

San Francisco Bay Area Toll Bridge Seismic Retrofit Program

2018 Fourth Quarter
Project Progress and Financial Update



 TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE
CALTRANS | BAY AREA TOLL AUTHORITY | CALIFORNIA TRANSPORTATION COMMISSION

Released: February 2019



Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
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February 14, 2019

Mr. Daniel Alvarez
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. Alvarez and Wilson:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2018 Fourth Quarter Project Progress and Financial Update, for the San Francisco Bay Area Toll Bridge Seismic Retrofit Program (TBSRP), prepared pursuant to California Streets and Highways Code Section 30952. The TBPOC was established by Assembly Bill 144 in 2005 to oversee the delivery of the TBSRP and consists of the Executive Director of the Bay Area Toll Authority (BATA), the Director of the California Department of Transportation (Caltrans), and the Executive Director of the California Transportation Commission (CTC).

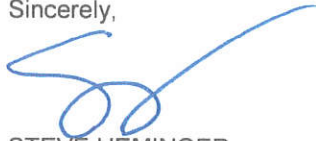
The TBPOC is pleased to report that objectives of the Toll Bridge Seismic Retrofit Program as described in AB 144 have been fulfilled and all seven state-owned toll bridges in the Bay Area are now seismically safe, including the San Francisco-Oakland Bay Bridge. All seismic construction activities that required TBPOC oversight have been completed.

The state-owned toll bridges in the Bay Area and any remaining activities work, including on-going fulfillment of environmental and permit obligations and administrative close-out activities, will be overseen by Caltrans and BATA as part of normal existing operations, maintenance, and rehabilitation processes. This 2018 Fourth Quarter Project Progress and Financial Update to the Legislature and CTC will be the Committee's final report.

As of the fourth quarter of 2018, the program contingency is currently \$53 million in accordance with the current TBPOC approved budget of \$8.952 billion. As of the end of the fourth quarter of 2018, the 50 percent probable draw on program contingency is \$21 million, resulting in a forecast surplus of \$32 million to the current budget. Thus, the current program contingency balance is expected to be sufficient to cover the cost of any remaining identified risks.

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



LAURIE BERMAN
Director
California Department of
Transportation



SUSAN BRANSEN
Executive Director
California Transportation
Commission



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February 14, 2019

Ms. Fran Inman, Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Mr. Paul Van Konynenburg, Incoming Vice-Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Dear Ms. Inman and Mr. Van Konynenburg:

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STEVE HEMINGER
TBPOC Chair
Executive Director
Bay Area Toll Authority



LAURIE BERMAN
Director
California Department of
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Cover:(Top) Pier E2 Pier Concrete Deck Pour, *Photo by Caltrans.*

Cover (Bottom) Concrete Girder Installation between E22 and E23 *Photo by Caltrans.*

Contents: SFOBB East Spans, looking east. *Photo by Caltrans.*

San Francisco Bay Area Toll Bridges



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

San Francisco Bay Area Toll Bridges

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 (TBSRP) 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 TBPOC), 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 TBSRP is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Complete
Antioch Bridge Seismic Retrofit	Complete
San Francisco-Oakland Bay Bridge East Span Replacement	Complete
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

Toll Bridge Seismic Retrofit Program Cost Summary (Millions)

	Contract Status	AB 144/ SB 66/ AB 1175 Budget	TBPOC Approved Changes	Current TBPOC Approved Budget (Dec 2018)	Cost to Date (Dec 2018)	Current Cost Forecast (Dec 2018)	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	(56.9)	1,236.1	1,235.6	1,236.1	-	●
SAS Tower Anchor Rod Grouting	Completed	-		8.9	8.7	8.9	-	●
SAS Marine Foundations	Completed	313.5	(38.7)	274.8	274.8	274.8	-	●
SAS Superstructure	Completed	1,753.7	255.7	2,009.4	2,006.5	2,009.4	-	●
YBI Detour	Completed	131.9	341.4	473.3	473.4	473.4	0.1	●
YBI Transition Structures (YBITS)		299.3	15.4	314.7	310.6	314.8	0.1	●
YBITS 1	Completed		-	203.7	203.2	203.8	0.1	●
YBITS 2	Completed		-	107.8	107.4	107.8	-	●
Southgate Rd Interchange	By Others		-	3.2	0	3.2	-	●
Oakland Touchdown (OTD)		283.8	42.6	326.4	326.5	326.5	0.1	●
OTD 1	Completed		-	202.8	202.8	202.8	-	●
OTD 2	Completed		-	71.2	71.2	71.2	-	●
Detour	Completed		-	46.7	46.7	46.7	-	●
Submerged Electric Cable	Completed		-	5.7	5.7	5.7	-	●
Existing Bridge Dismantling		239.2	93.9	338.9	318.6	348.0	9.1	●
Cantilever Section	Completed		-	69.0	68.5	69.0	-	●
504/288 Sections	Completed		-	81.8	79.0	81.6	(0.2)	●
Marine Foundations			-	188.1	171.1	197.4	9.3	●
Pier-3 Demonstration Project	Completed		-	16.8	16.8	16.8	-	●
E2 to E22 Marine Foundations			-	171.3	154.3	180.5	9.2	●
E4 to E18 Pier Demolition	Completed		-	109.7	109.9	110.0	0.3	●
E2, E19 to E22 Pier Retention	Construction		-	61.6	44.4	70.6	9.0	●
Stormwater Treatment Measures	Completed	15.0	1.9	16.9	16.9	16.9	-	●
Other Completed Projects	Completed	90.4	(0.5)	89.9	90.0	90.0	0.1	●
Capital Outlay Support		959.3	393.1	1,357.4	1,336.6	1,358.2	0.8	●
Right-of-Way and Envir. Mitigation		72.4	-	72.4	62.3	68.0	(4.4)	●
Other Budgeted Capital		35.1	(34.4)	0.7	0.7	0.7	-	●
Total SFOBB East Span Replacement		5,486.6	1,033.2	6,519.8	6,462.1	6,525.2	5.4	●
Antioch Bridge Seismic Retrofit								
Capital Outlay Support and Mitigation	Completed	-	24.1	24.1	24.1	24.2	0.1	●
Capital Outlay Construction		-	47.0	47.0	47.0	47.0	-	●
Total Antioch Bridge Seismic Retrofit		267.0	71.1	71.1	71.1	71.2	0.1	●
Dumbarton Bridge Seismic Retrofit								
Capital Outlay Support and Mitigation	Completed	-	47.5	47.5	47.4	47.5	-	●
Capital Outlay Construction		-	64.9	64.9	64.4	64.7	(0.3)	●
Total Dumbarton Bridge Seismic Retrofit		483.0	112.4	112.4	111.8	112.2	(0.3)	●
Program Completed Projects	Completed	2,268.4	(98.4)	2,170.0	2,169.6	2,169.9	(0.1)	●
Miscellaneous Program Costs		30.0	(4.0)	26.0	26.0	26.0	-	●
Net Programmatic Risks		-	-	-	-	15.2	15.2	●
Program Contingency*		900.0	(847.2)	52.8	-	-	(52.8)	●
Total Toll Bridge Seismic Retrofit Program*		9,435.0	(483.0)	8,952.0	8,840.9	8,919.7	(32.3)	●

