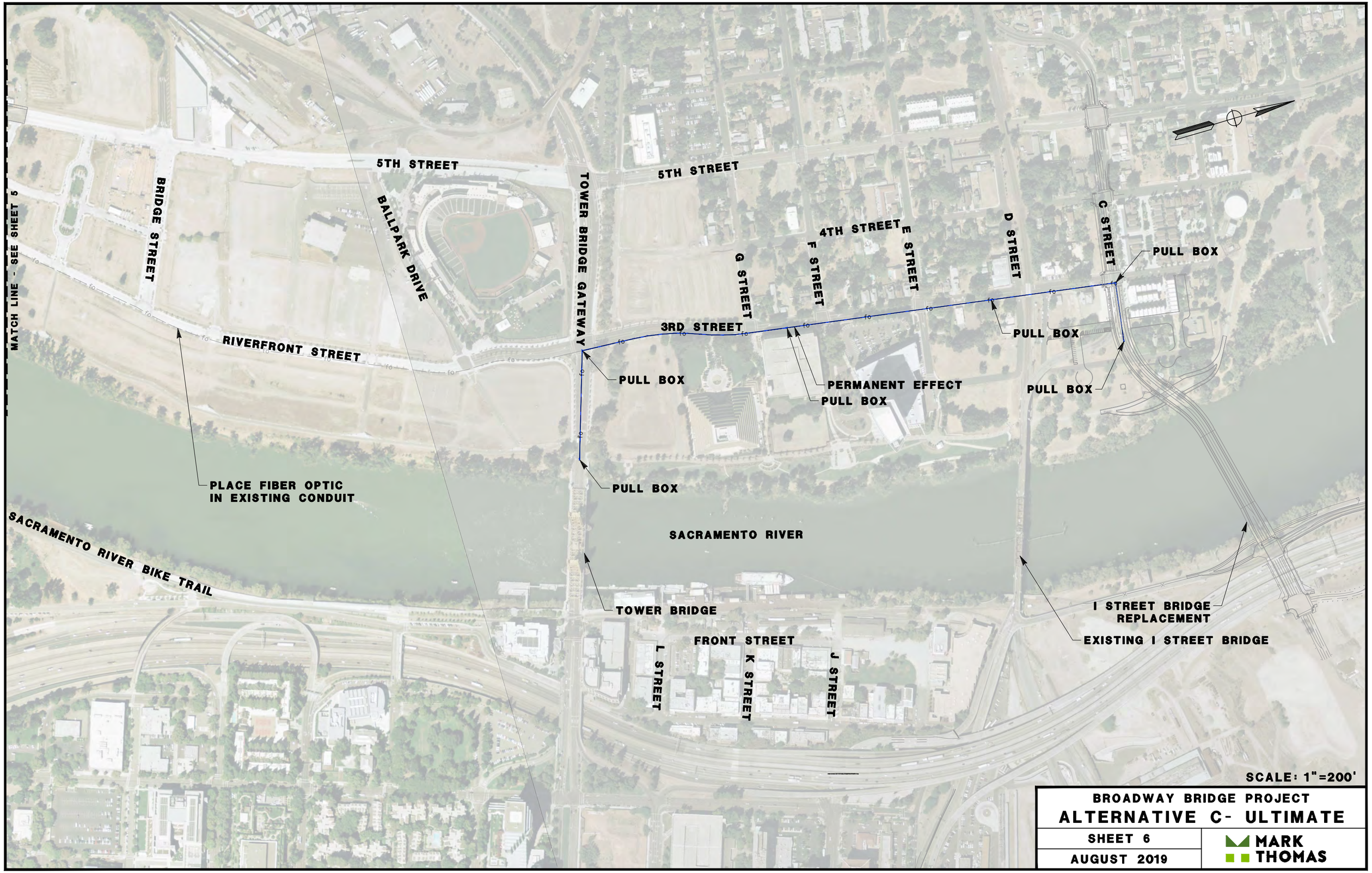
MARK THOMAS



BROADWAY BRIDGE PROJECT

ALTERNATIVE C- ULTIMATE

SHEET 5	MARK THOMAS
AUGUST 2019	



BROADWAY BRIDGE PROJECT

ALTERNATIVE C- ULTIMATE

SHEET 6

AUGUST 2019

MARK THOMAS