

STATE ROUTE 520

CONSTRUCTION PROGRESS REPORT

MAY 2016



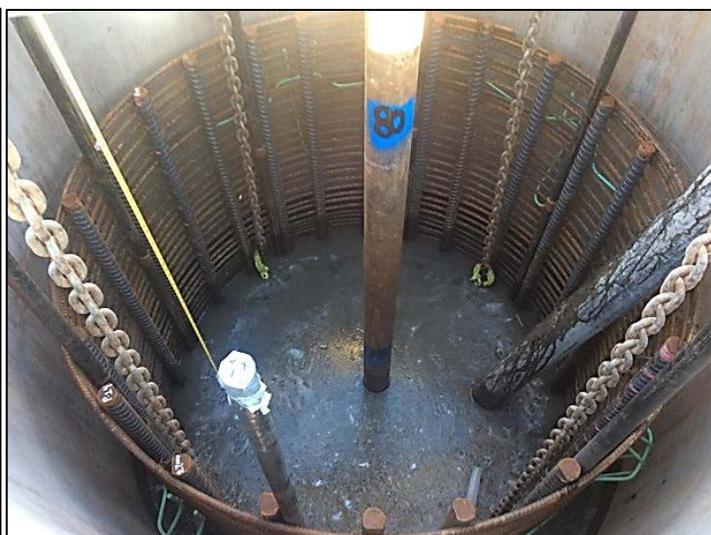
West Approach Bridge North (WABN): Pier 39, looking west



Floating Bridge and Landings (FB&L): Punch-list inspection on the regional shared-use path



FB&L: Roadway-deck demolition work



WABN: Placing concrete at shaft 14C



WABN: Finger pier 6



FB&L: Noise-wall 4 forms in Medina

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ACTIVE CONSTRUCTION PROJECT REPORTS*

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* Note: The *State Route 520 Construction Progress Report* is no longer publishing monthly updates for the Pontoon Construction Project and the Eastside Transit and HOV Project as major construction work on those two projects has ended. Please see the April 2015 *Construction Progress Report* for the final updates on those two projects.

Executive Summary

EXECUTIVE OVERVIEW

The SR 520 Bridge Replacement and HOV Program will improve safety and reliability throughout the SR 520 corridor, from I-5 in Seattle to the Eastside. Projects already completed or currently under construction include the new six-lane SR 520 floating bridge; the new six-lane Eastside corridor that includes culverts, improved transit facilities and lids; pontoon construction in Aberdeen; and the new west approach bridge for westbound traffic. Future work includes replacing the Portage Bay Bridge, building a new west approach bridge for eastbound traffic, building lids in Seattle, and connecting a bicycle/pedestrian path from the floating bridge to local and regional trails in Seattle.



WABN: Lowering rebar cage into shaft 18



Map of SR 520 Bridge Replacement and HOV Program

CURRENTLY FUNDED PROGRAM

We are currently funded to move forward with:

- Removing the old floating bridge from Lake Washington after opening the new, safer floating bridge to traffic in April 2016.
- Building the north half of the new west approach bridge, and connecting six lanes of traffic and the regional shared-use path from the Montlake interchange to the new floating bridge.
- Continuing to design the remaining elements of the west side of the corridor in Seattle, and then proceeding with construction.

PROGRAM STATUS

Floating Bridge and Landings (FB&L):

At the East Approach, crews worked on the completion of fabrication of the stairwell at Pier 3 on the regional shared-use path. On Lake Washington, crews performed pontoon R and Q bolt-beam painting and performed punch-list work. Crews continued electrical construction activities, testing bridge deck traffic loops, and performing punch-list walks for intelligent transportation system (ITS) sheds. Crews also continued deconstruction of the old bridge, removed span 41 bridge deck and girders, and de-tensioned west side post-tensioning cables.

West Approach Bridge North (WABN):

Demolition of the closed westbound off-ramp to Lake Washington Boulevard continued with the removal of demolished material offsite. Crews continued foundation work, placing concrete at shafts 12C, 13B, 14A and 15A. Crews conducted substructure work, placing concrete for shaft-to-column transitions at Pier 41. Crews also continued superstructure work, placing concrete for intermediate diaphragms at spans 18 and 19.



