

STATE ROUTE 520

CONSTRUCTION PROGRESS REPORT AUGUST 2015



Floating Bridge and Landings (FB&L): Maintenance dock ramp panels



West Approach Bridge North (WABN): Temporary off-ramp to Montlake Boulevard



WABN: Placing concrete at shaft 24A



FB&L: Wire testing in Pontoon p



FB&L: High-rise drainage installation



WABN: Paving temporary westbound off-ramp to Montlake Boulevard

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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 completed 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: Noise Wall reinforcement



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 Medina, crews placed forms and reinforcement steel for westbound noise wall panels and painted east transition span girders. On Lake Washington, crews installed fenders, hand rails, pump wells, swimmer cables and bird ramps on various pontoons. At the bridge maintenance facility; crews installed gas service, plumbing insulation and labeling at all levels.

West Approach Bridge North (WABN):

Through Aug. 30, the contractor has installed 37 bridge casings at 18 pier locations and constructed 26 drilled shafts at Piers 16-29. In August, the contractor reconfigured the westbound off-ramp to Montlake Boulevard into an interim ramp, paved and striped it, and switched traffic onto the new off-ramp. The contractor also continued sidewalk replacements on Montlake Boulevard, signal pole installation, intelligent transportation system (ITS) conduit installation, bike locker pad construction, and demolition of spans L4 to L7 of the R.H. Thomson “Ramps to Nowhere.”



FB&L: Span V4-W belvedere curb pour

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 floating bridge 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 Medina, crews will continue work on Piers 2, placing forms, reinforcement steel and concrete for westbound noise walls. At Lake Washington, crews will continue pontoon joining, and high-rise and low-rise bridge assembly. At the bridge maintenance facility, crews will test and start the HVAC system and place light fixtures at all levels. At Kenmore, crews continue demobilization of the jobsite.
- **WABN:** Crews will continue installation of shaft collars and will begin fabricating rebar shaft cages. In September, crews will begin building foundations by barge, east of Pier 33. At the 24th Avenue overpass extension, crews will perform mass excavation, install shoring and begin building foundations.

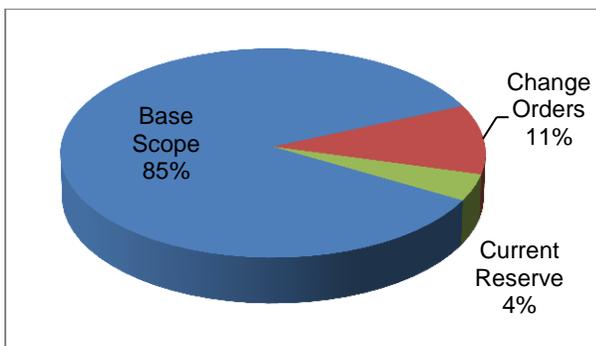
Total Program

	Total Budget	Actuals to Date	Remaining
SR520 Program Totals*	\$4,562,210,704	\$2,307,026,357	\$2,255,184,347
Funded Program	\$4,562,210,704	\$2,307,026,357	\$2,255,184,347
Row Labels			
Federal	\$498,134,693	\$336,327,733	\$161,806,960
FEDERAL GRANT FUNDS	\$3,000,000	\$3,000,000	\$0
FEDERAL FORMULA FUNDS	\$179,952,810	\$122,946,486	\$57,006,324
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	\$1,934,811	\$368,890
LOCAL PROJECT(CURRENT)	\$2,303,701	\$1,934,811	\$368,890
State	\$3,902,372,310	\$1,968,763,813	\$1,933,608,497
TRANSPORTATION PARTNERSHIP ACCOUNT (TPA)**	\$535,732,598	\$394,112,880	\$141,619,718
NICKEL ACCOUNT STATE DOLLARS	\$52,243,840	\$52,243,840	\$0
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***	\$15,000,000	\$204,959	\$14,795,041
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

* Deferred sales tax currently represents the "Toll funded Program"

