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

2012 First Quarter Project Progress and Financial Update

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Released: May 2012

Cable Installation Activities on the Self-Anchored Suspension Bridge

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
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May 4, 2012

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:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2012 First Quarter Project Progress and Financial Update for the San Francisco Bay Area Toll Bridge Seismic Retrofit and Regional Measure 1 Programs, prepared pursuant to California Streets and Highways Code Section 30952.

The TBPOC is tasked to perform project oversight and control over the Toll Bridge Seismic Retrofit Program (TBSRP) and comprises 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). This first quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through March 31, 2012, with more recent accomplishments and actions addressed in this letter.

On the new eastern span of the San Francisco-Oakland Bay Bridge, the last of 137 cable strands for the Self-Anchored Suspension (SAS) span were hauled into place on April 5, 2012, ahead of schedule. The contractor is now moving onto cable compaction operations to minimize any voids in the single main cable. Work is also proceeding on schedule on the Yerba Buena Island and Oakland sides of the new bridge. The project remains on schedule for a Labor Day 2013 Seismic Safety Opening.

In response to media reports calling into question foundation testing results and the safety of the new eastern span, particularly its signature element, the SAS main tower, the TBPOC commissioned the Seismic Safety Peer Review

Panel in November 2011 to review records and answer questions regarding the design, quality assurance and safety of the tower foundation. The evaluation, which covered construction methods, equipment and quality testing related to the foundation of the main tower for the SAS portion of the new east span, concluded that no data falsifications occurred at the tower foundations and that the structure is safe. The Federal Highway Administration came to a similar conclusion after analyzing SAS foundation test data from a previous investigation.

With regard to other seismic retrofit projects, the TBPOC is pleased to report that the Antioch Bridge achieved seismic safety on April 12, 2012. The retrofit work included installation of new seismic isolation bearings and steel cross bracings to strengthen and add flexibility to the bridge during an earthquake. The project was completed on time and under budget.

On the Dumbarton Bridge, structural steel is being added and new seismic isolation bearings are being installed to help it withstand large earthquakes. The bridge will be closed over the 2012 Memorial Day weekend from 10 p.m. Friday May 25, 2012, to 5 a.m. Tuesday May 29, 2012, to install a new expansion joint on the west side of the bridge. Motorists will be directed to detours via the San Mateo-Hayward Bridge to the north and State Route 237 to the south. A similar closure is scheduled for the 2012 Labor Day weekend. This work will be on-going through 2013.

As of the end of the first quarter of 2012, the 50 percent probable draw on program contingency is $154 million. The potential draw ranges from about $ 75 million to $ 225 million. The current $ 284 million program contingency balance can be used to cover the costs of these 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.

The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the TBSRP. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

STEVE HEMINGER
TBPOC Chair
Executive Director
Bay Area Toll Authority

BIMLA G. RHINEHART
TBPOC Vice-Chair
Executive Director
California Transportation Commission

MALCOLM DOUGHERTY
Acting Director
California Department of Transportation

Toll Bridge Program Oversight Committee
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1120 N Street
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May 4, 2012

Mr. Joseph Tavaglione, Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

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

Dear Messrs. Tavaglione and Ghielmetti:

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Sincerely,

STEVE HEMINGER
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MALCOLM DOUGHERTY
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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 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	Construction
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

Foundation for the Self-Anchored Suspension Bridge Tower

Parallel Wire Strands after Compaction

Self-Anchored Suspension Bridge Tower Saddle Housing Placed

Recent Issues

In response to media reports calling into question foundation testing results and the safety of the new East Span, particularly its signature element, the Self-Anchored Suspension (SAS) Bridge main tower, the TBPOC — whose members include Acting Caltrans Director Malcolm Dougherty, Bay Area Toll Authority Executive Director Steve Heminger and California Transportation Commission Executive Director Bimla Rhinehart — commissioned the Seismic Safety Peer Review Panel in November 2011 to review records and answer questions regarding the design, quality assurance and safety of the tower foundation.

The evaluation, which covered construction methods, equipment and quality testing related to the foundation of the main tower for the SAS portion of the new east span, concluded that no data falsifications occurred at the tower foundations and that the structure is safe. The Federal Highway Administration came to a similar conclusion after analyzing SAS foundation test data for a previous investigation.

The four-member Seismic Safety Peer Review Panel is chaired by structural engineer Joseph Nicoletti, who previously served as chair of the Engineering and Design Advisory Panel for the Bay Bridge East Span replacement project. Other panel members include Dr. Frieder Seible, who is dean of the Jacobs School of Engineering at the University of California at San Diego; Dr. I.M. Idriss, an independent consulting geotechnical engineer and emeritus professor of civil engineering at the University of California at Davis; and Dr. John Fisher, professor emeritus of civil engineering at Lehigh University and director emeritus of the ATLSS Engineering Research Center. Three of the four panel members are also members of the prestigious National Academy of Engineering.

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 first quarter of 2012, the 50 percent probable draw on program contingency is $154 million. The potential draw ranges from about $75 million to $225 million.

The $154 million program contingency balance can be used to cover the costs of 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

Yerba Buena Island Transition Structure #1 Westbound Deck Complete and Eastbound in Progress with Existing Bridge on Left

SAS Super Structures 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 and roadway nearing completion, focus is now turning to the placement of the bridge's more than 2.5 - foot in diameter and nearly mile-long main cable. The single cable is made up of 137 separate bundled strands containing 127 individual pencil thin wires (see diagram on page 24). Each of the 137 bundled strands are individually pulled by a tramway system similar to a ski lift, to haul the strands up and around the bridge. Cable strand installation started in December 2011 and will be complete in April 2012. After the cable hauling is complete, the cable will be compacted to minimize voids between the individual wires and strands. Following compaction will be installation of suspender brackets and suspenders. 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).

Work on the westbound structure was substantially completed in February 2012. Work is now focusing on the eastbound structure from the lower tunnel deck to the SAS bridge. Progress is shown in this photo on the left.

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

Antioch Bridge Seismic Retrofit

Oakland Detour

The detour realigns the existing bridge approach to the south to allow for construction of the remaining portion of OTD #2 that was in conflict with the existing bridge. The eastbound detour was completed and opened to traffic on May 30, 2011. The westbound detour lanes were constructed and opened to traffic on February 19, 2012.

Oakland Touchdown #2 Contract

The OTD #2 contract for construction was advertised in November 2011. The bid was protested by several bidders and was not awarded by Caltrans. In early March, the contract was rebid on an expedited procurement schedule. Bid opening was held on March 21, 2012, and the contract will be awarded in April 2012.

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. Staff has reported that work is progressing well and seismic safety opening is forecast for April 2012. Project progress is reported 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 - prestressed 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 is scheduled to be closed for construction over the 2012 Memorial Day weekend to install a seismic joint in the westbound direction. Project progress is reported on page 36.

Compacting Equipment Being Raised to the top of the Tower

Toll Bridge Seismic Retrofit Program Cost Summary (Millions)

	Contract Status	AB 144/SB 66 Budget (August 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (March 2012)	Cost to Date (March 2012)	Current Cost Forecast (March 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	1,237.1	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	1,657.9	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	113.4	326.7	64.7	●
YBITS 1	Construction			199.7	113.4	243.6	43.9	●
YBITS 2	Design			59.0	-	79.8	20.8	●
YBITS Landscaping	Design			3.3	-	3.3	-	●
Oakland Touchdown (OTD)		283.8	50.8	334.6	208.7	327.3	(7.3)	●
OTD 1	Completed			212.0	203.0	203.3	(8.7)	●
OTD 2	Awarded			62.0	-	56.3	(5.7)	●
Detour	Construction			51.0	-	53.7	2.7	●
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	-	237.3	(1.8)	●
*Cantilever Section	Design			-	-	60.4		
*504/288 Sections	Design			-	-	176.9		
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.8	18.3	-	●
Other Completed Contracts	Completed	90.4	-	90.4	89.9	90.4	-	●
Capital Outlay Support		959.3	261.5	1,220.8	1,045.3	1,264.1	43.3	●
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	5,162.4	6,416.8	84.0	
Antioch Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Construction		51.0	51.0	42.9	50.8	(0.2)	●
Capital Outlay Support			31.0	31.0	22.2	31.0	-	●
Total Antioch Bridge Seismic Retrofit		-	82.0	82.0	65.1	81.8	**(0.2)**	
Dumbarton Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Construction		92.7	92.7	37.6	83.5	(9.2)	●
Capital Outlay Support			56.0	56.0	32.9	56.0	-	●
Total Dumbarton Bridge Seismic Retrofit		-	148.7	148.7	70.5	139.5	**(9.2)**	
Other Program Projects		2,268.4	**(63.6)**	2,204.8	2,162.7	2,192.2	**(12.6)**	●
Miscellaneous Program Costs		30.0	-	30.0	25.5	30.0	-	●
Net Programmatic Risks		-	-	-	-	92.0	92.0	●
Program Contingency		900.0	**(616.3)**	283.7	-	129.7	**(154.0)**	●
Total Toll Bridge Seismic Retrofit Program [2]		8,685.0	397.0	9,082.0	7,486.2	9,082.0	-	

Toll Bridge Seismic Retrofit Program Schedule Summary (Millions)

	AB 144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (March 2012)	Current Completion Forecast (March 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 28
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 29
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	June 2017	18	●	
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			Jun 2012	Jun 2012	-	●	See Page 34
Seismic Safety Completion			Apr 2012	Apr 2012	-	●	
Dumbarton Bridge Seismic Retrofit							
Contract Completion			Sep 2013	Sep 2013	-	●	See Page 38
Seismic Safety Completion			Sep 2013	Sep 2013	-	●	

● 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.

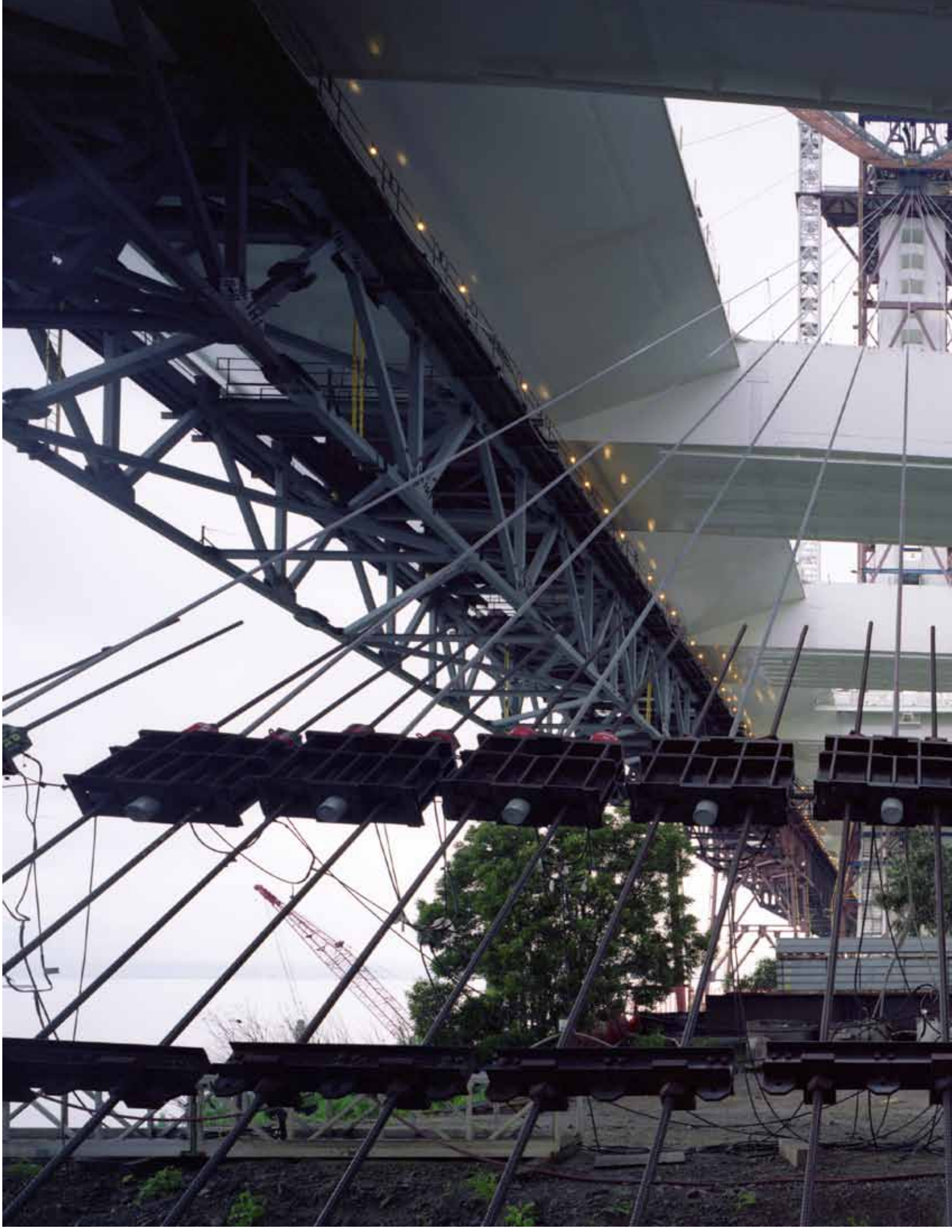
Regional Measure 1 Program Cost Summary (Millions)

	Contract Status	BATA Baseline Budget (July 2005)	BATA Approved Changes	Current BATA Approved Budget (March 2012)	Cost to Date (March 2012)	Current Cost Forecast (March 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	62.2	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	227.1	245.0	-	
Other Completed Program Projects		1,978.8	182.6	2,161.4	2,089.0	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 (Millions)

	BATA Baseline Completion Schedule (September 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (March 2012)	Current Completion Forecast (March 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 51



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

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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 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 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.

