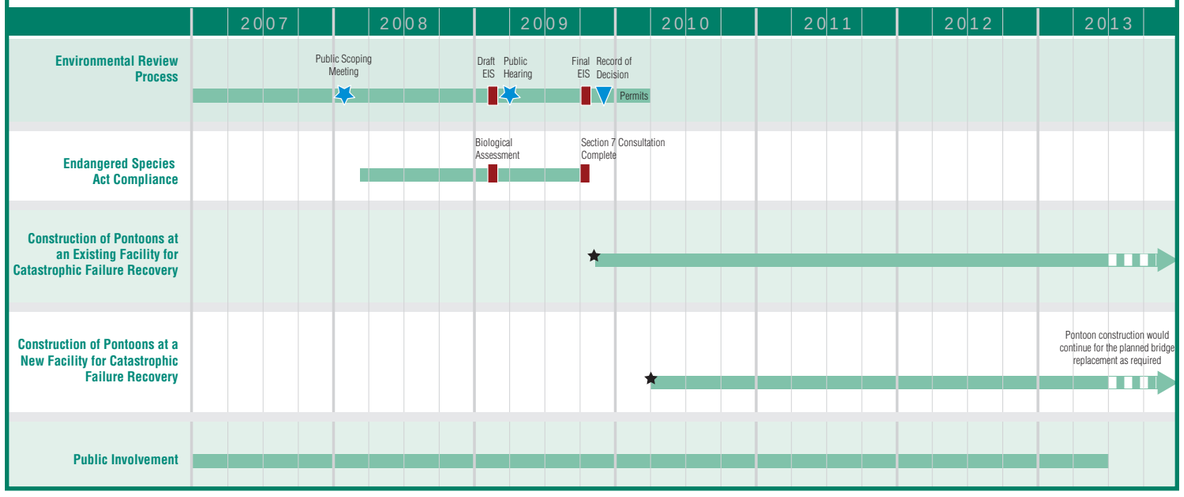
Project schedule



For More Information:

Call: 1-888-520-6397

E-mail: pontoons@wsdot.wa.gov

Visit the Web site:
www.wsdot.wa.gov/Projects/SR520/Pontoons

Mail: WSDOT
600 Stewart Street, Suite 520
Seattle, WA 98101

Washington State Department of Transportation

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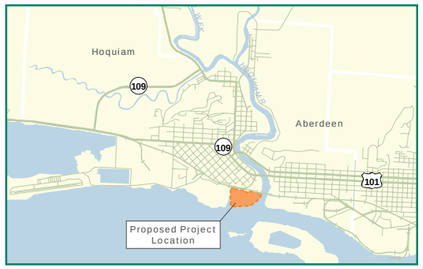
Washington State Department of Transportation

SR 520 Pontoon Construction Project

State Route 520

Spring 2008

Keeping us afloat



The Washington State Department of Transportation (WSDOT) is advancing pontoon construction to restore the floating section of the SR 520 bridge in case of a catastrophic failure. The SR 520 Evergreen Point Bridge over Lake Washington has endured severe winter storms, making the floating section increasingly vulnerable to wind and waves. The fixed structures are also vulnerable to failure in an earthquake.

We are moving forward with the environmental process and plan to release a draft environmental impact statement (EIS) in early 2009 for the construction and storage of pontoons for catastrophic failure recovery. If the pontoons are not needed for emergency use, they would be used for the planned replacement of the SR 520 bridge.

We are exploring constructing pontoons at an existing facility in addition to a proposed new facility. Recently, the governor announced her support for developing a new facility at a Port of Grays Harbor property zoned for industrial development. The project team is currently evaluating this property through the environmental process. We are still determining how the existing facility in Tacoma can help us prepare for pontoon construction.

Through the environmental documentation and design processes, we will continue to coordinate with resource agencies and the construction industry on complying with environmental regulations and determining efficient design and construction methods.

WSDOT employees and tour group walking on a pontoon supporting the SR 520 bridge

What are bridge pontoons?
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 daily. Depending on the bridge design, pontoons can be as long as a football field and as tall as a two-story building.

How do pontoons float?
A floating bridge is similar to a tanker ship or barge. Despite being heavy concrete structures, pontoons float because the water they displace weighs the same as the pontoons and road they support.

Washington State Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

View of the SR 520 floating bridge pontoon from underneath the west highrise

Why is pontoon construction important?

If the SR 520 bridge failed, it could take several years to construct the 1.4 miles of pontoons needed to recover the existing bridge. The timely availability of new pontoons is a critical element of restoring the bridge for drivers and maintaining the regional transportation system.

View from inside a pontoon

WSDOT employee enters pontoon during the annual bridge inspection

Pontoons under construction for the existing SR 104 Hood Canal Bridge in 2006

How are floating bridges built?

The steps to building a floating bridge start with pontoons:

1 – Form the box-like shape of the pontoons by assembling wood forms around a steel framework.

2 – Pour concrete into the forms to create the pontoon floors, walls and top slabs.

3 – Tow the pontoons to a moorage location.

4 - Tow pontoons to the bridge site when needed for bridge recovery or replacement.

5 - Join pontoons together and secure in place by steel cables that are anchored to the seafloor or lakebed.

6 – Add the road, concrete columns or beams on top of the pontoons. These structures can be added either before or after the pontoons are transported to the bridge site.

Aerial photo of the Industrial Development District property we are evaluating for the SR 520 Pontoon Construction Project

What is the next step for developing a new facility?

The project team is in the beginning stages of the environmental documentation process. We are currently evaluating the Port of Grays Harbor, shown to the left, as a potential location for a new pontoon construction facility. After preliminary investigations, we determined that the industrial property in Hoquiam warrants further study in the environmental impact statement (EIS) because it has the following features:

- Immediately available.
- Sufficient capacity to build several pontoons at the same time.
- Waterfront access to deep water.
- No known historic or cultural resources.
- No known chemical contamination.

What investigations have we completed so far?

We have conducted preliminary investigations to help us determine the suitability of this location for the project. We wanted to find out what we would encounter when developing this property. Our crews:

- Looked for potential evidence of cultural and historic resources.
- Tested for environmental contaminants.
- Identified wetlands and habitats.
- Gathered soil and sediment samples.

Crews gathering soil samples

The samples were carefully identified and then surveyed in the lab for potential evidence of historical and cultural resources