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December 9, 2021

Multnomah County  
Department of Community Services  
Land Use Planning Division  
Attn: Chris Liu

Re: Case #T3-2021-14603  
Addendum – Post Hearing Submittals

Dear Mr. Liu:

NW Engineers is submitting Post-Hearing items including: (1) Revised grading, erosion control, and mitigation plans dated December 9, 2021; (2) Memorandum from GeoPacific dated December 8, 2021; (3) Letter from the application dated December 9, 2021; and (4) updated narrative with additional findings primarily addressing Significant Environmental Concern – wildlife habitat criteria, and the Geologic Hazards criteria. Specifically, additional information is provided regarding the proposed wildlife mitigation area which is proposed with an area of approximately 1-acre (44,000 sq. ft., or 2.8:1 mitigation which exceeds the minimum 2:1), or half of the 2-acre parcel, along with more detail regarding the grading and erosion control plans.

The applicant does not agree with staff's characterization that the proposal is for a residential garden in half of the revegetation area which does not provide an appropriate amount of mitigation plantings. However, the applicant has agreed to increase the mitigation area anyway, as noted above. The applicant has proposed a highly creative and innovative mitigation plan with native trees, shrubs, berries and groundcover/wildflowers in an area that historically has been void of trees.

The plan enhances wildlife habitat in a far greater measure than would be the case for mitigation of Douglas fir, vine maple and grasses which had been proposed and approved (at approximately 28,000 sq. ft. of mitigation area) per Casefile T3-2012-2097. This plan provides a diverse habitat for small animals and honeybees, in addition to the deer and herds of elk which, according to the former owner, continue to forage on this property and the adjacent METRO property. The plan includes 39 trees on the slope which balances providing additional forest cover with the need for maintenance of the required secondary firebreak on the slope. The Wildlife Conservation Plan is a hybrid of Subsections 39.5860 C(3) and C(5) since the proposal is unique and cannot significantly expand the forest canopy or provide the density of trees and shrubs on the slope below the homesite, due to firebreak restrictions and concerns. This plan is a hybrid between the two sections which provides superior habitat value to that of standard forest cover as provided in the code.

As shown in photos dated back to 2010, almost the entire site has been in pasture or hay, which will now be substantially enhanced with trees, berries, nuts, wild roses, vine maple, clover and flowers for wildlife. No trees will be removed for development of this property, and few (if any) fir trees were removed on-site when the fill was imported for construction of the access road within the flag-pole in 2015-16.

The additional findings for approval of this application are provided as follows:

**5.H - SIGNIFICANT ENVIRONMENTAL CONCERN**

**39.5860 CRITERIA FOR APPROVAL OF SEC-H PERMIT -WILDLIFE HABITAT.**

**(B) Development standards:**

- (1) Where a parcel contains any non-forested "cleared" areas, development shall only occur in these areas, except as necessary to provide access and to meet mini-mum clearance standards for fire safety.**
- (2) Development shall occur within 200 feet of a public road capable of providing reasonable practical access to the developable portion of the site.**
- (3) The access road/driveway and service corridor serving the development shall not exceed 500 feet in length.**

**COMMENT:**

Development of the dwelling will occur only in the non-forested "cleared" areas. Development of the Parcel 2 dwelling and access road will be greater than 200-ft. from NW McNamee Road and its access road will be greater than 500-ft. in length – it is approximately 700-ft. in length. The longer road length is the least impacting design which will preserve natural areas while providing adequate area for septic drain field with replacement area, and firebreak. A wildlife conservation plan is proposed for Parcel 2 since the access road through the flag-pole exceeds 500-ft.

This plan was approved per Case T3-2012-2097 with approximately 28,000 sq. ft. mitigation area (Douglas fir, vine maple and grasses). As shown on the attached exhibits and discussed in detail, this Wildlife Conservation Plan includes approximately 44,000 sq. ft., or 2.81 vs. the 2:1 ratio of the service corridor required area for mitigation/enhancement with native blueberries, huckleberries, western serviceberry and hazel nut trees, elderberry, vine maple, and a wildflower mix from Heritage seedlings, among other native plants.

- (4) For the purpose of clustering access road/driveway approaches near one another, one of the following two standards shall be met:**
  - (a) The access road/driveway approach onto a public road shall be located within 100 feet of a side property line if adjacent property on the same side of the road has an existing access road or driveway approach within 200 feet of that side property line; or**
  - (b) The access road/driveway approach onto a public road shall be located within 50 feet of either side of an existing access road/driveway on the opposite side of the road.**
  - (c) Diagram showing the standards in (a) and (b) above.**
  - (d) The standards in this subsection (4) may be modified upon a determination by the County Road Official that the new access road/driveway approach would result in**

an unsafe traffic situation using the standards in the Multnomah County “Design and Construction Manual,” adopted June 20, 2000, (or all updated versions of the manual). Standards to be used by the Road Official from the County manual include Table 2.3.2, Table 2.4.1, and additional referenced sight distance and minimum access spacing standards in the publication A Policy on Geometric Design of Highways and Streets by the American Association of State Highway and Transportation Officials (AASHTO) and the Traffic Engineering Handbook by the Institute of Transportation Engineers (ITE).

