



STATE ROUTE 520

CONSTRUCTION PROGRESS REPORT APRIL 2016



West Approach Bridge North (WABN): Installation of casing 1B



Floating Bridge and Landings (FB&L): Pontoon A north sentinel lighting



FB&L: Interpretive sign at belvedere



WABN: Looking east at piers 34 through 41



WABN: Demolition of columns at Pier W28 of old Lake Washington Boulevard off-ramp



FB&L: Variable message signs on new floating bridge, at Pontoon T

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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: Setting rebar cage at Pier 40B



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.

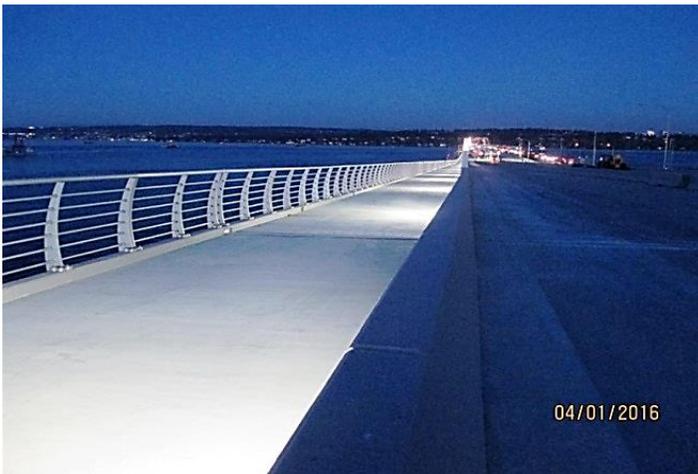
PROGRAM STATUS

Floating Bridge and Landings (FB&L):

The new bridge was opened to both westbound and eastbound traffic. Final pontoon anchor testing and anchor cable replacement was performed. Sentinel finish work continued at pontoons A and W. Finish work continued at the maintenance facility with the placement of parking lot electrical systems, and installation of hand railing and the freight elevator.

West Approach Bridge North (WABN):

Extension and widening work continued at 24th Avenue East with crews placing concrete for the upper barrier section. Demolition of closed westbound off-ramp to Lake Washington Boulevard continued with the removal of in-water columns from spans W21, W22, W28, and W29. Crews continued building foundations, installing casings at piers 5 through 7, and placing concrete at shafts 1B and 1D. Crews continued superstructure work, installing girders at spans 21 through 24. Pile driving was close to completion with the exception of expansion pier 9, which will be installed during the next in-water window.



FB&L: Lighted bicycle/pedestrian path on west high-rise

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.

UPCOMING MILESTONES

Floating Bridge and Landings:

Crews will work punch-list items for pontoons and bridge electrical systems. Existing bridge deconstruction activities will increase with crews removing a portion of the transition span trusses to lighten final pick loads, set span 41 barge containment, continue to install scaffolding in pontoons, cut deck openings and begin de-tensioning post-tension strands on west side.

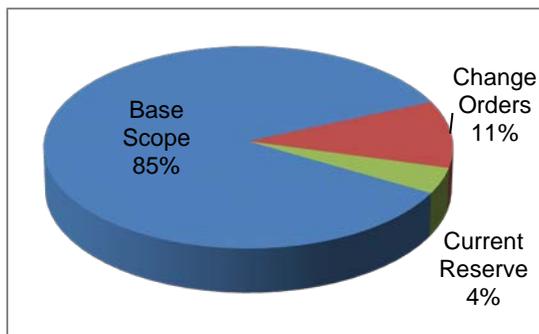
WABN:

Crews will install handrails at the Montlake flyer stop. Demolition of the closed westbound off-ramp to Lake Washington Boulevard will continue. Foundation work will continue with the installation of casings at piers 7 through 10 and concrete placement at piers 1A, 1C, and 2B. Substructure and superstructure work will continue.