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB 144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (Dec 2018)	Current Completion Forecast (Dec 2018)	Schedule Variance (Months)	Schedule Status
	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	-	●
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●
SAS Superstructure	Mar 2012	42	Sep 2015	Sep 2015	-	●
YBI Detour	Jul 2007	39	Oct 2010	Oct 2010	-	●
YBI Transition Structures (YBITS)	Nov 2013	36				
YBITS 1			Feb 2014	Feb 2014	-	●
YBITS 2			Nov 2017	Nov 2017	-	●
Oakland Touchdown	Nov 2013	10				
OTD 1			Jun 2010	Jun 2010	-	●
OTD 2			Sep 2015	Sep 2015	-	●
Submerged Electric Cable			Jan 2008	Jan 2008	-	●
Existing Bridge Dismantling	Sep 2014	48	Sep 2018	Sep 2018	-	●
Cantilever Section ⁽²⁾			Jul 2015	Jul 2015	-	●
504/288 Sections			Jun 2017	Jun 2017	-	●
Marine Foundations						
E3 Foundation Removal Demo Project			Jan 2016	Jan 2016	-	●
E4 - E18 Foundation Removal			Dec 2018	Dec 2018	-	●
E19 - E20 Foundation Removal			ep 2018	Sep 2018	-	●
E2, E21 to E22 Pier Retention			Aug 2019	Aug 2019	-	●
Stormwater Treatment Measures			Mar 2008	Mar 2008	-	●
SFOBB East Span Bridge Opening and Other Milestones						
Westbound Seismic Safety Open	Sep 2011	24	Sep 2013	Sep 2013	-	●
Eastbound Seismic Safety Open	Sep 2012	12	Sep 2013	Sep 2013	-	●
Bike/Ped Path to YBI Landing			Dec 2015	Oct 2016	-	●
Eastbound On-Ramp			Jun 2016	Jun 2016	-	●

- 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

Footnotes for Page 2 Toll Bridge Seismic Retrofit Program Cost Summary Table

*AB144/SB66 established a funding level of \$8.685 Billion in July 2005 for TBSRP. AB1175 added the retrofitting of the Antioch and Dumbarton Bridges in January 2010, providing another \$750 million in funding, bringing Total Toll Seismic Retrofit Program funding to \$9.435 Billion. Since 2010, \$483 million has been removed from the program, bringing the current TBPOC Approved Budget to \$8.952 Billion. The \$483 million removed consisted of:

Antioch Savings (4/12/10) \$137 million - Dumbarton Savings (9/02/10) \$216 million - Program Contingency Redirection (11/05/13) \$130 million, the current TBPOC approved Program Budget is \$8,952 million.

** (Due to the rounding of numbers, the totals above are shown within \$0.1).

San Francisco-Oakland Bay Bridge East Span Replacement Project

Seismic Retrofit

Rather than a seismic retrofit, the two-mile long east span of the San Francisco-Oakland Bay Bridge has been completely rebuilt. The new east span consists of several different sections, yet appears as a single streamlined span. The eastbound and westbound lanes of the east span no longer include upper and lower decks. The lanes are side-by-side, providing motorists with expansive views of the bay. These views are also enjoyed by bicyclists and pedestrians, thanks to a new bicycle/pedestrian path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span features the world's longest Self-Anchored Suspension (SAS) bridge that connects to an elegant roadway supported by piers (Skyway), which gradually slopes down toward the Oakland shoreline (Oakland Touchdown).



San Francisco-Oakland Bay Bridge East Span Replacement Project

YBITS 2 - Eastbound On-Ramp and Cantilever Dismantling

Approved Capital Outlay Budget: \$107.8 M

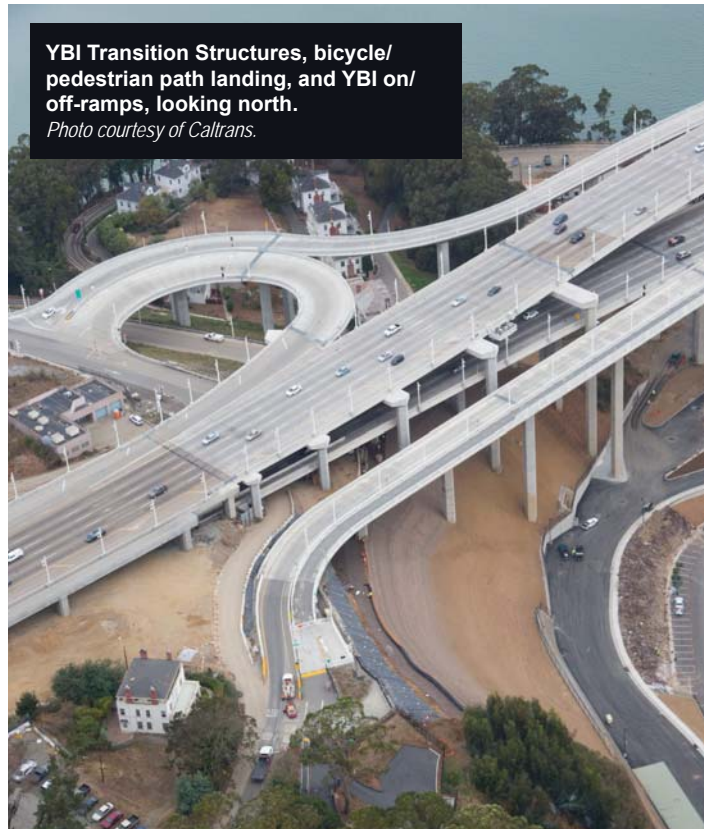
Contractor: CEC & Silverado, JV

Status: 100% Complete

The YBITS 2 contract involves dismantling the detour viaduct, constructing a new eastbound on-ramp to the bridge, completing the bicycle/pedestrian path to Yerba Buena Island, and dismantling the cantilever.

The contract was awarded to California Engineering Contractors Inc./Silverado Contractors Inc., Joint Venture on November 28, 2012. Startup activities and submittals began in March 2013, with actual dismantling starting after the seismic safety opening during Labor Day weekend in 2013.

Status: Cantilever removal was completed in July 2015. The eastbound on-ramp was opened on June 2, 2016. The pedestrian/bicycle path opened in October 2016. Construction was complete on November 29, 2017.



504'/288' Superstructure Dismantling

Approved Capital Outlay Budget: \$81.8 M

Contractor: CEC & Silverado JV

Status: 100% Complete

The contractor sequenced the bridge removal operations into seven phases of dismantling beginning with the upper deck and initial truss removal, followed by the removal of the 504' and 288' steel truss spans, and ending with the removal of the supporting steel columns.

Status: The first of five 504' main truss spans was lowered in February 2016. The last 504' section was lowered in August 2016. The first of fourteen 288' sections was lowered in November 2016. The last section was lowered in March 2017. The project reached substantial completion in June 2017.



San Francisco-Oakland Bay Bridge East Span Replacement Project

Marine Foundation Demolition

Approved Capital Outlay Budget:

