December 30, 2021

Linda Ritter, Senior Planner *VIA Email*
City of Mukilteo
11930 Cyrus Way
Mukilteo, WA 98275

RE: Harbor Grove Preliminary Plat Application
9110 53rd Ave W

Dear Ms. Ritter,

This letter provides additional details in support of issues raised in my previous comment letter dated November 30, 2021 on the proposed subdivision.

1. Surface Water/Drainage Impacts.
   A. Off-site analysis. The off-site study area in the preliminary storm drainage study stops at the existing storm-drain outfall located at Hargreaves Place. It does not evaluate any open channel portions of the downstream flow path. The project will require new storm drainage pipe to connect the proposed detention vault to the existing 92nd Street storm drain. The ¼ mile off-site analysis should be extended downstream as measured from the furthest downstream improvement required within the city's storm drain system. If system improvements are required to the 92nd Street/ Hargreaves Place storm system, this information should be included in the drainage study. Based on existing downstream erosion issues in Smuggler's Gulch Creek, the City should use its authority to require a quantitative analysis under section 3.5.12 of the City's Development Standards (2019 amendment) and DOE Manual.

   B. Impacts on Smuggler's Gulch Creek during construction. Until the storm detention vault is fully completed and operational, stormwater flows from the site during construction will run north (not south) along 53rd and enter Smuggler's Gulch Creek. The drainage study does not address temporary impacts on stormwater runoff and erosion of the creek during construction. Further analysis must be provided.

   C. Bypass Basin. The drainage study identifies a "bypass basin" consisting of 0.46 acres of land that will not drain to the detention vault (see pages 4.3, 4.4 and Developed Conditions Exhibit and Figure 1 below). This area is located along the west and south property lines of the project site and directly abuts several properties in Rugosa Ridge. The drainage study contains no analysis of potential impacts on adjacent properties and must be amended to address this issue since nearly 20% of the developed project site will bypass the storm system and flow to adjacent properties. The amount of runoff generated post-development from the bypass basin would exceed runoff from existing

conditions as a result of removal of all existing vegetation. This information also supports a requirement for a groundwater study.

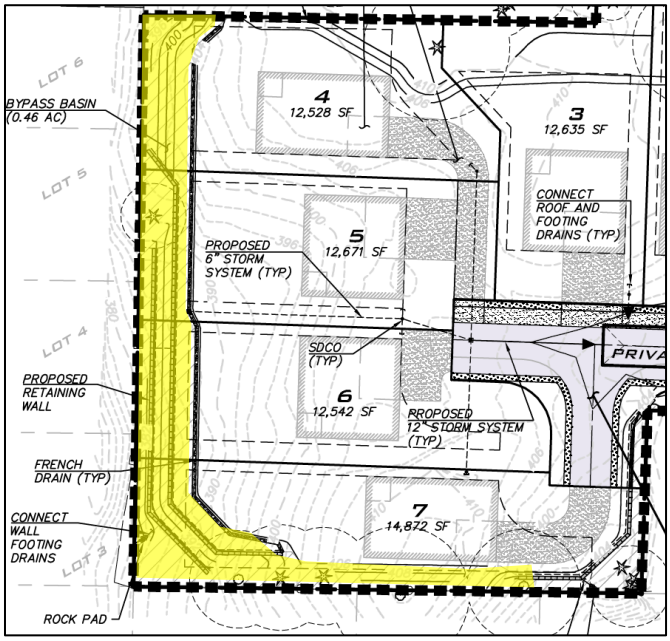

Figure 1 – Detention Vault "Bypass Basin" Area (highlighted in yellow)

D. R.O.W. dedication and future frontage improvements on 53rd Ave. W. The City's requirement for a dedication of 10 feet of right-of-way on 53rd would seem to imply frontage improvements (street widening and/or sidewalk) will be needed. The drainage study should account for any additional impervious area tied to this project's need for frontage improvements, whether they are built now or at some point in the future. This obligation should not be passed on to the City of Mukilteo and taxpayers.

