401 Inspection Form

Project Name: SR 520 Floating Bridge & Landing Site under active construction? X Yes ☐ No or ☐ Project completed	Date of Visit: June 8, 2016 Inspector: Penny Kelley
City: Medina County: King Location: SR520/Lake Washington Site visit trigger: Demolition Starts/Routine	
WSDOT Contacts: Stephen Sax – WSDOT 425-576-7133	Contact information:
Weather Conditions: cloudy with sun breaks – no rain	
Is a copy of the 401 Certification onsite: ☐ N/A **X Yes** ☐ No	
Does this project have an additional area of mixing for in-water work? ☐ Yes **X No** If yes, **Are turbidity standards being met at the boundary of the allowed mixing zone?** ☐ Yes ☐ No	
Were any WQ samples taken?	Yes **X No**
Were any photographs taken?	**X Yes** No
Is the project in compliance with 401 Certification Conditions: At the time of the inspection, the site was in compliance.	
Was Ecology notified of non-compliance? ☐ Yes ☐ No **X N/A Notified of all non-compliance events**	
Are there NPDES Construction Stormwater compliance concerns onsite? ☐ Yes **X No** N/A **WQ Inspector Greg Stegman phone/e-mail 425-649-7019 gste461@ecy.wa.gov**	
I certify that I have received _____ pages of this Site Inspection Field Form. ***Signature*_____ ***Date*_____**	

On-site Observations:

This inspection was a routine visit to inspect the containment set up because demolition work had started. The inspecting party consisted of myself, WSDOT and KGM. During the inspection, the group reviewed the demolition that was currently in progress (although no active work was occurring at the time of inspection) and discussed the process as it related to different sections of the bridge when viewed from the water.

The containment system consists of the following main components:

- Two containment barges that catch debris when breaking up the bridge i.e. rubblizing different sections
- Two processing barges for the girders and pier caps where they are broken up i.e. rubblized on the barge
- Crane mats and plywood to cover any gaps between barges placed under and around the bridge
- Water for dust control
- Pumps & tanks for containing and collecting water from the barges
- Netting to extend containment vertically where needed

It should be noted that for pontoons with superstructure on them, when that superstructure is removed (rubblized) then the pontoons are incorporated into the containment system.

The main three pieces of demolition equipment being used that were discussed:

- Hoe ram
- The shear
- The processor which is described as munching the concrete to get it off the rebar if needed.

The areas of demolition are:

- Transition spans which are made of metal
- Girder spans on the east and west ends of the bridge aka east and west approaches
- Pontoons and superstructure

There are pontoons with no superstructure and those pontoons will be separated, floated out of the lake and sold. The ongoing demolition work currently in progress includes the transition spans and the girder spans. At the time of the inspection, the contractor had not started demolishing the pontoons with superstructure.

We started the inspection with a look at the different barges being used for demolition work. This entailed visiting the barges via water by boat and we circled around them and in one case boarded a barge to review the containment set up.

The containment barges: there are two of these barges and they have a perimeter control constructed of concrete barrier and steel curbing. When connected together the concrete barriers do have gaps but to account for those gaps, additional perimeter control of steel curbing has been welded onto the barge to contain liquids. The steep curbing is 4" high. One containment barge was located at a mooring buoy but falls outside of the project limits. However, when a barge is at the mooring buoy, this location is considered a temporary holding area and no active demolition work occurs on the barge. Further, these containment barges are used for catching concrete demolition debris as the bridge is broken up initially and are not used for processing (rubblizing the concrete down to smaller sizes) on the barge itself.

The processing barges: There are two of these barges that are used for processing concrete, i.e. breaking it up or rubblizing. There are two different barges with perimeter control BMPs but are different from each other. The first barge, referred to as Barge 200, has four foot high steel walls which are vertically extended using steel chain link fence for a total of ~10 foot walls. The chain link fence is further lined with a finer mesh to contain concrete debris. The barge does have an opening at one end for offloading that is blocked off during demolition work with concrete barrier, lined with geotextile fabric and the welded steel curbing outside of the concrete barrier. There is then ~ 15 feet of barge deck extending beyond the opening. The second barge, referred to as barge 202, has the concrete barrier used on the containment barges (described above) with steel curbing and the concrete barrier walls are being extended vertically with the chain link fence/mesh. It will also have the same set up at the end for offloading material as Barge 200. The contractor clarified that they will mainly use Barge 200 but some work will need to occur on Barge 202. The group did walk around the edge of Barge 200 and look at the perimeter controls, some of the equipment being used (a chance to

look at the shear up close) and the rubble from some of the work that had already occurred. The rubble is approximately the size of softballs pieces or larger. Water is being used to control dust during this work on the barge and it is removed using pumps and storing that water into tanks for treatment and proper disposal in the sanitary sewer.

After inspecting the barges, the group reviewed demolition as it related to different sections of the bridge and how the barges figure into that process. This discussion occurred on the water while viewing the different sections. For the transition spans, barges are placed underneath the span and a torch is used to cut pieces of metal truss. The pieces are held by a crane which then lowers it down onto the Manson containment barge (different from barges described above). The Manson barge has steel walls with one end open for offloading and metal curbing at the open end. Once lowered onto the barge, the pieces are cut up further and taken away for recycling. The BMP to deal with lead paint chips is to sweep the barge daily. No torch cutting of the transition span is allowed unless something is stationed underneath it.

For the east approach, some demolition work has already occurred. Metal poles with wire were installed from the girders/pier caps which netting (consisting of a metal mesh) is hung down to contain the concrete debris when breaking up the bridge deck and barriers. This netting will only be used on the east approach. Barges are station underneath around the bridge columns to catch the debris as it falls from the deck. Plywood is used to cover gaps where the barges are stationed around the columns. The girders and pier caps are snipped off using the shear and lowered down to the processing barge to be broken up (rubblized). The remaining columns are then broken down or rubblized with the debris falling onto the barges underneath, again using plywood to cover the gaps where the barges are stationed against the columns. Demolition work has not started on the west approach yet.

We looked at the pontoons with superstructure next. For these sections of the bridge, containment barges will be stationed on either side of the pontoons with crane mats (made of wood) being used to span any gaps between the barges and pontoons. The containment barges already have curbing to contain liquids but the pontoons themselves will also be outfitted with curbing to contain liquid as they will be incorporated into the containment system. The netting will not be installed for this section because there are no girders/pier caps to suspend it from. The deck, barriers and columns will be rubblized, using the hoe ram. The columns get broken down (rubblized) to about two feet above the surface of the pontoon. The pontoons are then separated and shipped out.

In the middle section of the bridge are pontoons with no superstructure. As already mentioned, no demolition work will occur. The pontoons will be separated and shipped out of the lake.

During all parts of the inspection, the group discussed management of water: stormwater or process/concrete waste water. I expressed concern over the adequacy of the 4” curbing to contain stormwater in the event of a rain event. The two solutions discussed were to either extend the curbing in height, which could make offloading more problematic or to inspect the barges every time there is a rain event to ensure there is no overflow. I also reiterated the importance of removing any liquid from barges before moving them as it is possible to cause a discharge from jerking a barge with tug too suddenly, causing over splash from the curbing. All liquid should be removed before moving the barges from the active construction zone or from a mooring buoy. Removing water before moving a barge is the most effective procedural BMP followed by daily inspections and inspections during all rain events.

Suggested Site Improvements:

- Inspect barges at the start of (and during) rain events to ensure no discharges of stormwater to the lake.
- Remove all water from barges before moving them.

Initials of recipient_____