Pier E3 - \$16.8 M

Piers E4-E18 - \$109.7 M

Contractor: Kiewit/Manson

Status: 100% Complete

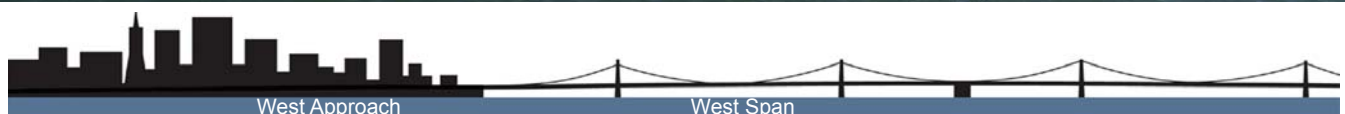
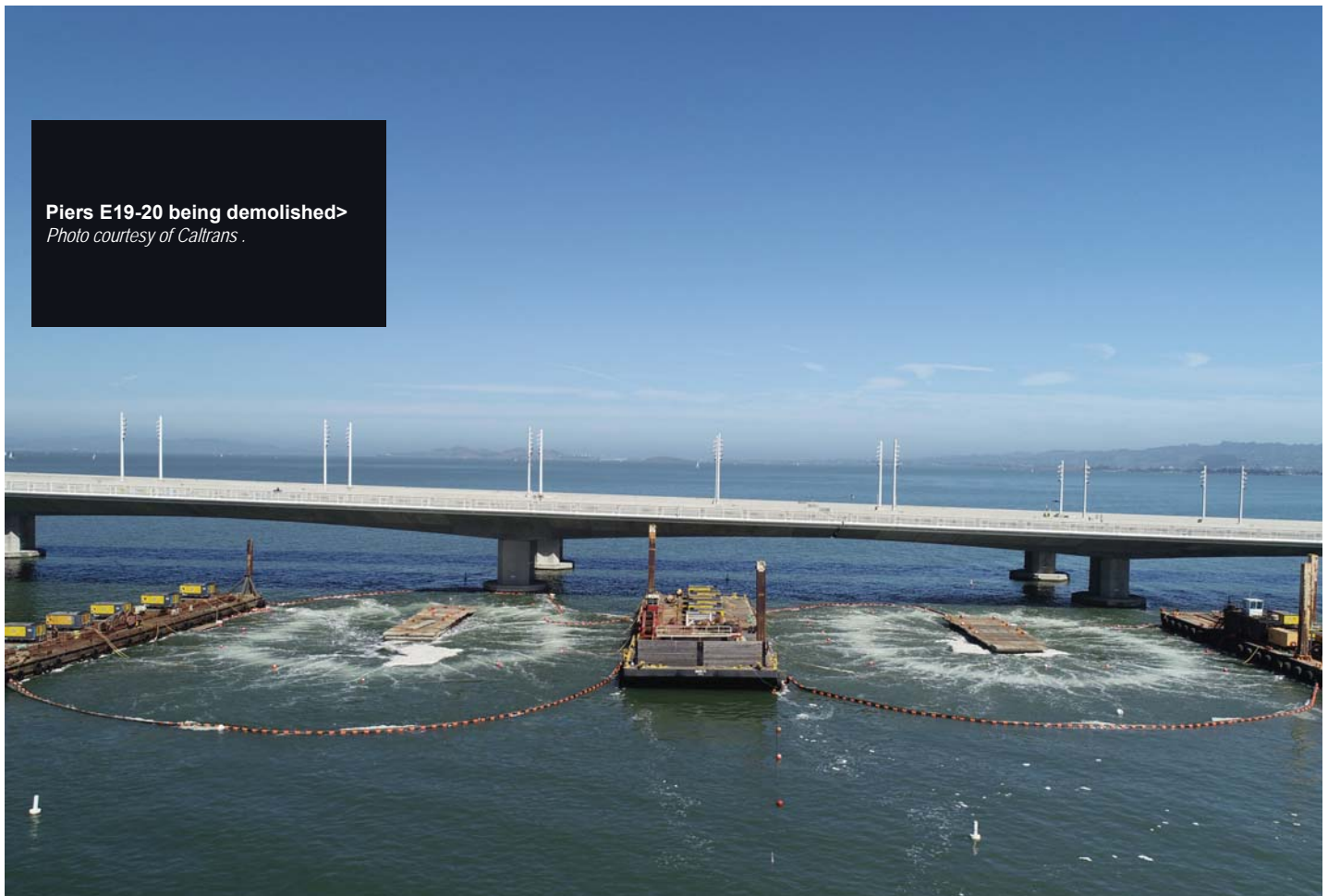
The original east span of the San Francisco-Oakland Bay Bridge was supported by 21 in-water bridge piers, Piers E2 through E22, along with land based piers at Yerba Buena Island and Oakland. Part of this project is the demolition of Pier E3, which is located 1,535 feet east of Yerba Buena Island and on the east side of a 50-foot deep navigation channel.

Status: E3 through E18 marine foundations have been removed. This contract is now complete.

The marine foundation removal is a CMGC (Construction Manager / General Contractor) contract and the selected CMGC contractor is a Kiewit/Manson team (KM).

Piers E19-20 being demolished>

Photo courtesy of Caltrans .



San Francisco-Oakland Bay Bridge East Span Replacement Project

Marine Foundation Demolition and Public Access Piers

Approved Capital Outlay Budget: \$61.6 M

Contractor: Kiewit/Manson

Status: 74% Complete as of December 2018

The Bay Bridge project environmental document and resource agency permits included removing all marine based piers of the old Bay Bridge east span. In lieu of removing the piers, the TBPOC was presented with a proposal to re-purpose the piers as part of observation decks along both the YBI shoreline and Oakland shoreline as environmental enhancements.

Caltrans awarded a contract to Kiewit/Manson on April 3, 2018 to demolish piers E19 and E20 and construct the observation decks and associated access improvements from Piers E21 to E23 and at Pier E2.

Status: E19 and E20 marine foundations were removed in September 2018. The team is now constructing observation piers at E2 and E21-E22. Pier girders have been installed on both the SF and Oakland sides. The Contractor is finishing the pier decks and working on railings, approaches and furnishings. Work is expected to be completed in August 2019.

In December 2018, the TBPOC approved by a vote of 3-0 (3 votes yes, 0 no) for the naming of the YBI Pier E2 Boardwalk after the late TBPOC member and Executive Director of CTC, Bimla Rhinehart.



Public access facility in Oakland for Piers E21-23 under construction
Photo courtesy of Caltrans.

San Francisco-Oakland Bay Bridge East Span Replacement Project

Self-Anchored Suspension Bridge Superstructure

Approved Capital Outlay Budget: \$2.01 B

Contractor: American Bridge/Fluor Enterprises, JV

Status: 100% Complete

The self-anchored suspension span (SAS) of the 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 appears to be two main cables on the SAS, it is actually a single continuous cable. This single cable is 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.



SFOBB Self-Anchored Suspension Structure, looking northeast.
Photo courtesy of Caltrans.

Status: During the contract arbitration process for the SAS Contract dispute with the contractor, the parties met in mediation and reached a tentative agreement for the settlement of all claims for a payment of \$25.5 million to the Contractor and a waiver of \$8,536,370 in accounts receivable. The settlement was presented and approved by the TBPOC at their June 21, 2018 meeting and payment was made to the contractor soon thereafter. The contract is now complete.

Risk Management Program Update

POTENTIAL DRAW ON PROGRAM RESERVE (PROGRAM CONTINGENCY)

Caltrans continues to implement comprehensive risk management on all TBSRP projects in accordance with AB 144. Risk response efforts continue to focus on mitigating the estimated cost and schedule impacts of identified risks. The “bottom line” of cost risk analysis is whether the Program Contingency remains adequate to cover all identified risks.

Each contract has a contingency allowance within its budget. The sum of these contingency allowances is compared to the total of capital outlay, capital outlay support and program-wide risks. Any excess of the risks over the contingency allowances represents a potential draw on the program contingency. The program contingency, as of the fourth quarter of 2018, is currently \$52.8 million in accordance with the TBPOC approved budget. As of the end of the fourth quarter of 2018, the 50 percent probable draw on program contingency is \$20.5 million. The potential draw ranges from about \$5 million to \$35 million (refer to Figure 1). The \$20.5 million probable draw on program contingency gives a forecast surplus of \$32.3 million at program completion to the current

approved program budget.

In general, the bottom line trend for the program has been improving for the last two years, with the forecast turning from a \$143.2 million deficit to a \$32.3 million forecast surplus (i.e. a \$175.5 million improvement) since the deficit peaked in the third quarter of 2015.

Since 2010, the TBPOC has approved the removal of \$483 million from the TBSRP budget (consisting of Antioch Savings (4/12/10) \$137 million, Dumbarton Savings (9/02/10) \$216 million and Program Contingency Redirection (11/05/13) \$130 million), bringing the current approved program budget to \$8.952 billion. The program contingency is currently sufficient to cover the cost of identified risks and BATA will not need to allocate any additional toll funds from its reserves.