FB&L: Pouring footings for noise wall 4 in Medina

MAJOR RISKS

Notable major risks that could delay the program or increase costs include:

- Inflation costs for labor, materials and equipment.
- New requirements or contract changes required by local communities, regulatory groups or agencies.
- FB&L coordination with the WABN project at Pier 36 and the west side staging area.
- Geotechnical difficulties.
- Procurement of long-lead items
- Potential for damage to the new bridge during the demolition of the old bridge.
- Demolition of remaining structures

UPCOMING MILESTONES

Floating Bridge and Landings:

At the East Approach crews will install the stair tower at the north side of Pier 3, install north right-of-way fence and place forms, reinforcing steel and concrete for walls 3 thru 26. At the bridge maintenance facility, crews will continue work on the installation of the freight elevator, parking lot electrical system, lockers, blinds and a catwalk.

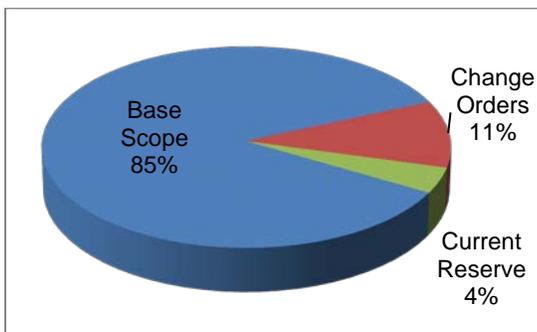
WABN:

Crews will continue drilling foundations and placing concrete at shafts 13A, 11C, 11B & 12B. Superstructure work will continue with crews placing concrete for intermediate diaphragms at spans 18 and 19, and preparing for girder setting and deck construction.

Total Program

	Total Budget	Actuals to Date	Remaining
SR520 Program Totals	\$4,561,710,704	\$2,459,050,709	\$2,102,659,995
Federal	\$498,134,693	\$343,100,721	\$155,033,972
FEDERAL GRANT FUNDS	\$3,000,000	\$3,000,000	\$0
FEDERAL FORMULA FUNDS	\$176,125,892	\$129,719,474	\$46,406,418
NATIONAL HIGHWAY PERFORMANCE PROGRAM	\$3,826,918	\$0	\$3,826,918
HIGHWAY SAFETY IMPROVEMENT	\$14,015,000	\$14,015,000	\$0
OUTDOOR ADVERTISING-INTERSTATE	\$855,000	\$855,000	\$0
STATE MATCHING (FUND 880)	\$311,883	\$311,883	\$0
TIFIA (USDOT - TIFIA LOAN)	\$300,000,000	\$195,199,364	\$104,800,636
Local	\$2,303,701	\$2,073,184	\$230,517
LOCAL PROJECT(CURRENT)	\$2,303,701	\$2,073,184	\$230,517
State	\$3,901,372,310	\$2,113,876,804	\$1,787,995,506
TRANSPORTATION PARTNERSHIP ACCOUNT (TPA)*	\$535,732,598	\$506,039,799	\$29,692,799
NICKEL ACCOUNT STATE DOLLARS	\$52,243,840	\$52,244,156	(\$316)
CONNECTING WASHINGTON	\$1,642,500,000	\$3,979	\$1,642,496,021
SR520 CORRIDOR	\$659,938,822	\$569,192,899	\$90,745,923
SR520 GARVEE	\$924,612,501	\$924,612,501	\$0
Toll Revenue	\$70,271,057	\$51,646,611	\$18,624,446
SR520 Civil Penalties Account	\$14,000,000	\$7,563,367	\$6,436,633
STATE FUNDS	\$2,573,492	\$2,573,492	\$0
Deferred Sales Tax	\$159,400,000		\$159,400,000
DEFERRED SALES TAX	\$159,400,000		\$159,400,000

*TPA Includes \$10M from ESSB 6001 for west side design development.



