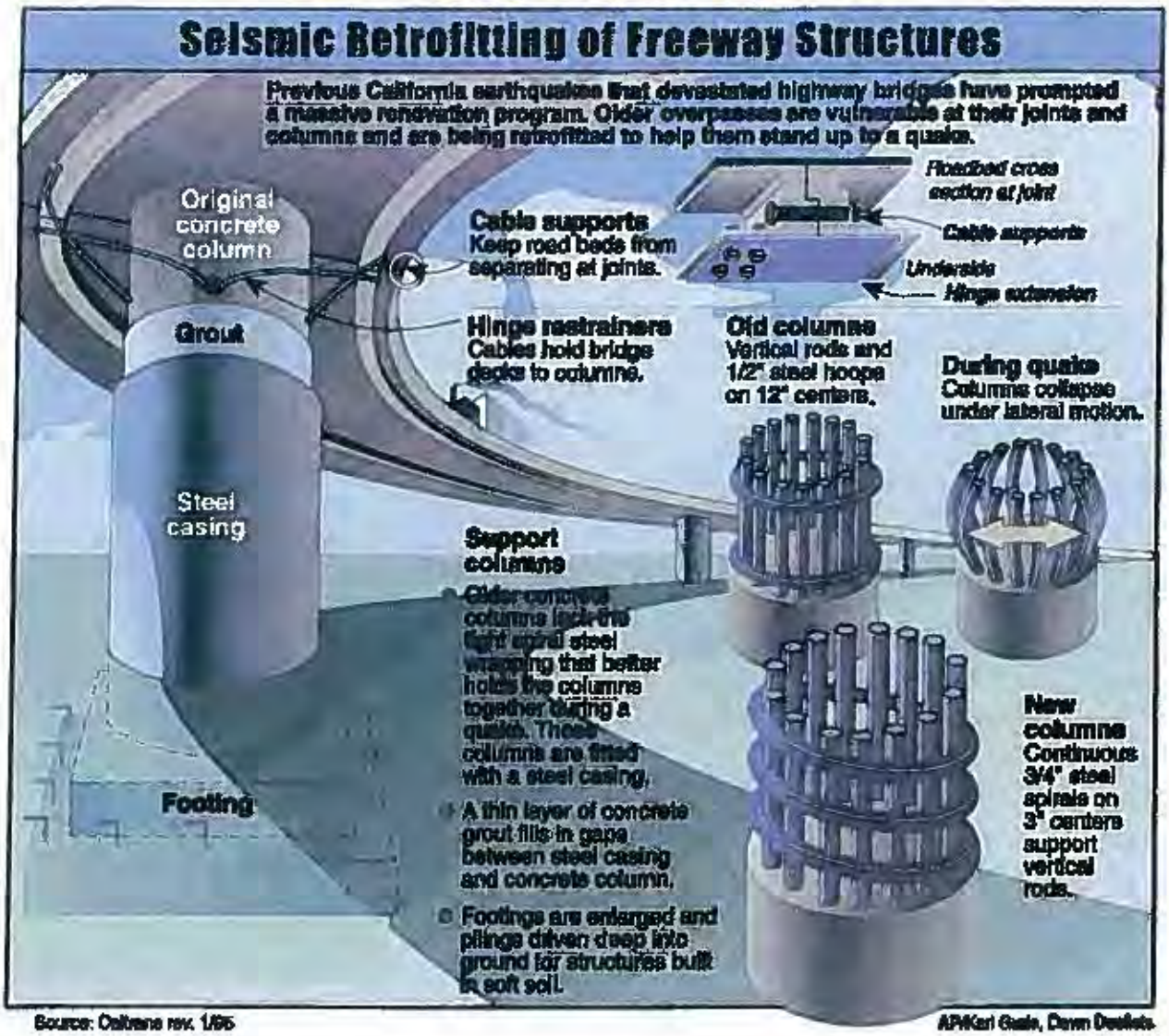
CALIFORNIA DEPARTMENT OF TRANSPORTATION

THIRD QUARTER 2011 NON-TOLL SEISMIC RETROFIT PROGRAM QUARTERLY REPORT



Reporting Period Ending September 30, 2011

Report Overview

This report provides information on the status and progress in delivering the California Department of Transportation's (Department) non-toll seismic retrofit programs. Other seismic retrofit programs under development by the Department included the following:

- The Phase 1 Seismic Retrofit Program is complete and is no longer reported.
- The Toll Bridge Seismic Retrofit Program Report is prepared and submitted separately by the Toll Bridge Program Oversight Committee as outlined in Section 30952.2 (b) (1) of the Streets and Highways Code.