1. The modification shall be the minimum necessary to allow safe access onto the public road.
2. The County Road Official shall provide written findings supporting the modification.

**COMMENT:**

This section was addressed and approved per Case T3-2012-2097. The modification results in the minimum departure from these standards while providing reasonable clearance between the proposed dwelling and south terminus of the hammerhead for residential parking and vehicle maneuvering. As shown on the attached exhibits, the proposed home is located more than 30-ft. from the “break in slope” which runs from southeast to northwest towards the hammerhead. No structure can be constructed within the 30-ft. “break in slope.”

- (5) The development shall be within 300 feet of a side property line if adjacent property has structures and developed areas within 200 feet of that common side property line.

**COMMENT:**

This section was approved per Case T3-2012-2097 and complies with this standard.

- (6) Fencing within a required setback from a public road shall meet the following criteria:
  - (a) Fences shall have a maximum height of 42 inches and a minimum 17 inch gap between the ground and the bottom of the fence.
  - (b) Wood and wire fences are permitted. The bottom strand of a wire fence shall be barbless. Fences may be electrified, except as prohibited by County Code.
  - (c) Cyclone, woven wire, and chain link fences are prohibited.
  - (d) Fences with a ratio of solids to voids greater than 2:1 are prohibited.
  - (e) Fencing standards do not apply in an area on the property bounded by a line along the public road serving the development, two lines each drawn perpendicular to the principal structure from a point 100 feet from the end of the structure on a line perpendicular to and meeting with the public road serving the development, and the front yard setback line parallel to the public road serving the development.

**COMMENT:**

No new fencing is proposed with this proposal. The previous plan for deer fencing around the mitigation area has been deleted. Existing fencing around the property along the west and south boundary was installed by METRO. The applicant is not permitted to modify or remove that fencing.

- (7) The following nuisance plants shall not be planted on the subject property and shall be removed and kept removed from cleared areas of the subject property:**

**COMMENT:**

There are existing Himalayan blackberries which encroach onto the sloping portion of the site from east. The applicant has been in contact with West Multnomah Soil and Water Conservation regarding blackberry removal and mitigation. This area will be planted with some trees (the plan calls for at least 39 trees in the mitigation area), plus three additional trees in the blueberry wildlife enhancement area, and wildflowers.

- (C) Wildlife Conservation Plan. An applicant shall propose a wildlife conservation plan if one of two situations exist.**

- (1) The applicant cannot meet the development standards of subsection (B) because of physical characteristics unique to the property. The applicant must show that the wildlife conservation plan results in the minimum departure from the standards required in order to allow the use; or**
- (2) The applicant can meet the development standards of subsection (B), but demonstrates that the alternative conservation measures exceed the standards of subsection (B) and will result in the proposed development having a less detrimental impact on forested wildlife habitat than the standards in subsection (B).**

**COMMENT:**

The applicant is proposing a unique and innovative Wildlife Conservation Plan to mitigate for the long, approximate 700-ft. driveway. The applicant does not agree with staff's statement that the proposal is not the minimum departure from the standards since the homesite is located in the only area on the site where a septic system can be installed away from the slope, hammerhead turn-around near the homesite, and required firebreaks are maintained. This homesite and road access flag lot design was approved per Case T3-2012-2097, along with 28,000 sq. ft. of mitigation and no substantial changes are proposed with this application.

As part of that application, the owner requested access from the existing road on the west side of the site (which would have been a shorter distance and not required the fill which the owner subsequently imported for construction of the flag-lot road access), but METRO refused the grant of an easement. The applicant also does not agree with staff comment that there is not "sufficient mitigation plantings to off-set the proposed approximately 50,000 sq. ft. development area." However, as noted above and provided on the submitted plans, the site includes approximately 44,000 sq. ft., or a ratio of 2.8:1 service area and development, for mitigation with native trees, shrubs and berries providing food for animals and wildflowers for bees. This mitigation plan significantly exceeds the standards of subsection (B).

**(3) Unless the wildlife conservation plan demonstrates satisfaction of the criteria in subsection (C)(5), the wildlife conservation plan must demonstrate the following:**

- (a) That measures are included in order to reduce impacts to forested areas to the minimum necessary to serve the proposed development by restricting the amount of clearance and length/width of cleared areas and disturbing the least amount of forest canopy cover.**
- (b) That any newly cleared area associated with the development is not greater than one acre, excluding from this total the area of the minimum necessary accessway required for fire safety purposes.**

**COMMENT:**

As noted previously, no new areas were cleared of forest for the development of the flag-pole access corridor. This area has historically been in pasture and hay. The area of existing service corridor within the flag-pole constructed in 2015-2016 as part of the original development, is approximately 8,875 sq. ft. The area of the access extension onto the main part of the site, with hammerhead is approximately 6,797 sq. ft., totaling 15,672 sq. ft.

- (c) That no fencing will be built and existing fencing will be removed outside of areas cleared for the site development except for existing cleared areas used for agricultural purposes.**

**COMMENT:**

No new fencing is proposed. Existing fencing on the south and west perimeter was installed by METRO and cannot be removed.