Total Program

	Total Budget	Actuals to Date	Remaining
SR520 Program Totals	\$4,561,710,704	\$2,442,058,818	\$2,119,651,885
Federal	\$498,134,693	\$336,327,733	\$161,806,960
FEDERAL GRANT FUNDS	\$3,000,000	\$3,000,000	\$0
FEDERAL FORMULA FUNDS	\$176,125,892	\$122,946,486	\$53,179,406
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	\$3,901,872,310	\$2,103,657,901	\$1,798,214,409
TRANSPORTATION PARTNERSHIP ACCOUNT (TPA)*	\$535,732,598	\$498,519,583	\$37,213,015
NICKEL ACCOUNT STATE DOLLARS	\$52,243,840	\$52,244,156	(\$316)
CONNECTING WASHINGTON	\$1,642,500,000	\$0	\$1,642,500,000
SR520 CORRIDOR	\$659,938,822	\$573,625,754	\$86,313,068
SR520 GARVEE	\$924,612,501	\$924,612,501	\$0
Toll Revenue	\$70,271,057	\$45,984,118	\$24,286,939
SR520 Civil Penalties Account	\$14,000,000	\$6,098,297	\$7,901,703
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	\$434,100,000
April Change Orders	(\$258,939)
Previous Change Orders	(\$315,157,604)
Right of Way Settlements	(\$3,777,010)
Current Reserve	\$114,906,447

Floating Bridge and Landings Project

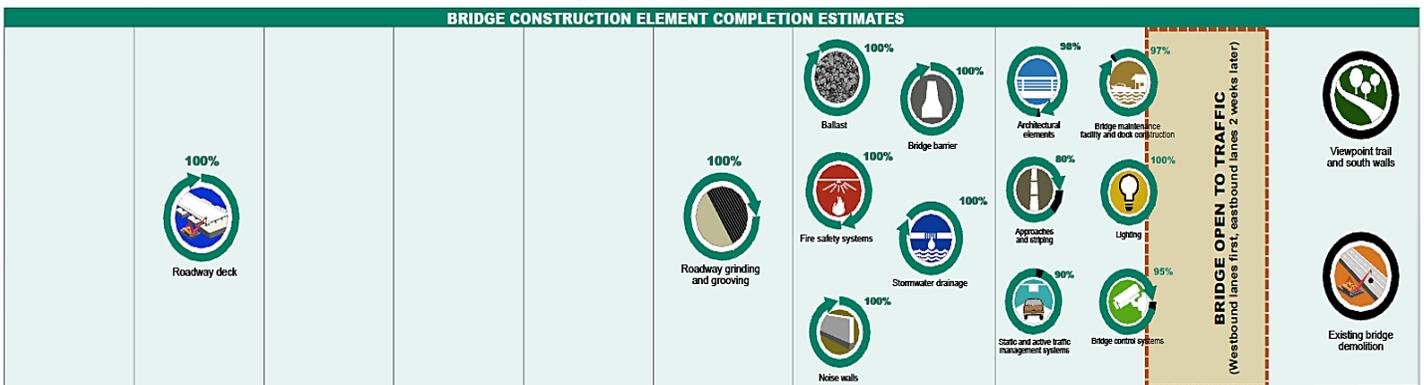
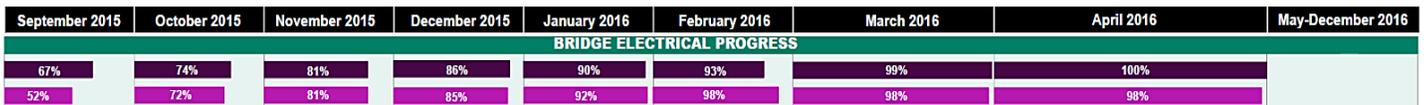
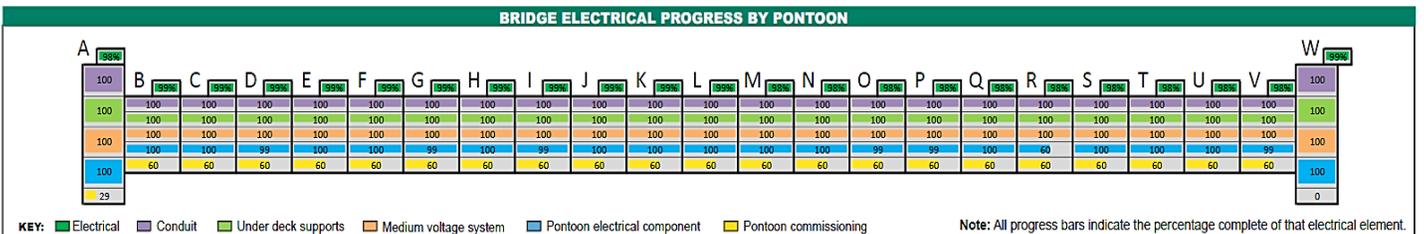
FLOATING BRIDGE AND LANDINGS

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: Anchor cable dive inspection

Original Engineers Estimate	\$640,769,000
Bid Price	\$586,561,000
Change Orders to date	\$171,108,718
Current Contract Value	\$757,669,718



