

## **World-class pontoon engineering advanced at Satsop test site**

### **Local News**

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SATSOP, Wash. - Unbeknownst to many, the science of floating bridges is currently being advanced quietly on the hill at Satsop Development Park.

And on some days, it's quite a sight with workers scrambling on and over a smaller test section of the pontoons that will soon be manufactured as replacements for the State Route 520 Bridge that spans Lake Washington, connecting Seattle and Bellevue.

The Washington State Department of Transportation (WSDOT) has determined that the 33 pontoons — the biggest ever built, each of them 75 feet wide by 360 feet long by 28.5 feet wide — will be manufactured in Grays Harbor County. Upon final environmental review, a pontoon casting facility will be built at either the "preferred" site of the former Weyerhaeuser log sorting yard in Aberdeen or the 90-acre alternative site in Hoquiam owned by the Anderson-Middleton Company.

Meanwhile what is absolutely certain is that the fascinating and innovative "advanced construction methods and engineering" (ACME) work of getting just the right mix and method to make concrete float, be strong and last long is well underway on seven acres at the Satsop Development Park, eastern Grays Harbor County's mixed use business park.

Quigg Bros. Construction Co. of Aberdeen has the \$2.7 million contract with the WSDOT to do the ACME testing.

Scott Ireland, WSDOT's project engineer for this testing process, says he can talk about concrete for hours. And after just a few minutes, you believe him.

It's not just getting concrete to float that's an issue, but finding the exact recipe, construction design and methods that will make the pontoons strong enough, without having the concrete heat up too much and crack — a particular concern with the size of these pontoons.

Permeability is an issue as well. The pontoons will be moored in salt water before they're delivered to Lake Washington. And then, of course, they will reside in Lake Washington with cars driving over them for many years.

Then there are the practical issues of actually physically applying the concrete quickly and effectively onto these huge structures, Ireland said.

"We've had to address constructability issues so we can figure out and correct those concerns before getting into building the actual pontoons," he said.

If that weren't enough variables to deal with, being able to quickly produce the pontoons to fit a tight schedule once the pontoon casting facility is built is also critical, he said.

Thankfully, with four floating bridges in the state, WSDOT is considered the world's expert in design and construction of floating bridges. Each time they build one they carefully make a list of "lessons learned" to carry over to the next project, said Ireland, who was the project manager on the Hood Canal Bridge.

For instance before going into the testing at Satsop they had nine trial concrete batches. But before this testing project began it was narrowed down to the single best performing mix design. This testing has included several versions of that mix, he said.

"I love to watch the daily progress of the project," said Tami Garrow, CEO of

Satsop Development Park, of the work going on in her backyard. "It's just fascinating what they're doing up here."

"Working at Satsop has facilitated the schedule to get this done as soon as possible," said Ireland. "We knew that in advance of the actual 520 Pontoon Project we needed a site that was available and that would facilitate being able to go right to work," he said.

"We didn't even have to go through the permitting process because the site was already permitted for this kind of work," Ireland said.

"We are so pleased that DOT decided to take a look at the Park for this particular project," said Garrow. "Satsop fit the bill in terms of their need for a permit-ready, immediately available site and we offered maximum flexibility to meet their scheduling requirements."

"We're honored to be a part of the project and thankful to DOT for thinking of us. We would very much like to be considered for future DOT projects, as well as any others that require pad-ready sites," Garrow said.

"It's exciting for us to play a small part in this big operation that will bring so many new jobs to Grays Harbor."