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

*** \$15M Included for Civil Penalties



Cumulative Reserve	\$434,100,000
August Change Orders	(\$1,402)
Previous Change Orders	(\$310,418,981)
Right of Way Settlements	(\$3,777,010)
Current Reserve	\$119,902,607

Floating Bridge and Landings Project

FLOATING BRIDGE AND LANDINGS

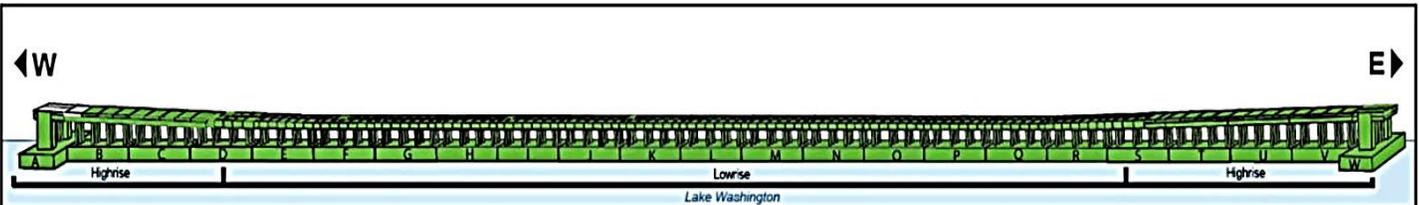
The SR 520 Floating Bridge and Landings (FB&L) Project will replace the existing, vulnerable four-lane structure with a new six-lane bridge that can withstand windstorms of up to 89 miles per hour. The new six-lane facility will include a bicycle/pedestrian path and a bridge maintenance facility on the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



FB&L: Placing Pontoon D precast deck panels

Original Engineers Estimate	\$640,769,000
Bid Price	\$586,561,000
Change Orders to date	\$168,833,595
Current Contract Value	\$755,394,595

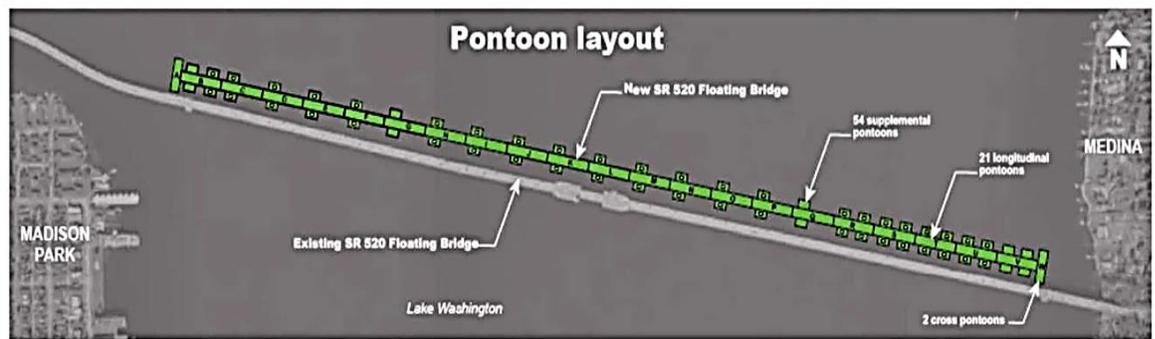
Pontoon tracking on Lake Washington, 8/31/15



GRAPHIC KEY AND FACTS

- 776 low-rise roadway deck sections
- 27 high-rise roadway deck spans
- 331 girders
- 771 columns
- 21 longitudinal pontoons + 2 cross pontoons

In Final Location
 Construction Complete
 Under Construction
 Future Construction



- Low-rise roadway deck includes pre-cast deck panels being constructed in Kenmore.
- 776 out of 776 pre-cast deck panels have been constructed. 776 of 776 have been placed.
- High-rise roadway deck includes girders and cast-in-place deck.
- 21 out of 23 cast-in-place deck spans have been constructed.
 - 331 out of 331 girders have been constructed. 331 of 331 have been placed.
- The number of columns shown is a representation of the total number of columns.
- 771 out of 771 columns have been installed.
- Current number of pontoons on Lake Washington: 77
 - Total number of pontoons constructed to date: 77
 - Pontoons currently under construction: 0

Note: not to scale, for illustrative purposes only

AUGUST ACCOMPLISHMENTS

Floating Bridge: Crews placed forms and reinforcement steel for westbound noise wall panels and painted east transition span girders. On Lake Washington, crews installed fenders, hand rails, pump wells, swimmer cables and bird ramps on various pontoons.

