City of Sacramento
City Council

915 I Street, Sacramento, CA, 95814
www.CityofSacramento.org

Meeting Date: **7/19/2011** **Report Type:** Staff/Discussion

Title: Sacramento River Crossings Alternatives Study

Report ID: 2011-00496

Location: Districts 1 and 4

Recommendation: Adopt a Resolution: 1) accepting the Sacramento River Crossings Alternatives Study Report; 2) endorsing the stakeholder process; and 3) directing staff to seek funding for preliminary engineering and environmental analysis of the north and south market area locations numbered 1 through 2 and 6 through 8.

Contact: Fran Halbakken, Operations Manager, (916)808-7194, Department of Transportation

Presenter: Fran Halbakken, Operations Manager, (916)808-7194, Department of Transportation

Department: Transportation Department
Division: Planning & Policy
Dept ID: 15001041

Attachments:

1-Description/Analysis
2-Background
3-Presentation
4-Resolution
5-Exhibit A - Map
6-Exhibit B - Study Summary Report

City Attorney Review
Approved as to Form
Jerry Hicks
7/6/2011 3:22:11 PM

City Treasurer Review
Prior Council Financial Policy Approval or Outside City Treasurer Scope
Russell Fehr
6/14/2011 9:53:06 AM

Approvals/Acknowledgements

Department Director or Designee: Jerry Way - 6/15/2011 2:39:05 PM

Assistant City Manager: John Dangberg - 7/6/2011 2:49:27 PM

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Description/Analysis

Issue: The Sacramento River Crossings Alternatives Study (T15068800) was undertaken to determine the purpose of new crossings over the Sacramento River, evaluate what is needed to meet that purpose, and identify alternative locations that meet the purpose and need. A main component of the study involved engaging stakeholder interests and the public in the planning process of the study.

Policy Considerations: The City of Sacramento General Plan, the West Sacramento General Plan, and the Sacramento Area Council of Governments Metropolitan Transportation Plan all include additional Sacramento River crossings without specifying the number, location, or transportation modes served by crossings. The action requested is consistent with the City's Strategic Plan goals of improving and expanding economic vitality and public safety.

Environmental Considerations:

California Environmental Quality Act (CEQA): Future Sacramento River crossing projects will be subject to environmental evaluation under CEQA guidelines and federal National Environmental Protection Agency (NEPA) requirements. The purpose and need statement developed through this study will support the NEPA environmental process. The stakeholder and public engagement process also fulfill some NEPA outreach requirements.

Sustainability Considerations: This project supports the City's sustainability goals to improve and optimize the transportation infrastructure.

Commission/Committee Action: None.

Rationale for Recommendation: The Sacramento River Crossings Alternatives Study has been completed. The study objectives have been met. Therefore, the City Council is being asked to accept the report and direct staff to find funding for preliminary engineering and environmental analysis of two of the market area crossings.

Financial Considerations: As of June 13, 2011, the Sacramento River Crossings Alternatives Study capital improvement project (T15068800) has a budget of $260,000 and an unobligated balance of $37,798. The cities of Sacramento and West Sacramento cooperatively agreed to share in the cost of the planning study. The two cities anticipate continued cooperation to seek funding for future aspects of the project.

Emerging Small Business Development (ESBD): Not applicable.

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Background:

On January 7, 2010, the City Council approved agreements for the Sacramento River Crossings Alternatives Study. The Cities of Sacramento and West Sacramento cooperatively managed and funded the Study. The Study's main component was engaging interested parties in the planning process of the study. This was achieved through stakeholder group meetings, a survey instrument, and a public open house. The stakeholders represented Sacramento and West Sacramento property owners, community groups, neighborhood associations, developers, business interests, public transportation agencies, and advocates of walking and biking.

The study process began by addressing the question of whether there was a need for one or more new crossings. This was followed by defining the need and purpose of new crossings. The final Need and Purpose Statement is grounded in the community values stated in the guiding principles of the Sacramento Riverfront Master Plan, which are:

- Creating riverfront neighborhoods and districts
- Establishing a web of connectivity
- Strengthening the green backbone of the community
- Making places for celebration

The final Need and Purpose Statement is on Page 3 of the Summary Report (see Exhibit A). The next step in the study was a constraints and opportunities analysis to identify potential crossing locations. The stakeholders went on a field tour to look at locations on both sides of the Sacramento River. This was followed by an alternatives analysis that evaluated each crossing location in terms of modal options, transportation performance, environmental screen, and construction costs. This information was reviewed in context of the Need and Purpose Statement to develop the final study recommendation.

<u>Final Study Recommendation</u>

The consensus conclusion of the study process is that additional crossings of the Sacramento River are needed in the study area between the confluence with the American River and the vicinity of Sutterville Road. The principal finding of the study is at least two new crossings are needed, especially for the underserved market areas both north and south of the existing I Street and Pioneer Bridges. New crossings would accomplish the following objectives:

- Increase economic activity and access to jobs
- Improve the potential to achieve planned urban development and redevelopment
- Reduce trip lengths to make walking and bicycling viable travel modes across the river
- Reduce undesirable delays to automobiles, trucks, and public transit
- Increase opportunities for public access to the riverfront for recreation

- Improve travel safety and increase evacuation alternatives during emergency situations

North Market Alternatives

The north market includes the Railyards and River District developments, the Washington Specific Plan area, and the proposed California Indian Heritage Center and is largely planned future development and redevelopment. Two alternatives were identified to serve this emerging north market area: one connects the River District to the Indian Heritage Center and the Rivers, and the second connects the River District and Railyards to the Washington Specific Plan area.

South Market Alternatives

The south market has the highest level of existing population and employment that is not served by an existing bridge and includes Southport, Stone Lock project, Pioneer Bluff redevelopment, Miller Park Redevelopment, the Broadway corridor, and Land Park. Three potential alternatives were identified to serve this south market area: one connects the Pioneer Bluff redevelopment area and West Sacramento riverfront to Broadway or W/X Streets, the second connects the Stone Lock area to Miller Park, and the third connects Southport at Linden Road to Land Park at Sutterville Road.

Other Considerations

There is strong support that any new crossings accommodate multiple modes, including bicycles, pedestrians, and vehicles. It was also important to stakeholders and the public that new crossings need to be the right scale for their surroundings, in consideration of both existing and planned future land uses. This was expressed as a low profile bridge - aesthetically pleasing in design with minimal number of vehicle lanes that serve as complete streets that accommodate all users.

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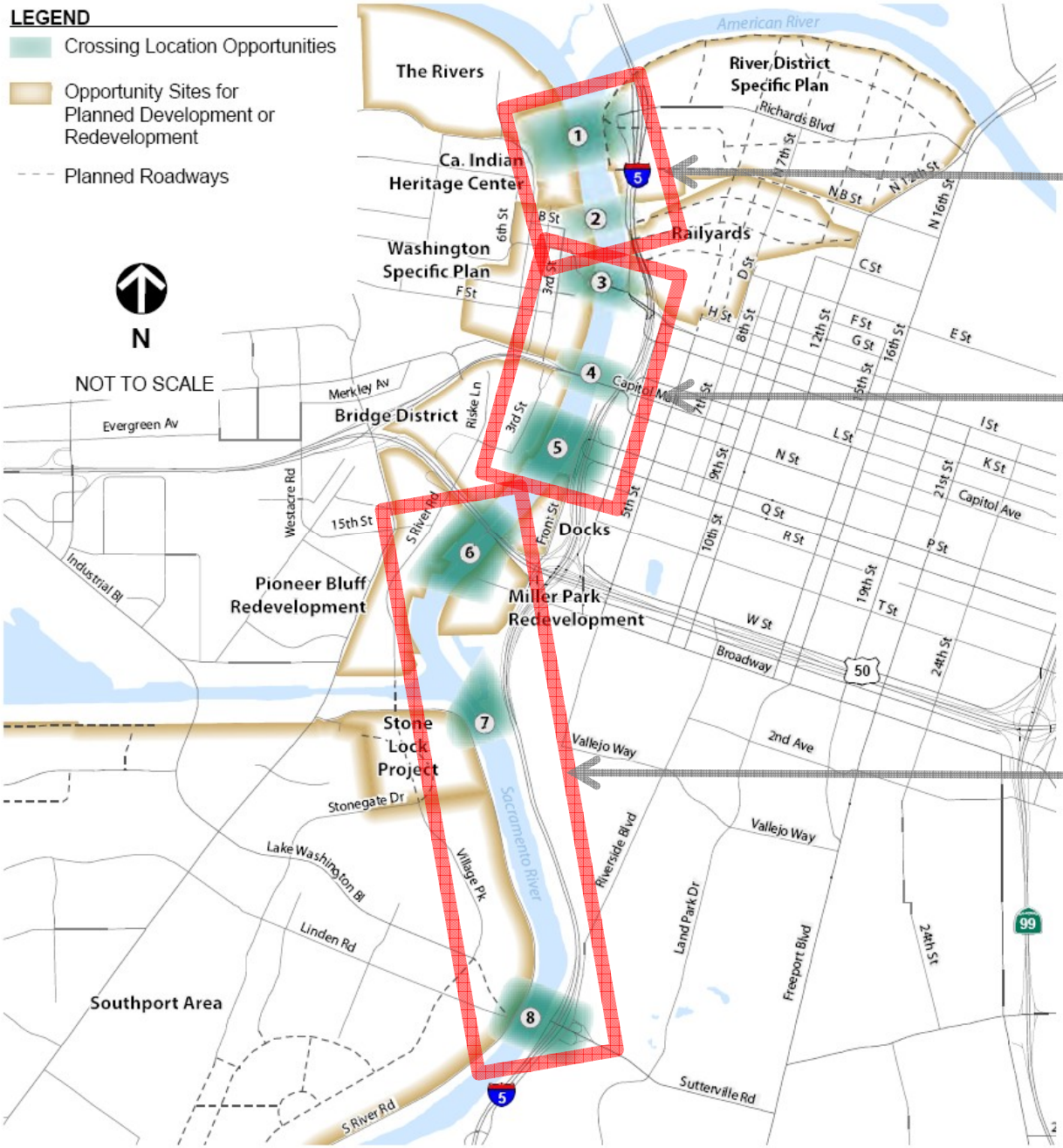
Sacramento River Crossings Alternatives Study