Cumulative Reserve	\$434,130,000
May Change Orders	(\$8,375,700)
Previous Change Orders	(\$315,416,543)
Right of Way Settlements	(\$3,777,010)
Current Reserve	\$106,560,747

Floating Bridge and Landings Project

FLOATING BRIDGE AND LANDINGS

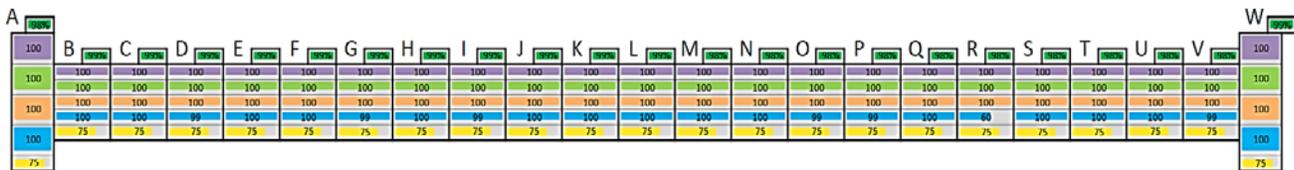
The SR 520 Floating Bridge and Landings (FB&L) Project replaced the old, vulnerable four-lane structure with a new six-lane bridge that can withstand windstorms of up to 89 miles per hour. The new six-lane bridge includes a bicycle/pedestrian path and a bridge maintenance facility on the east end. The project included construction of 44 supplemental stability pontoons in Tacoma.



FB&L: Deconstruction of old bridge's roadway deck at east truss

Original Engineers Estimate	\$640,769,000
Bid Price	\$586,561,000
Change Orders to date	\$173,088,718
Current Contract Value	\$759,649,718

BRIDGE ELECTRICAL PROGRESS BY PONTOON

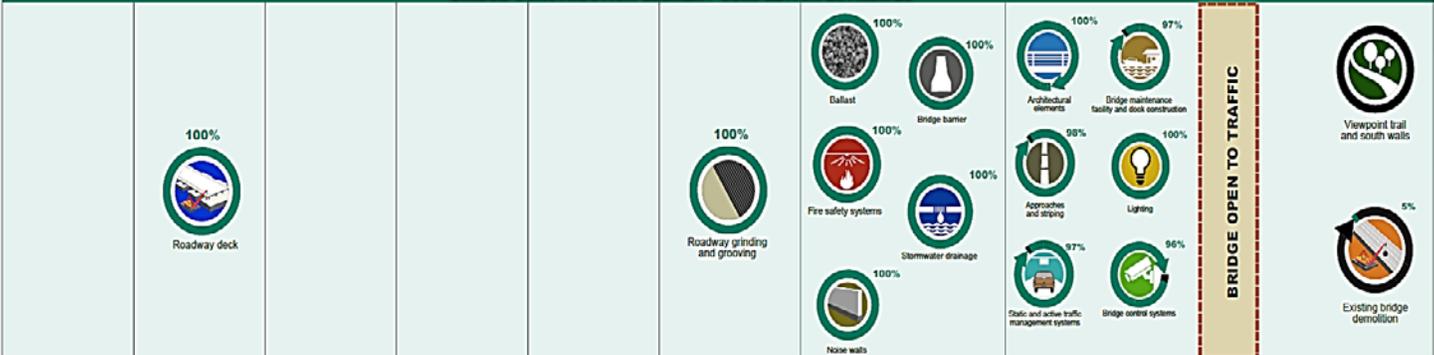


KEY: Electrical Conduit Under deck supports Medium voltage system Pontoon electrical component Pontoon commissioning **Note:** All progress bars indicate the percentage complete of that electrical element

September 2015	October 2015	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016	May-December 2016
BRIDGE ELECTRICAL PROGRESS								
67%	74%	81%	86%	90%	93%	99%	100%	
52%	72%	81%	85%	92%	98%	98%	98%	

