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MEMORANDUM

DATE: May 14, 2024

TO: Abhi Sharma
VIA Email: abhisharma@outlook.com

FROM: Khaled M. Shawish, PE
Faith K. Stelter, CESCL

RE: Geotechnical Engineering Comment Response
Sharma Retaining Wall Evaluation
7905 West Mercer Way
Mercer Island, Washington
NGA File No. 1496924



5.14.2024

INTRODUCTION

This memo presents our response to review comments raised by the City of Mercer Island regarding the proposed retaining wall located at **7905 West Mercer Way on Mercer Island, Washington**.

We previously prepared a geotechnical report for the retaining wall dated March 7, 2024. We understand that concerns have been raised over the critical environmental areas mapped within the vicinity of the site. These comments were provided to us in a letter from the City of Mercer Island, dated April 30, 2024.

Below, we address the relevant concerns in the letter, followed by our response.

CITY OF MERCER ISLAND COMMENTS AND OUR RESPONSE

COMMENT 1:

“Criteria Compliance Narrative. Detail how the application meets the review criteria for Critical Area Review 2 in MICC 19.07.090, MICC 19.07.160, MICC 19.07.170, MICC 19.07.180 and/or MICC 19.07.190.”

RESPONSE 1:

MICC 19.07.090: We understand that nearly the entire coastline of Mercer Island is mapped as containing landslide hazard, seismic hazard, and erosion hazard areas. The criteria used for evaluation of landslide hazards include soil type, slope gradient, and groundwater conditions. Topographically, the site has been graded to be relatively flat around the area of the existing residence due to the use of multiple soldier pile walls. However, the western portion of the property descends down towards Lake Washington at gradients in the range of 25- to 47-degrees (56 to 104 percent of slope, respectively) and has an overall vertical relief of approximately 55-feet. At the toe of the slope, a retaining wall has been constructed to create a relatively level area. In response, the City of Mercer Island red-tagged the development. We issued a critical areas report meeting the requirements of **Section 19.07.110 of the Mercer Island City Code (MICC)**. In our report, we provided recommendations on how to reconstruct the retaining wall to be compliant with the City of Mercer Island Code. We concluded that the conditions encountered on the site do not meet the definition of a landslide hazard area according to the City of Mercer Island Code because (1) even though steep slopes greater than 15 percent are located within the property, we did not observe (2) intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and we did not observe (3) any springs or groundwater seepage emitting from the slope. In our opinion, while the site is mapped in proximity to the **Seattle Fault Zone (SFZ)**, with the closest strand being 0.25 miles north of the subject site, it does not meet the definition of a seismic hazard area since (1) risk of surface rupture within the site is low and (2) the older clay till deposits that underly the site have a low potential for liquefaction.

Additionally in our report, we specifically address the erosion hazards mapped within the site in the **Erosion Hazard** subsection of the report, and provided recommendations on how to reduce the erosion hazard by implementing various erosional control methods.

MICC 19.07.160: As described above, the site does not meet the definition of a landslide hazard area or a seismic hazard area. However, the site does meet the definition of an **Erosion Hazard Area listed in MICC 19.16.101**, as site soils have been identified by the USDA as having a “severe” erosion hazard. The stormwater generated from the proposed development is classified as an allowable discharge per **MICC 15.09.040**. Provided that the recommendations in our previous document are followed during construction, the proposed development should not cause a net increase in geological instability on or off site, as stated in our minimum risk statement dated April 23, 2024.

MICC 19.07.170: We are a geotechnical engineering firm, so we are not qualified to identify fish and wildlife habitats.

MICC 19.07.180: There are no water courses mapped within the vicinity of the subject site.

MICC 19.07.190: There are no wetlands mapped within the vicinity of the subject site. However the proposed development is located in proximity to Lake Washington. In accordance with City of Mercer Island Code, the new retaining wall will be less than 30 inches tall, as it is located within 25-feet of Lake Washington.

We trust this memorandum should satisfy your needs at this time. Please contact us if you have any questions or require additional services.

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