Sacramento City Council

July 19, 2011


LEGEND
Crossing Location Opportunities
Opportunity Sites for Planned Development or Redevelopment
Planned Roadways
N
NOT TO SCALE
American River
The Rivers
River District Specific Plan
Richards Blvd
Ca. Indian Heritage Center
Railyards
Washington Specific Plan
Bridge District
Docks
Pioneer Bluff Redevelopment
Miller Park Redevelopment
Stone Lock Project
Southport Area
Sacramento River
Broadway
Capitol Ave
Vallejo Way
2nd Ave
Stonegate Dr
Lake Washington Bl
Linden Rd
Village Pk
Riverside Blvd
Land Park Dr
Freeport Blvd
Sutterville Rd
S River Rd
Industrial Bl
Westacre Rd
Evergreen Av
Merkley Av
Riske Ln
15th St
Front St
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50
99
North Market
Central Market
South Market

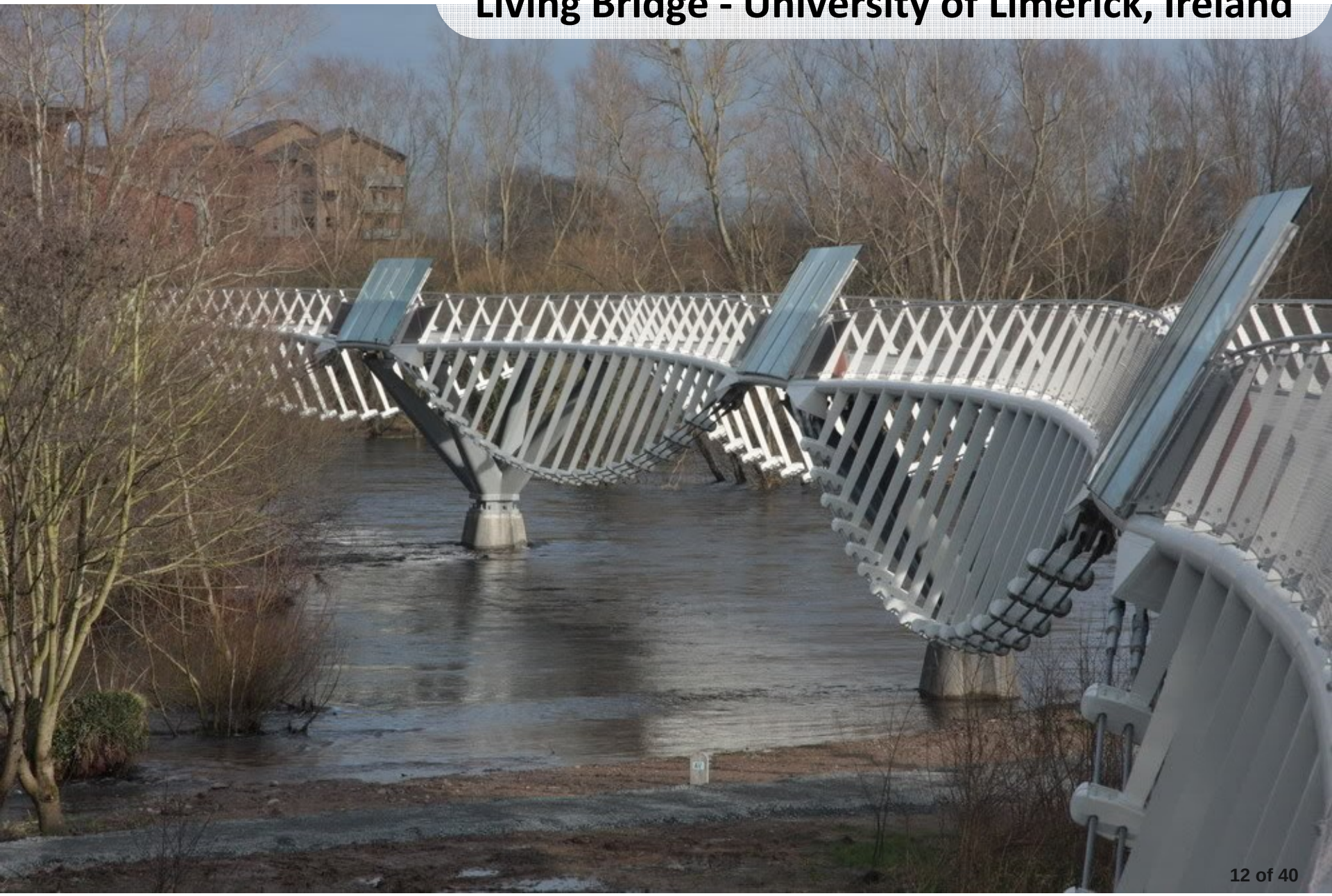
Existing Tower Bridge

Existing Tower Bridge

Sundial Bridge – Redding, CA

Denver, CO

Living Bridge - University of Limerick, Ireland



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RESOLUTION NO.

Adopted by the Sacramento City Council

ACCEPT THE SACRAMENTO RIVER CROSSINGS ALTERNATIVES STUDY REPORT, ENDORSE THE PROCESS AND DIRECT STAFF TO SEEK FUNDING FOR NORTH AND SOUTH MARKET AREA ALTERNATIVES

BACKGROUND

A. The City Councils of Sacramento and West Sacramento directed staff to proceed with a planning process to study the purpose of new crossings of the Sacramento River, evaluate what is needed to meet that purpose, and develop alternatives that meet the purpose and need.

B. A main component of the planning process was engaging interested stakeholders and the public in the discussion and study.

C. The study work was done in 2010 and a report has been produced, setting forth findings.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

Section 1. The Sacramento River Crossings Alternatives Study is accepted.

Section 2. The study process which included stakeholder group meetings, a public open house, an informal opinion survey, and a project website is endorsed.

Section 3. Staff is directed to seek funding for preliminary engineering and environmental analysis of the north and south market area locations numbered 1 through 2 and 6 through 8 in the Sacramento River Crossings Alternatives Study.

Section 4. Exhibits A and B are attached and are part of this Resolution.

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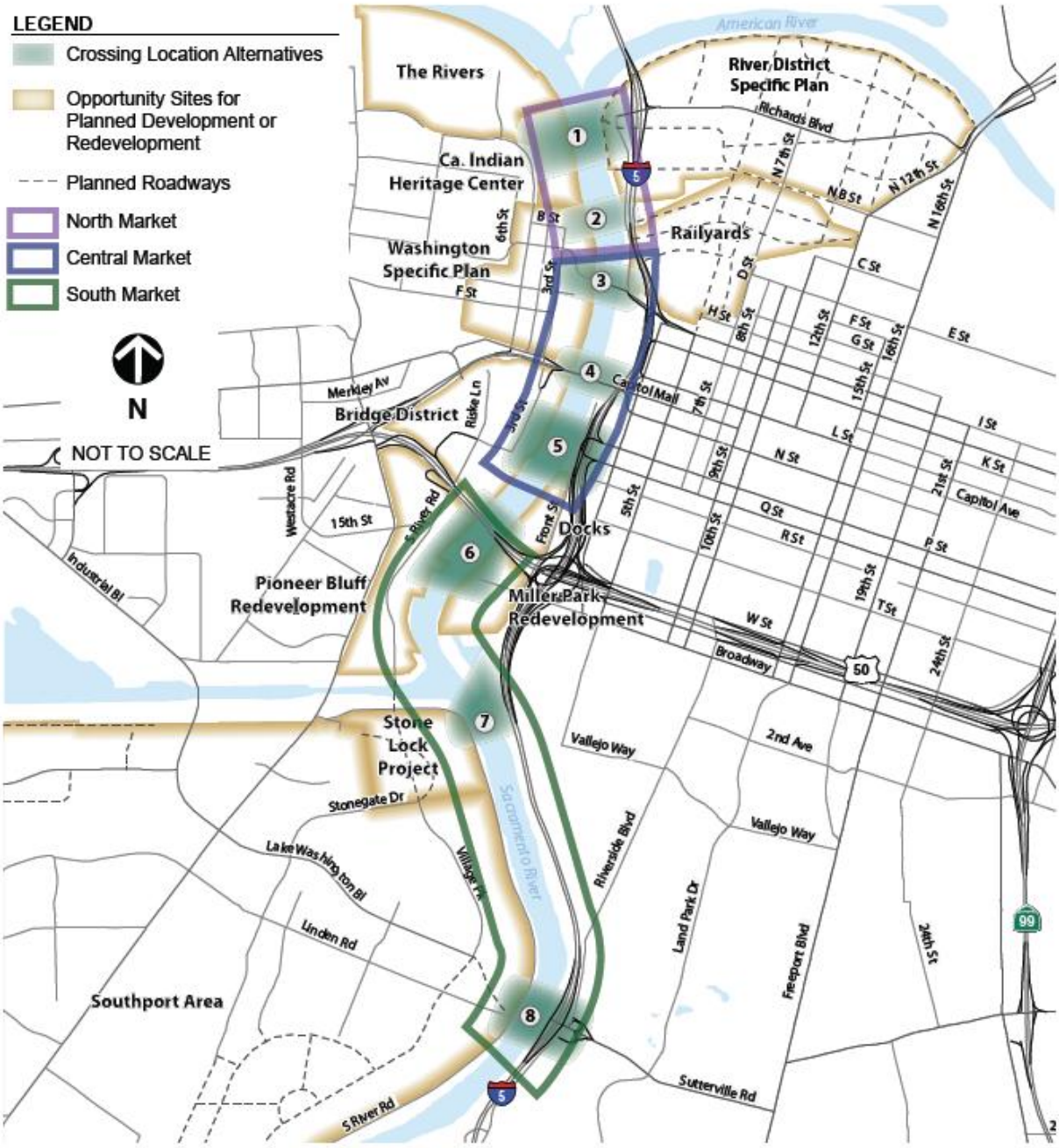
Attachment 2

Exhibit Map



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Sacramento River Crossings Alternatives Study

Summary Report

February 2011

Prepared for: City of Sacramento | City of West Sacramento

Prepared by: Fehr & Peers | ICF International | Dokken Engineering | AIM Consulting | Endicott Communications, Inc.

