

SR 520 Bridge Replacement and HOV Program

Lynn Peterson
Secretary of Transportation

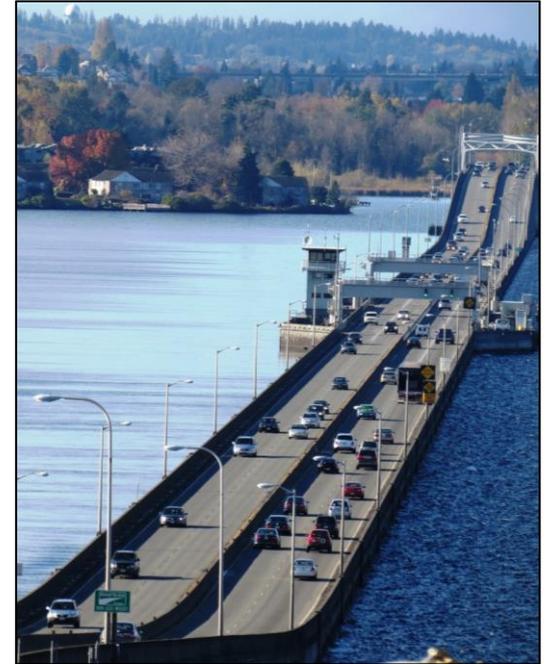
Cam Gilmour
Deputy Secretary

Julie Meredith, P.E.
SR 520 Program Director

Joint Transportation Committee
September 11, 2013

Presentation Overview

- Happy 50th Birthday to the existing bridge!
- SR 520 Program overview
- Pontoon repairs
- Financial update
- Construction updates:
 - Eastside
 - Floating Bridge
 - Pontoons
- Upcoming construction:
 - West Approach Bridge North
- Questions and answers



View of the SR 520 floating bridge, looking west from Medina.

1963 – 2013: 50th Anniversary of the SR 520 Bridge Opening



Photo of the SR 520 bridge opening event on Aug. 28, 1963. Photo courtesy of MOHAI.



Photo of the SR 520 bridge opening event on Aug. 28, 1963. Photo courtesy of MOHAI.

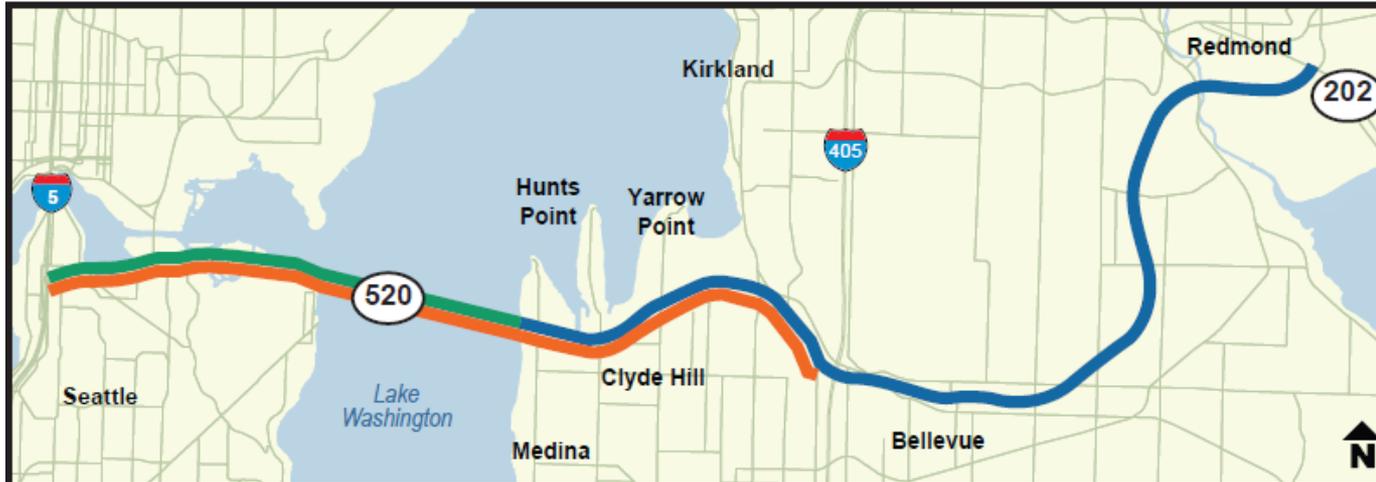


Visualization of the new SR 520 floating bridge. The new bridge will feature a transit/HOV lane in each direction, a bicycle/pedestrian path, and wider, safer shoulders.

