



# City of Sacramento City Council

915 I Street, Sacramento, CA, 95814  
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**Meeting Date:** 10/18/2011

**Report Type:** Staff/Discussion

**Title:** Sacramento River Crossing

**Report ID:** 2011-00880

**Location:** Various locations along the Sacramento River (District 4)

**Recommendation:** Adopt a Resolution: 1) accepting the Sacramento River Crossings Alternatives Study Report; 2) endorsing the stakeholder process; 3) accepting the definition for a Neighborhood Friendly Bridge; 4) directing staff to seek funding for a feasibility study in order to identify preferred crossing locations; and 5) directing staff to eliminate a river crossing at Sutterville Road/Linden Road from further consideration.

**Contact:** Ryan Moore, Supervising Engineer, (916) 808-8279; Nicholas Theocharides, Engineering Services Manager, (916) 808-5065

**Presenter:** None

**Department:** Transportation Department

**Division:** Funding & Project Development

**Dept ID:**

## **Attachments:**

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- 1-Description/Analysis
- 2 - Background Information
- 3 - Resolution
- 4 - Exhibit A - Study Summary Report
- 5 - Exhibit B - Neighborhood Friendly Bridge Definition
- 6 - Exhibit C - Map

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### **City Attorney Review**

Approved as to Form  
Jerry Hicks  
10/10/2011 11:41:26 AM

### **City Treasurer Review**

Reviewed for Impact on Cash and Debt  
Russell Fehr  
10/3/2011 3:24:50 PM

### **Approvals/Acknowledgements**

Department Director or Designee: Jerry Way - 10/7/2011 12:59:48 PM



## 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.

At the Sacramento City Council meeting of July 19, 2011, Staff presented the Sacramento River Crossing Need and Purpose Study for acceptance. Staff was directed to report back to Council on the definition of a Neighborhood Friendly Bridge, and the likely costs for a future feasibility study of various crossing locations.

**Policy Considerations:** The City of Sacramento General Plan, the West Sacramento General Plan, the Joint Riverfront Master 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) and National Environmental Policy Act (NEPA):** This activity is not considered a project as defined by Section 15378 of the CEQA guidelines. The activity does not involve physical construction and has no potential to cause a significant impact on the environment (CEQA Section 15061(b)(3)).

Future Sacramento River crossing projects will be subject to environmental evaluation under CEQA guidelines and federal 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 is consistent with the City Sustainability Plan by focusing on improving and optimizing transportation infrastructure and encouraging walking and bicycling.

**Other:** None.

**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 for future phases.

Based on City Council's response to July 19, 2011 report No. 2011-00496, staff was directed to report back with the definition of a Neighborhood Friendly Bridge and to formally remove the Sutterville Road/Linden Road location from further study.

**Financial Considerations:** The cities of Sacramento and West Sacramento cooperatively agreed to share in the cost of the Need and Purpose Study. The two cities anticipate continued cooperation on future aspects of the project. It is anticipated that the preparation of a feasibility study will cost between \$600,000 and \$850,000. No funds have been committed for future phases of work at this time.

**Emerging Small Business Development (ESBD):** None.



## 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.

### Final Study Recommendation

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 Miller Park. The principal finding of the study is at least two new crossings are needed, one in the north market area and one in the south market area. 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. The population and employment centers that would be served by a bridge in this area are 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. At the July 19<sup>th</sup> City Council meeting, staff was directed to remove the Sutterville Road location from further examination because it is not currently a high priority potential crossing location for either jurisdiction.

### 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.

### Neighborhood Friendly

At the Sacramento City Council meeting of July 19, 2011, Staff presented the Sacramento River Crossing Need and Purpose Study for acceptance. Staff was directed to report back to Council on the definition of a Neighborhood Friendly Bridge, and the likely costs for a future feasibility study of various crossing locations.

In coordination with staff from the City of West Sacramento and the Sacramento Area Council of Governments, Staff has developed a draft definition for a Neighborhood Friendly Bridge (Exhibit B). This definition represents staff's best effort to spell out conceptual design parameters which will meet the needs and desires of the communities on both sides of the river, for both the north market and the south market.