- (d) That revegetation of existing cleared areas on the property at a 2:1 ratio with newly cleared areas occurs if such cleared areas exist on the property.**

**COMMENT:**

A 2:1 ratio for mitigation = 31,344 sq. ft. The applicant proposes a mitigation area substantially larger, approximately 44,000 sq. ft. (2.8:1). This mitigation area is composed of trees, shrubs, berries and wildflowers along the forest edge. The applicant cannot replant this mitigation area with trees or shrubs at the density called for in Subsection C(5) since it is partially within the secondary firebreak areas as shown on Plan Sheet 4. There is a forest edge at the southeast corner of the site as shown on Plan Sheet 2. The rest of the forest edge is located on adjacent Tax Lot 700, approximately 60-100-ft. downslope from the site's perimeter. Any forest canopy enhancement could be provided in that location, should the adjacent property owner choose to restock this area which appears to historically have been grass meadow.

- (e) That revegetation and enhancement of disturbed stream riparian areas occurs along drainages and streams located on the property.**

**COMMENT:**

This section is not applicable since there is no stream riparian area on-site.

- (4) For a property meeting subsection (C)(1) above, the applicant may utilize the following mitigation measures for additions instead of providing a separate wildlife conservation plan:
- (a) Each tree removed to construct the proposed development shall be replaced on a one to one ratio with a six foot tall native tree.
  - (b) For each 100 square feet of new building area, the property owner shall plant, one, 3-4 foot tall native tree or three native tree seedlings. The trees shall be planted to improve wildlife habitat first within non-forested cleared areas contiguous to forested areas, second within any degraded stream riparian areas before being placed in forested areas or adjacent to landscaped yards.
  - (c) Existing fencing located in the front yard adjacent to a public road shall be consistent with subsection (B)(6).
  - (d) For non-forested "cleared" areas that require nuisance plant removal pursuant to subsection (B)(7), the property owner shall set a specific date for the work to be completed and the area replanted with native vegetation. The time frame must be within two years from the date of the permit.

**COMMENT:**

The applicant is using elements from both C(3) and C(5) to demonstrate adequate mitigation with this unique, innovative wildlife enhancement plan which is superior to standard mitigation plantings. The plan does not propose to create a Douglas fir forest on the slope and the applicant believes that they are not obligated to restock an area that historically has not been forested. Additionally, as mentioned above, the existing forest canopy is 60-ft. 100-ft. east and downslope of the site boundary, except at the southeast corner where it partially encroaches onto the site. Significant forest canopy enhancement is not possible due to restrictions from the required firebreaks.

Instead, this plan provides food, cover and unique habitat for a variety of wildlife that a forested plan does not. This plan includes a boundary orchard and meadow with least 39 trees, shrubs, vine maple, with clover and wildflowers on the slope, in addition to 3 trees and 15,000 sq. ft. of native blueberries, currants, wild rose and other plantings, all provided in the approximate 1-acre mitigation area as an enhancement to the forest boundary.

- (5) Unless the wildlife conservation plan demonstrates satisfaction of the criteria in subsection (C)(3) of this section, the wildlife conservation plan must demonstrate the following:
- (a) That measures are included in order to reduce impacts to forested areas to the minimum necessary to serve the proposed development by restricting the amount of clearance and length/width of cleared areas and disturbing the least amount of forest canopy cover.

**COMMENT:**

As noted, impacts to the forested areas are minimized. Approximately half of the 2-acre site will be mitigated with native trees, shrubs, vine maples, berries, with clover and wildflowers –

some on the slope and along the existing forest edge. The forest canopy will be increased in area when the proposed 39 trees on the slope are mature. However, much of this area on the slope is within the secondary firebreak which is mandated to be maintained for fire safety.

- (b) That any newly cleared area associated with the development is not greater than one acre, excluding from this total the area of the minimum necessary accessway required for fire safety purposes.**

**COMMENT:**

No new areas have been cleared for this development.

- (c) That no fencing will be built and existing fencing will be removed outside of areas cleared for the site development except for existing cleared areas used for agricultural purposes. Existing fencing located in the front yard adjacent to a public road shall be consistent with subsection (B)(6).**

**COMMENT:**

No new fencing is proposed.

- (d) For mitigation areas, all trees, shrubs and ground cover shall be native plants selected from the Metro Native Plant List. An applicant shall meet Mitigation Option 1 or 2, whichever results in more tree plantings; except that where the total developed area (including buildings, pavement, roads, and land designated as a Development Impact Area) on a Lot of Record will be one acre or more, the applicant shall comply with Mitigation Option 2:**

**COMMENT:**

The development impact area is less than 1 acre. As shown on Exhibit 7, the site is 2 acres in area and the mitigation area is greater than 1 acre. Disturbed area is approximately 18,720 sq. ft., but the service corridor area is A hybrid of Mitigation Option 2 and the standards of subsection C(3) – is used to meet this standard since the applicant cannot meet the prescriptive tree and shrub count (due to firebreak requirements), but provides an area with a ratio of 2.8:1 times the area of the service corridor.