Architectural Rendering of the New East Span of the San Francisco-Oakland Bay Bridge

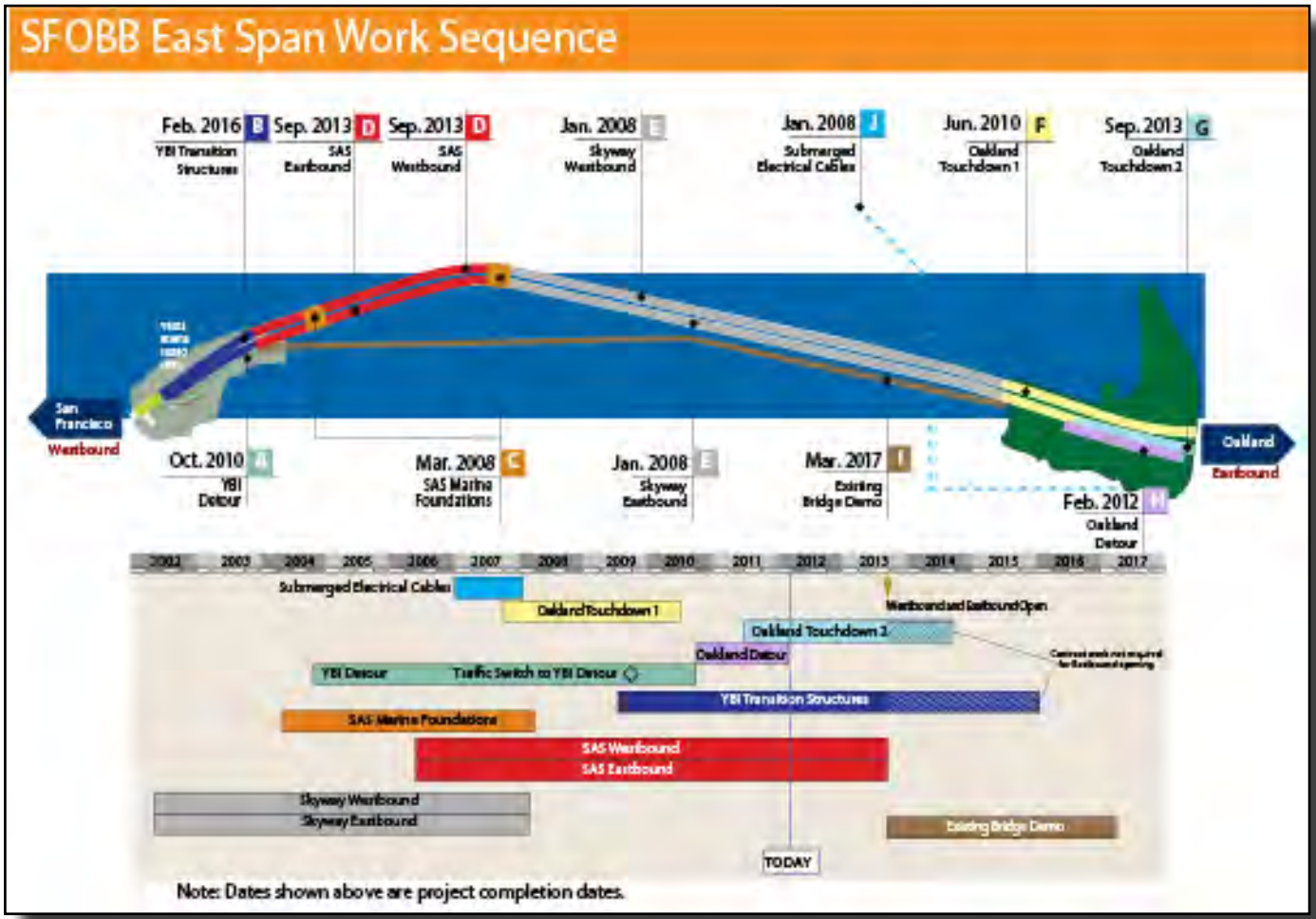
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components - the Skyway, 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 2007 Labor Day 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: 55% Complete as of March 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 is being removed and modified for use for the eastbound roadway deck. The eastbound roadway construction began in late December 2011 and will be completed to Hinge K by the end of 2012.

YBITS #2 Contract

Contractor: TBD

Approved Capital Outlay Budget: $59.0 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. 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. The YBITS #2 contract, including the cantilever truss demolition, will be advertised in April 2012.

YBITS Landscaping Contract

Contractor: TBD

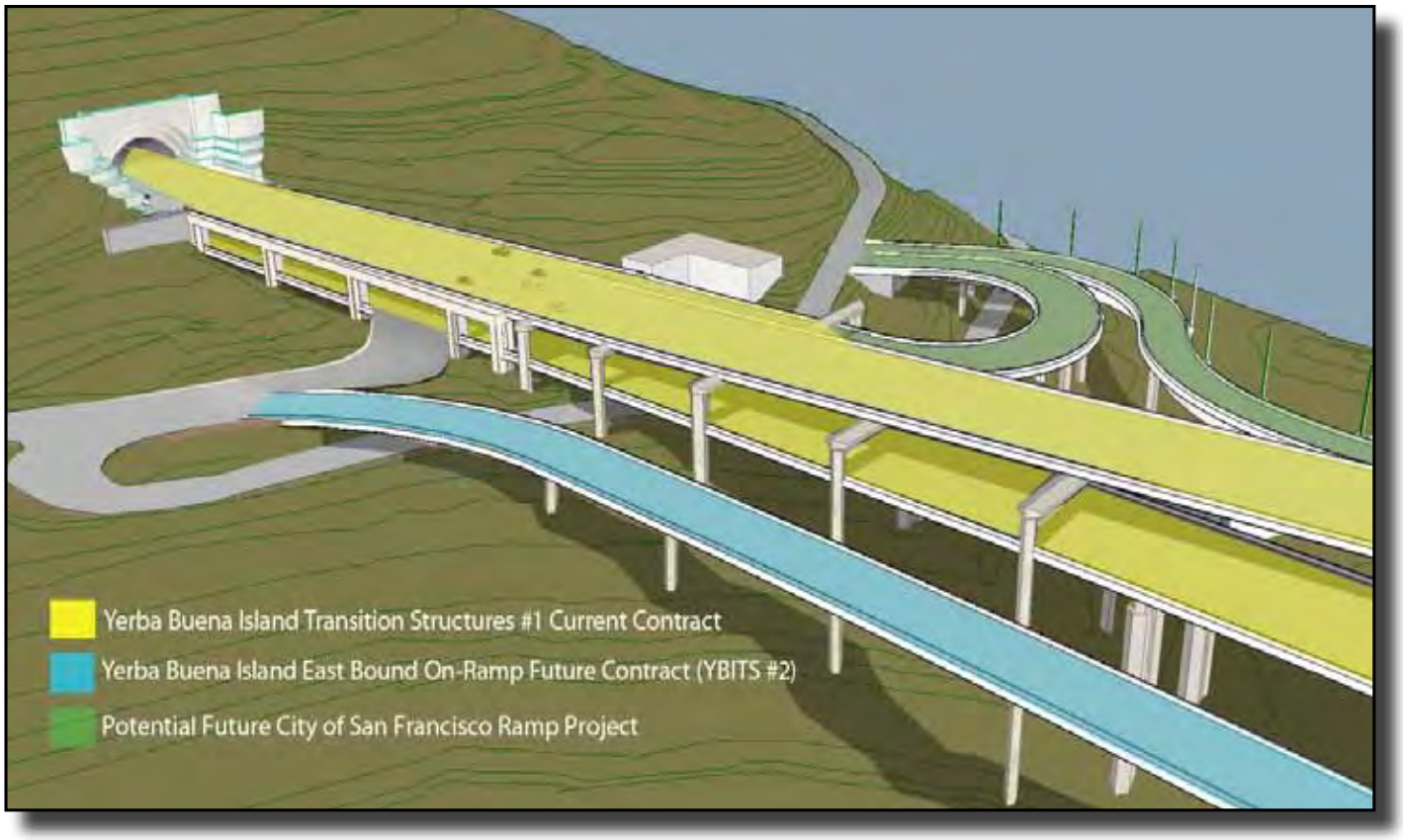
Approved Capital Outlay Budget $3.3 M

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 Nearly Completed Westbound Roadway Deck Construction

YBITS #1 Roadway Deck Construction in Progress



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 Marine Foundation - E2 Foundation with Completed Westbound Column

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.

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: 83% Complete as of March 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 in September 2010 between the Skyway and Yerba Buena Island 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 continues. Bike path railing and steel barrier installation continues on the roadway deck along with mechanical, electrical and piping installation.

STEP 3 - INSTALL TOWER

All tower legs, tower grillage and tower saddle were erected using the self-rising crane as of mid-May 2011. The tower head will be installed after cable erection and suspenders have been completed in mid 2012.

Status: Mechanical, electrical and piping installation continues in the tower. Field painting 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 will then be anchored. Suspender cables (114) will be added after all 137 cable bundles have been hauled, compacted and cable bands installed to lift the roadway deck off the temporary support structure.

Status: The parallel wire strand (PWS) cable installation is scheduled for completion in April 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 Yerba Buena Island Transition Structures (YBITS) #1 contract is currently in progress. Oakland Touchdown (OTD) #2 will begin construction in mid-2012. The Self-Anchored Suspension (SAS) segment is in progress and construction is scheduled to be complete and ready for seismic safety opening in both east and west directions by September 2013.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities

Roadway and Tower Segments

Like giant three-dimensional jigsaw puzzles, the roadway and tower lifts 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 strong and yet relatively light and flexible structure to withstand the massive loads placed on the bridge during seismic events.

All components underwent a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built according to contract specifications will be shipped.

Roadway Box Fabrication Status: Roadway boxes 1 through 14 east and west have all been fabricated by ZPMC and erected by the contractor, ABF.

Tower Fabrication Status: All tower components have been fabricated by ZPMC and erected by the contractor, ABF.

Cables and Suspenders

One continuous main cable will be used to support the roadway deck of the SAS bridge. The main cable installation will start from the east end of the westbound roadway boxes of the SAS near pier E2, then extend west over the northeast saddle towards the tower saddle at T1. It will then loop around pier W2 westbound deviation saddle, extend through the jacking beam saddle and extend around the eastbound deviation saddle at W2 over the tower saddle at T1 again to the southeast saddle and finally anchor within the eastbound roadway box near pier E2. The main cable is made up of 137 bundles of wire strands and a 114 suspender cables will connect the roadway decks to the main cable.

Status: All main cable parallel wire strands (PWS), cable bands and the suspender cables have been fabricated and are at the job site. PWS cable installation is ongoing and expected to be completed by April 2012.

