



**Snohomish County Public Works  
Wetlands and Fish & Wildlife Habitat Conservation Areas Checklist, Critical Area Study  
and Mitigation Plan for Minor Development Activities (SCC 30.62A)**

**Project Name:** Shaw Home Acquisition- South Fork Stillaguamish River  
**Project#/SFG#** RR49325  
**Date:** March 19, 2020  
**Completed by ENVS Staff:** Erin Harker

**Checklist Directions**

*This checklist is intended to demonstrate compliance with SCC 30.62A for minor development activities. Although minor development activities are allowed to occur within wetlands, fish and wildlife habitat conservation areas (FWHCA) or buffer, compliance with 30.62A.140 (critical area study content requirements) and 30.62A.150 (mitigation plan requirements) is required for any activity that occurs in wetlands, fish and wildlife habitat conservation areas and/ or within a buffer. The project must comply with best management practices (BMPs) adopted through rulemaking pursuant to chapter 30.82 SCC and all known and available reasonable technology (AKART) appropriate for compliance with chapter 30.62A. If it is determined that no further review is required under 30.62A, the project may still require compliance with SCC 30.62 B & C.*

**Section 1. Project Site and Project Description**

*Describe the project site (SCC 30.91S.350) and proposed activities. Include a vicinity map.*

The approximately 0.3-acre site consists of one parcel with a mobile home (Installed 1966), two outbuildings, septic, well, and driveway, is located at 17722 115th Street NE (Tax parcel number 00406400002900), Granite Falls, Washington, in Section 11, Township 30N, Range 6E, W.M., in unincorporated Snohomish County (vicinity map). The mobile home is located approximately 300 feet south and landward of the ordinary high water mark (OHWM) of the South Fork Stillaguamish River, and approximately 110 feet north of the boundary of a riparian pond (Wetland A).

FEMA has determined that the residence is a Substantially Damaged property and has agreed to fund the flood mitigation strategy for parcel acquisition. Following acquisition, the mobile home and outbuildings will be demolished, the septic system and well decommissioned, and the driveway decompacted (see aerial map and photos) within the 150 foot buffer area.

An unnamed Type-F tributary of the South Fork of Stillaguamish River, and associated riparian pond (Wetland A) are located along the southern border of the subject property. The riparian pond is a Cat III depressional Wetland with fish presence and habitat. The buffer projects 150 feet north and landward of the OHWM and wetland edge.

The site vegetation is dominated by non-native, invasive Himalayan blackberry with ornamental plants including English laurel and English holly surrounding the mobile home and driveway. All disturbed areas will be stabilized with mulch and planted with native plants. Other native vegetation will be preserved where feasible.

Removal of the existing structures and planting of native vegetation are not considered “development” under WAC 173-27-030(6) and therefore not subject to a shoreline permit.

**Section 2. Is the project a minor development activity exception? (SCC 30.62A.510)**

*Use the checklist items below to identify the minor development activity exception. SCC 30.62A.510(3)(g), which allows development activities within wetlands, is not included because Public Works typically produces a Critical Areas Study for such projects to use for the Corps application.*

**Section 2A. Does the project meet the minor development definitions of SCC 30.62A.510(3)?**

Yes  No

Do all project activities meet the definition of a minor development activity? If yes, check the relevant box below. If no, the project is not a minor development activity.

- Normal maintenance and repair that does not expand the footprint of existing:
  - improved public and private road rights-of-way
  - utility corridors
  - trails
  - utility facilities
  - flood protection and bank stabilization structures
  - stormwater facilities
  - structures
- Minor replacement, modification, extension, installation, or construction by a utility purveyor in an improved public road right-of-way;
- Minor replacement or modification of existing facilities by a utility purveyor in an improved utility corridor;
- Minor replacement or modification by a utility purveyor of individual utility service lines connecting to a utility distribution system;
- Minor replacement, modification, minor installation or construction in an improved road right-of-way by the county or by the holder of a current right-of-way use permit;
- Minor replacement, modification or installation of drainage, water quality or habitat enhancement projects;
- Survey or monument placement;
- Removal of invasive weeds (see invasive weed list).
- Felling or topping of hazardous trees based on review by a qualified arborist and the felled trees will be left in the buffer, stream, wetland, or lake from which was cut.

### Section 2B. Does the project have minor impacts?

*These definitions were included for the purposes of interpreting SCC 30.62A.510(3) for Snohomish County Public Works activities.*

Yes  No

Do all project activities meet any of the following? If yes, check the relevant box below. If no, the project is not a minor development activity and requires a Critical Area Study.

- The activity avoids all impacts to streams, lakes, marine waters, or wetlands.
- The activity avoids impacts to native forested buffers.
- The activity impacts less than 2,500 square feet of non-native or herbaceous buffer vegetation.
- The activity impacts less than 1,000 square feet of native shrub buffer vegetation.