- 1. Mitigation Option 1. In this option, the mitigation requirement is calculated based on the number and size of trees that are removed from the development site. Trees that are removed from the development site shall be replaced as shown in the table below. Conifers shall be replaced with conifers. Bare ground shall be planted or seeded with native grasses or herbs. Non-native sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.**

**COMMENT:**

As noted, no trees were removed for this development, therefore, no conifers are proposed. Bare ground is planted with trees, shrubs, berries, vine maple, wild rose, clover and wildflowers for food for wildlife and bees.

2. **Mitigation Option 2.** In this option, the mitigation requirement is calculated based on the size of the disturbance area associated with the development. Native trees and shrubs are required to be planted at a rate of five (5) trees and twenty-five (25) shrubs per every 500 square feet of disturbance area (calculated by dividing the number of square feet of disturbance area by 500, and then multiplying that result times five trees and 25 shrubs, and rounding all fractions to the nearest whole number of trees and shrubs; for example, if there will be 330 square feet of disturbance area, then 330 divided by 500 equals .66, and .66 times five equals 3.3, so three trees must be planted, and .66 times 25 equals 16.5, so 17 shrubs must be planted). Bare ground shall be planted or seeded with native grasses or herbs. Non-native sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

**COMMENT:**

The area of disturbance is 18,720 sq. ft. Based on the above standard, 5 trees and 25 shrubs per 500 sq. ft. are required. Therefore, per this criteria, 187 trees and 936 shrubs are required with this method. The applicant is proposing a hybrid of this standard along with the mitigation area exceeding the standard ratio of 2:1, with trees, shrubs and ground cover/wildflowers to meet the standard for superior wildlife enhancement over that which would be provided with standard forest mitigation.

As stated previously, the applicant cannot provide the required Douglas fir tree canopy stipulated in this code due to the requirement for the secondary firebreak which extends to within 25-ft. of the east property boundary downslope. This approximate 25-40% slope should be largely be void of fir trees for safety. Alternatively, the applicant has chosen to plant 42 trees which will provide food and habitat as part of the mitigation. The applicant agrees to plant additional trees along the perimeter of the mitigation area outside of the secondary firebreak should the Hearings Officer find that some additional trees are necessary to comply with this section.

Similarly, the applicant cannot plant 936 shrubs while also providing the large wildflower meadow that is necessary for bees. As proposed, the approximately 200 blueberries will be planted (assumed 5-ft. oc) along with at least another 100 shrubs which include currents, wild rose, vine maple and others throughout the mitigation site. Again, there are restrictions to planting a high density of shrubs on the steep slope within the secondary firebreak. Additional shrubs could be provided along the perimeter, should the Hearings Officer find that additional density is necessary to comply with this section. This plan retains much of this slope for wildflowers and other low-growing plants. Therefore, the proposed plan meets or exceeds the intent of the Significant Environmental Concern which requires a wildlife conservation plan that provides enhanced habitat for wildlife – in this case food and wildflowers for bees along the forest edge. This proposal is a substantial improvement to wildlife habitat from that which exists today.

- (e) **Location of mitigation area.** All vegetation shall be planted within the mitigation area located on the same Lot of Record as the development and shall be located within the SEC-h overlay or in an area contiguous to the SEC-h overlay; provided, however, that if the vegetation is planted outside of the SEC-h overlay then the applicant shall preserve the contiguous area by executing a deed restriction, such as a restrictive covenant. (Note: an off-site mitigation option is provided in a

streamlined discretionary review process). The mitigation area shall first be located within any existing non-forested cleared areas contiguous to forested areas, second within any degraded stream riparian areas and last in forested areas or adjacent to landscaped yards.

**COMMENT:**

The 44,000 sq. ft. mitigation area is located on-site along the east half of the 2-acre property adjacent to partial forest canopy on the southeast corner of the site.

- (f) Prior to development, all work areas shall be flagged, fenced, or otherwise marked to reduce potential damage to habitat outside of the work area. The work area shall remain marked through all phases of development.**

**COMMENT:**

The applicant will have the mitigation area surveyed and appropriately flagged prior to commencement of activities.

- (g) Trees shall not be used as anchors for stabilizing construction equipment.**

**COMMENT:**

There are no existing trees on the development portion of the site.

- (h) Native soils disturbed during development shall be conserved on the property.**

**COMMENT:**

As shown on Plan Sheet 5, 12,162 sq. ft. of native soil will be stripped for development (approximately 225 cy). These strippings will be used for the proposed stargazing mound which will also be planted with native clover for bees, other insects, and birds. No export of soil is proposed.

- (i) An erosion and sediment control plan shall be prepared in compliance with the ground disturbing activity standards set forth in MCC 39.6200 through MCC 39.6235.**

**COMMENT:**

An erosion control plan is attached as Plan Sheet 5.

- (j) Plant size. Replacement trees shall be at least one-half inch in caliper, measured at 6 inches above the ground level for field grown trees or above the soil line for container grown trees (the one-half inch minimum size may be an average caliper measure, recognizing that trees are not uniformly round), unless they are oak or madrone which may be one gallon size. Shrubs shall be in at least a 1-gallon container or the equivalent in ball and burlap and shall be at least 12 inches in height.**

**COMMENT:**

No trees are being replaced since the site has historically been in grass and hay. All new trees will meet the above minimum size standards.