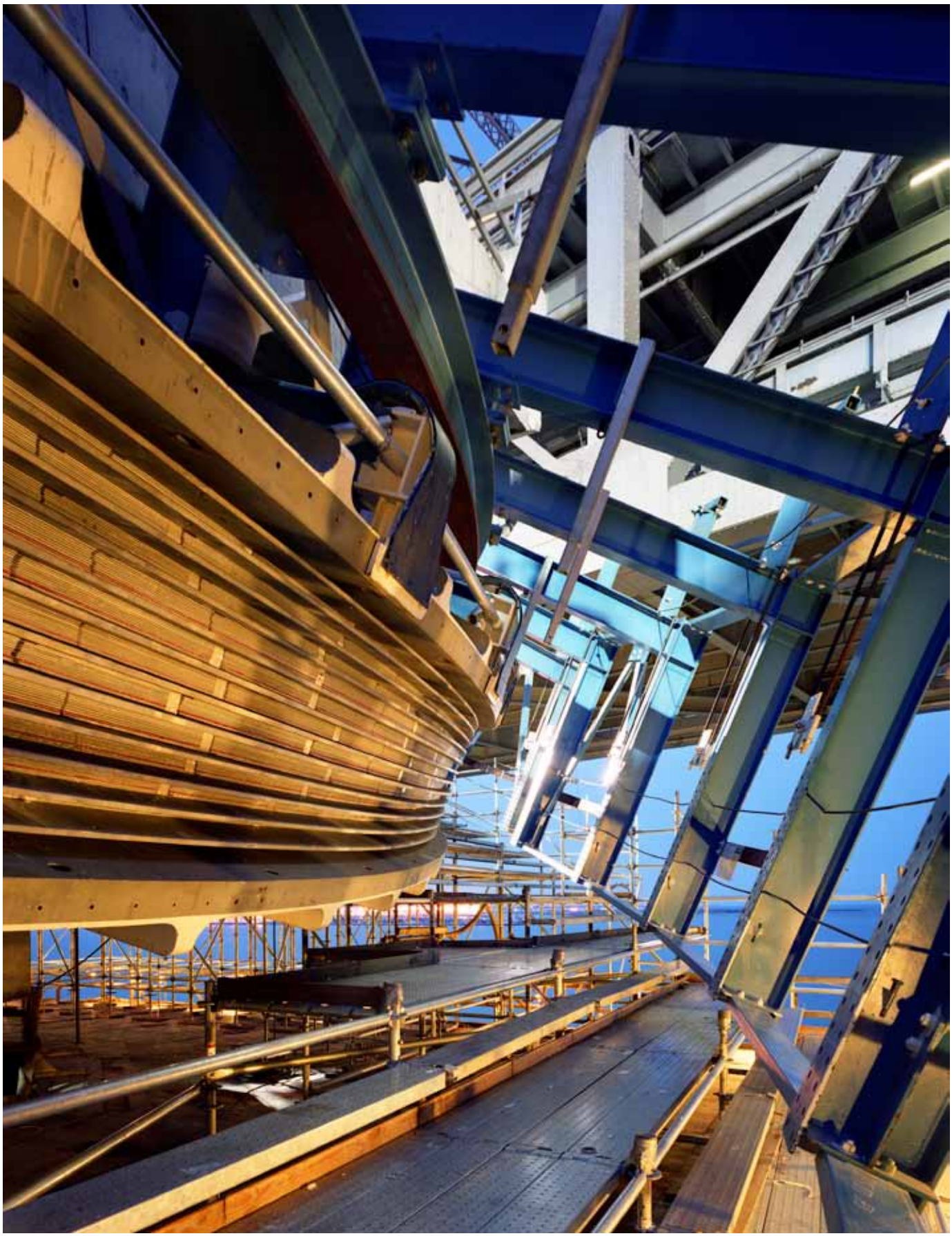
Off Loading the Final Four Roadway Boxes at Pier 7 in Oakland

Saddles, Bearings, Hinges, and Other Bridge Components

The mounts on which the main cable and suspender ropes will sit are solid steel castings. Castings for the main cable saddles were 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 loads from the Self-Anchored Suspension (SAS) Span 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, USA and Hochang, South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

Status: The Hinge K pipe beams have been fabricated and installed and Hinge A seismic expansion joints were completed in February 2012. The SAS traveler rails and the Skyway bike path railings and crushable zone arrived in early December 2011. The anchor rods have been fabricated and installed in roadway boxes 13 east and west.



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Cable Installation Activities

With installation of all structural elements of the tower and roadway nearing completion, focus is now turning to the placement of the bridge's more than 2.5 - foot in diameter and nearly mile long main cable. The single cable is made up of 137 separate bundled strands which contain 127 individual pencil thin wires. Each of the 137 bundled strands have been individually hauled by a tramway system from the northeastern end of the bridge, up and over the tower, and around the west end of the bridge before returning over the tower and to the southeastern end of the bridge (see photo below).

Maneuvering the Cable Compactor up to the Top of the Tower for Installation

Status: The cable hauling started on December 21, 2011, and is scheduled for completion by April 2012. The PWS cable compaction will begin immediately after the cable hauling system has been removed in April 2012.

Because the bridge is asymmetric with a longer span to the east than to the west, the tower has been pulled back 20 inches to the west so that the tower will return to a plumb position when the weight of the heavier east side of the bridge is transferred to the main cable.

Sample of 137 PWS Compacted Cables at Pier 7 in Oakland

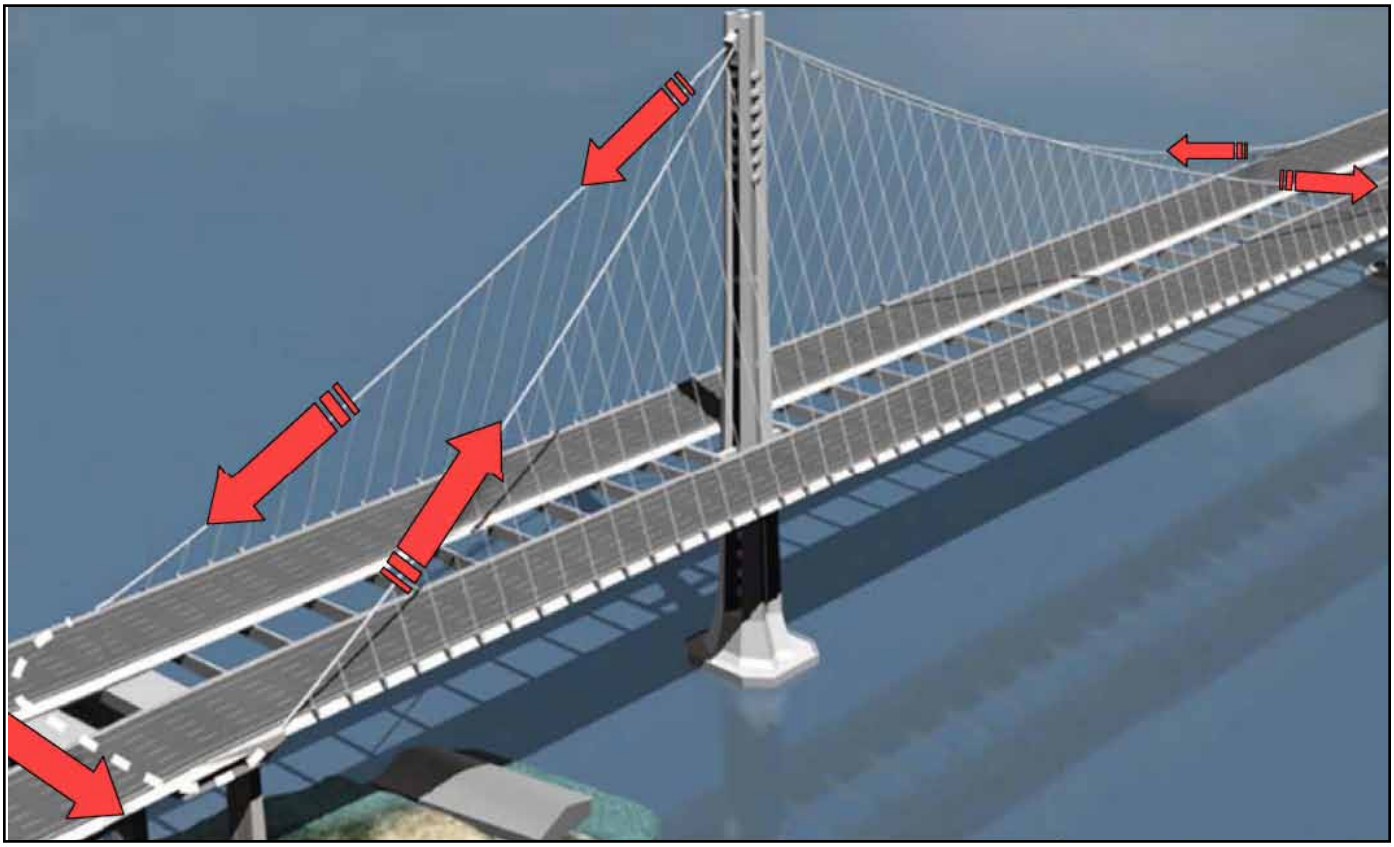
Parallel Wire Strand (PWS) before Compaction

Cable Strands Being Compacted

Verifying Circumference after Compaction

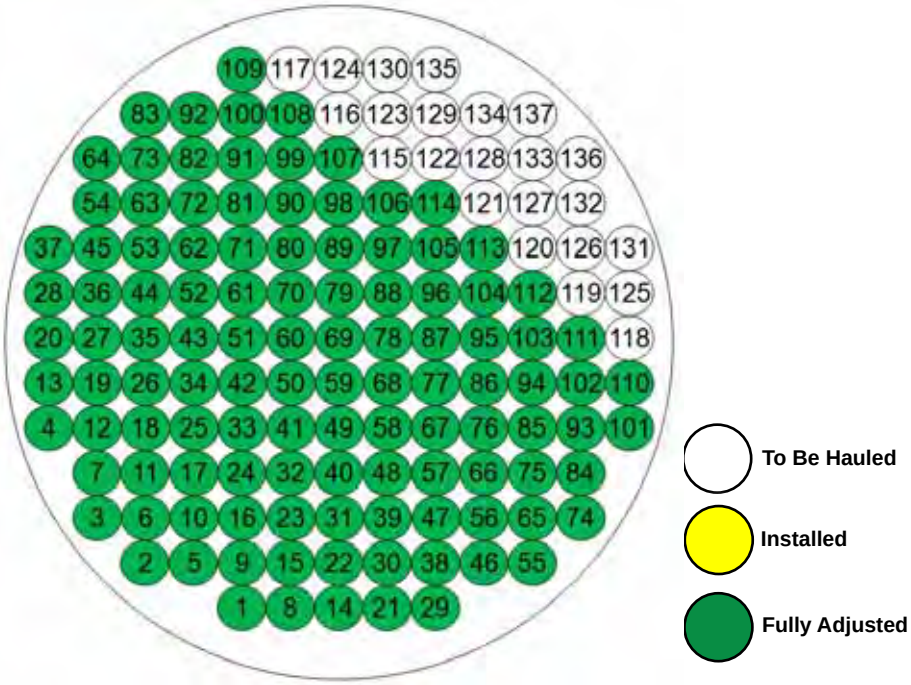
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Cable Installation Activities

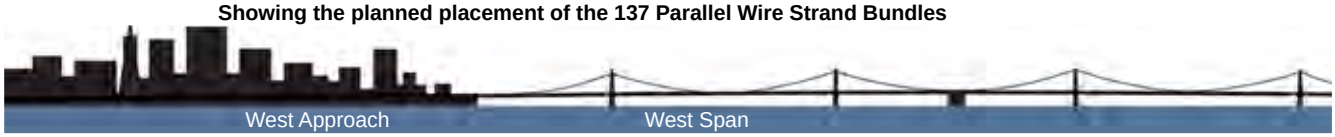


Cross Section of Main Cable (PWS) Installation Status at East Saddle South (Looking East)

(As of March 31, 2012)



Self-Anchored Suspension Bridge Main Cable Cross Section Diagram Showing the planned placement of the 137 Parallel Wire Strand Bundles



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Cable Installation Activities

Cable Hauling System

The 137 strands will be hauled up and around the self-anchored suspension span by a custom tramway system similar to a ski lift and technically known as a Primary Hauling System. Each strand will be brought to the SAS bridge deck on spools (1) that are unwound and attached to a tram lift hauling arm. The strand is hauled by the hauling arm starting at the northeast corner of the span (2) and up and down the tower (3) and around the west end of the span before returning over the tower to the southeast end corner of the SAS span (4).

