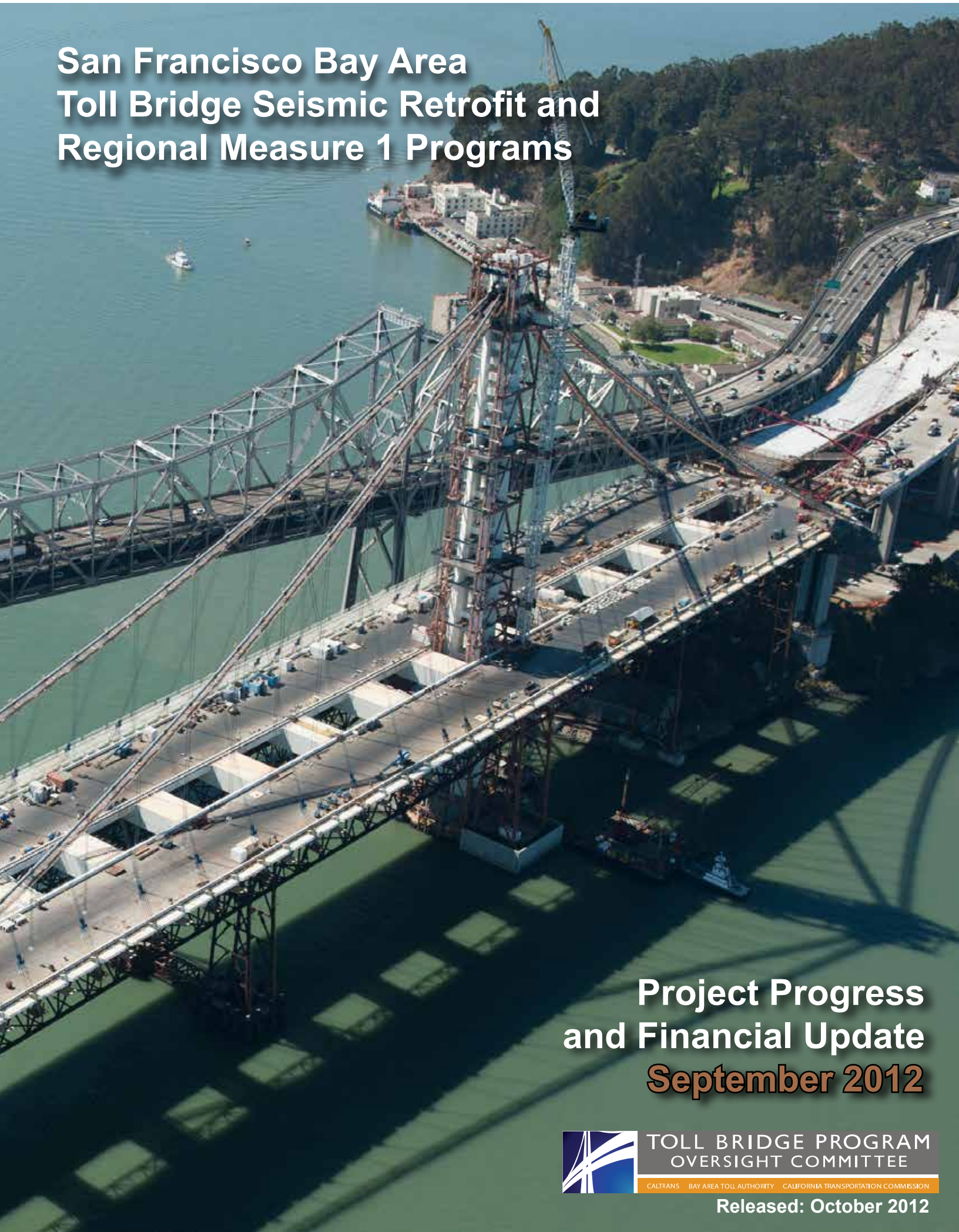
San Francisco Bay Area Toll Bridge Seismic Retrofit and Regional Measure 1 Programs



Project Progress and Financial Update

September 2012

TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Released: October 2012

The San Francisco-Oakland Bay Bridge Self-Anchored Suspension Bridge Suspender Cable Tensioning in Progress

Sunset View from the San Francisco - Oakland Bay Bridge

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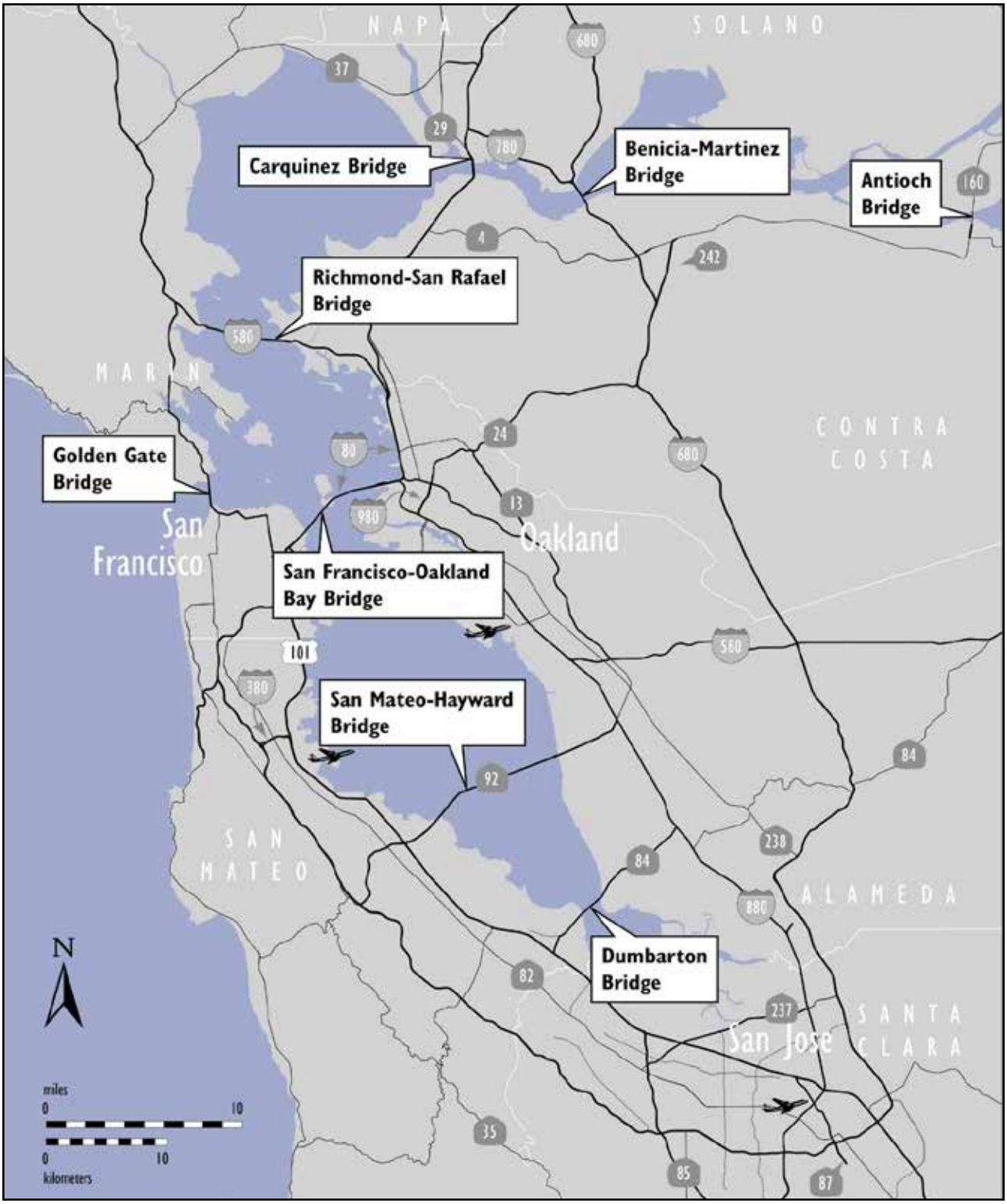


* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway and Transportation District.

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 new Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Director of the California Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA) 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, reviewing and approving significant change orders and claims in excess of $1 million (as defined by the Committee), and keeping the Legislature and others apprised of current project progress and status. In January 2010, Assembly Bill (AB) 1175 (Torlakson) amended the TBSRP to include the Antioch and Dumbarton Bridges seismic retrofit projects. The current Toll Bridge Seismic Retrofit Program is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Construction
Antioch Bridge Seismic Retrofit	Complete
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

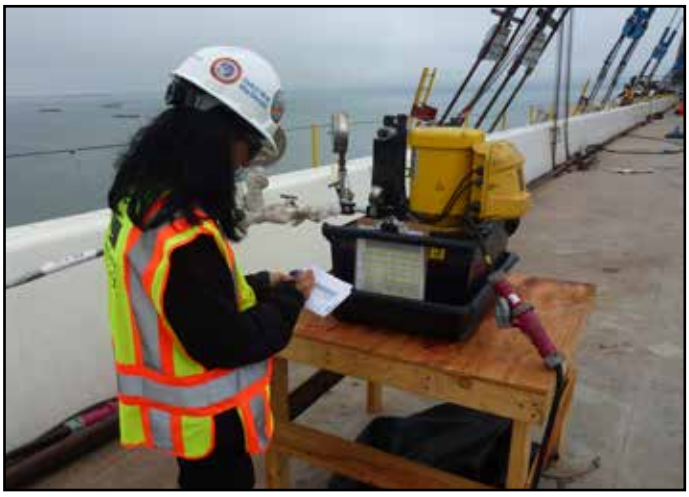
The New Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and 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	Open
1962 Benicia-Martinez Bridge Reconstruction	Open
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

Self-Anchored Suspension Bridge North Main Span Cable Swing-Out Framing Being Removed

Self-Anchored Suspension Bridge Caltrans Team Checking the Cable Band Bolt Extension Using a Calibrated Extensometer



Overseeing Self-Anchored Suspension Bridge Suspender Tensioning

Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 AB 144, 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.

A comprehensive risk assessment is performed for each project in the program on a quarterly basis. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, assurances have been made that the public is informed of the risks that have been identified and the possible expense they could necessitate.

The Program Contingency is currently $284 million in accordance with the TBPOC Approved Budget. As of the end of the second quarter of 2012, the 50 percent probable draw on Program Contingency is $135 million. The potential draw ranges from about $50 million to $225 million.

The current Program Contingency balance is sufficient to cover the cost of currently identified risks. In accordance with the approved TBSRP Risk Management Plan, risk mitigation actions are continuously developed and implemented to reduce the potential draw on the Program Contingency.

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

SAS Superstructures Contract

The prime contractor constructing the Self-Anchored Suspension (SAS) bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). The structures that comprise the SAS were produced both in the Bay Area and around the world.

With installation of all structural elements of the tower, roadway deck, PWS cable installation completed, the contractor's focus is now on the suspender installation and tensioning in preparation of load transfer scheduled to begin on September 4, 2012. The TBPOC's goal is to open the bridge to traffic in both directions by September 2013.

Yerba Buena Island Transition Structure #1 Contract

The YBITS #1 contract was awarded to MCM Construction, Inc., the same contractor that completed the Oakland Touchdown (OTD) #1 contract. The MCM contract includes completing the remaining foundations and the bridge deck structure from the Yerba Buena Island Tunnel to the Self-Anchored Suspension (SAS) bridge's Hinge "K" closure gap (Hinge "K" closure is now part of the SAS contract).

MCM is currently concentrating on the eastbound post-tensioning and is anticipating completion of this operation in October 2012.

YBITS #1 Eastbound Concrete Deck Post Tensioning in Progress

Yerba Buena Island Transition Structure #2 Cantilever and Demolition Contract

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 contract also includes the cantilever truss demolition, which was advertised on April 9, 2012. The bid opening is forecast for October 23, 2012, with award of the contract scheduled for December 22, 2012. Initial startup activities are planned to begin in March 2013 with actual dismantling to begin in September 2013.

Oakland Touchdown #2 Contract

Work on the OTD #2 contract includes the construction of the permanent bike path, which is scheduled for completion in early 2014. The OTD #2 structure will be completed in early 2013.

The OTD #2 contract for construction was awarded to Flatiron West, Inc. on March 29, 2012. The TBPOC approved an acceleration plan to construct a detour at the Oakland end of the bridge to allow for expedited construction. The OTD #2 construction contract started on June 25, 2012. The contractor completed the abutment wall in August and is in process of installing falsework for the OTD #2 structure and driving piles for the temporary trestle for access to the self-anchored suspension bridge.