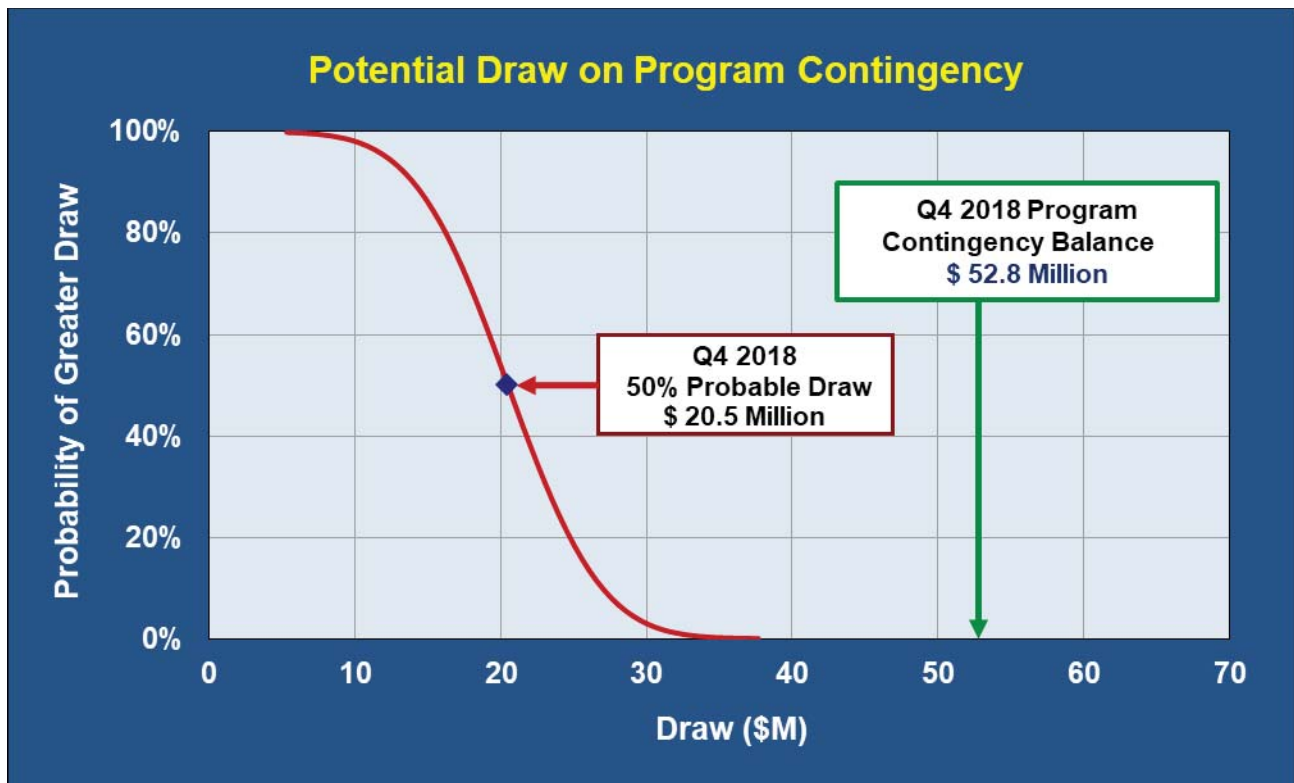


Figure 1 – Potential Draw on Program Contingency¹

1. Proposed architectural enhancements and project improvements are excluded unless approved by the TBPOC.

RISK MANAGEMENT DEVELOPMENTS

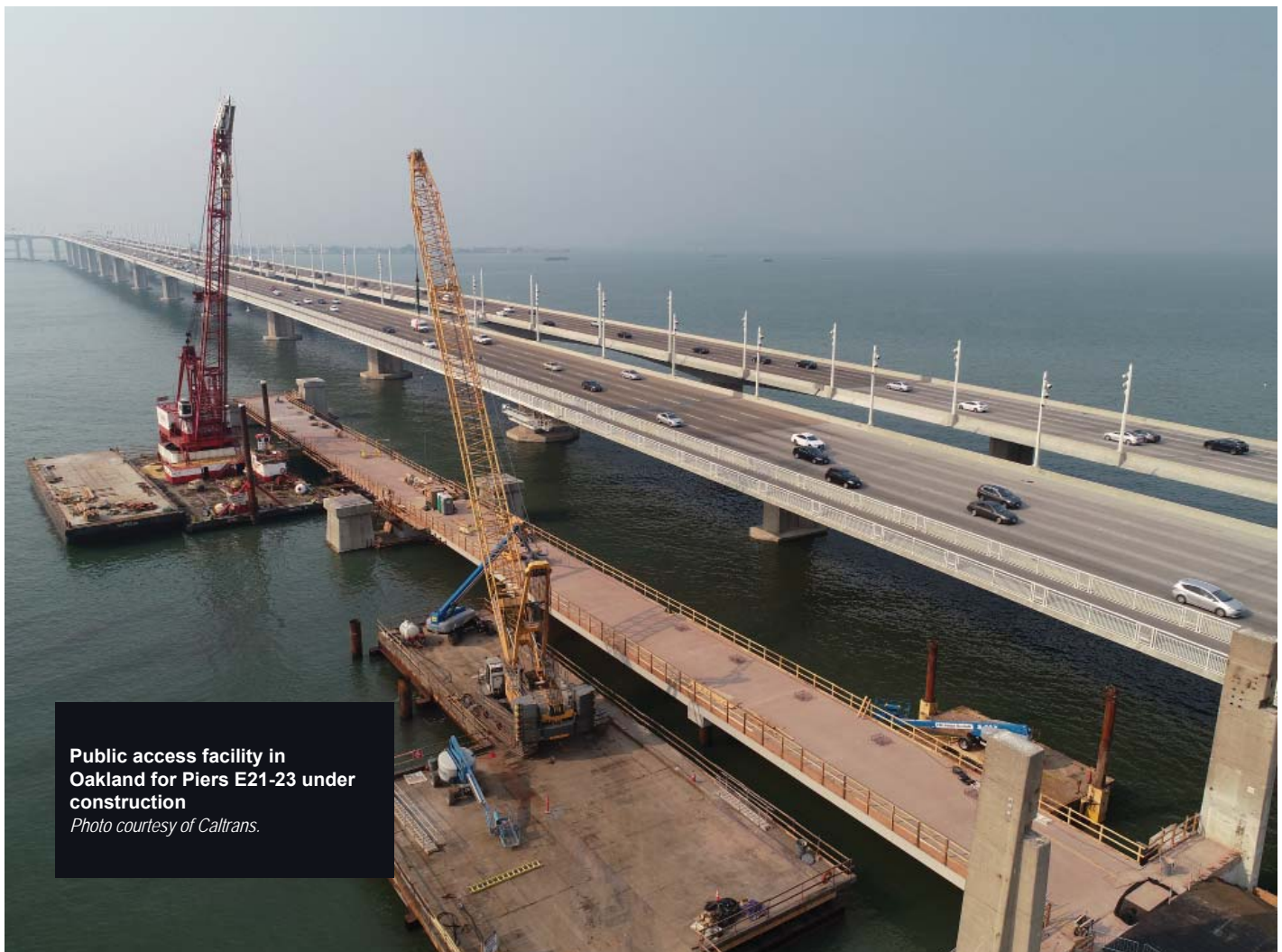
Close-Out of Toll Bridge Seismic Retrofit Program

On December 10, 2018, the TBPOC met and approved the final Toll Bridge Program Budget to be reported in this 2018 Fourth Quarter Project Progress and Financial Update to the Legislature and the California Transportation Commission. Caltrans verified that all seismic retrofit projects in the program were complete, that the objectives of the Toll Bridge Seismic Retrofit Program as described in AB144 have been fulfilled, and there are no more activities which require oversight by the TBPOC. Additionally, the TBPOC approved the transfer of remaining budget to BATA and assigned the oversight of the remaining minor work activities to BATA/Caltrans as part of their on-going Toll Bridge Rehabilitation Program (Rehab).

The final budget includes all recent TBPOC actions regarding pier retention and capital outlay support. This final budget was also approved by BATA in early January 2019. The overall program budget remained \$8,952 million and maintained a \$52.8 program contingency.

The risk management team were asked to forecast the final program forecast numbers using November 2018 budget, cost expenditures and risk information. The risk team forecast a probable draw (50% probable) of \$18.0 million on the \$52.8 million in program contingency at program completion and a forecast draw of \$26.2 million, when using the 90% confidence level (i.e. confidence level used when removing funds from the program in the past). The TBPOC approved keeping this \$26.2 million set aside in the BATA Rehab program to cover any residual seismic program costs. These costs could include risks to complete the pier retention work and any associated delays, close out of hazardous sites on YBI, environmental compliance, and disposition of right-of-way. The other \$26.6 million (i.e. \$52.8-\$26.2) in program contingency will be transferred back to BATA. This \$26.6 million, along with the \$483 million previously transferred back to BATA, brings the total to \$509.6 million in seismic toll funds being made available to fund other Bay Area transportation projects.

The project team led by the Bay Bridge Chief Engineer will continue to meet weekly in 2019 and plan to brief Caltrans



Public access facility in Oakland for Piers E21-23 under construction

Photo courtesy of Caltrans.

and BATA on progress regularly until all field work and closeout activities (i.e. as-builts, archiving, media inquiries, annual FHWA report, final audit and accounting) are complete.

