Pontoon modifications and repairs

In May 2012, WSDOT encountered concrete spalling (or chipping) damage and more-than-expected cracking in four of the first six pontoons built in Aberdeen.

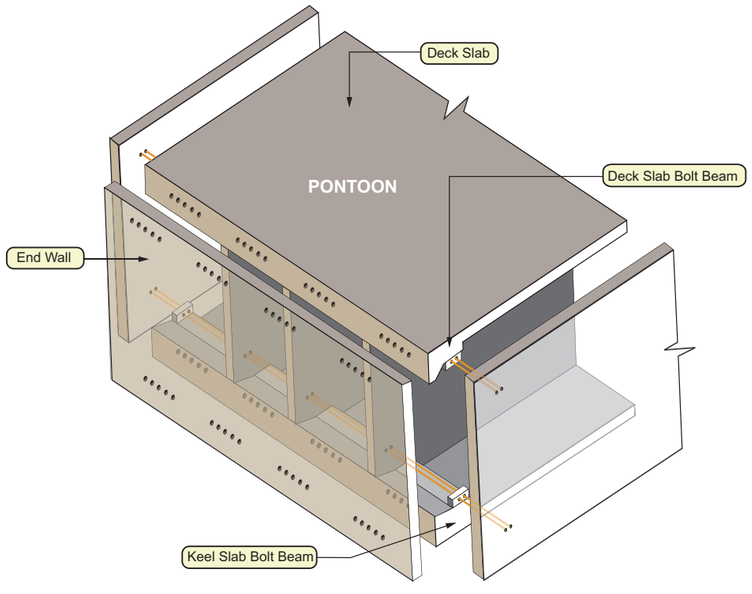
WSDOT convened an expert review panel to analyze these issues and develop design modifications and repair strategies.

The pontoons built in Cycle 2 included these design modifications, and repairs are underway on the Cycle 1 pontoons.

When these pontoons are repaired, the new bridge will meet its required 75-year design life with normal maintenance.

Crack repairs to the Cycle 1 pontoons will include:

1. Epoxy injections to cracks over .006” in width.
2. Transverse post-tensioning at the end walls. Post-tensioning is a common construction process where steel cables are tightened through the concrete to increase strength.
3. Carbon fiber wrap to portions of the keel slab.



How do the pontoons travel from Aberdeen to Lake Washington?

After construction and float-out of each cycle, pontoons will be thoroughly inspected inside and out before being handed over to the Floating Bridge and Landings Project contractor. The pontoons will then either be moored at a special site in Grays Harbor or towed to Tacoma or Lake Washington to be outfitted with roadway before becoming the floating foundation for the new SR 520 bridge.

For more information:

Pontoon Construction Project
1301 W. Heron Street
Aberdeen, WA 98520

Phone: 360-500-4401

Website: www.wsdot.wa.gov/projects/SR520/pontoons

Email: pontoons@wsdot.wa.gov

Americans with Disabilities Act (ADA) Information:

This material can be made available in an alternate format by emailing the WSDOT Diversity/ADA Affairs team at wsdotada@wsdot.wa.gov or by calling toll free, 855-362-4ADA(4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

Title VI Notice to Public:

It is the Washington State Department of Transportation’s (WSDOT) policy to assure that no person shall, on the grounds of race, color, national origin or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated, may file a complaint with WSDOT’s Office of Equal Opportunity (OEO). For additional information regarding Title VI complaint procedures and/or information regarding our non-discrimination obligations, please contact OEO’s Title VI Coordinators, George Laue at (509) 324-6018 or Jonte’ Sulton at (360) 705-7082.

Washington State Department of Transportation

Washington State Department of Transportation

SR 520 Bridge Replacement and HOV Program

STATE ROUTE 520

Pontoon Construction Project

Pontoon Construction Project in full swing

July 2013

What is the SR 520 Pontoon Construction Project?

The aging SR 520 floating bridge on Lake Washington is vulnerable to windstorms and needs to be replaced. WSDOT is moving forward with pontoon construction to replace the SR 520 floating bridge.

The $367.3 million Pontoon Construction Project broke ground in February 2011 at its 55-acre site in Aberdeen. The project contractor, Kiewit-General Joint Venture (K-G) has completed work on the pontoon construction facility and is now in the process of building the 33 concrete pontoons needed for replacing of the SR 520 floating bridge.

Clockwise from top: A tugboat tows a 240-foot-long pontoon out of the casting basin, a welder puts the finishing touches on a bollard for a pontoon, crews pour concrete for a pontoon top slab.