Acknowledgements

Project Team

Fran Halbakken, City of Sacramento

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Tom Zeidner, City of Sacramento

Maureen Pascoe, City of West Sacramento

Greta Vohlers, City of West Sacramento

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Environmental – ICF International

Cost Estimates – Dokken Engineering

Stakeholder and Public Outreach –
AIM Consulting /
Endicott Communications, Inc.

Stakeholders

ASB Properties – David Stroud

Bryte and Broderick Community Action Network – Jim Brewer

California Department of General Services – Cathy Buck

California State Railroad Museum – Cathy Taylor

Caltrans District 3 – Alyssa Begley

Capitol Area Development Authority – Jackie Whitelam

Downtown Sacramento Partnership – Kevin Greene

Greater Broadway Partnership – Teresa Rocha

Indian Heritage Center – Joe Goeden

Land Park Community Association – Mark Abrahams

Le Rivage Hotel – Mark Salquest

Ramco Enterprises – Dan Ramos

River District – Patty Kleinknecht

The Rivers Community Association – Joseph Barankin

SABA – Walt Seifert

SACOG – Matt Carpenter

Sacramento Metro Chamber – Kelly Brenk

Sacramento Metropolitan AQMD – Chris Morfas

Sacramento Regional Transit – Paul Marx

Sacramento River Crossings Association – Jim Randlett

Sacramento Walking Sticks – Susan Martimo

Southside Park Neighborhood Association – Sharon Sprowls

*WALK*Sacramento – Anne Geraghty

West Sacramento Chamber of Commerce – Denice Seals

Yolo County Transportation District – Erik Reitz

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Introduction

For over a decade, the concept of another Sacramento River crossing has surfaced in multiple forms, including the City of Sacramento and City of West Sacramento General Plans, the Sacramento Riverfront Master Plan (SRMP), and the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan (MTP). Mobility, economic development, riverfront accessibility, connectivity, air quality, safety, and security have been cited as benefits of a new Sacramento River crossing, while community and environmental impacts are often presented as concerns.

The purpose of the Sacramento River Crossings Alternatives Study was to take a comprehensive look at the need for a new crossing and to answer the following key questions.

- *Why is a new crossing needed?*
- *What are the objectives a new crossing should achieve?*
- *What locations are feasible for constructing a new crossing?*
- *What travel modes should a new crossing serve?*
- *How would a new crossing influence future travel demand?*
- *How much would a new crossing cost to construct?*
- *How do stakeholders and the public feel about new crossings?*

In answering these questions, the study engaged stakeholders and the public in the transportation planning process. It started with defining the need and purpose of a new crossing, which directly responds to the first two questions, and then refining it throughout the study based on stakeholder and public input. The final Need and Purpose Statement, shown on the opposite page, is grounded in the community values stated in the principles of the SRMP, the General Plan policies from both cities, and expressed by stakeholders and the public during the planning process.

Based on this statement, the clear need for a new crossing stems from limited connectivity, which is a barrier to economic activity, social exchanges, recreational opportunities, and access to jobs. This barrier effect creates long trip lengths that discourage walking and bicycling while creating dependence on automobile use that generates negative public health effects and adverse environmental effects. A new crossing would respond to the need but also be expected to accomplish additional objectives listed under the project purpose. These objectives were defined by the project team with input from the stakeholders and public.

The other key components of the study included a constraints and opportunities analysis to identify potential crossing locations. This was followed by an alternatives analysis that evaluated each crossing location in terms of modal options, transportation performance, environmental impacts, and construction costs. This information was synthesized and reviewed against the need and purpose statement to develop the final study recommendations. Key elements of the study are described in this executive summary, while the Technical Information Compilation Report contains the detailed information developed during the study and presented to the stakeholders and the public.

The *Sacramento Riverfront Master Plan* builds on four central guiding principles identified by the communities:

- Creating riverfront neighborhoods and districts
- Establishing a web of connectivity
- Strengthening the green backbone of the community
- Making places for celebration

NEED AND PURPOSE STATEMENT

NEED: The proposed action is needed for the reasons listed below.

- Limited connectivity across the river creates longer trip lengths, which discourage walking and bicycling.
- Longer trip lengths create dependence on automobile use that generates negative public health effects and adverse environmental effects such as emissions of air pollutants and greenhouse gases (GHGs).
- Limited connectivity across the river creates concentrated vehicle traffic flows on existing bridges and their connecting approach roadways, resulting in undesirable travel delays for vehicle traffic, including public bus transit during weekday peak periods and special events.
- Limited connectivity across the river reduces options for emergency response teams, thereby increasing response times and limiting alternatives for evacuations.
- The I Street, Tower, and Pioneer bridges do not fully comply with current design standards, which limits or restricts multimodal use, increases seismic vulnerability, and exacerbates the potential effects of natural disasters.
- Limited connectivity across the river is a barrier to economic activity, social exchanges, recreational opportunities, and access to jobs within the urban core of Sacramento and West Sacramento.
- Limited connectivity to the riverfront reduces the potential to achieve planned urban development and redevelopment of opportunity sites identified in the adopted plans of Sacramento and West Sacramento.
- Limited connectivity reduces opportunities to use the riverfront for enjoyment and recreation.

PURPOSE: The proposed action is intended to achieve the following objectives.

- Increase the number of river crossings that meet current design standards and encourage travel by walking, bicycling, low energy vehicles, and public transit.
- Increase the number of persons that can safely, efficiently, and reliably cross the river.
- Increase options for emergency response teams to cross the river.
- Increase options for evacuations.
- Improve the connectivity to, and accessibility of, businesses, recreational areas, and new or redevelopment opportunity sites located in the urban core of Sacramento and West Sacramento.
- Reduce trip length distances across the river between major origins and destinations.
- Reduce the growth in vehicle miles of travel (VMT) and vehicle hours of delay (VHD).
- Reduce the growth in transportation-related energy use, air pollution emissions, and GHG emissions.
- Reduce the growth in vehicle traffic on local neighborhood streets, especially cut-through traffic.
- Minimize use of the Pioneer Bridge by local traffic.