SR 520 Program Description

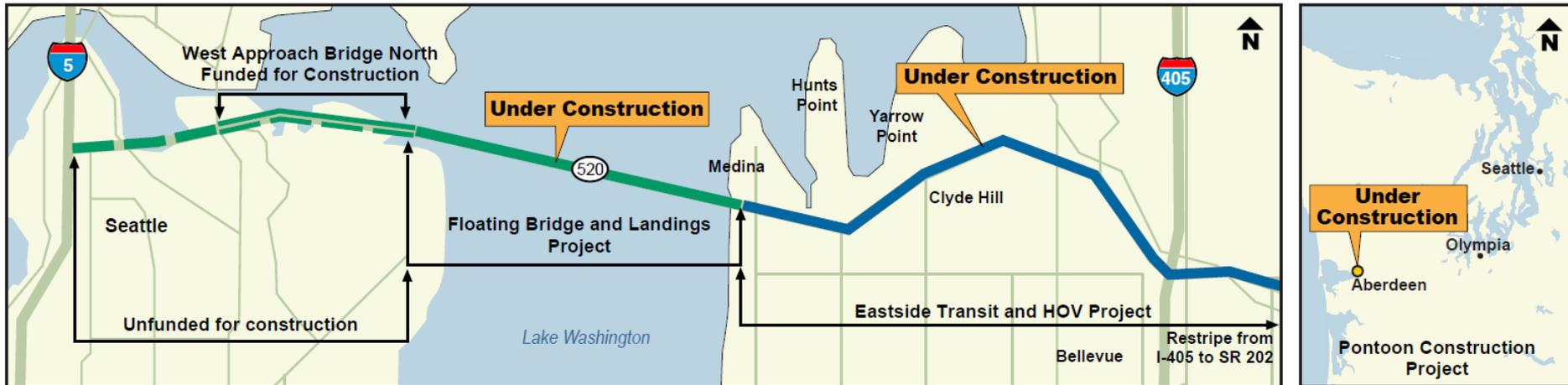
The SR 520 Bridge Replacement and HOV Program will replace the Portage Bay and Evergreen Point bridges and improve the existing roadway between I-5 in Seattle and SR 202 on the Eastside.

-  **I-5 to Medina: Bridge Replacement and HOV Project** – Replaces the SR 520 floating bridge and landings, and interchanges and roadway between I-5 and the eastern shore of Lake Washington.
-  **Medina to SR 202: Eastside Transit and HOV Project** – Completes and improves the transit and HOV system from Evergreen Point Road in Medina to the SR 202 interchange in Redmond.
-  **Lake Washington Congestion Management Project** – Implements tolls on the existing SR 520 floating bridge, and activates Smarter Highways features from I-5 to I-405.
-  **Pontoon Construction Project** – Advances pontoon construction to restore the floating section of the SR 520 bridge in the event of a catastrophic failure and to store those pontoons until needed.



What Is funded for \$2.72 Billion?

Program map



SR 520 Program budget (2009): \$4.65 billion

SR 520 Program cost estimate (Oct. 2012): \$4.13 billion

Current SR 520 construction:

- Eastside transit and HOV improvements.
- The floating bridge and landings.
- Pontoon construction in Grays Harbor.

