



STATE ROUTE 520

CONSTRUCTION PROGRESS REPORT

JANUARY 2016



Floating Bridge and Landings (FB&L): Constructing Pontoon W south sentinel



West Approach Bridge North (WABN): Setting shaft rebar cage



WABN: Setting shaft transition forms at pier 34



FB&L: Rebar panel installation at wall 1

DATE PUBLISHED: MARCH 2, 2016





FB&L: Installing a panel form at wall 1



WABN: Concrete placement at pier 31

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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 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.



FB&L: Removing Lake Washington Boulevard exit sign from westbound SR 520



Map of SR 520 Bridge Replacement and HOV Program

CURRENTLY FUNDED PROGRAM

We are currently funded to move forward with:

- Constructing a new, safer floating bridge.
- 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 applied pigmented sealer at segmental bridge sections and placed forms, reinforcement steel and concrete for the median barrier under the Evergreen Point Road lid. On Lake Washington, crews erected steel for a Pontoon A sentinel and installed precast panels for Pontoon W's south sentinel. Crews continued other bridge and electrical construction activities: conducting functional tests at pontoons H, G and N, and installing conduit for fire pumps at pontoons I and O.

West Approach Bridge North (WABN):

Extension and widening work continued at 24th Avenue East; crews installed temporary barriers and signs in preparation for traffic switch. Crews completed demolition of the pier and cap from span W3 of the old westbound Montlake Boulevard exit. Work continued on foundations: fabricating shaft reinforcement, installing marine casings and drilling shafts at the east end of the bridge. Substructure work continued with crews installing stainless steel rings and fabricating column rebar cages.



FB&L: Setting a rebar cage at pier 37A

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.
- A lengthy commissioning process that impacts the open-to-traffic date.
- Potential for damage to the new bridge during the demolition of the old bridge.

UPCOMING MILESTONES

Floating Bridge and Landings: At Lake Washington, crews will conduct anchor testing on longitudinal pontoons, continue to erect pontoon sentinels, and install precast panels, stairs and mesh boxes on Pontoon A. In Medina, crews will continue work at the east approach, and place forms, reinforcement steel and concrete for wall 1 panels. At the bridge maintenance facility, crews will install bridge crane and continue work on installation of passenger and freight elevators.

WABN: Crews will continue demolition of the closed westbound off-ramps to Montlake Boulevard and Lake Washington Boulevard, and removal of W21, 24 and 25 spans and columns. Crews will continue marine work, including drilling and placing concrete at shaft 41A. Substructure work will continue with the installation of stainless steel rings and fabrication of column rebar cages.

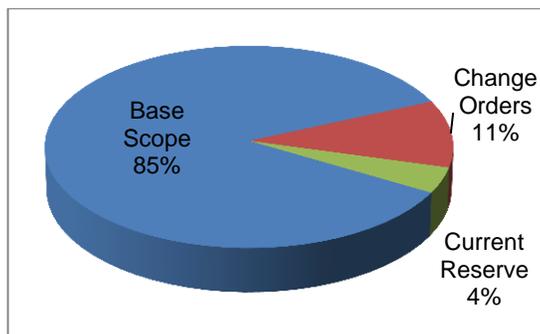
Total Program

	Total Budget	Actuals to Date	Remaining
SR520 Program Totals*	\$4,561,210,704	\$2,394,961,312	\$2,166,249,392
Funded Program	\$4,561,210,704	\$2,394,961,312	\$2,166,249,392
Row Labels			
Federal	\$498,134,693	\$374,943,911	\$123,190,781
FEDERAL GRANT FUNDS	\$3,000,000	\$3,000,000	\$0
FEDERAL FORMULA FUNDS	\$176,125,892	\$160,535,046	\$15,590,846
NATIONAL HIGHWAY PERFORMANCE PROGRAM	\$3,826,918	\$1,027,619	\$2,799,299
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	\$2,071,979	\$231,722
LOCAL PROJECT(CURRENT)	\$2,303,701	\$2,071,979	\$231,722
State	\$3,901,372,310	\$2,017,945,422	\$1,883,426,888
TRANSPORTATION PARTNERSHIP ACCOUNT (TPA)**	\$535,732,598	\$439,796,189	\$95,936,409
NICKEL ACCOUNT STATE DOLLARS	\$52,243,840	\$52,244,156	(\$316)
CONNECTING WASHINGTON	\$1,642,000,000	\$0	\$1,642,000,000
SR520 CORRIDOR	\$549,032,022	\$549,032,022	\$0
SR520 GARVEE	\$924,612,501	\$924,612,501	\$0
SR520 TRIPLE BACKED BOND SECOND SALE	\$110,906,800	\$0	\$110,906,800
Toll Revenue	\$70,271,057	\$45,984,118	\$24,286,939
SR520 Civil Penalties Account***	\$14,000,000	\$3,702,944	\$10,297,056
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