Floating Bridge Electrical Progress and Commissioning milestones

APRIL ACCOMPLISHMENTS

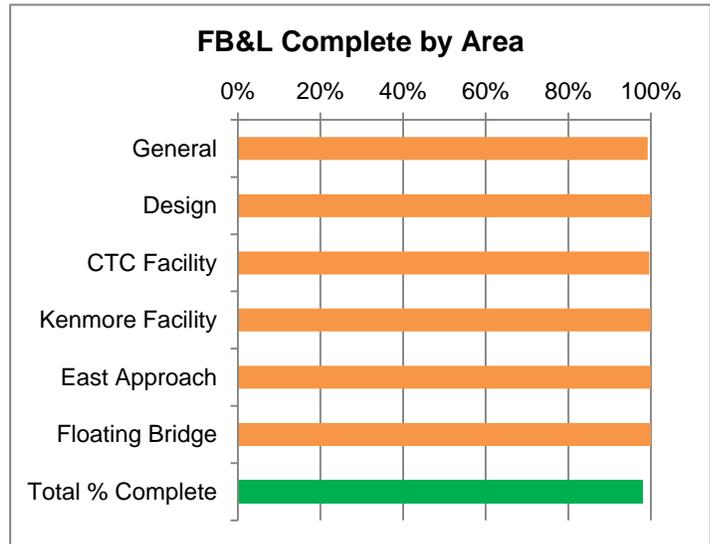
The new bridge's grand opening celebration was on April 2, with the bridge opening to westbound traffic on April 11 and to eastbound traffic on April 25. Final pontoon anchor testing and anchor cable replacement was conducted. Sentinel finish work continued at pontoons A and W. Finish work continued at the maintenance facility with the placement of parking lot electrical systems, and installation of hand railing and the freight elevator.

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: Demo mobilization at the old floating bridge

APRIL COSTS

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

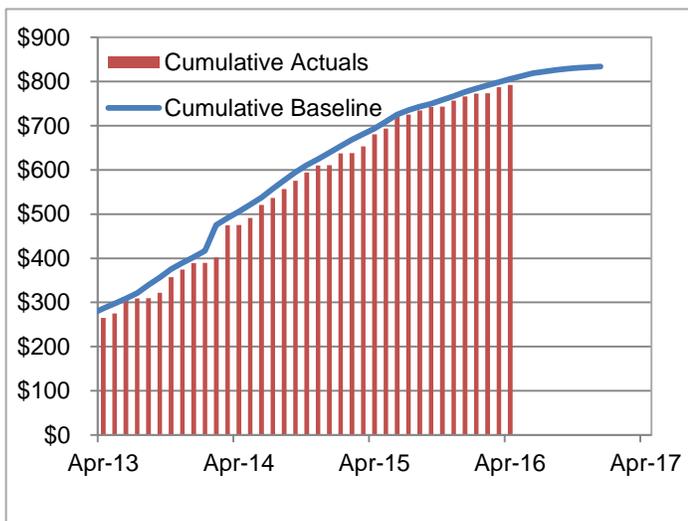
	Current Budget	Actuals to Date	Remaining Budget
Floating Bridge and Landings Construction Project Totals	\$840,830,897	\$818,167,210	\$22,663,687
Preliminary Engineering	\$10,659,065	\$10,659,065	\$0
Right of Way	\$4,046,032	\$3,904,070	\$141,962
Construction	\$826,125,800	\$803,604,075	\$22,521,725
<i>Current Contract Value</i>	<i>\$757,669,718</i>	<i>\$742,246,357</i>	<i>\$15,423,361</i>
<i>Agreements</i>	<i>\$39,748,164</i>	<i>\$34,824,943</i>	<i>\$4,923,221</i>
<i>Construction Engineering</i>	<i>\$20,967,918</i>	<i>\$19,824,173</i>	<i>\$1,143,745</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 April 30, 2015

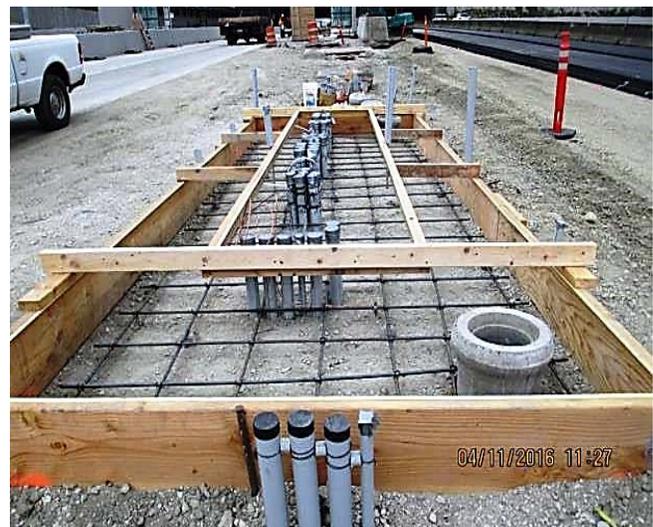
APRIL CHANGE ORDER SUMMARY

There were two change orders executed in April for zero dollars. Change orders total \$171,108,718 for the FB&L project at the time of this report.