SFOBB East Span COS Budget

Budget to Completion: The fourth quarter 2018 COS forecast to completion is \$1,357.9 million, which results in a cost variance of \$0.6 million to the current budget. This is a \$46.9 million improvement over the fourth quarter 2015 forecast, when the COS forecast peaked at \$1,404.8 million. The current approved budget of \$1,357.36 million for SFOBB East Span COS is expected to fund the program COS through completion of close-out activities.

Expenditures vs. Budget for 2018/19 Fiscal Year: On October 22, 2018, the TBPOC approved a total COS budget of \$14.6 million for the 2018/19 fiscal year. The actual expenditure for FY 2018/19 through December 31 2018 was \$6.7 million, running below the expected cost of \$7.3 million for the same period. This keeps the program on target to deliver the planned work at or under the approved COS budget.

Marine Foundation E2, E21 & E22 Pier Retention

Permitting Contract for E2, E21, E22 Pier Retention & E19, E20 Demolition: The project environmental team diligently pursued seven different permits and secured the permits by the end of July to allow the contract to be substantially complete with all marine work by December 31, 2018. Marine work is now complete and the contractor has demobilized his marine fleet, thereby significantly reducing the project's exposure to delay costs. The permits came with additional requirements which the team worked to build into the contract during the fourth quarter.

On November 6 2018, the TBPOC approved \$5.8 million in additional funding to fund this added scope. BCDC may require additional amenities be added to this project prior to allowing the piers to be accessed by the public. If required, the additional amenities would be funded from the \$26.2 million in TBSRP funds transferred to the Rehab Program that the TBPOC approved as a reserve for any residual seismic program obligations.

Close Out of historic contaminated sites on YBI: There are several historic contaminated sites on YBI that were the result of the Navy's past activities on the island. The Navy postponed clean-up of these sites pending completion of the SFOBB East Span replacement project. One of these sites (Site #11) lies under the area the TBSRP plans to build a parking lot to facilitate public access to pier E2. There is a risk that, to move the Pier Retention project forward, the project might be held responsible for a portion of the cleanup costs. Remediation would be funded from TBSRP funds transferred to the Rehab Program that the TBPOC approved as a reserve for any residual seismic

program obligations.

The project team has identified several risks in the program risk registers that the project might be found to be the responsible party for these sites rehabilitation. These risks carry a high-end exposure of \$10 million, with a probable cost of \$6.1 million carried in the forecast numbers of the program risk register. The risks could be funded from TBSRP funds transferred to the Rehab Program that the TBPOC approved as a reserve for any residual seismic program obligations.

Caltrans is currently developing a work plan to define the nature and extent of the contamination and developing a scoping document for remediation alternatives as it relates to interim work, and long-term remediation. Once approved, implementation of these remediation alternatives will take place and then monitoring and reporting may take 1-5 years to complete.

RISK MANAGEMENT LOOK AHEAD

Marine Foundation E2, E21 & E22 Pier Retention

Increased cost of required permit amenities: The project environmental team secured the required permits by the end of July to allow the contract to be substantially complete with all marine work by December 31, 2018. The permits came with additional requirements which the team worked to build into the contract during the fourth quarter 2018. These additional permit requirements came at an additional cost of about \$5.8 million, which was allocated to the contract by the TBPOC during the Nov 6 2018 TBPOC meeting. BCDC may require additional amenities prior to closing out the project/program environmental permit.

Close Out Historic Contaminated Sites on YBI

Project Environmental and Legal team will reinstate coordination with the US Navy in accordance with the Interim Site 11 Remedial Investigation Report (2010). Caltrans will work with the Navy to consult with resource agencies to develop workplans for final closure of these contaminated sites.

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. On April 9, 2010, the TBPOC approved a \$137 million reduction in the TBSRP program budget as a result of savings from the Antioch Bridge Retrofit. On September 2, 2010, the TBPOC approved a \$216 million reduction in the TBSRP program budget as a result of savings from the Dumbarton Bridge Retrofit. And finally, on November 5, 2013, the TBPOC approved a \$130 million reduction in the TBSRP program budget as a result of a reduction in the program contingency, bringing the current approved TBSRP budget to \$8.952 billion (see Appendix A-1). The program funding sources are shown in Table 1 - Program Budget.

Table 1 - Program Budget as of December 31, 2018 (\$ 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 ⁽¹⁾	750.0	750.0
BATA Consolidation	820.0	820.0
Subtotal - Financing	6,002.0	6,002.0
Contributions		
Proposition 192	790.0	790.0
San Diego Coronado Toll Bridge Revenue Fund	33.0	33.0
Vincent Thomas Bridge ⁽²⁾	15.0	6.9
State Highway Account ⁽³⁾	745.0	745.0
Public Transportation Account ⁽³⁾	130.0	130.0
ITIP/SHOPP/Federal Contingency ⁽³⁾	448.0	448.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR) ⁽³⁾	642.0	642.0
SHA - East Span Dismantling ⁽³⁾	300.0	300.0
SHA - "Efficiency Savings" ⁽³⁾	130.0	130.0
Redirect Spillover ⁽³⁾	125.0	125.0
Motor Vehicle Account ⁽³⁾	75.0	75.0
Subtotal - Contribution	3,433.0	3,424.9
Total Funding	9,435.0	9,426.9
Allocated to Date		8,884.5
Remaining Unallocated		542.4
Expenditures :		
Capital Outlay		6,941.1
State Operations		1,881.2
Antioch and Dumbarton Expenditures by BATA		18.6
	Total Expenditures	8,840.9
Encumbrances :		
Capital Outlay		32.7
State Operations		11.0
	Total Encumbrances	43.6
Total Expenditures and Encumbrances ⁽⁴⁾		8,884.5
<p>⁽¹⁾ The Vincent Thomas Bridge state funds contribution was finalized in legislation and statutes to be \$6.9 million and no additional funds were identified in AB144 to address the funding gap, in Q2 2018 BATA agreed to fund the shortfall.</p> <p>⁽²⁾ The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p>⁽³⁾ 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.</p> <p>⁽⁴⁾ The Skyway contract is the only contract in the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project with federal funds. The Federal Aid Project No. is 0801(090) for the amount of \$321,645,209.22. No other federal funds will be used on this project in the future.</p>		

Summary of the Toll Bridge Oversight Committee 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 December 31, 2018, 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 (Actual)	2013-14 (Actual)	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	1,830

* Caltrans Efficiency Savings
** SFOBB East Span Dismantling Cost.
Actual as of December 31, 2018

Table 3—Toll Bridge Program Oversight Committee
Estimated Expenses: July 1, 2005 through December 31, 2018 (\$ Millions)

Agency/Program Activity	Expenses
BATA	3.0
Caltrans	4.3
CTC	3.7
Reporting	5.9
Total Program	16.6

Quarterly Environmental Compliance Highlights

Overall environmental compliance for the San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Safety Project (SFOBB Project) has been a success during the 4th Quarter of 2018. The tasks for the current quarter were focused on biological monitoring in support of construction activities, pier retention and pier removal permit compliance, and project close-out.

ENVIRONMENTAL TEAM KEY SUCCESSES

The environmental team conducted construction monitoring throughout the 4th quarter of 2018 to ensure compliance with regulatory approvals for implosion of piers E19 and E20, construction of new public access piers on Yerba Buena Island (YBI) and the Oakland Touchdown (OTD), and dismantling of the construction access trestle at the OTD. Bird monitoring was conducted weekly in compliance with the project's Bird Monitoring Plans. The goal of this monitoring was to document potential impacts to birds from construction activities. Water quality monitoring was conducted during all in-water work activities, including post-implosion clean-up and OTD trestle dismantling. With approval from the California Department of Fish and Wildlife, the Department proceeded with in-water removal of the temporary trestle piles at OTD during the month of December without a herring waiver. The Department committed to monitoring for herring spawns each day of in-water activity. Monitoring was conducted prior to the start of construction activities each day, including weekends when the contractor worked. No evidence of herring spawning was observed, and all work proceeded without delay due to herring.

