

Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

First Quarter 2009 Project Progress and Financial Update





TOLL BRIDGE SEISMIC RETROFIT AND REGIONAL MEASURE 1 PROGRAMS

First Quarter 2009 Project Progress and Financial Update



TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

May 11, 2009

Mr. Bob Alvarado, Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Mr. James Earp, Vice-Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Dear Commissioners Alvarado and Earp:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the *First Quarter 2009 Project Progress and Financial Update Report*. This report is intended to keep the Legislature apprised of the progress and financial status of the Toll Bridge Seismic Retrofit Program (TBSRP) pursuant to California Streets and Highways Code Section 30952.2.

Milestones

This year promises to be an eventful one for the San Francisco-Oakland Bay Bridge East Span Seismic Replacement Project.

- On March 12, 2009, we received delivery of a new 1,700-ton capacity shear-leg crane barge—the largest on the West Coast—that will be used to lift sections of the new bridge into place.
- The first shipments of fabricated steel sections for the suspended portion of the bridge are scheduled to arrive this summer.
- Finally, over an extended Labor Day weekend, the Bay Bridge will be closed to all traffic so that a section of the existing bridge can be removed and a new section rolled in its place to allow for the opening of a new detour structure to the Yerba Buena Island tunnel.

Revised Cost Contingency Forecasts

A major element of Assembly Bill 144 of 2005, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. We have reached a milestone with our risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today. From this point forward, we will adopt a “50 percent probability” standard when assessing and reporting risks. The risk management program is described in more detail on pages 42 through 46 of this report.

Full realization of this program, together with additional risks discussed in more detail below, has resulted in some significant increases in reported risk this quarter. The major forecast changes for this quarter’s report are:

- **Self-Anchored Suspension (SAS) Span:** Fabrication of the steel bridge sections remains several months behind schedule. Including future potential risks during segment and cable installation, we forecast a potential drawdown of \$227.4 million from the program contingency for the SAS contract. (See page 2 for more details.)
- **Yerba Buena Island Detour:** Recognizing challenges associated with opening the detour and the demolition of the existing viaduct, we forecast a potential drawdown of as much as \$84.5 million from the program contingency for this contract. (See page 3 for more details.)

- **Capital Outlay Support:** The TBPOC has made several decisions to draw down the contingency fund to spur early completion of the East Span project. Early completion remains a key objective. But because current delays make it less likely that this goal will be achieved, we forecast a potential drawdown of \$214.5 million from the program contingency for project support. (See page 4 for more details.)
- **Programmatic Risks:** This category includes risks that are not scoped within existing contracts or spread across multiple contracts. We forecast a net potential drawdown of \$117.2 million from the program contingency for these risks.

While the potential drawdowns we now forecast are significant, it is by no means certain that we will actually incur these costs as our risk management assessments are deliberately conservative and account for many risks that may not occur. As noted earlier, our contingency forecasts are based on an assessment of risks that are 50 percent probable to be realized. It is possible our forecasts could decrease as risks are resolved and retired. Nonetheless, we want to ensure that the public is fully informed of the risks we have identified and the possible expense they could necessitate. We do not view these contingency costs as a "foregone conclusion." Indeed, they motivate us to increase our vigilance and to continue to use all means necessary to reduce the forecast costs and complete the project as soon as possible. It is important to note that, even if all these risks were to be realized, there still would be \$129.3 million remaining in the contingency reserve.

Dumbarton and Antioch Bridge Seismic Retrofits

In March 2009, Caltrans and BATA completed the 65 percent design plans for the seismic retrofits of the Dumbarton and Antioch bridges. When first developed, the seismic retrofit program excluded these two bridges based on their relatively young age and studies performed at the time. Further seismic vulnerability studies have determined that the bridges are in need of an estimated \$950 million in retrofit work (see page 62). Full funding for the retrofit work has not yet been identified; however, State Assemblyman Tom Torlakson is sponsoring Assembly Bill 1175 to amend the Toll Bridge Seismic Retrofit Program (TBSRP) to include the Antioch and Dumbarton bridges and to make the projects eligible for TBSRP funding.

Updated Report Format

The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the TBSRP. This quarter's report format has been extensively revised to provide greater project progress detail and additional toll bridge-related information, such as detailed construction sequencing and a progress report on the Regional Measure 1 (RM1) Toll Bridge Program.

If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

WILL KEMPTON
Director
California Department of Transportation
Chair, TBPOC

BIMLA G. RHINEHART
Executive Director
California Transportation Commission

STEVE HEMINGER
Executive Director
Bay Area Toll Authority



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CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

May 11, 2009

Mr. Gregory Schmidt
Secretary of the Senate
State Capitol, Room 3044
Sacramento, CA 95814

Mr. E. Dotson Wilson
Chief Clerk of the Assembly
State Capitol, Room 3196
Sacramento, CA 95814

Dear Messrs Schmidt and Wilson:

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Sincerely,



WILL KEMPTON
Director
California Department of Transportation
Chair, TBPOC



STEVE HEMINGER
Executive Director
Bay Area Toll Authority



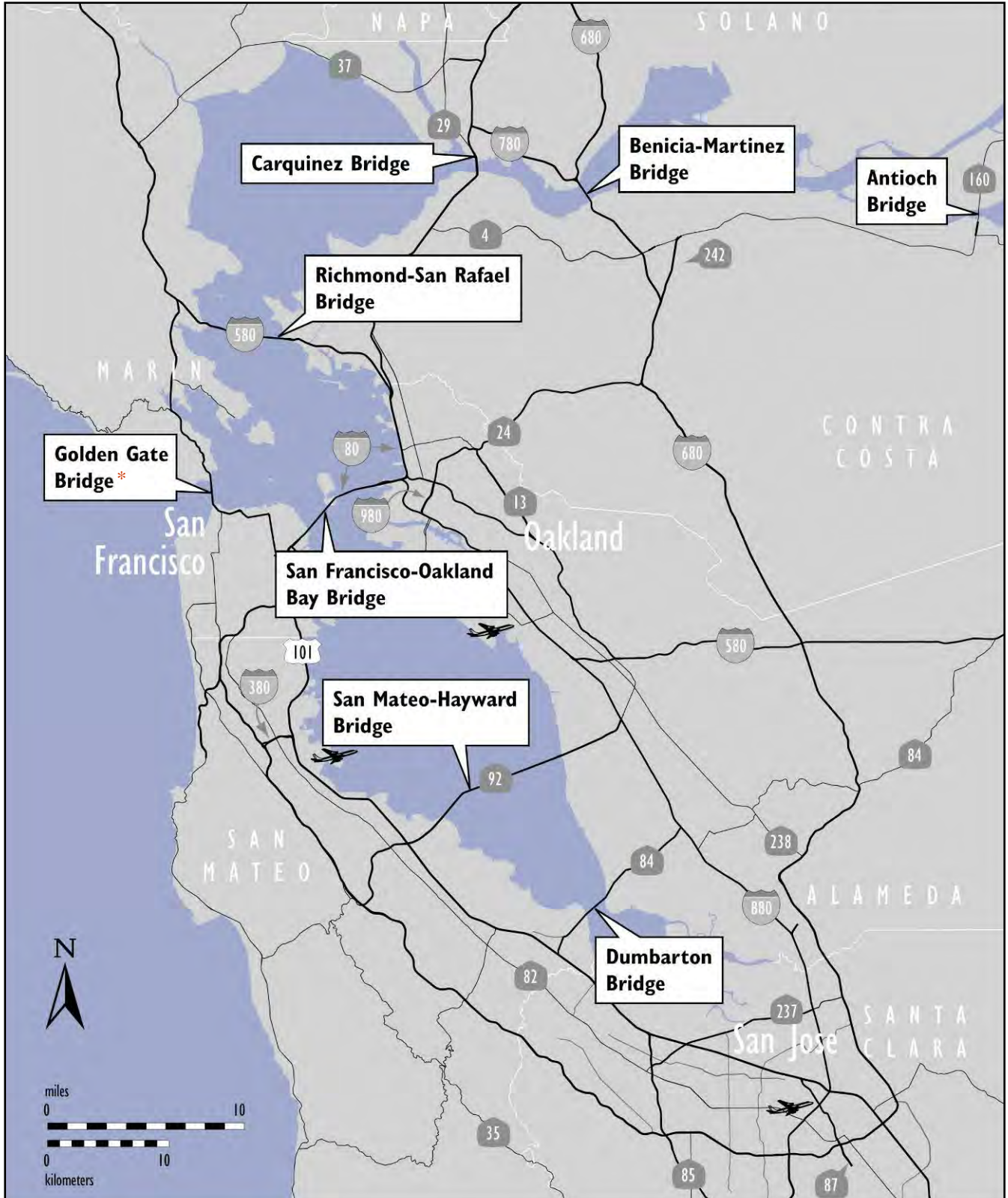
BIMLA G. RHINEHART
Executive Director
California Transportation Commission



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Map of Bay Area Toll Bridges



* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge project and the State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Construction
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



SAS Roadway Boxes in Fabrication



Shear-Leg Crane Barge Arrived in San Francisco Bay on March 12, 2009

Toll Bridge Seismic Retrofit Program Risk Management

A major element of Assembly Bill 144 of 2005, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. We have reached a milestone with our risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today. From this point forward, we will adopt a “50 percent probability” standard when assessing and reporting risks, which results in major cost forecast revisions for the Self-Anchored Suspension Span (SAS) Superstructure and Yerba Buena Island Detour (YBID) contracts and for programmatic risks. Our forecasts are based on an assessment of risks that are 50 percent probable to be realized. It is possible our forecasts could decrease as risks are resolved and retired. Nonetheless, we want to ensure that the public is fully informed of the risks we have identified and the possible expense they could necessitate. It is important to note that, even if all these risks were to be realized, there still would be \$129.3 million remaining in the contingency reserve. The risk management program is described in more detail on pages 42 through 46 of this report.

San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project

SAS Superstructure Contract

The contractor for the Self-Anchored Suspension (SAS) Bridge, American Bridge/Fluor, continues work on both the fabrication of major bridge components around the world and on the temporary support structures in the bay.

The contractor has reported that fabrication of the steel tower and roadway boxes has fallen behind schedule due to the shop preparation process and the complexity of the fabrication. This delay is putting pressure on the westbound opening of the bridge in 2012, but has not yet affected the expected full opening date of the bridge in 2013. The TBPOC and the contractor continue to



Temporary Support Structures for the SAS Bridge Erection



Yerba Buena Island Detour Structure Under Construction

negotiate a mitigation proposal. The cost for this agreement is included in the revised forecast for the project. The TBPOC and contactor continue to evaluate all options to accelerate the project. Caltrans is also continuing their quality assurance process so that no part of the new bridge will be shipped unless it is fit to be installed.

Out on the bay, the contractor continues to erect the temporary support structures that span from Yerba Buena Island to the Skyway. These structures will support the SAS bridge before the cable system is installed. With the arrival of the shear-leg crane barge from China on March 12, 2009, the longer and heavier segments of the temporary support structures can be lifted into place.

To further mitigate future project risks, Caltrans has established risk management teams to evaluate future potential risks to completing the project on time and on budget. In particular, teams are reviewing cable erection plans and mitigation schedules. Based on the last risk management assessment, there is a potential for a \$227.4 million increase on the contract.

Yerba Buena Island Detour Contract

The Yerba Buena Island Detour contractor, CC Myers, continues to erect the detour structure that will divert traffic off the existing bridge to the detour structure that will tie the existing bridge to the Yerba Buena Island tunnel. The traffic switch has been scheduled for Labor Day Weekend 2009 and will require a full closure of the Bay Bridge over an extended holiday weekend. In addition to work on the detour structure, the contractor is making progress on a number of accelerated foundations for the future transition structure from the SAS to the tunnel.

Based on the last risk management assessment, there is potential for a \$84.5 million increase for the contract. Risks include the cost to potentially postpone Labor Day weekend 2009 operations due to unexpected high winds and unexpected construction challenges during the demolition of the old structure. These risks are being addressed via collaborative on-site meetings between Caltrans and the contractor to actively identify and resolve issues early and at the least cost.

SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS

TBSRP Capital Outlay Support

Based on initial discussions with our contractors, early completion of the East Span Project was believed to be highly possible and sufficient to mitigate potential identified support cost increases. The support cost increases are due primarily to the need to re-advertise the SAS contract and by decisions made to increase our opportunities for early completion of the East Span project and potential for support cost savings. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract and extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west end deck reconstruction. Since we now judge early completion and the attendant cost savings to be less likely, we forecast a potential drawdown of \$214.5 million from the program contingency for project support. Further increases in project support costs would be expected if the project is delayed beyond the 2013 bridge opening date.

TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or spread across multiple contracts. The interdependencies between all the contracts in the program result in the potential for delays on one contract to impact the other contracts in the overall program of contracts. We forecast a net potential drawdown of \$117.2 million from the program contingency for these risks.



Recently Reopened Harrison Street Off-Ramp

SFOBB West Approach Seismic Replacement Project

Caltrans certified seismic safety on the San Francisco-Oakland Bay Bridge West Approach Seismic Replacement Project in December 2008 - eight months ahead of schedule. On February 9, 2009, Caltrans reopened the Harrison Street westbound off-ramp from the Bay Bridge, which was closed for over three years for construction. The contract was substantially completed in February 2009 with only final closeout and punchlist work remaining.



Antioch Bridge

Seismic Retrofit of the Dumbarton and Antioch Bridges

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state-owned toll bridges to be in need of seismic retrofit, excluding the Dumbarton and Antioch bridges. Further seismic vulnerability studies were completed by Caltrans and BATA on those structures, which determined that both structures were in need of retrofit based on current seismic standards. While final designs for the retrofit of the bridges are still being prepared, the total cost to retrofit both structures is estimated to be \$950 million. State Assemblyman Tom Torlakson is sponsoring Bill AB1175 to amend the Toll Bridge Seismic Retrofit Program to include the Antioch and Dumbarton bridges and to make the projects eligible for TBSRP funding.



New Bicycle/Pedestrian Pathway on Benicia Martinez Bridge

New Benicia-Martinez Bridge Project

On the 1962 Benicia-Martinez Bridge Modification Contract, work to modify the southbound I-680 bridge to add an additional traffic lane and bicycle/pedestrian lane is proceeding. Caltrans is forecasting the work to be completed at least two months ahead of schedule in October 2009.



New East Route 92 to North Interstate 880 Direct Connector Under Construction

Interstate 880/State Route 92 Interchange Reconstruction Project

On the Interchange Reconstruction Contract, the new east Route 92 to North Interstate 880 direct connector structure (ENCONN) is nearing completion and is scheduled to open to detour traffic in mid-May.

Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (Jul 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (Mar 2009)	Cost to Date (Mar 2009)	Current Cost Forecast (Mar 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
SFOBB East Span Seismic Replacement								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.8	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	275.0	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	677.6	1,981.1	227.4	●
YBI Detour	Construction	132.0	310.2	442.2	300.7	526.7	84.5	●
YBI Transition Structures (YBITS)		299.3	(23.2)	276.1	-	278.0	1.9	●
YBITS 1	Advertised				-	215.3		●
YBITS 2	Design				-	59.4		●
YBITS Landscaping	Design				-	3.3		●
Oakland Touchdown		283.8	-	283.8	161.2	290.6	6.8	●
OTD 1	Construction				153.3	214.6		●
OTD 2	Design				-	62.0		●
OTD Electrical Systems	Design				-	4.4		●
Submerged Electric Cable	Completed				7.9	9.6		●
Existing Bridge Demolition	Design	239.2	-	239.2	-	222.0	(17.2)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.3	-	90.3	89.2	90.3	-	●
Capital Outlay Support		959.3	-	959.3	703.9	1,173.8	214.5	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.1	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
Total SFOBB East Span Replacement		5486.6	215.5	5,702.1	3,512.9	6,195.9	493.8	
SFOBB West Approach Replacement								
Capital Outlay Construction	Completed	309.0	41.7	350.7	318.6	350.7	-	●
Capital Outlay Support		120.0	-	120.0	114.8	120.0	-	●
Total SFOBB West Approach Replacement		429.0	41.7	470.7	433.4	470.7	-	
Completed Program Projects	Completed	1,839.4	(97.5)	1,741.9	1,713.2	1,741.9	-	●
Miscellaneous Program Costs		30.0	-	30.0	24.7	30.0	-	●
Net Programmatic Risks		-	-	-	-	117.2	117.2	●
Program Contingency		900.0	(159.7)	740.3	-	129.3	(611.0)	●
Total Toll Bridge Seismic Retrofit Program		8,685.0	-	8,685.0	5,684.2	8,685.0	-	●

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (Jul 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (Mar 2009)	Current Completion Forecast (Mar 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
SFOBB East Span Seismic Replacement							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 32
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 22
SAS Superstructure	Mar 2012	12	Mar 2013	Mar 2013	-	●	See Page 23
YBI Detour	Jul 2007	35	Jun 2010	Nov 2010	5	●	See Page 16
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 20
YBITS 1			Sep 2013	Sep 2013	-	●	
YBITS 2			Nov 2014	Nov 2014	-	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 34
OTD 1			May 2010	May 2010	-	●	
OTD 2			Nov 2014	Nov 2014	-	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Sep 2015	-	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
SFOBB East Span Bridge Opening and Other Milestones							
OTD West bound Access			Jan 2010	Jan 2010	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See page 18
West bound Open	Sep 2011	12	Sep 2012	Dec 2012	3	●	See page 2
East bound Open	Sep 2012	12	Sep 2013	Sep 2013	-	●	
SFOBB West Approach Replacement							
Contract Completion	Aug 2009	(7)	Jan 2009	Jan 2009	-	●	See page 39

Notes: 1) Figures may not sum up to totals due to rounding effects.
 2) TBSRP Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with quarterly risk analysis assessments for the TBSRP Projects.

Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (Jul 2005)	BATA Approved Changes	Current BATA Approved Budget (Mar 2009)	Cost to Date (Mar 2009)	Current Cost Forecast (Mar 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
New Benicia-Martinez Bridge								
Capital Outlay Construction	Construction	861.6	173.5	1,035.1	983.6	1,035.1	-	●
Capital Outlay Support		157.1	35.2	192.3	186.8	192.3	-	●
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-	●
Project Reserve		20.8	4.0	24.8	-	24.8		
Total New Benicia-Martinez Bridge		1,059.9	212.6	1,272.5	1,187.4	1,272.5		
Interstate 880/Route 92 Interchange Reconstruction								
Capital Outlay Construction	Construction	94.8	60.2	155.0	58.0	155.0	-	●
Capital Outlay Support		28.8	26.2	55.0	46.1	55.0	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.6	16.9	-	●
Project Reserve		0.3	17.8	18.1	-	18.1		
Total I-880/SR-92 Interchange Reconstruction		133.8	111.2	245.0	115.7	245.0		
Completed Program Projects		918.9	-	918.9	878.5	898.9	(20.0)	
Total Regional Measure 1 Toll Bridge Program		2,112.6	323.8	2,436.4	2,181.6	2,416.4	(20.0)	

- Within approved schedule and budget
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Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (Jul 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (Mar 2009)	Current Completion Forecast (Mar 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
New Benicia-Martinez Bridge							
Contract Completion							
1962 BM Bridge Reconstruction	Dec 2009	-	Dec 2009	Oct 2009	(2)	●	See Page 58
New Benicia-Martinez Bridge Opening Date							
New Bridge	Dec 2007	(4)	Aug 2007	Aug 2007	-	●	
Interstate 880/Route 92 Interchange Reconstruction							
Contract Completion							
Interchange Reconstruction	Dec 2010	6	Jun 2011	Jun 2011	-	●	See Page 60

Notes: 1) Figures may not sum to totals due to rounding effects.





TOLL BRIDGE SEISMIC RETROFIT PROGRAM

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

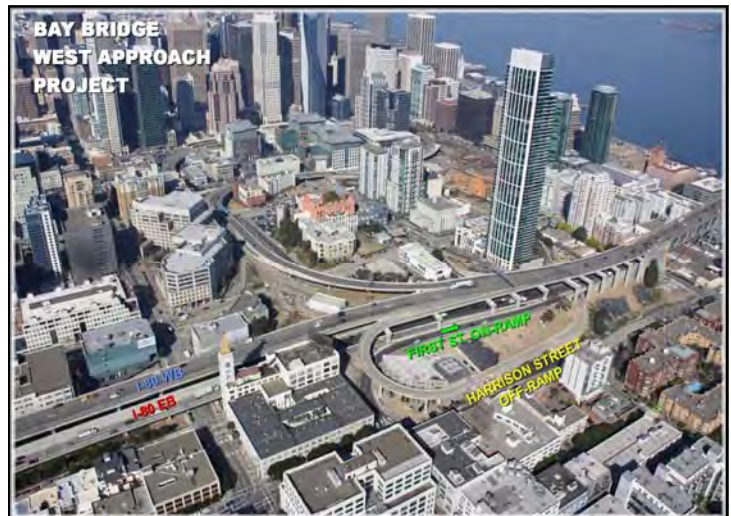
San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1- magnitude Loma Prieta earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered; how could the Bay Bridge - a vital regional lifeline structure - be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each of the separate elements seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge - the need to accommodate the more than 280,000 vehicles that cross the bridge each day.

West Approach Seismic Replacement Project

Project Status: Completed 2008

Seismic safety retrofit work on the West Approach in San Francisco - bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street - involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on and off-ramps within the confines of the West Approach's original footprint.



Completed West Approach Replacement Structure

West Span Seismic Retrofit Project

Project Status: Completed 2004

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



West Span of the Bay Bridge While Undergoing Seismic Retrofit



East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile-long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views also will be enjoyed by bicyclists and pedestrians thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue flowing on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down towards the Oakland shoreline (Oakland Touchdown). A new Transition Structure on Yerba Buena Island (YBI) will connect the SAS to the YBI tunnel and will transition the East Span's side-by-side traffic to the upper and lower decks of the tunnel and west span.

When construction of the new East Span is complete and vehicles have been safely rerouted to it, the original East Span will be demolished.



Simulation of New East Span in Relation to West Span and the Golden Gate Bridge





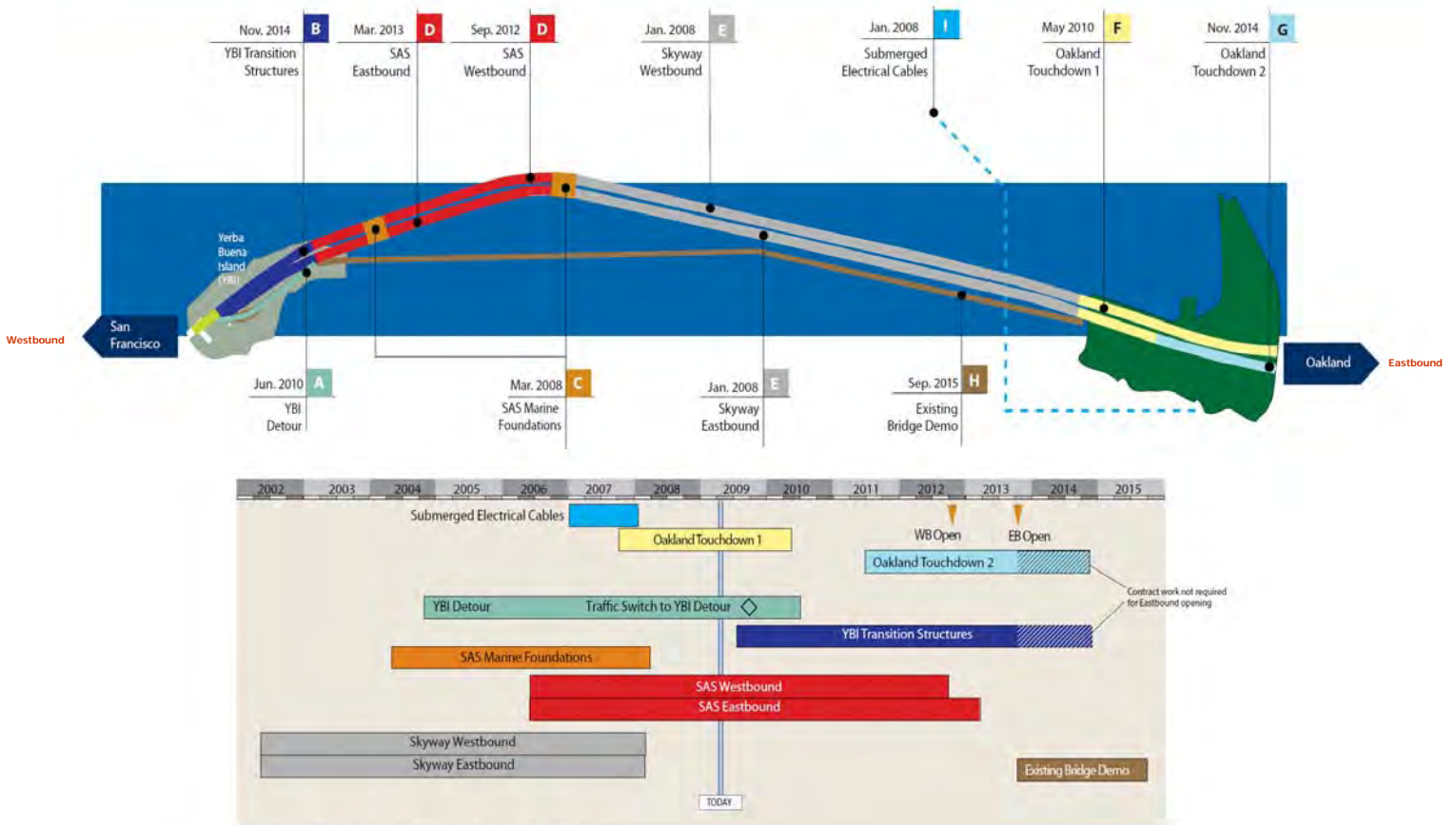
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components - the Skyway and the Self-Anchored Suspension Bridge in the middle and the Yerba Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that all have been sequenced together.

Highlighted below are the major East Span contracts including their schedules. The letter designation before each contract corresponds to contract descriptions in the rest of the report.

SFOBB East Span Work Sequence



Note: Dates shown above are project completion dates.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) close to moving vehicles and without disrupting traffic. To accomplish this daunting task, eastbound and westbound traffic will be shifted off the existing roadway and onto a temporary detour supported by 200-foot-tall steel towers. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

A YBID Contract

Contractor: C.C. Myers Inc.

Approved Capital Outlay Budget: \$442.2 M

Status: 64% Complete

This contract originally was awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current east span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day Weekend 2007, advancing future transition structure foundation work and making design enhancement to the temporary detour structure.

These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.



Current Progress on Detour Structure

Tunnel Approach Roadway Replacement

The first in a series of activities to open the detour viaduct was completed in 2007 with the replacement of a 350-foot long stretch of upper deck roadway just east of the Yerba Buena Island tunnel. During this historic milestone, the entire Bay Bridge was closed over the 2007 Labor Day weekend so crews could demolish and replace the old section of the deck with a seismically upgraded 6,500-ton precast section of viaduct that was literally pushed into place (see photo above).

Status: Completed.

Detour Viaduct Fabrication and Construction

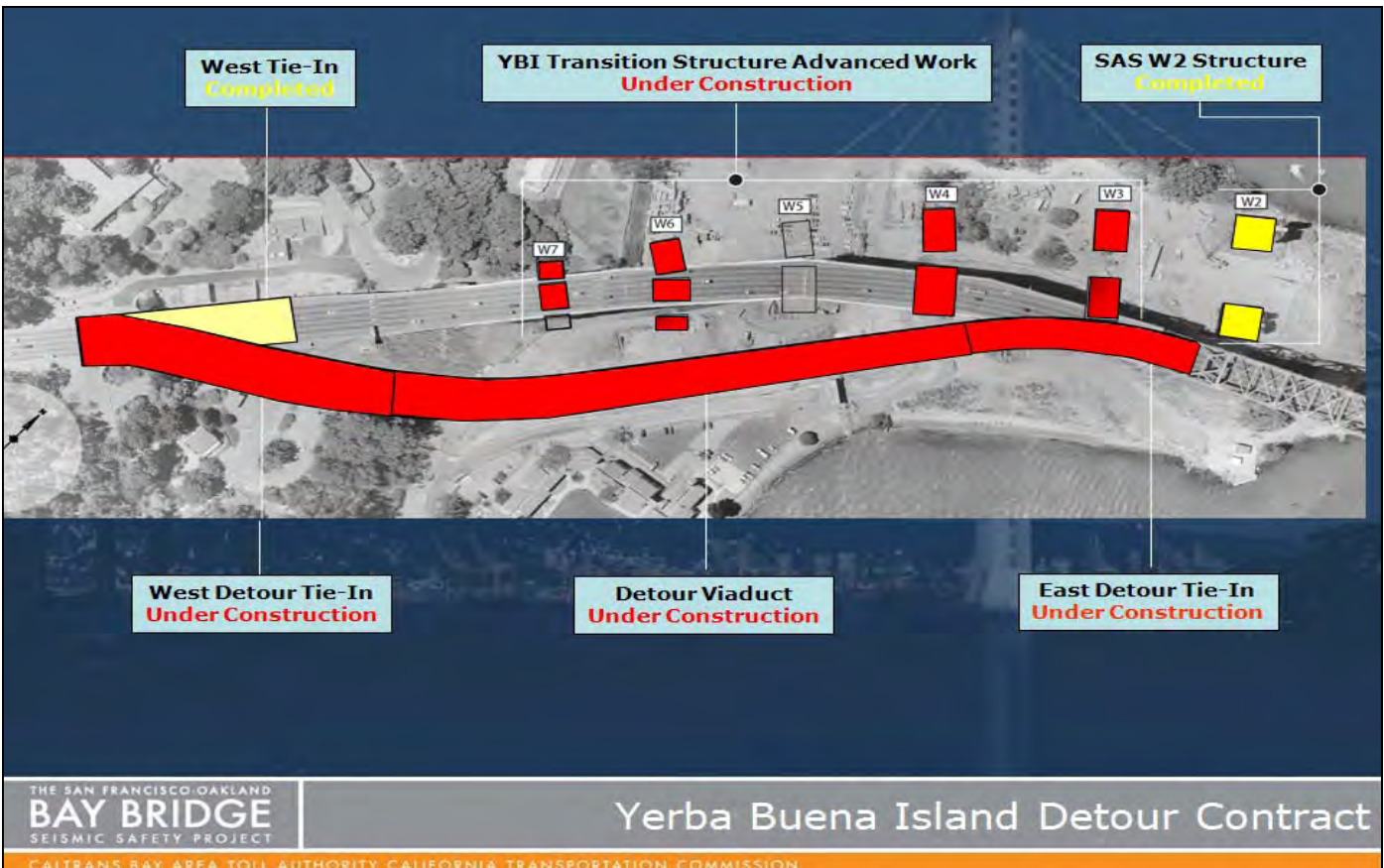
The detour viaduct will run generally parallel to the existing lanes on the island and will tie back into the existing bridge and tunnel. While speed limits will be reduced due to the turns needed to get on and off the detour, the viaduct will look quite similar to the existing bridge with steel cross beams and girders and a concrete roadway deck. To insure a good fit, the steel viaduct truss members were pre-fitted during fabrication in South Korea and Oregon. Opening of the detour to traffic is discussed on the following page.

Status: Most of the center portion of the detour viaduct has already been erected, including the concrete decks. At the west end of the detour, a cast-in-place concrete transition span is being poured to connect the detour into the completed tunnel approach roadway replacement span. At the east end, support structures are being erected to facilitate the roll-out/roll-in of the last truss section, which will tie the detour into the existing bridge.

Demolition of Existing Viaduct

After shifting traffic onto the detour structure, crews will focus on the demolition of the existing transition structure into the tunnel. The old transition structure will need to be removed before construction of the new transition structures from the SAS bridge to the YBI tunnel can be completed.

Status: The start of the demolition is pending the opening of the detour.



Overview of Yerba Buena Island Detour Contract Scope of Work and Current Status



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Yerba Buena Island Detour (YBID) East Tie-in Opening Activities

Shifting traffic to the Yerba Buena Island detour will be the most significant realignment of the bridge to date. To accomplish this, crews will cut away a 288-foot portion of the existing truss bridge and replace it with a connection to the detour. This dramatic maneuver will involve aerial construction that occurs more than 100 feet above the ground. When the Bay Bridge reopens to traffic, vehicles will travel on the detour until the completion of the new East Span.

A detailed step-by-step construction sequence for the roll-out of existing span and roll-in of the new truss at the east tie-in to the detour viaduct structure is provided on the facing page.

Status: The YBID contractor is currently at stage one and is erecting the support structure and skid beam for the roll-out and roll-in operations (see photos on right). The new truss is in fabrication in Arizona.



Skid Beams for Roll-Out and Roll-In of East Tie-in Structure under Construction



Yerba Buena Island Detour Viaduct under Construction (foreground) with East Tie-In Support Structures Being Erected (right)



East Tie-in Activities From Now through August 2009

Erect skid bents and falsework



Stage 1 – As the detour viaduct is being constructed (left), a support structure of falsework will be erected to support the new and existing trusses and the skid bent girders on which the trusses will move.

Erect truss



Stage 2 – The new roll-in truss will be constructed atop the skid bent just south of the existing truss.

Close existing bridge



Stage 3 – When the roll-in truss and detour viaduct are ready to be installed and opened to traffic, the Bay Bridge will be closed to all traffic.

East Tie-in Activities Over Labor Day Weekend 2009

Roll out YB4



Stage 4 – After the bridge is closed, the existing truss will be cut loose at both ends and will be rolled out hydraulically using jacks similar to those used for the Labor Day 2007 move to push the truss aside.



Stage 5 – After the existing truss has been rolled out of the way, the new truss will be similarly rolled into place using the same hydraulic jacking system.

Open detour to traffic and demolish YB4



Stage 6 – After being rolled into place, the new truss will be secured to the detour viaduct and existing bridge and the Bay Bridge will be re-opened to traffic. Removal of the rolled out span will commence soon after the new truss is secured.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge to the existing Yerba Buena Island tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.



YBITS Advanced Foundation and Column Work

B YBITS #1 Contract

Contractor: TBD

Approved Capital Outlay Budget: \$214.3M

Status: **Advertised**

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. Work on the structures is scheduled to start once the existing structures have been demolished and removed from the site.



Simulation of Future Yerba Buena Island Transition Structures (top) with Detour Viaduct (bottom)



YBITS #2 Contract

Contractor: TBD
 Approved Capital Outlay Budget: \$58.5 M
 Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

YBITS Landscaping Contract

Contractor: TBD
 Approved Capital Outlay Budget: \$3.3 M
 Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

Yerba Buena Island Transition Structures Advanced Work

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.

Status: Advanced foundations and columns for the left piers of W3, W4, and W6 are under construction. Work at pier W5 is pending removal of the existing transition structure. See page 17 for a diagram of pier locations.



YBITS Advanced Foundation and Column Work Just North Of Existing Viaduct (foreground)

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows the status of world class on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts – construction of the land-based foundations and columns at Pier W2, construction of the marine-based foundations and columns at Piers T1 and E2, and the construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.

SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

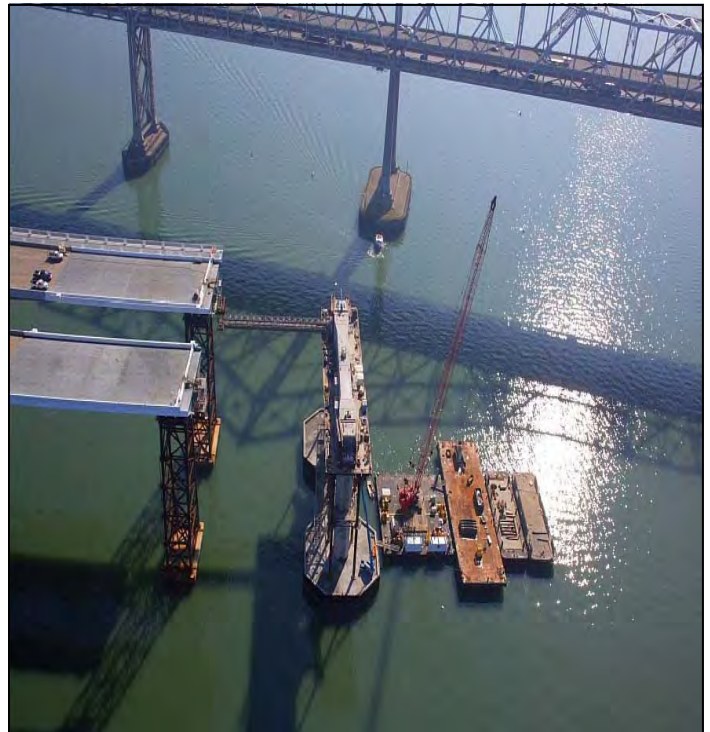
Approved Capital Outlay Budget: \$26.4 M

Status: Completed

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.



SAS W2 Cap Beam



Construction of the Pier Table at E2

C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed

The single main suspension cable is anchored at Pier E2 and goes up and over the tower at Pier T1 before wrapping around column W2 on Yerba Buena Island before returning to Pier E2 (see rendering on facing page). Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down not only to bedrock, but also through the bay water and mud.

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.

D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1,753.7 M

Status: 38% Complete

Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. The SAS bridge is not just another suspension bridge. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to separate structures in the ground. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and wrapped around the two side-by-side decks at the western end.

The single steel tower will be made up of four separate legs connected by shear link beams, which function in the same way as a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs. In addition, if one of the legs is damaged, the other legs will keep the bridge standing.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of new Self-Anchored Suspension Span

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Construction Sequence

STEP 1 - CONSTRUCT TEMPORARY SUPPORTS

Temporary support trusses will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

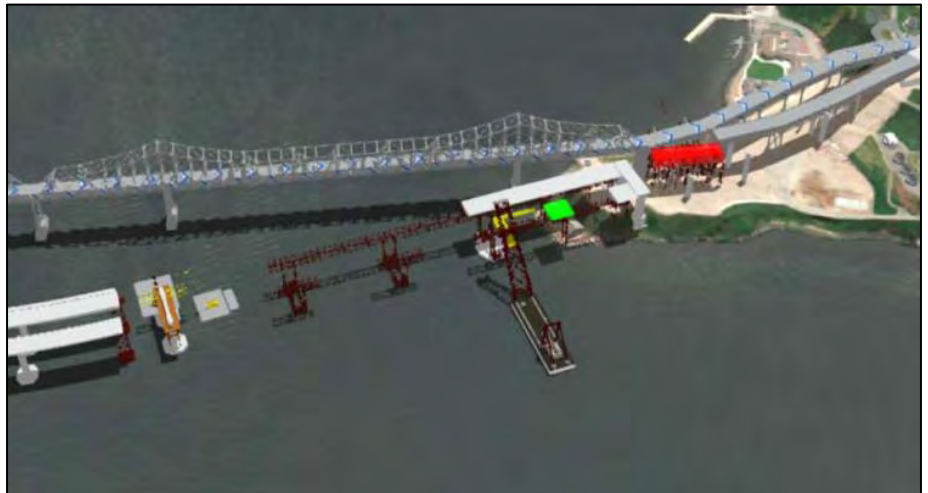
Status: Foundations for the temporary supports are under construction. Support columns and trusses are now being installed from west to east.



STEP 2 - INSTALL ROADWAYS

The roadway boxes will be lifted into place by using the shear-leg crane barge. The boxes will be bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

Status: The first shipment of roadway boxes is scheduled for summer 2009.



STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The first lift will use the shear-leg crane barge while the remaining higher lifts will use a temporary support tower and lifting jacks.

Status: The first shipment of tower boxes is scheduled for late 2009. Tower installation cannot begin until the initial eastbound roadway boxes are installed between the existing east span and new tower.



STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around the west end before returning back. Suspender cables will be added to lift the roadway decks off the temporary support structure.

Status: Cable installation is pending the erection of the tower and roadway sections.



STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures. Westbound access to the Skyway from Oakland will be completed by the Oakland Touchdown #1 Contract in 2009.

Status: Westbound opening is scheduled for 2012.



STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown 2, which needs westbound traffic off the existing bridge before the eastbound approach structure can be completed.

Status: Eastbound opening is scheduled for 2013.



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities

Nearly every component of the SAS above the waterline - from the temporary support structures to the roadway and tower box sections to the main cable and suspender ropes - will be fabricated off-site and erected, bolted and welded into place upon arrival in the Bay Area. This project is truly global in nature, with fabrication of the bridge components occurring not only in the United States, but around the world in China, the United Kingdom, Japan, South Korea and other locations.

Roadway and Tower Segments

Like giant three-dimensional jigsaw puzzles, the roadway and tower segments of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

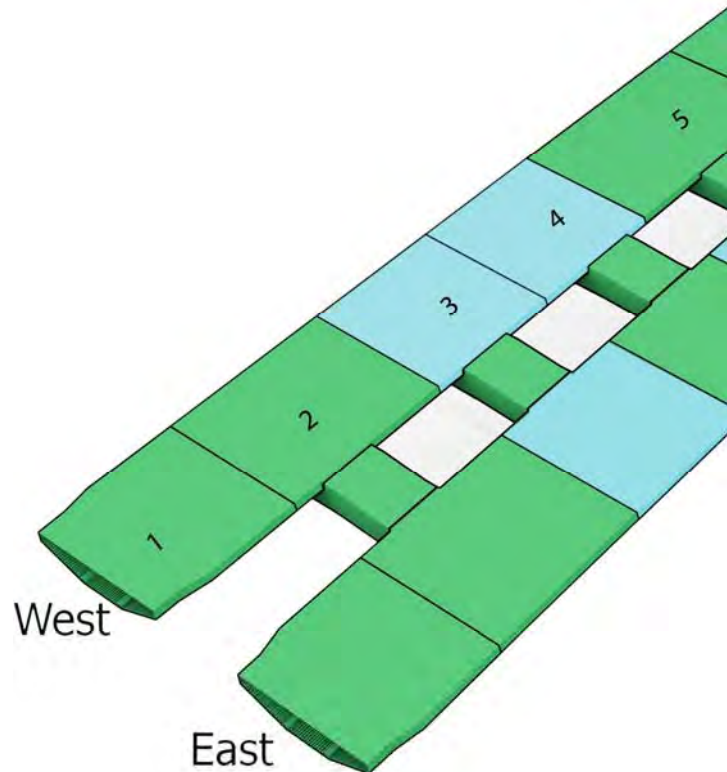
Status: Segments are in various stages of fabrication. Roadway sections 3, 4 and 5 east and west have been assembled for paint and fit up, while roadway sections 1, 2, 6, and 7 have started assembly. Individual components for roadway sections 8, 9, and 10 are being fabricated. On the tower sections, assembly of the first of five tower lifts is well underway. The second tower lifts have also started to allow for trial fit-up prior to shipping of the first lift as per specification (see additional progress photos on pages 82 and 83).



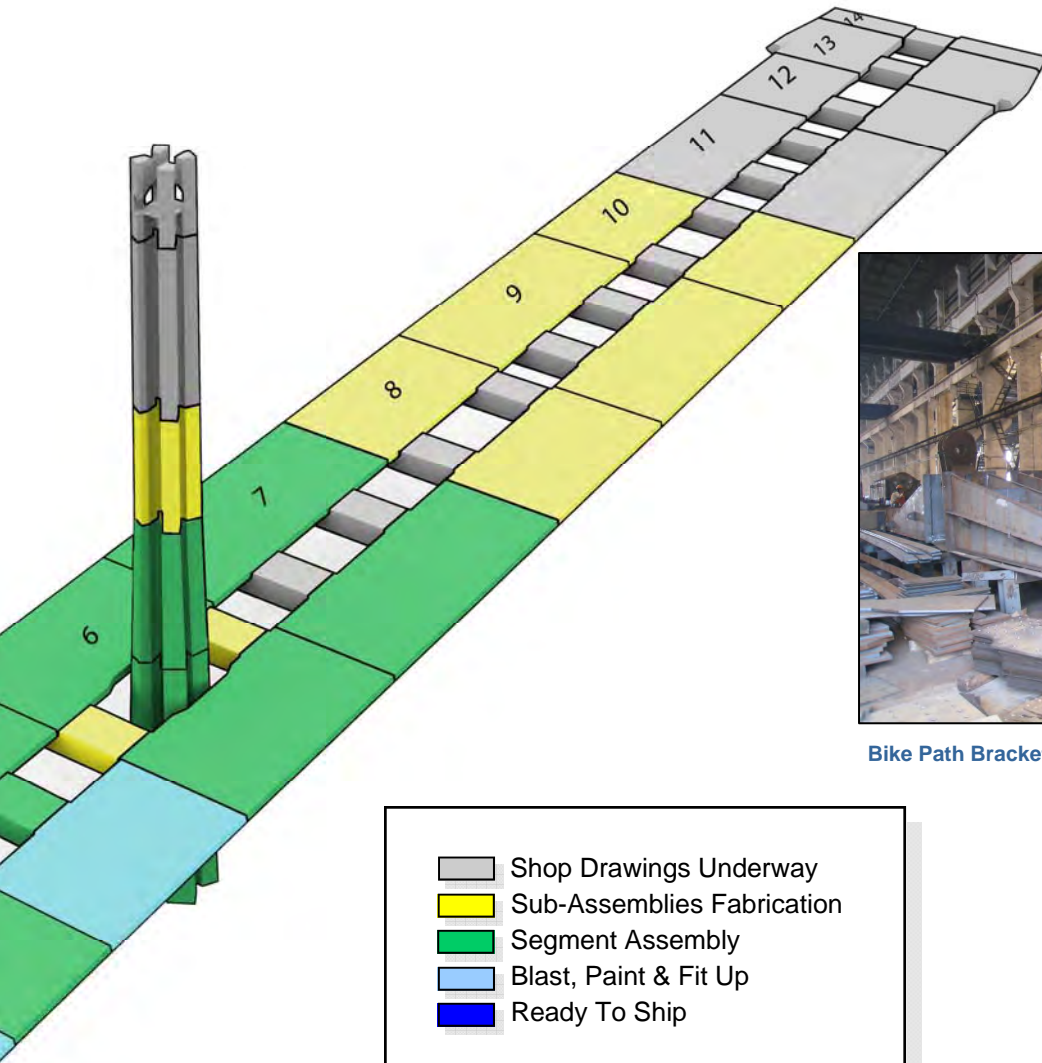
Painted Roadway Box Section Ready For Fit-up



West Shaft, Lift 2 Assembly



Fabrication Progress Diagram



Bike Path Bracket Assembly in Bay 5



Tower Production

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities

Cables and Suspenders

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will start on one side of Pier E2, go over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then back over main tower to the other end of Pier E2. The main cable will be made up of bundles of individual wire strands. Lifting up the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri.

Status: Initial trial testing of the main cable strands is in progress.



Trial Cable Band Assembly



Bronze Spherical Bushing for E2 Bearings

Saddles, Bearings, Hinges, and Other Bridge Components

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer service loads from the SAS bridge to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania and South Korea, while hinge pipe beams are being fabricated in Oregon.

Status: Under Fabrication.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Field Activities



Ship Carrying the Shear-leg Crane Barge Crossing beneath the West Span of the Bay Bridge

Shear-leg Crane Barge

The massive shear-leg crane barge that will help build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-pacific voyage.

The crane and barge are separate units operating as a single entity dubbed the “Left Coast Lifter.” The 400 by 100-foot barge is a U.S. flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Port Machinery Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower sections for the SAS, which will begin arriving this summer.

The crane will offload and erect the remaining steel for the temporary support structures, as well as all of the deck and tower segments. Work on the eastbound side of the SAS must occur first, as the crane cannot reach over permanent westbound decks to work on the eastbound roadway.

Status: On location.

Cap Beams

Construction of the massive steel-reinforced concrete cap beams that link the columns at piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around and tie down upon them.

Status: Completed.



Nearly Completed Cross Beam at Pier E2

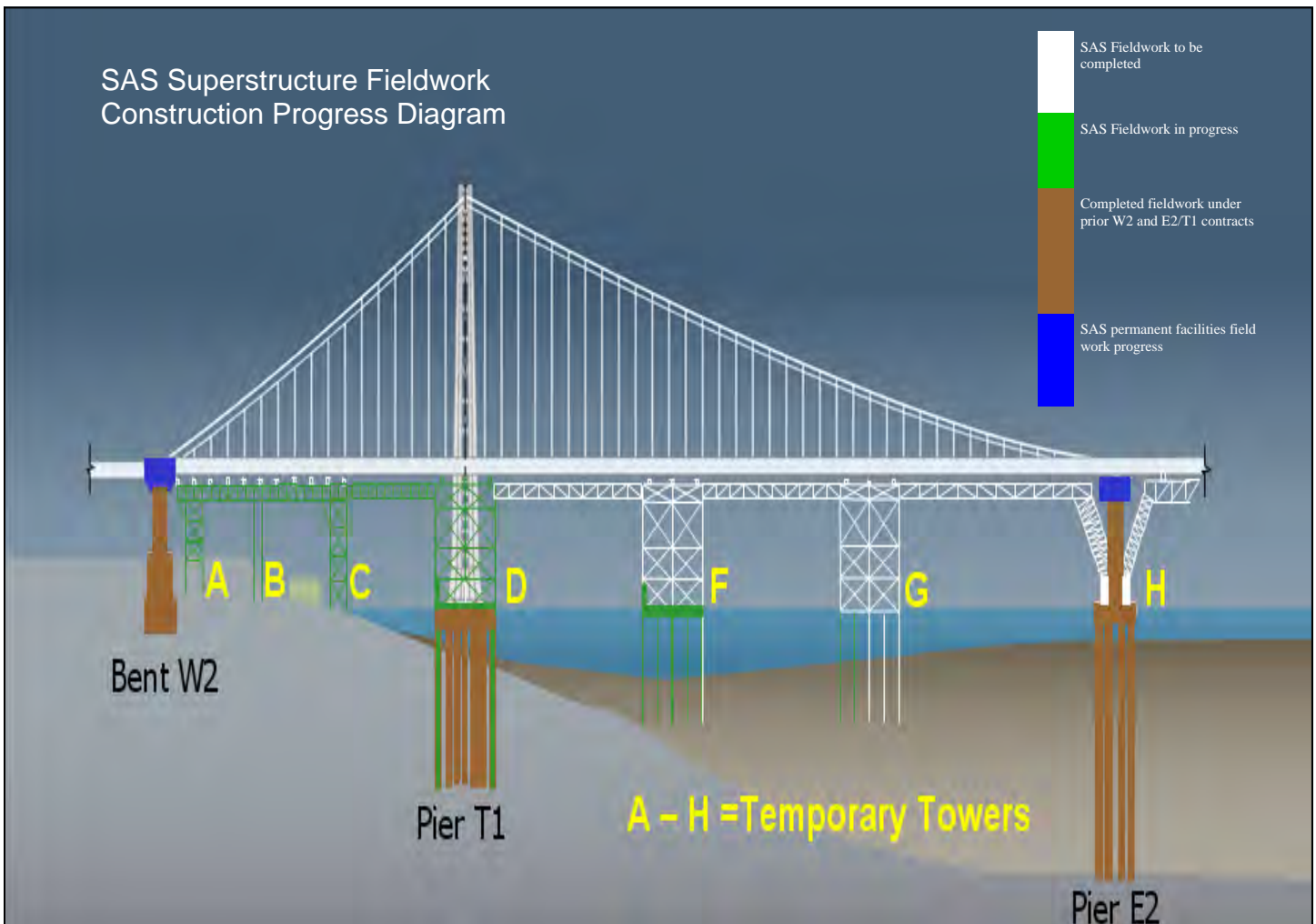
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Field Activities

Temporary Support Structures

To erect the roadway and tower of the bridge, temporary support structures will first be put in place. Almost a bridge in itself, the temporary support structures will stretch from the end of the completed skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower's temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

Status: The secondary channel between Yerba Buena Island and Oakland has been closed to shipping traffic. The temporary support foundations are under construction and erection of completed trusses is ongoing from west to east. Later remaining trusses are still being fabricated.





Overview of the Bay Bridge Looking towards Yerba Buena Island and Downtown San Francisco



Temporary Support Structures Erected Behind Existing East Span

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the grey steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

E Skyway Contract

Contractor: Kiewit/FCI/Manson Joint Venture

Approved Capital Outlay Budget: \$1,254.1 M

Status: Completed

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), and contain approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by winches that were custom made for this project.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Completed Skyway Left of Existing East Span



Western End of Completed Skyway



Rendering of the Western End of Completed Skyway and the Self-Anchored Suspension Bridge

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge so that a portion of the upper deck of the existing bridge can be demolished to allow for a smooth transition for the new eastbound lanes in Oakland.

F Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.
Approved Capital Outlay Budget: \$226.5 M
Status: 67% Complete

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

On the westbound structure, the contractor has completed all foundation work and is now proceeding with superstructure work. Work continues on the eastbound structure's foundations and columns. The approach is going full steam ahead and is visible to the drivers.



Oakland Touchdown #1 Pier Construction

G Oakland Touchdown #2 Contract

Contractor: TBD
Approved Capital Outlay Budget: \$62.0 M
Status: In design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.





Oakland Touchdown under Construction with New Westbound Structure on Left

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.

East Span Interim Seismic Retrofit

Contractors: 1) California Engineering Contractors
2) Balfour Beatty
Approved Capital Outlay Budget: \$30.8 M
Status: Completed

After the 1989 Loma Prieta earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span is completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so that they would be more resilient during an earthquake.

Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.
Approved Capital Outlay Budget: \$18.3 M
Status: Completed

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of storm water runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Archeological Investigations



Existing East Span of Bay Bridge



Storm Water Retention Basin

Yerba Buena Island Substation

Contractor: West Bay Builders
 Approved Capital Outlay Budget: \$11.6 M
 Status: Completed

This contract relocated an electrical substation just east of the Yerba Buena Island tunnel in preparation for the new East Span.



New YBI Electrical Substation

Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture
 Approved Capital Outlay Budget: \$9.2 M
 Status: Completed

While common in offshore drilling, the new East Span is one of the first bridges to use large diameter battered piles in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

H Existing Bridge Demolition

Contractor: TBD
 Approved Capital Outlay Budget: \$239.2 M
 Status: In Design

Design work on the contract will start in earnest as opening of the new bridge to traffic approaches.

I Electrical Cable Relocation

Contractor: Manson Construction
 Approved Capital Outlay Budget: \$9.6 M
 Status: Completed

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new cables were run from Oakland to Treasure Island to replace the existing cable. The extra cable was funded by the Treasure Island Development Authority and its future development plans.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Quarterly Environmental Compliance Highlights

Overall environmental compliance for the SFOBB East Span project has been a success. All weekly, monthly and annual compliance reports to resource agencies have been delivered on time. There are no comments from receiving agencies. The tasks for the current quarters are focused on mitigation monitoring. Key successes in this quarter are as follows:

- Bird monitoring was conducted weekly in the active construction area. Monitors did not observe any indication that birds were disturbed due to East Span construction activities.
- Peregrine falcon monitoring was conducted weekly throughout January and February 2009. During monitoring in February a pair of peregrine falcons was observed in copulation. The observations suggest that the East Span Bay Bridge peregrine falcon territory is occupied and a breeding attempt is underway. In response to these observations peregrine falcon monitoring was conducted twice to three times a week throughout March 2009.
- Marine mammal, hydro-acoustic and bird predation monitoring was conducted during the driving of marine based piles at SAS Temporary Towers F and G.
- Caltrans met with the San Francisco Bay Conservation and Development Commission (BCDC) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA-Fisheries) to discuss the Central Bay Eelgrass and Sand Flat Mitigation Program.
- BCDC Permit No. 8-01, Amendment No. 24, for the construction of a temporary wildlife exclusion fence, to minimize the potential entrance of Canadian geese on to I-80 roadway adjacent to the Emeryville Crescent Marsh was issued on January 14, 2009.
- Caltrans performed herring monitoring during marine-based East Span construction activities. In addition, Caltrans received weekly herring spawning updates from the California Department of Fish and Game

(CDFG). Herring spawning season ended March 31st, and a 2008-2009 SFOBB East Span herring monitoring report is being prepared for submittal to CDFG.



Herring Monitoring



Canadian Geese

San Francisco-Oakland Bay Bridge West Approach Replacement Project Project Status: **Completed 2009**

Seismic safety retrofit work on the West Approach, bordered by 5th Street and the Anchorage at Beale Street, involved completely removing and replacing this one-mile stretch of Interstate 80 and six on and off-ramps in its original footprint. At least 280,000 vehicles passed by daily in the midst of this essential construction.

The West Approach originally had one foundation system supporting both an upper and lower deck configuration from 3rd Street to Beale Street. Each deck now has its own independent column and foundation support system, a crucial aspect of making the West Approach seismically sound. The roadways between 3rd and 5th Streets are parallel concrete decks that transition into the double-deck configuration as drivers approach the West Span of the Bay Bridge.



Recently Reopened Harrison Street Off-ramp

West Approach Seismic Replacement Contract

Contractor: Tutor-Saliba, Joint Venture
Approved Capital Outlay Budget: \$350.7 M
Status: **98% Complete**

To minimize disruptions to the neighborhood and to keep the bridge's traffic moving, the project was performed in a series of six elaborate stages, including a series of lane shifts, regular lane and ramp closures, and one partial bridge closure. Each of the six stages of retrofit work follows a carefully staged formula to meet seismic safety standards. A temporary structure is built and vehicles are rerouted to it. The old structure is then demolished and work begins on the new structure in the original footprint. Drivers are then rerouted back onto the completed replacement structure and the temporary structure is demolished.

Work on the 72-year-old structure began in 2003 and seismic safety was certified in 2008. Final punchlist work was completed in early 2009.



Workers Constructing Infill Wall beneath West Approach

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Other Completed Projects

The State Legislature in the 1990s identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all the bridges have been completed as planned.

San Mateo-Hayward Bridge Seismic Retrofit Project

Project Status: Completed 2000

The San Mateo-Hayward Bridge seismic retrofit project focused on the strengthening of the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.



High-Rise Section of San Mateo-Hayward Bridge

1958 Carquinez Bridge Seismic Retrofit Project

Project Status: Completed 2002

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.

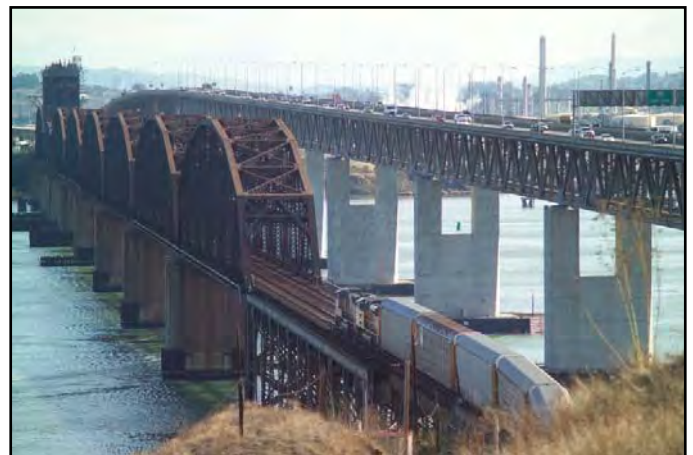


1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)

1962 Benicia-Martinez Bridge Seismic Retrofit Project

Project Status: Completed 2003

The southbound 1962 Benicia-Martinez Bridge was retrofitted to “Lifeline” status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



1962 Benicia Martinez Bridge (right)

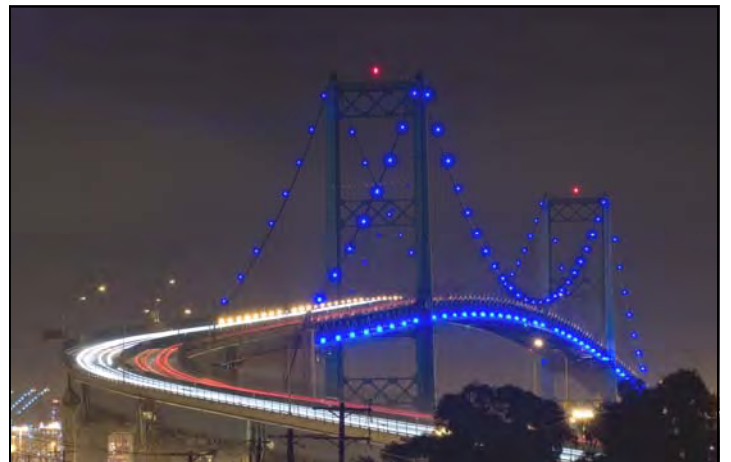
Richmond-San Rafael Bridge Seismic Retrofit Project
Project Status: Completed 2005

The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project
Project Status: Completed 2000



Vincent Thomas Bridge

San Diego-Coronado Bridge Seismic Retrofit Project
Project Status: Completed 2002



San Diego-Coronado Bridge

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Risk Management Program Update

Assembly Bill (AB) 144 states that Caltrans must “regularly reassess its reserves for potential claims and unknown risks, incorporating information related to risks identified and quantified through its risk assessment processes.” AB 144 set a \$900 million Program Reserve (also referred to as the Program Contingency). The Program Contingency is currently at \$740.3 million according to the TBPOC Approved Budget, unchanged from the previous quarter.

The Risk Management Process

Caltrans’ approved risk management plan provides for a systemic and continuous process of identifying, analyzing, and responding to project and program

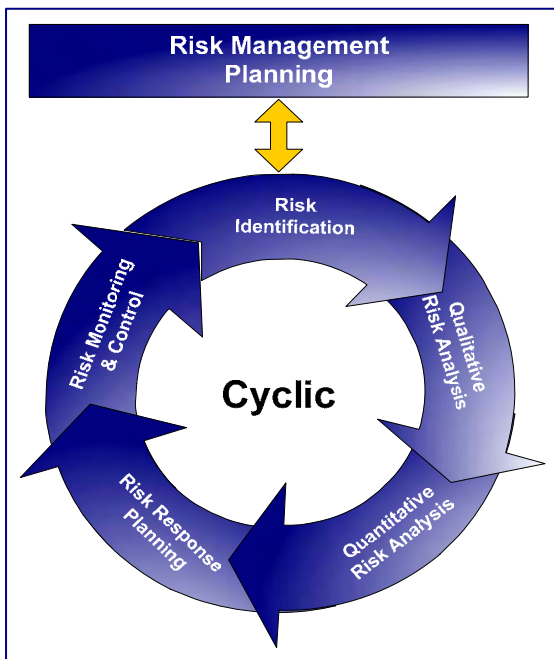


Figure 1 – The Risk Management Process

risks. Risk management plan implementation provides for maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives (e.g., cost, schedule and quality). Each element of the risk management process is shown in the Figure 1, above, and explained below. The risk management cyclic process is performed on a quarterly basis and encompasses all identified risks related to the

contracts, program, corridor, capital outlay, capital outlay support, and schedule.

1. Risk Management Planning – deciding how to approach, plan and execute the risk management activities for the project.
2. Risk Identification – determining which risks might affect the project and documenting their characteristics.
3. Qualitative Risk Analysis – prioritizing risks for subsequent further analysis or action by assessing and combining their probability and impacts.
4. Quantitative Risk Analysis – analyzing numerically the effect of identified risks on overall project objectives.
5. Risk Response Planning – developing options and actions to enhance opportunities and to reduce impact to project objectives.
6. Risk Monitoring and Control – tracking identified risks, monitoring residual risks, identifying new risks, executing risk response plans, and evaluating their effectiveness throughout the project life cycle.

Although the risk management processes above are presented as discreet elements with well-defined interfaces, in practice they often overlap and interact with each other.

What Risk Management Does and Does Not Include

Risk management addresses risks that may affect its defined project objectives such as cost, time, scope and quality. Given a project plan, risk management generally looks at ways in which the project may not go according to plan. Risk management focuses on the defined project scope and objectives, and therefore does not include 1) risks or possible decisions that may “kill” the project -- if the project ceases to exist, there are no risks to manage. For example, risk management does not include risks such as the loss of funding, natural disaster that destroys all or part of the construction or acts of governments, and 2) risks or possible decisions that may materially change the project -- if the project objectives are changed substantially, risk management will start afresh on the “new” project. For example, the YBI Detour contract



Temporary Support Structures for the SAS

was materially changed by the addition several YBITS1 project foundations by contract change order as well as certain design enhancements that were made to the east and west “tie-ins” of the YBI Detour structure. The risks of such decisions were not in the risk register of the original contract. In a nutshell, risk management is confined to quantifying risks that are intended to be covered by project and program contingency.

About “Risk” and “Opportunity”

The concept of risk can include both upside as well as downside impacts. This means that the word “risk” can be used to describe uncertainties, which if they occurred, would have a negative or harmful effect, and the same word can also describe uncertainties, which if they occurred, would be helpful. In short, there are two sides to risk -- threats and opportunities. A risk that has no threat is a “pure opportunity.” It is simply an unplanned good thing which might happen. For example, a new design method might be released, which we can apply to benefit our project. Opportunity is the inverse of threat if a risk has both threat and opportunity. Where a risk variable exists on a continuous scale and there is uncertainty over the eventual outcome, instead of just defining the risk as the downside it might also be possible to consider upside potential. For example, if we have included escalation at 5 percent in our budget for future contracts and this rate could range from say 3 to 7 percent depending on economic conditions at the time of advertisement, we have an opportunity in the 3 to 5 percent range and a threat in the 5 to 7 percent range.

Opportunity and threat exist in the one risk. If the budget were based on 7 percent escalation we would have only opportunity. If based on 3 percent we would have only threat. Threat and opportunity can also depend on how we define the risk. For example, if the risk is that an external agency may relax its requirements and this saves us money relative to what we have budgeted currently in our plan, this is an opportunity. If the risk is defined as the agency may tighten its requirements and this adds to our costs, this is a threat. We can only separate the opportunity and threat if we are certain that the agency may act only one way and not the other. If the risk is that the agency may change its requirements, we could have impacts that range from positive to negative. We would have both opportunity and threat in the same risk, and the degree of each would depend on what we have budgeted in our plan. Uncertainty in the cost of major contract change orders is another example of opportunity. If we enter an estimate into the change order log and the final outcome could range from less than the estimate to more than the estimate, we have both an opportunity and a threat. The degree of opportunity and threat depends on where the estimate lies within the range.

Risk Management for Projects in Design and Construction

Projects in design have the greatest potential for opportunities, because the project is still open to changes. Risk reduction and avoidance are opportunities, as are value analysis, constructability reviews and innovations in design, construction methods and materials. Once a project enters construction, the project objectives (scope, time and cost) are fixed contractually. Any changes are made using a contract change order. The only opportunity to save money or time is from a negative change order such as resulting from a cost reduction incentive proposal by the Contractor. Otherwise, change orders add cost and/or time to the project. So, the prime opportunity during construction is to reduce or eliminate risks.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Risk Management Program Update (cont.)



Soil Nail Wall

RISK MANAGEMENT DEVELOPMENTS IN THE 4TH QUARTER OF 2008

The approved risk management plan provides for reporting quantitative cost risk results and other risk management information from the previous quarter. Described below are the main risk management developments and updated quantitative cost risk results for the 4th Quarter of 2008.

SAS Contract

Some of the main risk management developments on the SAS contract during the 4th Quarter of 2008 are:

- a. “Green Tag” Process: This enhanced quality control and quality assurance process continues to prove successful in documenting quality welds and mitigating schedule and cost risks. The green tag process has resulted in enhanced coordination of quality control and assurance earlier in the fabrication process.
- b. Welding Acceptance Criteria: A contract change order providing revised acceptance criteria for welding was submitted to the Contractor. This change order mitigates schedule and cost risk by clearly providing a baseline for welding quality control, quality assurance, and acceptance criteria, while taking into account the Contractor’s means and methods.

- c. Orthotropic Box Girder (OBG) Tack Weld Issue: The proposed technical resolution of this issue was presented to the Seismic Peer Review Team (SPRT). The SPRT concurred with the proposed technical resolution and it is currently being implemented. This solution provides an exhaustive fit for purpose design assessment and greatly mitigates cost and schedule risk.
- d. Administrative Resolution of Prior Fabrication Issues: Preliminary discussions have been held with the Contractor in an attempt to address the administrative resolution of fabrication issues to date. Discussions will continue in the 1st Quarter of 2009. Talks will focus on the administrative resolution of several contract change orders related to fabrication. Resolution of such administrative issues at the earliest possible time will mitigate cost risk.
- e. Cable Issues: The Cable Engineering Risk Management (CERM) team continues to engage international experts to help resolve the complex cable engineering and geometry issues. The SAS main cable geometry depends on the weight of the OBG and the suspender loads. The CERM team has recommended that additional cables bands and cable brackets be procured to cover all potential geometry variations that may occur where the cable interacts with the deck. Team China will be measuring as-fabricated thicknesses of structural steel to validate theoretical models. The CERM team is also looking at and resolving potential spatial conflicts and issues related to cable rotation during installation of the cable bands and suspenders.

Corridor Schedule

During the 4th Quarter of 2008, the SAS Contractor estimated that various OBG and tower fabrication operations were potentially 13 months behind the Contractor’s original schedule and indicated that about six months could conceivably be recovered. Caltrans and the SAS Contractor initiated a joint effort to review the schedule and develop mitigating actions. The parties addressed in principle approximately six months of the potential 13 month period. The

Contractor will engage its fabricator and provide incentives and disincentives for new delivery dates. It is anticipated that the fabricator will utilize additional shop space at their facility to advance this work. Caltrans and the Contractor (and its fabricator) will continue to negotiate with the anticipation of a contract change order being issued prior to the end of the 1st Quarter of 2009. This is a preliminary step in an attempt to recover schedule and maintain previous commitments to bridge opening dates. The TBPOC and the SAS Contractor's management team requested that an effort be made to jointly develop a proposed accelerated schedule (Opportunity Schedule). The Opportunity Schedule will be a joint effort that will include teams comprised of members of the Department, the Contractor, designer, and other stakeholders. The kick-off meeting is anticipated in early January. Joint Caltrans and Contractor teams are being established to investigate potential mitigating actions for fabrication, steel erection, cable installation and mechanical/electrical/piping phases of the project.