### Next Phase of Work

Staff was also asked to examine possible costs for a feasibility study as the next phase in the process. Staff has developed a conceptual scope of work which would include additional public outreach, alternatives analysis, traffic analysis, preliminary evaluation of environmental permitting requirements, and an estimate of probable project costs. The intent of the development of the conceptual scope of work and cost was to evaluate the costs associated with examination of each potential river crossing site in the feasibility study. Staff has determined that the majority of costs are fixed, regardless of the number of crossing locations evaluated. These costs include traffic modeling, public outreach, procurement/contracting, coordination with regulatory agencies, and environmental analysis.

It is Staff's assessment that above and beyond the fixed costs, the approximate cost to evaluate each individual location is \$50,000. Staff estimates that the total cost for a project which would evaluate seven crossing locations would be between \$600,000 and \$850,000. The seven locations which would be evaluated and prioritized are those locations which were studied during the need and purpose phase of work, less the Sutterville Road/Linden Road location which has been recommended for removal from further examination at this time.



## RESOLUTION NO.

Adopted by the Sacramento City Council

### SACRAMENTO RIVER CROSSING REPORT BACK

#### 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.
- D. The City Council directed staff to report back to council with a definition of a Neighborhood Friendly Bridge and the likely costs for a future feasibility study of various crossing locations.
- E. Staff estimates that the next phase of work, an alternatives analysis and feasibility study will cost between \$600,000 and \$850,000.
- F. The City of Sacramento and West Sacramento are in agreement that the Sutterville Road/Linden Road location is not desirable as a high priority river crossing location.

#### **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. The definition of Neighborhood Friendly Bridge is accepted.
- Section 4. The Sutterville Road/Linden Road location will not be included for consideration in future phases of work as a possible location for a Sacramento River crossing.

Section 5. Staff is directed to seek funding to conduct a feasibility study and alternatives analysis of the crossing locations numbered 1 through 7 in the Sacramento River Crossings Alternatives Study.

Section 6. Exhibits A through C are attached and are part of this Resolution.