The environmental team provided preliminary monitoring results from the Pier E19 and E20 implosion event to applicable regulatory agencies throughout the end of the 3rd quarter of 2018. The team assembled a final report summarizing the monitoring results of the 2018 pier implosion event throughout the 4th quarter of 2018 that will be submitted to the regulatory agencies in February 2019. Monitoring during the implosion event indicated impacts were less than or equal to what was anticipated, indicating there was no unauthorized take of fish or marine mammals and water quality parameters reached background levels within a few hours.

The environmental team worked closely with the project team, Bay Area Toll Authority (BATA), East Bay Regional Parks District (EBRPD), and the Coastal Conservancy to secure an additional \$1.1 million in grant funding for amenities on the OTD public access pier. The task involved extensive coordination between BATA, EBRPD, the Coastal Conservancy and SFOBB construction management to develop a list of additional amenities (e.g., benches, water line, vault toilet) to be funded through a

cooperative funding agreement.

The environmental team worked with EBRPD throughout the 4th quarter of 2018 to resolve the outstanding shorebird roosting habitat mitigation requirement pursuant to conditions of the San Francisco Bay Conservation Development Commission (BCDC) permit for the SFOBB Project. The team has developed a strategy in coordination with EBRPD to fulfil this mitigation requirement at the Martin Luther King Jr. Regional Shoreline in San Leandro Bay. Meetings were held with BCDC on September 27, 2018 and December 7, 2018 to discuss this option, and the team will continue to work with stakeholders and BCDC to comply with this permit requirement in early 2019.

The environmental team submitted a BCDC permit amendment request for a proposed OTD parking lot and associated infrastructure. The amendment request includes plans for a 63-stall parking lot with sidewalks and shoulders that will satisfy the requirement for a temporary parking lot included in the project's BCDC permit. The parking lot will also meet the needs of EBRPD and MTC for inclusion into the future Gateway Park.

SFOBB PROJECT CLOSE-OUT

The environmental team continued working on SFOBB Project close-out activities throughout the 4th quarter of 2018. Archiving of key environmental records for the project was conducted throughout the quarter. The team also reviewed the SFOBB Project environmental document and natural resource agency permits and authorizations for outstanding compliance and mitigation items.

To address potential impacts to environmental resources during bridge construction and dismantling, the Department and Federal Highway Administration (FHWA) prepared the SFOBB Project FEIS, dated May 2001, pursuant to the National Environmental Policy Act (NEPA). The Department also obtained approvals from regulatory agencies for all activities associated with both the construction of the new east span and the dismantling of the original east span. These approvals include the following:

- California Department of Fish and Game (CDFG) Incidental Take Permit No. 2081-2001-021-03 (2001) and all 7 associated Amendments
- National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) Biological Opinion and Incidental Take Statement No. 151422-SWR99-SR-190 (2001) and all 6 Supplemental Biological and Conference Opinions

Quarterly Environmental Compliance Highlights (Continued)

- National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) Incidental Harassment Authorizations (13) and Letters of Authorization
- Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements Order R2-2002-0011 (2002), and modification (2018)
- Regional Water Quality Control Board (RWQCB) Water Quality Certification Order 01-120 (2001)
- San Francisco Bay Conservation and Development Commission (BCDC) Permit No. 8-01 (2001), and all 44 associated Amendments
- United States Army Corps of Engineers (ACOE) Permit No. 23013S (2001) and all associated Letters of Modification
- United States Coast Guard New Bridge Permit (2001) and all associated Amendments
- United States Fish and Wildlife Service (USFWS) Biological Opinion No. 1-1-02-F-0002 (2001)

The environmental team anticipates the close-out of these authorizations will take approximately six months after completion of SFOBB Project construction activities. Examples of outstanding compliance items that must be resolved prior to permit close-out include completion of shorebird roosting habitat compensatory mitigation, finalizing a public access guarantee for public access areas on YBI and OTD, and completion of infill monitoring at the locations of the former marine foundations. The Capital Outlay costs of these close out items are captured in the Right of Way and Environmental Mitigation approved budget and the Capital Outlay Support cost of implementing these items are captured in the approved SFOBB East Span Replacement COS budget.

KEY ACCOMPLISHMENTS FOR SFOBB PROJECT

The environmental team was a key member of the SFOBB Project team throughout permitting, bridge construction and dismantling. Key accomplishments made by the environmental team for the SFOBB Project are outlined below.

- Developed a \$15.5 million comprehensive mitigation package to address project environmental impacts off-site, and oversee on-site restoration activities.
- Undertook a series of interagency meetings to keep federal and state regulatory agencies apprised of

the progress and changes of the project's environmental elements and aid in the decision making process for developing continued avoidance and minimization measures and strategies.

- Minimized impacts from pile driving by developing and implementing effective marine pile driving attenuation systems that are now standard on projects across the country.
- Contributed to the improvement of San Francisco Bay water quality through the construction and operation of bio-retention basins that filter runoff from the SFOBB toll plaza.
- Completion of two cage fish studies to further understanding of hydroacoustic impacts on fish from pile driving and pier implosion activities.
- Obtained regulatory authorizations for the use of up to 2,540 steel shell piles to support bridge dismantling activities.
- Worked with the project team to develop alternative dismantling methodologies which greatly reduced the originally considered amount of pile driving and eliminated the need for dredging.
- Obtained unique permit from USFWS allowing for the removal of chicks and eggs from active nests to avoid construction delays during bridge dismantling.
- Mitigated effects to the existing cormorant colony during construction through effective avoidance and minimization measures.
- Avoided impacts to the fully protected peregrine falcon that were residents on the original east span during bridge construction and demolition construction activities.
- Obtained regulatory approvals for underwater controlled blasting, a first in San Francisco Bay, which reduced the demolition phase of the project by approximately 3 years.
- Successfully relocated the resident cormorant population from the original east span to platforms constructed on the new east span.

Quarterly Environmental Compliance Highlights (Continued)

- Innovated methods to implement and attenuate controlled blasting of major marine structures through use of advanced blasting technology and planning and a robust blast attenuation system, thereby reducing environmental effects from previously considered demolition methods.
- Contributed to and advanced the understanding of controlled implosion as a viable and less impactful method for removal of major marine structures.
- Implemented a successful monitoring program that provided effective protection to marine species during controlled blast events.
- Cleaned up the Bay by removing SFOBB original east span without take of listed species during bridge dismantling.
- Minimized impacts to water quality through effective BMPs and response measures throughout construction.
- Provided public access to YBI and the San Francisco Bay via the SFOBB bike path on the new east span.
- Provided public access to the Bay at the OTD and YBI via new over-water observation areas.
- Extended public access via the Bay Trail from the new east span through the Emeryville Crescent.

APPENDICES

A. TBSRP AB 144/SB 66/ AB 1175 Baseline Budget, Forecasts and Expenditures through December 31, 2018 (A-1 and A-2).....	16
B. TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through December 31, 2018.....	20
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Appendix A-1: TBSRP AB 144/SB 66/AB 1175 Baseline Budget, Forecasts and Expenditures Through December 31, 2018, by bridge including program contingency (\$ Millions)

Contract	AB 144/SB 66/AB 1175	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.3	398.1	1,357.4	1,336.6	1,357.9	0.5
Capital Outlay Construction	4,492.2	669.5	5,161.7	5,124.8	5,166.6	4.9
Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Total	5,486.6	1,033.2	6,519.8	6,462.1	6,525.2	5.4
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	(0.5)	119.5	119.4	119.5	-
Capital Outlay Construction	309.0	24.1	333.1	333.0	333.1	-
Total	429.0	23.6	452.6	452.4	452.6	-
SFOBB West Span Retrofit						
Capital Outlay Support	75.0	(0.2)	74.8	74.8	74.8	-
Capital Outlay Construction	232.9	(2.4)	230.5	230.5	230.5	-
Total	307.9	(2.6)	305.3	305.3	305.3	-
Richmond-San Rafael Bridge Retrofit*						
Capital Outlay Support	134.0	(7.2)	126.8	126.7	126.8	-
Capital Outlay Construction	780.0	(111.8)	668.2	668.1	668.1	(0.1)
Total	914.0	(119.0)	795.0	794.8	794.9	(0.1)
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 Bridge 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	-	42.1	42.0	42.1	-
Total	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	-	70.0	70.0	70.0	-
Total	103.5	(0.3)	103.2	103.2	103.2	-