KEY: Planned completion of electrical Current status of electrical

BRIDGE CONSTRUCTION ELEMENT COMPLETION ESTIMATES



Floating Bridge Electrical Progress and Commissioning milestones

MAY ACCOMPLISHMENTS

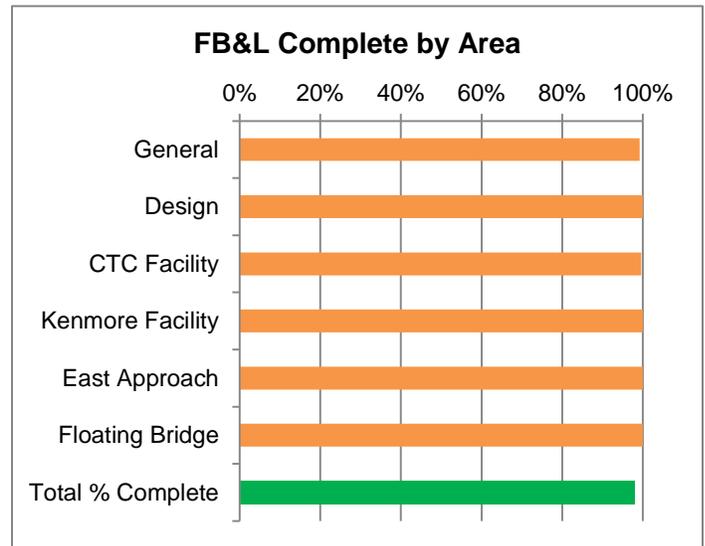
At the East Approach, crews worked on the completion of fabrication of the stairwell at Pier 3 on the regional shared-use path. On Lake Washington, crews performed pontoon R and Q bolt-beam painting and performed punch-list work. Crews continued electrical construction activities, testing bridge deck traffic loops, and performing punch-list walks for intelligent transportation system (ITS) sheds. Crews continued deconstruction of the old floating bridge, removed span 41's bridge deck and girders, and de-tensioned west side post-tensioning cables.

RISK

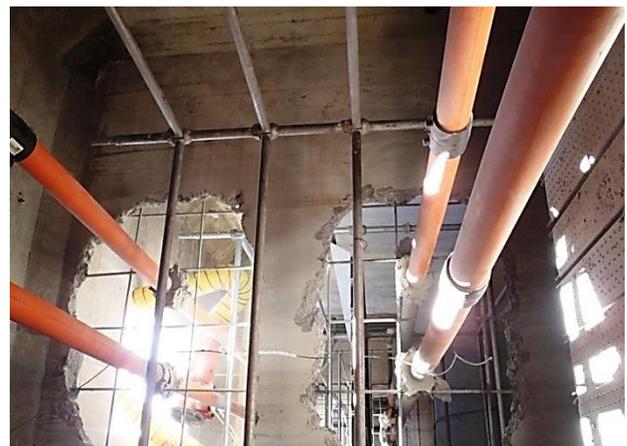
Several anchor cables were found to have been compromised during the installation process. Based on an initial analysis, the cables are considered structurally adequate and can be replaced under traffic conditions. Replacement of the cables will be performed by the design-builder during spring/summer 2016.

There is a project interface between the Eastside and the FB&L projects. The work – such as paving and installation of drainage, lighting, electrical, intelligent transportation system (ITS), and barrier as part of the Eastside project – needs to be verified that it was completed as designed.

A review of the design-builder's compliance with the "Buy America" requirement is being performed. If the design-builder is found to be out of compliance, the contractor may need to replace noncompliant materials or WSDOT could be at risk of losing federal funding.



The design-builder continues performing major work on the Lake Washington. This includes demolition of the existing bridge. Spills of oil, concrete or soils from the project may cause work stoppage or fines. Permits are tied to all projects working on the lake. Other project violations could impact permits on this project.



FB&L: Preparation work to de-tension post-tensioning cables on old floating bridge

MAY COSTS

Preliminary engineering is complete. The total actual cost to date from the contractor is 97 percent of the budget.