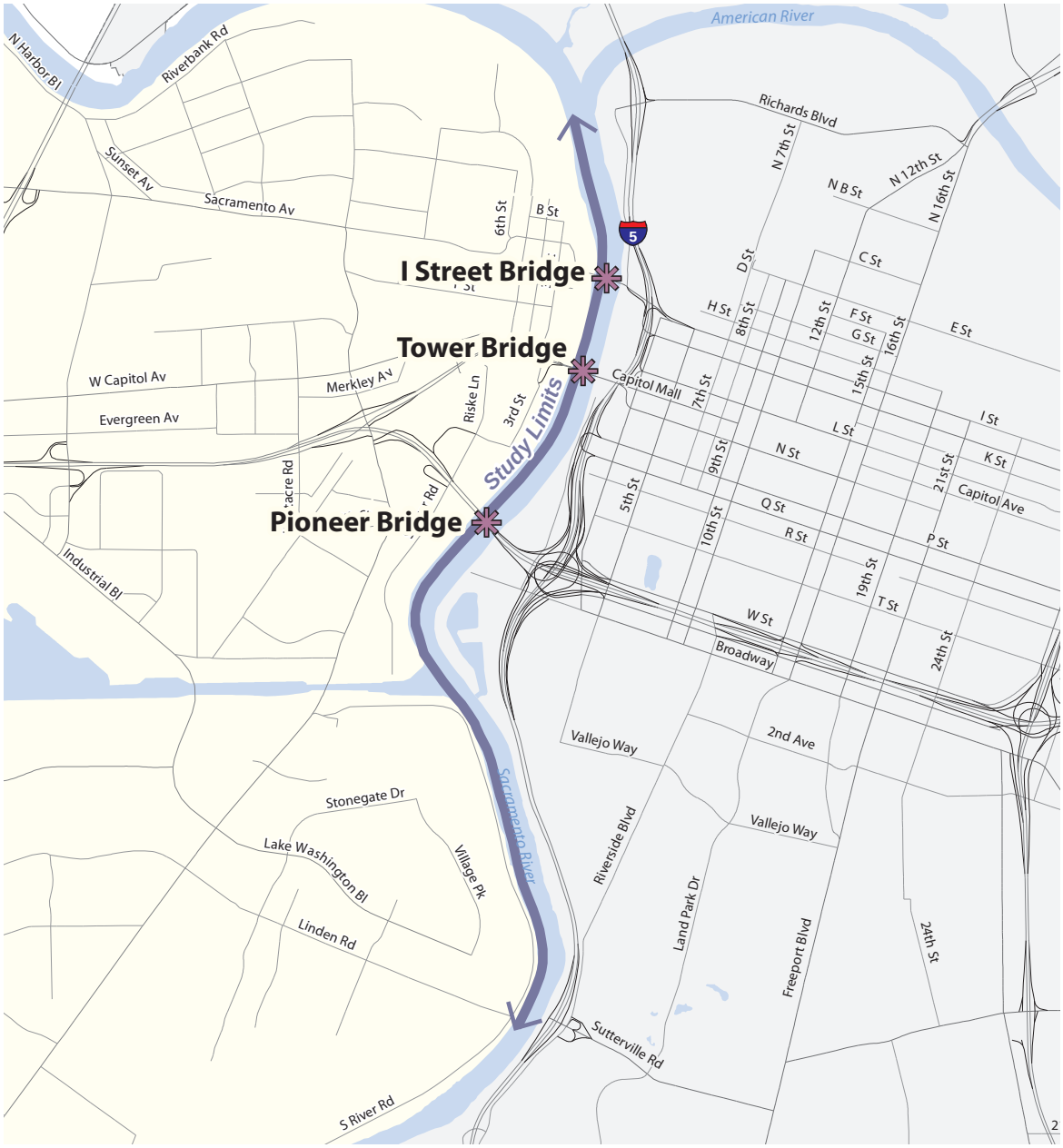
Alternatives Development and Analysis

The Sacramento River Crossings Alternatives Study started with a large study area that extended from the confluence of the American River to the Freeport Bridge approximately 13 miles to the south. The Need and Purpose Statement was used to assess and refine this initial study area to the final limits shown in Figure ES-1. This refined study area was the focus of the alternatives development and analysis, which started with an evaluation of existing constraints under the following topics to identify potential opportunities for new crossing locations.

- ***Environmental*** *– These constraints include biological (i.e., plants, animals, water, and air quality) and cultural resources that are regulated by federal, state, and regional agencies.*
- ***Physical*** *– These constraints include natural and manmade physical features that would influence the feasibility or cost of constructing a new crossing.*
- ***Land Use*** *– These constraints include land uses that have a special status or sensitivity that would influence the feasibility or cost of constructing a new crossing.*

FINAL STUDY AREA AND EXISTING BRIDGE CROSSINGS

FIGURE ES-1



The constraints were based on a review of available information and input from the stakeholder advisory committee. Opportunity crossing locations were identified by reviewing the constraints and the following information.

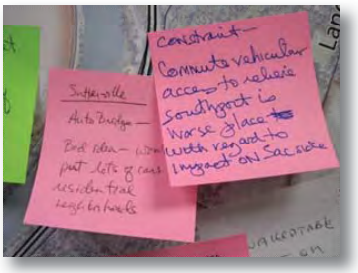
- *Planned development and redevelopment areas (also known as opportunity development sites).*
- *Existing and planned transportation network, including roadways, rail lines, bikeways, and pedestrian facilities.*
- *Stakeholder input from their second meeting and the June 14, 2010, site tour.*

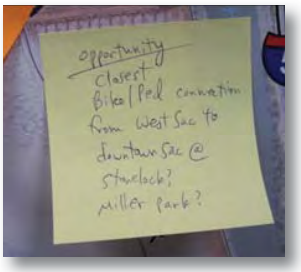
The main product of the constraints and opportunities analysis was a technical memorandum that included a preliminary map of potential crossing locations and modal options for each crossing. The memo and map were the key items presented at the third stakeholder meeting and the public workshop. At this point in the study, the modal options included bridges, ferries, and aerial trams. Further assessment of these modal options, based on the Need and Purpose Statement during the alternatives analysis, revealed that a ferry or aerial tram would fail to meet key project purpose objectives. Figure ES-2 on pages 8 and 9 shows the final map of eight potential crossing locations and the various modal options they could support.

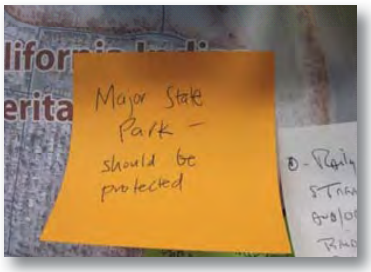
Following is a summary of the eight crossing location opportunities.

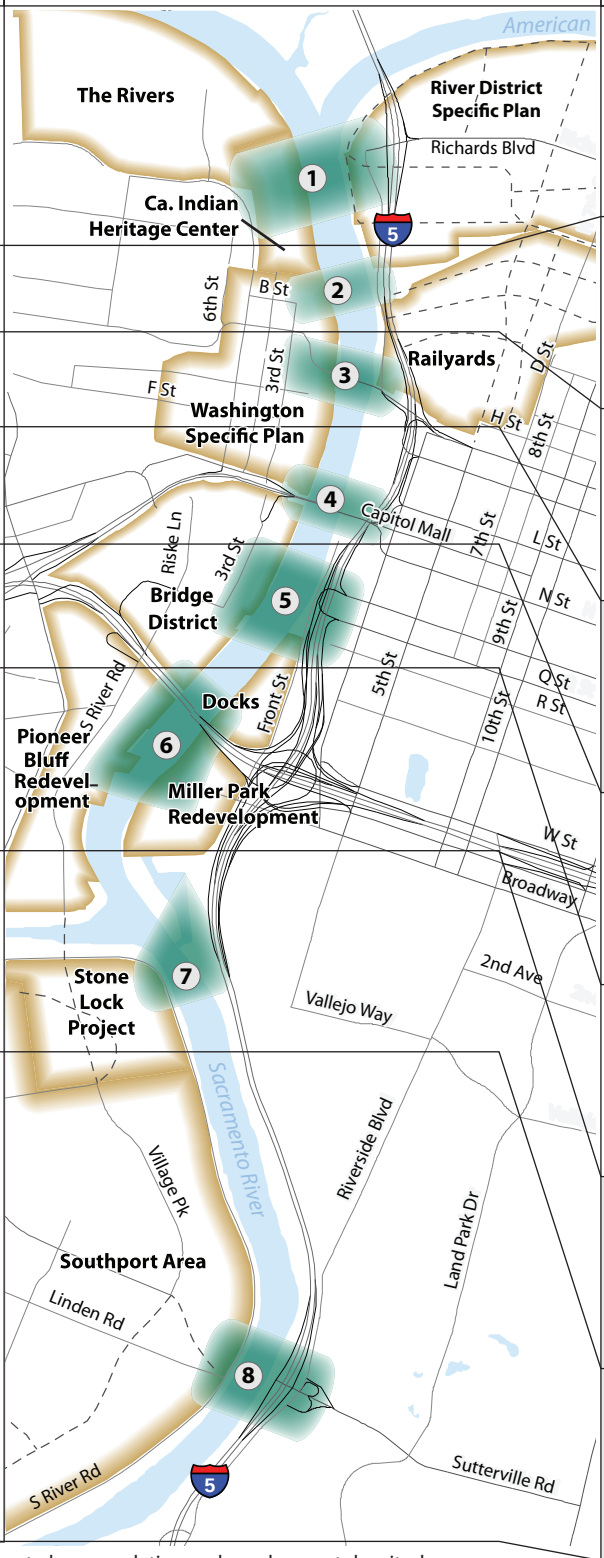
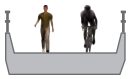
- ***Location 1*** *– This location could connect development/redevelopment opportunity sites on both sides of the river, including the River District Specific Plan area, The Rivers development area, and the planned California Indian Heritage Center. The location also offers the potential to connect directly to I-5. A pedestrian- and bicycle-only bridge was previously identified in this area in the Riverfront Master Plan.*
- ***Location 2*** *– This location could connect development/redevelopment opportunity sites on both sides of the river including the River District Specific Plan area, Railyards Specific Plan area, Washington Specific Plan area, and the planned California Indian Heritage Center.*
- ***Location 3*** *– This location focuses on the existing I Street Bridge corridor and strengthening the connection between downtown Sacramento, the Railyards Specific Plan area, and the Washington Specific Plan area and surrounding neighborhood. A key question is whether it would be more cost effective to upgrade the existing bridge or to replace it altogether. The presumption for this study is that any modification in this area would not increase the number of lanes for vehicles but would enhance the crossing for automobiles, transit vehicles, bicyclists, and pedestrians. Transit vehicles do not use the I Street Bridge because it is too narrow, and bicyclists must share the narrow travel lanes with vehicles given the absence of shoulders.*

- ***Location 4*** *– This location focuses on the existing Tower Bridge corridor and would continue to connect the core of downtown Sacramento with north-south gateways to the Washington Specific Plan area and Bridge District development area. While a new crossing would not likely be added here, enhancements to the existing Tower Bridge could be made to accommodate rail transit or provide additional space for bicycles and pedestrians.*
- ***Location 5*** *– This location could connect existing developed areas and development/redevelopment opportunity sites on both sides of the river. The Sacramento side of the river includes the P, Q, and R Street corridors. The R Street corridor is a planned mixed-use growth area. On the West Sacramento side of the river, this location could connect to the Bridge District. A pedestrian- and bicycle-only bridge was previously identified in this area in the Riverfront Master Plan. The elevation of P, Q, and R Streets above I-5 in this area would help address the challenge of crossing both the river and I-5.*
- ***Location 6*** *– This location could connect development/redevelopment opportunity sites on both sides of the river, including the Docks project and Miller Park redevelopment area in Sacramento, with the Pioneer Bluff Redevelopment area in West Sacramento. This area also captures the existing Pioneer Bridge, which presents an opportunity for enhancing this existing vehicle crossing to accommodate non-auto modes. A new crossing in this area may present an opportunity to leverage planned relocation of the existing fuel tank farms on both sides of the river to the Port of Sacramento. The Riverfront Master Plan proposed extending Broadway as a multimodal bridge across the river in this area. Broadway already crosses under I-5.*
- ***Location 7*** *– This location could connect development/redevelopment opportunity sites on both sides of the river, including the Miller Park Redevelopment Project area in Sacramento and the Southport Specific Plan and Stone Lock project areas in West Sacramento.*
- ***Location 8*** *– This location could connect the existing Land Park area in Sacramento with the Southport Specific Plan area in West Sacramento. This location also offers the potential for a direct connection to I-5, with or without a connection to Sutterville Road.*