** \$14M included for civil penalties

*** In January 2015, WSDOT announced an updated cost estimate of \$4.47 billion to reconstruct the SR 520 corridor. The updated estimate included a \$1.57 billion cost to construct SR 520's then-unfunded western segment. (A 2012 estimate put that cost at \$1.40 billion.)



Cumulative Reserve	\$434,100,000
January Change Orders	\$0
Previous Change Orders	(\$312,825,355)
Right of Way Settlements	(\$3,777,010)
Current Reserve	\$117,497,635

Floating Bridge and Landings Project

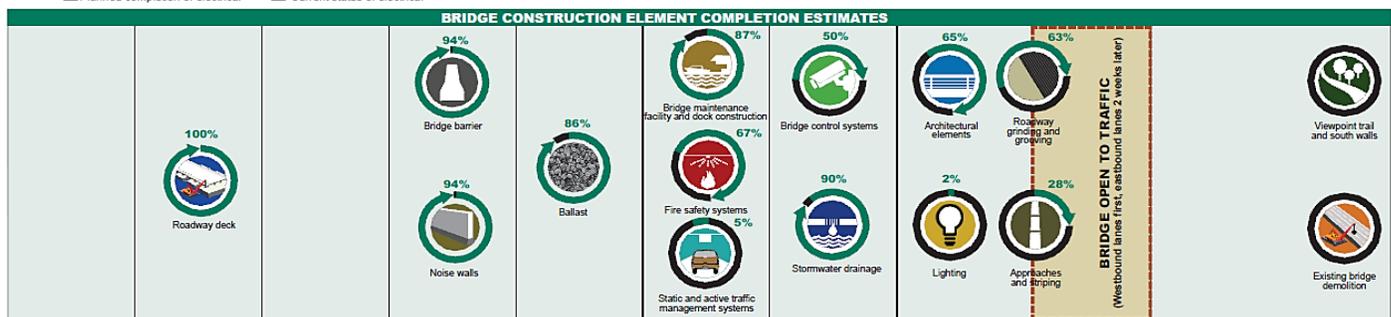
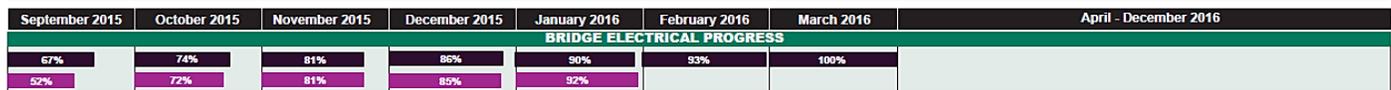
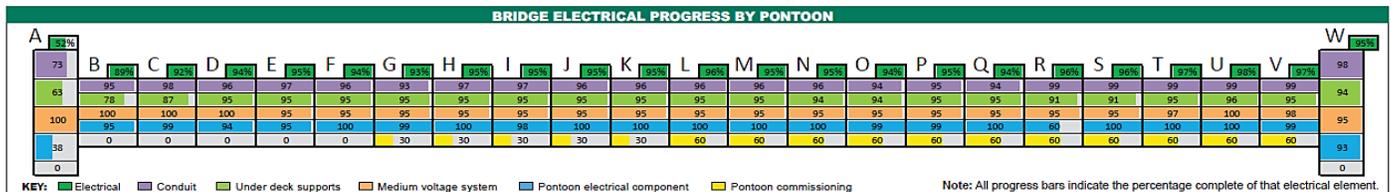
FLOATING BRIDGE AND LANDINGS

The SR 520 Floating Bridge and Landings (FB&L) Project will replace the existing, 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 facility will include a bicycle/pedestrian path and a bridge maintenance facility on the east end. The project includes construction of 44 supplemental stability pontoons in Tacoma.