YBI Detour Contract

Some of the main risk management developments in the 4th Quarter of 2008 on the YBI Detour contract are:

- a. East Tie-In: Collaborative on-site meetings at the different fabrication facilities between the Caltrans construction team, design team, and the Contractor have resolved many issues that might have caused significant delay in the traffic switch schedule.
- b. West Tie-In: The design team's concrete specialist continues developing high performance concrete to accelerate the closure pour which will help ensure that the Bay Bridge can be returned to service as soon as possible during the traffic switch weekend.
- c. Demolition: The project team continues to assess a new strategy to allow demolition work to proceed on all spans after the traffic switch instead of demolishing the bridge one span at a time. The new approach helps protect the access road to the Coast Guard Station while the demolition work is in progress. The project team is also reassessing the

cost/benefits to determine if added value could be realized by bidding this work on the YBITS1 project.

Oakland Touchdown Westbound (OTD1) Contract

Some of the main risk management developments on the OTD1 contract during the 4th Quarter of 2008 are:

- a. In order to mitigate corridor schedule and cost risks, the decision was made to implement OTD1 mechanical-electrical-plumbing work on the SAS contract by contract change order.
- b. Notice of Potential Claim No. 8 for Integrated Shop Drawings (ISDs) impacts has been resolved to the satisfaction of all parties.
- c. The Department and the Contractor are working closely to resolve any remaining structural and mechanical/electrical conflicts at highly congested areas to complete the ISDs.

YBI Transition Structure (YBITS1) Contract

Some of the main risk management developments on the YBITS1 contract during the 4th Quarter of 2008 are:

- a. The contract bid opening date has been changed to July 14, 2008 to more closely match the adjacent contracts' schedules. This will optimize the YBITS1 work schedule and minimize schedule and cost risk both to the YBITS1 contract and the corridor.
- b. Based on the Skyway and OTD1 risk identification and response, options to begin ISDs during design are being evaluated.
- c. The contract specifications team is working on the location and specifications of the "Working Drawing Campus," to be issued by addendum. This specification provides for the collocation of Contractor and designer forces in the resolution of working drawing issues and will mitigate cost and schedule risk.

West Approach Contract

Some of the main risk management developments on the West Approach project during the 4th quarter 2008 are:

- Caltrans and the Contractor have resolved all time related costs through contract completion. Continued resolution efforts are underway related to contractor controlled insurance program costs for the added change order work. Resolution is expected the 1st Quarter of 2009.
- Community liaisons are working proactively with neighbors to help prevent damage claims from being brought against the project.
- Weekly meetings of project, City of San Francisco, and the Contractor staff have been ongoing to insure that all stakeholders can be satisfied with the project when it is accepted in the Spring of 2009.

ADEQUACY OF PROGRAM CONTINGENCY

Potential Draw on Program Contingency

Each contract in design has an assigned contingency allowance. A contract in construction has a remaining contingency, which is the difference between its budget

and the sum of bid items, state furnished materials, contract change orders and remaining supplemental work. Capital outlay support has no identified contingency allowance. The total of the contingencies is the amount that is available to cover the risks of all contracts, program risks, and capital outlay support risks. The amount by which the sum of all risks exceeds the total of all contingencies represents a potential draw on the Program Contingency (Reserve).

As of the end of the fourth quarter of 2008, the 50 percent probable draw on Program Contingency is \$611 million, an increase of \$27 million over the previous quarter, as shown in Figure 2 below. This increase was primarily driven by accelerated YBI Detour work to achieve traffic switch on Labor Day weekend of 2009 and project completion in April of 2010. The potential draw ranges from about \$450 million to \$750 million. The Program Contingency is sufficient to cover identified risks but there is a small probability that the potential draw could exceed the Program Contingency balance. Ongoing risk mitigation actions are being continuously developed and implemented to reduce the potential draw on the Program Contingency.

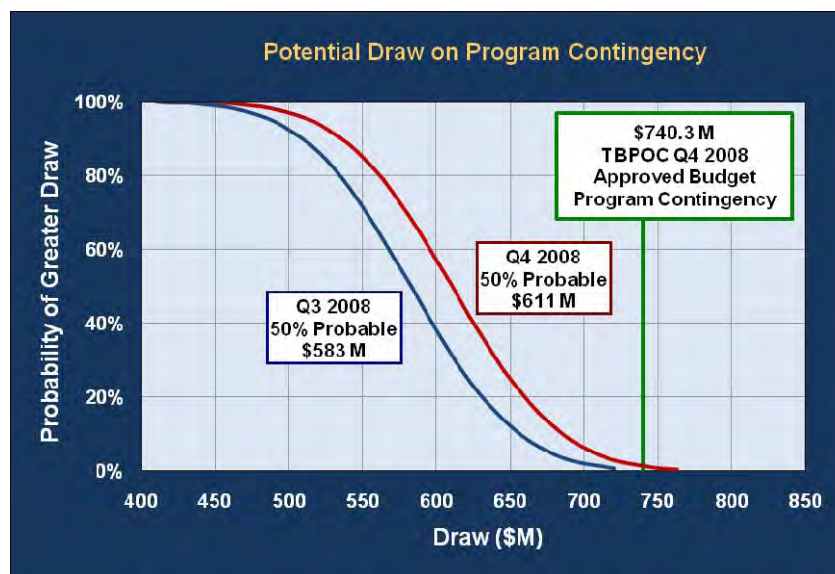


FIGURE 2 – POTENTIAL DRAW ON PROGRAM CONTINGENCY

The curve in Figure 2 can be used to directly read off the probability of exceeding any value of cost. For example, there is about an 80 percent chance that the potential draw on Program Contingency (Reserve) will exceed \$560 million while there is only about a 20 percent chance that it will exceed \$660 million. Note that although the curve appears to reach a zero probability of overrun at about \$750M, there is still less than a 1% chance of some cost greater than \$750M. Note that the curve does not include risks or possible decisions that may materially change or "kill" the project. The \$740.3 million TBPOC 4th Quarter of 2008 Approved Budget Program Contingency is sufficient to cover identified risks. Ongoing risk mitigation actions will continue to be developed and implemented to reduce the potential draw on Program Contingency.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Financing Program

AB 144 consolidated the administration of all toll revenues collected on the state-owned Bay Area toll bridges and financing of the TBSRP under the jurisdiction of BATA. BATA has direct programmatic responsibilities for the administration of all toll revenues collected on the state-owned bridges in the Bay Area and responsibilities for financial management of the TBSRP program, including:

- administrative responsibility for collection and accounting of all toll revenues
- authorization to increase tolls on the state-owned bridges by \$1.00, effective January 1, 2007
- project level toll-setting authority as necessary to cover additional cost increases beyond the funded program contingency in order to complete the TBSRP
- assumption of funding all of the roadway and bridge structure maintenance from Caltrans once bridge seismic retrofit projects are completed

In accordance with its responsibilities provided under the law, in September 2005 BATA adopted a finance plan for the TBSRP. The major components of the finance plan include:

- issuing \$6.2 billion in debt, including defeasance of \$1.5 billion in outstanding State Infrastructure Bank (I-Bank) bonds and commercial paper
- increasing tolls on the state-owned bridges by \$1.00 (from \$3.00 to \$4.00 for two-axle vehicles), effective January 1, 2007
- securing the maximum amount of state funding early in the construction schedule to most efficiently use toll funds (see the following discussion concerning the California Transportation Commission (CTC) funding schedule)
- locking in current interest rates to the extent possible in order to improve the likelihood that the entire toll program construction and the operations and maintenance can be delivered within the \$4.00 auto toll level

In March 2006, BATA approved the issuance of \$1.2 billion in bonds to defease the I-Bank bonds approved in October 2005. Additionally, pursuant to the law, BATA held two public hearings - one in October and

one in November 2005 - to receive public testimony regarding the proposed \$1.00 seismic surcharge toll increase that began on January 1, 2007 on the state-owned toll bridges in the Bay Area. BATA approved the toll increase on January 25, 2006.

Pursuant to AB 144, on September 29, 2005, the CTC adopted a schedule, revised in December 2005, for the transfer of state funds to BATA to fund the TBSRP. The schedule contains the timing and sources of the state contributions, which began in Fiscal Year (FY) 2005-06, and distributes the contributions over the years of project construction to ensure a timely balance between state sources and the contributions from toll funds. In December 2005, the CTC re-adopted the schedule to reflect opportunities maximizing the use of available PTA funds and correct prior transfer transactions. The CTC's December 2005 revised schedule for the transfer of funds allows BATA to pledge the state fund contribution to the financing of the TBSRP per BATA's adopted finance plan.

In June 2008, BATA refunded \$500 million of the Series 2006 XL Capital auction rate bonds and variable rate demand notes. In July 2008, BATA was requested to approve the refunding of \$715 million in Ambac-insured bonds. The bonds were reissued as uninsured fixed rate bonds. The BATA total debt portfolio is approximately \$5.2 billion.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Program Funding Status

AB 144 established a funding level of \$8.685 billion for the TBSRP. The bill specifies program funding sources as shown in *Table 1-Program Budget*.

Table 1-Program Budget
as of March 31, 2009 (\$ Millions)

	Budgeted	Funding Available & Contributions
Financing		
Seismic Surcharge Revenue AB 1171	\$2,282	\$2,282.0
Seismic Surcharge Revenue AB 144	\$2,150	\$2,150.0
BATA Consolidation	\$820	\$820.0
Subtotal - Financing	\$5,252	\$5,252.0
Contributions		
Proposition 192	\$790	\$789.0
San Diego Coronado Toll Bridge Revenue Fund	\$33	\$33.0
Vincent Thomas Bridge	\$15	\$6.9
State Highway Account ⁽¹⁾⁽²⁾	\$745	\$745.0
Public Transportation Account ⁽¹⁾⁽³⁾	\$130	\$130.0
ITIP/SHOPP/Federal Contingency	\$448	\$0.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR)	\$642	\$642.0
SHA - East Span Demolition	\$300	
SHA - "Efficiency Savings" ⁽⁴⁾	\$130	\$10.0
Redirect Spillover	\$125	\$125.0
Motor Vehicle Account	\$75	\$75.0
Subtotal - Contributions	\$3,433	\$2,555.9
Total Funding	\$8,685	\$7,807.9
Remaining Unallocated		\$747.5
Expenditures		
Capital Outlay		\$4,494.7
State operations		\$1,189.5
	Total Expenditures	\$5,684.2
Encumbrances		
Capital Outlay		\$1,369.0
State operations		\$7.2
	Total Encumbrances	\$1,376.2
Total Expenditures and Encumbrances		\$7,060.4
<p>⁽¹⁾ The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p>⁽²⁾ To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.</p> <p>⁽³⁾ To date, \$130 million has been transferred from the PTA to the TBSRP, including the full amount of all transfers scheduled by the CTC.</p> <p>⁽⁴⁾ To date, \$10 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" identified under AB 144. Approximately \$120 million remains to be distributed as scheduled by the CTC.</p>		
Notes:		
Program budget includes \$900 million program contingency.		

Summary of the Toll Bridge Oversight Committee (TBPOC) Expenses

Pursuant to Streets and Highways Code Section 30952.1 (d), expenses incurred by Caltrans, BATA, and the California Transportation Commission (CTC) for costs directly related to the duties associated with the TBPOC are to be reimbursed by toll revenues. *Table 3-Toll Bridge Program Oversight Committee Estimated Expenses: July 1, 2005 through March 31, 2009* shows expenses through March 31, 2009 for TBPOC functioning, support, and monthly and quarterly reporting.

Table 2 - CTC Toll Bridge Seismic Retrofit Program Contributions Adopted December 2005

Schedule of Contributions to the Toll Bridge Seismic Retrofit Program (\$ Millions)

Source	Description	2005-06 (Actual)	2006-07 (Actual)	2007-08 (Actual)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AB 1171	SHA	290									290
	PTA	80	40								120
	Highway Bridge Replacement and Rehabilitation (HBRR)	100	100	100	42						342
	Contingency				1	99	100	100	148		448
AB 144	SHA*	2	8				53	50	17		130
	Motor Vehicle Account (MVA)	75									75
	Spillover		125								125
	SHA**									300	300
	Total	547	273	100	43	99	153	150	165	300	1830

**Caltrans Efficiency Savings

**Table 3—Toll Bridge Program Oversight Committee
Estimated Expenses: July 1, 2005 through March 31, 2009
(\$ Millions)**

Agency/Program Activity	Expenses
BATA	0.8
Caltrans	1.5
CTC	0.7
Reporting	2.7
Total Program	5.7





Seismic Retrofit of the Dumbarton and Antioch Bridges

SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

Dumbarton Bridge Seismic Retrofit Project

Project Status: In Design

The Dumbarton Bridge was opened to traffic in 1982 linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile long bridge carries average daily traffic of nearly 60,000 vehicles over its six lanes and has an eight-foot bicycle/pedestrian lane to the south.

Though located between the San Andreas and Hayward faults, the Dumbarton Bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded the bridge did not warrant retrofitting. The bridge has since been reevaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.



Mock-up of Dumbarton Pier Columns Undergoing Seismic Testing



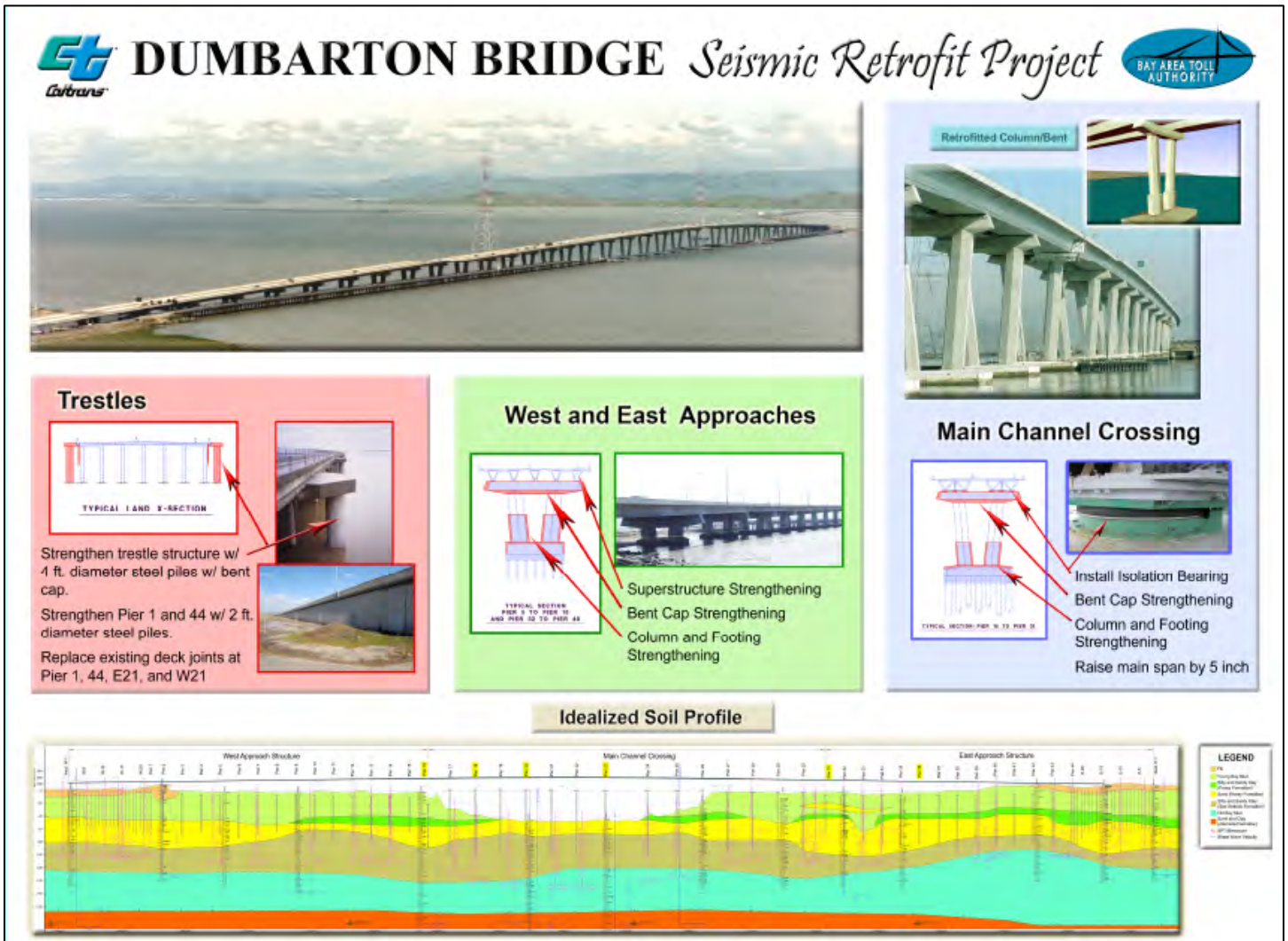
Existing Dumbarton Bridge Looking East towards the Alameda County Foothills

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps towards retrofitting the Dumbarton bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This includes detailed geotechnical and geophysical investigations at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Dumbarton Bridge includes superstructure and deck modifications, plus strengthening of the over-land approach slab structures. Additional activities are identified in the

attached diagram. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.

Status: The project team delivered 65 percent design plans for review in March 2009. Complete plans and specifications are expected by the end of the year, with contract advertisement in 2010. The estimated cost of the Dumbarton Bridge seismic retrofit is \$637 million. Full funding for the retrofit work has not yet been identified; however, State Assemblyman Tom Torlakson is sponsoring Bill AB1175 to amend the Toll Bridge Seismic Retrofit Program (TBSRP) to incorporate the Antioch and Dumbarton bridges and to raise tolls to fund the project.