San Francisco-Oakland Bay Bridge SAS and YBITS Eastbound and Westbound Construction Overview

SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS

Oakland Detour - Westbound Opened to Traffic

Existing San Francisco-Oakland Bay Bridge Cantilever Section to be Dismantled as Part of the YBITS #2 Contract

Completed Antioch Bridge Seismic Retrofit

Existing SFOBB Dismantling

To expedite the opening of a new eastbound on-ramp and the pedestrian/bicycle pathway from Yerba Buena Island, the TBPOC has decided to split the bridge dismantling project into at least two contracts. The dismantling of the superstructure of the main cantilever section of the existing bridge will be incorporated into the YBITS #2 contract, while the remaining portions of the existing bridge will be removed by separate contract(s) still in design.

Antioch Bridge Seismic Retrofit

The major retrofit strategy for the bridge includes installing seismic isolation bearings at each of the 41 piers, strengthening piers 12 through 31 with steel cross-bracing between column bents, and installing steel casings at all columns located at the Sherman Island approach slab bridge. Seismic safety opening was achieved on April 12, 2012 and contract was completed on July 13, 2012. Project progress is described on page 34.

Dumbarton Bridge Seismic Retrofit

The Dumbarton bridge Bridge is a combination of three bridge types; reinforced concrete slab approaches supported on multiple pile extension columns, precast - pre-stressed concrete girders and steel box girders supported on reinforced concrete piers. The retrofit strategy for the bridge includes superstructure and deck modifications and installation of isolation bearings. The Dumbarton Bridge will be closed to traffic for the second time this year during Labor Day Weekend. A full bridge closure is necessary in order for crews to replace the existing expansion joint on the eastern side of the bridge at Pier 31 with a state-of-the-art seismic joint.

The Self-Anchored Suspension Bridge Suspender Tensioning in Progress

Toll Bridge Seismic Retrofit Program Cost Summary (Millions)

	Contract Status	AB 144/SB 66 Budget (August 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (August 2012)	Cost to Date (August 2012)	Current Cost Forecast (August 2012)	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	(47.8)	1,245.2	1,237.2	1,245.2	-	
SAS Marine Foundations	Completed	313.5	(34.9)	278.6	274.8	278.6	-	
SAS Superstructure	Construction	1,753.7	293.1	2,046.8	1,705.4	2,058.0	11.2	
YBI Detour	Completed	131.9	360.9	492.8	466.1	482.8	(10.0)	
YBI Transition Structures (YBITS)		299.3	(37.3)	262.0	151.4	324.2	62.2	
YBITS 1	Construction			199.7	151.4	240.4	40.7	
YBITS 2 Cantilever and Demo	Advertised			59.0	-	80.5	21.5	
YBITS Landscaping	Design			3.3	-	3.3	-	
Oakland Touchdown (OTD)		283.8	50.8	334.6	213.7	325.4	(9.2)	
OTD 1	Completed			212.0	203.0	203.3	(8.7)	
OTD 2	Construction			62.0	5.0	56.3	(5.7)	
Detour	Completed			51.0	-	51.8	0.8	
OTD Electrical Systems	Design			-	-	4.4	4.4	
Submerged Electric Cable	Completed			9.6	5.7	9.6	-	
Existing Bridge Demolition	Design	239.2	(0.1)	239.1	-	237.4	(1.7)	
*Cantilever Section	Advertised			-	-	60.5		
*504/288 Sections	Design			-	-	70.2		
*Marine Foundations	Design			-	-	106.7		
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.8	18.3	-	
Other Completed Contracts	Completed	90.4	-	90.4	90.0	90.4	-	
Capital Outlay Support		959.3	261.5	1,220.8	1,080.5	1,268.9	48.1	
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.7	80.4	8.0	
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	
Total SFOBB East Span Replacement		5,486.6	846.2	6,332.8	5,288.3	6,417.3	84.5	
Antioch Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Completed		51.0	51.0	46.8	50.3	(0.7)	
Capital Outlay Support			31.0	31.0	23.3	25.0	(6.0)	
Total Antioch Bridge Seismic Retrofit		-	82.0	82.0	70.1	75.3	(6.7)	
Dumbarton Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Construction		92.7	92.7	51.0	75.3	(17.4)	
Capital Outlay Support			56.0	56.0	37.7	56.0	-	
Total Dumbarton Bridge Seismic Retrofit		-	148.7	148.7	88.7	131.3	(17.4)	
Other Program Projects		2,268.4	(63.6)	2,204.8	2,163.7	2,192.2	(12.6)	
Miscellaneous Program Costs		30.0	-	30.0	25.5	30.0	-	
Net Programmatic Risks		**-**	**-**	**-**	**-**	**86.7**	**86.7**	
Program Contingency		**900.0**	**(616.3)**	**283.7**	**-**	**149.2**	**(134.5)**	
Total Toll Bridge Seismic Retrofit Program [2]		**8,685.0**	**397.0**	**9,082.0**	**7,636.3**	**9,082.0**	**-**	

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB 144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (August 2012)	Current Completion Forecast (August 2012)	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 24
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 18
SAS Superstructure	Mar 2012	29	Aug 2014	Aug 2014	-	●	See Page 19
YBI Detour	Jul 2007	39	Oct 2010	Oct 2010	-	●	See Page 15
YBI Transition Structures (YBITS)	Nov 2013	27	Feb 2016	Feb 2016	-		See Page 16
YBITS 1			Dec 2013	Dec 2013	-		
YBITS 2			Feb 2016	Feb 2016	-	●	
Oakland Touchdown	Nov 2013	10	Sep 2014	Sep 2014	-	●	See Page 25
OTD 1			Jun 2010	Jun 2010	-	●	
OTD 2			Sep 2014	Sep 2014	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	18	Dec 2015	March 2017	15	●	
Stormwater Treatment Measures	Mar 2008		Mar 2008	Mar 2008	-	●	
SFOBB East Span Bridge Opening and Other Milestones							
Westbound Seismic Safety Open	Sep 2011	27	Dec 2013	Sep 2013	(3)	●	
Eastbound Seismic Safety Open	Sep 2012	15	Dec 2013	Sep 2013	(3)	●	
Bike/Ped Pathway Open to YBI			Sep 2015	Sep 2015	-	●	
Permanent Eastbound On Ramp Open			Sep 2015	Sep 2015	-	●	
Oakland Detour Eastbound Open			May 2011	May 2011	-	●	
Oakland Detour Westbound Open			Feb 2012	Feb 2012	-	●	
OTD Westbound Access			Aug 2009	Aug 2009	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 15
Antioch Bridge Seismic Retrofit							
Contract Completion			Jul 2012	Jul 2012	-	●	See Page 34
Seismic Safety Completion			Apr 2012	Apr 2012	-	●	
Dumbarton Bridge Seismic Retrofit							
Contract Completion			Sep 2013	Mar 2013	(6)	●	See Page 30
Seismic Safety Completion			Sep 2013	Mar 2013	(6)	●	

● 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

(1) Figures may not sum up to totals due to rounding effects.
(2) Construction administration of the OTD Detour is under the YBITS#1 contract.
(3) Construction administration of the Cantilever segment will be under the YBITS#2 contract.

Regional Measure 1 Program Cost Summary (Millions)

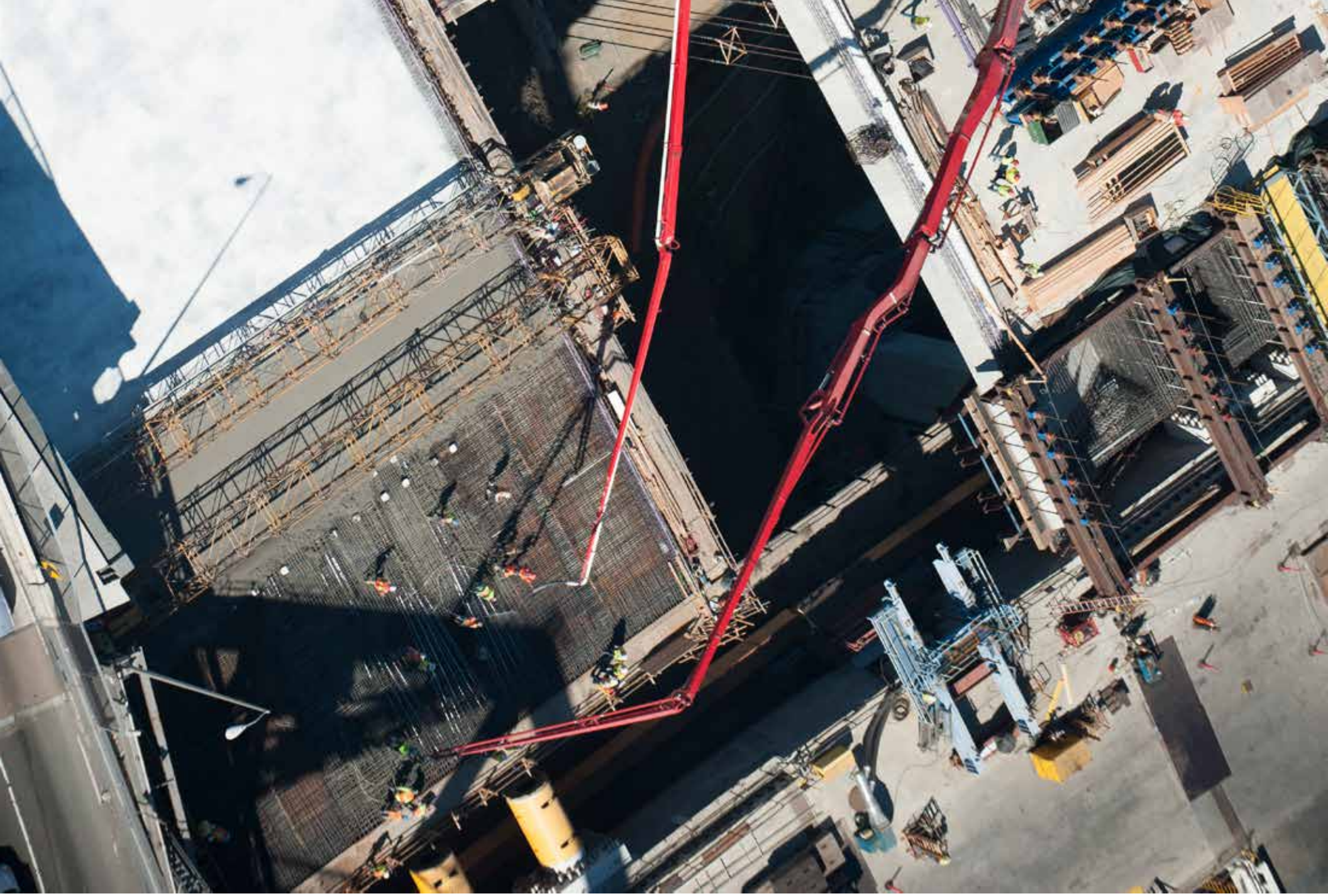
	Contract Status	BATA Baseline Budget (July 2005)	BATA Approved Changes	Current BATA Approved Budget (August 2012)	Cost to Date (August 2012)	Current Cost Forecast (August 2012)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
Interstate 880/Route 92 Interchange Reconstruction								
Capital Outlay Construction	Complete	94.8	68.4	163.2	150.2	163.2	-	●
Capital Outlay Support		28.8	35.8	64.6	62.1	64.6	-	●
Capital Outlay Right-of-Way		9.9	7.3	17.2	14.7	17.2	-	●
Project Reserve		0.3	(0.3)	-	-	-	-	
Total I-880/SR-92 Interchange Reconstruction		133.8	111.2	245.0	227.0	245.0	-	
Other Completed Program Projects		1,978.8	182.6	2,161.4	2,089.1	2,161.4	-	
Total Regional Measure 1 Toll Bridge Program [1]		**2,112.6**	**293.8**	**2,406.4**	**2,316.1**	**2,406.4**	-	

● 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
[1] Figures may not sum up to totals due to rounding effects.

Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (September 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (August 2012)	Current Completion Forecast (August 2012)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i=g+h	j	k=j-i	l	
Interstate 880/Route 92 Interchange Reconstruction							
Contract Completion							
Interchange Reconstruction	Dec 2010	9	Sep 2011	Sep 2011	-	●	See Page 39

YBITS #1 Eastbound Concrete Pour in Progress



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, a critical question 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 separate element 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.