Upcoming SR 520 construction:

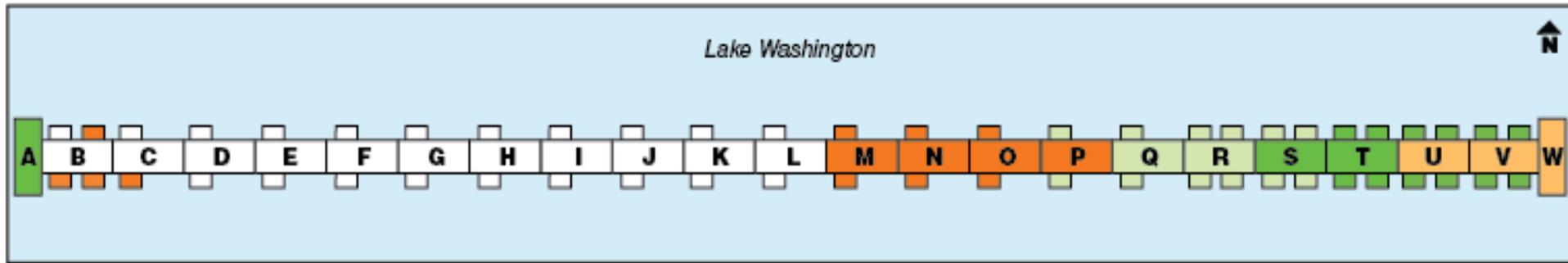
- West Approach Bridge North
(enabled by federal TIFIA loan)

Next steps:

- I-5 to the west end of the floating bridge *(\$1.4 billion needed for construction)*

SR 520 Pontoons – Status and Locations

Updated: Sept. 3, 2013



Note: not to scale

Pontoon status:	 On Lake Washington	 Under construction	 In transit / pending transit
	 Temporarily moored	 Repairs underway	 Future construction

- 32 pontoons have been constructed to date.
- 77 total pontoons are needed to build the new floating bridge.
- 18 pontoons are currently on Lake Washington.
- Construction continues on the next six pontoons in Aberdeen and the next eight pontoons in Tacoma.

Pontoon Repairs: Ensuring Quality Results

- Goal: Ensure a 75-year design life for SR 520 bridge pontoons
- Repair plan includes:
 - Epoxy injections and crystalline waterproofing
 - Transverse post-tensioning
 - Carbon-fiber wrapping
- Experts in concurrence with repair plan:
 - SR 520 Pontoon Expert Review Panel (commissioned by WSDOT)
 - Ben C. Gerwick, Marine and Bridge Engineering Firm (commissioned by KGM)
- WSDOT engineers inspected completed repairs to ensure compliance with the plan prior to float-out from drydock facilities in Seattle and Portland.
- WSDOT has conducted extensive outreach to the public and media.

Pontoon Repairs



Crews conduct repairs on Pontoon T at a drydock facility in Portland, Ore. in July 2013.



Photos of a Legislative tour of Pontoon W repairs at a drydock facility in Seattle on Sept. 5, 2013.

Pontoon Repairs: Epoxy Injections and Crystalline Waterproofing

- Epoxy injection repairs were completed on cracks that were **greater than .006 inches.**
- Crystalline waterproofing repairs were completed on cracks that were **less than .006 inches.**



SR 520 Floating Bridge and Landings Project Manager Dave Becher shows epoxy injection locations on Pontoon W.

Pontoon Repairs: Carbon Fiber Wrap and Transverse Post-tensioning



Upper Left: Photo of Pontoon W in a drydock facility prior to undergoing carbon fiber wrap repairs. Photo taken: July 2013.



Upper Right: Photo of the same pontoon, with completed carbon fiber wrap repairs. Photo taken: August 2013.