E. TESC Plan (Sheet 4 of 12). The TESC plan shows a "temporary interceptor swale" that apparently is intended to collect surface flows and route them east to a sediment trap, which appears to discharge to a swale in 53rd at an approximate elevation of 402 feet. However, no elevation data is provided for the swale itself. Since positive flow is required from all portions of the interceptor swale to the sediment trap discharge point, a likely scenario is that the lowest point of the swale will need to be at least 405' elevation. This will be at too high of an elevation to effectively prevent stormwater runoff and erosion impacts on adjacent properties, which are at a much lower elevation of around 380' or less.

An additional concern is the timing of the installation of the interceptor swale. At its proposed location, the swale cannot be installed until the clearing and fill placement phases of the project are complete, which increases the risk of an erosion/runnoff event affecting adjacent properties during construction.

The City should require installation of the interceptor swale along the western boundary of the property, at the lowest elevation, not at the 405' level as proposed. The most effective timing of swale installation would be immediately following the clearing phase of construction and prior to the grading/fill phase. Appropriate easements for conveyance and discharge of temporary stormwater runoff must be obtained by the applicant, in addition to approval by the city for the discharge point.

2. Groundwater/Hydrology Study. The need for a groundwater/hydrology study is further supported by the following:
   A. 15.16.050.C.2.b.i.(b), which requires a slope and hydrology report when clearing/grading on slopes greater than 35%. The south and southwest portions of the site contain slopes greater than 35% (see Figure 2 below from Grading Plan, Sheet 5). I calculated slopes up to 40%.

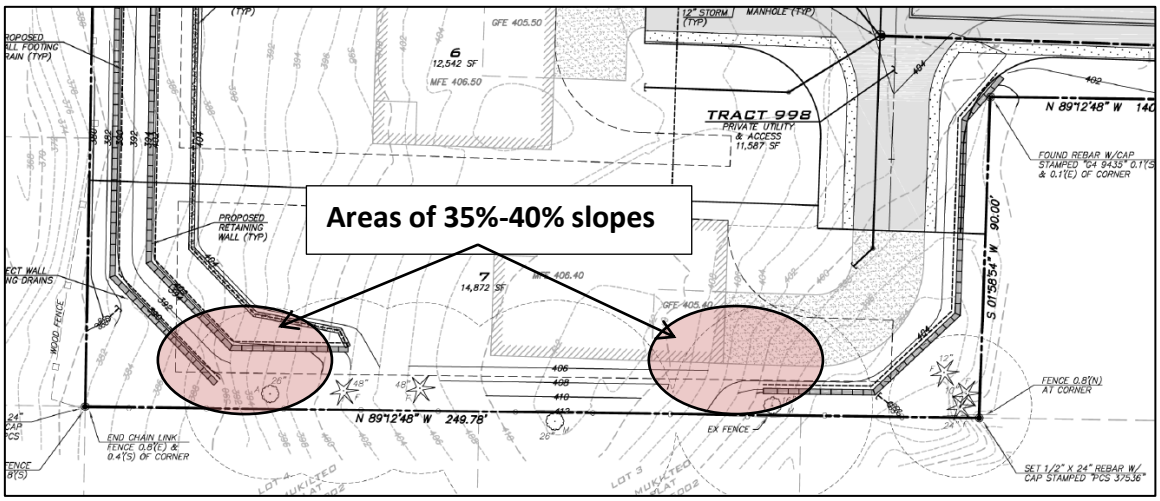

Figure 2 – Areas of 35-40% slopes

   B. 15.16.060.D.6. and D7, which require a groundwater component in the geotechnical study. The study provided with the application addresses groundwater in a cursory manner—it does not provide any analysis of the proposed large-scale grading and fill project on groundwater, particularly as it would affect the adjacent properties.

3. Grading and Retaining Walls. Subsection 15.16.140.C requires the incorporation of "special precautions" to project adjoining properties from impacts. How has this requirement been met by the proposed project design? Based on previously described impacts, the project design should be revised by the applicant to demonstrate consistency with this standard.

4. Risk Analysis. As a means of disclosing and evaluating impacts on adjoining properties, the City should conduct an analysis of the following:
   A. Probable effects of a major storm event that exceeds the design capacity of the proposed storm detention vault;
   B. Risk of retaining wall failure given size and proximity to adjacent properties;
   C. Risk of erosion during construction and post development; and
   D. Risk of settlement of fill areas.

Sincerely,

David Tyler
9055 Hargreaves Place
Mukilteo, WA 98275