APRIL PERFORMANCE



Monthly actuals are trending down as the project nears completion.



FB&L: Permanent toll cabinet foundation

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.

APRIL 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	3880	16	3896	19	3877

	Previous Total	Open	Current Period	Avg. Time Open
Nonconformance Reports (NCR)	386	26	1	26 days
Nonconformance Issues (NCI)	935	27	7	143 days

APRIL 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.

Design-Builder	Previous Total	Current Period	Project Total
Recordable Incidents	42	0	42
Lost Time Incidents	4	0	4
Contract Days without an Incident	3	28	31

There were no recordable incidents during the month of April.

APRIL 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)	63	1	64
Minor Environmental Event	62	1	63

On 4/6/2016, a Noncompliance Event occurred. Sheen was observed on the water between the two bridges. It was determined that the sheen came from an off-site source. All of the sheen was cleaned up and the incident was reported to the appropriate resource agencies.

On 4/6/2016, a Minor Environmental Event occurred. A subcontractor’s truck discharged a small quantity of oil onto the upper bridge deck. None of the oil entered waters of Lake Washington and all of the oil was cleaned up.

West Approach Bridge North Project

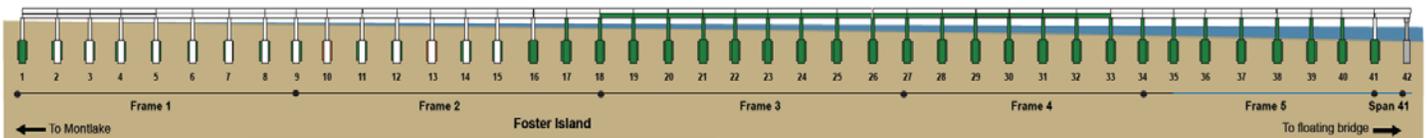
CONSTRUCTION OVERVIEW

The West Approach Bridge North Project (WABN), the first stage of western landings for the new SR 520 floating bridge, continues WSDOT's commitment to replace vulnerable structures and improve mobility for motorists. The new approach bridge, more than 6,000 feet long, will support a six-lane highway corridor and a regional shared-use path for bicyclists and pedestrians between the new floating bridge and Montlake. The WABN project will also greatly benefit the local built and natural environment by improving stormwater treatment, employing noise-reduction measures, mitigating for wetland and aquatic impacts, and improving the Arboretum and local parks.



WABN: Cable saw tool for cutting concrete columns

Original Engineers Estimate	\$209,905,587
Bid Price	\$199,537,371
Change Orders to date	\$2,407,768
Current Contract Value	\$201,945,139



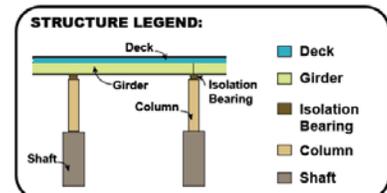
PROGRESS KEY: ■ Complete ■ Under construction □ To be constructed ■ New floating bridge structure — Installation by barge **Note:** This graphic is for illustrative and tracking purposes only. It is not to scale and is in profile view.

WABN Progress Tracker																																																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42							
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100				
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KEY: ■ Casing Installation (%) ■ Shaft Installation (%) ■ Column Installation (%) ■ Girder Installation (%) ■ Deck Installation (%)