(1) Parallel Wire Strands (PWS) Feeding through Cable Trolley System

(2) Connecting the Cable Strand Lead Socket to the Hauling Arm

(3) Hauling Arm Pulling the PWS Cable Strand up to the Tower Saddle

(4) Strand Haul Complete at Eastbound Anchorage Area and Connected to the Anchor Rods

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 March 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.

Skyway on the left and Existing Bridge on the Right Looking East toward Oakland

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 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 current phase of work, performed by the Oakland Detour contractor, is 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. 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. This will allow 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: 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 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. OTD #2 was advertised on March 12, 2012, and will be awarded in April 2012. Construction will begin in June 2012.

Aerial View of the Eastbound Oakland Detour with the EBMUD Outfall Crossing Structure on the left and the Westbound Oakland Detour Open to Traffic

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

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

H Oakland Detour

Contractor: MCM Construction, Inc.
Approved Capital Outlay Budget: $51.0 M
Status: 100% Complete as of March 2012

To ensure a simultaneous eastbound and westbound opening of the bridge by September 2013, the TBPOC has approved an acceleration plan that will construct a detour at the Oakland end of the bridge to allow for expedited construction of the OTD #2 contract. The detour realigns the existing bridge approach to the south to allow for construction of the remaining portion of OTD that was in conflict with the existing bridge.

Status: The westbound detour construction is complete and opened to traffic on February 19, 2012. Existing pier demolition and clean up will be completed in April 2012.

Oakland Detour Westbound Expansion Structure

Oakland Westbound Detour (Looking East) AC Asphalt Installed

Preparation for Demolition of the Existing Westbound Partial Structure

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

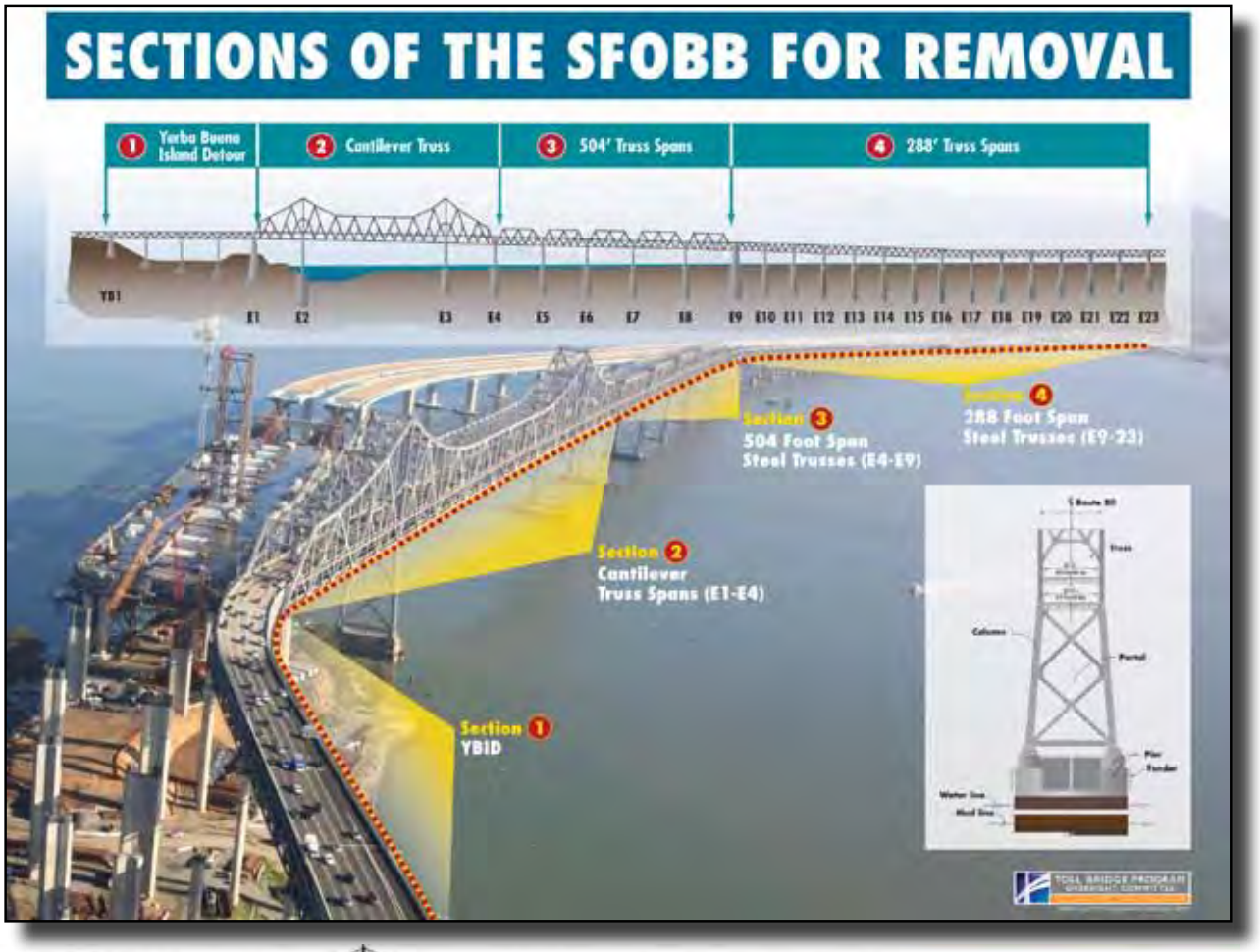
San Francisco-Oakland Bay Bridge East Span Replacement Project
Existing East Span Bridge Demolition

I Existing East Span Demolition

Contractor: TBD
Approved Capital Outlay Budget: $239.1 M
Status: In Design

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 will be 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



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

Antioch Bridge Seismic Retrofit Project

Contractor: California Engineering Contractors, Inc.
Approved Capital Outlay Budget: $51.0 M
Status: 94% Complete as of March 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.

Status: Work is progressing well and seismic safety is forecast to be completed in April 2012.

Seismic isolation bearings will allow the superstructure of the bridge to move independently from the pier and column substructure during an earthquake. All seismic isolation bearings have been fabricated, tested, and delivered to the site. Seventy-eight bearings (95% complete) have been installed at 41 piers.

At piers 12 through 31, center steel cross-bracing is being added between the pier columns to strengthen the pier. The work requires off-site fabrication of the steel cross-bracing and on-site preparation of the existing columns to ensure proper bond with the new bracing. Installation of cross-bracing has been completed at all 20 piers.

Columns supporting the approach slab bridge located on Sherman Island are being strengthened with steel column casing jackets. There are a total of 116 columns that have been retrofitting with steel casing jackets. The approach slab bridge expansion joints have been retrofitted with seat extenders. All of the 12 seat extenders have been installed.

Landscaping at the south end of the bridged is 100% complete and the 60-day plant establishment period is scheduled to be completed at the end of April 2012.

In addition to the retrofit work, seismic monitoring equipment is being installed to provide ground and structure motion information during future seismic events. The monitoring equipment is being installed at 250, 160, 80, 50, 20 and 4 feet below the ground surface.

Internal Shear Keys Installed to Prevent Bending of Pin Hangers

Welding of Isolation Bearing to Girder at Pier 41

Antioch Bridge Installing Cross Bracing as Part of the Seismic Retrofit Construction

Antioch Bridge with Completed Cross Bracings

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Dumbarton Bridge Seismic Retrofit Project

Contractor: Shimmick Construction Company, Inc.

Approved Capital Outlay Budget: $92.7 M

Status: 61% Complete as of March 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.

Status: The main bridge structure between piers 16-31 will be raised approximately 5 inches in order for isolation bearings to be installed to separate the superstructure from the substructure during seismic events. In preparation, the bridge piers are being widened with reinforced concrete to accommodate the new bearings. Work continues with reinforcing steel and concrete placement at these main bridge piers.

Along the reinforced concrete slab approaches, the bent caps are being 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.

The concrete coring operation to widen the pier caps is complete at all of the 14 locations. Concrete has been placed at 14 of 16 piers. The installation of jacking frames is complete at piers 17 through 22. Welding is ongoing at piers 27, 28, 29 and 30.

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 17 through 22 and piers 25 through 30.

Retrofitting of the existing damaged piles at the Ravenswood pier is ongoing in order to mobilize a crane to begin the pier removal operation. Demolition and reconstruction of the concrete barrier at the approach to the seismic joints at pier 16 is ongoing.

The Dumbarton bridge is scheduled to be closed for construction over the 2012 Memorial Day weekend.

Ravenswood Staging for Footing Overlay Work

Pier 31 Platform 2

Piers 26 to 31

Pier 28 Jacking Frame

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

C/G

Eastbound Hinge K Area with the Self-Anchored Suspension Bridge on the left and Yerba Buena Island Transition Structure on the right

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Risk Management Program Update

Potential Draw On Program Reserve (Program Contingency)

The program contingency is currently $284 million in accordance with the TBPOC Approved Budget. As of the end of the first quarter of 2012, the 50 percent probable draw on program contingency is $154 million. The potential draw ranges from about $75 million to $225 million (refer to Figure 1).

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.

RISK MANAGEMENT DEVELOPMENTS

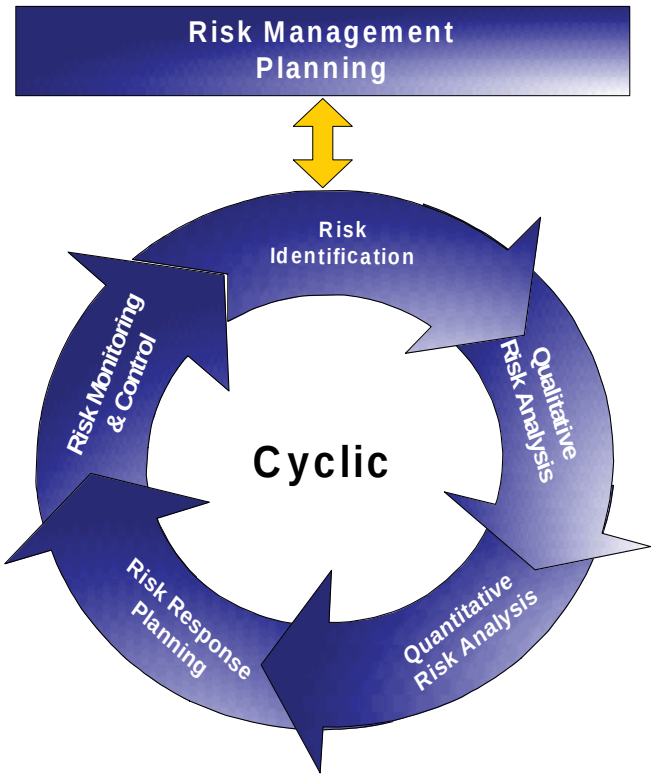
The 50% probable remaining program contingency balance (i.e., the approved TBPOC program contingency balance less the 50% probable draw) increased by $40 million this quarter.

Cost and schedule risks on the SAS contracts trended downward this quarter primarily due to progress made with installation of cable strands and the transfer of Hinge K work to the SAS contract. The cost and schedule risks associated with completing the cable system, load transfer, and the corridor systems required for bridge opening have not changed substantially this quarter. Teams are actively engaged in each of these areas to mitigate the risks to the greatest extent possible.

During a full weekend closure of the westbound lanes during the Presidents' Day weekend, traffic was shifted successfully to the westbound Oakland detour. Careful planning and implementation of risk mitigation actions prior to the closure resulted in the bridge re-opening to traffic more than 24 hours ahead of schedule.

The next major activities on the critical path to bridge opening include compacting the cable, attaching the cable bands and suspenders, wrapping the cable, painting the cable and suspenders, and installing the cable electrical systems.

The Cable Erection Risk Management team has been meeting weekly for the past three years to resolve potential cable issues and many of their recommendations have been implemented, resulting in a reduction of many risks.



The Antioch Bridge Retrofit is scheduled to achieve Seismic Safety on April 16, 2012. Risk management forecasts the project to complete well under budget.

RISK MANAGEMENT LOOK AHEAD

The corridor schedule is aggressive and there are risks to the future activities on the critical paths through SAS cable installation, load transfer, and completion of mechanical, electrical, and plumbing systems required for the bridge opening. The risk management team continues to monitor the SAS contract, YBITS#1 contract, and the updated corridor schedule to alert the TBPOC of approaching critical activities and suggest mitigation responses for impending risks.