**Table of Contents:**

Exhibit A: Study Summary Report

Exhibit B: Neighborhood Friendly Bridge Definition

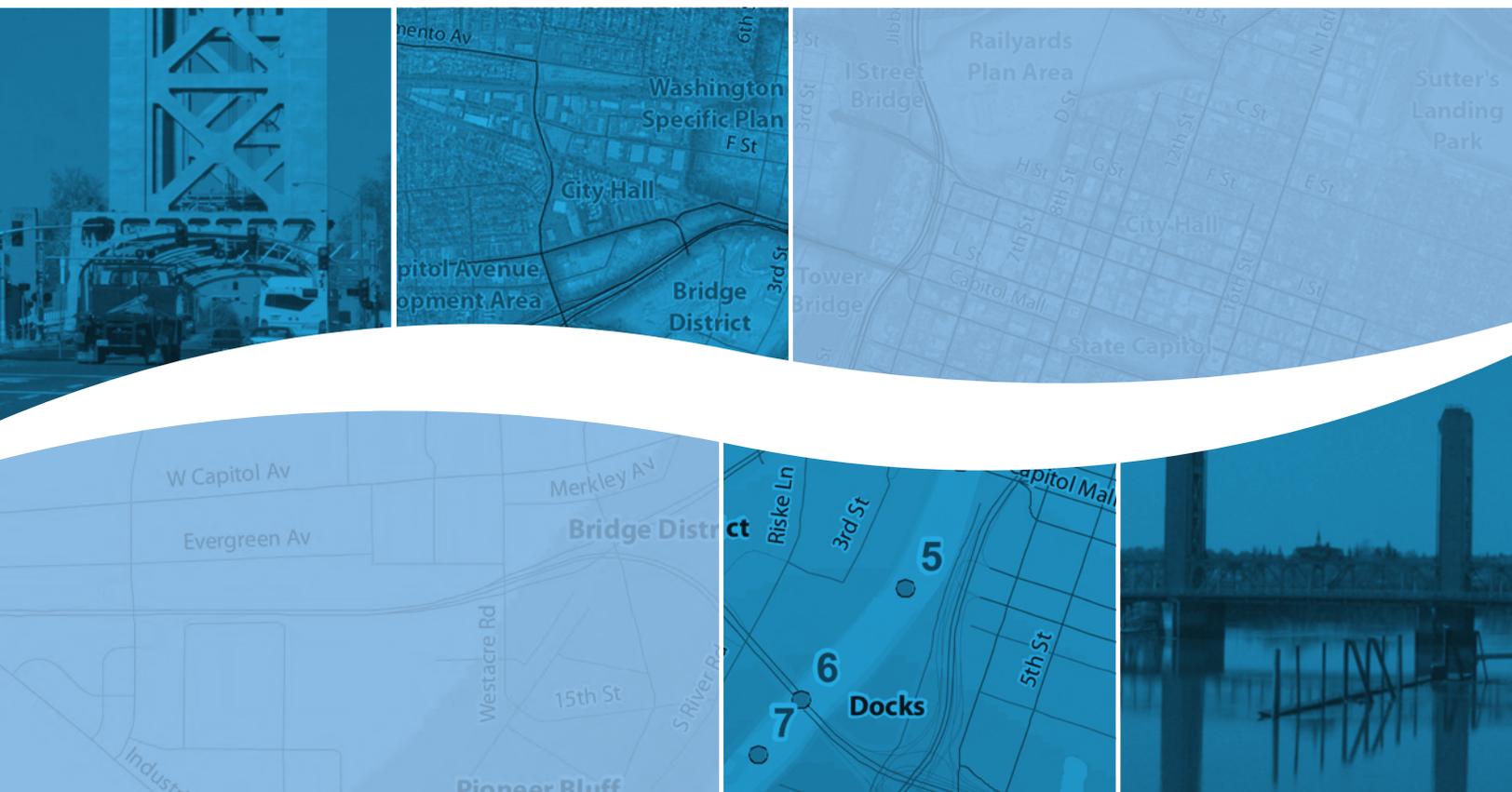
Exhibit C: Location Map





# 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

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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 –  
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# CONTENTS

Introduction . . . . .	1
Alternatives Development and Analysis . . . . .	4
Evaluation Criteria . . . . .	10
Transportation Analysis . . . . .	12
Cost Estimates . . . . .	17
Findings . . . . .	19
North Market Alternatives . . . . .	19
South Market Alternatives . . . . .	21
Other Considerations. . . . .	21
Next Steps . . . . .	22

# LIST OF TABLES

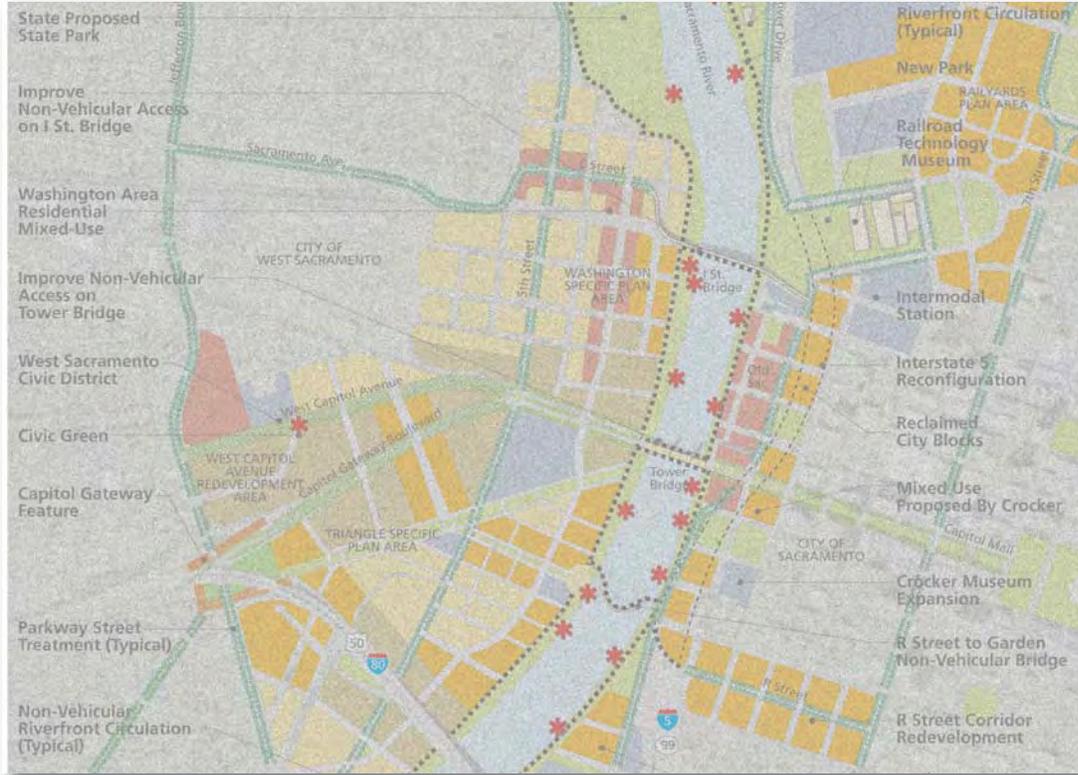
Table ES-1 – Evaluation Criteria Performance Measures . . . . .	11
Table ES-2 – Conceptual Construction Cost Estimates . . . . .	18

