



# CITY OF West Linn

## Memorandum

Date: January 7, 2021

To: Mayor Jules Walters and Members of City Council

From: Darren Wyss, Planning Manager

Subject: Peer Review of Groundwater Findings for Willow Ridge Subdivision Appeal (AP-20-05)

---

City Council will hold a public hearing on Monday, January 11, 2021 for the purpose of adjudicating an appeal (AP-20-05) of the West Linn Planning Commission (PC) approval of the Willow Ridge Six-Lot Subdivision (SUB-20-01) at 4096 Cornwall Street. One of the issues identified in the appeal is related to the groundwater/geotechnical information relied upon by the PC to make its decision.

The applicant (Icon Construction) submitted a number of reports the PC found satisfied the approval criteria found in West Linn Community Development Code Chapter 85. Public testimony submitted during the PC public hearings disputed some of the report findings.

To help provide clarity for the City Council on the competing groundwater/geotechnical information, staff contracted with GRI to provide a third-party peer review of the information. The results of the peer review can be found in the attached letter sent from GRI to City Engineering staff. A list of the applicant reports, as well as the public testimony, that were peer reviewed can be found on the first page of the letter. As the record for the PC decision is quite large, staff has provided page numbers/locations of the reports and testimony at the end of this memo for ease of finding them.

The GRI peer review letter found the GeoPacific report, submitted by Icon Construction and relied upon by the PC in making its decision, *“adequately addresses the geotechnical development, slope stability, and groundwater risks for the project”*.

The GRI peer review letter makes one recommendation based on the RNSA report, submitted by Icon Construction and relied upon by the PC in making its decision. This recommendation will be implemented during site development review and construction by City Engineering staff. This is standard operating procedure for the City.



# CITY OF West Linn

Based on the GRI letter, staff recommends City Council upholds the Planning Commission findings regarding groundwater/geotechnical information and deny the appeal based on this issue.

GeoPacific Geotechnical Report 10/27/2020

[AP-20-05 PC Record](#) pages 20-54 of the .pdf document

GeoPacific Geotechnical Report Correction 11/4/2020

[AP-20-05 Public Testimony](#) page 365 of the .pdf document

Carlson Geotechnical Report 01/2016

[AP-20-05 Agenda Report](#) pages 150-185 of the .pdf document

Roger N Smith Associates Memorandum 10/28/2020

[AP-20-05 PC Record](#) pages 55-65 of the .pdf document

William House Public Testimony 10/7/2020

[AP-20-05 Public Testimony](#) pages 278-300 of the .pdf document

William House Public Testimony 11/4/2020

[AP-20-05 Public Testimony](#) pages 355-359 of the .pdf document



9750 SW Nimbus Avenue  
Beaverton, OR 97008-7172  
503-641-3478 | www.gri.com

January 6, 2021

6450 PEER REVIEW LTR

City of West Linn  
22500 Salamo Road  
West Linn, OR 97068

Attention: Amy Pepper

**SUBJECT: Peer Review  
Willow Ridge Subdivision Groundwater Matter  
West Linn, Oregon**

Per your authorization, GRI provided consultation services for the above-referenced project. The project Applicant is ICON Construction and Development, Inc. Our consultation was limited to providing a second opinion, or peer review, of the groundwater findings by GeoPacific Engineering, Inc. (GeoPacific), the geotechnical engineer of record for the project, and Roger N. Smith Associates, (RNSA). We have also reviewed public comments for the project regarding groundwater. This project is intended to achieve a life-safety/no-collapse level of performance for the new structures.