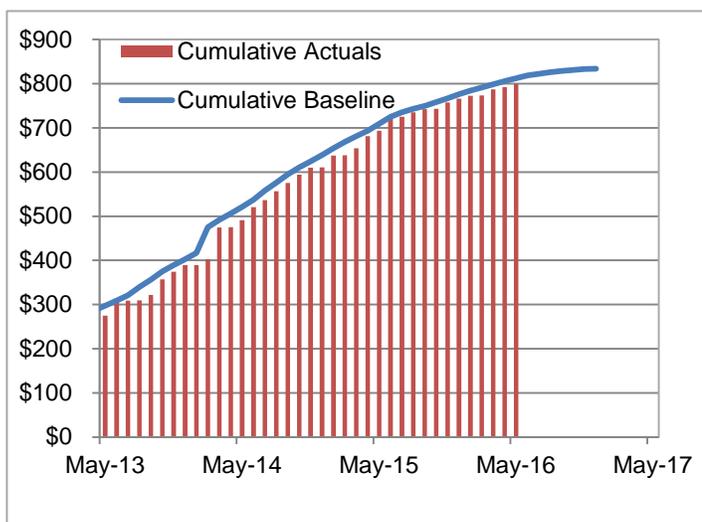
	Current Budget	Actuals to Date	Remaining Budget
Floating Bridge and Landings Construction Project Totals	\$842,810,897	\$820,035,385	\$22,775,512
Preliminary Engineering	\$10,659,065	\$10,659,065	\$0
Right of Way	\$4,046,032	\$3,906,378	\$139,654
Construction	\$828,105,800	\$805,469,942	\$22,635,858
<i>Current Contract Value</i>	<i>\$759,649,718</i>	<i>\$743,857,646</i>	<i>\$15,792,072</i>
<i>Agreements</i>	<i>\$39,748,164</i>	<i>\$34,741,531</i>	<i>\$5,006,633</i>
<i>Construction Engineering</i>	<i>\$20,967,918</i>	<i>\$20,162,163</i>	<i>\$805,755</i>
<i>State Force Work</i>	<i>\$60,000</i>	<i>\$3,745</i>	<i>\$56,255</i>
<i>State Materials</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
<i>Vendor Supplied Materials</i>	<i>\$7,680,000</i>	<i>\$6,704,857</i>	<i>\$975,143</i>

Cost information through May 31, 2015

MAY CHANGE ORDER SUMMARY

There was one change order executed in May for \$1,980,000. Change orders total \$173,088,718 for the FB&L project at the time of this report.

MAY PERFORMANCE



Monthly actuals are trending down as the project nears completion.



FB&L: Pier 3 stair tower

SCHEDULE SUMMARY

Milestone	Revised Contract Date	Actual/Trend
Notice to Proceed 1 - Design Initiated	9/1/2011	9/1/2011
Notice to Proceed 2 - Site Construction Start	9/1/2011	9/1/2011
Pier 36 Construction	11/15/2013	11/14/2013
Substantial Completion	4/28/2016	4/25/2016
Physical Completion	2/22/2017	On Time

The contractor achieved substantial completion on April 25, 2016.

MAY QUALITY SUMMARY

“Audits – Actual” are audits performed by WSDOT Quality Verification staff on the design-builder’s compliance with contract requirements.

“Nonconformance Reports” are incidents recorded by the design-builder’s quality inspection staffs that do not appear to be constructed in accordance with the approved drawings and specifications.

	Previous Total	Current Period	Project Total	Open	Closed
Audits - Actual	3896	2	3898	26	3872

	Previous Total	Open	Current Period	Avg. Time Open
Nonconformance Reports (NCR)	387	23	2	312 days
Nonconformance Issues (NCI)	942	26	2	168 days

MAY SAFETY SUMMARY

“Recordable Incidents” are job-related safety incidents that have been recorded.

“Lost Time Incidents” are job-related safety incidents that result in personnel not being able to work.

“Contract Days without an Incident” are the number of days since a lost-time incident has occurred. There were no recordable incidents during the month of May.

Design-Builder	Previous Total	Current Period	Project Total
Recordable Incidents	42	0	42
Lost Time Incidents	4	0	4
Contract Days without an Incident	31	28	59

There were no recordable incidents during the month of May.

MAY ENVIRONMENTAL SUMMARY

“**Noncompliance Event (ECAP)**” is an action not in compliance with environmental standards, permits or laws.

“**Minor Environmental Event**” is an environmental impact that does not meet the requirements to become an ECAP.