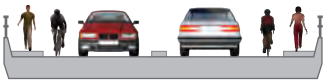
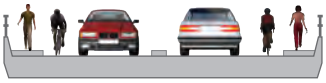
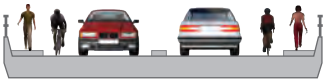
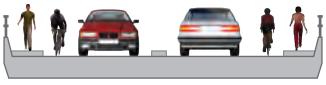
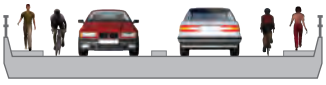
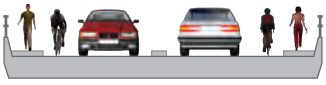




Destinations/Crossing Connections	Key Map	Ped/Bike Only
1. California Indian Heritage Center/ The Rivers to River District		
2. Washington Specific Plan to River District/Railyards		
3. Washington Specific Plan to Railyards (I Street Bridge)		
4. Washington Specific Plan/ Bridge District to Downtown Sacramento (Tower Bridge)		
5. Bridge District to R St. Corridor		
6. Bridge District/Pioneer Bluff to Docks/Miller Park (Pioneer Bridge)		
7. Stone Lock to Miller Park		
8. Southport to I-5/Sutterville Rd.		

Notes: Shaded cells denote crossing type not best suited due to low population and employment density, long distances between major destinations for non-motorized modes, or high demand for motorized modes.
(1) Transit bridges would have dedicated lanes for the exclusive use of transit vehicles.
(2) Auto bridges could be two or more lanes and would be used by buses operating in mixed traffic.

FIGURE ES-2

BRIDGES		
Ped/Bike with Transit (1)	All Modes - 2 Lanes (2)	All Modes - 4 Lanes
		
		
		
		
		
		
		
		

EVALUATION CRITERIA

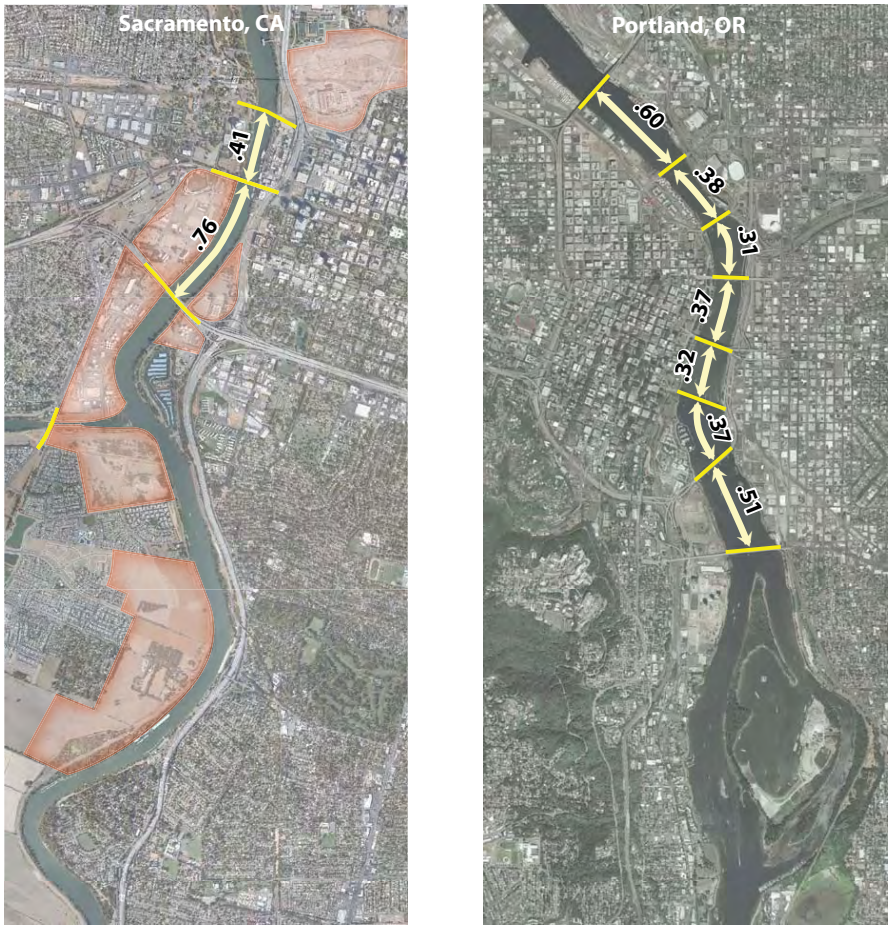
The alternatives analysis focused on evaluation criteria developed by the project team in collaboration with the stakeholders. The evaluation criteria was linked to specific community values identified early in the study process based on adopted local, regional, and state plans, plus stakeholder input and an Internet-based public survey, which included almost 1,700 responses. This approach ensured that the alternatives analysis would relate directly to the community values expressed as being important to the stakeholders and the public. Table ES-1 shows the final evaluation criteria.

Table ES-1 – Evaluation Criteria Performance Measures

COMMUNITY VALUES	QUANTITATIVE PERFORMANCE MEASURES	QUALITATIVE PERFORMANCE MEASURES
Accessibility • Increase accessibility to the riverfront • Remove barriers to travel, especially by walking and bicycling • Reduce gaps in the transportation network	• Population and employment within ½ mile (walk) radius of each river crossing location • Population and employment within a 5-minute drive of each river crossing location	• Travel market map based on estimated distribution of vehicle trips using each crossing • Potential to reduce emergency vehicle response times
Aesthetics • Maintain local character and identity		• Location is compatible with existing or planned development • Design would be consistent with scale of existing development
Connectivity • Increase the number of river crossings • Improve pedestrian and bicycle network connectivity	• Number of new crossings • Number of vehicle lanes crossing the river • Number of sidewalks/paths crossing the river • Number of bike lanes/paths crossing the river • Change in average spacing between crossings	
Economic • Minimize impedance to movement of goods, services, and workers • Develop cost-effective alternatives • Align costs and funding	• Population and employment within ½ mile (walk) radius of each river crossing location • Population and employment within a 5-minute drive of each river crossing location	• Cost compared to funding estimate
Environment • Protect environmental and cultural resources • Protect and restore riverfront environment • Reduce travel-related energy and emissions	• Change in regional vehicle miles of travel (VMT)	• Environmental and cultural resource disruption • Transportation energy demand reduction potential
Mobility • Reduce undesired future congestion • Improve roadway utilization • Reduce travel times to cross the river by all modes	• Travel times for select origin-destination pairs by mode • Change in regional VMT • Congested lane-miles within study area	• Potential to induce new travel
Neighborhoods/Community • Preserve existing conditions • Minimize through traffic	• Percent change in neighborhood cut-through traffic • Vehicle traffic volume change on major neighborhood roadways	• Potential to induce new growth beyond current plans
Safety • Improve travel safety • Reduce severity of collisions • Improve emergency vehicle response		• Meets current design standards

TRANSPORTATION ANALYSIS

Accessibility, connectivity, and mobility are the community values that resonated most strongly with the stakeholders. These values are directly related to existing and future levels of population and employees. Figure ES-3 shows that the study area has a significant amount of planned population and employment growth, especially in the urban core areas of Sacramento and West Sacramento. Figure ES-4 relates this growth to each crossing location based on select accessibility and mobility related evaluation criteria from Table ES-1. This information suggests that each crossing would serve different amounts of population and employment, with those closer to the urban core serving the most. However, the core area already has existing bridges, whereas the areas to the north and south have none. This condition partly explains why adding new bridges to the north or south has a greater influence on reducing vehicle miles of travel (VMT).