**REVIEW**

The following documents prepared by GeoPacific were provided for our review by the City of West Linn:

*Geotechnical Report, Willow Ridge Subdivision, 4096 Cornwall Street, West Linn, Oregon, October 23, 2020.*

*Geotechnical Report Correction, Willow Ridge Subdivision aka Cornwall Street Subdivision, West Linn, Oregon, November 4, 2020.*

We were also provided the following documents:

*Carlson Geotechnical, Report of Geotechnical Investigation, Cornwall Street Subdivision, 4096 Cornwall Street, West Linn, Oregon, January 2016.*

*Public Testimony by William House dated October 7, 2020.*

*Roger N. Smith Associates, Technical Memorandum, Groundwater Characteristics, Willow Ridge Project Site, 4096 Cornwall Street, West Linn, OR, dated October 28, 2020.*

*Public Testimony by William House dated November 4, 2020.*

The October 7, 2020, public testimony document was prepared by William House, a retired petroleum geologist. Mr. House interprets the local geology to include a 20-foot-thick subsurface water-bearing zone within the Columbia River Basalt (CRB) rock units that underlies the project area. He interprets the zone to intersect the ground surface across the central portion of the Willow Ridge subdivision and be potential sources of "flooding and slope stability" risk not addressed in the subdivision application at the time.

The October 23, 2020, geotechnical report by GeoPacific indicates the site is approximately 2.2 acres and slopes down to the south. The proposed development will include six lots for single-family homes, construction of a new street, and associated underground utilities. Cuts and fills will be on the order of 8 feet or less and will be limited to the vicinity of the proposed street. Stormwater will be collected and "routed to either treatment structures onsite that outlet to an existing underground detention system in Landis Street or be routed to lined rain gardens which will outfall to the creek to the east of the site via a storm pipe." They indicate "while infiltration at the site is poor, it is our opinion that the proposed stormwater disposal plan will not have an adverse effect on slope stability." Additionally, they indicate "in our opinion, the slope instability hazard at the subject site is very low and there are no off-site slope stability hazards that would affect the proposed development."

Seven test pits were excavated during their field investigation in October 2020. Soil conditions encountered within the test pits were identified as a surficial 12 inches to 14 inches of topsoil, underlain by 3 feet to 4 feet of residual soil derived from decomposition of the underlying CRB. Weathered CRB rock was encountered below depths of 3 feet to 4 feet in the test pits, to a maximum depth of 15 feet (the limit of the reach of the excavator). Shallow groundwater seepage was encountered in each test pit at depths ranging from 1.5 feet to 10 feet, with discharge visually estimated at less than 1/10 gallon per minute to 1/2 gallon per minute. They note that regional groundwater is estimated to be greater than 200 feet below the ground surface.

GeoPacific identified the potential for shallow perched water to occur within near-surface soils "depending on the season, local subsurface conditions, changes in site utilization, and other factors." They also stated "site earthwork will be impacted by soil moisture and shallow groundwater conditions." GeoPacific provides geotechnical recommendations to address shallow groundwater that might be encountered during construction.

In our opinion, the October 23, 2020, GeoPacific report adequately addresses the geotechnical development, slope stability, and groundwater risks for the project.

The October 28, 2020, memorandum by RNSA concludes that shallow groundwater is present on the site and "it appears to be confined to flowing through the property on top of the underlying clay-rich weathered basalt. No springs were seen on the property during site work and there does

not appear to be any groundwater flowing horizontally through an underlying basalt interflow zone..." They note that "intercepting groundwater along the upper area boundary of the property would reduce migration across the lower portion."

The November 4, 2020, public testimony document by Mr. House requests additional geological mapping and an exploratory borehole.

### RECOMMENDATION

GRI recommends that the City request the Applicant and their geotechnical engineer review and comment on the need for a subdrainage trench or other drainage improvement feature in the northern part of the property as noted in the RNSA report.

### LIMITATIONS AND CLOSURE

This review has been prepared to assist the City of West Linn in evaluating the groundwater information for the project. The opinions stated in this document are based solely on our review of the referenced work by GeoPacific and RNSA. GRI did not participate in the implementation of the work and did not independently verify the accuracy or completeness of the subsurface information contained in the report. No warranty, either expressed or implied, is provided.

Thank you for the opportunity to assist the City of West Linn. Please contact the undersigned if you have questions or comments regarding this letter.

Submitted for GRI,



George A. Freitag, CEG, LHG  
Principal

This document has been submitted electronically.