Bridge maintenance facility: Crews installed; gas service, plumbing insulation and labeling at all levels.

Medina area: Crews placed; forms and reinforcement steel for westbound noise wall panels and painted east transition span girders.

RISK

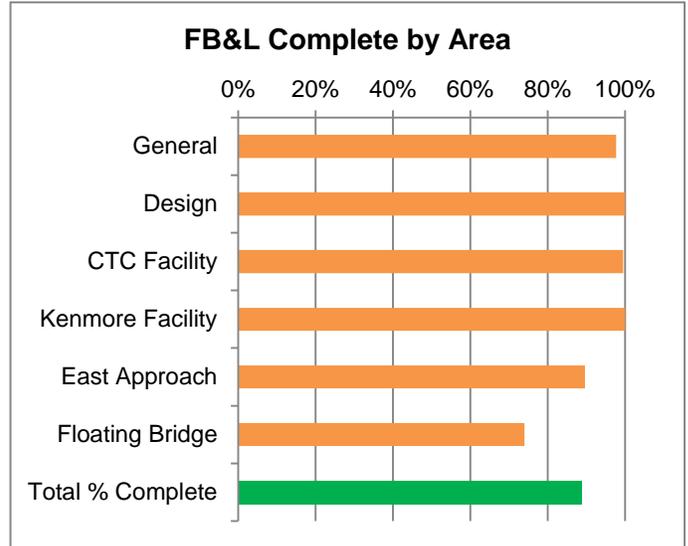
West Approach Bridge North (WABN) construction is underway with work progressing toward the FB&L work area. Coordination will continue to be a priority between contractors and WSDOT project offices.

The design-builder has begun the process of grinding the bridge deck for smoothness. It is critical that the grinding be completed to achieve good driving feel (ride smoothness), provide proper slope for drainage and maintain minimum concrete cover over bridge deck reinforcement.

Removal of the existing bridge will begin after traffic is switched to the new bridge. Good planning and execution of the removal plan is critical to ensure the removal operation does not damage or impact the new bridge.

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.

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.



There is a risk to the new floating bridge at Pontoon L. The existing bridge provides breakwater protection from the larger storms from the south. Until all anchoring and bridge assembly are complete, Pontoon L may be vulnerable to damage if the existing drawspan needs to open for a storm event.



FB&L: Precast girder span at west approach

JULY COSTS

Preliminary engineering is complete. The right of way budget is complete. The total actual cost to date from the contractor is 89 percent of the budget.

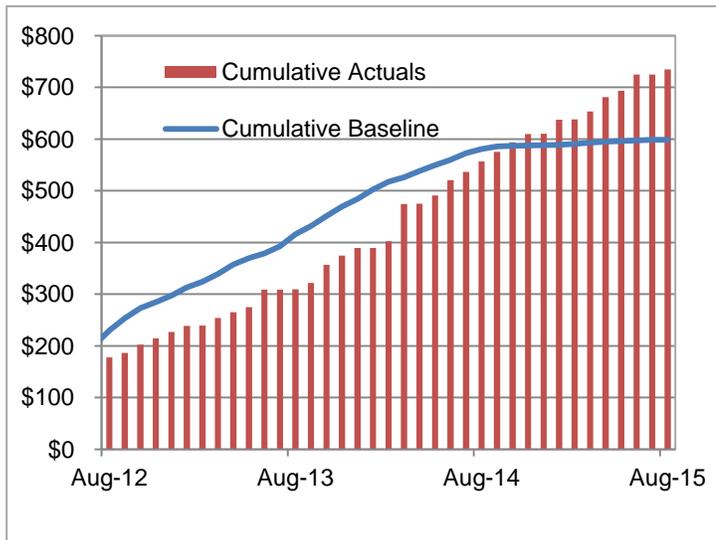
	Current Budget	Actuals to Date	Remaining Budget
Floating Bridge and Landings Construction Project Totals	\$835,641,193	\$749,692,176	\$85,949,017
Preliminary Engineering	\$10,659,063	\$10,659,063	\$0
Right of Way	\$4,426,535	\$3,770,680	\$655,855
Construction	\$820,555,595	\$735,262,433	\$85,293,162
Current Contract Value	\$755,394,595	\$678,546,080	\$76,848,515
Agreements	\$36,818,940	\$32,485,439	\$4,333,501
Construction Engineering	\$20,602,060	\$17,522,787	\$3,079,273
State Force Work	\$60,000	\$3,270	\$56,730
State Materials	\$0	\$0	\$0
Vendor Supplied Materials	\$7,680,000	\$6,704,857	\$975,143