Aggressive planning for the future East Span dismantling work is underway. Dismantling of the cantilever span has been incorporated in the YBITS #2 contract to reduce contractor coordination risk and take advantage of other cost and schedule efficiency opportunities.

For the dismantling of the trusses, the risk management team evaluated four options to select the most prudent and efficient procurement strategy. The team determined that the bonding requirements of smaller contracts would foster increased bidding competition and possible cost savings from lower bids. Based on a cost-risk-benefit comparison of the four options, the team recommended

that the dismantling of trusses be split into two contracts: all steel superstructure work in one contract, and all marine foundation work in the other. The TBPOC agreed to this arrangement and the two-contract option was implemented this quarter.

Various architectural enhancements and other project improvements are being assessed by the TBPOC and, if approved, will be reflected in the potential draw on program contingency curve in future quarters.

YBITS #1 Westbound Sections of Roadway on right with Existing Bridge and Yerba Buena Island Detour on Left with Hinge K at bottom right

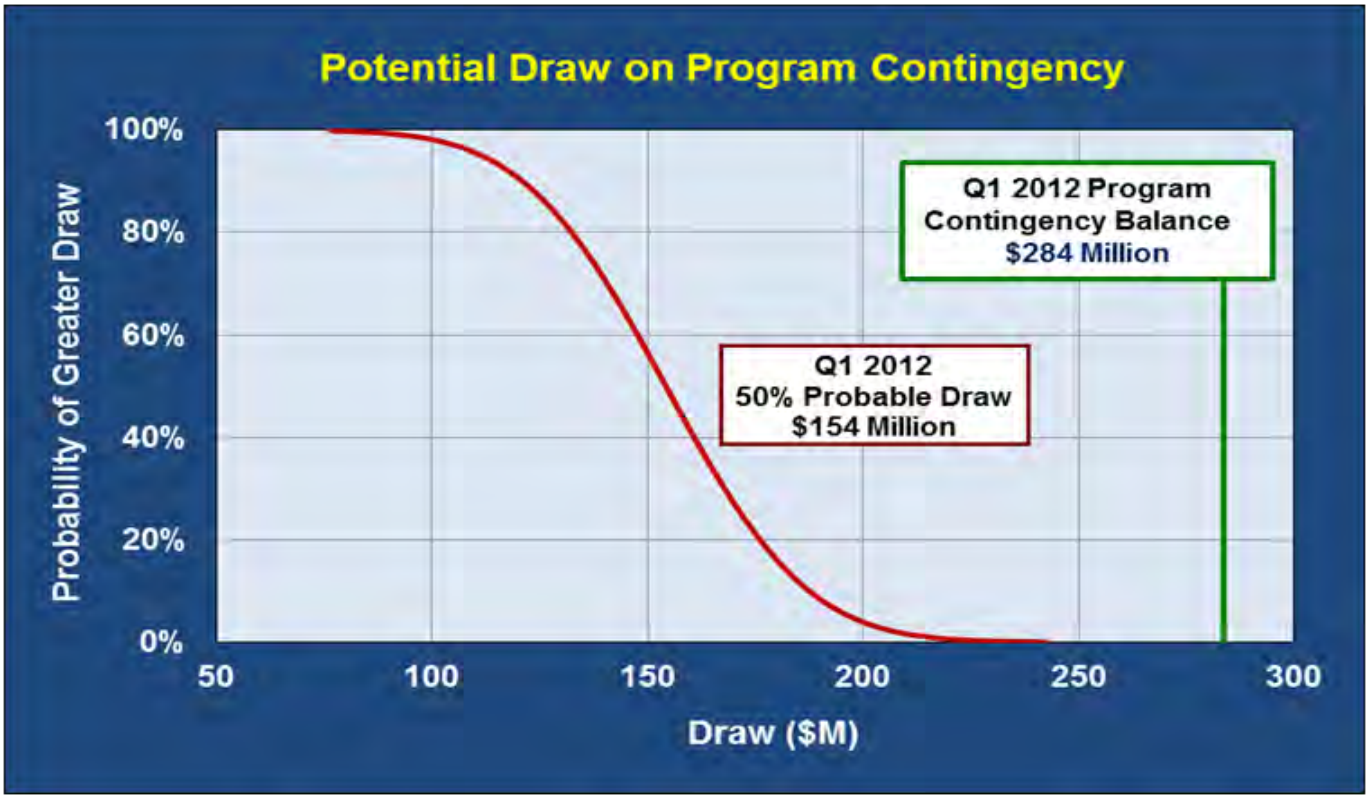


Figure 1 – Potential Draw on Program Contingency*

*Figure 1 Notes:
1. Proposed architectural enhancements and project improvements are excluded unless approved by the TBPOC.
2. Program Contingency may be used for other beneficial purposes than to cover risks. Therefore, the potential draw chart may not necessarily represent forecast of the future balance of Program Contingency funds.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Program Funding Status

AB 144 established a funding level of $8.685 billion for the TBSRP. As of January 1, 2010, seismic retrofitting of Antioch and Dumbarton Bridges became part of the Toll Bridge Seismic Retrofit Program with the passage of AB 1175, which provided another $750 million bringing the total funding to $9.435 billion. The program funding sources are shown in Table 1- Program Budget.

Table 1—Program Budget as of March 31, 2012 ($ Millions)

	Budgeted	Funding Available & Contribution
Financing		
Seismic Surcharge Revenue AB 1171	2,282.0	2,282.0
Seismic Surcharge Revenue AB 144	2,150.0	2,150.0
Seismic Surcharge Revenue AB 1175	750.0	750.0
BATA Consolidation	820.0	820.0
Subtotal - Financing	6,002.0	6,002.0
Contributions		
Proposition 192	790.0	789.0
San Diego Coronado Toll Bridge Revenue Fund	33.0	33.0
Vincent Thomas Bridge	15.0	6.9
State Highway Account(1)(2)	745.0	745.0
Public Transportation Account(1)(3)	130.0	130.0
ITIP/SHOPP/Federal Contingency (4)	448.0	300.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR)	642.0	642.0
SHA - East Span Demolition	300.0	-
SHA - "Efficiency Savings"(5)	130.0	113.0
Redirect Spillover	125.0	125.0
Motor Vehicle Account	75.0	75.0
Subtotal - Contribution	3,433.0	2,958.9
Total Funding	9,435.0	8,960.9
Encumbered to Date		7,661.6
Remaining Unallocated		1,299.3
Expenditures :		
Capital Outlay		5,895.4
State Operations		1,578.6
Antioch and Dumbarton Expenditures by BATA		12.2
Total Expenditures		**7,486.2**
Encumbrances :		
Capital Outlay		143.5
State Operations		31.8
Total Encumbrances		175.4
Total Expenditures and Encumbrances		**7,661.6**

(1) The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.

(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.

(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.

(4) To date, $63 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" identified under AB 144. Approximately $67 million remains to be distributed as scheduled by the CTC.

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, 2012 shows expenses through March 31, 2012 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 (Actual)	2009-10 (Actual)	2010-11 (Actual)	2011-12 (Actual)	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
** SFOBB East Span Demolition Cost

Table 3—Toll Bridge Program Oversight Committee Estimated Expenses: July 1, 2005 through March 31, 2012 ($ Millions)

Agency/Program Activity	Expenses
BATA	2.1
Caltrans	2.5
CTC	2.1
Reporting	4.6
Total Program	11.3

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Quarterly Environmental Compliance Highlights

Environmental compliance for the San Francisco Oakland Bay Bridge (SFOBB) East Span project has accomplished several milestones during the first quarter of 2012. The tasks for the current quarters are focused on mitigation monitoring and environmental permitting. Key successes in this quarter are as follows:

Bird monitoring was conducted weekly in all active construction areas. Monitors did not observe any indication that birds were disturbed due to the east span construction activities.

Peregrine falcon monitoring for the 2011/2012 nesting season began on December 6, 2011, and will continue through June 2012. The resident pair of peregrine falcons has nested on pier E3 of the existing SFOBB. The nest is just below the lower deck, on a north-facing ledge of the south tower leg. Due to the limited visibility of the nest, monitors were not able to determine the exact date eggs were laid or the total number of eggs. Based on the pair's behavior, monitors determined that eggs were laid on between March 9th and 11th. It is anticipated young will hatch around April 13th and take their first flight 30 to 35 days after hatching between May 13th to 19th.

SFOBB environmental compliance and storm water pollution prevention plan (SWPPP) inspections were conducted weekly at all active project sites. The project team continues to work closely with contractors to ensure compliance with environmental permits and regulations and to improve SWPPP and best management practices.

In response to heavy spring rain events, Caltrans has implemented water containment systems at both Yerba Buena Island and the Oakland Touchdown, by pumping impacted storm water to tanks for transport to a publicly owned treatment works facility. This measure is helping to control flooding at the sites while minimizing potential impacts to receiving water quality.

Caltrans is working on the environmental phase for the dismantling of the existing east span of the SFOBB.

On February 2, 2012, Caltrans presented at the Bay Conservation and Development Commission (BCDC) Commission Hearing on the BCDC permit amendment for construction activities related to dismantling of the existing east span. The commission voted unanimously in favor of the amendment.

On February 6, 2012, Caltrans received a supplemental Biological Opinion (BO) from the National Marine Fisheries Service. The supplemental Biological Opinion covers potential effects to salmon, steelhead and green sturgeon from construction of temporary trestles and falsework needed for the removal of the existing East Span.

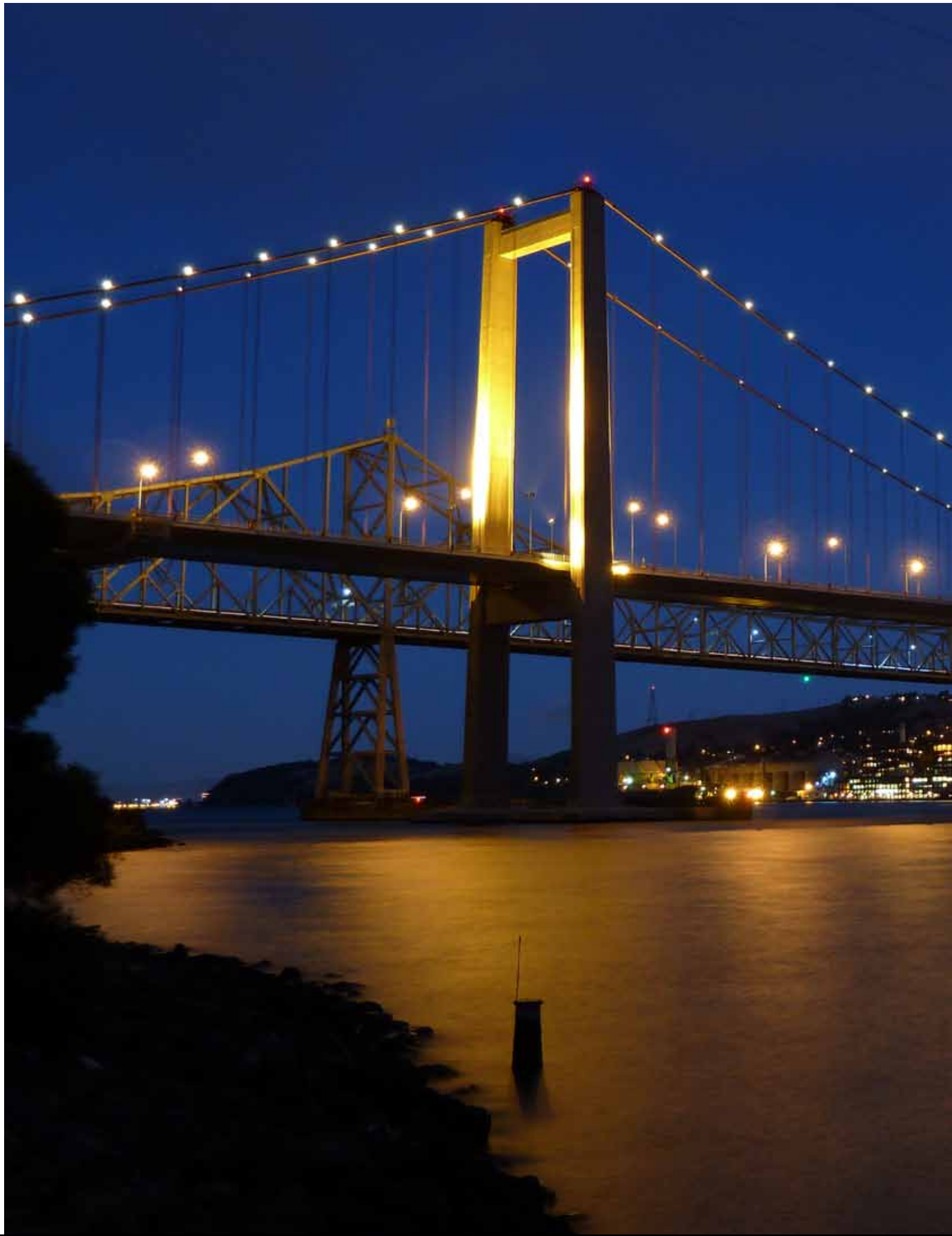
On February 10, 2012, Caltrans received Amendment No. 32 to San Francisco Bay Conservation and Development Commission (BCDC) Permit No. 2001.008, authorizing construction of temporary trestles and falsework needed for the removal of the existing East Span and extending the deadline to complete work authorized under the permit to March 1, 2020.