- (k) **Plant spacing.** Trees shall be planted between 8 and 12 feet on center and shrubs shall be planted between 4 and 5 feet on-center, or clustered in single species groups of no more than four (4) plants, with each cluster planted between 8 and 10 feet on-center. When planting near existing trees, the drip line of the existing tree shall be the starting point for plant spacing measurements.
- (l) **Plant diversity.** Shrubs shall consist of at least two (2) different species. If 10 trees or more are planted, then no more than 50% of the trees may be of the same genus.

**COMMENT:**

The installation of trees and shrubs will be performed in accordance with these standards. As noted, there are several varieties of trees and shrubs.

- (m) **Nuisance plants.** Any nuisance plants listed in MCC 39.5580 Table 1 shall be removed within the mitigation area prior to planting.

**COMMENT:**

Invasive blackberries will be removed from the slope.

- (n) **Planting schedule.** The planting date shall occur within one year following the approval of the application.

**COMMENT:**

The applicant intends to install the plantings in fall 2022.

- (o) **Monitoring and reporting.** Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind so that a minimum of 80% of the trees and shrubs planted shall remain alive on the fifth anniversary of the date that the mitigation planting is completed

**COMMENT:**

The applicant will monitor and report the mitigation site as required.

**GEOLOGIC HAZARDS - GH**

**39.5070: PURPOSES**

The purposes of the Geologic Hazards (GH) Overlay, MCC 39.5070 through MCC 39.5095, are to promote the public health, safety and general welfare, and minimize public and private losses due to earth movement hazards in specified areas and minimize erosion and related environmental damage in unincorporated Multnomah County, all in accordance with ORS 215,

LCDC Statewide Planning Goal No. 7 and OAR 340- 41- 455 for the Tualatin River Basin, and the Multnomah County Comprehensive Plan policies relating to natural hazards. In addition, the GH is intended to:

- (A) Protect human life;
- (B) Protect property and structures;
- (C) Minimize expenditures for rescue and relief efforts associated with earth movement failures;
- (D) Control erosion, production and transport of sediment; and
- (E) Regulate land development actions including excavation and fills, drainage controls and protect exposed soil surfaces from erosive forces; and
- (F) Control stormwater discharges and protect streams, ponds, and wetlands within the Tualatin River and Balch Creek Drainage Basins.

**39.5075: PERMITS REQUIRED**

All persons proposing development, construction, or site clearing (including tree removal) on property located in hazard areas as identified on the Slope Hazard Map, or on lands with average slopes of 25 percent or more shall obtain a Geologic Hazard Permit as required in the GH, unless specifically exempted in MCC 39.5080.

**COMMENT:**

This section was addressed and approved per Case T3-2012-2097. No changes to the roadway design are proposed with this application. The grading permit for the access road has been issued and all the necessary fill activities were completed in 2016. No modifications to the roadway design are proposed with this application.

**39.5085 APPLICATION INFORMATION REQUIRED**

An application for a Geologic Hazards Permit shall include two copies of each of the following:

- (A) A scaled site plan showing the following both existing and proposed:
  - (1) Property lines;
  - (2) Building structures, driveways, roads and right of way boundaries;
  - (3) Location of wells, utility lines, site drainage measures, stormwater disposal system, sanitary tanks and drainfields (primary and reserve);
  - (4) Trees and vegetation proposed for removal and planting and an outline of wooded areas;
  - (5) Water bodies;

- (6) Boundaries of ground disturbing activities;
- (7) Location and height of unsupported finished slopes;
- (8) Location for wash out and cleanup of concrete equipment;
- (9) Storage location and proposed handling and disposal methods for potential sources of non-erosion pollution including pesticides, fertilizers, petrochemicals, solid waste, construction chemicals, and wastewaters;
- (10) Soil types;
- (11) Ground topography contours (contour intervals no greater than 10- feet); and
- (12) Erosion and sediment control measures.

**COMMENT:**

All of the applicable criteria listed above have been provided. There will be no tree removal or unsupported finished slopes. There is no stream or water body on-site.

- (B) Calculations of the total area of proposed ground disturbance (square feet), volume of proposed cut (cubic yards) and fill (cubic yards), total volume of fill that has been deposited on the site over the 20-year period preceding the date of application, and existing and proposed slopes in areas to be disturbed (percent slope). For purposes of this subsection, the term "site" shall mean either a single lot of record or contiguous lots of record under same ownership, whichever results in the largest land area.

**COMMENT:**

According to the Geotechnical Engineer, GeoPacific Engineering, Inc., less than 5,000 cy of soil was imported to the site in 2015 and 2016 for construction of the road within the flag lot area and stabilization of the slope off-site to the east. GeoPacific monitored the fill activities at the time and certified the compaction upon completion. The 2:1 or 3:1 slope has been stabilized with grass for 5 years.

- (C) Written findings, together with any supplemental plans, maps, reports or other information necessary to demonstrate compliance of the proposal with all applicable provisions of the Geologic Hazards standards in MCC 39.5090. Necessary reports, certifications, or plans may pertain to: engineering, soil characteristics, stormwater drainage control, stream protection, erosion and sediment control, and replanting. The written findings and supplemental information shall include:

**COMMENT:**

The above required information is found in the Geotechnical Report and Addendums, Hillside Development Permit documentation also provided by GeoPacific Engineering, Inc., and on the submitted plans, stormwater certificate and narratives in this application.