This report fulfills the Department's statutory reporting requirement outlined in Assembly Bill (AB) 144 (Chapter 71, Statutes of 2005), which amended Section 188.5 (g) of the Streets and Highways Code as follows:

"(1) Commencing on January 1, 2004, and quarterly thereafter until completion of all applicable projects, the Department shall provide quarterly seismic reports to the transportation committees of both houses of the Legislature and to the commission for other seismic retrofit programs.

(2) The reports shall include all of the following:
(A) A progress report for each program.
(B) The program baseline budget for support and capital outlay construction costs.
(C) The current or projected program budget for support and capital outlay construction costs.
(D) Expenditures to date for support and capital outlay construction costs.
(E) A comparison of the current or projected schedule and the baseline schedule.
(F) A summary of milestones achieved during the quarterly period and any issues identified and actions taken to address those issues."

The Department currently has two active non-toll seismic retrofit programs as outlined below.

Phase 2 Seismic Retrofit Program:

The program consists of additional (beyond Phase 1) State-owned bridges that were determined to need seismic retrofit based on additional screening.

Local Bridge Seismic Retrofit Program:

The program consists of seismic retrofit of locally owned and Department of Water bridges. This program is funded and implemented by the agencies having jurisdiction over the bridges.

Background

California has more than 12,000 State-owned bridges on its State Highway System, plus an additional 11,500 city and county-owned bridges not on the State Highway System. Each bridge is inspected at least once every two years.

After the 1994 Northridge earthquake, the Department identified 1,155 State-owned bridges that became the Phase 2 program consisting of

mostly multicolumn bridges. Funding for this $1.35 billion program came from a $2 billion Proposition 192 bond, which was passed in 1996.

Seismic Evaluation

The Seismic Retrofit Program involves strengthening the columns of existing bridges by encircling certain columns with a steel casing or, in a few instances, an advanced woven fiber casing. In addition to the column casing, some bridge footings are made bigger and given more support by placing additional pilings in the ground, or by using steel tie-down rods to better anchor the footings to the ground.

In a few projects, bridge abutments are made larger and the existing restrainer units are made stronger, because encasing the columns makes them stiffer and can change the way forces are transmitted within the bridge. Many seismic retrofits involve "hinge seat extensions" which enlarge the size of the hinges that connect sections of bridge decks and help prevent them from separating during severe ground movement. The design of each bridge to be retrofitted is "site specific" based on the maximum credible earth movement expected at that location. The design details depend on many factors, including the nearest active earthquake fault, type of geology beneath the bridge, and the original bridge design.

Phase 2 Seismic Retrofit Program

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Progress Report and Milestones Achieved

The Phase 2 Seismic Retrofit Program is 99 percent complete. To date, 1,151 State-owned bridges, of 1,155 planned bridges, have been retrofitted under the Phase 2 program. The remaining four bridges are under construction (three contracts).

The programs remaining financial obligations are to complete right of way acquisition for two projects - 5th Avenue and High Street. In addition, there is a mitigation contract for the Humboldt County 10-Mile bridge project planned for delivery in FY 2011-12. No program cost overruns are anticipated.

Completion Schedule

The remaining bridges took substantially longer than originally planned because they are total bridge replacement projects. The bridge replacement contracts face delivery challenges, including environmental constraints, construction under heavy traffic conditions, and securing public and external agency input and acceptance for project approval.

Locations	Percent Complete	Baseline Schedule	Current Schedule
5th Avenue Overhead	66	2nd Qtr 2010	2nd Qtr 2013
High Street Separation	47	2nd Qtr 2008	1st Qtr 2014
Schuyler Heim Bridge	1	4th Qtr 2008	3rd Qtr 2013

Program Financials

The total budget for Phase 2 is $1.35 billion.

Budget (Costs in millions)	Baseline	Current
Support	$ 419.0	$ 438.0
Capital (right of way, construction)	$ 931.0	$ 904.0
Reserve	$ 0.0	$ 8.0
Total	$ 1,350.0	$ 1,350.0

Expenditures of $1.324 billion committed to date uses approximately 98 percent of the available program funds.

Expenditures (millions)	Costs
Program Expenditures	
Support	$ 435.0
Capital (right of way, construction)	$ 889.0
Planned Costs	
Support	$ 3.0
Capital (right of way, construction)	$ 15.0
Reserve (for claims, arbitration)	$ 8.0
Total	$ 1,350

Local Bridge Seismic Retrofit Program Status

The purpose of this report is to provide information on program delivery status of the Local Bridge Seismic Retrofit Program (LBSRP) for the 1,242 bridges which includes the 479 bridges adopted by the California Transportation Commission (Commission) on May 28, 2008. The 479 bridges adopted by the Commission, were identified to receive bond funds to match federal Highway Bridge Program (HBP) funds for their right of way and construction phases.

