



Soundview Consultants LLC

Environmental Assessment • Planning • Land Use Solutions

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Technical Letter

To: Alex Garcia, Trammel Crow

File Number: 1520.0006

From: Jon Pickett, Soundview Consultants LLC

Date: May 21, 2024

Re: Stormwater Model Analysis – Trammel Crow - PSE Todd Road: 325 & 221 Todd Road NW, Puyallup, WA 98371

Hi Alex,

Soundview Consultants LLC (SVC) has been assisting Trammel Crow (Applicant) with a wetland, stream, and fish and wildlife habitat assessment for the proposed commercial development on a 6.17-acre property located at 325 Todd Road Northwest in the City of Puyallup, Washington. The property consists of one parcel located in the Southwest $\frac{1}{4}$ of Section 21, Township 20 North, Range 4 East, W.M. (Pierce County Tax Parcel Numbers 0420211030). This letter provides an analysis for the proposed project to review the stormwater model prepared by Freeland and Associates, Inc. and review the potential lack of impacts to wetland hydrology.

The proposed commercial development project utilizes the Western Washington Hydrology Model manual recommended by the Washington State Department of Ecology (Clear Creek Solutions, 2016). This tool models wetland hydrology fluctuation between pre-developed and post-developed conditions, with two criteria: 1) Total volume of water into a wetland during a single precipitation event should not be more than 20 percent higher or lower than the pre-project volumes, and 2) Total volume of water into a wetland on a monthly basis should not be more than 15 percent higher or lower than the pre-project volumes. Wetland 1 is located approximately 100 feet offsite to the west of the subject property. Hydrology for Wetland 1 is provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Surface runoff from Wetland 1 is conveyed into a ditch at the southern end of the wetland unit. Wetland vegetation is dominated by non-native invasive reed canarygrass (*Phalaris arundinacea*). Wetland 1 is a Palustrine Emergent, Seasonally Saturated wetland according to the definitions outlined in Cowardin et al. (1979) as it contains a water table or saturation within 12 inches of the soil surface under normal precipitation conditions at least every 5 out of 10 years (USACE, 2010).

According to the Project Engineer, Stormwater will be managed on site with flow control and treatment. A detention pond east of the parking lot will provide flow control for the project site. Rainfall landing on pollution generating surfaces will be conveyed to bioretention cells for stormwater treatment prior to detention. Rainfall landing on roof areas will be conveyed directly to the pond. After stormwater detention, runoff is routed directly to the piped drainage system in Todd

Road. The City's piped drainage system daylight to a roadside ditch near 4th Street NW/Todd Road NW and continues west in the roadside ditch until reaching Wapato Creek.

Modeling shows compliance with criterion 2 for 12 out of the 12 months of the year, while the hydrology monitoring failed to comply with criterion 2 for four days in July, three days in August, and seven days in September, and three days in October cumulatively all months passed the requirements and only narrowly fails on these select days (generally less than 10-percent). This indicates that the proposed flows are determined to match pre-developed conditions and natural wetland recharge.

As discussed in the Geotechnical Response Memorandum by Terra Associates, Inc., dated December 4, 2023, these soils were deposited by the Puyallup River following retreat of the glaciers and are unconsolidated deposits. Infiltration rates discussed in the referenced report for design of low impact development (LID) features such as permeable pavement and bioretention cells are based on our experience and as allowed by Ecology's Stormwater Management Manual for Western Washington (Manual), results of grain size analysis. We would note that the rates recommended represent saturated permeability values (Ksat) of less than .3 inches per hour which in the Manual, is a threshold below which permeable pavement and bioretention for managing stormwater runoff is considered infeasible. Given that the soils onsite do not allow infiltration and the stormwater model indicates that the systems proposed system is notable in compliance or within a small percentage of meeting compliance throughout the year; wetland hydrology is not anticipated to be altered from a biological standpoint. In addition, the Project Engineer has indicated the mitigated conditions are not anticipated to impact the wetland from a hydraulic standpoint.

Please do not hesitate to contact me with any question or concerns you may have.

Sincerely,



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References

Clear Creek Solutions, 2016. *Western Washington Hydrology Model 2012 – User Manual*. Report Prepared December 4, 2023.

Cowardin, L.M. V. Carter, F. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish & Wildlife Service. Washington D.C.

Terra Associates, Inc. 2023. Response to Comments – Terra Associates Geotechnical Report, PSE Operational Training Center. December 4, 2023

U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-13. Vicksburg, MS: U.S. Army Engineer Research and Development Center.