**(1) With respect to fill:**

- (a) Description of fill materials, compaction methods, and density specifications (with calculations). The planning director may require additional studies or information or work regarding fill materials and compaction.**

**COMMENT:**

No new fill is proposed with this application. Approximately 225 cy of topsoil will be stripped and placed in the mitigation area as part of the maximum 6-ft. high star gazing mound. The Addendum from GeoPacific Engineering, Inc. dated December 8, 2021 states that the "mound can be constructed with minimal impacts to slope stability provided slopes do not exceed 2H:1V and fill heights do not exceed 6 feet."

- (b) Statement of the total daily number of fill haul truck trips, travel timing, loaded haul truck weight, and haul truck travel route(s) to be used from any fill source(s) to the fill deposit site.**

**COMMENT:**

No fill is being imported to the site, therefore, no additional trucks except those necessary for completion of the road and construction of the house (ie – gravel trucks, construction vehicles).

- (2) A description of the use that the ground disturbing activity will support or help facilitate.**

**COMMENT:**

The proposed use is a house with gravel access road and emergency vehicle turn-around.

**(3) One of the following:**

- (a) Additional topographic information showing the proposed development to be on land with average slopes less than 25 percent, and located more than 200 feet from a landslide, and that no cuts or fills in excess of 6 feet in depth are planned. High groundwater conditions shall be assumed unless documentation is available, demonstrating otherwise; or**
- (b) A geological report prepared by a Certified Engineering Geologist or Geotechnical Engineer certifying that the site is suitable for the proposed development; or,**
- (c) A GHP Form– 1 completed, signed and certified by a Certified Engineering Geologist or Geotechnical Engineer with their stamp and signature affixed indicating that the site is suitable for the proposed development.**
- (i) If the GHP Form– 1 indicates a need for further investigation, or if the director requires further study based upon information contained in the GHP Form– 1, a geotechnical report as specified by the director shall be prepared and submitted.**

- [a] A geotechnical investigation in preparation of a geotechnical report shall be conducted at the applicant's expense by a Certified Engineering Geologist or Geotechnical Engineer. The report shall include specific investigations required by the director and recommendations for any further work or changes in proposed work which may be necessary to ensure reasonable safety from landslide hazards.
- [b] Any development related manipulation of the site prior to issuance of a permit shall be subject to corrections as recommended by the geotechnical report to ensure safety of the proposed development.
- [c] Observation of work required by an approved geotechnical report shall be conducted by a Certified Engineering Geologist or Geotechnical Engineer at the applicant's expense; the geologist's or engineer's name shall be submitted to the director prior to issuance of the permit.
- [d] The director, at the applicant's expense, may require an evaluation of GHP Form- 1 or the geotechnical report by another Certified Engineering Geologist or Geotechnical Engineer.

**COMMENT:**

GeoPacific Engineering, Inc., prepared a report certifying that the site is suitable for the proposed development.

- (4) Documentation of approval by each governing agency having authority over the matter of any new stormwater discharges into public right-of-way.
- (5) Documentation of approval by the City of Portland Sanitarian and any other agency having authority over the matter of any new stormwater surcharges to sanitary drainfields.

**COMMENT:**

No stormwater is discharged into the right-of-way. The applicant has received an evaluation from the Multnomah County Transportation Planner. The applicant has also received approval of the proposed septic system by the City of Portland Sanitarian.

**39.5090 GEOLOGIC HAZARDS PERMIT STANDARDS.**

A Geologic Hazards (GH) permit shall not be issued unless the application for such permit establishes compliance with MCC 39.6210 and satisfaction of the following standards:

- (A) The total cumulative deposit of fill on the site for the 20-year period preceding the date of the application for the GH permit, and including the fill proposed in the GH permit application, shall not exceed 5,000 cubic yards. For purposes of this provision, the term "site" shall mean either a single lot of record or contiguous lots of record under same ownership, whichever results in the largest land area.

**COMMENT:**

As noted above, GeoPacific Engineering, Inc., states in their report prepared for this development that less than 5,000 cy of soil was imported to the site in 2015 and 2016 for construction of the road within the flag lot and stabilization of the slope off-site to the east. GeoPacific monitored the fill activities at the time and certified the compaction upon completion. The 2:1 or 3:1 slope has been stabilized with grass for 5 years. No additional fill is proposed with this development.

**(B) Fill shall be composed of earth materials only.**

**COMMENT:**

No fill is proposed.

**(C) Cut and fill slopes shall not exceed 33 percent grade (3 Horizontal: 1 Vertical) unless a Certified Engineering Geologist or Geotechnical Engineer certifies in writing that a grade in excess of 33 percent is safe (including, but not limited to, not endangering or disturbing adjoining property) and suitable for the proposed development.**

**COMMENT:**

No fill is proposed. The report prepared by GeoPacific Engineering, Inc. states that the existing slope is stable and suitable for the proposed development.