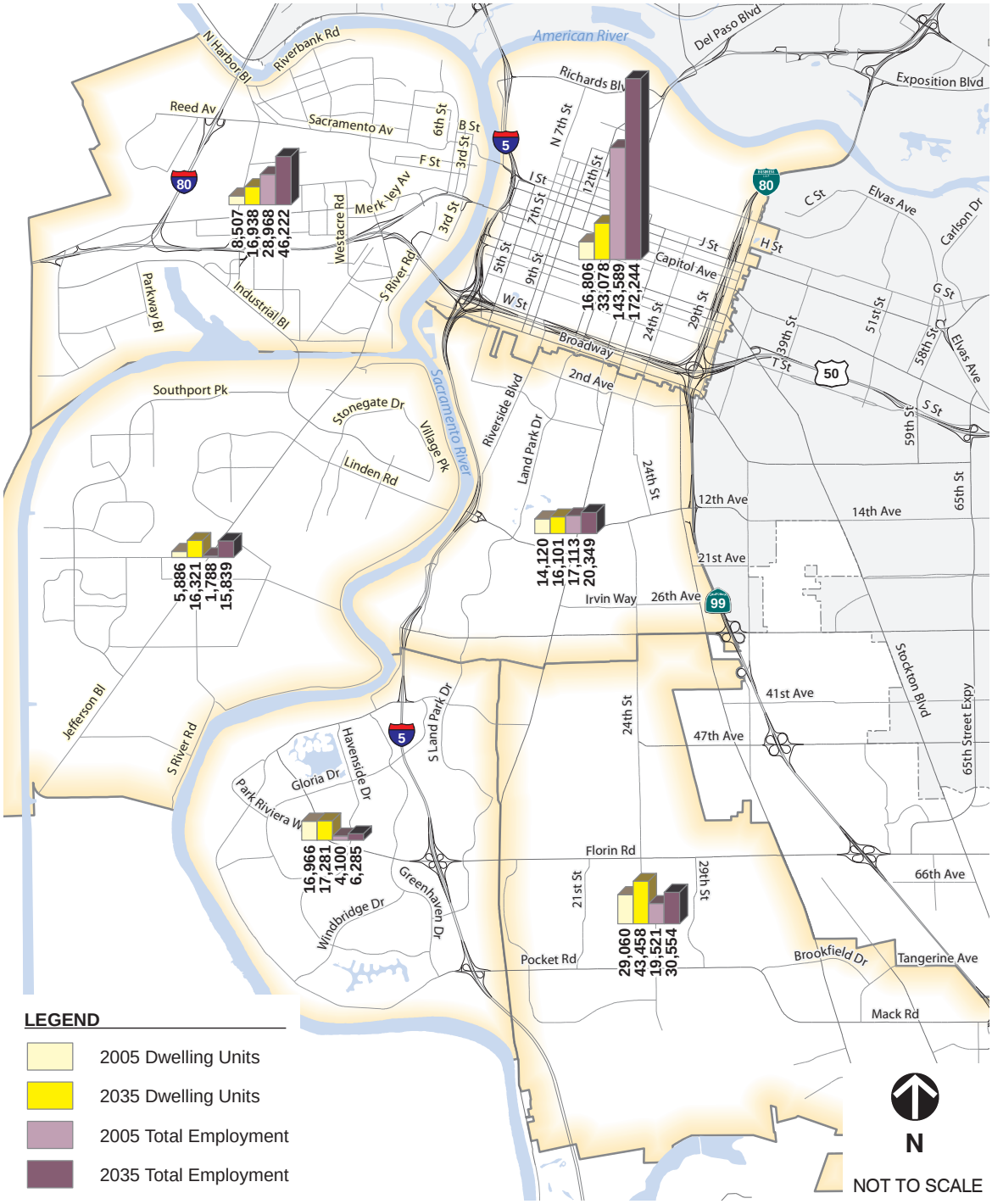


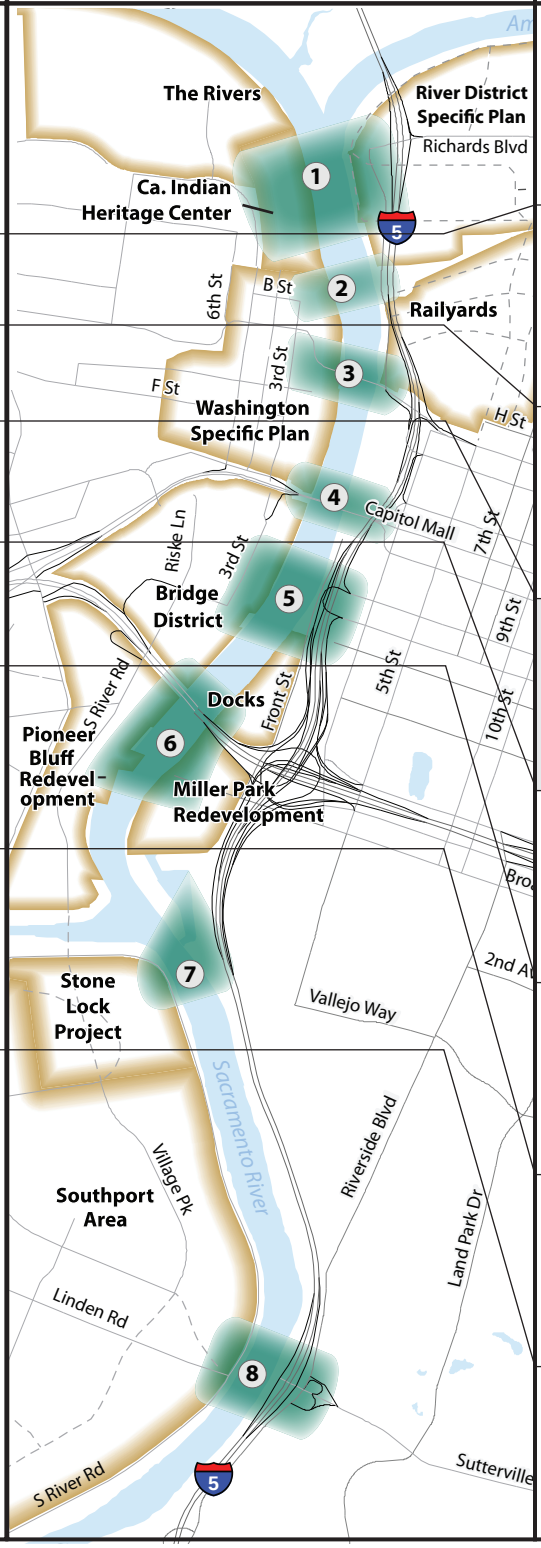
Influence of accessibility on development

LEGEND

.60 Distance Between Bridges (miles)

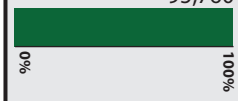
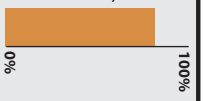
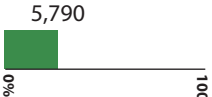
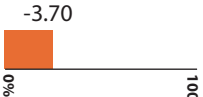
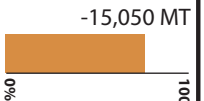
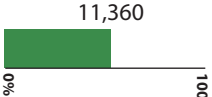
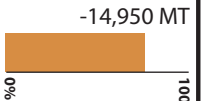
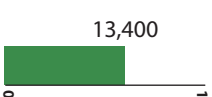
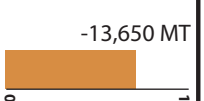
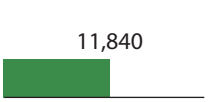
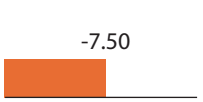
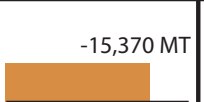
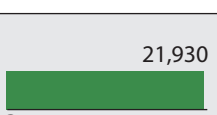
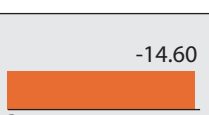
Areas of Less Intense Development Partly Due to Limited Assessibility


American River
Sacramento River
N Harbor Bl
Riverbank Rd
Reed Av
Sacramento Av
6th St
B St
3rd St
F St
Merkley Av
Westacre Rd
Parkway Bl
Industrial Bl
S River Rd
8,507
16,938
28,968
46,222
Richards Blvd
N 7th St
12th St
I St
7th St
5th St
9th St
W St
Capitol Ave
J St
24th St
29th St
16,806
33,078
143,589
172,244
Del Paso Blvd
Exposition Blvd
C St
Elvas Ave
Carlson Dr
H St
G St
51st St
39th St
58th St
T St
50
S St
59th St
Broadway
2nd Ave
Southport Pk
Stonegate Dr
Village Pk
Linden Rd
Riverside Blvd
Land Park Dr
24th St
14,120
16,101
17,113
20,349
12th Ave
14th Ave
65th St
21st Ave
Irvin Way
26th Ave
99
5,886
16,321
1,788
15,839
Jefferson Bl
S River Rd
S Land Park Dr
Havenside Dr
Gloria Dr
Park Riviera W
16,966
17,281
4,100
6,285
41st Ave
47th Ave
Stockton Blvd
65th Street Expy
Florin Rd
66th Ave
21st St
29th St
29,060
43,458
19,521
30,554
Greenhaven Dr
Windbridge Dr
Pocket Rd
Brookfield Dr
Tangerine Ave
Mack Rd
LEGEND
2005 Dwelling Units
2035 Dwelling Units
2005 Total Employment
2035 Total Employment
N
NOT TO SCALE