Cost information through August 31, 2015

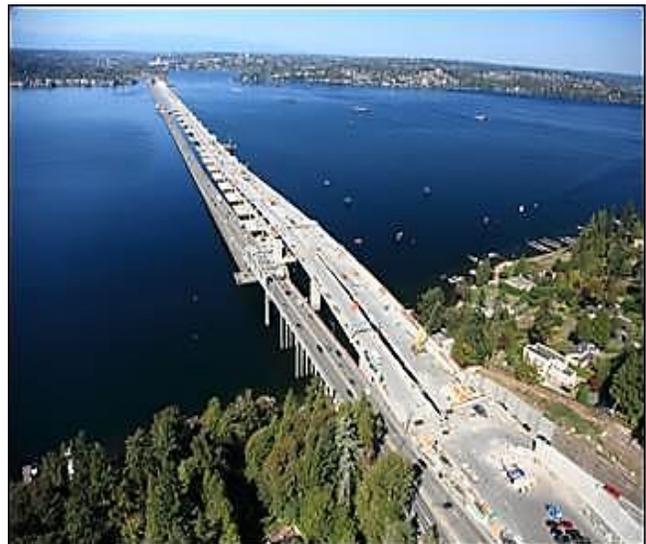
AUGUST CHANGE ORDER SUMMARY

There were two change orders executed in August with a total value of \$22,600. Change orders total \$168,833,595 for the FB&L project at the time of this report.

AUGUST PERFORMANCE



Cumulative actuals are above the baseline for August



FB&L: Aerial view of SR520 floating bridge

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	8/23/2013
Substantial Completion	4/28/2016	On Time
Physical Completion	2/22/2017	Early

AUGUST 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 staff that do not appear to be constructed in accordance with the approved drawings and specifications.

“**Nonconformance Issues**” are incidents recorded by WSDOT’s Quality Verification staff due to an audit finding based on their observance of the work.

	Previous Total	Current Period	Project Total	Open	Closed
Audits - Actual	3592	62	3654	26	3628

	Previous Total	Open	Current Period	Avg. Time Open
Nonconformance Reports (NCR)	346	57	4	403 days
Nonconformance Issues (NCI)	882	37	5	153 days

AUGUST 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	37	1	38
Lost Time Incidents	4	0	4
Contract Days without an Incident	52	3	3

On 8/25/2015, a Recordable Incident occurred. A KGM operator broke the tip of his finger by using a 3-inch piece of conduit to crush cardboard boxes down in a skip box. When swinging the conduit, he smashed his finger between the conduit and side of the skip box.