**(D) Unsupported finished cuts and fills greater than 1 foot in height and less than or equal to 4 feet in height at any point shall meet a setback from any property line of a distance at least twice the height of the cut or fill, unless a Certified Engineering Geologist or Geotechnical Engineer certifies in writing that the cuts or fills will not endanger or disturb adjoining property. All unsupported finished cuts and fills greater than 4 feet in height at any point shall require a Certified Engineering Geologist or Geotechnical Engineer to certify in writing that the cuts or fills will not endanger or disturb adjoining property.**

**COMMENT:**

No unsupported cuts or fill are proposed. The only fill proposed on the site is the approximate 225 cy of topsoil that will be stripped and placed in the mitigation area as part of the maximum 6-ft. high star gazing mound. As noted above, the Addendum from GeoPacific Engineering, Inc. dated December 8, 2021 states that the "mound can be constructed with minimal impacts to slope stability provided slopes do not exceed 2H:1V and fill heights do not exceed 6 feet."

**(E) Fills shall not encroach on any water body unless an Oregon licensed Professional Engineer certifies in writing that the altered portion of the waterbody will continue to provide equal or greater flood carrying capacity for a storm of 10-year design frequency.**

**COMMENT:**

This section is not applicable since there is no water body on-site.

- (F) Fill generated by dredging may be deposited on Sauvie Island only to assist in flood control or to improve a farm's soils or productivity, except that it may not be deposited in any SEC overlay, WRG overlay, or designated wetland.**

**COMMENT:**

This section is not applicable since it refers to Sauvie Island.

- (G) On sites within the Tualatin River drainage basin, erosion, sediment and stormwater drainage control measures shall satisfy the requirements of OAR 340-041- 0345(4) and shall be designed to perform as prescribed in the most recent edition of the City of Portland Erosion and Sediment Control Manual and the City of Portland Stormwater Management Manual. Ground-disturbing activities within the Tualatin Basin shall provide a 100-foot undisturbed buffer from the top of the bank of a stream, or the ordinary high watermark (line of vegetation) of a water body, or within 100-feet of a wetland; unless a mitigation plan consistent with OAR 340-041-0345(4) is approved for alterations within the buffer area.**

**COMMENT:**

No disturbance is proposed within 100-ft. of a stream. Erosion control measures will be in place for the duration of the project as shown on Plan Sheets 5 & 6.

- (H) Stripping of vegetation, ground disturbing activities, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilize the soil as quickly as practicable, and expose the smallest practical area at any one time during construction.**

**COMMENT:**

Approximately 12,162 sq. ft. will be stripped for development of the gravel road and homesite. It will be done in a manner which will minimize soil erosion since it is a minimum 30-ft. from the break in slope and 10-ft. from any property line. Plan Sheet 5 demonstrates compliance with this section which shows installation of proposed sediment fencing for the duration of the project, and erosion control notes describing temporary seeding and mulch over disturbed areas after October 1.

- (I) Development Plans shall minimize cut or fill operations and ensure conformity with topography so as to create the least erosion potential and adequately accommodate the volume and velocity of surface runoff.**

**COMMENT:**

Cut and fill has been minimized to approximately 2-ft. cut for construction of the hammerhead and building foundations. No fill is proposed with the exception of the previously-mentioned star gazing mound.

- (J) Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development.**

**COMMENT:**

Plan Sheet 5 provides the required erosion control notes for temporary seeding and mulching exposed soil during development. As noted, the only disturbance is for road and house construction, along with trenching for the septic system and stormwater outfall. All other areas on-site will be maintained in grass. The mitigation area will be planted in the summer and stabilized prior to October 1. The trenches will be seeded or covered with mulch as required.

**(K) Whenever feasible, natural vegetation shall be retained, protected, and supplemented;**

**(1) A 100-foot undisturbed buffer of natural vegetation shall be retained from the top of the bank of a stream, or from the ordinary high watermark (line of vegetation) of a water body, or within 100-feet of a wetland;**

**(2) The buffer required in subsection (K)(1) may only be disturbed upon the approval of a mitigation plan which utilizes erosion, sediment, and stormwater control measures designed to perform as effectively as those prescribed in the most recent edition of the City of Portland Erosion and Sediment Control Manual and the City of Portland Stormwater Management Manual and which is consistent with attaining equivalent surface water quality standards as those established for the Tualatin River drainage basin in OAR 340-041-0345(4).**

**COMMENT:**

No natural vegetation will be removed. Existing grass on-site will be maintained where possible during construction.

**(L) Permanent plantings and any required structural erosion control and drainage measures shall be installed as soon as practical.**

**COMMENT:**

With the exception of trenching for the septic system and storm outfall, all construction or ground disturbance is limited to the 12,162 sq. ft. area for road and home construction. Temporary seeding of the septic and storm water outfall area will be performed upon installation. Mulch or hay will be provided where necessary until the disturbed soil is stabilized. The septic drainfield trench lines will be restored with grass. The stormwater outfall area will be restored with grass, clover or wildflowers as part of the mitigation plan. All other permanent plantings are located with the 44,000 sq. ft. mitigation area.