# LIST OF FIGURES

Figure ES-1 – Study Area and Existing Bridge Crossings . . . . .	5
Figure ES-2 – Illustrative Crossing Types . . . . .	8
Figure ES-3 – Land Use Forecasts . . . . .	13
Figure ES-4 – Transportation Analysis . . . . .	14
Figure ES-5 – Market Area . . . . .	20



# 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.





N

NOT TO SCALE

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.

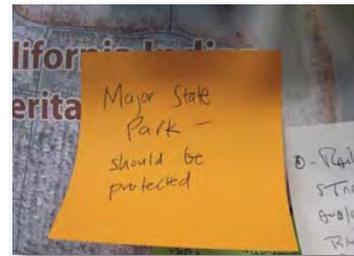
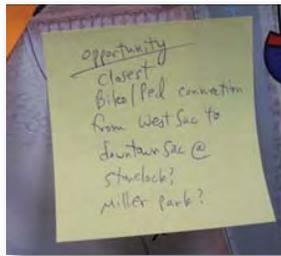
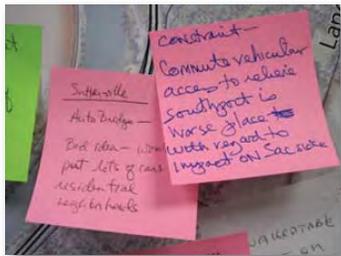
- *Planned development and redevelopment areas (also known as opportunity development sites).*
- *Existing and planned transportation network, including roadways, rail lines, bikeways, and pedestrian facilities.*
- *Stakeholder input from their second meeting and the June 14, 2010, site tour.*

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.

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**

<b>COMMUNITY VALUES</b>	<b>QUANTITATIVE PERFORMANCE MEASURES</b>	<b>QUALITATIVE PERFORMANCE MEASURES</b>
<b>Accessibility</b> <ul style="list-style-type: none"> <li>Increase accessibility to the riverfront</li> <li>Remove barriers to travel, especially by walking and bicycling</li> <li>Reduce gaps in the transportation network</li> </ul>	<ul style="list-style-type: none"> <li>Population and employment within ½ mile (walk) radius of each river crossing location</li> <li>Population and employment within a 5-minute drive of each river crossing location</li> </ul>	<ul style="list-style-type: none"> <li>Travel market map based on estimated distribution of vehicle trips using each crossing</li> <li>Potential to reduce emergency vehicle response times</li> </ul>
<b>Aesthetics</b> <ul style="list-style-type: none"> <li>Maintain local character and identity</li> </ul>		<ul style="list-style-type: none"> <li>Location is compatible with existing or planned development</li> <li>Design would be consistent with scale of existing development</li> </ul>
<b>Connectivity</b> <ul style="list-style-type: none"> <li>Increase the number of river crossings</li> <li>Improve pedestrian and bicycle network connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Number of new crossings</li> <li>Number of vehicle lanes crossing the river</li> <li>Number of sidewalks/paths crossing the river</li> <li>Number of bike lanes/paths crossing the river</li> <li>Change in average spacing between crossings</li> </ul>	
<b>Economic</b> <ul style="list-style-type: none"> <li>Minimize impedance to movement of goods, services, and workers</li> <li>Develop cost-effective alternatives</li> <li>Align costs and funding</li> </ul>	<ul style="list-style-type: none"> <li>Population and employment within ½ mile (walk) radius of each river crossing location</li> <li>Population and employment within a 5-minute drive of each river crossing location</li> </ul>	<ul style="list-style-type: none"> <li>Cost compared to funding estimate</li> </ul>
<b>Environment</b> <ul style="list-style-type: none"> <li>Protect environmental and cultural resources</li> <li>Protect and restore riverfront environment</li> <li>Reduce travel-related energy and emissions</li> </ul>	<ul style="list-style-type: none"> <li>Change in regional vehicle miles of travel (VMT)</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and cultural resource disruption</li> <li>Transportation energy demand reduction potential</li> </ul>
<b>Mobility</b> <ul style="list-style-type: none"> <li>Reduce undesired future congestion</li> <li>Improve roadway utilization</li> <li>Reduce travel times to cross the river by all modes</li> </ul>	<ul style="list-style-type: none"> <li>Travel times for select origin-destination pairs by mode</li> <li>Change in regional VMT</li> <li>Congested lane-miles within study area</li> </ul>	<ul style="list-style-type: none"> <li>Potential to induce new travel</li> </ul>
<b>Neighborhoods/Community</b> <ul style="list-style-type: none"> <li>Preserve existing conditions</li> <li>Minimize through traffic</li> </ul>	<ul style="list-style-type: none"> <li>Percent change in neighborhood cut-through traffic</li> <li>Vehicle traffic volume change on major neighborhood roadways</li> </ul>	<ul style="list-style-type: none"> <li>Potential to induce new growth beyond current plans</li> </ul>
<b>Safety</b> <ul style="list-style-type: none"> <li>Improve travel safety</li> <li>Reduce severity of collisions</li> <li>Improve emergency vehicle response</li> </ul>		<ul style="list-style-type: none"> <li>Meets current design standards</li> </ul>