FB&L: Steel framework for Pontoon W's south sentinel

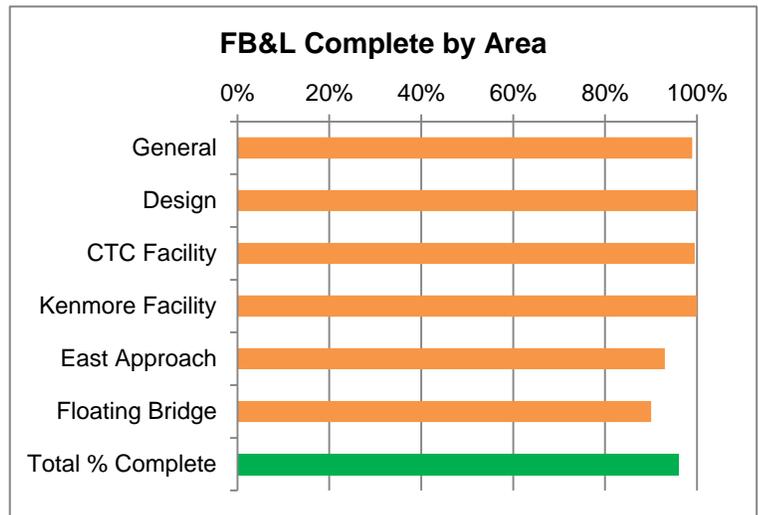
Original Engineers Estimate	\$640,769,000
Bid Price	\$586,561,000
Change Orders to date	\$171,108,718
Current Contract Value	\$757,669,718



Floating Bridge Electrical Progress and Commissioning milestones

JANUARY ACCOMPLISHMENTS

At the east approach, crews worked on placement of pigmented sealer at segmental bridge sections and placed forms, reinforcement steel and concrete for the median barrier under the Evergreen Point Road lid. On Lake Washington, crews erected steel for a Pontoon A sentinel and installed precast panels for Pontoon W's south sentinel. Crews continued other bridge and electrical construction activities, conducted functional tests at Pontoons H, G and N, and installed conduit for fire pumps at Pontoons I and O.



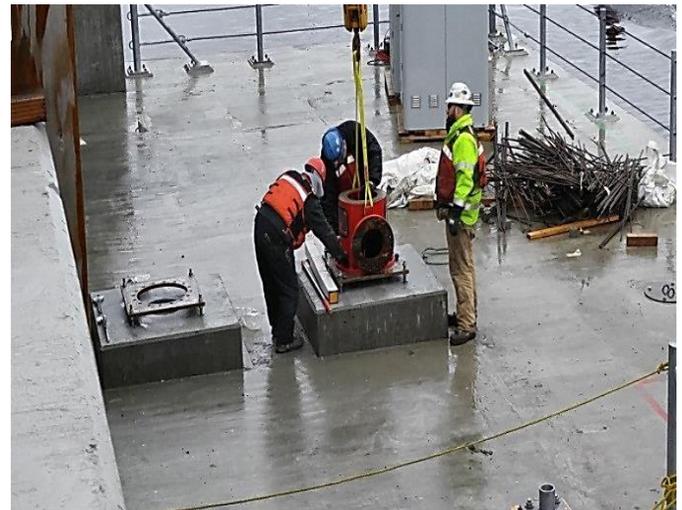
RISK

Commissioning of the new floating bridge is a complex and potentially time-consuming process and is on the critical path to switching traffic to the new bridge. Traffic cannot be switched to the new bridge until commissioning is completed to ensure all systems are in working order and safe for public use.

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

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

The de-construction and demolition of the existing bridge, adjacent to the newly constructed and operational floating bridge, may be more complicated than anticipated.



FB&L: Fire-pump installation on Pontoon D

JANUARY COSTS

Preliminary engineering is complete. The total actual cost to date from the contractor is 94 percent of the budget.