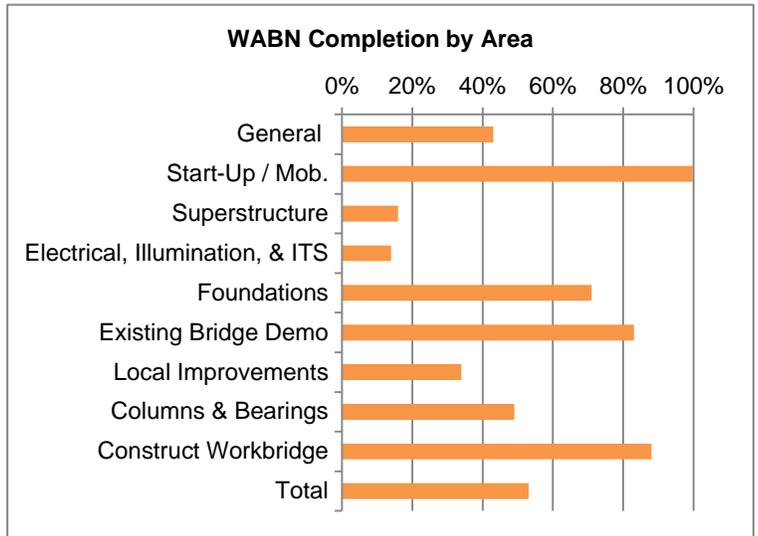
	Previous Total	Current Period	Total
Noncompliance Event (ECAP)	64	2	66
Minor Environmental Event	63	0	63

On 5/3/2016, a Noncompliance Event occurred. During removal of the pavement on the west transition span, the hoe ram punctured the decking, exposing lead-based paint. There was secondary containment under the work area. Some of the paint chips were blown by the wind past the containment and entered the lake. None of the chips could be recovered. All of the appropriate resource agencies were notified.

On 5/19/2016, a Noncompliance Event occurred. One of the barges being used for containment of demolition debris at Pier 41 started to list from being unevenly loaded. Approximately 1 to 3 gallons of process water overtopped the 4-inch perimeter berm. The pH of the process water was measured at 11. Hoses were turned off and the water was pumped out into a tank for storage and disposal. All resource agencies were notified.

MAY ACCOMPLISHMENTS

In May, the contractor installed 11 casings, drilled 11 shafts east of Foster Island, built 1 column, installed 16 girders, and poured 6 intermediate diaphragms. In addition, crews started forming the deck soffits in Frame 3 and preparing for the remaining demolition of the existing ramps south of SR 520.



RISK

- Environmental noncompliance events
- Procurement of expansion joints
- Geotechnical obstructions or complications during foundation construction
- Coordination of multiple phases of bridge construction along the work trestle.
- Demolition of remaining structures



WABN: Casings with drilling extensions at Pier 15

MAY COSTS

The preliminary engineering is complete; final right-of-way costs are being recorded. There have been 22 payments made to the contractor through May 2016.

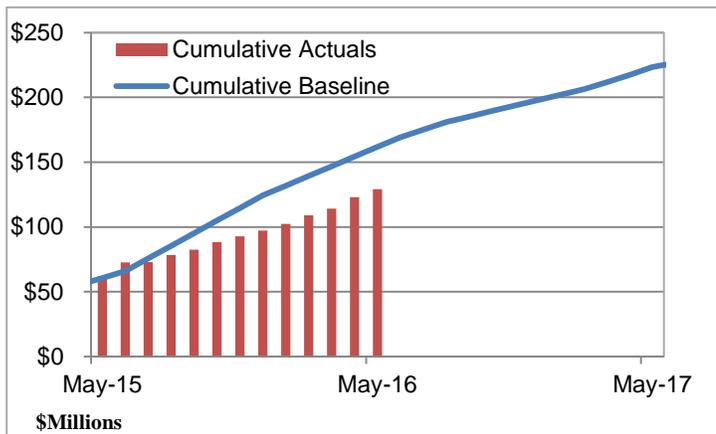
	Current Budget	Actuals to Date	Remaining Budget
West Approach Bridge North Project Construction Totals	\$256,060,597	\$163,242,587	\$92,818,010
Preliminary Engineering	\$26,485,353	\$26,485,353	\$0
Right of Way	\$4,730,000	\$4,245,116	\$484,884
Construction	\$224,845,244	\$132,512,118	\$92,333,126
Current Contract Value	\$201,940,839	\$118,769,945	\$83,170,894
Agreements	\$9,259,667	\$7,712,097	\$1,547,570
Construction Engineering	\$13,478,157	\$5,926,401	\$7,551,756
State Force Work	\$10,301	\$10,301	\$0
State Materials	\$0	\$0	\$0
Vendor Supplied Materials	\$156,280	\$93,374	\$62,906

Cost information through May 31, 2016

MAY CHANGE ORDER SUMMARY

Four change orders were executed in May for -\$4,300. Change orders total \$2,403,468 for the WABN project at the time of this report.