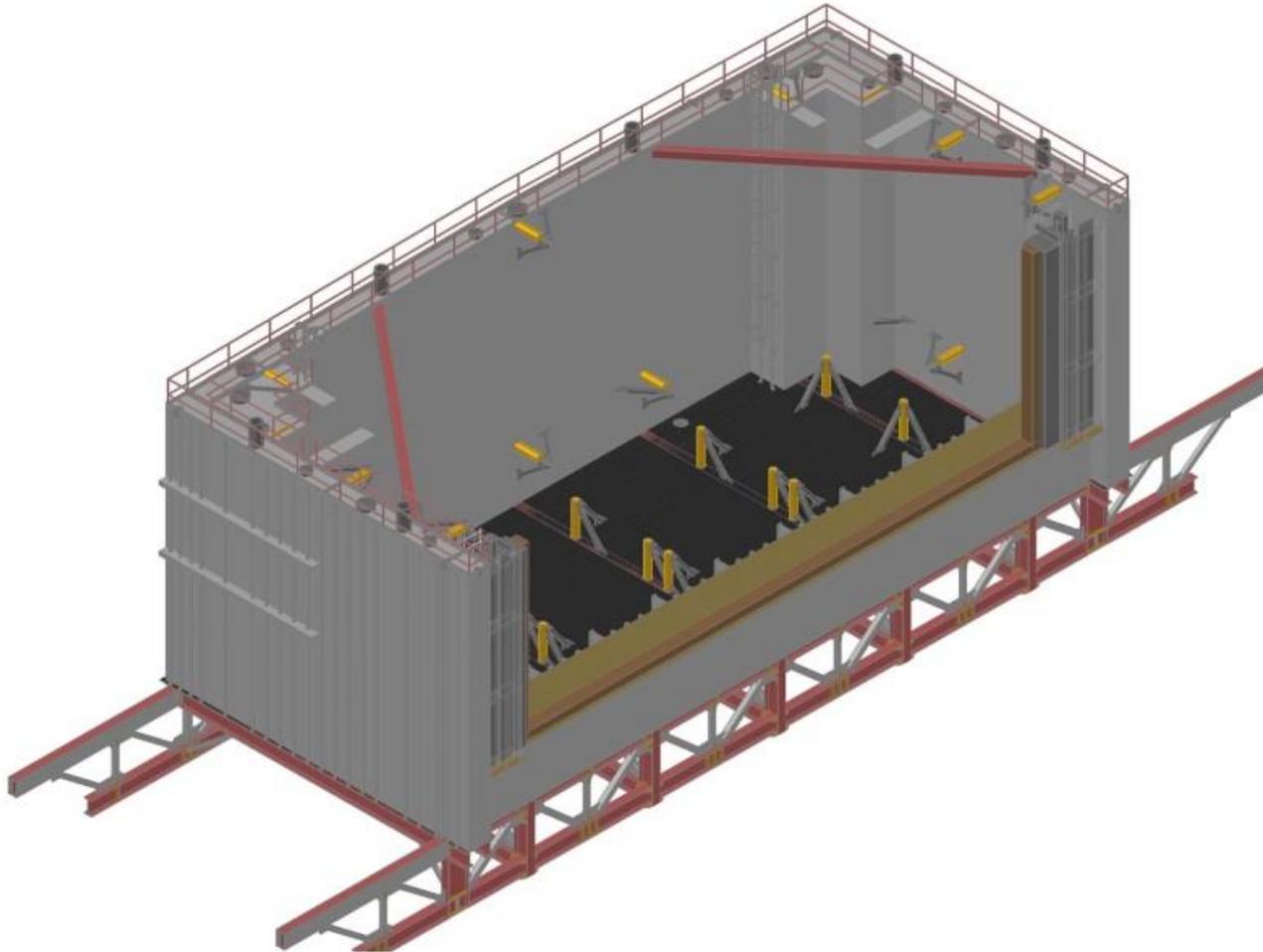


Lower Left: Photo of external opening of post-tensioning ducts. Photo taken: July 2013.



Lower Right: Photo of completed exterior cap of post-tensioning ducts. Photo taken: August 2013.

Pontoon repairs: Coffercell on Lake Washington



Rendering of upcoming coffer cell on Lake Washington.

Pontoon Repairs and Schedule Negotiations

- The contract date to open the new bridge to traffic is July 2015.
- Due to pontoon repairs, we now expect to open the bridge to traffic in late 2015 or early 2016.
- WSDOT is continuing to work with the contractor to identify opportunities to ensure the project is completed as early as possible and to refine the schedule moving forward.