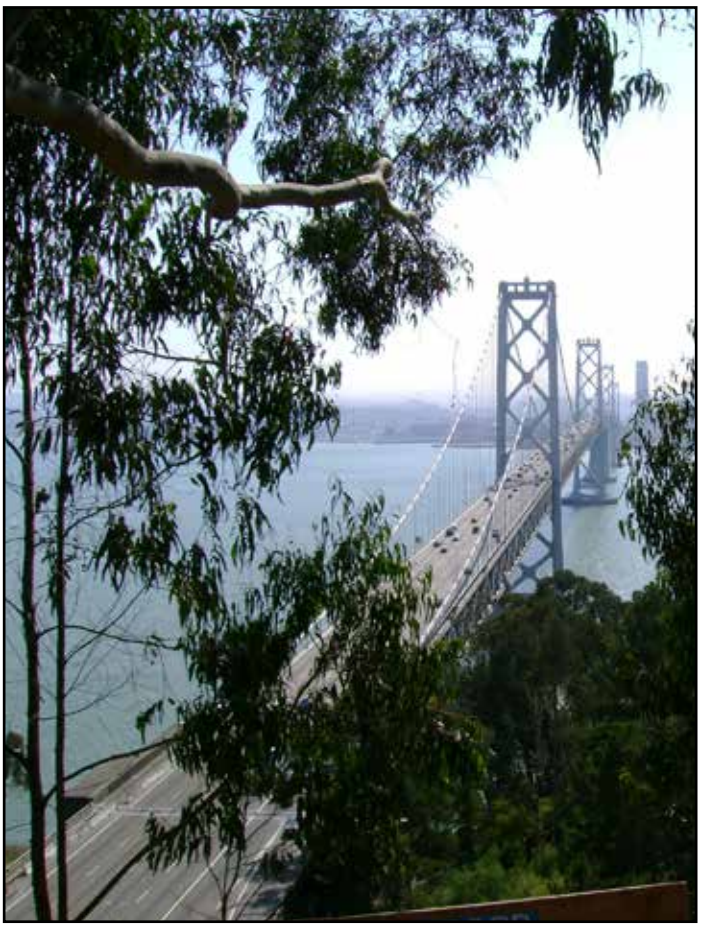
West Approach Overview

West Approach Seismic Replacement Project
Project Status: Completed 2009

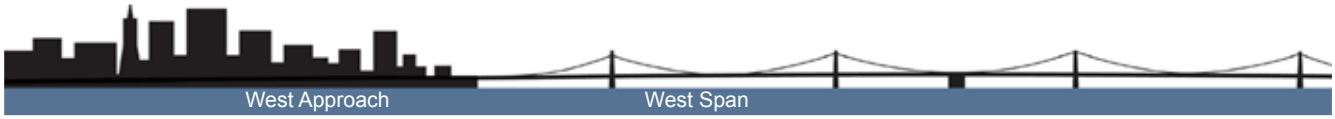
Seismic safety retrofit work on the West Approach in San Francisco, bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street, involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

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.



San Francisco-Oakland Bay Bridge West Span



East Span Seismic Replacement Project
Project Status: In Construction

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 side-by-side, providing motorists with expansive views of the bay. These views will also be enjoyed by bicyclists and pedestrians, thanks to a new bike/pedestrian path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span is aligned north of the existing bridge to allow traffic to continue to flow 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 toward 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 has been completed and vehicles have been safely rerouted to it, the original East Span will be demolished.

The Self-Anchored Suspension Bridge Tower and Roadway Deck Showing Suspender Cable Installation in Progress

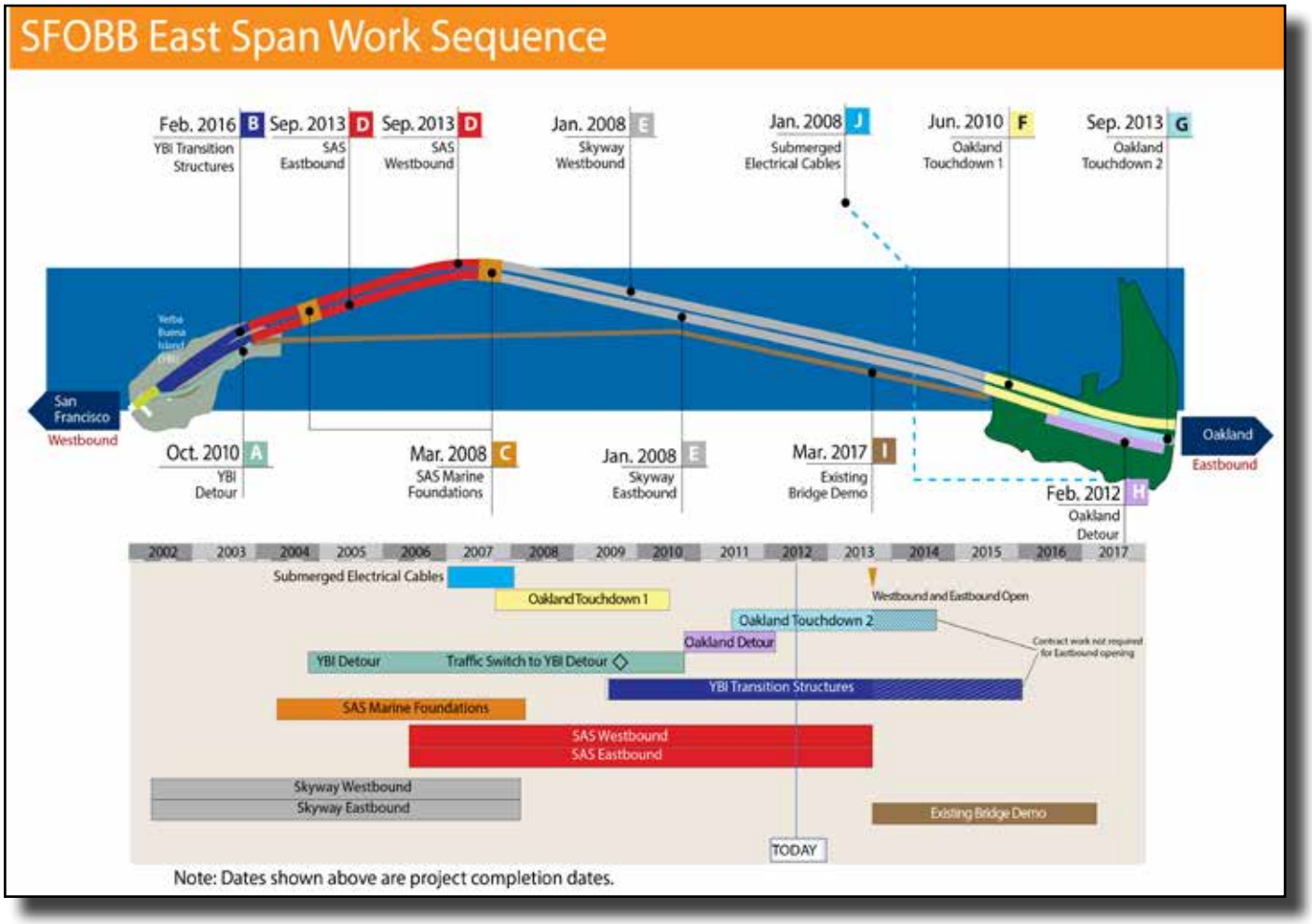
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

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

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

Overview of the San Francisco-Oakland Bay Bridge East Span Construction Progress



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

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

As with all of the Toll Bridge Seismic Retrofit Program's projects, crews built the Yerba Buena Island Detour structure (YBID) without disrupting traffic. To accomplish this task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour over Labor Day weekend 2009. 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: $492.8 M

Status: Completed October 2010

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Because of a lack of funding, the SAS Superstructure contract was re-advertised in 2005 and the 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 approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over the Labor Day 2007 weekend advancing future transition structure foundation work and making design enhancements to the temporary detour structure. These changes increased the budget and forecast for the contract to cover the revised project scope and reduce project risks.

YBID East Tie-In Rolled in on Labor Day 2009 Weekend

West Tie-In Phase # 1 Rolled in on Labor Day Weekend 2007

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 contract (YBITS) will connect the new SAS bridge span 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 were advanced by the YBID contract, the remaining work is being completed under three separate YBITS contracts.

B YBITS #1 Contract

Contractor: MCM Construction, Inc.
Approved Capital Outlay Budget: $199.7 M
Status: 61% Complete as of August 2012

The YBITS #1 contract will construct the mainline roadway structure from the SAS bridge to the YBI tunnel. On February 4, 2010, Caltrans awarded the YBITS #1 contract to MCM Construction, Inc.

Status: The construction of the westbound roadway deck was completed in February 2012. Westbound falsework was removed and modified for use for the eastbound roadway deck in April 2012. The eastbound roadway construction was completed to Hinge K in August 2012 and was partially turned over to American Bridge Fluor (ABF) for Hinge K work.

MCM is currently concentrating on the eastbound post-tensioning and is anticipating completion of this operation in October 2012.

YBITS #2 Contract

Approved Capital Outlay Budget: $59.0 M
Contractor: TBD
Approved Capital Outlay Budget $3.3 M
Status: Advertised

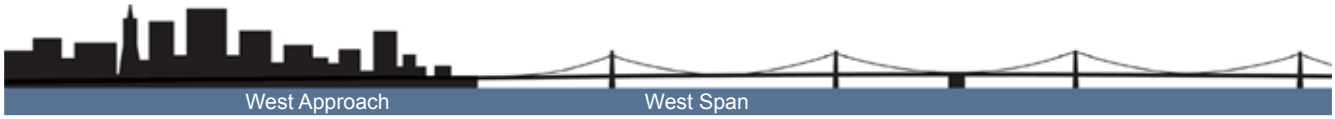
The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island. To expedite opening of a new eastbound on-ramp and the pedestrian/bicycle pathway from Yerba Buena Island, the TBPOC has decided to split the bridge dismantling project into at least two contracts. The dismantling of the superstructure of the main cantilever section of the existing bridge will be incorporated into the YBITS #2 contract, while the remaining portions of the existing bridge will be removed by separate contract or contracts yet to be determined.

Status: The YBITS #2 contract, which includes the cantilever truss demolition, was advertised on April 9, 2012. The bid opening is forecast for October 23, 2012, with award of the contract scheduled for December 22, 2012. Initial startup activities are planned to begin in March 2013 with actual dismantling to begin in September 2013.

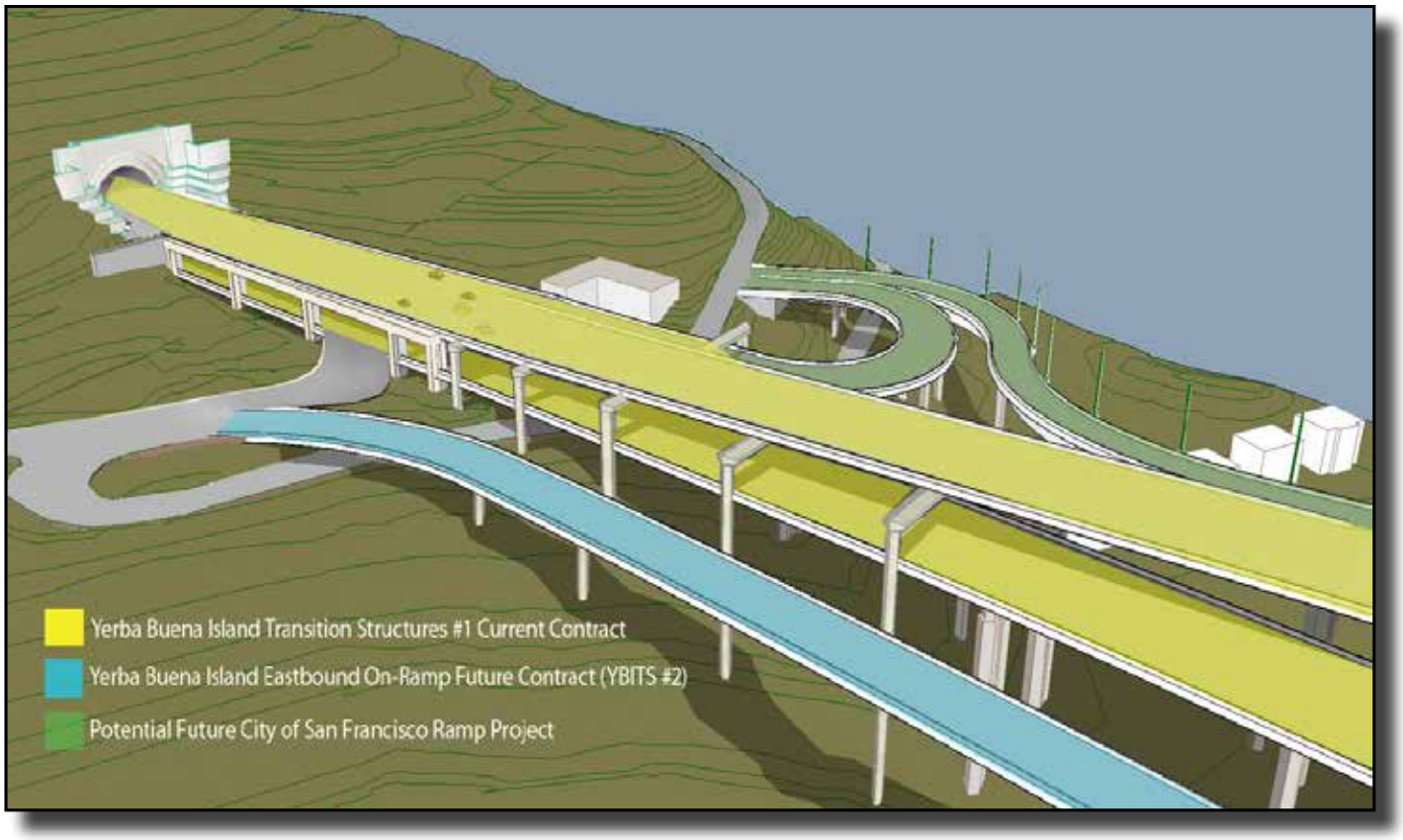
YBITS Landscaping Contract

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 replant and landscape the area.



