HWA GeoSciences Inc.
DBE/MWBE

September 13, 2024
HWA Project No. 2024-042-01 Task Order 04

City of Puyallup
333 S. Meridian
Puyallup, Washington 98371

Attention: Ms. Rachael Brown, Associate Planner

Subject: **Geotechnical Peer Review**
Normandy Heights
Permit Application No. PLPMP20240053
Puyallup, Washington

Dear Ms. Brown,

An applicant proposes to construct a new residential plat with associated infrastructure improvements at the northeast corner of the intersection between Shaw Road East and Crystal Ridge Drive (Parcel No. 042035-4039) in Puyallup, Washington (site).

At the request of the City of Puyallup, HWA GeoSciences Inc. (HWA) reviewed geotechnical portions of the following documents for compliance with relevant chapters of the Puyallup Municipal Code (PMC) 21.06:

- Earth Solutions NW, LLC. 2024. Response to Comments, Normandy Heights, Parcel No. 0420351081. March 4.

- Earth Solutions NW, LLC. 2006. Updated Geotechnical Engineering Study, Proposed Normandy Heights, 2007 Shaw Road, Puyallup, Washington. ES-0593. November 9. Updated May 3, 2022.

- Barghausen Consulting Engineers, Inc. 2024. Preliminary Grading and Utility Layout and Master Site Plan, Normandy Heights PDR. April 3.

- Barghausen Consulting Engineers, Inc. 2022. Boundary and Topographic Survey, PTN of the SE1/4, of the SE1/4 of SEC. 35, TWP. 20 N., RGE 4 E., W.M., City of Puyallup, Pierce County, Washington State. March 3.

After reviewing the above referenced documents, HWA offers the following review comments:

Review Comment 1: Per Section 21.06.530(1)(b) of the PMC, a critical area report shall contain a site plan for the development proposal showing the proposed development footprint and clearing limits, and all critical areas and buffers. The updated geotechnical engineering study provided by Earth Solutions included a subsurface exploration plan (Plate 2 of the report); however, proposed development footprint and clearing limits, and all critical areas and buffers are not clearly marked. Earth Solutions should update their report to include a site plan that designates these items.

Review Comment 2: The geotechnical response to comments letter provided by Earth Solutions acknowledges that updated topographic and slope delineations have indicated the presence of isolated slope features that exceed a gradient of 40 percent. Based on HWA's review of the referenced topographic survey, these slopes are less than 25 feet in height. Pursuant to PMC 21.06.1240.1a(iii), slopes with a vertical elevation of more than 10 feet but less than 25 feet may utilize a buffer that is equal to the height of the slope divided by two. This provision is contingent on the condition that there are no other factors that pose a slope stability risk.

The geotechnical response to comments letter provided by Earth Solutions indicates that the presences of isolated slope features that exceed a gradient of 40 percent are primarily contained within the proposed Tract C and D site areas and that these site areas will not be modified with the proposed development. Earth Solutions' geotechnical opinion is that the project can feasibly pursue the reduced slope buffer per PMC 21.06.1240.1a(iii) without altering current slope stability characteristics in each representative area.

The master site plan and preliminary grading and utility layout sheets provided by Barghausen Consulting Engineers (April 3, 2024) indicate modification of slopes within areas of isolated slope features that exceed a gradient of 40 percent (proposed Tract A and adjacent to Tract D). These modified areas also indicate "critical area tract" slope buffers of either 5 feet or 11 feet. Earth Solutions should confirm that the reduced slope buffers and configurations on the referenced plans are in accordance with Section 21.06.1240.1a(iii) and that the alterations to the slopes do not pose a slope stability risk.

Review Comment 3: Per Section 21.06.1230 (2) of the PMC, development within all other erosion or landslide hazard areas and/or buffers shall be designed to meet the following basic requirements unless it can be demonstrated through a geotechnical study that an alternative design that deviates from one or more of these standards provides greater long-term slope stability while meeting all other provisions of this chapter. This includes alteration of slopes less than 40 percent, including slopes of 15 percent or less that have unstable soil or drainage characteristics, which may be permitted pursuant to an approved critical area geotechnical report. The following basic development design standards must be met: (a) the proposed development shall not decrease the factor of safety for landslide occurrences below the limits of 1.5 for static conditions and 1.2 for dynamic conditions, based on horizontal acceleration as established by the current version of the International Building Code; (b) the alteration will not increase the threat of the geologic hazard to the project site or adjacent properties beyond predevelopment conditions, nor shall it result in a need for increased buffers on neighboring properties; (c) the

development will not increase or concentrate surface water discharge or sedimentation to adjacent sites beyond predevelopment conditions; (d) structures and improvements shall be located to minimize alterations to the natural contour of the slope and foundations shall be tiered where possible to conform to existing topography; (e) the use of engineered retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes; (f) development shall be designed to minimize impervious lot coverage. To be in accordance with the PMC, Earth Solutions should demonstrate that the geotechnical aspects of these basic development design standards can be met.

This letter has been prepared to facilitate the City of Puyallup's evaluation of permit submittal documents for the proposed development at the northeast corner of the intersection between Shaw Road East and Crystal Ridge Drive (Parcel No. 042035-4039) in Puyallup, Washington. HWA reviewed geotechnical portions of the referenced documents for compliance with portions of Chapter 21.06 of the Puyallup Municipal Code and for conformance with standard geotechnical engineering practices. HWA's peer review does not diminish the responsibility of the applicant's geotechnical consultant to serve as the project's Geotechnical Engineer of Record. Furthermore, the applicant's consultants are responsible for preparing a design suitable for the site conditions.

We appreciate the opportunity to provide geotechnical engineering services on this project. Should you have any questions or comments, or if we may be of further service, please do not hesitate to contact the undersigned at your convenience.

Sincerely,

HWA GEOSCIENCES INC.

Amy Power, P.E.
Geotechnical Engineer

Steven R. Wright, P.E.
Geotechnical Engineer

Reference

City of Puyallup. Puyallup Municipal Code, Chapter 21.06 Critical Areas. Current through Ordinance 3300, passed August 20, 2024.