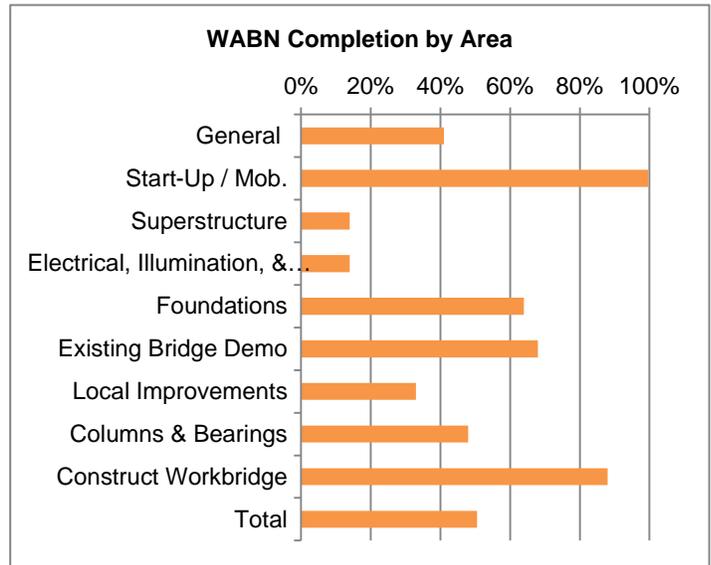
	April 2016	May 2016	June 2016	July 2016	Aug. 2016	Sept. 2016	Oct. 2016	Nov. 2016	Dec. 2016	Jan. 2017
Casing Installation	88%	100%								
Shaft Installation	90%	97%								
Column Installation	63%	73%	84%	94%	100%					
Girder Installation	53%	56%	56%	65%	75%	87%	97%	100%		
Deck Installation	22%	30%	30%	30%	46%	72%	96%	100%		
Planned Completion (%)	0%	0%	39%	54%	54%	59%	76%	95%	100%	

KEY: ■ Planned Completion (%) ■ Current Completion (%)



APRIL ACCOMPLISHMENTS

In April the contractor installed 32 casings east of Foster Island, drilled two shafts (at Pier 1), built one column (at Pier 34), and installed 44 girders between Piers 18 and 28. In addition, crews completed work-trestle fingers in Frames 1 and 2.



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.



WABN: Cable saw tool for cutting concrete columns

APRIL COSTS

The preliminary engineering is complete; final right-of-way costs are being recorded. There have been 21 payments made to the contractor through April 2016.

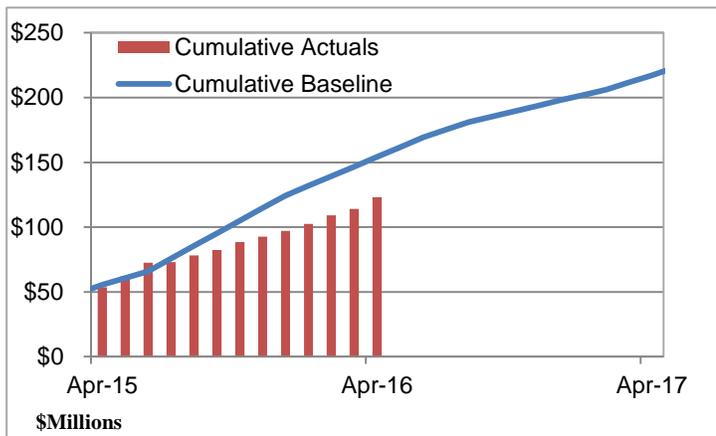
	Current Budget	Actuals to Date	Remaining Budget
West Approach Bridge North Project Construction Totals	\$256,060,598	\$159,154,989	\$96,905,609
Preliminary Engineering	\$26,485,353	\$26,485,353	\$0
Right of Way	\$4,730,000	\$4,244,432	\$485,568
Construction	\$224,845,245	\$128,425,204	\$96,420,041
Current Contract Value	\$201,940,840	\$114,868,237	\$87,072,603
Agreements	\$9,259,667	\$7,526,891	\$1,732,776
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 April 30, 2016

APRIL CHANGE ORDER SUMMARY

Eight change orders were executed in April for \$258,939. Change orders total \$2,407,768 for the WABN project at the time of this report.

APRIL PERFORMANCE



Cumulative actuals are running below the baseline projection through April.



WABN: Girder placement complete at span 18

SUMMARY SCHEDULE

The fourteenth progress schedule update (March) has been submitted and is under 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.

APRIL SAFETY SUMMARY

	Previous Total	Current Period	Project Total
Work-related injuries requiring first aid only	6	1	7
Work-related injuries resulting in transfers or restrictions	6	0	6
Work-related injuries resulting in days away from work	0	0	0

On 4/22/2016, a Recordable Incident occurred. Carpenter cut finger on a metal rebar cover. Stitches were required.

APRIL 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)	82	2	84
Minor Environmental Event	0	0	0

On 4/14/2016, a Noncompliance Event occurred. A half-gallon of diesel fuel spilled on the work trestle east of Foster Island; one cup dripped through into Lake Washington.

On 4/26/2016, a Noncompliance Event occurred. Drilling slurry spilled into Lake Washington from casing 2C.

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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