**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

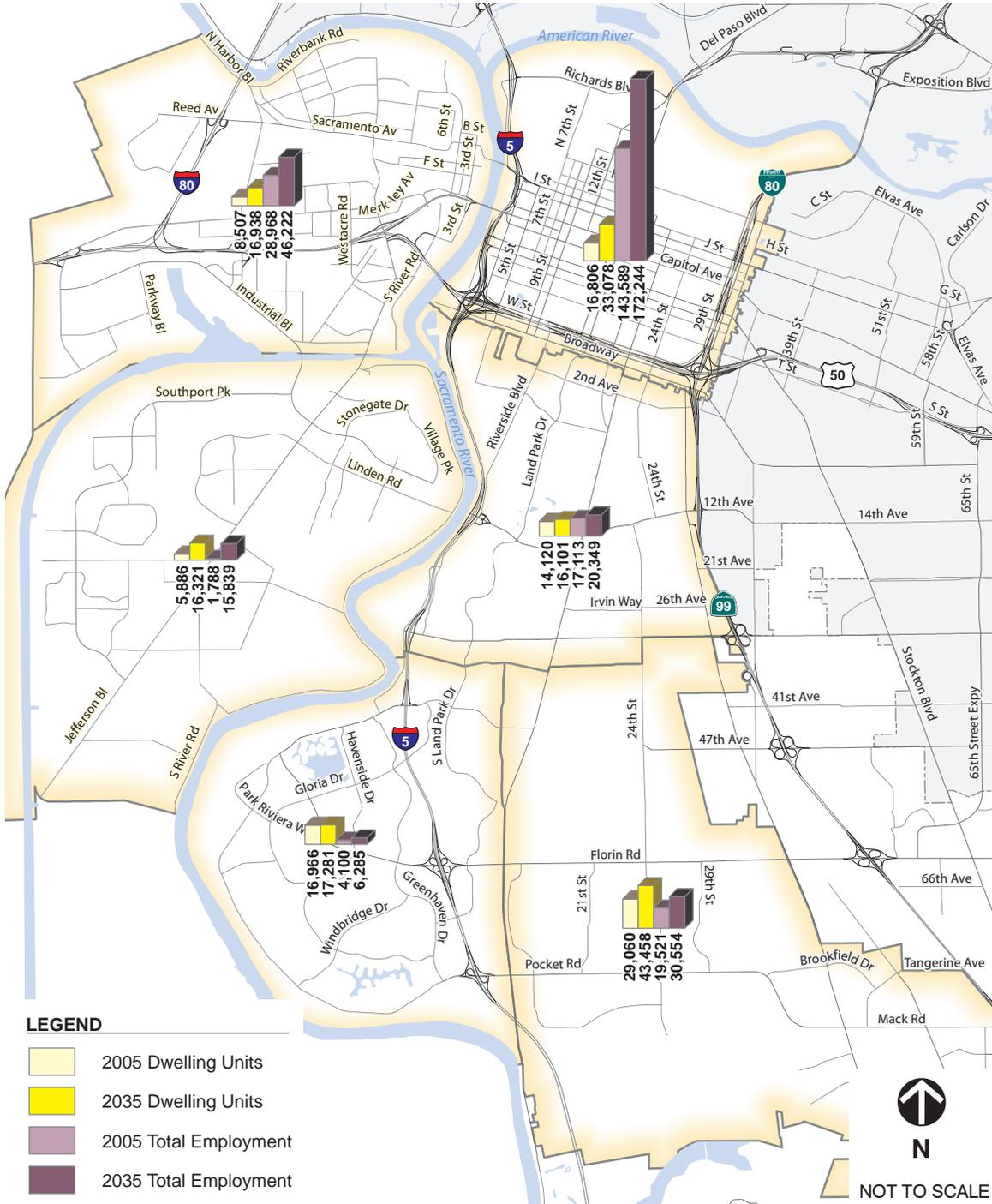
related evaluation criteria from Table ES-1. This information suggests that each crossing would serve different amounts of population and employment, with those closer to the urban core serving the most. However, the core area already has existing bridges, whereas the areas to the north and south have 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