YBITS #1 Roadway Deck and SAS Construction in Progress next to Existing Cantilever Bridge



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

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

If one single element bestows world class status 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 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: $26.5 M
Status: Completed October 2004

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 Marine Foundation - E2 Foundation with Completed Westbound Column

C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture
Approved Capital Outlay Budget: $278.6 M
Status: Completed January 2008

Construction of the piers at E2 and T1 (see rendering on facing page) 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: $2.05 B
Status: 86.5% Complete as of August 2012

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

The single-steel tower is made up of four separate legs connected by shear link beams which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

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 and Skyway

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Construction Sequence

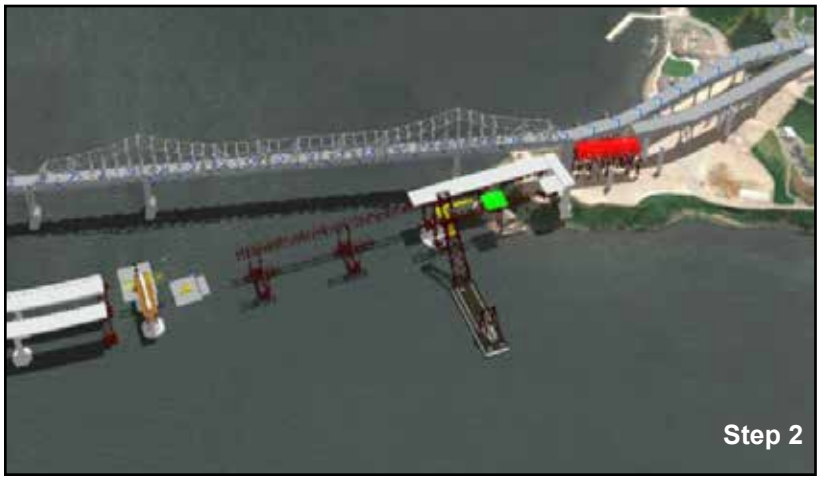
STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

All temporary support foundations and structures were completed between the Skyway and Yerba Buena Island by September 2010 to support the westbound and eastbound roadway box erections.

STEP 2 - INSTALL ROADWAYS

All of the 28 steel roadway boxes and 17 crossbeams have been erected as of the end of October 2011.

Status: Roadway deck interior field painting and weld repair work for lifts 13 east and west and drop-in pieces lifts 12 east and west corner assemblies are ongoing in addition to mechanical, electrical and piping installation.



STEP 3 - INSTALL TOWER

All tower legs, tower grillage, tower saddle and tower head were erected using the self-rising crane as of mid-August 2012.

Status: Final tower base shear plate welding is ongoing.

STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable haul started in late December 2011 from the east end of the westbound roadway deck moving over the tower saddle, wrapping around pier W2 west deviation saddles and returning to the tower saddle to the east end of eastbound roadway deck where it was anchored. The cable band and suspender cables will then be installed to lift the roadway deck off the temporary support structure.

Status: The parallel wire strand (PWS) cable installation was completed in early April 2012 followed by cable compaction completion in late June 2012. The suspender installation started in late May 2012 and was completed in August 2012 in preparation for phase one load transfer scheduled to start on September 4, 2012.

STEP 5 - WESTBOUND AND EASTBOUND SEISMIC SAFETY OPENING

The new bridge will now open simultaneously in both the westbound and eastbound directions on Labor Day, September 2, 2013.

Status: The Self-Anchored Suspension (SAS) construction is scheduled to be complete and ready for seismic safety opening in both eastbound and westbound directions by September 2013.

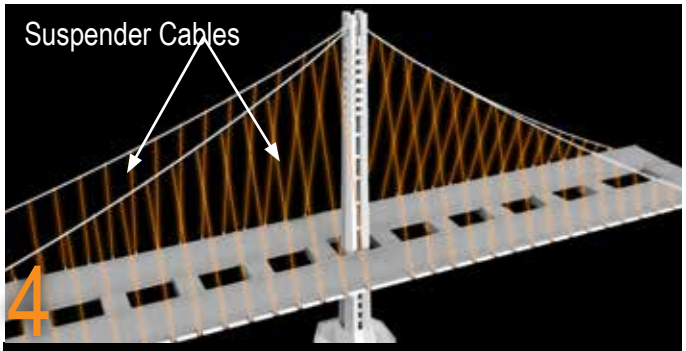
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Main Cable Completion Activities

CABLE STRAND HAULING

Crews haul the 137 individual steel wire strands that comprise the nearly 1-mile long single main cable. The strands are adjusted and then anchored into the east end of the SAS.

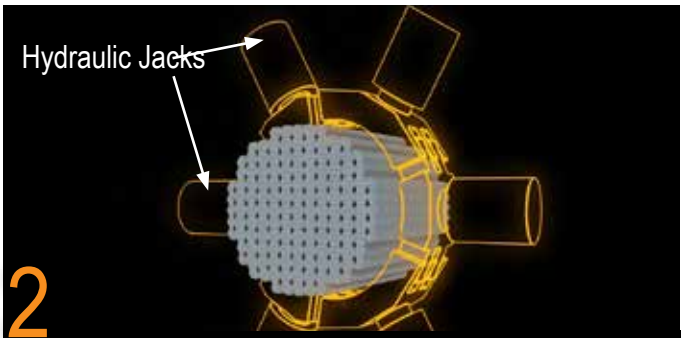
Status: Complete



SUSPENDER CABLES INSTALLATION

Workers begin placing the suspender cables that connect the main cable to the road-decks. Not all of the suspender cables need to be attached before load transfer begins.

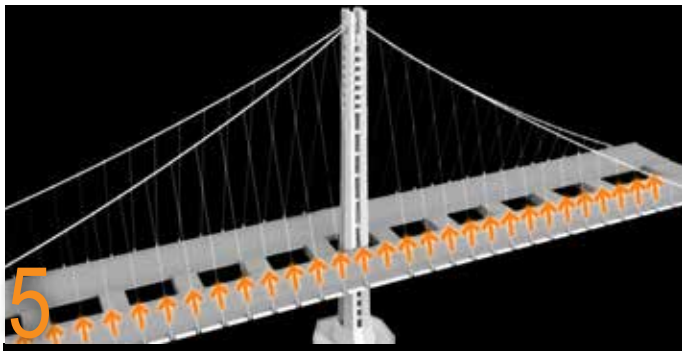
Status: Completed



CABLE STRAND COMPACTING

Four compacting machines containing hydraulic jacks are used to compress the 137 steel wire strands into the shape of the main cable. Temporary bands are placed to maintain the shape.

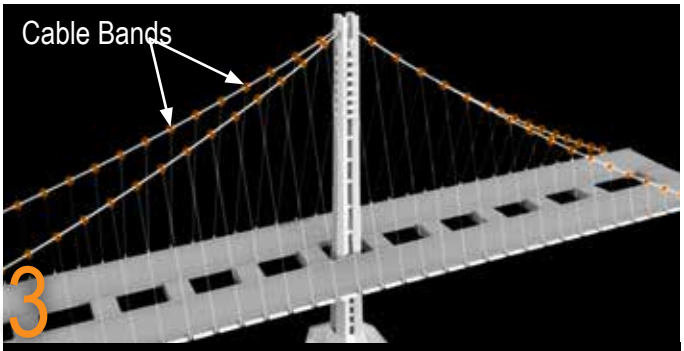
Status: Complete.



LOAD TRANSFER (see facing page)

Using the attached suspender cables, crews begin the process of transferring the weight of the span from the temporary supports under the bridge to the main cable.

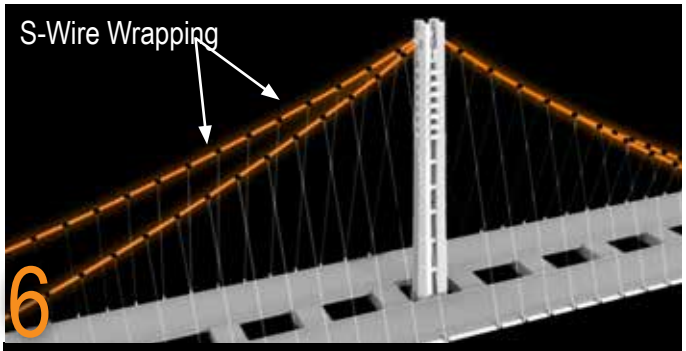
Status: Started September 4, 2012



CABLE BANDS INSTALLATION

Crews installed 114 permanent steel cable bands along the main cable. These bands maintain the shape of the cable, and serve as anchor points for the suspender cables.

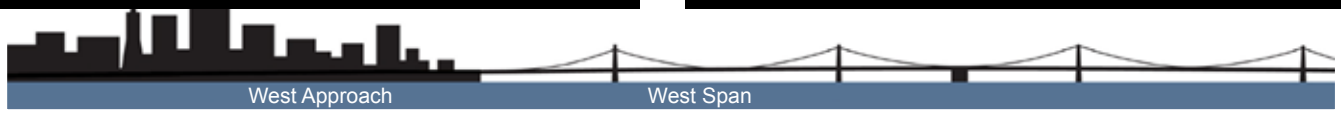
Status: Complete



S-WIRE WRAP

After load transfer, the main cable is wrapped in S-wire to protect the cable against corrosion. After the cable is wrapped, it is painted.

Status: Start October 2012



Load Transfer Sequence

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 gray 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: $1.25 B
Status: Completed April 2008

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.

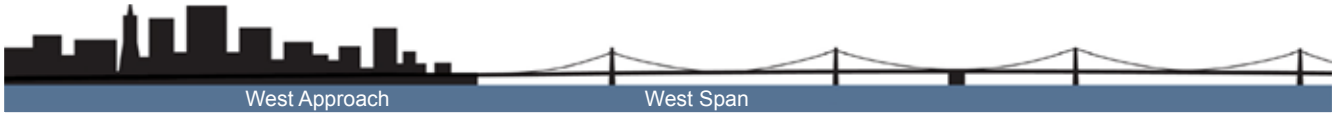
The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), containing approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest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

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.

Status: The Skyway light poles installation continues All light poles will be delivered to the jobsite by September 2012 and installed prior to seismic safety opening in 2013.

Rending of the New San Francisco/Oakland Bridge Eastspan



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 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 approach structures to the Skyway will be constructed in three phases. The first phase, constructed under the OTD #1 contract, built the new westbound approach structure. Due to physical constraints with the existing bridge, the OTD #1 contract was only able to construct a portion of the eastbound approach. To facilitate opening the bridge in both directions at the same time, the second phase of work, performed by the Oakland Detour contractor, included widening the upper deck of the Oakland end of the existing bridge to allow for a traffic shift to the north that removes the physical constraint to completing the eastbound structure. This phase was completed in April 2012. The third phase, to be constructed by a future OTD #2 contract, will complete the eastbound lanes and provide the traffic switch to the new structure in both directions, thus allowing the bridge to open simultaneously in both directions.

F Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.
Approved Capital Outlay Budget: $212.0 M
Status: Completed June 2010

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

Status: MCM Construction, Inc. completed OTD #1 westbound and eastbound phase 1 on June 8, 2010.

G Oakland Touchdown #2 Contract

Contractor: Flatiron West, Inc.
Approved Capital Outlay Budget: $62.0 M
Status: In Construction

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 by September 2013.