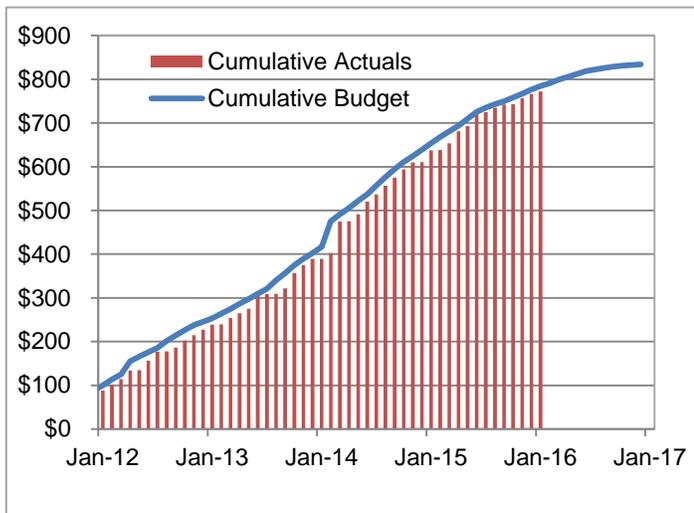
	Current Budget	Actuals to Date	Remaining Budget
Floating Bridge and Landings Construction Project Totals	\$837,512,074	\$787,205,531	\$50,306,543
Preliminary Engineering	\$10,659,063	\$10,659,063	\$0
Right of Way	\$4,046,033	\$3,862,890	\$183,143
Construction	\$822,806,978	\$772,683,578	\$50,123,400
<i>Current Contract Value</i>	<i>\$757,669,718</i>	<i>\$713,345,662</i>	<i>\$44,324,056</i>
<i>Agreements</i>	<i>\$37,978,379</i>	<i>\$33,782,440</i>	<i>\$4,195,939</i>
<i>Construction Engineering</i>	<i>\$19,418,881</i>	<i>\$18,846,874</i>	<i>\$572,007</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 Jan. 31, 2015

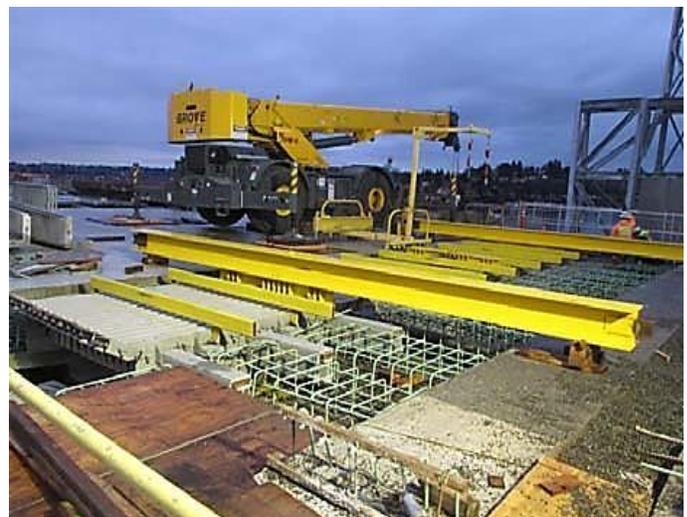
JANUARY CHANGE ORDER SUMMARY

There was one change order executed in January for zero cost. Change orders total \$171,108,718 for the FB&L project at the time of this report.

JANUARY PERFORMANCE



Monthly actuals are trending down as the project nears substantial completion.



FB&L: Pontoon A modular joint

SUMMARY SCHEDULE

The contractor's current schedule submittal is showing on-time substantial completion by April 28, 2016, consistent with the revised contract date.

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	11/15/13	11/14/2013
Substantial Completion	4/28/2016	On Time
Physical Completion	2/22/2017	Early

JANUARY 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	3801	27	3828	18	3810

	Previous Total	Open	Current Period	Avg. Time Open
Nonconformance Reports (NCR)	369	42	7	225 days
Nonconformance Issues (NCI)	916*	21	2	256 days

* Includes a noncompliance incident not reported in the December 2015 construction update.

JANUARY 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	40	1	41
Lost Time Incidents	4	0	4
Contract Days without an Incident	80	15	15

On 1/14/2016, a Recordable Incident occurred. A JP Francis employee unloading 20-foot sticks of steel pipe from a cargo rack injured a shoulder.

JANUARY 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)	59	1	60
Minor Environmental Event	56	2	58

On 1/11/2016, a Minor Environmental Event occurred. Several oil sheens were discovered on the site while raining. The source was determined to be a Cadman concrete truck leaking oil. All of the oil was cleaned up; none of it reached waters of the state. The driver was asked by KGM personnel to leave the construction area and fix the leak before returning on site.

On 1/15/2015, a Minor Environmental Event occurred. The hydraulic system on a 65-foot crane broke, discharging hydraulic oil into the containment under it. None of the hydraulic fluid entered waters of the state and all the oil was removed.