Financial Update – SR 520 Risk Reserve Status

SR 520 risk reserve overview – August 2013

Initial SR 520 program reserve budget	\$250.0 million
Total executed change orders for three design-build projects	-\$149.8 million
Current SR 520 program reserve budget	\$100.2 million
Pending and potential change order issues	-\$228.4 million
Remaining balance if ALL potential change items are realized	-\$128.2 million

Financial Update – Next Steps

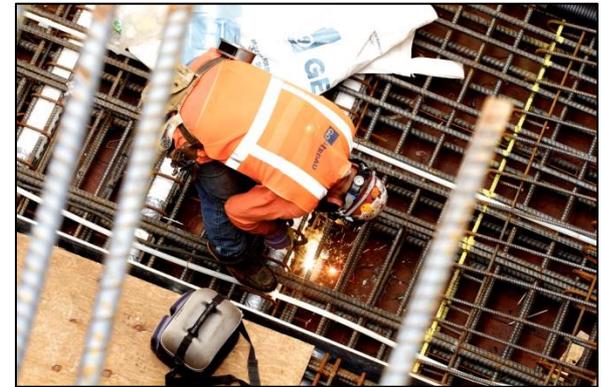
WSDOT will complete the following steps moving forward to address these issues:

- Review remaining construction and assess risks to WSDOT
- Review and update risk registers and use experts as needed
- Update and model cost trends
- Continue exploring financing implications with WSDOT CFO and State Treasurer's office
- Review planned expenditures and assess any potential cost savings
- Continue to engage senior, experienced management and consultant staff while negotiating future change orders.

Construction Update

Job Creation

- SR 520 projects have created hundreds of jobs around the state.
 - Eastside Transit and HOV Project: 224 jobs
 - Floating Bridge and Landings Project: 282 jobs
 - Pontoon Construction Project: 400 jobs
- Skilled construction trades include:
 - Carpenters
 - Concrete workers
 - Crane operators
 - Electricians
 - Iron workers
 - Laborers
 - Machine operators
 - Painters
 - Truck drivers
 - Welders



Construction Update: Eastside Transit and HOV Project



Pictured above is a rendering of the completed Evergreen Point Road lid. The new Eastside corridor will feature three community-connecting lids with improved transit facilities and bicycle/pedestrian connections.

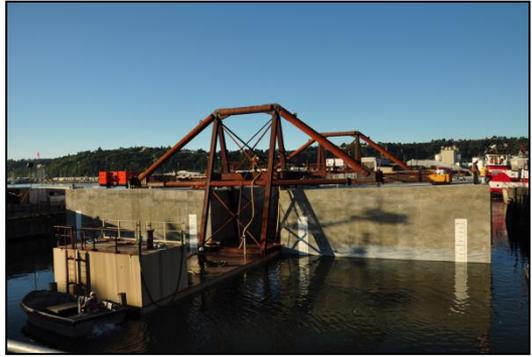
Construction Update: Floating Bridge and Landings Project



Construction is taking place around the state, including new pontoons in Tacoma, precast elements in Kenmore, and building the new bridge on Lake Washington.



Construction of box columns on cross Pontoon A on Lake Washington, near Medina.



Float-out of third cycle of pontoons in Tacoma in July 2013.

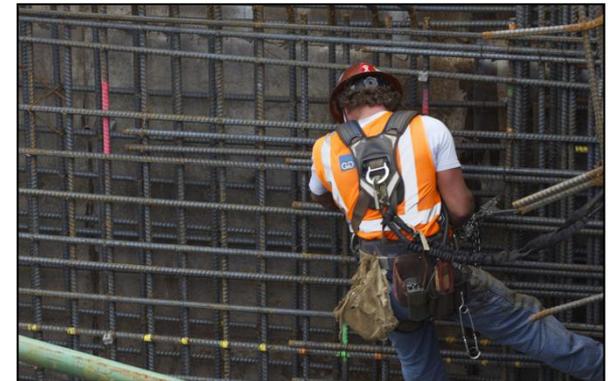


All 58 anchors for the new floating bridge have been built and placed in Lake Washington.