Appendix A-1: TBSRP AB 144/SB 66/AB 1175 Baseline Budget, Forecasts and Expenditures Cont. Through December 31, 2018, by bridge including program contingency (\$ Millions)

Contract	AB 144/SB 66/AB 1175	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	24.1	24.1	17.4	24.2	0.1
Capital Outlay Support by BATA				6.7		
Capital Outlay Construction	-	47.0	47.0	47.0	47.0	-
Total	267.0	71.1	71.1	71.1	71.2	0.1
Dumbarton Bridge						
Capital Outlay Support	-	47.5	47.5	39.5	47.5	-
Capital Outlay Support by BATA				7.9		
Capital Outlay Construction	-	64.9	64.9	64.4	64.7	(0.2)
Total	483.0	112.4	112.4	111.8	112.2	(0.2)
Subtotal Capital Outlay Support	1,682.9	211.8	1,894.6	1,873.8	1,895.3	0.7
Subtotal Capital Outlay	6,787.1	190.9	6,977.9	6,940.4	6,982.5	4.6
Subtotal Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Miscellaneous Program Costs	30.0	(4.0)	26.0	26.0	26.0	-
Subtotal Toll Bridge Seismic Retrofit Program	8,535.0	364.2	8,899.2	8,840.9	8,904.5	5.3
Net Programmatic Risks**	-	-	-	-	15.2	15.2
Program Contingency	900.0	(847.2)	52.8	-		
Total Toll Bridge Seismic Retrofit Program***	9,435.0	(483.0)	8,952.0	8,840.9	8,919.7	(32.3)

* Budget for Richmond-San Rafael Bridge included \$16.9 million for deck joint rehabilitation work that was considered to be eligible for seismic retrofit program funding. On 6/21/18 TBPOC approved plan to fund this work from the Toll Bridge Rehabilitation account, freeing up \$16.9 million in Toll Bridge Seismic contingency transferred to Program Contingency in Q3 2018.

** Programmatic Risks: Consists of \$15.23 million in Q4 2018 Program Risk Register Costs

*** AB144/SB66 established a funding level of \$8.685 Billion in July 2005 for TBSRP. AB1175 added the retrofitting of the Antioch and Dumbarton Bridges in January 2010, providing another \$750 million in funding, bringing Total Toll Bridge Seismic Retrofit Program funding to \$9.435 Billion. Since 2010, \$483 million has been removed from the program, bringing the current TBPOC Approved Budget to \$8.952 Billion. The \$483 million removed consisted of:

- Antioch Savings (4/12/10) \$137 million
- Dumbarton Savings (9/02/10) \$216 million
- Program Contingency Redirection (11/05/13) \$130 million.

(Due to the rounding of numbers, the totals above are show within \$0.1)

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Through December 31, 2018, by major contract, without program contingency (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of (12/2018) see Note (1)	Estimated costs not yet spent or encumbered as of (12/2018)	Total Forecast as of (12/2018)
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	-	144.6
Capital Outlay	472.6	472.6	471.9	0.6	472.5
Total	617.5	617.5	616.5	0.6	617.1
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.8	-	126.8
Capital Outlay	698.0	668.2	668.1	-	668.1
Project Reserves	82.0	-	-	-	-
Total	914.0	795.0	794.9	-	794.9
West Span Retrofit					
Capital Outlay Support	75.0	74.8	74.9	(0.1)	74.8
Capital Outlay	232.9	230.5	230.5	-	230.5
Total	307.9	305.3	305.4	(0.1)	305.3
West Approach					
Capital Outlay Support	120.0	119.5	119.5	-	119.5
Capital Outlay	309.0	333.1	333.1	-	333.1
Total	429.0	452.6	452.6	-	452.6
SFOBB East Span -Skyway					
Capital Outlay Support	197.0	181.2	181.2	-	181.2
Capital Outlay	1,293.0	1,236.1	1,237.3	-	1,236.1
Total	1,490.0	1,417.3	1,417.3	-	1,417.3
SFOBB East Span -SAS- Superstructure					
Capital Outlay Support	214.6	512	511.7	0.2	511.9
Capital Outlay	1,753.7	2,009.4	2,009.4	-	2,009.4
Total	1,968.3	2,521.4	2,521.1	0.2	2,521.3
SFOBB East Span -SAS- Tower Anchor Rod Grouting					
Capital Outlay Support	-	0.8	0.8	-	0.8
Capital Outlay	-	8.9	8.9	-	8.9
Total	-	9.7	9.7	-	9.7
SFOBB East Span -SAS- Foundations					
Capital Outlay Support	62.5	37.6	37.6	-	37.6
Capital Outlay	339.9	301.3	301.3	-	301.3
Total	402.4	338.9	338.9	-	338.9
Small YBI Projects					
Capital Outlay Support	10.6	10.2	10.2	-	10.2
Capital Outlay	15.6	15.2	15.2	-	15.2
Total	26.2	25.4	25.4	-	25.4
YBI Detour					
Capital Outlay Support	29.5	87.7	87.9	-	87.9
Capital Outlay	131.9	473.3	473.3	0.1	473.4
Total	161.4	561.0	561.2	0.1	561.3

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Cont.

Through December 31, 2018, by major contract, without program contingency (\$ Millions)

Contract	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of (12/2018) see Note (1)	Estimated costs not yet spent or encumbered as of (12/2018)	Total Forecast as of (12/2018)
a	b	c	d	e	f = d + e
YBI - Transition Structures					
Capital Outlay Support	78.7	152.4	147.1	6.4	153.5
Capital Outlay	299.4	314.7	314.8	-	314.8
Total	378.1	467.1	461.9	6.4	468.3
Oakland Touchdown					
Capital Outlay Support	74.4	118.7	118.3	-	118.3
Capital Outlay	283.8	326.4	326.5	-	326.5
Total	358.2	445.1	444.8	-	444.8
East Span Other Small Projects					
Capital Outlay Support	212.3	197.9	197.9	-	197.9
Capital Outlay	170.8	138.2	133.9	-	133.9
Total	383.1	336.1	331.8	-	331.8
Existing Bridge Demolition					
Capital Outlay Support	79.7	58.9	54.9	4.0	58.8
Capital Outlay	239.2	338.9	339.1	8.9	348.0
Total	318.9	397.8	394.0	12.9	406.9
Antioch Bridge					
Capital Outlay Support	-	24.1	17.4	0.1	17.5
Capital Outlay Support by BATA	-	-	6.7	-	6.7
Capital Outlay	-	47.0	47.0	-	47.0
Total	267.0	71.1	71.1	0.1	71.2
Dumbarton Bridge					
Capital Outlay Support	-	47.5	39.6	-	39.6
Capital Outlay Support by BATA	-	-	7.9	-	7.9
Capital Outlay	-	64.9	64.7	-	64.7
Total	483.0	112.4	112.2	-	112.2
Miscellaneous Program Costs	30.0	26.0	26.0	-	26.0
Total Capital Outlay Support ⁽²⁾	1,712.9	1,920.6	1,910.8	10.6	1,921.4
Total Capital Outlay	6,822.1	6,978.6	6,973.7	9.4	6,983.1
Program Total	8,535.0	8,899.2	8,884.5	20.0	8,904.5

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

(2) Construction administration of the OTD Detour is under the YBITS1 contract. Encumbrance is included in YBITS 1 contract.

(3) Construction administration of the Cantilever segment is under the YBITS2 contract. Encumbrance is included in YBITS2 contract.