On 1/29/2015, a Noncompliance Event occurred. A light sheen approx. 20 feet x 20 feet in size was seen in one of the drainage wells on supplemental pontoon ESW. KGM crews cleaned it up. They were not able to determine the source of the sheen. There were no injured or disturbed fish observed in the lake.

West Approach Bridge North Project

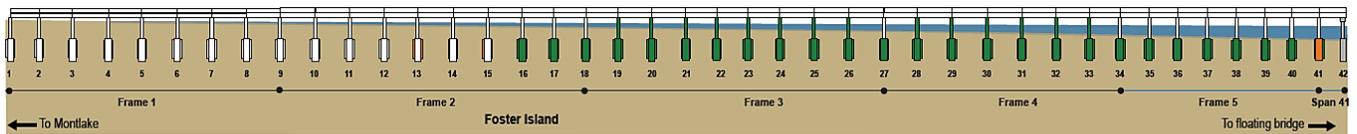
CONSTRUCTION OVERVIEW

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: Pier 38 rebar cage

Original Engineers Estimate	\$209,905,587
Bid Price	\$199,537,371
Change Orders to date	(\$183,419)
Current Contract Value	\$199,353,952

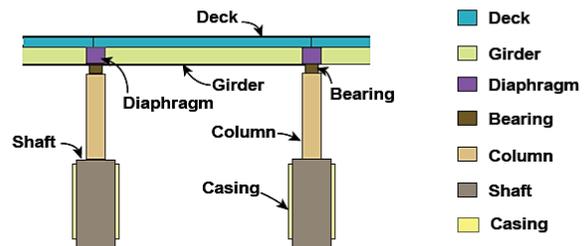


PROGRESS KEY: ■ Complete ■ Under construction □ To be constructed ■ New floating bridge structure — Installation by barge Note: This graphic is for illustrative and tracking purposes only. It is not to scale and is in profile view.

WABN PROGRESS

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Ramp demolition											
Casing installation											
Shaft installation											
Column installation											
Bearing installation											
Girder installation											
Diaphragm installation											
Deck installation											

STRUCTURE LEGEND:



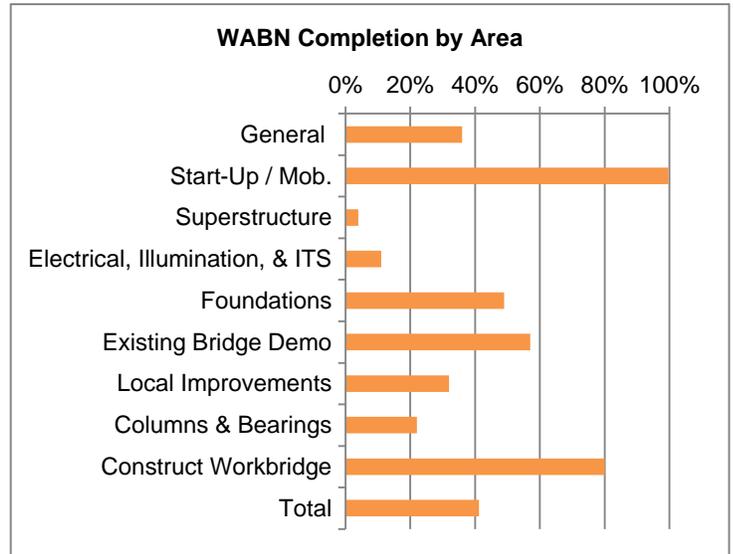
BY THE NUMBERS:

- 58 of 99 casings complete
- 0 of 47 diaphragms complete
- 0 of 41 sections of roadway deck complete
- 52 of 99 shafts complete
- 0 of 104 bearings complete
- 28 of 95 columns complete
- 0 of 353 girders complete

West Approach Bridge North progress tracker as of Jan. 31, 2016

JANUARY ACCOMPLISHMENTS

Through Jan. 31, the contractor has installed 58 bridge casings at 29 pier locations, constructed 52 drilled shafts at Piers 13-41 and completed 28 of 95 columns. In January, the contractor completed demolition of the 520/6 W-W spans, commenced demolition of the 520/6 W-S spans, opened the 24th Avenue overpass to traffic, and continued marine work for piers east of pier 33.



RISK

- Environmental noncompliance events
- Procurement of seismic isolation bearings
- Procurement of expansion joints
- Geotechnical obstructions or complications during foundation construction



WABN: Installation of marine casing at pier 41B

JANUARY COSTS

The preliminary engineering is complete; final right-of-way costs are being recorded. There have been 17 payments made to the contractor through January 2016.