MAY PERFORMANCE



Cumulative actuals are running below the baseline projection through May.



WABN: Processing demolition debris

SUMMARY SCHEDULE

The fourteenth progress schedule update (March) was originally submitted for review on 4/21/16. Revision 4 is in the final stage of review.

Milestone	Contract Date	Actual/Trend
First Charged Working Day	9/11/2014	9/11/2014
Begin Access East of Pier 33	9/1/2015	9/1/2015
Begin Access to Floating Bridge	9/1/2016	9/1/2016
Bridge Open to Traffic	7/12/2017	7/12/2017
End of Working Days	11/29/2017	11/29/2017

Milestone dates for Bridge Open to Traffic and End of Working Days were updated per amended contract.

MAY SAFETY SUMMARY

	Previous Total	Current Period	Project Total
Work-related injuries requiring first aid only	7	0	7
Work-related injuries resulting in transfers or restrictions	6	0	6
Work-related injuries resulting in days away from work	0	0	0

MAY ENVIRONMENTAL SUMMARY

“**Noncompliance Event (ECAP)**” is an action not in compliance with environmental standards, permits or laws.

“**Minor Environmental Event**” is an environmental impact that does not meet the requirements to become an ECAP.

	Previous Total	Current Period	Project Total
Noncompliance Event (ECAP)	84	2	86
Minor Environmental Event	0	0	0

On 4/27/2016, a Noncompliance Event occurred. WABN shaft 1B was excavated without an archaeological monitor present.

On 5/2/2016, a Noncompliance Event occurred. A subcontractor's forklift leaked diesel fuel onto the trestle between Piers 9 and 10. An estimated 0.5 gallon of fuel leaked onto the trestle between the piers, from which an estimated 1 cup of fuel entered Lake Washington. A 40-foot x 20-foot sheen developed on the lake. The forklift was immediately shut down by the operator when fuel drips were observed leaking from the equipment.

GLOSSARY OF FREQUENTLY USED PROJECT AND INDUSTRY ACRONYMS

ATM	Active Traffic Management
CCMP	Community Construction Management Plan
CIP	Cast-in-Place
CTC	Concrete Technology Corporation (SSP production site)
D-B	Design-Builder
DBIC	Design-Builder Initiated Change
Eastside	Eastside Transit and HOV Project
ECAP	Environmental Compliance Assurance Procedure
ECC	Eastside Corridor Constructors (Eastside Design-Builder)
ESA	Endangered Species Act
FB&L	Floating Bridge & Landings
FONSI	Finding of No Significant Impact
GH	Grays Harbor (Pontoon construction site)
HQ	WSDOT Headquarters
ITS	Intelligent Transportation System
K-G	Kiewit General, A Joint Venture (PCP Design-Builder)
KGM	Kiewit General Manson, A Joint Venture (FB&L Design-Builder)
M-A	Mowat American, A Joint Venture (WCB Contractor)
NCI	Non-Conformance Incident
NCR	Non-Conformance Report
NEPA	National Environmental Policy Act
NTP	Notice to Proceed
NWR	WSDOT Northwest Region
PCI	Potential Change Issue
PCO	Potential Change Order
PCP	Pontoon Construction Project
PT	Post-Tensioning
QA	Quality Assurance
QC	Quality Control
RFI	Request for Information
RFP	Request for Proposal
ROD	Record of Decision
SPI	Schedule Performance Index is a performance index which equals
SSP	Supplemental Stability Pontoon
TCE	Temporary Construction Easement
TIFIA	Transportation Infrastructure Finance and Innovation Act
WABN	West Approach Bridge North
WCB	West Connection Bridge

For more information

Visit: www.wsdot.wa.gov/projects/SR520Bridge
E-mail: SR520Bridge@wsdot.wa.gov
Call: 1-888-520-NEWS (6397)
Mail: Washington State Department of Transportation
SR 520 Bridge Replacement and HOV Program
999 3rd Avenue, Suite 2200
Seattle, WA 98104

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