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					
4. Tower Bridge - Washington Specific Plan/ Bridge District to Downtown Sacramento		11,850	33,674	61,279	100,996
5. R Street - Bridge District to R St. Corridor					
6. Broadway - Bridge District/Pioneer Bluff to Docks/Miller Park		23,448	44,425	63,954	95,981
7. Marina View - Stone Lock to Miller Park		16,909	36,449	69,603	106,097
8. Sutterville Rd. - Southport to I-5/ Sutterville Rd.		4,422	12,799	65,915	98,545
		4,176	5,684	7,658	24,503
		2,364	3,660	11,850	19,377

Notes: Shaded cells denote highest value.

(1) [2035 with new bridge] - [2035 no project]

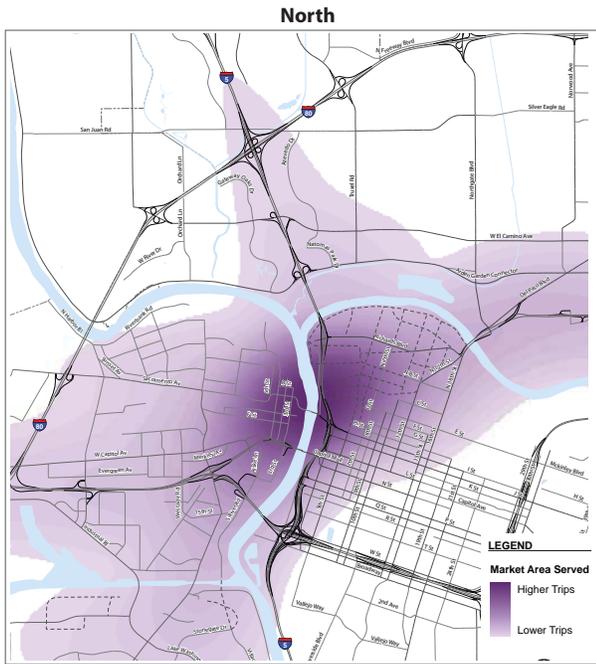
(2) Change within study area during PM peak period.

(3) MT = Metric ton. Assumes one vehicle mile of travel generates approx. 1 lb. of CO2 equivalent.