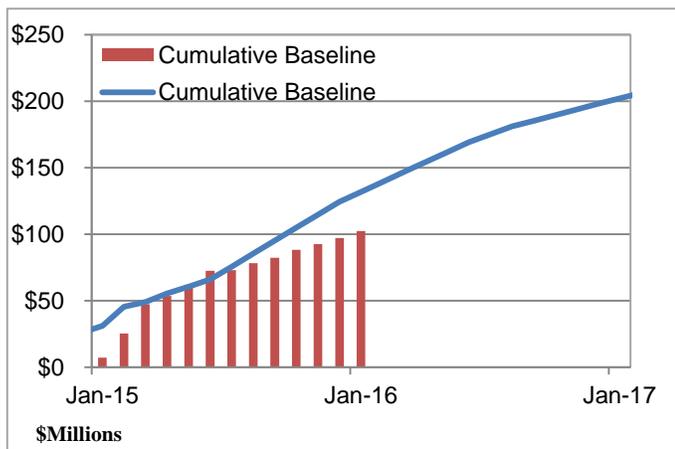
	Current Budget	Actuals to Date	Remaining Budget
West Approach Bridge North Project Construction Totals	\$253,440,997	\$137,505,520	\$115,935,477
Preliminary Engineering	\$26,485,353	\$26,485,353	\$0
Right of Way	\$4,730,000	\$4,230,306	\$499,694
Construction	\$222,225,644	\$106,789,861	\$115,435,783
<i>Current Contract Value</i>	\$199,353,952	\$94,649,713	\$104,704,239
<i>Agreements</i>	\$9,226,954	\$6,106,661	\$3,120,293
<i>Construction Engineering</i>	\$13,478,157	\$5,929,812	\$7,548,345
<i>State Force Work</i>	\$10,301	\$10,301	\$0
<i>State Materials</i>	\$0	\$0	\$0
<i>Vendor Supplied Materials</i>	\$156,280	\$93,374	\$62,906

Cost information through Jan. 31, 2016

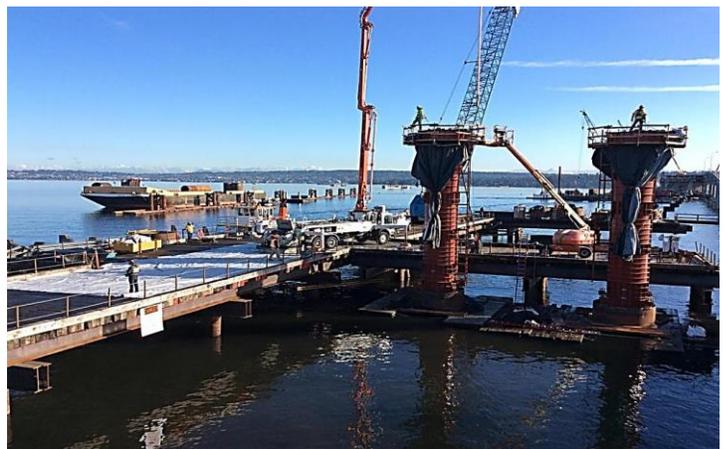
JANUARY CHANGE ORDER SUMMARY

There was one change order executed in January for zero cost. Change orders total **(\$183,419)** for the WABN project at the time of this report.

JANUARY PERFORMANCE



Cumulative actuals are running below the baseline projection through January.



WABN: Concrete placement in progress at pier 32

SUMMARY SCHEDULE

The twelfth progress schedule update (January) 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	6/20/2017	7/6/2017
End of Working Days	11/3/2017	11/16/2017

JANUARY SAFETY SUMMARY

	Previous Total	Current Period	Project Total
Work-related injuries requiring first aid only	6	0	6
Work-related injuries resulting in transfers or restrictions	3	0	3
Work-related injuries resulting in days away from work	0	0	0

No recordable incidents this month.

JANUARY 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)	75	2	77
Minor Environmental Event	0	0	0

On 12/29/2015, a Noncompliance Event occurred. Water was withdrawn from Lake Washington through an unscreened pump and discharged into the lake without sampling. The incident was not reported within the required 24-hour timeframe.

On 1/26/2016, a Noncompliance Event occurred. Concrete demolition debris fell into Lake Washington at span W-9 due to poor containment positioning.

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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