Construction update

WSDOT and contractor Kiewit-General have completed the new casting basin in Aberdeen, and built and floated out the first two cycles of pontoons. WSDOT is preparing these pontoons for assembly on Lake Washington. Crews are now building the third cycle of pontoons, expected to be complete later in 2013

WSDOT and its contractor are working together to ensure the pontoons for the new bridge meet WSDOT’s high standards of quality and will serve the region for 75 years or more.

Washington State Department of Transportation

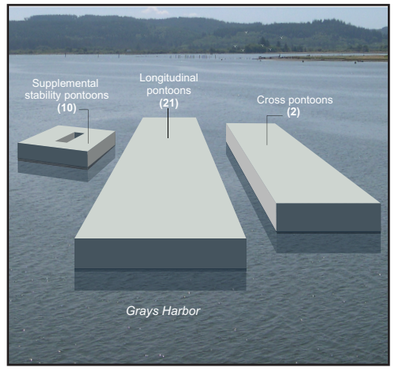
U.S. Department of Transportation
Federal Highway Administration

What are bridge pontoons?

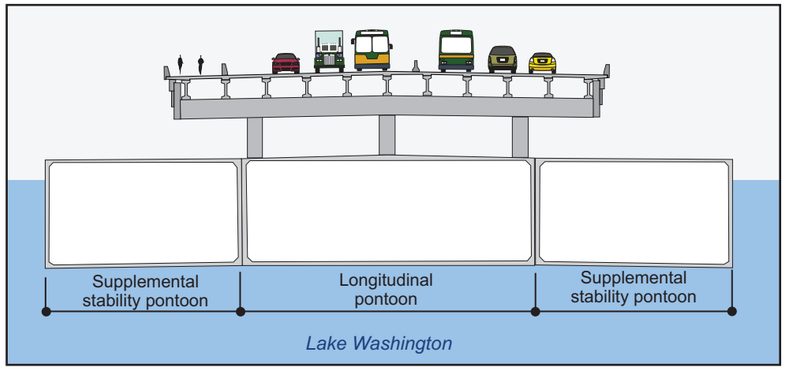
Bridge pontoons are the foundation of a floating bridge. These large, hollow concrete structures are designed to support the weight of the road, plus the cars, trucks and buses that use the bridge every day.

SR 520 bridge pontoons measure up to 360 feet long – as long as a football field. They weigh a little over 11,000 tons – approximately equal to 23 Boeing 747 jets. To build all 33 pontoons in Aberdeen, large quantities of material are necessary, including 112,000 cubic yards of concrete, 35,000 tons of rebar, and 2,745,000 square feet of formwork.

Pontoons are similar to a tanker ship or barge – even though they are very heavy, they still float. This is because each pontoon displaces an amount of water that weighs more than the pontoon and portion of the bridge it will support.

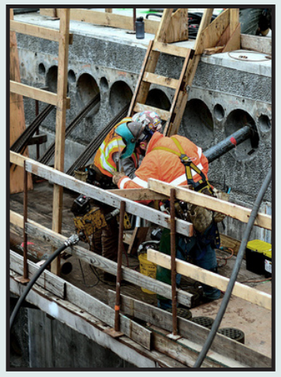
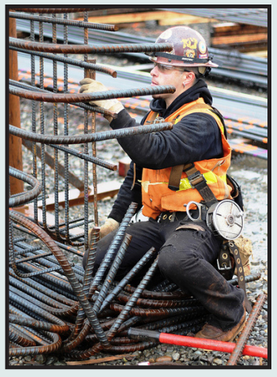


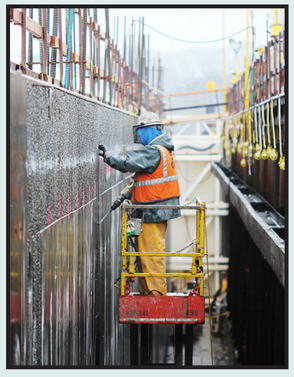
Three types of pontoons will support the new SR 520 floating bridge.



Conceptual graphic of the new SR 520 floating bridge with two general-purpose lanes and one transit/HOV lane in each direction, and a new bicycle/pedestrian path.

