



**MEMORANDUM**

**TO:** Shannon Farrant, Surface Water Management Coordinator  
City of Lake Stevens

**FROM:** Erik Davido, PE *E.D.*

**DATE:** August 2, 2021

**RE:** Lake Stevens Outlet Stream  
Pedestrian Bridge Crossing

The purpose of this memorandum is to provide justification for allowing the concrete footings to remain that have been constructed for a proposed pedestrian bridge crossing of the Lake Stevens outlet stream approximately 150 feet downstream from the lake outlet. Furthermore, this memo provides justification for a decrease in clearance between the bottom of the bridge structure and the 100-year peak flow water surface.

The proposed pedestrian bridge will be replacing an old wooden vehicular and pedestrian bridge to provide safe access from North Lakeshore Drive to the North Cove Park. Without a bridge crossing, access to North Cove Park from nearby North Lakeshore Swimming Beach, located 0.1 mile to the west along North Lakeshore Drive, and the neighborhood north of North Lakeshore Drive is a long way around on streets without designated pedestrian walking space to access the park from Main Street. People are currently attempting to jump across the stream near the proposed pedestrian bridge location or more dangerously walking across the outlet stream weir structure.

Topographic survey indicates that the in-place bridge footing is slightly outside the flagged and mapped ordinary high water (OHW) line horizontally (see attached drawing). Furthermore, City staff have indicated that the height of the footing is 18-inches which puts the base of the footing outside and above OHW. However, some of the cobbles that were placed for erosion control on the left bank ended up below OHW (see attached drawing and photo).

Greg Johnston, Senior Fisheries Biologist of The Watershed Company, inspected the footings and cobbles and determined that the cobbles are rounded and graded (2-8 inches) such that they are not creating a hazard to fish and, in fact, may provide some habitat value. The outlet channel generally exhibits a substrate composition which is too-fine-grained for salmonid fish spawning, and the placed rounded rock at the crossing location could make a contribution to substrate for that function. During a recent site visit on July 12, 2021, with representatives of Washington Department of Fish and Wildlife (WDFW), the Tulalip Tribes, the City of Lake Stevens (City), and The Watershed Company, WDFW and the Tribes both firmly objected to removal of large-gravel, rounded substrate in the vicinity of the Main Street crossing. Therefore, keeping the cobbles installed for the bridge footing would be consistent with keeping the gravel at Main Street.

---

<b>Seattle</b> 9706 4th Ave NE Suite 300 Seattle, WA 98115 Tel 206.523.0024	<b>Whidbey Island</b> PO Box 1132 Freeland, WA 98249 Tel 360.331.4131	<b>Mount Vernon</b> 2210 Riverside Drive, Suite 110 Mount Vernon, WA 98273 Tel 360.899.1110	<b>Federal Way</b> 31620 23rd Ave S, Suite 307 Federal Way, WA 98003 Tel 206.523.0024
--	--	--	--

Shannon Farrant  
8/2/2021

Regarding the bridge clearance over water surface, as shown on the attached drawing, the bottom of the proposed bridge ranges from approximately one foot to 2 feet above the 100-year water surface. The vertical location of the bridge is dictated by the North Lakeshore Drive elevation and having to meet ADA access requirements.

The footbridge must provide ADA compliance and meet North Lakeshore Drive at an elevation compatible with the interaction of vehicular and pedestrian traffic. These factors dictate that a clearance between the bottom of the bridge and the 100-year water surface which is less than the standard 3-foot minimum prescribed under WAC 220-660-190; however, the WAC allows a lower clearance with engineering justification.

Several justifying factors are apparent. The bridge location is at a well-used City park adjacent to City Hall and Public Works. City staff will cross and inspect the bridge, actively or passively, on a near-daily basis. Accumulating debris can and will be promptly removed. The location of this footbridge is at the outlet of 1,040-acre Lake Stevens, and the lake itself comprises 30% of the entire drainage basin. A 1-foot rise in the lake stores 1,040 acre-feet of water. Given this situation, there is more time to take corrective action to remove accumulating debris. On many streams with undersized culverts a clogged pipe could cause flooding and road overtopping in a rapid timeframe. With the large lake storage provided at this site, the situation at hand is much more forgiving, likely providing several hours or days to make corrections by removing the debris without damage due to flooding; subject to the severity of the associated rainfall event(s). The City also intends to install an aluminum bridge with a relatively thin bottom cord providing the maximum clearance possible.

In conclusion, removing the bridge footings and re-constructing the exact same footings to meet the goals of the proposed pedestrian bridge, as stated above, would cause more impact to the stream and its habitat than leaving them in place. Similarly, removing the rounded cobble material would be more adverse than leaving the material as-is. The proposed bridge will have less than the prescribed 3-feet of clearance over the 100-year water surface; however, there is valid justification for the lower clearance.



Shannon Farrant  
8/2/2021



Photo #1 – Left Bank Bridge Footing and Cobbles (photo taken by Greg Johnston on 7/20/21)