AUGUST 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)	53	0	53
Minor Environmental Event	50	0	50

West Approach Bridge North Project

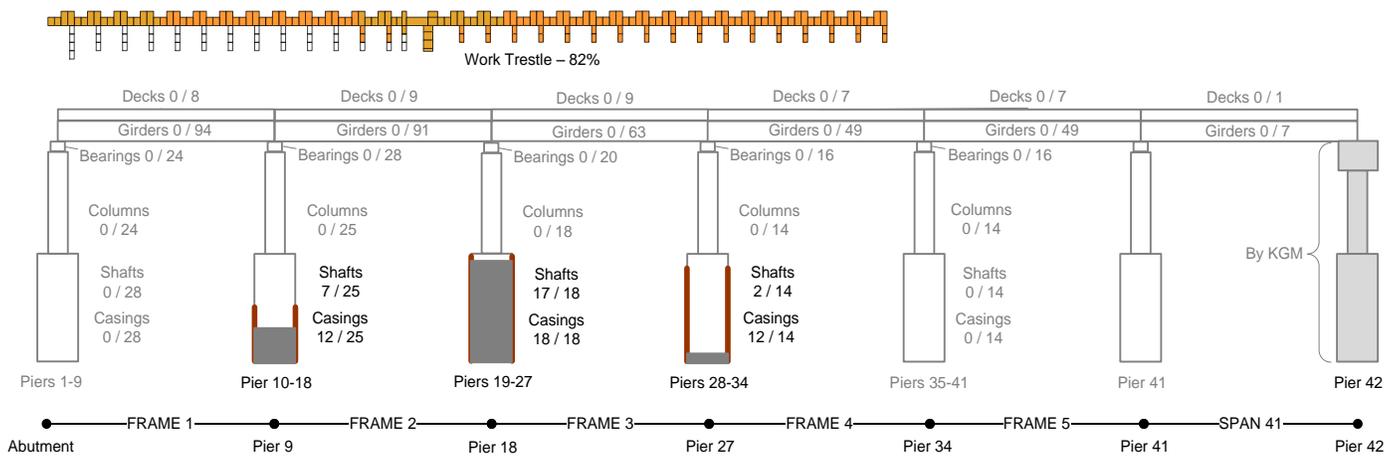
CONSTRUCTION OVERVIEW

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: Cross-Hole Sonic Log Tube cleaning and preparation for grout

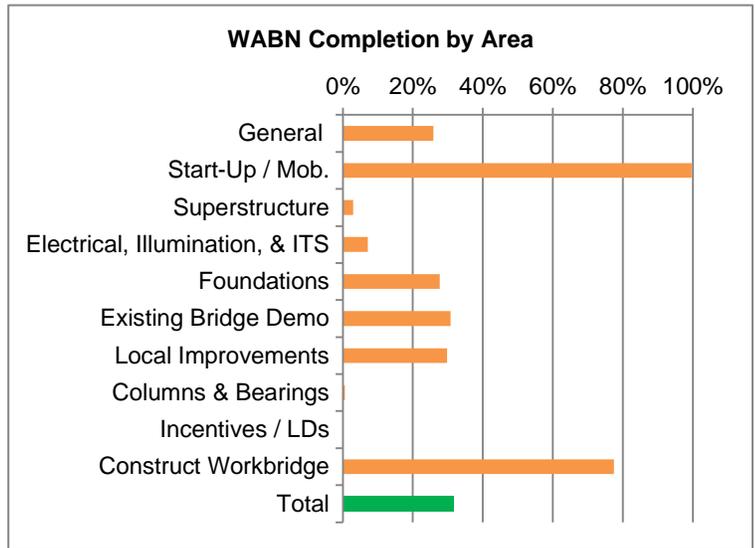
Original Engineers Estimate	\$209,905,587
Bid Price	\$199,537,371
Change Orders to date	(\$301,169)
Current Contract Value	\$199,236,202



West Approach Bridge North progress tracker as of Aug 31, 2015

AUGUST ACCOMPLISHMENTS

Through Aug. 30, the contractor has installed 42 bridge casings at 18 pier locations and constructed 26 drilled shafts at Piers 16-29. In August, the contractor reconfigured the westbound off-ramp to Montlake Boulevard, paved and striped the reconfigured, interim ramp, and switched traffic onto it. The contractor also continued sidewalk replacements on Montlake Boulevard, signal pole installation, ITS conduit installation, bike-locker pad construction, and demolition of spans L4 to L7 of the R.H. Thomson “Ramps to Nowhere.”