In previous quarterly reports, we have reported changes that have reduced the number of bond bridges to 430. Therefore, this report will reflect the program delivery of 1,242 bridges under LBSRP which includes 430 bond bridges.

The Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 provides $125 million of State matching funds to complete the LBSRP with bond funds. The Bond program budget of $125 million is to be allocated to provide the 11.47 percent required local match for right of way and construction phases of remaining seismic retrofit work on local bridges, ramps, and overpasses and includes $2.5 million set aside for bond administrative costs. An additional $32.9 million state match through annual exchange of a portion of local share of funds received from federal HBP fund is also available to accommodate the current remaining required local match needs. The Commission has allocated $13.5 million, $21 million, and $12.2 million bond funds for FY 2007–08, FY 2008–09, and FY 2009–10 respectively. Allocation of the bond funds by the Commission is available for sub-allocation in one fiscal year. Therefore, bond funds that were not sub-allocated from FY 2007–08, FY 2009–10 and FY 2010–11 will be reallocated in future years. Consistent with the Local Bridge Seismic Retrofit Guidelines, the Department has exchanged $24.3 million of local share of funds received through the federal HBP for state funds to accommodate local match needs for BART and other bond shortfalls. To date, $29.8 million of seismic bond funds and $19.9 million of state funds have been sub-allocated to seismic retrofit projects.

The Department did not request a bond allocation from the Commission for FY 2010–11. The match needs for FY 2010–11 will be covered by $8.4 million State funds remaining from the exchange mentioned above. These funds will expire by June 31, 2014 if not expended.

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Local Bridge Seismic Retrofit Program Progress Report

The LBSRP is currently 66 percent complete. To date, 827 local bridges, out of total of 1,242 planned bridges, have been retrofitted under the LBSRP. Currently, there are 238 bridges under construction, 164 bridges under design, and 13 bridges in a pre-strategy phase.

LBSRP Milestones Achieved This Quarter

The status as of September 30, 2011 of local bridges by phases is as follows:

	2007	2008	2009	2010	2011
Complete	709	724	747	810	827
Construction	66	124	161	239	238
Design	333	349	320	178	164
Pre-Strategy	127	38	7	15	13
Total	1,235	1,235	1,235	1,242	1,242

Please see previous reports for explanation of changes in number of bridges.

Milestones Achieved This Quarter for Bond Funded Bridges

The status as of September 30, 2011, of local bridges by phases is as follows:

	2007	2008	2009	2010	2011
Complete	0	4	25	47	62
Construction	15	99	117	236	235
Design	271	327	277	133	120
Pre-Strategy	193	38	7	15	13
Sub-Total	479	468	426	431	430
Removed	0	11	53	56	*57
Grand Total	479	479	479	487	487

Please see previous reports for explanation of changes in number of bridges.

**One bridge was removed from the bond list in 2011.*

LBSRP Program Budget and Expenditures

The estimated budget for the overall LBSRP is $2,068.5 million. This estimate does not include cost of other scopes of work that may be combined with the seismic retrofit project. A total of $1,065.2 million has been encumbered (spent) to date.

Funds (millions)	Spent*	Plan	Total
State	$79.5	$13.4	$92.9
Bond	$29.8	$92.7	$122.5
Federal	$894.0	**$959.1	$1,853.1
Total	$1,003.3	$1,065.2	$2,068.5

**Expenditure + Unliquidated Encumbrance*

***Includes 15 percent of total estimated construction cost for Preliminary Engineering*

Overall Program Delivery by Agency Group (Includes all the bridges in the LBSRP)

Bridges By Agency Group	Number Of Agencies	Pre Strategy	In Design		In Construction		Complete or No Retrofit		Total # Bridges	Percent Program
		Bond	Bond	Non-Bond	Bond	Non-Bond	Bond	Non-Bond		
All Other Agencies	59	5	85	0	35	2	30	639	796	64%
Los Angeles Region (City and County)	2	0	11	0	21	0	30	123	185	15%
San Francisco (YBI Structures)*	0	8	1	0	0	0	0	0	9	1%
Department of Water Resources	1	0	23	0	0	0	0	2	25	2%
BART	1	0	0	45	179	0	2	1	227	18%
Total	63	13	120	45	235	2	62	765	1,242	100%

Projects in the pre-strategy and design phase will qualify for bond match when they advance to right of way and construction phase.

**YBI bridges are tracked separately since these bridges were added to the program in April 2010.*

- One agency, Bay Area Rapid Transit (BART) is responsible for 227 bridges (18 percent of the entire program). All of the bond funded BART bridges have advanced to construction. The remaining BART bridges in the design phase will be fully funded by BART.