EXHIBIT 5
SHOR17-04

# MEMORANDUM

**DATE:** April 16, 2018

**TO:** James Hodges, City of Camas

**FROM:** Kent E. Snyder, PhD
Senior Natural Resources Scientist
Harper Houf Peterson Righellis Inc.
1104 Main Street, Suite 100
Vancouver, Washington 98660

**RE:** City of Camas Camp Lacamas STEP Sewer Project – Vegetation Near the NE Restroom

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This memorandum describes vegetation along the alignment of the proposed sewer line and STEP tank, between the restroom building in the northeast area of the camp and the existing gravel driveway that serves this area. This information is based on pedestrian site visits by Harper Houf Peterson Righellis Inc. (HHPR) staff on June 20 and 26, and July 28, 2017. The City of Camas (City) plans to install approximately 70 feet of 4-inch sewer pipe between the restroom building and a new STEP tank, and approximately 55 feet of 1-inch pipe between the tank and the gravel driveway. The alignment was selected to avoid removal of trees and impacts to cultural resources.

The proposed lines and STEP tank would pass through the center of an area that receives very high pedestrian traffic between camp buildings, and, to a lesser degree, ATV traffic (Figure 2, Appendix A in the shoreline application). The northeast restroom (Photograph 1) is located for use by overnight campers, in its proximity, and is also one of two restrooms for day campers. In addition to the summer camp season, the facility is used as a conference center throughout the year. Within 100 feet of the restroom are six multi-occupancy overnight cabins (southeast of the alignment), the camp "snack shack" (northwest of the alignment), and a storage building (also to the northwest). Still more cabins served by the restroom lie further to the east, and the kitchen and dining hall lies to the southwest.

The forest canopy in this area is characterized by mature Douglas fir trees (*Pseudotsuga menziesii*, 24 to 55 inches diameter breast height [DBH]) that provide approximately 80 percent canopy cover throughout. As would be expected for an area receiving such shade and substantial amounts of pedestrian traffic, the understory is typically sparse and the soil surface is typically barren or covered by a thin layer of needles (Photographs 1 through 4). Where present, understory vegetation is dominated by non-native grasses and forbs (e.g. orchard grass [*Dactylis glomerata*], shiny geranium [*Geranium lucidum*], English ivy (*Hedera helix*), and common dandelion [*Taraxacum officinale*]), with occasional native forbs (e.g. fringecup [*Tellima grandiflora*] and Siberian springbeauty [*Claytonia sibirica*]).

**Photograph 1:** View east towards the restroom (back left), showing generally barren and sparsely vegetated understory in the vicinity of the proposed alignment. The storage building can be seen, front left, and two cabins are on right, in background. Photograph taken July 28, 2017.

**Photograph 2:** View west towards gravel driveway, showing generally barren and sparsely vegetated area along the proposed pipe alignment, which would run left to right in the foreground of the photograph. Camp “snack shack” is on the right behind the ATV. Photograph taken July 28, 2017.

**Photograph 3:** View along east side of restroom, showing barren soil and sparse vegetation in foreground and area of less trampled (taller) vegetation and piles of grass clippings at back of restroom. The tall shrubs at the edge of the herbaceous cover are beyond the area of impact. The proposed alignment runs between the building and the Douglas fir on right center. Photograph taken July 28, 2017.

**Photograph 4:** View around base of a Douglas fir in the vicinity of the proposed alignment, showing barren ground and sparse vegetation. Photograph taken July 28, 2017.