On February 23, 2012, Caltrans received a major amendment to the California Department of Fish and Game Incidental Take Permit for the project. The amendment provides coverage for the take of listed fish species incidental to the construction of temporary trestles and falsework needed for the removal of the existing East Span.

A draft bird management plan for the dismantling of the existing east span was reviewed and refined throughout the first quarter of 2012. The purpose of this plan is to provide a management framework for avoiding impacts to birds nesting on the existing east span during dismantling activities.

A draft cormorant enticement plan is being developed. The purpose of the plan is to entice the cormorant colony, which roosts and nests on the crossbeams under the lower deck of the existing east span, to nesting platforms on the Skyway span of the new east span. The relocation of cormorants to the new platform may help minimize impacts to the colony during bridge dismantling. Caltrans will work with bird experts and regulatory agencies to further refine and finalize the plan prior to implementation.

Eel Grass in San Francisco Bay



Carquinez Bridge

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.

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.

Widening of the San Mateo-Hayward Bridge Trestle on Left

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 (see progress photos in appendices). A Caltrans landscaping project will be undertaken in 2012.

Aerial View of Construction Progress

Compacting the Parallel Wire Strands (PWS)

APPENDICES

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

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	1,045.3	1,264.1	43.3
Capital Outlay Construction	4,492.2	588.0	5,080.2	4,116.4	5,145.0	64.8
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Total	5,486.6	846.2	6,332.8	5,162.4	6,416.8	84.0
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	(1.0)	119.0	118.7	119.0	-
Capital Outlay Construction	309.0	41.7	350.7	331.0	338.1	(12.6)
Total	429.0	40.7	469.7	449.7	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 March 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	31.0	31.0	16.0	31.0	-
Capital Outlay Support by BATA				6.2		
Capital Outlay Construction	-	51.0	51.0	42.9	50.8	(0.2)
Total	-	82.0	82.0	65.1	81.8	(0.2)
Dumbarton Bridge						
Capital Outlay Support	-	56.0	56.0	26.9	56.0	-
Capital Outlay Support by BATA				6.0		
Capital Outlay Construction	-	92.7	92.7	37.6	83.5	(9.2)
Total	-	148.7	148.7	70.5	139.5	(9.2)
Subtotal Capital Outlay Support	1,433.1	340.1	1,773.2	1,565.4	1,816.5	43.3
Subtotal Capital Outlay	6,286.8	676.5	6,963.3	5,894.6	7,006.1	42.8
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	7,486.2	8,860.3	62.0
Net Programmatic Risks*	-	-	-	-	92.0	92.0
Program Contingency	900.0	(616.3)	283.7	-	129.7	(154.0)
Total Toll Bridge Seismic Retrofit Program [1]	8,685.0	397.0	9,082.0	7,486.2	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 March 31, 2012 ($ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current **Approved Budget**	**Expenditures** to date and Encumbrances **as of March** 2012 **see Note (1)**	Estimated costs not yet spent or Encumbered as **of March 2012**	Total Forecast **as of March** 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	472.6	(0.8)	471.8
Total	617.5	616.5	617.2	(0.8)	616.4
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.7	0.3	127.0
Capital Outlay	698.0	689.5	667.8	21.7	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	794.5	22.0	816.5
West Span Retrofit					
Capital Outlay Support	75.0	74.8	74.9	(0.1)	74.8
Capital Outlay	232.9	227.4	232.8	(5.4)	227.4
Total	307.9	302.2	307.7	(5.5)	302.2
West Approach					
Capital Outlay Support	120.0	119.0	118.8	0.2	119.0
Capital Outlay	309.0	350.7	346.0	(7.9)	338.1
Total	429.0	469.7	464.8	(7.7)	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	391.8	72.5	464.3
Capital Outlay	1,753.7	2,046.8	1,659.9	398.1	2,058.0
Total	1,968.3	2,465.8	2,051.7	470.6	2,522.3
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	88.8	(1.1)	87.7
Capital Outlay	131.9	492.8	492.9	(10.1)	482.8
Total	161.4	583.5	581.7	(11.2)	570.5
YBI- Transition Structures					
Capital Outlay Support	78.7	106.4	71.7	39.7	111.4
Capital Outlay	299.4	262.0	132.8	193.9	326.7
Total	378.1	368.4	204.5	233.6	438.1

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

Contract	AB 144 Baseline Budget	TBPOC Current **Approved Budget**	**Expenditures to** date and Encumbrances **as of March 2012 see Note (1)**	Estimated Costs not yet spent or Encumbered as **of March 2012**	Total Forecast **as of March** 2012
a	b	c	d	e	f = d + e
Oakland Touchdown					
Capital Outlay Support	74.4	108.9	95.4	28.4	123.8
Capital Outlay	283.8	334.6	250.6	76.7	327.3
Total	358.2	443.5	346.0	105.1	451.1
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	2.0	38.9	40.9
Capital Outlay	239.2	239.1	-	237.3	237.3
Total	318.9	299.0	2.0	276.2	278.2
Antioch Bridge					
Capital Outlay Support	-	31.0	16.2	8.6	24.8
Capital Outlay Support by BATA			6.2	-	6.2
Capital Outlay	-	51.0	47.4	3.4	50.8
Total	-	82.0	69.8	12.0	81.8
Dumbarton Bridge					
Capital Outlay Support	-	56.0	27.2	22.8	50.0
Capital Outlay Support by BATA			6.0	-	6.0
Capital Outlay	-	92.7	55.7	27.8	83.5
Total	-	148.7	88.9	50.6	139.5
Miscellaneous Program Costs	30.0	30.0	25.5	4.5	30.0
Total Capital Outlay Support	1,463.2	1,803.2	1,622.7	223.8	1,846.5
Total Capital Outlay	6,321.8	6,995.1	6,038.9	974.9	7,013.8
Program Total [1]	7,785.0	8,798.3	7,661.6	1,198.7	8,860.3

(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 March 31, 2012 ($ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	370.5	464.3	45.3
Capital Outlay Construction	1,753.7	293.1	2,046.8	1,657.9	2,058.0	11.2
Total	1,968.3	497.5	2,465.8	2,028.4	2,522.3	56.5
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	87.6	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	553.7	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	1,237.1	1,245.2	-
Total	1,490.0	(63.6)	1,426.4	1,418.3	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	67.4	111.4	5.0
Capital Outlay Construction	299.3	(37.3)	262.0	113.4	326.7	64.7
Total	378.0	(9.6)	368.4	180.8	438.1	69.7
* 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	39.5	59.8	2.8
Capital Outlay Construction			199.7	113.4	243.6	43.9
Total			256.7	152.9	303.4	46.7
* YBI- Transition Structures Contract No. 2						
Capital Outlay Support			32.0	11.5	34.2	2.2
Capital Outlay Construction			59.0	-	79.8	20.8
Total			91.0	11.5	114.0	23.0
* 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 March 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	91.1	123.8	14.9
Capital Outlay Construction	283.8	50.8	334.6	208.7	327.3	(7.3)
Total	358.2	85.3	443.5	299.8	451.1	7.6
* 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	51.1	51.3	4.0
Capital Outlay Construction			212.0	203.0	203.3	(8.7)
Total			259.3	254.1	254.6	(4.7)
* OTD No. 2 (Eastbound)						
Capital Outlay Support			22.5	13.2	35.3	12.8
Capital Outlay Construction			62.0	-	56.3	(5.7)
Total			84.5	13.2	91.6	7.1
* OTD Touchdown 2 Detour(2)						
Capital Outlay Support			15.0	5.1	13.1	(1.9)
Capital Outlay Construction			51.0	-	53.7	2.7
Total			66.0	5.1	66.8	0.8
* 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	1.8	40.9	(19.0)
Capital Outlay Construction	239.2	(0.1)	239.1	-	237.3	(1.8)
Total	318.9	(19.9)	299.0	1.8	278.2	(20.8)
* Cantilever Section						
Capital Outlay Support			-	-	15.0	
Capital Outlay Construction			-	-	60.4	
Total			-	-	75.4	
* 504/288 Sections						
Capital Outlay Support			-	1.8	25.9	
Capital Outlay Construction			-	-	176.9	
Total			-	1.8	202.8	
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 March 31, 2012 ($ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	9.2	9.3	-
Total	11.1	(0.1)	11.0	11.0	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	1,045.3	1,264.1	43.3
Subtotal Capital Outlay Construction	4,492.2	588.0	5,080.2	4,116.4	5,145.0	64.8
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	5,162.4	6,416.8	84.0

[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 (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	6.2	6.6	-
Subtotal	26.3	10.4	36.7	36.3	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	135.1	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 (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	7.1	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	1,209.3	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	35.0	35.2	-
Total	51.3	(0.3)	51.0	50.8	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	10.0	10.4	-
Total	45.1	(0.4)	44.7	42.9	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	379.2	380.8	-
Subtotal Capital Outlay Right-of-Way	10.5	(0.1)	10.4	10.0	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					

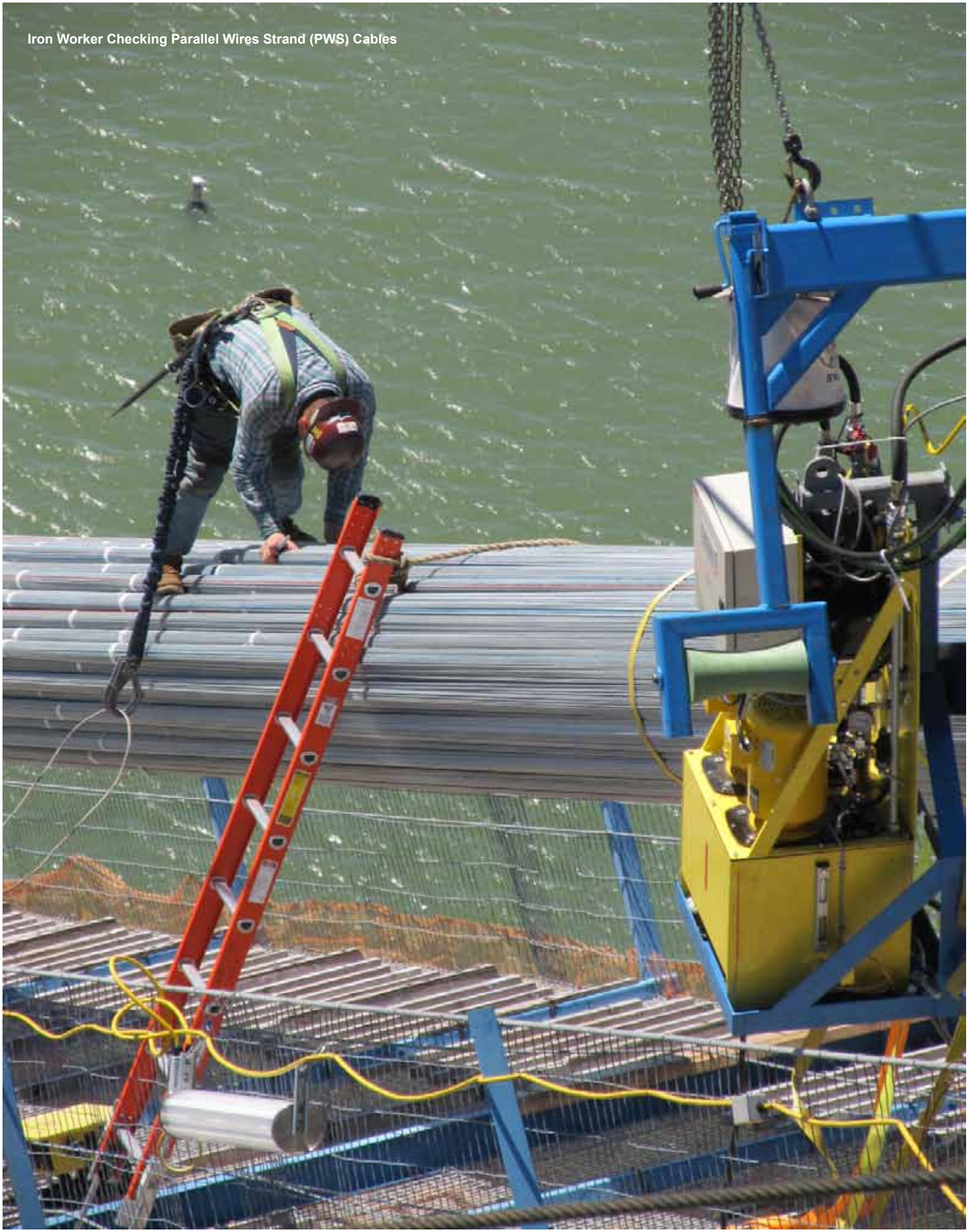
[1] Figures may not sum up to totals due to rounding effects.