Project creates hundreds of jobs

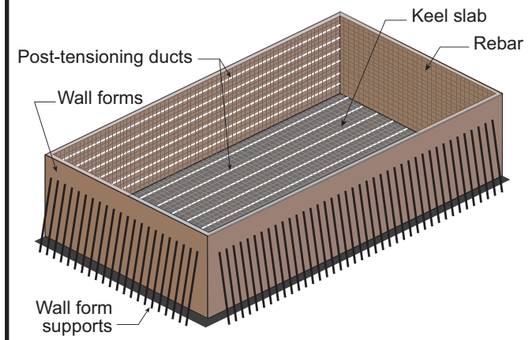


The Pontoon Construction Project supports hundreds of project-related jobs in Grays Harbor, including work in construction, supplies and supporting services.

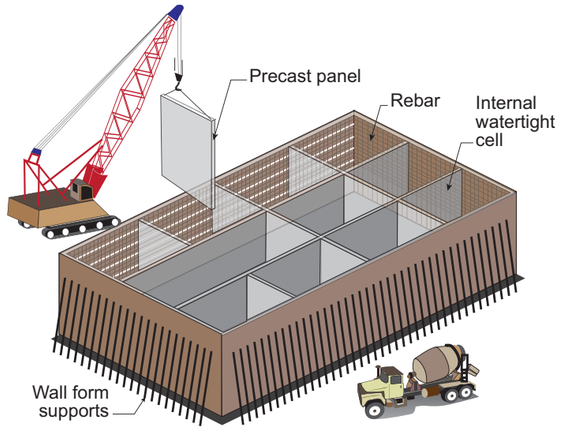
Kiewit-General is responsible for all hiring for the project and working closely with unions to provide a skilled workforce for the project. Several types of skilled trades and materials are needed for pontoon construction.

More than 400 employees have been hired for the project, including more than 200 workers from Grays Harbor County.

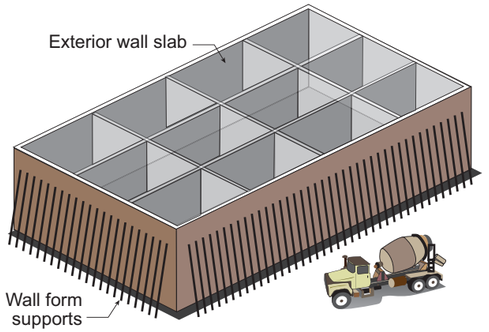
How to build a pontoon



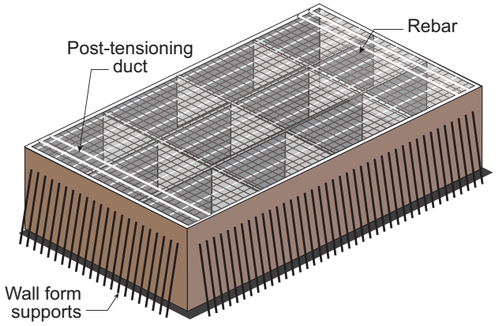
1 **Set wall forms, rebar, and install post-tensioning ducts**



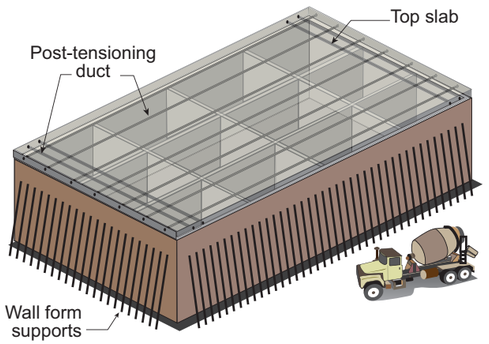
2 **Install interior precast panels and pour concrete in keel slab**



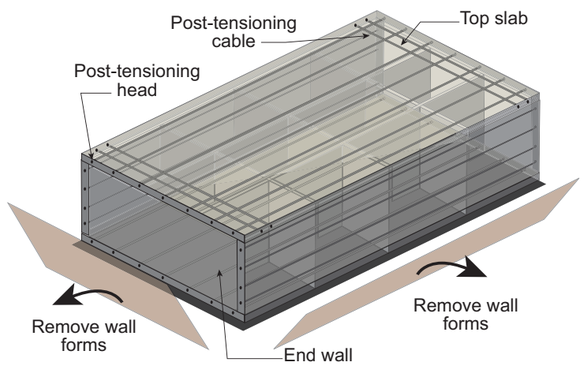
3 **Pour concrete for exterior walls and joints between interior precast panels**



4 **Install top slab rebar and post-tensioning ducts**



5 **Pour top slab concrete**



6 **Remove wall forms and perform post-tensioning to add strength**