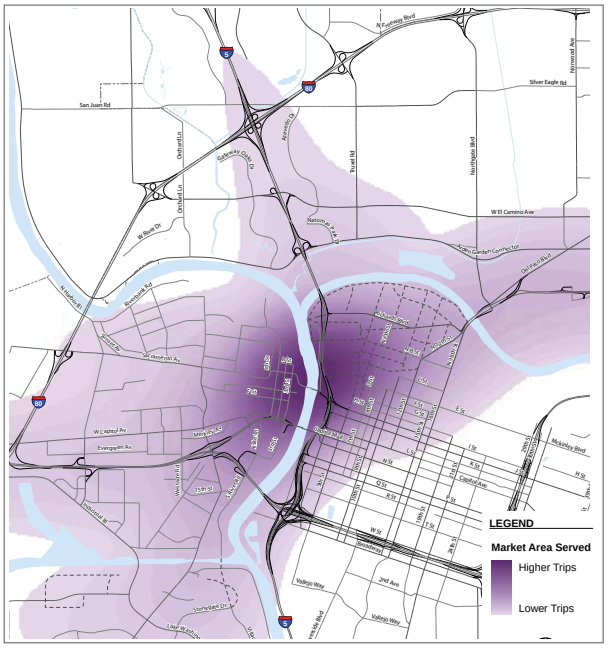
Destinations/Crossing Connections	Key Map	2005 Pop. Plus Employ.within 1/2 mile	2035 Pop. Plus Employ. within 1/2 mile	2005 Pop. Plus Employ. within 5 min. Drive	2035 Pop. Plus Employ. within 5 min. Drive
1. Richards Boulevard - California Indian Heritage Center/The Rivers to River District		3,201	7,171	15,254	41,359
2. C Street - Washington Specific Plan to River District/Railyards		5,966	22,941	33,821	68,342
3. I Street (Modified) - Washington Specific Plan to Railyards		11,850	33,674	61,279	100,996
4. Tower Bridge - Washington Specific Plan/ Bridge District to Downtown Sacramento		23,448	44,425	63,954	95,981
5. R Street - Bridge District to R St. Corridor		16,909	36,449	69,603	106,097
6. Broadway - Bridge District/Pioneer Bluff to Docks/Miller Park		4,422	12,799	65,915	98,545
7. Marina View - Stone Lock to Miller Park		4,176	5,684	7,658	24,503
8. Sutterville Rd. - Southport to I-5/ Sutterville Rd.		2,364	3,660	11,850	19,377

Notes: Shaded cells denote highest value.
(1) [2035 with new bridge] - [2035 no project]
(2) Change within study area during PM peak period.
(3) MT = Metric ton. Assumes one vehicle mile of travel generates approx. 1 lb. of CO_2 equivalent.
* Congested lane miles increased by 1.9 for this alternative.

FIGURE ES-4

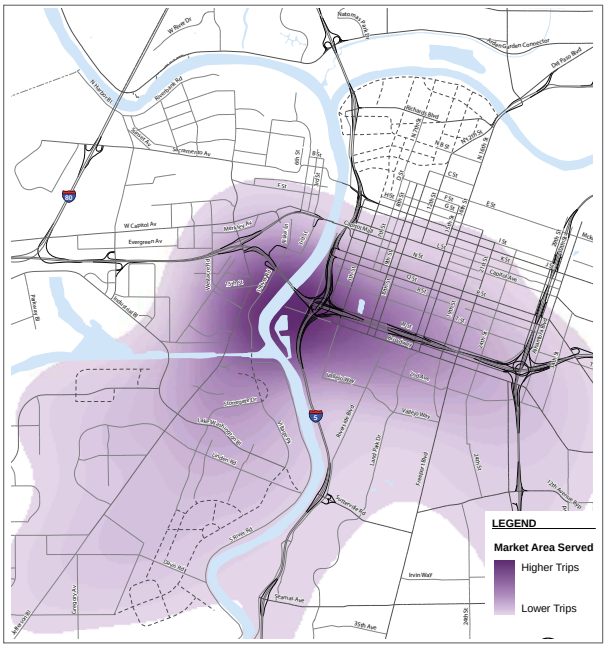
2035 Regional Daily VMT Change (1)	2035 Total River Crossing Daily Volume Change (1)	2035 Lane-Miles of Congestion Change (1, 2)	2035 Annual GHG Emission Change (1, 3)	Potential Residential Neighborhoods Affected by Traffic Volume Changes	
				Sacramento	West Sacramento
				3	3
				5	4
No Change Compared to No Project					
No Change Compared to No Project					
				5	3
				5	2
				5	2
				7	3

North

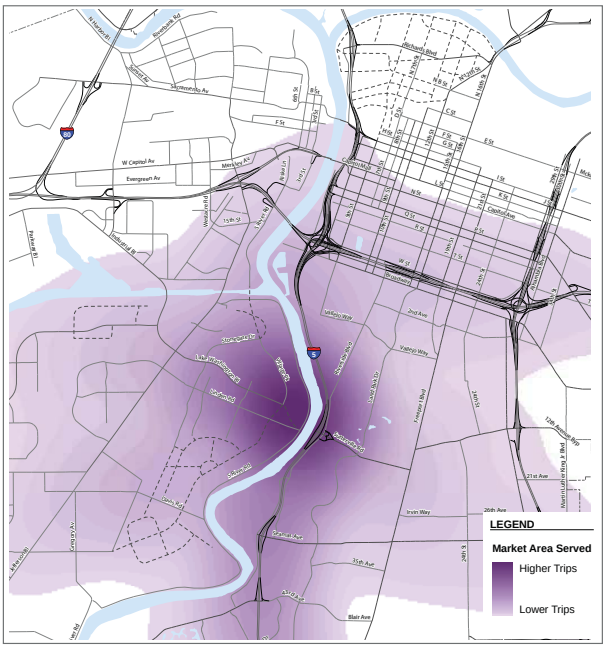


To better understand the specific areas or "markets" being served by each crossing, a visual analysis was conducted, as shown in the images on this page, to show how the location of a new bridge affects the distribution of the vehicle trips that cross it. Three distinct markets were revealed: north, central, and south. The central market is already served by the I Street and Tower Bridges although I Street does not accommodate all modes and is in need of significant maintenance. The north market (north of I Street) and the south market (south of Pioneer Bridge) are not served by any bridges. When a new bridge is introduced into these areas, the users tend to be concentrated from the same area.

Central



South



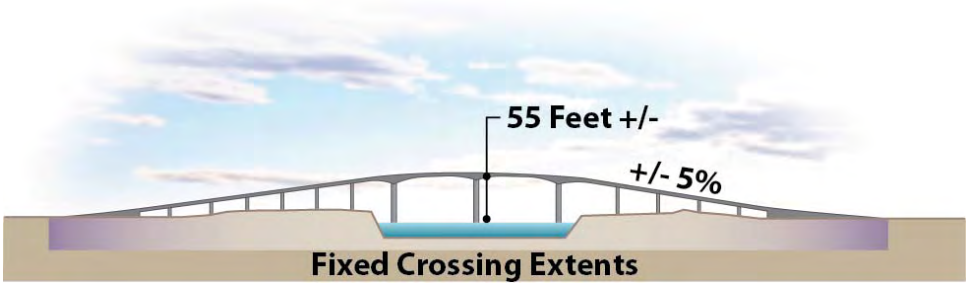
Another important community value identified by the stakeholders was the preservation of existing residential neighborhoods and the desire to minimize regional cut through traffic on residential streets that would occur due to a new crossing. The planning level analysis conducted for this study did not contain sufficient detail or sensitivity to draw definitive conclusions about potential residential neighborhood effects, but the analysis did provide evidence that new crossings connecting directly to, or adjacent to, existing residential neighborhoods had a high likelihood of attracting new traffic through these areas and should be studied in closer detail in subsequent project development phases.

A complete summary of the transportation analysis can be found in the Technical Information Compilation Report, which is a compilation of the information that was produced during this study and used in stakeholder meetings and the public workshop. Since any new bridge would comply with current design standards and would improve current emergency response capabilities, these criteria were not directly included in the transportation analysis summaries. Likewise, each two-lane bridge would add the same number of vehicle lanes, sidewalks, and bike lanes. As for aesthetics, it is too early in the planning process to have bridge designs prepared. However, this was an important criterion for many stakeholders (with a strong preference for low profile bridge designs such as Tower Bridge) and will need to be addressed as the project progresses into design phases.

COST ESTIMATES

The alternatives analysis also included cost estimates. The cost estimates considered three potential crossing types, as listed below.

- *Fixed bridge with a 55' vertical clearance to comply with U.S. Coast Guard Navigable Waterways design requirements (similar to Pioneer Bridge height).*
- *Fixed bridge with a 30' vertical clearance, assuming an exception to the U.S. Coast Guard Navigable Waterways design requirements.*
- *Moveable bridge similar to Tower Bridge or I Street Bridge.*



For each bridge type, the cost estimates included three different cross-sections with varying widths to accommodate the modal options shown in Figure ES-2. Actual bridge widths could vary by as much as 10 feet from the widths assumed for these preliminary estimates. For example, the pedestrian/bicycle-only option was assumed to be at least 20 feet so it could also accommodate modes such as neighborhood electric vehicles. Narrower options that would accommodate only pedestrian/bicycle modes would have lower construction costs. Table ES-2 summarizes the cost estimates. Additional details about the cost estimates are available in the Technical Information Compilation Report.

These cost estimates represent a significant range and do not include right-of-way, environmental mitigation, or enhanced aesthetic designs. Each of these items can add significantly to the cost amount, depending on the specific location, although the environmental assessment did not identify major environmental constraints that would dramatically change the cost estimates between the alternative locations. While a complete cost is difficult to estimate at this early planning stage, the range in Table ES-2 is generally in line with the current funding projection contained in the Sacramento Regional Metropolitan Transportation Plan, SACOG, 2008, of approximately $100 million. However, this plan is being updated and additional funding may be designated for new river crossings.

Table ES-2 – Conceptual Construction Cost Estimates

Bridges	Ped/Bike	Ped/Bike with Transit	All Modes - 2 Lanes	All Modes - 4 Lanes
Width	20'	60'	60'	100'
Types	Range of Costs (in millions of dollars)			
Fixed = 30'	$35-$70	$45-$145	$40-$130	$110-$205
Fixed = 55'	$65-$80	$65-$165	$60-$150	$140-$250
Moveable	$80-$115	$115-$180	$105-$165	$200-$270

Notes: The values in this table are estimates with ranges of costs. These costs include a 25% contingency cost, escalation in cost for 15 years (3% per year), 20% engineering and environmental cost, and 10% construction administration cost. Costs do not include right-of-way or environmental mitigation.
Source: Dokken Engineering, 2010.