Construction update: Pontoon Construction Project

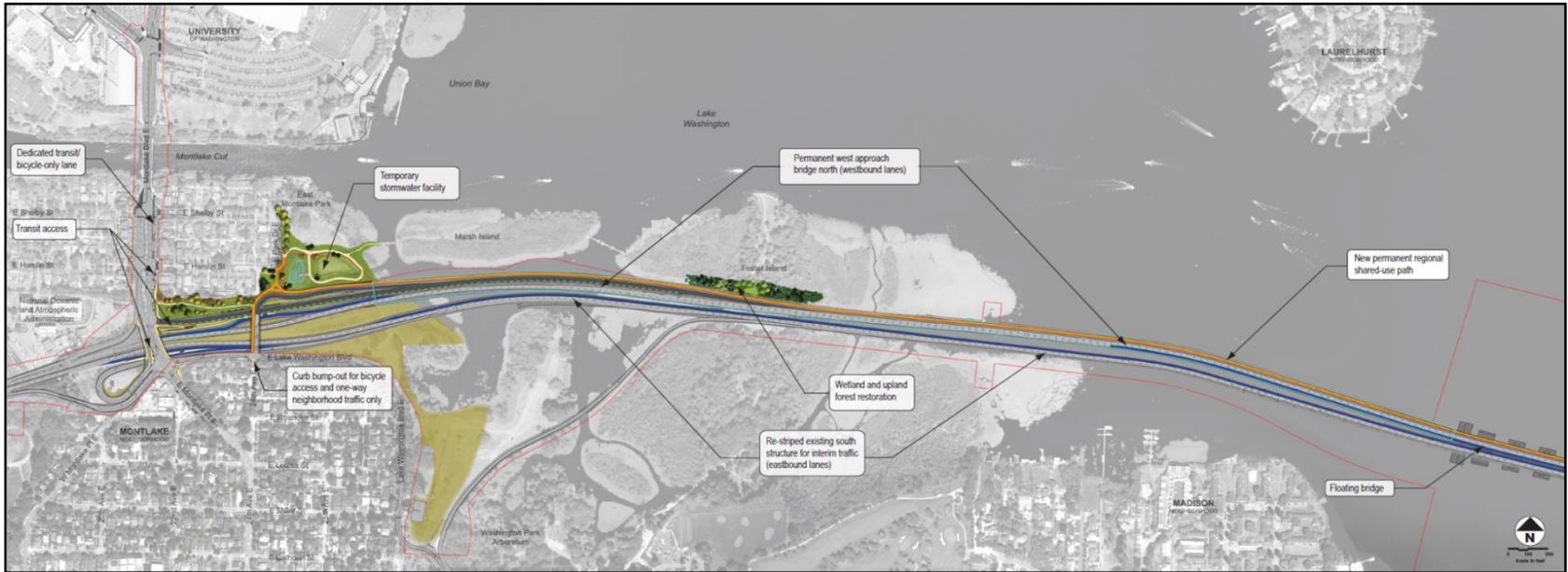


Aerial view of the casting basin during Cycle 3 construction in Aberdeen, WA. Cycle 3 pontoons are expected to float out in fall 2013. Photo credit: Soundview Aerial Photography.



Photos of Cycle 3 pontoons under construction in Aberdeen, WA.