**(M) Provisions shall be made to effectively accommodate increased runoff caused by altered soil and surface conditions during and after development. The rate of surface water runoff shall be structurally retarded where necessary.**

**COMMENT:**

The applicant's engineer, NW Engineers, has provided a storm report and certificate, along with a plan for treatment in a flow-thru planter, and discharge of stormwater in a dispersion trench spreader downslope. Based on associated stormwater calculations, this project will generate 0.03 cfs into the spreader, which has capacity for approximately 15 time more water

at a maximum flow rate of 0.5 cfs. GeoPacific states in its addendum Dated December 8, 2021, that in their opinion, “the erosion and sedimentation hazard at the dispersal trench is low given the flow rate...and the proposed sediment fence downslope of the trench.”

**(N) Sediment in the runoff water shall be trapped by use of debris basins, silt traps, or other measures until the disturbed area is stabilized.**

**COMMENT:**

Any sediment will be trapped in the flow-thru planter and/or sediment fencing provided downslope of the development.

**(O) Provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surface of fills by installation of temporary or permanent drainage across or above such areas, or by other suitable stabilization measures such as mulching or seeding.**

**COMMENT:**

No stormwater from the building or driveway will be conveyed towards the slope on the east side of the site. Any overland water during construction of the driveway and house will be intercepted by the sediment fencing as shown on Plan Sheet 5.

**(P) All drainage measures shall be designed to prevent erosion and adequately carry existing and potential surface runoff to suitable drainageways such as storm drains, natural water bodies, drainage swales, or an approved drywell system.**

**COMMENT:**

As noted, drainage from the development will be conveyed to the flow-thru planter for treatment, then to the bottom of the slope and discharged into the spreader. It is unlikely that this design will result an erosion impacts due to the large capacity of the dispersion trench spreader.

**(Q) Where drainage swales are used to divert surface waters, they shall be vegetated or protected as required to minimize potential erosion.**

**COMMENT:**

A drainage swale is not proposed with this development. Instead, a sealed flow-thru planter will be used so no stormwater will be discharged at the top of bank.

**(R) Erosion and sediment control measures must be utilized such that no visible or measurable erosion or sediment shall exit the site, enter the public right-of-way or be deposited into any water body or storm drainage system. Control measures which may be required include, but are not limited to:**

**(1) Energy absorbing devices to reduce runoff water velocity;**

**(2) Sedimentation controls such as sediment or debris basins. Any trapped materials shall be removed to an approved disposal site on an approved schedule;**

**(3) Dispersal of water runoff from developed areas over large undisturbed areas.**

**COMMENT:**

The dispersion trench spreader will slow stormwater down and infiltrate at the bottom of the slope across its entire 50-ft length.

- (S) Disposed spoil material or stockpiled topsoil shall be prevented from eroding into water bodies by applying mulch or other protective covering; or by location at a sufficient distance from water bodies; or by other sediment reduction measures;**

**COMMENT:**

Strippings will be used for the 6-ft. tall star grazing mound which will be planted with clover. Temporary seeding or mulch will be provided if the clover is not established by October 1.

- (T) Such non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, continuous site monitoring and clean-up activities.**

**COMMENT:**

The applicant does not intend to use the above chemicals on-site once the construction is complete and mitigation installed. However, should any be used during construction, the applicant and contractor will provide the require monitoring.

- (U) On sites within the Balch Creek drainage basin, erosion, sediment, and stormwater control measures shall be designed to perform as effectively as those prescribed in the most recent edition of the City of Portland Erosion and Sediment Control Manual and the City of Portland Stormwater Management Manual. All ground disturbing activity within the basin shall be confined to the period between May first and October first of any year. All permanent vegetation or a winter cover crop shall be seeded or planted by October first the same year the development was begun; all soil not covered by buildings or other impervious surfaces must be completely vegetated by December first the same year the development was begun.**

**COMMENT:**

As noted, any exposed soil will be planted with temporary or permanent vegetation prior to October 1.

- (V) Ground disturbing activities within a water body shall use instream best management practices designed to perform as prescribed in the City of Portland Erosion and Sediment Control Manual and the City of Portland Stormwater Management Manual.**

**COMMENT:**

This section is not applicable.

**(W) The total daily number of fill haul truck trips shall not cause a transportation impact (as defined in the Multnomah County Road Rules) to the transportation system or fill haul truck travel routes, unless mitigated as approved by the County Transportation Division.**

**COMMENT:**

As noted, no fill will be imported to or exported from the site.

**(X) Fill trucks shall be constructed, loaded, covered, or otherwise managed to prevent any of their load from dropping, sifting, leaking, or otherwise escaping from the vehicle. No fill shall be tracked or discharged in any manner onto any public right-of-way.**

**COMMENT:**

No fill will be imported to or exported from the site.  
No new fencing

**(Y) No compensation, monetary or otherwise, shall be received by the property owner for the receipt or placement of fill.**

**COMMENT:**

This section is not applicable.

Based on the above findings, submitted plans and reports, the applicant has met the minimum requirements for approval for all applicable criteria in addition to the Significant Environmental Concern – wildlife habitat criteria, and the Geologic Hazards criteria which are discussed in the addendum.

Sincerely,

Matt Newman  
Manager/Owner