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

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	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	62.2	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	227.1	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.

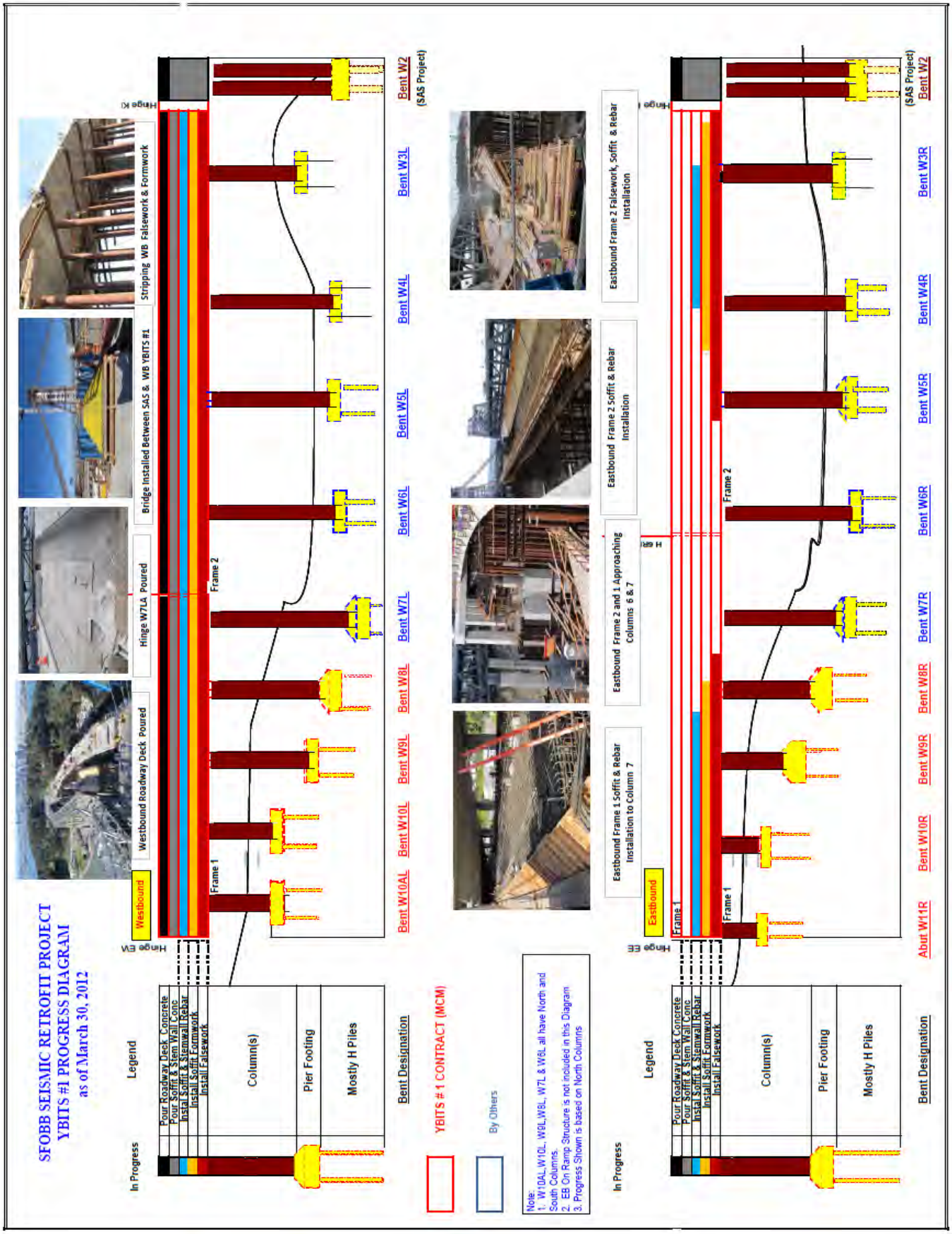
Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2012)	Cost to Date (03/2012)	Cost Forecast (03/2012)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
US 101/University Avenue Interchange Modification						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	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	419.4	423.0	-
Subtotal BATA Capital Outlay Construction	1,569.8	217.5	1,787.3	1,753.8	1,787.3	-
Subtotal Capital Outlay Right-of-Way	42.5	6.2	48.7	42.5	48.7	-
Subtotal Non-BATA Capital Outlay Support	14.0	4.0	18.0	17.5	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_					



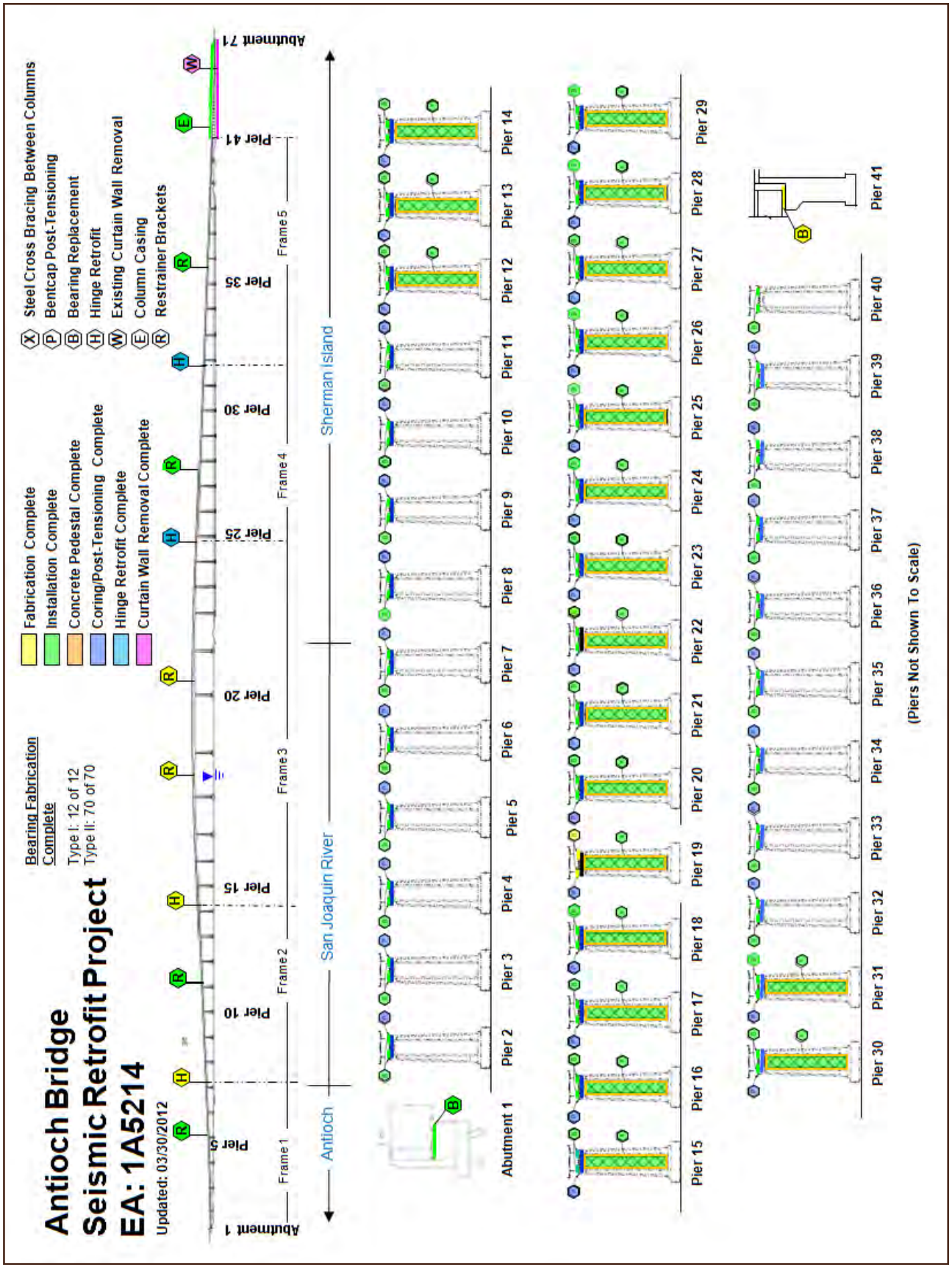
Iron Worker Checking Parallel Wires Strand (PWS) Cables

Appendix D: Progress Diagrams

Yerba Buena Island Transition Structures

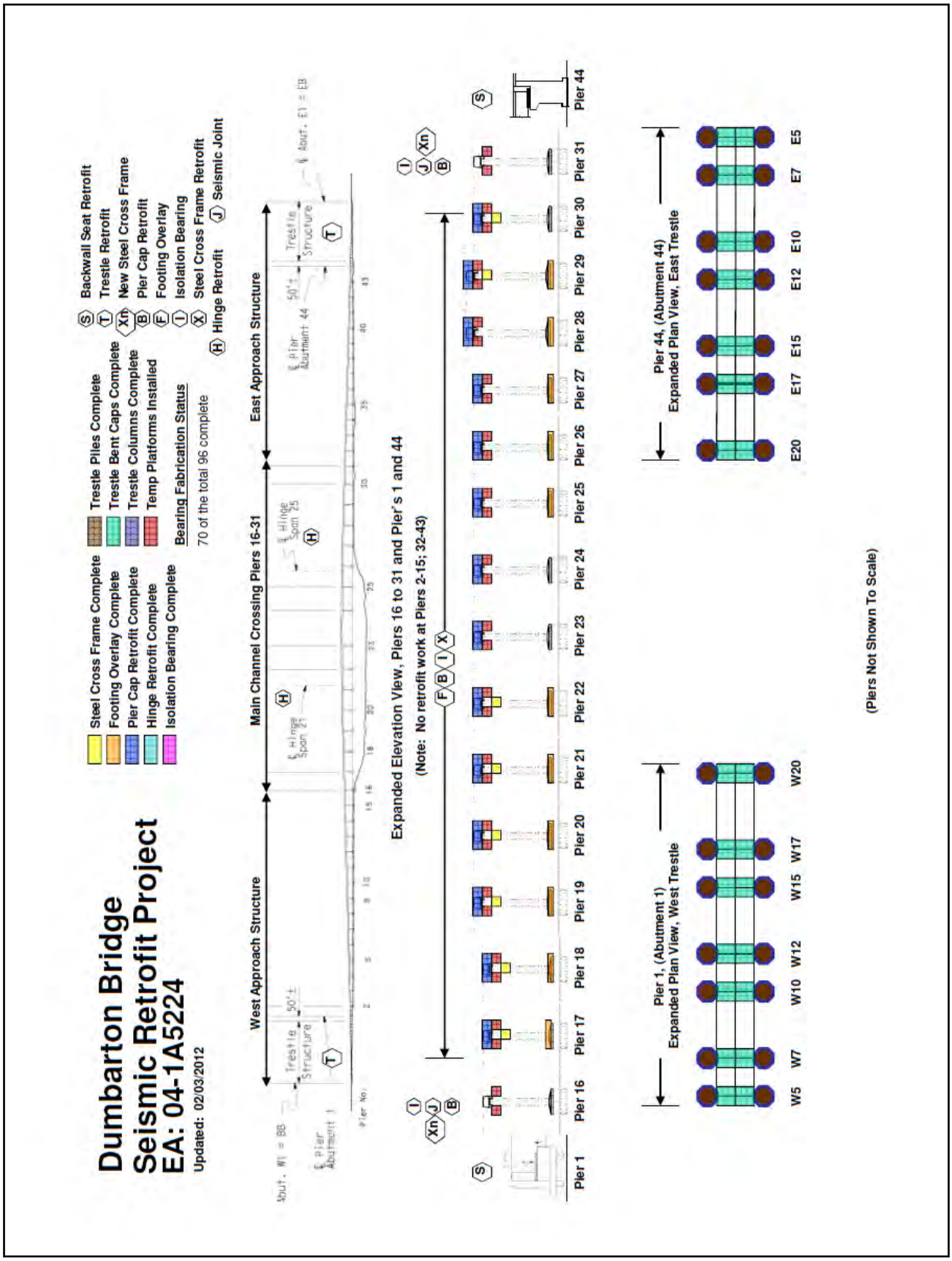


Appendix D: Progress Diagrams (cont.)
Antioch Bridge



Appendix D: Progress Diagrams (cont.)