Status: The TBPOC approved an acceleration plan to construct a detour at the Oakland end of the bridge to allow for expedited construction of the OTD #2 contract. The OTD #2 construction contract started on June 25, 2012 and the contractor completed the abutment wall in August and is in process of installing falsework for the OTD #2 structure and driving piles for the temporary trestle for access to the self-anchored suspension bridge.

Aerial View of the Eastbound Oakland Touchdown #2 Construction Progress

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project
Existing East Span Bridge Demolition

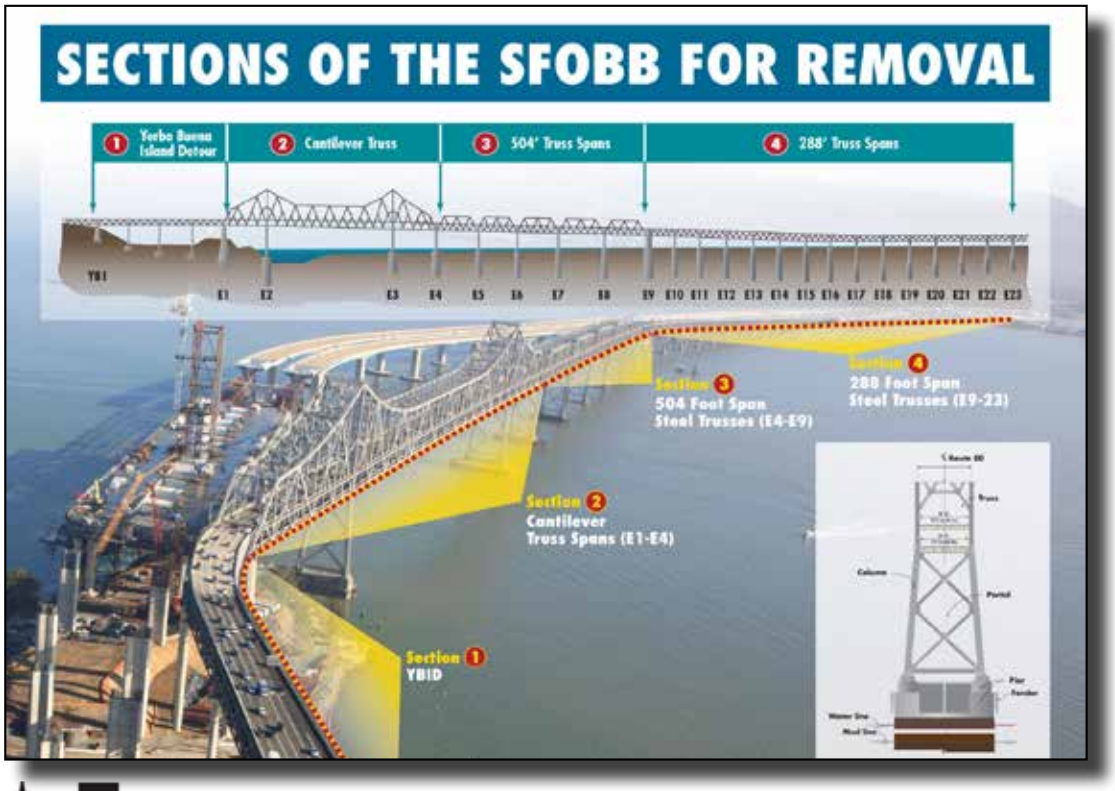
I Existing East Span Demolition

Approved Capital Outlay Budget: $239.1 M

Design work on the demolition of the existing bridge is ongoing. The environmental clearance and all permits were received on February 29, 2012. To expedite the opening of a new eastbound on-ramp and the pedestrian/bicycle pathway from Yerba Buena Island to Oakland, the TBPOC has decided to split the existing bridge dismantling project into at least two contracts. The dismantling of the superstructure of the main cantilever section of the existing east span of the bridge was incorporated into the YBITS #2 contract, while the remaining portions will be removed by separate contract or contracts yet to be determined for the superstructure and marine foundations.

Dismantling Scope Included in the Future YBITS#2 Contract - YBI Detour at left, E-1 column in center, Cantilever Bridge Deck at right

Status: The cantilever portion of the demolition was advertised with the YBITS #2 contract on April 9, 2012. Bid opening is scheduled for October 23, 2012, and the contract award is forecast for December 22, 2012. Initial dismantling activities are planned to begin in March 2013 with actual dismantling to begin in September 2013.



The Existing San Francisco-Oakland Bay Bridge Cantilever Section

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.

Archeological Investigations

J Electrical Cable Relocation

Contractor: Manson Construction
Approved Capital Outlay Budget: $9.6 M
Status: Completed January 2008

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 replacement cables were run from Oakland to Treasure Island. The extra cable was funded by the Treasure Island Development Authority.

New YBI Electrical Substation

Yerba Buena Island Substation

Contractor: West Bay Builders
Approved Capital Outlay Budget: $11.6 M
Status: Completed May 2005

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

Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.
Approved Capital Outlay Budget: $18.3 M
Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater 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.

Stormwater Retention Basin

East Span Interim Seismic Retrofit

Contractors: 1) California Engineering
2) Balfour Beatty
Approved Capital Outlay Budget: $30.8 M
Status: Completed October 2000

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 was 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 they would be more resilient during an earthquake.

Existing East Span of the San Francisco-Oakland Bay Bridge

Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture
Approved Capital Outlay Budget: $9.2 M
Status: Completed December 2000

While large-diameter battered piles are common in offshore drilling, the new East Span is one of the first bridges to use them 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.

Battered Pile Installation Demonstration

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

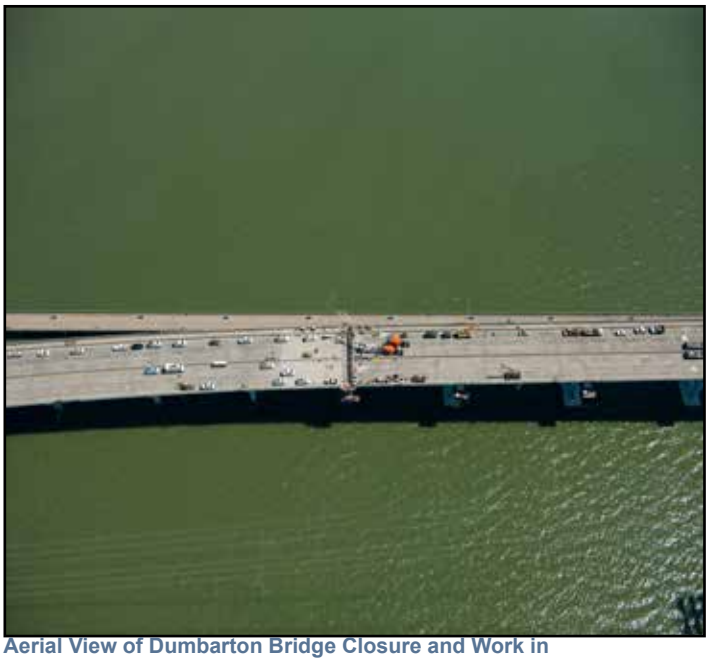
Dumbarton Bridge Seismic Retrofit Project

Contractor: Shimmick Construction Company, Inc.

Approved Capital Outlay Budget: $92.7 M

Status: 81% Complete as of August 2012

The current 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 has six lanes (three in each direction) and an eight-foot-wide bicycle/pedestrian pathway. The bridge is a combination of three bridge types; reinforced concrete slab approaches supported on multiple pile extension columns, precast-prestressed concrete delta girders and steel box girders supported on reinforced concrete piers. The current retrofit strategy for the bridge includes superstructure and deck modifications and installation of isolation bearings.



Aerial View of Dumbarton Bridge Closure and Work in Progress

Status: The main bridge structure between piers 16 through 31 will be raised approximately five inches in order for isolation bearings to be installed to separate the superstructure from the substructure during seismic events. In preparation, the bridge piers have been widened with reinforced concrete to accommodate the new bearings.

Along the reinforced concrete slab approaches, the bent caps have been extended and tied to new 48-inch diameter steel piles that have been installed to strengthen the bridge. Bent cap extensions along the east and west trestle approach are now complete.

Concrete has been placed and installation of jacking frames is complete at all of the 16 piers. The isolation bearing installation at piers 16 through 19 is complete, which totals 24 out of 96 bearings installed.

Work at the pumping plant is substantially complete. Fender rehabilitation work is ongoing at piers 23 and 24. Pier footing overlay concrete has been placed at piers through 17 through 30.

Retrofitting of the existing piles at the Ravenswood pier and pier removal operation are ongoing.

The Dumbarton Bridge will be closed to traffic for the second time this year during Labor Day Weekend. A full bridge closure is necessary in order for crews to replace the existing expansion joint on the eastern side of the bridge at Pier 31 with a state-of-the-art seismic joint.

Aerial View of Dumbarton Bridge Closure and Work in Progress

Aerial View of Dumbarton Bridge Closure and Work in Progress

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Other Completed Projects

In the 1990s, the State Legislature 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 of the bridges have been completed as planned.

High-Rise Section of San Mateo-Hayward Bridge

San Mateo-Hayward Bridge Seismic Retrofit Project
Project Status: Completed 2000

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

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

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.

1962 Benicia-Martinez Bridge (right)

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 a seismic event and to reopen quickly to emergency response traffic.

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

The Vincent Thomas Bridge is a 1,500-foot long suspension bridge crossing the Los Angeles Harbor in Los Angeles that links San Pedro with Terminal Island. The bridge was one of two state-owned toll bridges in Southern California (the other being the San Diego-Coronado Bridge). Opened in 1963, the bridge was seismically retrofitted as part of the TBSRP in 2000.

Los Angeles-Vincent Thomas Bridge

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

The San Diego-Coronado Bridge crosses over San Diego Bay and links the cities of San Diego and Coronado. Opened in 1969, the 2.1-mile long bridge was seismically retrofitted as part of the TBSRP in 2002.

San Diego-Coronado Bridge

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Other Completed Projects

Antioch Bridge Seismic Retrofit Project

Project Status: Completed 2012

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 1.8-mile-long steel plate girder bridge was opened in 1978 with one lane in each direction. The major retrofit measure for the bridge includes installing seismic isolation bearings at each of the 41 piers, strengthening piers 12 through 31 with steel cross-bracing between column bents, and installing steel casings at all columns located at the Sherman Island approach slab bridge.

Antioch Bridge

Aerial View of Antioch Bridge

N

REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

REGIONAL MEASURE 1 PROGRAM

Completed Projects

In November 1988, Bay Area voters approved Regional Measure 1 (RM 1), which authorized a standard auto toll of $1 for all seven state-owned Bay Area toll bridges. The additional revenues generated by the toll increase were identified for use for certain highway and bridge improvements, public transit rail extensions, and other projects that reduce congestion in the bridge corridors.

The toll bridge projects identified by RM 1 are complete and are as follows:

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.

Widening of the San Mateo-Hayward Bridge Trestle on Left

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 the bridge.

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/pedestrian pathway.

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

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 US 101/ Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle/pedestrian access in the area.

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

Benicia-Martinez Bridge Project Project Status: Completed 2009

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 was 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 connects to Park Road in Benicia and to Marina Vista Boulevard in Martinez. Reconstruction of the east side of the bridge and approaches was completed in August 2008. Reconstruction of the west side of the bridge and its approaches and construction of the bicycle/pedestrian pathway were completed in August 2009.

Benicia-Martinez Bridge

Interstate 880/State Route 92 Project Status: Completed 2011

This corridor was consistently one of the Bay Area's most congested during the evening commute. This was due in part to the lane merging and weaving that was required by the then-existing cloverleaf interchange. The new interchange features direct freeway-to-freeway connector ramps that now increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off of the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880. A Caltrans landscaping project will be undertaken in 2012.