Seismic Retrofit Strategy Summary for Dumbarton Bridge

SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

Antioch Bridge Seismic Retrofit Project

Project Status: In Design

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River linking eastern Contra Costa County with Sacramento County. The current bridge was opened in 1978 with one lane in each direction and carries an average of over 10,000 vehicles a day. Approximately 1.8 miles long, the bridge is a steel girder support roadway on reinforced concrete columns and foundations.

Like the Dumbarton Bridge, the Antioch bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded that the bridge did not warrant retrofitting. The Antioch bridge has since been reevaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps towards the retrofitting the Antioch Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This analysis includes detailed geotechnical and geophysical investigation at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Antioch Bridge includes relatively minor modifications to the approach structure on Sherman Island, addition of isolation bearings, strengthening of the columns, and hinge retrofits. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.

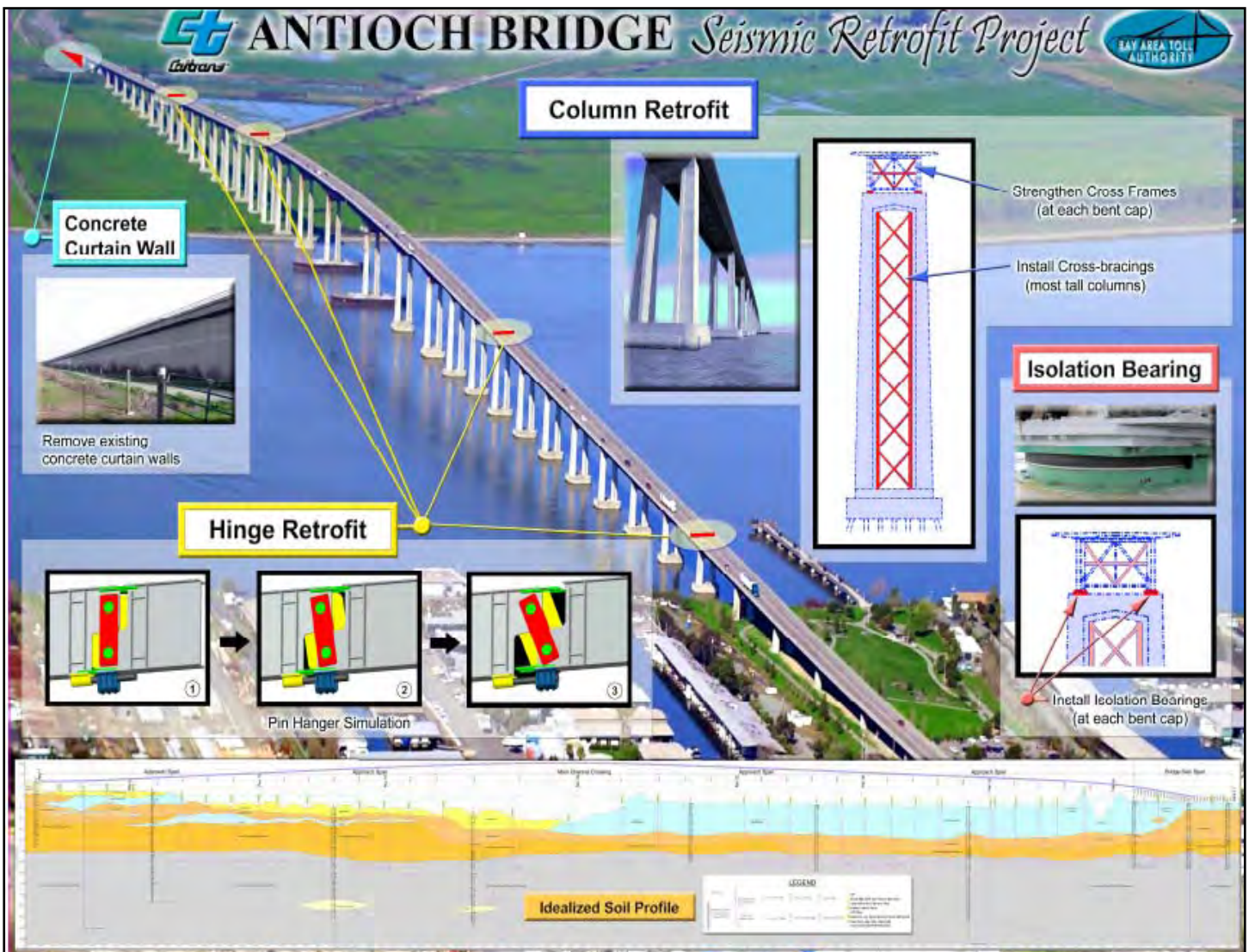


Antioch Bridge

Status: The project team delivered 65 percent design plans for review in March 2009. Complete plans and specifications are expected by the end of the year, with contract advertisement in 2010. The estimated cost of the Antioch Bridge seismic retrofit is \$313 million. Full funding for the retrofit work has not yet been identified; however, State Assemblyman Tom Torlakson is sponsoring Bill AB1175 to amend the Toll Bridge Seismic Retrofit Program (TBSRP) to incorporate the Antioch and Dumbarton bridges and to raise tolls to fund the project.



Sample of Lower Half of Isolation Bearing and Slider Used on Benicia Bridge Seismic Retrofit Project

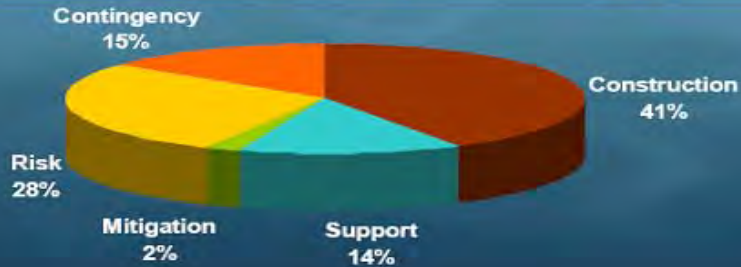


Seismic Retrofit Strategy Summary for Antioch Bridge

Seismic Retrofits of Dumbarton and Antioch Bridges Project Cost and Schedule Summaries

Total Project Costs - \$950 Million 1

Description	Antioch (\$ Millions)	Dumbarton (\$ Millions)
CONSTRUCTION COST (ESCALATION TO MID YEAR OF CONSTRUCTION)	\$125	\$267
CONTINGENCIES	44	94
SUBTOTAL CAPITAL COSTS	169	361
SUPPORT COSTS	39	95
MITIGATION COSTS	13	7
RISK COSTS	92	174
TOTAL COST ESTIMATE	\$313	\$637



Milestone	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
PSR Phase												
Begin Retrofit Strategy Study	(Apr 06) cpt											
Geotechnical Investigations												
Geotechnical Investigations	(Jan08)											
Modeling and Analysis - As - Built												
Draft As-Built Analysis Report Incl. Testing	(Dec07-Feb08)											
Final As-Built Analysis Report	(Feb08-Apr08)											
Environmental												
Project Reports	(Feb08-Sep08)											
Permits - Environmental	(Feb08-Jun09)											
Agencies Permits												
Right of Way	(Jan08-Sep09)											
Office Engineering												
Strategy Meeting	(August 22, 2008)											
Submit Plan/Footprint for Permit	(September 1, 2008)											
Retrofit Strategy Estimate	(Aug08-Oct08)											
Final Strategy Report	(Nov08-Dec08)											
65% Unchecked Detail	(March 11, 2009)											
P & Q	(May09)											
Draft Structural PS&E	(Jun09)											
Structural PS&E	(Jul09)											
District PS&E	(Aug09)											
Ready to List	(Sep09-Nov09)											
Advertise	(Dec09-Mar10)											
Award	(April10)											
Testing	(Apr08-Jun09)											

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REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

REGIONAL MEASURE 1 PROGRAM

New Benicia-Martinez Bridge Project

Project Status: New Bridge Completed 2007

The new Congressman George Miller Bridge opened to traffic in August 2007 taking its place alongside the existing 1962 Benicia-Martinez Bridge, which is named for Congressman Miller's father, the late George Miller, Jr. The new bridge carries five lanes of northbound Interstate 680 traffic, while the existing bridge is being upgraded to carry four lanes of southbound traffic and a new bicycle/pedestrian pathway.

Decades in the planning and construction, the new bridge is designed to a "Lifeline" seismic design standard, expected to be available for emergency response vehicles soon after a major seismic event. Constructed of lightweight concrete, the structure is one of the longest post-tensioned reinforced cast-in-place concrete bridges in the world. The new toll plaza, relocated from Benicia to Martinez, features the Bay Area's first FasTrak[®] express lanes, which vastly increase the throughput of vehicles using electronic toll collection.



New Benicia-Martinez Bridge Opened to Traffic in August 2007

1962 Benicia-Martinez Bridge Reconstruction Contract

Contractor: ACC/Top Grade, Joint Venture

Approved Capital Outlay Budget: \$59.5 M

Status: 63% Complete

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge is being modified to carry four lanes of southbound traffic (one more than before) - with shoulders on both sides - plus a bicycle/pedestrian path on the west side of the span that will connect to Park Road in Benicia and to Marina Vista Boulevard in Martinez.

Stage 1 – Reconstruction of East Side of Bridge and Approaches

Completed in August 2008, this stage involved removal of the old toll plaza on the Benicia side of the bridge, deck repairs on the east side of span, and repair of the roadway undulations on the southern approach just south of the Marina Vista interchange.



Bike Path to Vista Point on the North Side

Stage 2 – Reconstruction of West Side of Bridge and Approaches and Construction of Bicycle/Pedestrian Pathway

This stage began after southbound traffic was shifted from the west side of the bridge to the newly refurbished east side. It involves repairing the west side bridge deck, repairing undulations on the west side of the roadway in Martinez, demolishing obsolete I-680/I-780 interchange structures, realigning southbound Interstate 680 for four lanes, and construction of the barrier separating traffic lanes from the bicycle/pedestrian path.

Status: Remaining tasks include raising the western portions of the Marina Vista interchange to bring the lanes into the proper alignment, completion of deck rehabilitation work, repair of roadway undulations, and the addition of a new concrete barrier to separate pedestrians and bicyclists from vehicular traffic. The work is currently two months ahead of schedule.



Bike Path North



New Pedestrian/Bicycle Pathway Is under Construction on the West Side of the Existing Bridge

REGIONAL MEASURE 1 PROGRAM

Interstate 880/State Route 92 Interchange Reconstruction Project

Project Status: Under Construction

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 86 and 87).



Future Interstate 880/State Route 92 Interchange (as simulated)
Looking West towards San Mateo.

Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$155.0 M

Status: 45% Complete

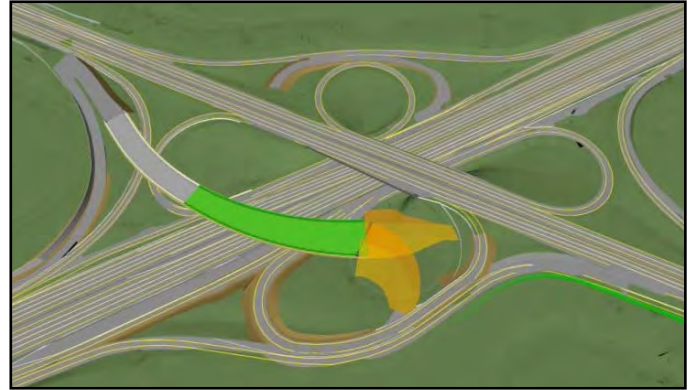


New East Route 92 to North Interstate 880 Connector under Construction.

Stage 1 – Construct East Route 92 to North Interstate 880 Connector

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical flyover structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

Status: The structure is nearly complete and is scheduled to open to detour traffic in May 2009.

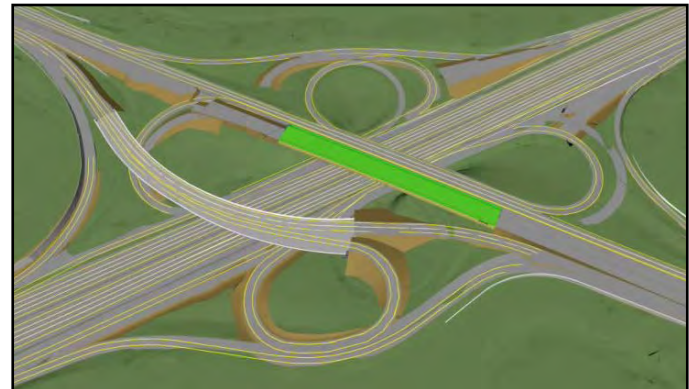


Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector

Stage 2 – Replace South Side of Route 92 Separation Structure

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR-92 over I-880 can be replaced. The separation structure needs to be elevated to accommodate east Route 92 to north Interstate 880 traffic under it without a loop alignment. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south Interstate 880 to east Route 92 traffic will stay on the remaining structure.

Status: Pending Stage 1.

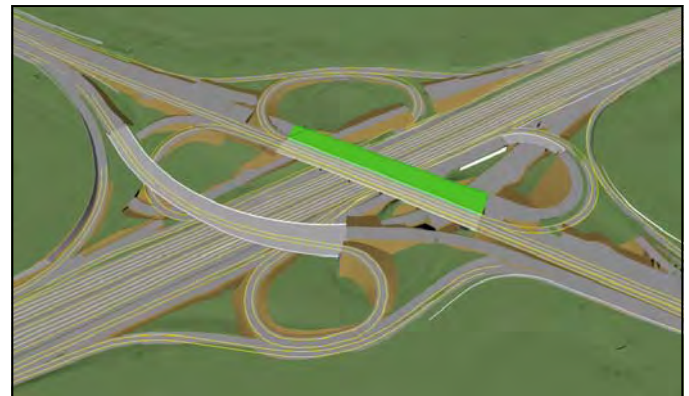


Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure

Stage 3 – Replace North Side Route 92 Separation Structure

Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

Status: Pending Stage 2.



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure

Stage 4 – Final Realignment and Other Work

Upon completion of the Route 92 separation structure, east Route 92 traffic can be shifted onto its permanent alignment from the new ENCONN and directly under the new separation structure. Along with the ENCONN and Route 92 separation structures, several soundwalls, a pedestrian overcrossing on I-880 at Eldridge Avenue and other ramps and structures will also be reconstructed as part of this project.

Status: The soundwalls in the northwest and southwest quadrants of the interchange are complete. Work continues on walls in the southeast and northeast quadrants, as well as on the pedestrian overcrossing. Final realignment is pending Stage 3.



Stage 4 - Final Realignment and Other Work

REGIONAL MEASURE 1 PROGRAM

Other Completed Projects

San Mateo-Hayward Bridge Widening Project

Project Status: Completed 2003



This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of bridge.

Widening of the San Mateo-Hayward Bridge Trestle on Left

Richmond-San Rafael Bridge Rehabilitation Projects

Project Status: Completed 2006

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed:

- (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and
- (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

Richmond Parkway Construction Project

Project Status: Completed 2001

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic with Crockett Interchange Still under Construction.

New Alfred Zampa Memorial (Carquinez) Bridge Project **Project Status: Completed 2003**

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane, shoulders and a bicycle and pedestrian pathway.

Bayfront Expressway (State Route 84) Widening Project **Project Status: Completed 2004**

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the U.S. 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.



East Tie-In Truss structure under Construction atop Skid Beams

APPENDICES

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Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Through March 31, 2009

(\$ in millions)							
Bridge	AB 144/SB 66 Baseline	TBPOC Current Approved Budget	Fourth Quarter 2008 Forecast	First Quarter 2009 Forecast	Cost Variance	Forecast Variance (1st Q09 - 4th Q08)	Expenditures Through Mar 2009
a	b	c	d	e	f = e - c	g = e - d	h
Benicia-Martinez							
Capital Outlay Support	38.1	38.1	38.1	38.1	-	-	38.1
Capital Outlay	139.7	139.7	139.7	139.7	-	-	139.7
Total	177.8	177.8	177.8	177.8	-	-	177.8
Carquinez							
Capital Outlay Support	28.7	28.7	28.7	28.7	-	-	28.8
Capital Outlay	85.5	85.5	85.5	85.5	-	-	85.4
Total	114.2	114.2	114.2	114.2	-	-	114.2
San Mateo-Hayward							
Capital Outlay Support	28.1	28.1	28.1	28.1	-	-	28.1
Capital Outlay	135.4	135.4	135.4	135.4	-	-	135.3
Total	163.5	163.5	163.5	163.5	-	-	163.4
Vincent Thomas							
Capital Outlay Support	16.4	16.4	16.4	16.4	-	-	16.4
Capital Outlay	42.1	42.1	42.1	42.1	-	-	42.0
Total	58.5	58.5	58.5	58.5	-	-	58.4
San Diego-Coronado							
Capital Outlay Support	33.5	33.5	33.5	33.5	-	-	33.2
Capital Outlay	70.0	70.0	70.0	70.0	-	-	69.4
Total	103.5	103.5	103.5	103.5	-	-	102.6
Richmond-San Rafael							
Capital Outlay Support	134.0	127.0	127.0	127.0	-	-	126.7
Capital Outlay	780.0	689.5	689.5	689.5	-	-	668.1 *
Total	914.0	816.5	816.5	816.5	-	-	794.8
West Span Retrofit							
Capital Outlay Support	75.0	75.0	75.0	75.0	-	-	74.8
Capital Outlay	232.9	232.9	232.9	232.9	-	-	227.2
Total	307.9	307.9	307.9	307.9	-	-	302.0
West Approach							
Capital Outlay Support	120.0	120.0	120.0	120.0	-	-	114.8
Capital Outlay	309.0	350.7	350.7	350.7	-	-	318.6
Total	429.0	470.7	470.7	470.7	-	-	433.4
SFOBB East Span							
Capital Outlay Support	959.3	959.3	977.1	1,173.8	214.5	196.7	703.9
Capital Outlay	4,492.2	4,711.0	4,745.2	5,014.4	303.4	269.2	2,808.3
Other Budgeted Capital	35.1	31.8	7.7	7.7	(24.1)	-	0.7
Total	5,486.6	5,702.1	5,730.0	6,195.9	493.8	465.9	3,512.9
Miscellaneous Program Costs	30.0	30.0	30.0	30.0	-	-	24.7
Subtotal Capital Outlay Support	1,463.1	1,456.1	1,473.9	1,670.6	214.5	196.7	1,189.5
Subtotal Capital Outlay	6,321.9	6,488.6	6,498.7	6,767.9	279.3	269.2	4,494.7
Subtotal Toll Seismic Retrofit	7,785.0	7,944.7	7,972.6	8,438.5	493.8	465.9	5,684.2
Net Programmatic Risks	-	-	-	117.2	117.2	117.2	-
Program Contingency	900.0	740.3	712.4	129.3	(611.0)	(583.1)	-
Total Toll Seismic Retrofit Program	8,685.0	8,685.0	8,685.0	8,685.0	-	-	5,684.2

Notes: * Budget for Richmond-San Rafael Bridge includes \$16.9 million of deck joint rehabilitation work that is considered to be eligible for seismic retrofit program funding.