West Approach Bridge North: Key Features



Future-Compatibility

- Advances the next phase of full corridor build-out
- Accommodates potential future light rail
- Incorporates ongoing community input
- Interim design at Montlake does not preclude future decisions

Bridge and Corridor Safety

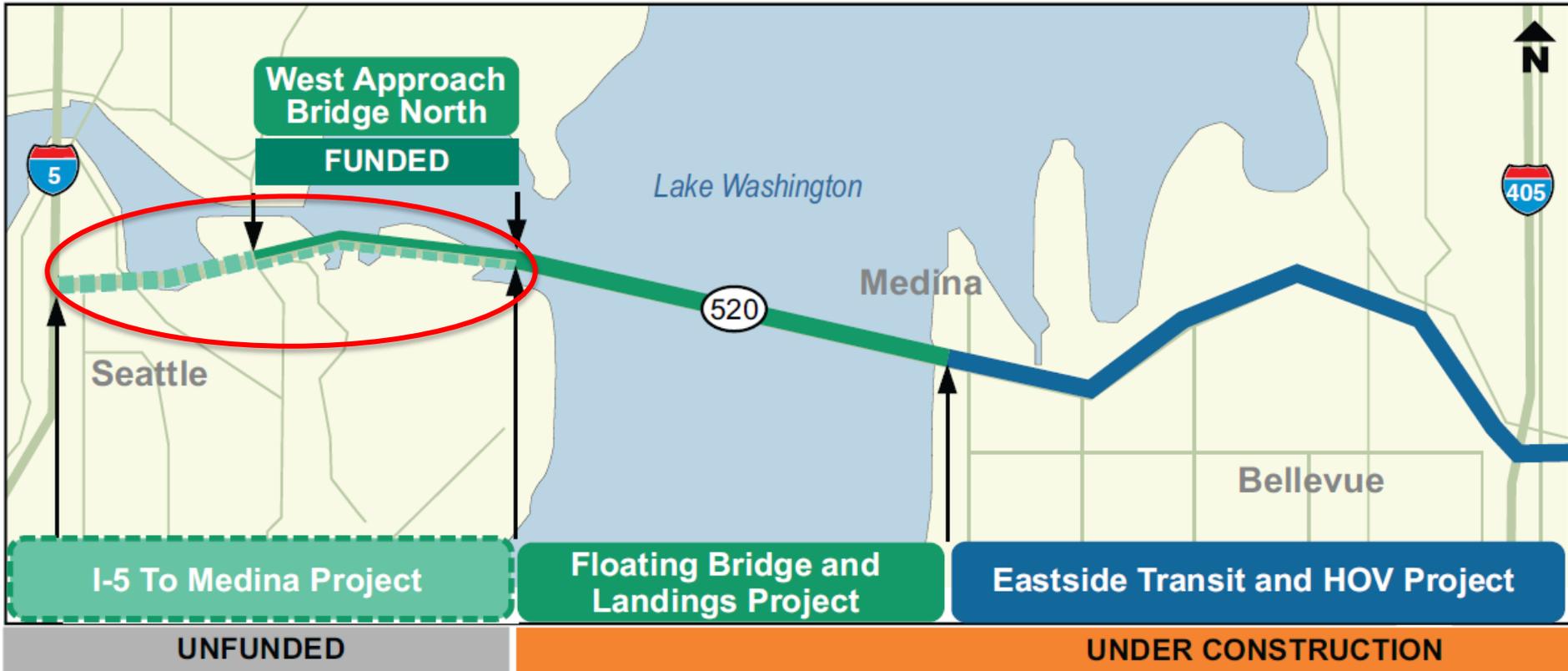
- Addresses next major vulnerable structure on the west side
- Incorporates corridor and local traffic mobility improvements
- Extends a 6-lane corridor from Redmond to Montlake vicinity
- Improves safety for pedestrians and bicyclists

Community and Environmental Benefits

- Advances aquatic, wetland, and parks mitigation
- Constructs the permanent regional shared-use path between Bellevue and Seattle
- Improves bicycle and pedestrian connectivity
- Improves transit connectivity and reliability by extending the HOV/transit lane to Seattle
- Reduces concrete volumes by nearly 50 percent as a result of baseline design refinements

Next Steps to Complete the SR 520 Corridor

- Remaining unfunded section: \$1.4 billion.



Questions?

For more information:

Visit: www.wsdot.wa.gov/projects/SR520Bridge

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