(Due to the rounding of numbers, the totals above are shown within \$0.1)

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

Through December 31, 2018 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	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	297.4	512.0	511.7	511.9	(0.1)
Capital Outlay Construction	1,753.7	255.7	2,009.4	2,007.4	2,009.4	-
Total	1,968.3	553.1	2,521.4	2,519.1	2,521.3	(0.1)
SAS Tower Anchor Rod Grouting						
Capital Outlay Support	-	0.8	0.8	0.7	0.8	-
Capital Outlay Construction	-	8.9	8.9	8.7	8.9	-
Total	-	9.7	9.7	9.5	9.7	-
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	26.5	-
Total	36.4	(0.7)	35.7	35.7	35.7	-
YBI South/South Detour						
Capital Outlay Support	29.4	58.3	87.7	87.9	87.9	0.2
Capital Outlay Construction	131.9	341.4	473.3	473.4	473.4	0.1
Total	161.3	399.7	561.0	561.3	561.3	0.3
East Span - Skyway						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(56.9)	1,236.1	1,235.6	1,236.1	-
Total	1,490.0	(72.7)	1,417.3	1,416.8	1,417.3	-
East Span - SAS E2/T1 Foundations						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(38.7)	274.8	274.8	274.8	-
Total	366.0	(62.8)	303.2	303.2	303.2	-
YBI Transition Structures (see notes below)						
Capital Outlay Support	78.7	73.7	152.4	143.2	153.5	1.1
Capital Outlay Construction	299.3	15.4	314.7	310.7	314.8	0.1
Total	378.0	89.1	467.1	454.1	468.3	1.2
* YBI - Transition Structures						
Sunk Cost			16.4	16.4	16.4	-
* YBI - Southgate Road						
Cost Outlay Support BATA (Southgate Road)			6.4	4.1	6.4	-
Cost Outlay BATA (Southgate Road)			3.2	-	3.2	-
Total			9.6	4.1	9.6	-
* YBI - Transition Structures Contract No. 1						
Capital Outlay Support			72.1	71.2	71.2	(0.9)
Capital Outlay Construction			203.7	203.2	203.8	0.1
Total			275.8	274.4	275.0	(0.8)
* YBI - Transition Structures Contract No. 2						
Capital Outlay Support			56.5	51.4	58.5	2.0
Capital Outlay Construction			107.8	107.4	107.8	-
Total			164.3	158.9	166.3	2.0
* YBI - Transition Structures Contract No. 3 Landscape						
Capital Outlay Support			1.0	0.3	1.0	-
Capital Outlay Construction			-	-	-	-
Total			1.0	-	1.0	-

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

Through December 31, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Oakland Touchdown (see notes below)						
Capital Outlay Support	74.4	44.3	118.7	118.2	118.3	(0.4)
Capital Outlay Construction	283.8	42.6	326.4	326.5	326.5	0.1
Total	358.2	86.9	445.1	444.7	444.8	(0.3)
* OTD Prior-to-Split Costs						
Capital Outlay Support			20.1	20.0	20.0	(0.1)
Capital Outlay Construction			-	-	-	-
Total			20.1	20.0	20.0	(0.1)
* OTD Submarine Cable(1)						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			5.7	5.7	5.7	-
Total			6.6	6.6	6.6	-
* OTD No. 1 (Westbound)						
Capital Outlay Support			51.2	51.2	51.2	-
Capital Outlay Construction			202.8	202.8	202.8	-
Total			254.0	254.0	254.0	-
* OTD No. 2 (Eastbound)						
Capital Outlay Support			37.6	37.4	37.4	(0.2)
Capital Outlay Construction			71.2	71.2	71.2	-
Total			108.8	108.6	108.6	(0.2)
* OTD Touchdown 2 Detour⁽²⁾						
Capital Outlay Support			8.1	8.0	8.0	(0.1)
Capital Outlay Construction			46.7	46.7	46.7	-
Total			54.8	54.7	54.7	(0.1)
* OTD Electrical Systems						
Capital Outlay Support			0.8	0.8	0.8	-
Capital Outlay Construction			-	-	-	-
Total			0.8	0.8	0.8	-
Existing Bridge Dismantling						
Capital Outlay Support	79.7	(20.8)	58.9	47.9	58.9	--
Capital Outlay Construction	239.2	99.7	338.9	318.6	348.0	9.1
Total	318.9	78.9	397.8	366.5	406.9	9.1
* Bridge Dismantling Prior-to-Split Cost						
Capital Outlay Support			3.9	3.9	3.9	-
Capital Outlay Construction			-	-	-	-
Total			3.9	3.9	3.9	-
* Cantilever Section						
Capital Outlay Support			1.6	1.6	1.6	-
Capital Outlay Construction			69.0	68.5	69.0	-
Total			70.6	70.1	70.6	-
* 504/288 Sections						
Capital Outlay Support			11.0	10.2	10.5	(0.5)
Capital Outlay Construction			81.8	79.0	81.6	(0.2)
Total			92.8	89.2	92.1	(0.7)

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

Through December 31, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
*Marine Foundations						
Capital Outlay Support			42.4	32.2	42.9	0.5
Capital Outlay Construction			188.1	171.1	197.4	9.3
Total			230.5	203.4	240.3	9
Sunk Cost for Marine Foundation			5.8	5.8	5.8	-
Pier-3 Demonstration Project						
Capital Outlay Support			4.0	4.0	4.0	-
Capital Outlay Construction			16.8	16.8	16.8	-
Total			20.8	20.8	20.8	-
Remaining Marine Foundations²						
Capital Outlay Support			32.6	22.5	33.2	0.6
Capital Outlay Construction			171.3	154.3	180.5	9.2
Total			203.9	176.8	213.7	9.8
Pier-E4 to Pier-E18						
Capital Outlay Support			12.0	11.7	12.0	-
Capital Outlay Construction			109.7	109.9	110.0	0.3
Total			121.7	121.8	122.0	0.3
Pier-E2 and Pier-E19 to Pier-E22						
Capital Outlay Support			20.6	10.6	21.2	0.6
Capital Outlay Construction			61.6	44.4	70.6	9.0
Total			82.2	55.0	91.8	9.6
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	-
YBI - USCG Road Relocation						
Capital Outlay Support	3.0	(0.3)	2.7	2.7	2.7	-
Capital Outlay Construction	3.0	(0.2)	2.8	2.8	2.8	-
Total	6.0	(0.5)	5.5	5.5	5.5	-
YBI - Substation and Viaduct						
Capital Outlay Support	6.5	(0.1)	6.4	6.4	6.4	-
Capital Outlay Construction	11.6	(0.3)	11.3	11.3	11.3	-
Total	18.1	(0.4)	17.7	17.7	17.7	-
Oakland Geofill						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
Total	10.7	-	10.7	10.7	10.7	-
Pile Installation Demonstration Project						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.3	(0.1)	9.2	9.3	9.3	-
Total	11.1	(0.1)	11.0	11.1	11.1	-

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

Through December 31, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (12/2018)	Cost to Date (12/2018)	Cost Forecast (12/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Stormwater Treatment Measures						
Capital Outlay Support	6.0	2.2	8.2	8.2	8.2	-
Capital Outlay Construction	15.0	1.9	16.9	16.9	16.9	-
Total	21.0	4.1	25.1	25.1	25.1	-
Right-of-Way and Environmental Mitigation						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	62.3	68.0	(4.4)
Total	72.4	-	72.4	62.3	68.0	(4.4)
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	0.1	97.8	97.8	97.8	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-Project Specific Costs	20.0	(16.8)	3.2	3.2	3.2	-
Total	162.6	(16.7)	145.9	145.9	145.9	-
Subtotal Capital Outlay Support	959.3	398.1	1,357.4	1,336.6	1,357.9	0.5
Subtotal Capital Outlay Construction	4,492.2	669.5	5,161.7	5,124.8	5,166.6	4.9
Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Total SFOBB East Span Replacement Project	5,486.6	1,033.2	6,519.8	6,462.1	6,525.2	5.4

⁽¹⁾ Current contract allotment to install two submarine electrical cables is \$5.7 million. Additional non-program funding to support this allocation beyond the \$9.6 million of available programs funds has been made available by the Treasure Island Development Authority.

⁽²⁾ Construction administration of the OTD Detour is under the YBITS#1 contract.

⁽³⁾ Construction administration of the Cantilever segment is under the YBITS#2 contract.

(Due to the rounding of numbers, the totals above are shown within \$0.1).

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/AB1175 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 PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

CAPITAL OUTLAY SUPPORT (COS): Cost of developing and administering a capital project.

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.