Dumbarton Bridge



Iron Worker Installing PWS Cable

Installing Plus Cable in the West Deviation Saddle

Project Photos

Appendix E: Project Progress Photographs

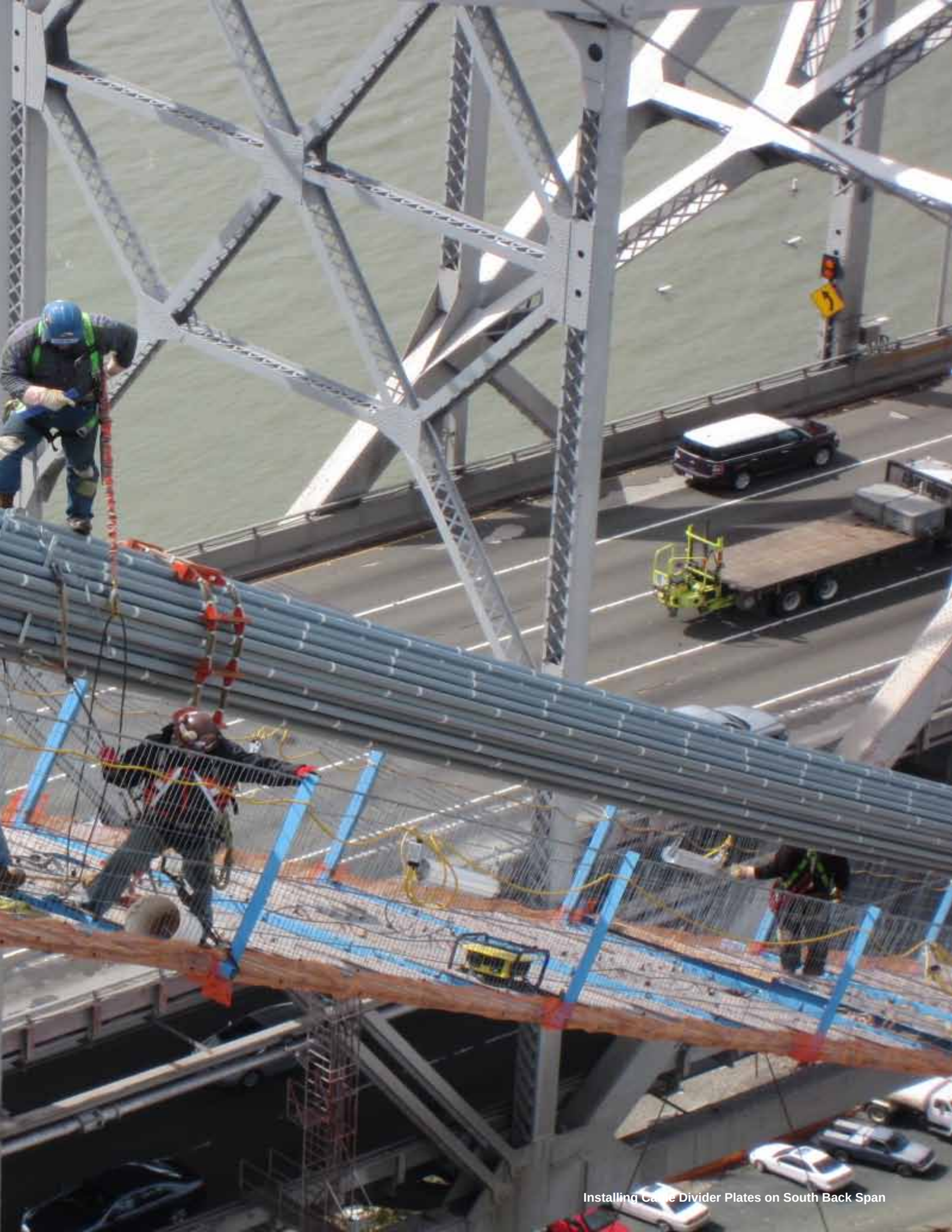
Self-Anchored Suspension Bridge Field Work

Welding Endplate at the Terminus of the Skyway Bike path at Trimming at Hinge A

Installing Cable Compaction Rollers at West end

Compacting the Parallel Wire Strands (PWS)

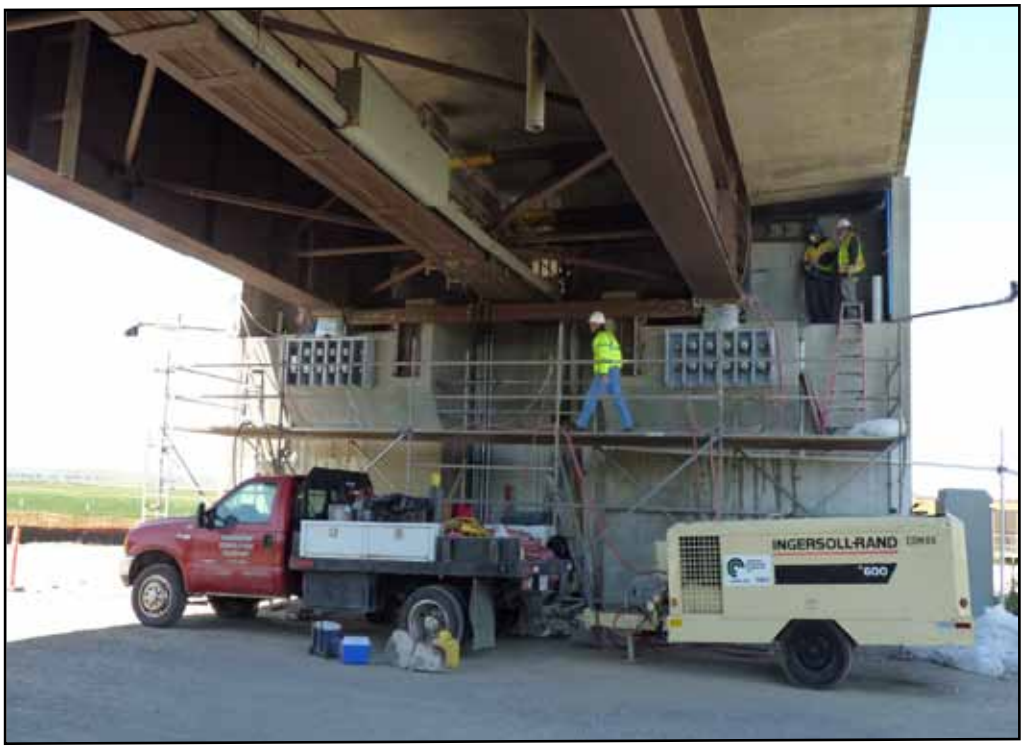
North Main Compactor - Checking Circumference after Compaction



Installing Cable Divider Plates on South Back Span

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

Appendix E: Project Progress Photographs

Westbound Oakland Detour

Before Opening to Traffic

After Opening to Traffic

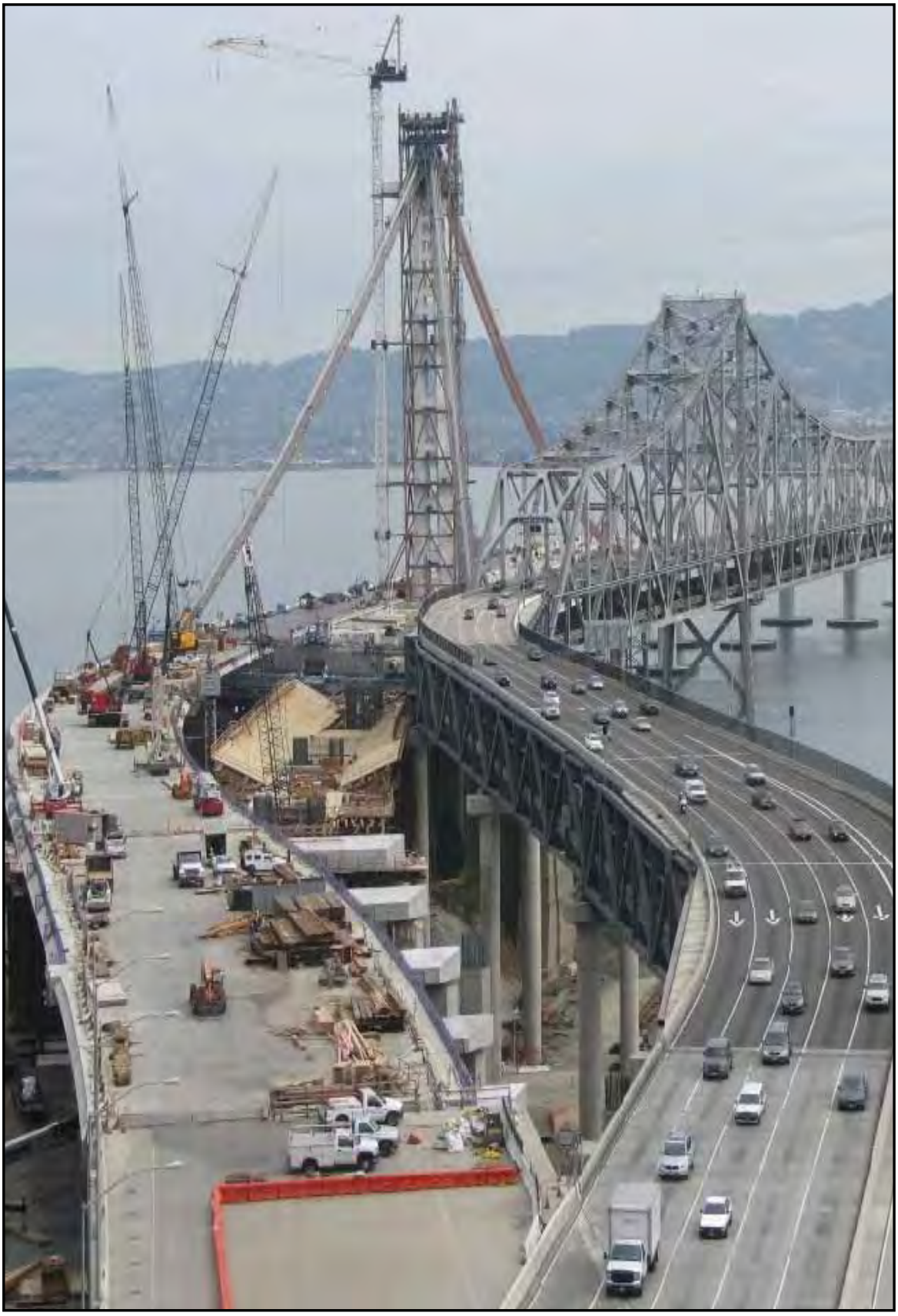
Westbound Oakland Detour Construction Progress

Appendix E: Project Progress Photographs

Yerba Buena Island Transition Structure #1 Westbound

YBITS #1 Soffit Formwork and Falsework Installation in Progress

Carpenters Working on YBITS #1 Eastbound Formwork



YBITS #1 Westbound Roadway Deck Nearing Completion

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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Yerba Buena Island Transition Structures