Findings

The principal finding of this study is that a clear need exists for a new crossing of the Sacramento River, but instead of just one new crossing, at least two new crossings are needed. This is particularly evident for the under-served markets north and south of the I Street and Pioneer Bridges. New crossings would accomplish the following objectives.

- *Increase economic activity and access to jobs*
- *Improve the potential to achieve planned urban development and redevelopment*
- *Reduce trip lengths to make walking and bicycling viable travel modes across the river*
- *Reduce undesirable delays to automobiles, trucks, and public transit*
- *Increase the opportunities for public access to the riverfront for recreation*
- *Improve travel safety and increase evacuation alternatives during emergency situations*

The five-mile study segment of the Sacramento River is served by two local bridges, the Tower Bridge and the I Street Bridge, located just less than one-half mile apart. Travel by all modes across the river must use these two bridges for east-west travel, except for vehicles that have the option of using US 50 (Pioneer Bridge). The I Street Bridge is 100 years old and its upper roadway is too narrow to serve buses, it has no bicycle facilities, and it has very narrow sidewalks.

The two new crossings should include one that serves the "north market" and one that serves the "south market." The most promising alternatives for each market, as shown on Figure ES-5, and the purposes they would serve, are described below.

NORTH MARKET ALTERNATIVES

The crossings at Locations 2 and 3 would provide connectivity between major planned developments, including the Washington Specific Plan and California Indian Heritage Center in West Sacramento, and the Railyards and River District in Sacramento.

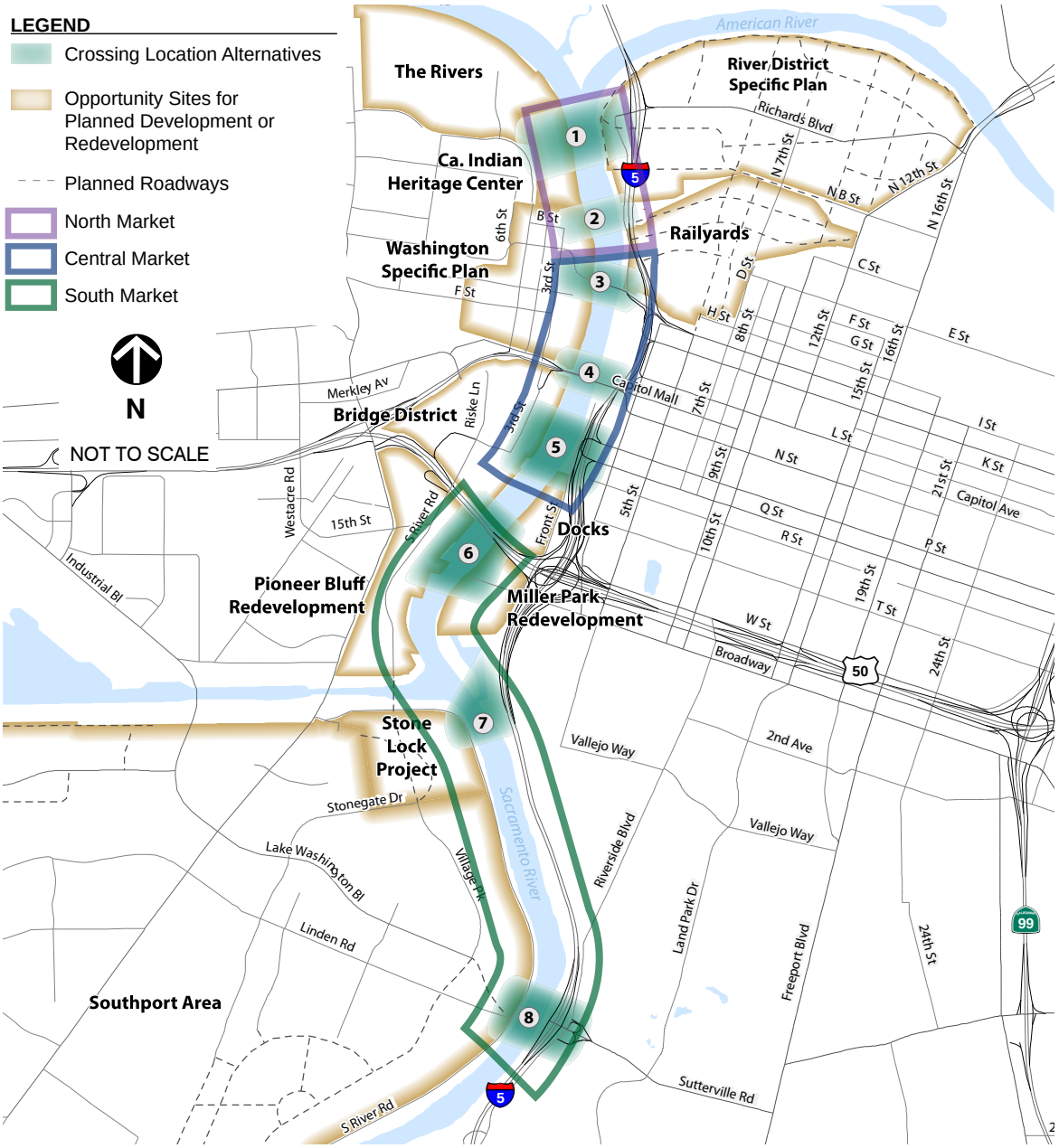
Location 2: C Street to Railyards Boulevard

This crossing would maintain the west approach of the existing I Street Bridge at C Street, but shift the east approach away from I and J Streets (and the associated I-5 ramps) to Railyards Boulevard. This crossing is likely to be less costly and disruptive to implement because its alignment north of the I Street Bridge allows the existing I Street Bridge to remain in operation. After the three core bridges (Locations 3, 4, and 5), it has the highest 2035 population and employee total within both a one-half mile area and a five-minute drive.

Location 3: I Street Bridge Replacement

This crossing would replace the I Street Bridge at its current location, but widen it to provide pedestrian and bicycle facilities. The existing rail line would be maintained and the roadway widened to allow buses to use the bridge. Replacement of the I Street Bridge would require maintenance of freight and passenger rail traffic during construction.

MARKET AREA
FIGURE ES-5



SOUTH MARKET ALTERNATIVES

The crossing at Location 6 would provide connectivity between the Pioneer Bluff, a planned redevelopment area along the West Sacramento riverfront, and the Docks development project, Miller Park, and the Broadway commercial district in Sacramento.

The crossing at Location 8 would provide connectivity between primarily residential neighborhoods, including the Southport area in West Sacramento and the Land Park area in Sacramento, but also attract regional traffic to the new shorter distance route between SR 99/I-5 and I-80.

Location 6: 15th Street to Broadway or W Street/X Street couplet

This crossing is located just south of the existing Pioneer Bridge. It would serve multiple purposes, including improving access to jobs and supporting planned riverfront development. Compared to the other crossings located outside the existing core (crossings 1, 7, and 8), it yields the highest 2035 population and employment within both a one-half mile area and a five-minute drive.

Location 8: Linden Road to Sutterville Road

This crossing is located at the southern edge of the study area. The distance between this crossing and the nearest crossing to the north (Pioneer Bridge) is approximately two miles. As such, a crossing at this location would yield a significant benefit in terms of reducing trip lengths required to cross the river.

OTHER CONSIDERATIONS

Public and stakeholder sentiment suggests that any new crossing should accommodate multiple modes, including bicycles, pedestrians, and vehicles. This was based on a number of factors, including the desire for new crossings to serve as complete streets that accommodate all users.

Other important considerations drawn for each market area during the study are described in detail below.

- ***North Market*** – *This area has no existing bridges and substantial planned growth on both sides of the river. Without a new bridge, this area will have limited accessibility that could affect the amount of future development. This could mean that some population and employment growth occurs farther from the urban cores of Sacramento and West Sacramento, which would likely increase the amount of vehicle travel that occurs in the region and contribute to greater levels of energy use and emissions.*
- ***Central Market*** – *This area is already served by the I Street and Tower Bridges. The Tower Bridge functions well and accommodates multiple modes, but modifications would be required to accommodate rail transit. Another crossing opportunity for bicycles and pedestrians does not exist south of Tower Bridge. A new bridge at Location 5 (R Street) would improve accessibility and connectivity to this area for all modes. After the existing Tower and I Street Bridges, it has the highest level of 2035 population and employment*

within both a one-half mile area and a five-minute drive. However, the inclusion of vehicles would likely increase traffic volumes through residential neighborhoods.

- ***South Market*** *– This area has the highest level of existing population and employment that is not served by a bridge. The area is large enough that more than one bridge could be justified. This area has some key challenges related to any bridge crossings at Locations 7 (Marina View) and 8 (Sutterville). Location 7 would require a bridge through Miller Park, which could disrupt existing public recreational areas and cause circuitous routing. A bridge at Location 8 would likely increase traffic volumes through residential neighborhoods.*

NEXT STEPS

Advancing a specific bridge alternative to the next phase of project development would involve preliminary engineering, more detailed alternative analysis, and environmental review to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The preliminary engineering work will be essential to determine specific footprint locations, right of way issues, and how a new bridge would connect to the existing roadway system. Other important engineering details include whether the bridge would be fixed or moveable. The alternative analysis would include more refined travel demand forecasts and traffic operations analysis to help determine the number of lanes for each alternative and whether modifications are required to connecting roadways, transit lines, and bicycle/pedestrian facilities. The environmental review will include the typical biological and cultural resource evaluation, but this project would likely involve special issues related to residential neighborhood sensitivity, aesthetics, construction in a river ecosystem, and U.S. Coast Guard vertical clearance requirements.