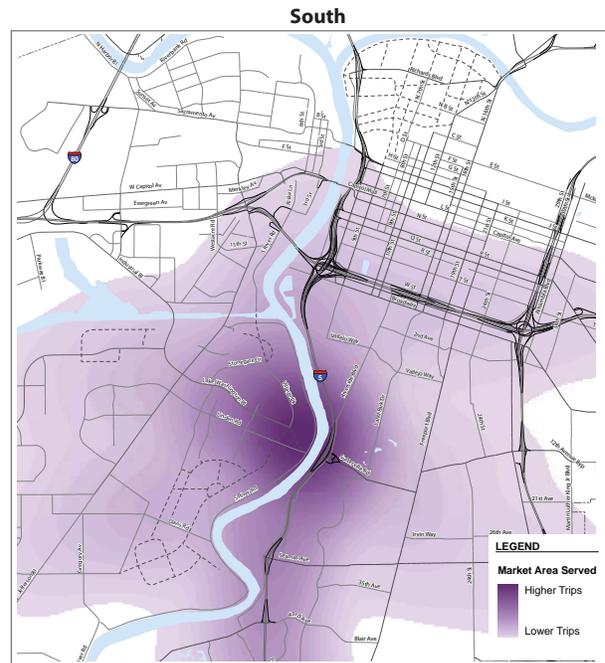
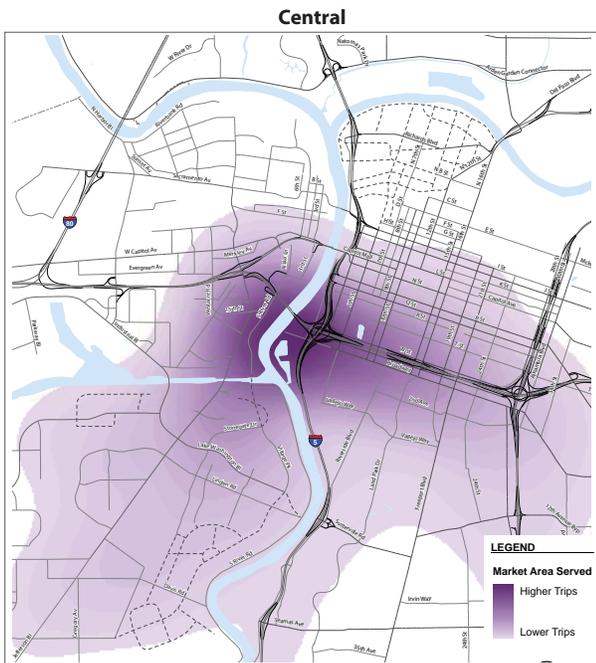
\* Congested lane miles increased by 1.9 for this alternative.

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
-95,760	16,090	-2.00	-15,850 MT	3	3
-90,920	5,790	-3.70	-15,050 MT	5	4
← No Change Compared to No Project →					
← No Change Compared to No Project →					
-90,300	11,360	-5.30	-14,950 MT	5	3
-82,440	13,400	*	-13,650 MT	5	2
-92,880	11,840	-7.50	-15,370 MT	5	2
-92,830	21,930	-14.60	-15,370 MT	7	3



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.



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.

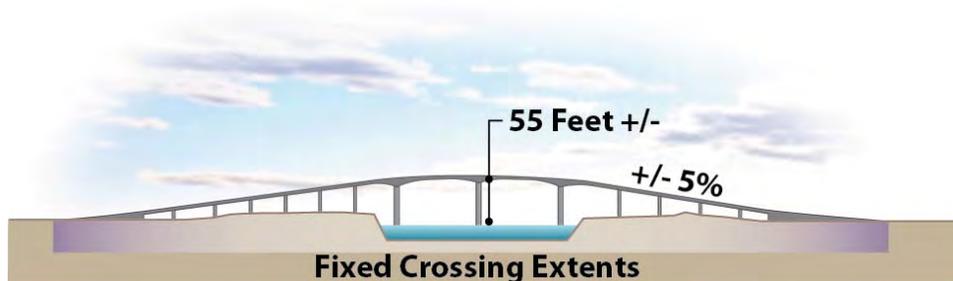
A complete summary of the transportation analysis can be found in the Technical Information Compilation Report, which is a compilation of the information that was produced during this study and used in stakeholder meetings and the public workshop. Since any new bridge would comply with current design 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**

<b>Bridges</b>	<b>Ped/Bike</b>	<b>Ped/Bike with Transit</b>	<b>All Modes - 2 Lanes</b>	<b>All Modes - 4 Lanes</b>
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***