Aerial View of Completed 880/92 Interchange Project

San Francisco-Oakland Bay Bridge
SAS and YBITS Eastbound and
Westbound Construction Overview

APPENDICES

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B. TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012.....46

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Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.3	261.5	1,220.8	1,080.5	1,268.9	48.1
Capital Outlay Construction	4,492.2	588.0	5,080.2	4,207.1	5,140.7	60.5
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Total	5,486.6	846.2	6,332.8	5,288.3	6,417.3	84.5
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	(1.0)	119.0	119.0	119.0	-
Capital Outlay Construction	309.0	41.7	350.7	331.7	338.1	(12.6)
Total	429.0	40.7	469.7	450.7	457.1	(12.6)
SFOBB West Span Retrofit						-
Capital Outlay Support	75.0	(0.2)	74.8	74.9	74.8	-
Capital Outlay Construction	232.9	(5.5)	227.4	227.4	227.4	-
Total	307.9	(5.7)	302.2	302.3	302.2	-
Richmond-San Rafael Bridge Retrofit						
Capital Outlay Support	134.0	(7.0)	127.0	126.8	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
Total	914.0	(97.5)	816.5	794.3	816.5	-
Benicia-Martinez Bridge Retrofit						-
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
Total	177.8	-	177.8	177.8	177.8	-
Carquinez Bridge Retrofit						
Capital Outlay Support	28.7	0.1	28.8	28.8	28.8	-
Capital Outlay Construction	85.5	(0.1)	85.4	85.4	85.4	-
Total	114.2	-	114.2	114.2	114.2	-
San Mateo-Hayward Retrofit						-
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	(0.1)	135.3	135.3	135.3	-
Total	163.5	(0.1)	163.4	163.4	163.4	-
Vincent Thomas Bridge Retrofit (Los Angeles)						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	(0.1)	42.0	42.0	42.0	-
Total	58.5	(0.1)	58.4	58.4	58.4	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	(0.6)	69.4	69.4	69.4	-
Total	103.5	(0.9)	102.6	102.6	102.6	-

Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	31.0	31.0	17.1	25.0	(6.0)
Capital Outlay Support by BATA				6.2		
Capital Outlay Construction	-	51.0	51.0	46.8	50.3	(0.7)
Total	-	82.0	82.0	70.1	75.3	(6.7)
Dumbarton Bridge						
Capital Outlay Support	-	56.0	56.0	31.7	56.0	-
Capital Outlay Support by BATA				6.0		
Capital Outlay Construction	-	92.7	92.7	51.0	75.3	(17.4)
Total	-	148.7	148.7	88.7	131.3	(17.4)
Subtotal Capital Outlay Support	1,433.1	340.1	1,773.2	1,606.8	1,815.3	42.1
Subtotal Capital Outlay	6,286.8	676.5	6,963.3	6,003.3	6,993.1	29.8
Subtotal Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Miscellaneous Program Costs	30.0	-	30.0	25.5	30.0	-
Subtotal Toll Bridge Seismic Retrofit Program	7,785.0	1,013.3	8,798.3	7,636.3	8,846.1	47.8
Net Programmatic Risks*	-	-	-	-	86.7	86.7
Program Contingency	900.0	(616.3)	283.7	-	149.2	(134.5)
Total Toll Bridge Seismic Retrofit Program [1]	8,685.0	397.0	9,082.0	7,636.3	9,082.0	-

[1] Figures may not sum up to totals due to rounding effects.

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of 08/2012 see Note (1)	Estimated costs not yet spent or encumbered as of 08/2012	Total Forecast as of 08/2012
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.6	144.6	-	144.6
Capital Outlay	472.6	471.9	472.8	(1.1)	471.7
Total	617.5	616.5	617.4	(1.1)	616.3
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.8	0.2	127.0
Capital Outlay	698.0	689.5	667.5	22.0	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	794.3	22.2	816.5
West Span Retrofit					
Capital Outlay Support	75.0	74.8	74.9	(0.1)	74.8
Capital Outlay	232.9	227.4	232.9	(5.5)	227.4
Total	307.9	302.2	307.8	(5.6)	302.2
West Approach					
Capital Outlay Support	120.0	119.0	119.0	-	119.0
Capital Outlay	309.0	350.7	346.3	(8.2)	338.1
Total	429.0	469.7	465.3	(8.2)	457.1
SFOBB East Span - Skyway					
Capital Outlay Support	197.0	181.2	181.2	-	181.2
Capital Outlay	1,293.0	1,245.2	1,237.2	8.0	1,245.2
Total	1,490.0	1,426.4	1,418.4	8.0	1,426.4
SFOBB East Span - SAS - Superstructure					
Capital Outlay Support	214.6	419.0	400.2	66.0	466.2
Capital Outlay	1,753.7	2,046.8	1,707.4	350.6	2,058.0
Total	1,968.3	2,465.8	2,107.6	416.6	2,524.2
SFOBB East Span - SAS - Foundations					
Capital Outlay Support	62.5	37.6	37.6	-	37.6
Capital Outlay	339.9	305.1	309.3	(4.3)	305.0
Total	402.4	342.7	346.9	(4.3)	342.6
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.2	0.4	10.6
Capital Outlay	15.6	15.6	15.5	0.2	15.7
Total	26.2	26.2	25.7	0.6	26.3
YBI Detour					
Capital Outlay Support	29.5	90.7	87.8	(0.1)	87.7
Capital Outlay	131.9	492.8	492.9	(10.1)	482.8
Total	161.4	583.5	580.7	(10.2)	570.5
YBI- Transition Structures					
Capital Outlay Support	78.7	106.4	83.2	29.4	112.6
Capital Outlay	299.4	262.0	152.4	171.8	324.2
Total	378.1	368.4	235.6	201.2	436.8

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions) Cont.

Contract	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of 08/2012 see Note (1)	Estimated costs not yet spent or encumbered as of 08/2012	Total Forecast as of 08/2012
a	b	c	d	e	f = d + e
Oakland Touchdown					
Capital Outlay Support	74.4	108.9	97.1	26.6	123.7
Capital Outlay	283.8	334.6	250.7	74.7	325.4
Total	358.2	443.5	347.8	101.3	449.1
East Span Other Small Projects					
Capital Outlay Support	212.3	206.5	197.9	8.7	206.6
Capital Outlay	170.8	170.7	118.4	36.2	154.6
Total	383.1	377.2	316.3	44.9	361.2
Existing Bridge Demolition					
Capital Outlay Support	79.7	59.9	3.0	39.7	42.7
Capital Outlay	239.2	239.1	-	237.4	237.4
Total	318.9	299.0	3.0	277.1	280.1
Antioch Bridge					
Capital Outlay Support	-	31.0	17.2	1.6	18.8
Capital Outlay Support by BATA			6.2	-	6.2
Capital Outlay	-	51.0	47.4	2.9	50.3
Total	-	82.0	70.8	4.5	75.3
Dumbarton Bridge					
Capital Outlay Support	-	56.0	31.9	18.1	50.0
Capital Outlay Support by BATA			6.0	-	6.0
Capital Outlay	-	92.7	55.8	19.5	75.3
Total	-	148.7	93.7	37.6	131.3
Miscellaneous Program Costs	30.0	30.0	25.5	4.5	30.0
Total Capital Outlay Support	1,463.2	1,803.2	1,650.3	195.0	1,845.3
Total Capital Outlay	6,321.8	6,995.1	6,106.5	894.2	7,000.7
Program Total [1]	7,785.0	8,798.3	7,756.8	1,089.2	8,846.0

(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 in 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.

[1] Figures may not sum up to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
San Francisco-Oakland Bay Bridge East Span Replacement Project						
East Span - SAS Superstructure						
Capital Outlay Support	214.6	204.4	419.0	385.8	466.2	47.2
Capital Outlay Construction	1,753.7	293.1	2,046.8	1,696.7	2,058.0	11.2
Total	1,968.3	497.5	2,465.8	2,082.5	2,524.2	58.4
SAS W2 Foundations						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	0.1	26.5	26.5	26.4	(0.1)
Total	36.4	(0.7)	35.7	35.7	35.6	(0.1)
YBI South/South Detour						
Capital Outlay Support	29.4	61.3	90.7	87.8	87.7	(3.0)
Capital Outlay Construction	131.9	360.9	492.8	466.1	482.8	(10.0)
Total	161.3	422.2	583.5	553.9	570.5	(13.0)
East Span - Skyway						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(47.8)	1,245.2	1,237.2	1,245.2	-
Total	1,490.0	(63.6)	1,426.4	1,418.4	1,426.4	-
East Span - SAS E2/T1 Foundations						-
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(34.9)	278.6	274.8	278.6	-
Total	366.0	(59.0)	307.0	303.2	307.0	-
YBI Transition Structures (see notes below)						
Capital Outlay Support	78.7	27.7	106.4	76.3	112.6	6.2
Capital Outlay Construction	299.3	(37.3)	262.0	145.6	324.2	62.2
Total	378.0	(9.6)	368.4	221.9	436.8	68.4
* YBI- Transition Structures						
Capital Outlay Support			16.4	16.4	16.4	-
Capital Outlay Construction			-	-	-	-
Total			16.4	16.4	16.4	-
* YBI- Transition Structures Contract No. 1						
Capital Outlay Support			57.0	46.6	60.1	3.1
Capital Outlay Construction			199.7	145.6	240.4	40.7
Total			256.7	192.2	300.5	43.8
* YBI- Transition Structures Contract No. 2						
Capital Outlay Support			32.0	13.3	35.1	3.1
Capital Outlay Construction			59.0	-	80.5	21.5
Total			91.0	13.3	115.6	24.6
* YBI- Transition Structures Contract No. 3 Landscape						
Capital Outlay Support			1.0	-	1.0	-
Capital Outlay Construction			3.3	-	3.3	-
Total			4.3	-	4.3	-

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Oakland Touchdown (see notes below)						
Capital Outlay Support	74.4	34.5	108.9	93.5	123.7	14.8
Capital Outlay Construction	283.8	50.8	334.6	211.5	325.4	(9.2)
Total	358.2	85.3	443.5	305.0	449.1	5.6
* OTD Prior-to-Split Costs						
Capital Outlay Support			21.7	20.0	21.7	-
Capital Outlay Construction			-	-	-	4.4
Total			21.7	20.0	21.7	4.4
* OTD Submarine Cable(1)						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			9.6	5.7	9.6	-
Total			10.5	6.6	10.5	-
* OTD No. 1 (Westbound)						
Capital Outlay Support			47.3	51.2	51.3	4.0
Capital Outlay Construction			212.0	203.0	203.3	(8.7)
Total			259.3	254.2	254.6	(4.7)
* OTD No. 2 (Eastbound)						
Capital Outlay Support			22.5	14.7	35.2	12.7
Capital Outlay Construction			62.0	2.8	56.3	(5.7)
Total			84.5	17.5	91.5	7.0
* OTD Touchdown 2 Detour(2)						
Capital Outlay Support			15.0	5.9	13.1	(1.9)
Capital Outlay Construction			51.0	-	51.8	0.8
Total			66.0	5.9	64.9	(1.1)
* OTD Electrical Systems						
Capital Outlay Support			1.5	0.8	1.5	-
Capital Outlay Construction			-	-	4.4	4.4
Total			1.5	0.8	5.9	4.4
Existing Bridge Demolition						
Capital Outlay Support	79.7	(19.8)	59.9	2.8	42.7	(17.2)
Capital Outlay Construction	239.2	(0.1)	239.1	-	237.4	(1.7)
Total	318.9	(19.9)	299.0	2.8	280.1	(18.9)
* Cantilever Section						
Capital Outlay Support			-	-	16.8	
Capital Outlay Construction			-	-	60.5	
Total			-	-	77.3	
* 504/288 Sections						
Capital Outlay Support			-	2.8	13.9	
Capital Outlay Construction			-	-	70.2	
Total			-	2.8	84.1	
*Marine foundations						
Capital Outlay Support			-	-	12.0	
Capital Outlay Construction			-	-	106.7	
Total			-	-	118.7	
YBI/SAS Archeology						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
Total	2.2	-	2.2	2.2	2.2	-

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
YBI - USCG Road Relocation						
Capital Outlay Support	3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction	3.0	-	3.0	2.8	3.0	-
Total	6.0	-	6.0	5.5	6.0	-
YBI - Substation and Viaduct						
Capital Outlay Support	6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction	11.6	-	11.6	11.3	11.6	-
Total	18.1	-	18.1	17.7	18.1	-
Oakland Geofill						-
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
Total	10.7	-	10.7	10.7	10.7	-
Pile Installation Demonstration Project						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.3	(0.1)	9.2	9.3	9.3	-
Total	11.1	(0.1)	11.0	11.1	11.1	-
Stormwater Treatment Measures						
Capital Outlay Support	6.0	2.2	8.2	8.2	8.2	-
Capital Outlay Construction	15.0	3.3	18.3	16.8	18.3	-
Total	21.0	5.5	26.5	25.0	26.5	-
Right-of-Way and Environmental Mitigation						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	51.7	80.4	8.0
Total	72.4	-	72.4	51.7	80.4	8.0
Sunk Cost - Existing East Span Retrofit						
Capital Outlay Support	39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction	30.8	-	30.8	30.8	30.8	-
Total	70.3	-	70.3	70.3	70.3	-
Other Capital Outlay Support						
Environmental Phase	97.7	-	97.7	97.8	97.7	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-Project Specific Costs	20.0	(8.0)	12.0	3.2	12.0	-
Total	162.6	(8.0)	154.6	145.9	154.6	-
Subtotal Capital Outlay Support	959.3	261.5	1,220.8	1,080.5	1,268.9	48.1
Subtotal Capital Outlay Construction	4,492.2	588.0	5,080.2	4,207.1	5,140.7	60.5
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
						-
Total SFOBB East Span Replacement Project	5,486.6	846.2	6,332.8	5,288.3	6,417.3	84.5

[1] Figures may not sum up to totals due to rounding effects.