Note: Details may not sum to totals due to rounding effects.

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Through March 31, 2009

Bridge	(\$ in millions)				
	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of Mar 2009 See Note (1)	Estimated Costs not yet Spent or Encumbered as of Mar 2009	Total Forecast as of Mar 2009
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	472.6	0.1	472.7
Total	617.5	617.5	617.2	0.4	617.6
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.7	0.3	127.0
Capital Outlay	698.0	689.5	674.8	14.7	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	801.5	15.0	816.5
West Span Retrofit					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	232.7	0.2	232.9
Total	307.9	307.9	307.5	0.4	307.9
West Approach					
Capital Outlay Support	120.0	120.0	115.9	4.1	120.0
Capital Outlay	309.0	350.7	342.5	8.2	350.7
Total	429.0	470.7	458.4	12.3	470.7
SFOBB East Span -Skyway					
Capital Outlay Support	197.0	181.0	181.7	(0.6)	181.1
Capital Outlay	1,293.0	1,254.1	1,412.1	(158.0)	1,254.1
Total	1,490.0	1,435.1	1,593.8	(158.6)	1,435.2
SFOBB East Span -SAS- Superstructure					
Capital Outlay Support	214.6	214.6	141.5	239.2	380.7
Capital Outlay	1,753.7	1,753.7	1,649.6	331.5	1,981.1
Total	1,968.3	1,968.3	1,791.1	570.7	2,361.8
SFOBB East Span -SAS- Foundations					
Capital Outlay Support	62.5	41.0	37.6	1.0	38.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
Total	402.4	348.3	346.3	(0.4)	345.9
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.2	0.4	10.6
Capital Outlay	15.6	15.6	16.2	(0.5)	15.7
Total	26.2	26.2	26.4	(0.1)	26.3
YBI Detour					
Capital Outlay Support	29.5	66.0	61.2	24.3	85.5
Capital Outlay	131.9	442.2	442.4	84.3	526.7
Total	161.4	508.2	503.6	108.6	612.2
YBI - Transition Structures					
Capital Outlay Support	78.7	78.7	16.4	88.7	105.1
Capital Outlay	299.4	276.1	0.1	277.9	278.0
Total	378.1	354.8	16.5	366.6	383.1
Oakland Touchdown					
Capital Outlay Support	74.4	74.4	55.3	43.3	98.6
Capital Outlay	283.8	283.8	218.0	72.6	290.6
Total	358.2	358.2	273.3	115.9	389.2
East Span Other Small Project					
Capital Outlay Support	212.3	213.3	205.1	8.4	213.5
Capital Outlay	170.8	170.8	94.0	52.6	146.6
Total	383.1	384.1	299.1	61.0	360.1
Existing Bridge Demolition					
Capital Outlay Support	79.7	79.7	0.4	59.6	60.0
Capital Outlay	239.2	239.2	-	222.0	222.0
Total	318.9	318.9	0.4	281.6	282.0
Miscellaneous Program Costs	30.0	30.0	25.3	4.7	30.0
Total Capital Outlay Support (2)	1,463.2	1,456.2	1,196.7	473.9	1,670.6
Total Capital Outlay	6,321.8	6,488.5	5,863.7	904.2	6,767.9
Program Total	7,785.0	7,944.7	7,060.4	1,378.1	8,438.5

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based on Bechtel Infrastructure Corporation input.

This column is subject to revision upon completion of Department's risk assessment update.

(3). Total Capital Outlay Support includes program indirect costs.

Note: Details may not sum to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Through March 31, 2009

East Span Contract	(\$ millions)						
	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	Fourth Quarter 2008 Forecast	First Quarter 2009 Forecast	Cost Variance	Forecast Variance (1st Q09 - 4th Q08)	Expenditures Through Mar 2009
a	b	c	d	e	f = e - c	g = e - d	h
SFOBB East Span - Skyway							
Capital Outlay Support	197.0	181.0	181.0	181.1	0.1	0.1	181.1
Capital Outlay	1,293.0	1,254.1	1,254.1	1,254.1	-	-	1,236.8
Total	1,490.0	1,435.1	1,435.1	1,435.2	0.1	0.1	1,417.9
SFOBB East Span - SAS- E2/T1 Foundations							
Capital Outlay Support	52.5	31.0	31.0	28.6	(2.4)	(2.4)	28.4
Capital Outlay	313.5	280.9	280.9	280.9	-	-	275.0
Total	366.0	311.9	311.9	309.5	(2.4)	(2.4)	303.4
SFOBB East Span - SAS- Superstructure							
Capital Outlay Support	214.6	214.6	214.6	380.7	166.1	166.1	138.8
Capital Outlay	1,753.7	1,753.7	1,767.4	1,981.1	227.4	213.7	677.6
Total	1,968.3	1,968.3	1,982.0	2,361.8	393.5	379.8	816.4
SFOBB East Span - SAS- W2 Foundations							
Capital Outlay Support	10.0	10.0	10.0	10.0	-	-	9.2
Capital Outlay	26.4	26.4	26.4	26.4	-	-	25.8
Total	36.4	36.4	36.4	36.4	-	-	35.0
YBI Detour							
Capital Outlay Support	29.4	66.0	66.0	85.5	19.5	19.5	60.0
Capital Outlay	132.0	442.2	461.2	526.7	84.5	65.5	300.7
Total	161.4	508.2	527.2	612.2	104.0	85.0	360.7
YBI - Transition Structures (Total, including the following split contracts and prior-to-split expenses)							
Capital Outlay Support	78.7	78.7	78.7	105.1	26.4	26.4	23.7
Capital Outlay	299.3	276.1	276.1	278.0	1.9	1.9	-
Total	378.0	354.8	354.8	383.1	28.3	28.3	23.7
YBI- Transition Structures Contract No. 1							
Capital Outlay Support	-	-	45.0	64.7	-	19.7	4.7
Capital Outlay	-	-	214.3	215.3	-	1.0	-
Total	-	-	259.3	280.0	-	20.7	4.7
YBI- Transition Structures Contract No. 2							
Capital Outlay Support	-	-	16.0	23.4	-	7.4	2.7
Capital Outlay	-	-	58.5	59.4	-	0.9	-
Total	-	-	74.5	82.8	-	8.3	2.7
YBI- Transition Structures Contract No. 3 - Landscape							
Capital Outlay Support	-	-	1.0	1.0	-	-	-
Capital Outlay	-	-	3.3	3.3	-	-	-
Total	-	-	4.3	4.3	-	-	-
Oakland Touchdown (Total, including the following split contracts and prior-to-split expenses)							
Capital Outlay Support	74.4	74.4	92.1	98.6	24.2	6.5	54.4
Capital Outlay	283.8	283.8	302.5	290.6	6.8	(11.9)	161.2
Total	358.2	358.2	394.6	389.2	31.0	(5.4)	215.6
Oakland Touchdown Contract - Submarine Cable							
Capital Outlay Support	-	-	3.0	0.9	-	(2.1)	0.9
Capital Outlay	-	-	9.6	9.6	-	-	7.9
Total	-	-	12.6	10.5	-	(2.1)	8.8
Oakland Touchdown Contract No. 1 (Westbound)							
Capital Outlay Support	-	-	49.9	53.3	-	3.4	30.3
Capital Outlay	-	-	226.5	214.6	-	(11.9)	153.3
Total	-	-	276.4	267.9	-	(8.5)	183.6
Oakland Touchdown Contract No. 2 (Eastbound)							
Capital Outlay Support	-	-	15.8	20.8	-	5.0	2.5
Capital Outlay	-	-	62.0	62.0	-	-	-
Total	-	-	77.8	82.8	-	5.0	2.5
Oakland Touchdown Contract - Electrical Systems							
Capital Outlay Support	-	-	1.4	1.5	-	0.1	0.8
Capital Outlay	-	-	4.4	4.4	-	-	-
Total	-	-	5.8	5.9	-	0.1	0.8

Note: Details may not sum to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Through March 31, 2009 (cont.)

East Span Contract	(\$ millions)						
	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	Fourth Quarter 2008 Forecast	First Quarter 2009 Forecast	Cost Variance	Forecast Variance (1st Q09 - 4th Q08)	Expenditures Through Mar 2009
a	b	c	d	e	f = e - c	g = e - d	h
YBI/SAS (Archeology)							
Capital Outlay Support	1.1	1.1	1.1	1.1	-	-	1.1
Capital Outlay	1.1	1.1	1.1	1.1	-	-	1.1
Total	2.2	2.2	2.2	2.2	-	-	2.2
YBI - USCG Rd Relocation							
Capital Outlay Support	3.0	3.0	3.0	3.0	-	-	2.7
Capital Outlay	3.0	3.0	3.0	3.0	-	-	2.8
Total	6.0	6.0	6.0	6.0	-	-	5.5
YBI - Substation and Viaduct							
Capital Outlay Support	6.5	6.5	6.5	6.5	-	-	6.4
Capital Outlay	11.6	11.6	11.6	11.6	-	-	11.3
Total	18.1	18.1	18.1	18.1	-	-	17.7
Oakland Geofill							
Capital Outlay Support	2.5	2.5	2.5	2.5	-	-	2.5
Capital Outlay	8.2	8.2	8.2	8.2	-	-	8.2
Total	10.7	10.7	10.7	10.7	-	-	10.7
Pile Installation Demonstration Project							
Capital Outlay Support	1.8	1.8	1.8	1.8	-	-	1.8
Capital Outlay	9.2	9.2	9.2	9.2	-	-	9.2
Total	11.0	11.0	11.0	11.0	-	-	11.0
Existing Bridge Demolition							
Capital Outlay Support	79.7	79.7	79.7	60.0	(19.7)	(19.7)	0.4
Capital Outlay	239.2	239.2	222.0	222.0	(17.2)	-	-
Total	318.9	318.9	301.7	282.0	(36.9)	(19.7)	0.4
Stormwater Treatment Measures							
Capital Outlay Support	6.0	8.0	8.0	8.2	0.2	0.2	8.1
Capital Outlay	15.0	18.3	18.3	18.3	-	-	16.7
Total	21.0	26.3	26.3	26.5	0.2	0.2	24.8
Right-of-way and Environmental Mitigation							
Capital Outlay Support	-	-	-	-	-	-	-
Capital Outlay	72.4	72.4	72.4	72.4	-	-	51.1
Total	72.4	72.4	72.4	72.4	-	-	51.1
Sunk Cost - Existing East Span Retrofit							
Capital Outlay Support	39.5	39.5	39.5	39.5	-	-	39.5
Capital Outlay	30.8	30.8	30.8	30.8	-	-	30.8
Total	70.3	70.3	70.3	70.3	-	-	70.3
Environmental Phase (Expended)							
Capital Outlay Support	97.7	97.7	97.7	97.7	-	-	97.7
Project Expenditures, Pre-splits							
Capital Outlay Support	44.9	44.9	44.9	44.9	-	-	44.9
Non-project Specific Costs							
Capital Outlay Support	20.0	19.0	19.0	19.0	-	-	3.2
Subtotal East Span Capital Outlay Support	959.3	959.3	977.1	1,173.8	214.5	196.7	703.9
Subtotal East Span Capital Outlay and Sunk Costs	4,492.2	4,711.0	4,745.2	5,014.4	303.4	269.2	2,808.3
Other Budgeted Capital	35.1	31.8	7.7	7.7	(24.1)	-	0.7
Total SFOBB East Span	5,486.6	5,702.1	5,730.0	6,195.9	493.8	465.9	3,512.9

(1) Current contract allotment to install two submarine electrical cables is \$11.5 million. Additional non-program funding to support this allocation beyond the \$9.6 million of available programs funds has been made available by the Treasure Island Development Authority.

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2009)	Cost To Date (03/2009)	Cost Forecast (03/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project							
New Bridge							
	00603_						
Capital Outlay Support		84.9	6.7	91.6	91.7	91.6	-
Capital Outlay Construction				-			-
BATA Funding		661.9	94.6	756.5	753.8	756.5	-
Non-BATA Funding		10.1	-	10.1	10.1	10.1	-
Subtotal		672.0	94.6	766.6	763.9	766.6	-
Total		756.9	101.3	858.2	855.6	858.2	-
I-680/I-780 Interchange Reconstruction							
	00606_						
Capital Outlay Support							
BATA Funding		24.9	5.2	30.1	30.1	30.1	-
Non-BATA Funding		1.4	5.2	6.6	6.3	6.6	-
Subtotal		26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction							
BATA Funding		54.7	26.9	81.6	77.1	81.6	-
Non-BATA Funding		21.6	-	21.6	21.7	21.6	-
Subtotal		76.3	26.9	103.2	98.8	103.2	-
Total		102.6	37.3	139.9	135.2	139.9	-
I-680/Marina Vista Interchange Reconstruction							
	00605_						
Capital Outlay Support		18.3	1.8	20.1	20.0	20.1	-
Capital Outlay Construction		51.5	4.9	56.4	56.1	56.4	-
Total		69.8	6.7	76.5	76.1	76.5	-
New Toll Plaza and Administration Building							
	00604_						
Capital Outlay Support		11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction		24.3	2.0	26.3	25.1	26.3	-
Total		36.2	5.8	42.0	40.8	42.0	-
Existing Bridge & Interchange Modifications							
	0060A_						
Capital Outlay Support		4.3	14.3	18.6	15.1	18.6	-
Capital Outlay Construction							
BATA Funding		17.2	32.8	50.0	23.1	50.0	-
Non-BATA Funding		-	9.5	9.5	-	9.5	-
Subtotal		17.2	42.3	59.5	23.1	59.5	-
Total		21.5	56.6	78.1	38.2	78.1	-
Other Contracts							
	See note below						
Capital Outlay Support		11.4	(1.8)	9.6	7.9	9.6	-
Capital Outlay Construction		20.3	2.8	23.1	16.6	23.1	-
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Total		52.1	0.9	53.0	41.5	53.0	-
Subtotal BATA Capital Outlay Support		155.7	30.0	185.7	180.5	185.7	-
Subtotal BATA Capital Outlay Construction		829.9	164.0	993.9	951.8	993.9	-
Subtotal Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support		1.4	5.2	6.6	6.3	6.6	-
Subtotal Non-BATA Capital Outlay Construction		31.7	9.5	41.2	31.8	41.2	-
Project Reserves		20.8	4.0	24.8	-	24.8	-
Total New Benicia-Martinez Bridge Project		1,059.9	212.6	1,272.5	1,187.4	1,272.5	-

Notes: Includes EA's 00601_, 00603_, 00605_, 00606_, 00608_, 00609_, 0060A_, 0060C_, 0060E_, 0060F_, 0060G_, and 0060H_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2009)	Cost To Date (03/2009)	Cost Forecast (03/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Carquinez Bridge Replacement Project							
New Bridge	01301_						
Capital Outlay Support		60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction		253.3	4.0	257.3	255.9	257.3	-
Total		313.8	3.7	317.5	316.1	317.5	-
Crockett Interchange Reconstruction							
	01305_						
Capital Outlay Support		32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction		73.9	-	73.9	71.9	73.9	-
Total		105.9	(0.1)	105.8	103.8	105.8	-
Existing 1927 Bridge Demolition							
	01309_						
Capital Outlay Support		16.1	-	16.1	15.5	15.5	(0.6)
Capital Outlay Construction		35.2	-	35.2	34.8	35.2	-
Total		51.3	-	51.3	50.3	50.7	(0.6)
Other Contracts							
	See note below						
Capital Outlay Support		15.8	0.2	16.0	16.3	16.3	0.3
Capital Outlay Construction		18.8	(0.8)	18.0	16.1	18.1	0.1
Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-
Total		45.1	(0.6)	44.5	42.3	44.9	0.4
Subtotal BATA Capital Outlay Support		124.4	(0.2)	124.2	123.9	123.9	(0.3)
Subtotal BATA Capital Outlay Construction		381.2	3.2	384.4	378.7	384.5	0.1
Subtotal Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-
Project Reserves		12.1	(3.0)	9.1	-	0.3	(8.8)
Total Carquinez Bridge Replacement Project		528.2	-	528.2	512.5	519.2	(9.0)

Notes:

Other Contracts includes EA's 01301_01302_, 01303_, 01304_01305_, 01306_, 01307_, 01308_, 01309_0130A_, 0130C_, 0130D_, 0130F_, 0130G_, 0130H_, 0130J_, 00453_, 00493_, 04700_, 00607_, 2A270_, and 29920_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project a	EA Number b	BATA Budget (07/2005) c	Approved Changes d	Current Approved Budget (03/2009) e = c + d	Cost To Date (03/2009) f	Cost Forecast (03/2009) g	At- Completion Variance h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation		See note ¹ below					
Capital Outlay Support							
BATA Funding		2.2	-	2.2	1.4	2.2	-
Non-BATA Funding		8.6	-	8.6	10.4	10.4	1.8
Subtotal		10.8	-	10.8	11.8	12.6	1.8
Capital Outlay Construction							
BATA Funding		40.2	-	40.2	33.4	33.4	(6.8)
Non-BATA Funding		51.1	-	51.1	51.1	51.1	-
Subtotal		91.3	-	91.3	84.5	84.5	(6.8)
Project Reserves		-	-	-	-	-	-
Total		102.1	-	102.1	96.3	97.1	(5.0)
Richmond-San Rafael Bridge Deck Overlay Rehabilitation		04152_					
Capital Outlay Support							
BATA Funding		4.0	(0.4)	3.6	3.3	3.6	-
Non-BATA Funding		4.0	(4.0)	-	-	-	-
Subtotal		8.0	(4.4)	3.6	3.3	3.6	-
Capital Outlay Construction		16.9	3.6	20.5	16.3	16.2	(4.3)
Project Reserves		0.1	0.8	0.9	-	5.2	4.3
Total		25.0	-	25.0	19.6	25.0	-
Richmond Parkway Project (RM 1 Share Only)		Non-Caltrans					
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	4.3	5.9	-
Total		5.9	-	5.9	4.3	5.9	-
San Mateo-Hayward Bridge Widening		See note ² below					
Capital Outlay Support		34.6	(0.3)	34.3	34.1	34.3	-
Capital Outlay Construction		180.2	-	180.2	174.1	176.2	(4.0)
Capital Outlay Right-of-Way		1.5	-	1.5	0.5	0.6	(0.9)
Project Reserves		1.5	0.3	1.8	-	0.8	(1.0)
Total		217.8	-	217.8	208.7	211.9	(5.9)
I-880/SR-92 Interchange Reconstruction		EA's 23317_, 01601_, and 01602_					
Capital Outlay Support		28.8	26.2	55.0	46.1	55.0	-
Capital Outlay Construction							
BATA Funding		85.2	60.2	145.4	58.0	145.4	-
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	60.2	155.0	58.0	155.0	-
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.6	16.9	-
Project Reserves		0.3	17.8	18.1	-	18.1	-
Total		133.8	111.2	245.0	115.7	245.0	-
Bayfront Expressway Widening		EA's 00487_, 01511_, and 01512_					
Capital Outlay Support		8.6	(0.3)	8.3	8.3	8.2	(0.1)
Capital Outlay Construction		26.5	-	26.5	24.9	26.5	-
Capital Outlay Right-of-Way		0.2	-	0.2	0.2	0.2	-
Project Reserves		0.8	0.3	1.1	-	1.1	-
Total		36.1	-	36.1	33.4	36.0	(0.1)
US 101/University Avenue Interchange Modification		Non-Caltrans					
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
Total		3.8	-	3.8	3.7	3.8	-
Subtotal BATA Capital Outlay Support		358.3	55.0	413.3	397.6	412.9	(0.4)
Subtotal BATA Capital Outlay Construction		1,569.8	231.0	1,800.8	1,645.2	1,785.8	(15.0)
Subtotal Capital Outlay Right-of-Way		42.5	6.9	49.4	39.2	48.5	(0.9)
Subtotal Non-BATA Capital Outlay Support		14.0	1.2	15.2	16.7	17.0	1.8
Subtotal Non-BATA Capital Outlay Construction		92.4	9.5	101.9	82.9	101.9	-
Project Reserves		35.6	20.2	55.8	-	50.3	(5.5)
Total RM1 Program		2,112.6	323.8	2,436.4	2,181.6	2,416.4	(20.0)

Notes:

Note: Details may not sum to totals due to rounding effects.

¹ Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_

² San Mateo-Hayward Bridge Widening Includes EA's 00305_, 04501_, 04502_, 04503_, 04504_, 04505_, 04506_, 04507_, 04508_, 04509_, 27740_, 27790_, 04860_

Appendix D: YBITS Advanced Work Project Progress Diagram

**SFOBB SEISMIC RETROFIT PROJECT
THE YBITS PROGRESS DIAGRAM
(As of March 25, 2009)**

Legend
 Work in Progress (Green)
 Completed Work (Red)

SSD CONTRACT (CC MYERS)
 (Blue outline)

YBITS # 1 CONTRACT
 (Red outline)

Note:
 1. W10AL, W10L, W8L, W7L & W6L all have North and South Columns.
 2. EB On Ramp Structure is not included in this Diagram.

West Bound

East Bound Looking West

Bent Designation

Roadway Deck	Bent Cap, Stem, and Soffit	Column(s)	Pier Footing	Mostly H Piles
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Bent Designation

Roadway Deck	Bent Cap, Stem, and Soffit	Column(s)	Pier Footing	Mostly H Piles
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Legend
 Work in Progress (Green)
 Completed Work (Red)

SSD CONTRACT (CC MYERS)
 (Blue outline)

YBITS # 1 CONTRACT
 (Red outline)

Note:
 1. W10AL, W10L, W8L, W7L & W6L all have North and South Columns.
 2. EB On Ramp Structure is not included in this Diagram.

West Bound

East Bound Looking West

Bent Designation

Roadway Deck	Bent Cap, Stem, and Soffit	Column(s)	Pier Footing	Mostly H Piles
--------------	----------------------------	-----------	--------------	----------------

Bent Designation

Roadway Deck	Bent Cap, Stem, and Soffit	Column(s)	Pier Footing	Mostly H Piles
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Legend
 Work in Progress (Green)
 Completed Work (Red)

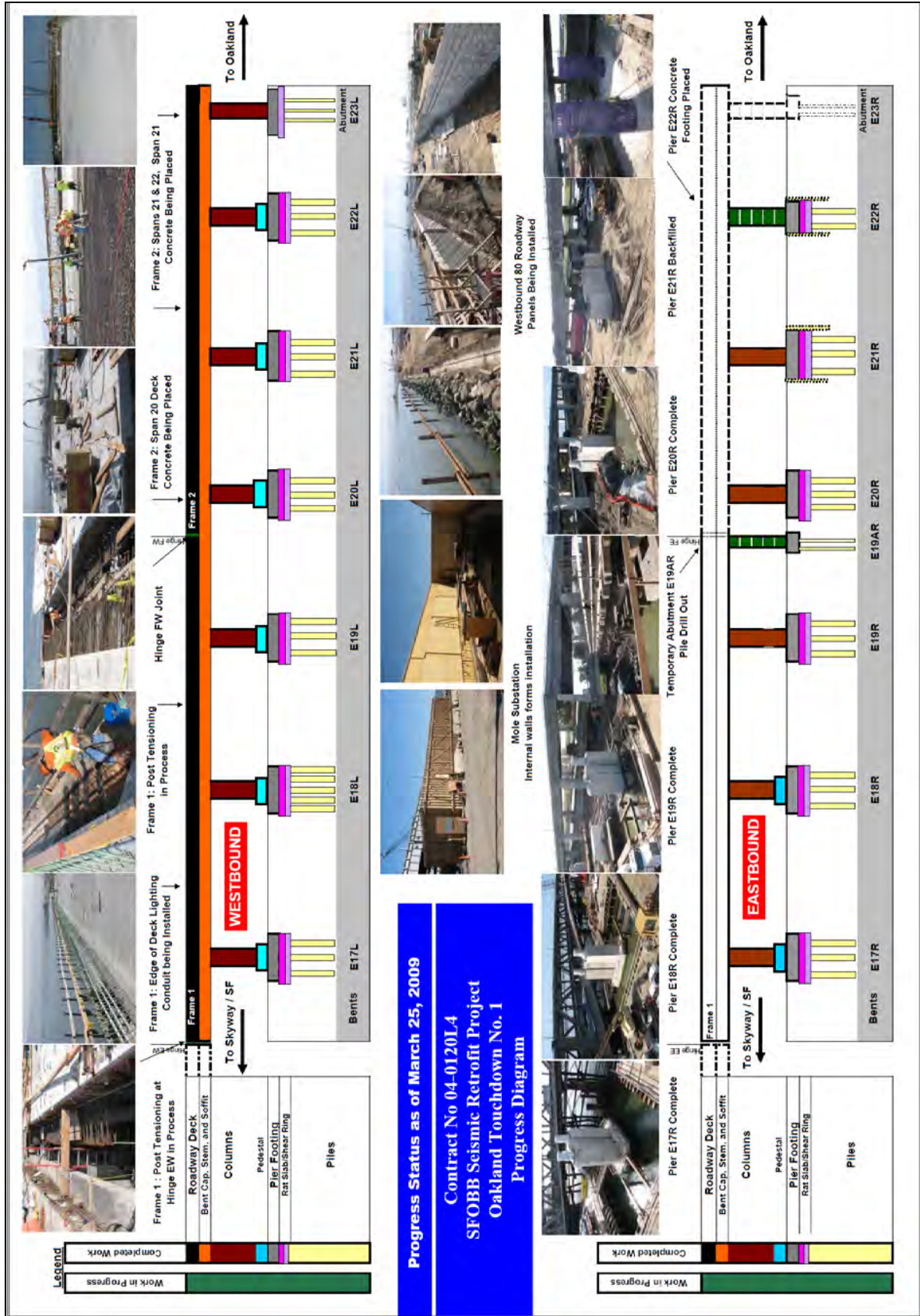
SSD CONTRACT (CC MYERS)
 (Blue outline)

YBITS # 1 CONTRACT
 (Red outline)

Note:
 1. W10AL, W10L, W8L, W7L & W6L all have North and South Columns.
 2. EB On Ramp Structure is not included in this Diagram.

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Appendix E: OTD #1 Program Diagram





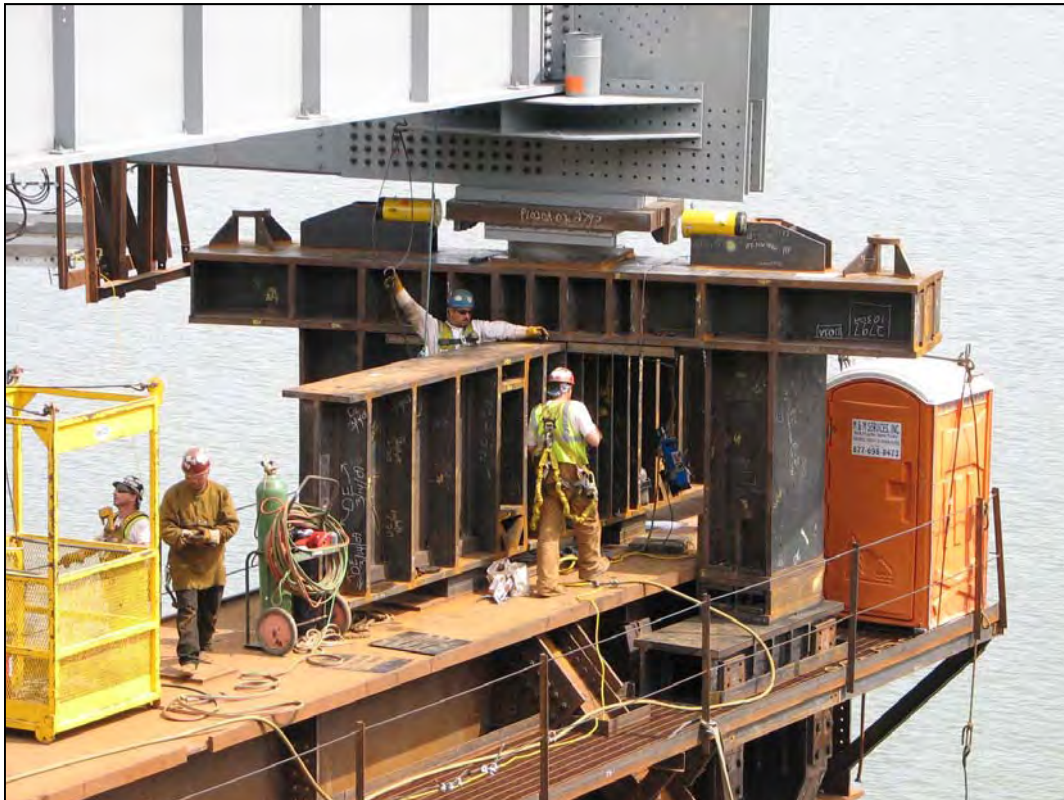
Appendix F: Project Progress Photographs

Appendix F: Project Progress Photographs

Yerba Buena Island Detour



Temporary Towers Looking from W2 to the East



East Tie-In Truss Structure Support



East Tie-in Skid Bent System Framing



East Tie-in Skid Beams and Truss Supports

Appendix F: Project Progress Photographs

Self-Anchored Suspension Bridge Fabrication



CB1 Assembly in Bay 1



Bike Path Bracket Assembly in Bay 5



Overview of 1 BW Assembly in Bay 13

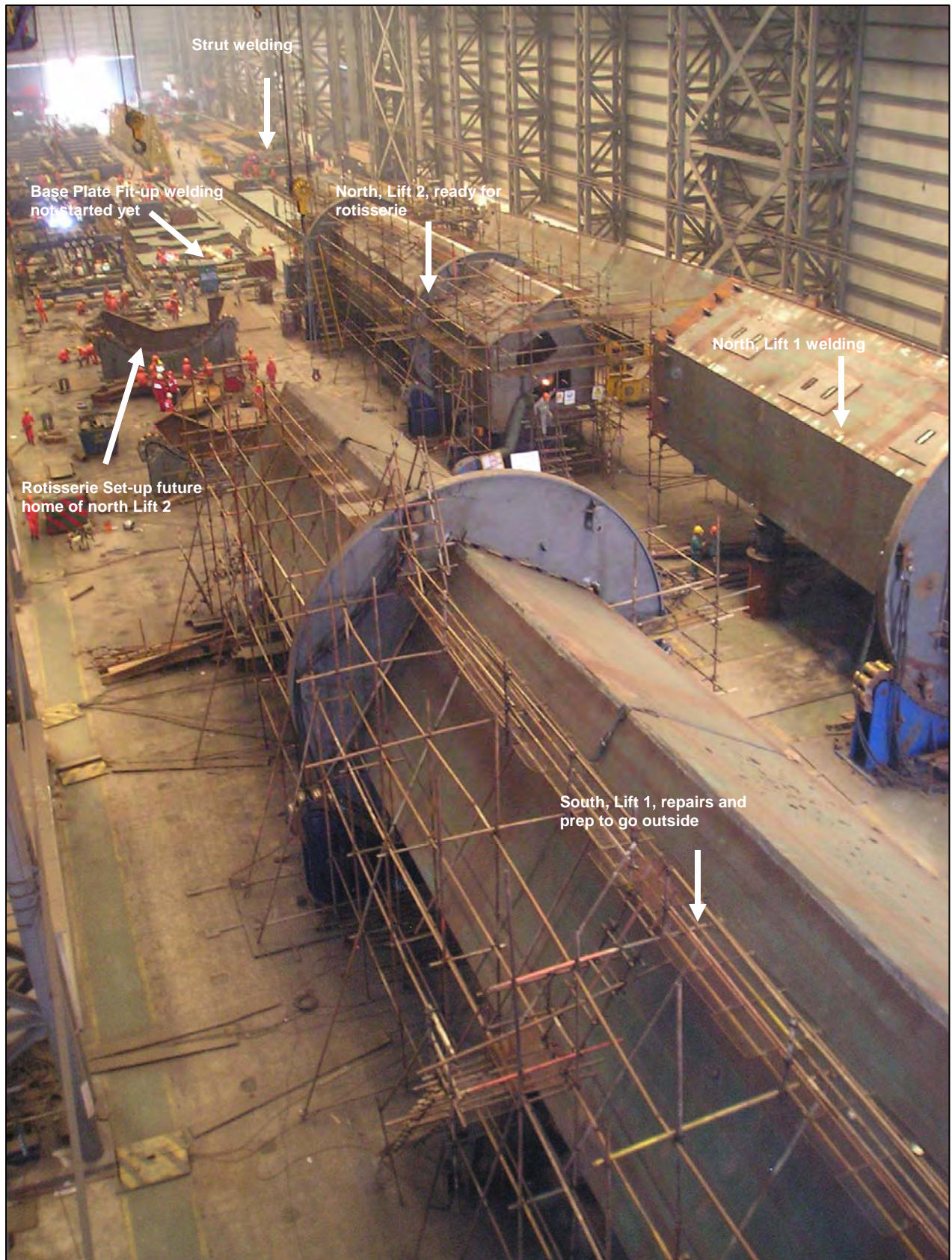


Overview of East Jig in Bay 14

Appendix F: Project Progress Photographs

Self-Anchored Suspension Bridge Fabrication





Appendix F: Project Progress Photographs

Oakland Touchdown



Westbound Precast Panels Installed



Completed Frame Two Pre-Stressing



OTD #1 Westbound Barrier Lighting Conduit and Poles Installation

Appendix F: Project Progress Photographs

92/880 Interchange



Work at Eldridge Avenue



Work at Eldridge Avenue



Overview of 92/880 Interchange

Appendix G: Glossary of Terms

AB144/SB 66 BUDGET: The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

BATA BUDGET: The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

APPROVED CHANGES: For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

CURRENT APPROVED BUDGET: The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

COST TO DATE: The actual expenditures incurred by the program, project or contract as of the month and year shown.

COST FORECAST: The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

AT COMPLETION VARIANCE or VARIANCE (cost): The mathematical difference between the Cost Forecast and the Current Approved Budget.

AB 144/SB 66 PROJECT COMPLETE BASELINE: The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

BATA PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

PROJECT COMPLETE SCHEDULE FORECAST: The current projected date for the completion of the program, project, or contract.

SCHEDULE VARIANCE or VARIANCE (schedule): The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

% COMPLETE: % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.