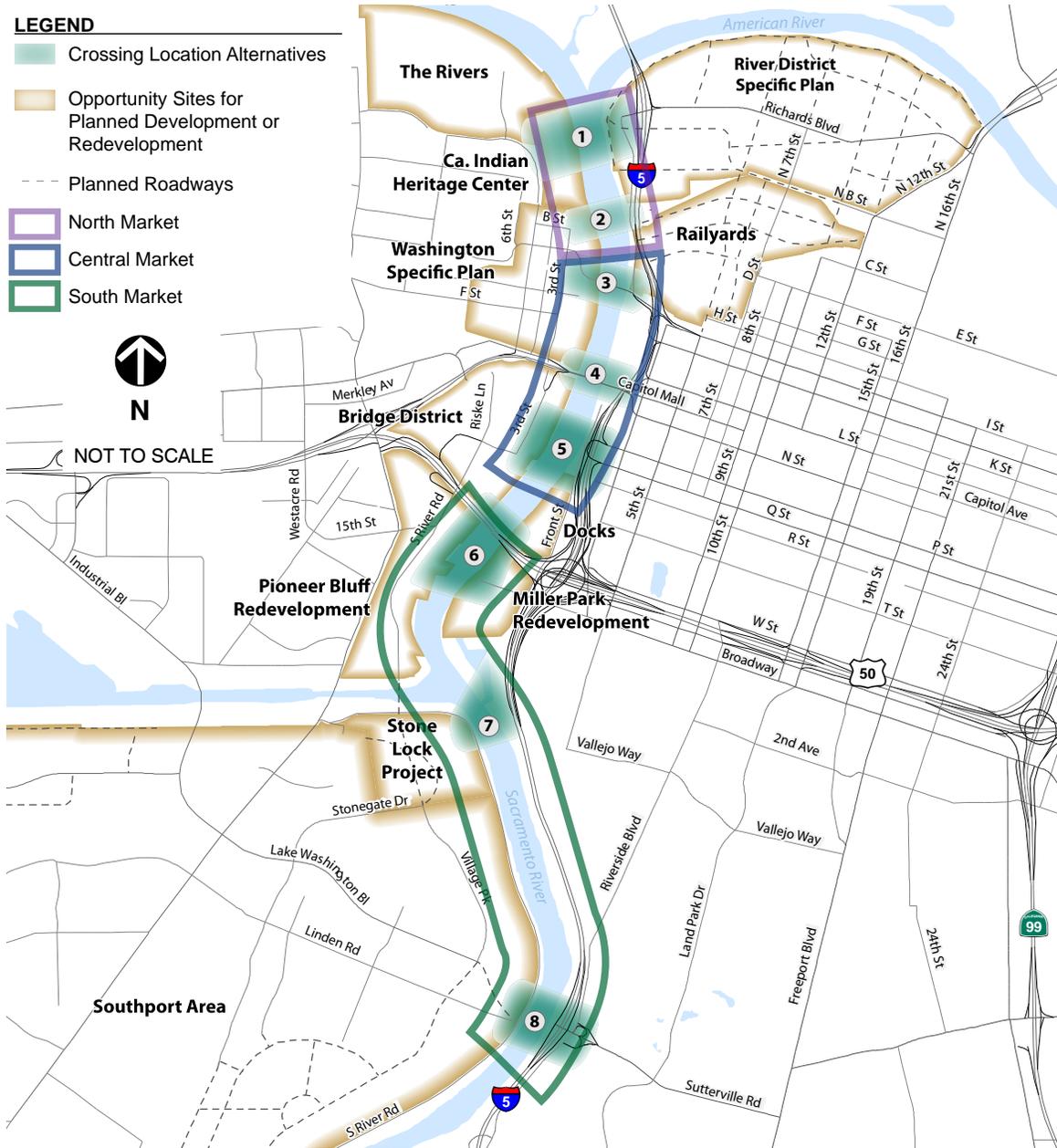
This crossing would replace the I Street Bridge at its current location, but widen it to provide pedestrian and bicycle facilities. The existing rail line would be maintained and the roadway widened to allow buses to use the bridge. Replacement of the I Street Bridge would require maintenance of freight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

**LEGEND**

- Crossing Location Alternatives
- Opportunity Sites for Planned Development or Redevelopment
- Planned Roadways
- North Market
- Central Market
- South Market



NOT TO SCALE



## 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.



## Exhibit B

New crossings of the Sacramento River between the City of Sacramento and West Sacramento shall be Neighborhood Friendly. A Neighborhood Friendly river crossing shall be defined as:

- A facility whose primary function is local connectivity rather than regional travel and primarily serves short local trips.
- A bridge which serves all users, including motorists, bicyclists, pedestrians, low energy vehicles, and public transit riders.
- A bridge with aesthetics and dimensions which are architecturally pleasing and contextually appropriate for the adjacent neighborhoods.
- A bridge that does not exceed or expand the already-planned capacity of the approach roadways (i.e. no widening of approaches just to accommodate bridge flows).
- A facility which is designed with a target speed that is equal to or less than the approach roadways.
- A bridge which reduces the growth in vehicle miles traveled in the adjacent communities.
- A bridge that does not connect directly to streets which are primarily residential in character.
- A bridge that is consistent with the Need and Purpose statement as articulated.