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

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project						
New Bridge						
Capital Outlay Support						
BATA Funding	84.9	7.2	92.1	91.9	92.1	-
Non-BATA Funding	-	0.1	0.1	0.1	0.1	-
Subtotal	84.9	7.3	92.2	92.0	92.2	-
Capital Outlay Construction			-			-
BATA Funding	661.9	94.6	756.5	753.7	756.5	-
Non-BATA Funding	10.1	-	10.1	10.1	10.1	-
Subtotal	672.0	94.6	766.6	763.8	766.6	-
Total	756.9	101.9	858.8	855.8	858.8	-
I-680/I-780 Interchange Reconstruction						
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	21.7	0.1
Subtotal	76.3	26.9	103.2	98.8	103.3	0.1
Total	102.6	37.3	139.9	135.2	140.0	0.1
I-680/Marina Vista Interchange Reconstruction						
Capital Outlay Support	18.3	1.9	20.2	20.2	20.2	-
Capital Outlay Construction	51.5	4.9	56.4	56.1	56.4	-
Total	69.8	6.8	76.6	76.3	76.6	-
New Toll Plaza and Administration Building						
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						
Capital Outlay Support						
BATA Funding	4.3	13.7	18.0	18.0	18.0	-
Non-BATA Funding	-	0.9	0.9	0.8	0.9	-
Subtotal	4.3	14.6	18.9	18.8	18.9	-
Capital Outlay Construction						
BATA Funding	17.2	32.8	50.0	37.2	50.0	-
Non-BATA Funding	-	9.5	9.5	-	9.5	-
Subtotal	17.2	42.3	59.5	37.2	59.5	-
Total	21.5	56.9	78.4	56.0	78.4	-
Other Contracts						
Capital Outlay Support	11.4	(0.9)	10.5	9.7	10.5	-
Capital Outlay Construction	20.3	3.3	23.6	18.6	23.6	-
Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Total	52.1	2.3	54.4	45.3	54.4	-

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

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project continued...						
Subtotal BATA Capital Outlay Support	155.7	30.9	186.6	185.6	186.6	-
Subtotal BATA Capital Outlay Construction	829.9	164.5	994.4	967.8	994.4	-
Subtotal Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support	1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction	31.7	9.5	41.2	31.8	41.3	0.1
Project Reserves	20.8	1.6	22.4	-	22.3	(0.1)
Total New Benicia-Martinez Bridge Project	1,059.9	212.6	1,272.5	1,209.4	1,272.5	-
Notes:	Includes EAs 00601_,00603_,00605_,00606_,00608_,00609_,0060A_,0060C_,0060E_,0060F_,0060G_,0060H_, and all Project Right-of-Way					
Carquinez Bridge Replacement Project						
New Bridge						
Capital Outlay Support	60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction	253.3	2.7	256.0	255.9	256.0	-
Total	313.8	2.4	316.2	316.1	316.2	-
Crockett Interchange Reconstruction						
Capital Outlay Support	32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction	73.9	(1.9)	72.0	71.9	72.0	-
Total	105.9	(2.0)	103.9	103.8	103.9	-
Existing 1927 Bridge Demolition						
Capital Outlay Support	16.1	(0.3)	15.8	15.8	15.8	-
Capital Outlay Construction	35.2	-	35.2	35.1	35.2	-
Total	51.3	(0.3)	51.0	50.9	51.0	-
Other Contracts						
Capital Outlay Support	15.8	0.9	16.7	16.5	16.7	-
Capital Outlay Construction	18.8	(1.2)	17.6	16.4	17.6	-
Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Total	45.1	(0.4)	44.7	42.8	44.7	-
Subtotal BATA Capital Outlay Support	124.4	0.2	124.6	124.4	124.6	-
Subtotal BATA Capital Outlay Construction	381.2	(0.4)	380.8	379.3	380.8	-
Subtotal Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves	12.1	(9.7)	2.4	-	2.4	-
Total Carquinez Bridge Replacement Project [1]	528.2	(10.0)	518.2	513.6	518.2	-
Notes	Other Contracts include EAs 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					

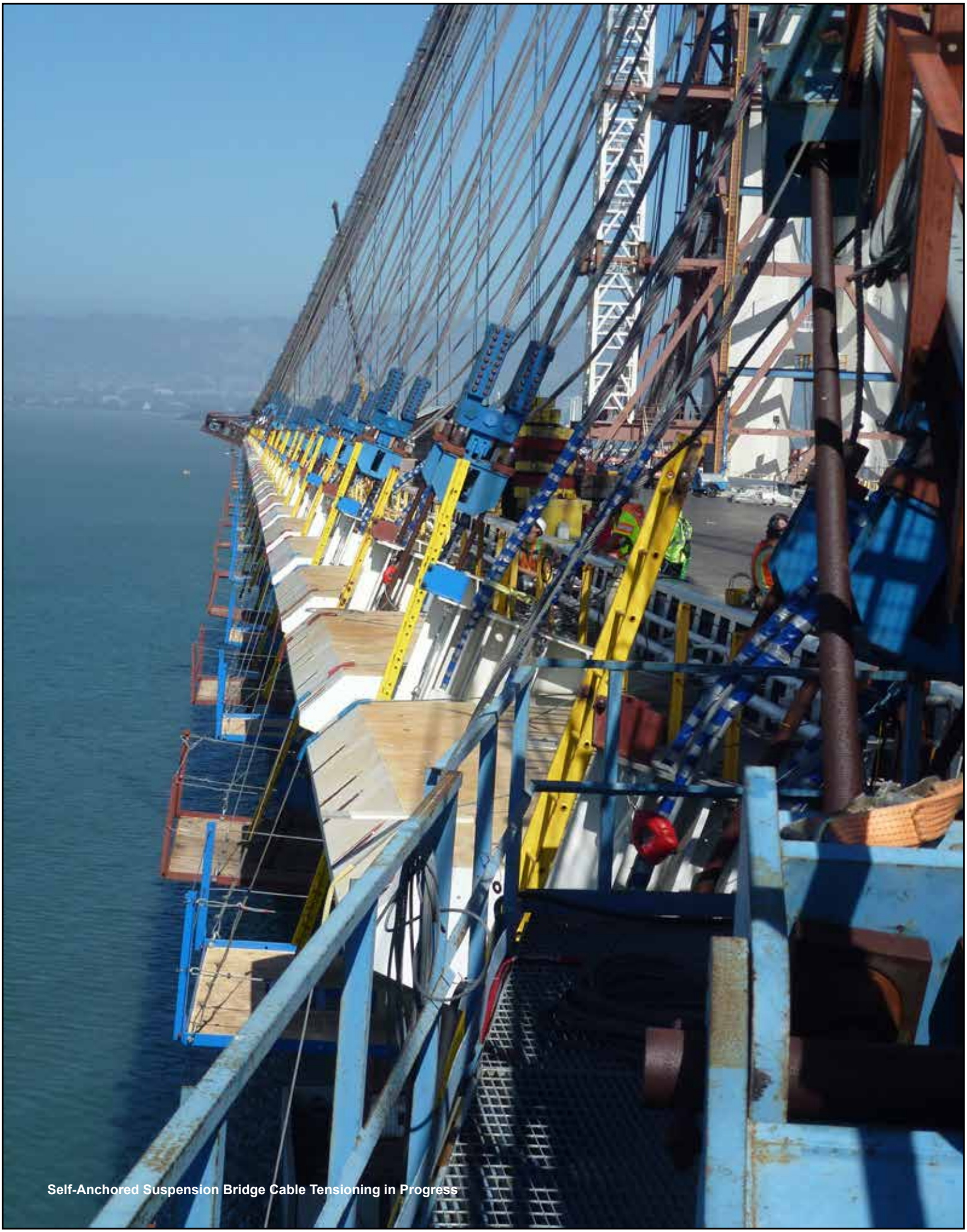
[1] Figures may not sum up to totals due to rounding effects.

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

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Richmond-San Rafael Bridge Trestle. Fender, and Deck Joint Rehabilitation						
Capital Outlay Support						
BATA Funding	2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding	8.6	1.8	10.4	10.4	10.4	-
Subtotal	10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction						
BATA Funding	40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding	51.1	-	51.1	51.1	51.1	-
Subtotal	91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves	-	0.8	0.8	-	0.8	-
Total	102.1	(5.0)	97.1	96.2	97.1	-
Richmond-San Rafael Bridge Deck Overlay Rehabilitation						
Capital Outlay Support						
BATA Funding	4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding	4.0	(4.0)	-	-	-	-
Subtotal	8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction	16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves	0.1	0.3	0.4	-	0.4	-
Total	25.0	(5.0)	20.0	19.6	20.0	-
Richmond Parkway Project (RM 1 Share Only)						
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						
Capital Outlay Support	34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction	180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way	1.5	(0.9)	0.6	0.6	0.6	-
Project Reserves	1.5	(0.5)	1.0	-	1.0	-
Total	217.8	(8.0)	209.8	208.8	209.8	-
I-880/SR-92 Interchange Reconstruction						
Capital Outlay Support	28.8	35.8	64.6	62.1	64.6	-
Capital Outlay Construction						
BATA Funding	85.2	68.4	153.6	150.2	153.6	-
Non-BATA Funding	9.6	-	9.6	-	9.6	-
Subtotal	94.8	68.4	163.2	150.2	163.2	-
Capital Outlay Right-of-Way	9.9	7.3	17.2	14.7	17.2	-
Project Reserves	0.3	(0.3)	-	-	-	-
Total	133.8	111.2	245.0	227.0	245.0	-
Bayfront Expressway Widening						
Capital Outlay Support	8.6	(0.2)	8.4	8.4	8.4	-
Capital Outlay Construction	26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way	0.2	-	0.2	0.2	0.2	-
Project Reserves	0.8	(0.3)	0.5	-	0.5	-
Total	36.1	(2.0)	34.1	33.5	34.1	-