RISK

- Environmental noncompliance events
- Procurement of seismic isolation bearings
- Expansion joint procurement
- Asbestos-containing materials in existing ramps
- Coordination with development of future West Approach Bridge South/Montlake interchange project.



WABN: Fabricating shaft rebar cages in MOHAI yard

AUGUST COSTS

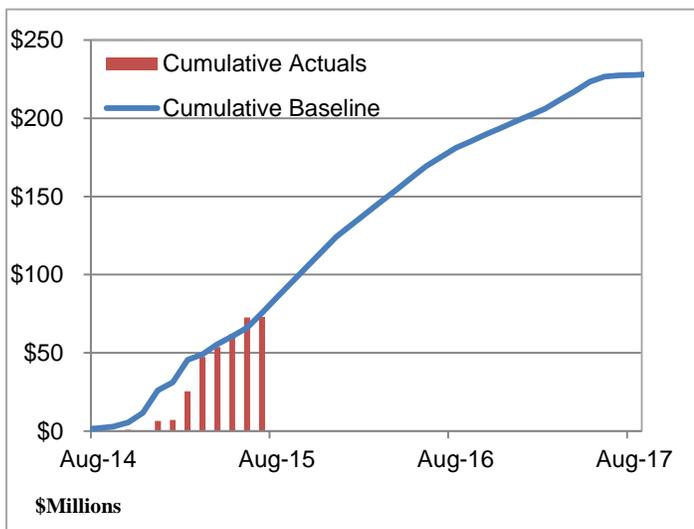
The preliminary engineering and right of way phases are nearly complete; final costs are being recorded. There have been 12 payments made to the contractor through August 2015.

	Current Budget	Actuals to Date	Remaining Budget
West Approach Bridge North Project Totals	\$252,438,571	\$113,929,878	\$138,508,693
Preliminary Engineering	\$26,485,353	\$26,485,353	\$0
Right of Way	\$4,730,000	\$4,224,518	\$505,482
Construction	\$221,223,218	\$83,220,007	\$138,003,211
<i>Current Contract Value</i>	\$199,236,202	\$74,205,924	\$125,030,278
<i>Agreements</i>	\$8,342,278	\$4,488,401	\$3,853,877
<i>Construction Engineering</i>	\$13,478,157	\$4,428,249	\$9,049,908
<i>State Force Work</i>	\$10,301	\$10,301	\$0
<i>State Materials</i>	\$0	\$0	\$0
<i>Vendor Supplied Materials</i>	\$156,280	\$87,132	\$69,148

Cost information through Aug 31, 2015

AUGUST CHANGE ORDER SUMMARY

There were zero orders executed in Aug. Change orders total **(\$301,169)** for the WABN project at the time of this report.



Cumulative actuals are slightly below the baseline in August.



WABN: Placing concrete at shaft 24A

SUMMARY SCHEDULE

The sixth progress schedule update (August) was submitted on Aug. 20th and returned for correction on Aug. 21st. The contractor resubmitted with corrections and the update was approved.

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	6/20/2017
End of Working Days	11/3/2017	11/3/2017

AUGUST SAFETY SUMMARY

	Previous Total	Current Period	Project Total
Work-related injuries requiring first aid only	4	0	4
Work-related injuries resulting in transfers or restrictions	3	0	3
Work-related injuries resulting in days away from work	0	0	0

AUGUST 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)	52	4	56
Minor Environmental Event	0	0	0

On 8/7/15 a Noncompliance Event occurred. Over 300 gallons of ShorePac slurry leaked from drill shaft casing 28B. The appropriate resource agencies were notified.

On 8/14/15 a Noncompliance Event occurred. During heavy rains, water breached containment, resulting in turbidity exceedances in the lake. The incident was reported to the Department of Ecology’s Environmental Report Tracking System.

On 8/21/15 a Noncompliance Event occurred. One gallon of slurry spilled into the lake from an in-transit kiddie pool. The appropriate resource agencies were notified

On 8/26/15 a Noncompliance Event occurred. Approximately 500 gallons of ShorePac slurry leaked into the lake from drilled shaft casing 20A. The appropriate resource agencies were notified.

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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