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November 4, 2025

Elliot Levin
North County Operations & Terminal Manager
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RECEIVED

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Land Development Services

**RE: Stormwater Hydrology Technical Review Memorandum
Port of Columbia County – Port Westward Expansion
Columbia County, Oregon**

Mr. Levin:

The following technical memorandum is intended to review stormwater hydrology and stormwater management standards for the existing and proposed expansion of the Port Westward Industrial Park (PWIP). The proposed PWIP expansion consists of rezoning ±837 acres of land adjacent to the PWIP for Resource Industrial Planned Development (RIPD) zoning to allow various industrial uses for use of the Port.

Stormwater Hydrology Review

The proposed expansion of the PWIP is situated within the Beaver Drainage District (BDD), which consists of a series of levees, canals, ditches, and a pump station managed by the Beaver Drainage Improvement Company (BDIC). The BDIC manages the drainage system to control the flooding and ponding of surface water within the BDD. During the rainy season, the BDIC utilizes canals, ditches, and the pump station to manage surface water and ditch water levels within the District boundaries and pumps surface water out of the BDD to prevent flooding of the ground surface. During the dry season, the water levels within the ditches and canals are allowed to fluctuate naturally and/or be used for irrigation purposes.

Review of geotechnical bore logs within the general area indicates that the underlying soils typically consist of sands, silty sands, and silts. These soil types are typical of the soil deposits that are encountered along the banks and floodplains along the Columbia River. These floodplain soil deposits can vary from clean and well-drained sands to poorly drained silts that slowly infiltrate surface water. Clean sand soil will tend to infiltrate stormwater runoff relatively quickly, but infiltration volumes will be limited due to the project location adjacent to the Columbia River and the presence of shallow groundwater.

The geotechnical well logs obtained and reviewed from the Oregon Water Resources Department (OWRD) online database indicate groundwater levels were observed immediately after drilling at depths ranging from 2 feet to 22 feet below the ground surface, with the majority of the logs having groundwater levels ranging from 4 to 7 feet below the surface (regardless of whether the bore hole was accomplished in the rainy or dry seasons of the year). Based on the location of the PWIP (and the BDD) along the south bank of the Columbia River and within a levee protected area, it is assumed that the groundwater level generally correlates to and varies with the water level of the river. The volume of water pumped out of

the drainage district by the BDIC is a function of storm rainfall intensity and the volume of stormwater runoff of that occurs within the district.

The expansion and development of RIPD-related industrial uses within the BDD drainage basin could result in an increase of stormwater runoff due to an increase of impervious area. However, due to the shallow groundwater levels, the presence of impermeable and poorly drained soils, and the presence of numerous wetlands within the BDD (which typically limit infiltration and naturally pond water), this increase in stormwater runoff will be limited because future permitting requirements for the development of the RIPD-related industrial use land will trigger stormwater management standards from numerous permitting agencies that require water quality treatment and stormwater quantity control be implemented for each project. Therefore, the volume of stormwater discharges by the BDIC to control and manage excess stormwater runoff during the wet winter months within the BDD is not expected to change and the pumping volume needs and requirements by the BDIC are expected to be similar to existing conditions.

Stormwater Management Standards Review

The existing and proposed Port Westward expansion of the Port of Columbia County facility is located within Columbia County, which currently defines the base stormwater management (SWM) criteria for all development within the PWIP.

The proposed Port Westward expansion area includes properties that currently contain significant areas of mapped and unmapped wetlands and waters of the state. It is anticipated that any development of the expansion area will likely have wetland or water impacts that trigger additional permit reviews and approvals by the Oregon Department of State Land (DSL), Oregon Department of Environmental Quality (DEQ), and US Army Corps of Engineers (USACE). Any impacts or cuts/fills within wetlands and waters of the state are regulated by DSL under the removal-fill law and by USACE under the Clean Water Act (CWA).

The ultimate goal of implementing stormwater management criteria per DSL and USACE standards is to show that stormwater management of runoff from the project site (post-construction) is managed to reduce water pollution and avoid impacts to downstream water quality standards per the CWA and Oregon Administrative Rules (OARs).

Based on the table below, all development within the PWIP (existing area or expansion area) must meet the minimum SWM requirements as outlined by Columbia County requirements, whereas any development within the PWIP that impacts wetlands or waters of the state must meet the slightly more restrictive SWM requirements as outlined by DSL or USACE.

The following table outlines each jurisdiction's stormwater requirements and criteria for water quality treatment and water quantity control:

SWM Standard Criteria	Water Quality Treatment Criteria	Water Quantity Criteria
Columbia County¹	Water quality treatment of resulting flow from 0.83 inches in 24 hours over contributing project area	Limit post-developed discharge rates to match pre-developed rates for flows from 50% of the 2-year, 10-year, and 100-year storm events
DSL (DEQ 401 WQ Certification)²	Water Quality Volume (WQV) that equals 1.4 inches (24-hour storm) over contributing project impervious area	Not required
USACE (SLOPES V)³	Volume equal to 50% of the cumulative rainfall from contributing project impervious area for the 2-year, 24-hour storm	Limit post-developed discharge rates to match pre-developed rates for flows between 50% of the 2-year and 10-year events

¹ SWM standards per Columbia County Stormwater & Erosion Control Ordinance 2001-10 (dated November 21, 2001).

² Water quality standards per DEQ Post-Construction Stormwater Management Plan Submission Guidelines (dated October 2022).

³ USACE SWM standards per Revised Standard Local Operating Procedures for Endangered Species for Stormwater, Transportation, or Utilities (SLOPES V) (issued March 14, 2014).

It should be noted that additional permit approvals (1200-C, 1200-Z) will also be required for any industrial development within PWIP and these permits have additional stormwater management requirements that must be addressed by the future developer based on the development.

Conclusions & Recommendations

Based on our review of the stormwater hydrology and the existing stormwater management standards within the BDD, the following outlines our professional opinions regarding the potential impacts to stormwater quality and quantity:

- The existing stormwater management standards within Columbia County are sufficient to minimize impacts and significant increases in the peak stormwater runoff volumes to the BDIC are not expected.
- Existing stormwater management requirements (water quality and quantity) within Columbia County are sufficient for the Port to use as the baseline standards for existing and future industrial development within the PWIP to mitigate potential peak flow increases and minimize the potential for impacts to downstream waters from water quality degradation. The Columbia County stormwater management standards are typical of best management practices (BMPs) and standards across the state and align very closely to state and federal SWM standards.

If you have any questions regarding this letter, please do not hesitate to email me with any questions. Please include the City in all correspondence regarding this project.

Sincerely,

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