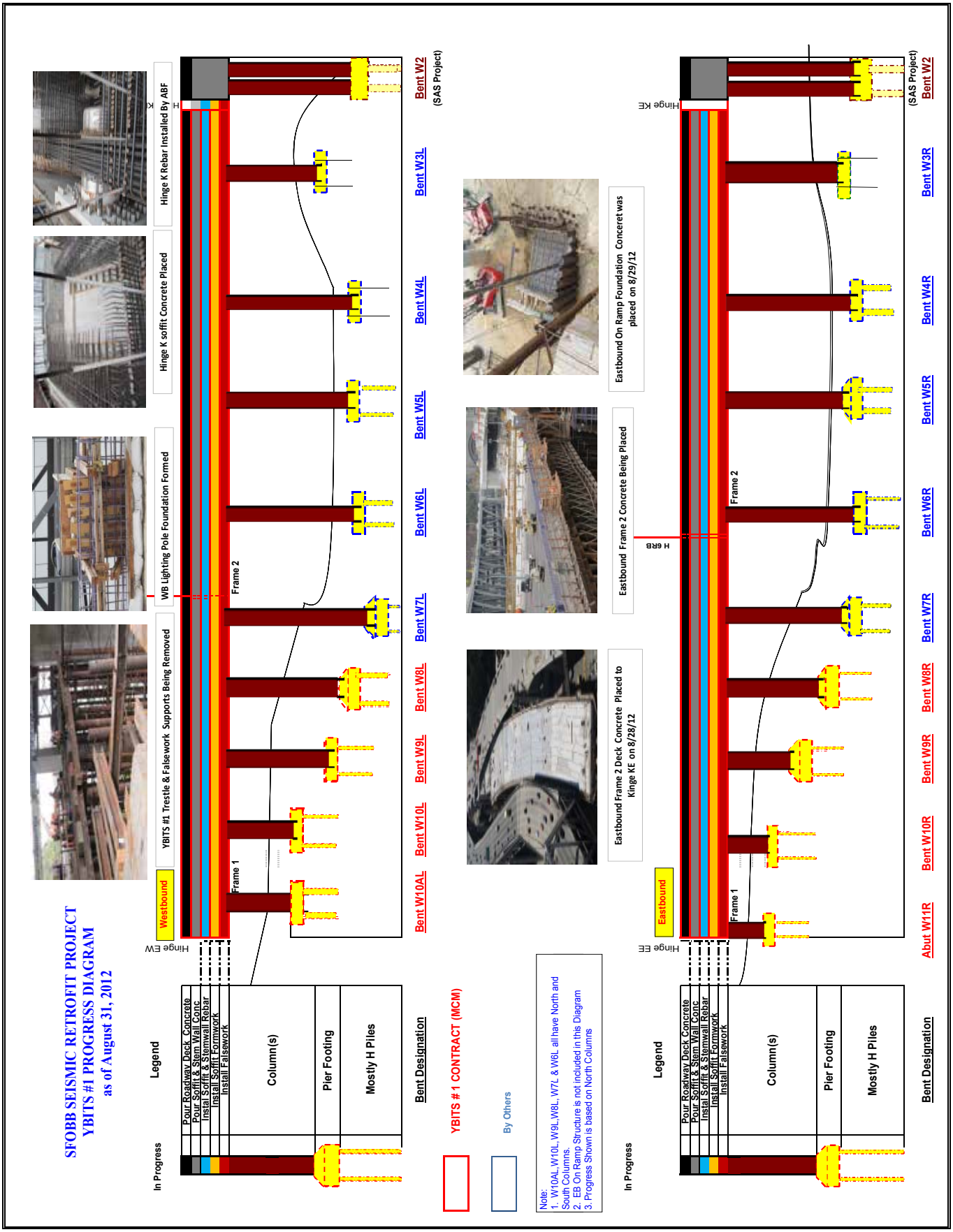
Appendix C: Regional Measure 1 Program Cost Detail ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (08/2005)	Approved Changes	Current Approved Budget (08/2012)	Cost to Date (08/2012)	Cost Forecast (08/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
US 101/University Avenue Interchange Modification						
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	64.7	423.0	419.3	423.0	-
Subtotal BATA Capital Outlay Construction	1,569.8	217.5	1,787.3	1,753.9	1,787.3	-
Subtotal Capital Outlay Right-of-Way	42.5	6.2	48.7	42.4	48.7	-
Subtotal Non-BATA Capital Outlay Support	14.0	4.0	18.0	17.6	18.0	-
Subtotal Non-BATA Capital Outlay Construction	92.4	9.5	101.9	82.9	102.0	0.1
Project Reserves	35.6	(8.1)	27.5	-	27.4	(0.1)
Total RM1 Program	2,112.6	293.8	2,406.4	2,316.1	2,406.4	-
Notes:	1 Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRP Expenses for EA 0438U_ and 04157_					
	2 San Mateo-Hayward Bridge Widening includes EAs 00305_,04501_,04503_,04504_,04504_,04505_,04506_,04507_,04508_,04509_,27740_,27790_,04860_					

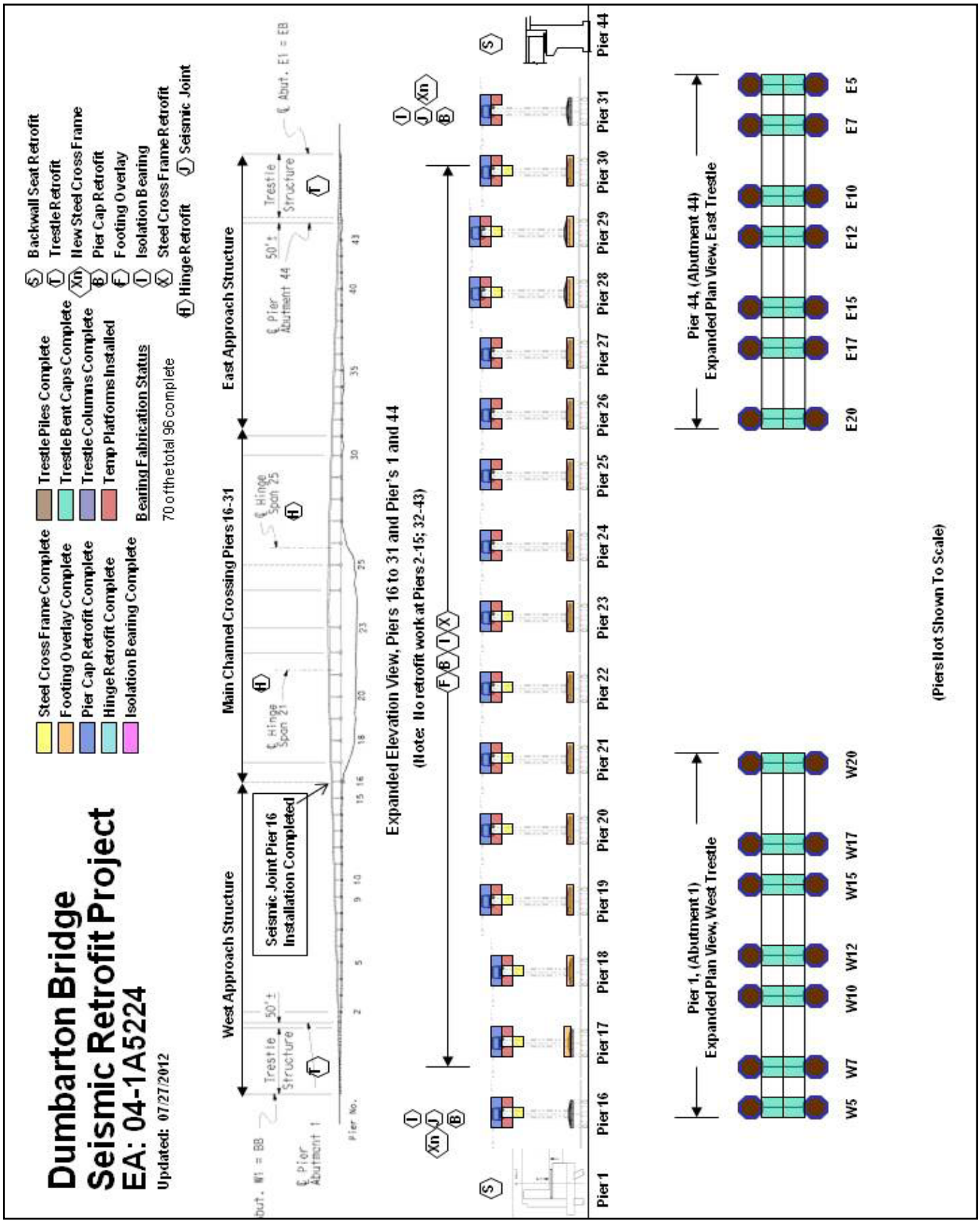


Self-Anchored Suspension Bridge Cable Tensioning in Progress

Appendix D: Progress Diagrams
Yerba Buena Island Transition Structures



Appendix D: Progress Diagrams (cont.)
Dumbarton Bridge



SAS Jacking Saddle Shim Plates Being Installed for Tensioning the Cable

Project Photos

Appendix E: Project Progress Photographs

Self-Anchored Suspension Bridge Field Work

Self-Anchored Suspension Bridge Caltrans Team Checking the Cable Band Bolt Extension Using a Calibrated Extensometer

Hinge K Westbound Construction Progress Overview

Self-Anchored Suspension Bridge Caltrans Team Checking the Cable Band Bolt Extension Using a Calibrated Extensometer

Yerba Buena Island Transition Structure #2 Eastbound Structure Forms Being Removed

Appendix E: Project Progress Photographs

Westbound Oakland Detour

Before Opening to Traffic

After Opening to Traffic

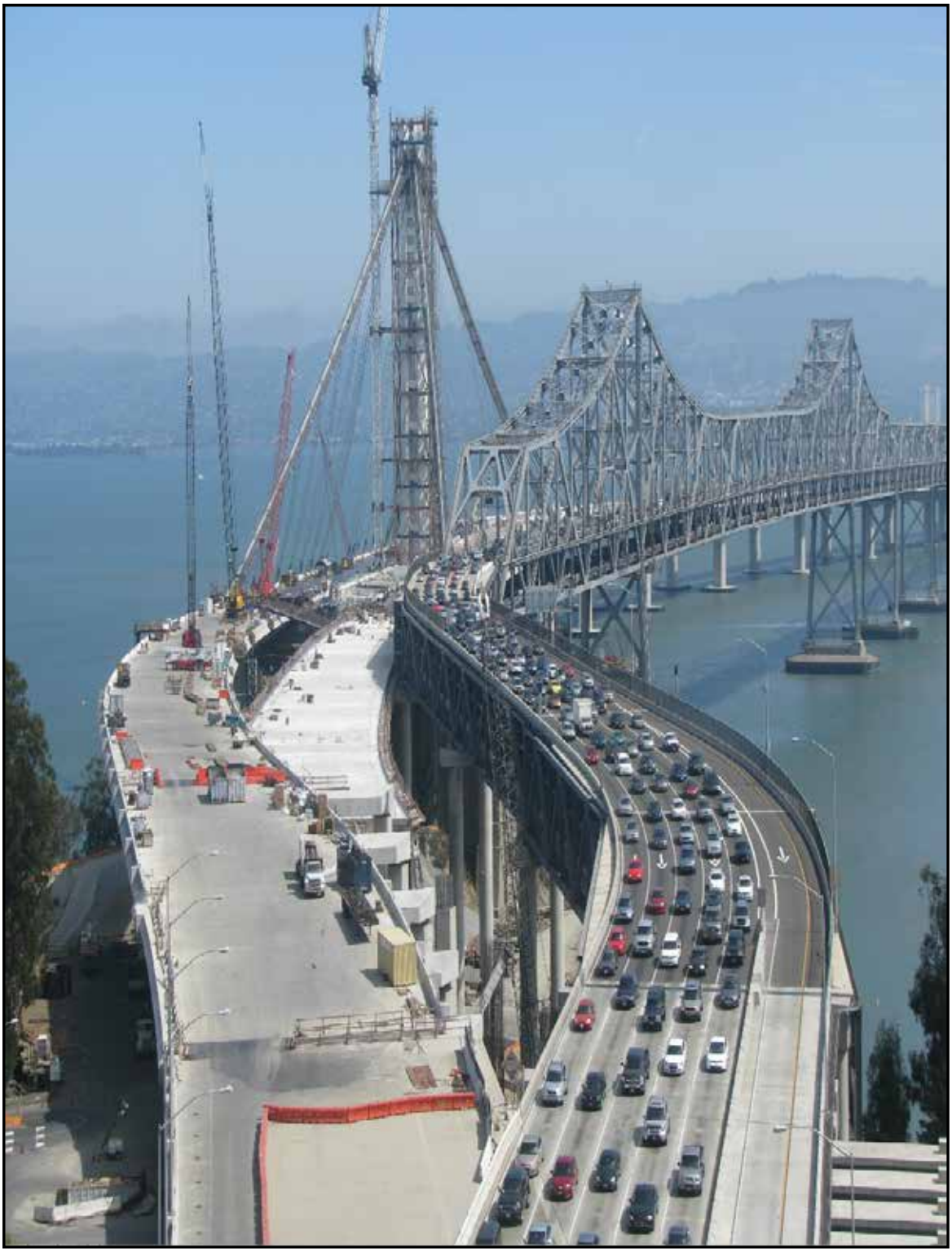
Westbound Oakland Detour Construction Progress

Appendix E: Project Progress Photographs

Yerba Buena Island Transition Structure #1 Westbound

YBITS #1 Eastbound Deck Concrete Placement Completed

YBITS #1 Eastbound and Westbound Construction Progress Looking West



YBITS #1 Eastbound and Completed Westbound Roadway Deck Concrete Placement

Appendix E: Project Progress Photographs

Antioch Bridge

Antioch Bridge - Pier 41 Girders on Temporary Jacks prior to Installation of Isolation Bearings

Antioch Bridge - Welding of Jacking Stiffeners at Existing Girder Web

Appendix E: Project Progress Photographs
Dumbarton Bridge

Dumbarton Bridge - Ravenswood Pier Staging for Footing Overlay Work

Dumbarton Bridge - Pier 26 Footing Overlay - All Footing Overlay Completed Except Piers 23 & 24

Glossary of Terms

AB 144/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.

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

APPROVED CHANGES: For cost, changes to the AB 144/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.

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

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.

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

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.

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

CURRENT APPROVED BUDGET: The sum of the AB 144/SB 66 Budget or BATA Budget and Approved Changes.

HINGE PIPE BEAMS: Pipes between roadway sections designed to move within their sleeves during expansion or contraction of the decks during minor events, such as changes in temperature. The beams are designed to absorb the energy of an earthquake by deforming in their middle or “fuse” section. Hinge pipe beams are also found at the western piers where the SAS connects to the YBITS (Hinge “K” pipe beams).

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB 144/SB 66 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.

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The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is $1,574,873.73.

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The San Francisco-Oakland Bay Bridge Self-Anchored Suspension Bridge
Suspender Cable Tensioning in Progress