### Section 3. Critical Areas Description

*Discuss all wetlands, FWHCAs, and buffers present within 300 ft. of the site. Discuss Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) within the study area. Include classification of all streams, wetlands or lakes pursuant to SCC 30.62A.230 as needed. Include a site plan as an attached figure.*

The Ordinary High Water Mark (OHWM) of the South Fork of the Stillaguamish River is located approximately 300 feet north of the residence. The river is categorized as "Type S," fish bearing stream that supports Puget Sound steelhead (O. mykiss), Chinook (Oncorhynchus tshawytscha), and bull trout (Salvelinus malma) and is a designated "Shoreline of the State." These species are listed as "threatened" under Section 7 of the Endangered Species Act (ESA). The WDFW PHS Map also identifies Coho (Oncorhynchus kisutch), listed as a candidate species, as occurring in the South Fork of the Stillaguamish River. The South Fork of the Stillaguamish River has been identified as having steelhead, chinook, bull trout, and coho breeding areas. Type S streams are required to have 150-foot wide buffers extending landward from a river's OHWM, pursuant to Snohomish County Code (SCC) Chapter 30.62A.

An unnamed tributary, and associated riparian pond (Wetland A), flows west along the southern boundary of the subject site enters the South Fork of Stillaguamish River through a series of culverts and altered channels. Snohomish County PDS Map Portal characterizes the tributary as a "Type-F" fish-bearing stream that supports bull trout (Salvelinus malma)

and the riparian pond (Wetland A) is considered fish habitat. The WDFW PHS Map identifies Coho as occurring in the unnamed tributary.

Wetland A is a Cat III, depression, Palustrine Emergent Permanently Flooded, Seasonally flooded (PEMCH) wetland, with a habitat score of 5. The wetland would project a 110-foot buffer, however due to the presence of fish and fish habitat, the buffer is 150 feet.

#### **Section 4. Description of Critical Areas Impacts**

*Describe all impacts to wetlands, FWHCAs, and buffers present within 200 ft of the development activity. Include location of impacts on the attached site plan.*

All work will occur within a Fish and Wildlife Habitat Conservation Area, specifically, within a primary association area for critical (listed) species. The project will remove impervious surfaces. Temporary impacts associated with site disturbance will be mitigated by restoring the disturbed bare soil areas with mulch and native plant species.

#### **Section 5. Minimization**

*Describe how possible impacts to wetlands, FWHCAs and buffers have been minimized?*

Areas of disturbance will be limited to the footprints of the existing constructed features: house, well house, and driveway. Prior to demolition, erosion control Best Management Practices (BMPs) will be installed to avoid sedimentation to adjacent properties and the river. Onsite native trees and shrubs will be protected.

#### **Section 6. Description of BMPs and/or Proposed Mitigation**

*Describe the proposed BMPs and mitigation for critical area impacts. Briefly describe existing functions and values and specify how lost functions and values will be replaced.*

The goals of the mitigation are to establish native vegetation communities appropriate for the landscape position, increase floodplain roughness, and return the habitat to natural conditions. All disturbed areas will be covered with 6 inches of weed free straw or wood mulch. Planting areas will be cleared of non-native, invasive vegetation and planted with native trees and shrubs. When possible, any identified hazard or dead trees will be assessed by a certified arborist and converted to wildlife snags.

Standard Temporary Erosion and Sediment Control (TESC) measures and (BMPs) have been incorporated into the proposed project to avoid and minimize impacts to critical areas in the project area.

YES:    N/A:

- |                                     |                                     |  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Install temporary erosion and sediment control (TESC) measures including orange temporary construction fencing (or alternative) and sedimentation control fencing. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Invasive species and or weed removal/control   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Clear and grub mitigation area   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | N/A inches of compost soil amendment or topsoil will be incorporated into soils by rototilling to a minimum depth of N/A inches.                                   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Following plant installation, the planting area will receive mulch.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Woody chip mulch rings   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Irrigation   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Hydroseed mix  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | CAPA sign installation   |

#### **Section 7. Impervious Surfaces**

*Restrictions on impervious surfaces within buffers and within 300 feet of any stream, lake, wetland and marine waters that contain salmonids are detailed in SCC 30.62A.320(1)(c). Use the checklist below to verify that the project is consistent with requirements for new impervious surface.*

The project proposes no new impervious surface. Approximately 1,080 square feet of impervious surface will be removed by demolishing structures and scarifying the compacted driveway.

- Yes    No    Project complies with impervious surface requirements per SCC 30.62A.320(1)(c). If yes, check the relevant boxes to demonstrate how the project complies.

- No new effective impervious surfaces are proposed within the buffer of streams, wetlands, lakes or marine waters.
- For development activities occurring within buffers and that create 5,000 square feet or greater of impervious surface, it has been demonstrated that the infiltration best management practices (BMPs) from the Snohomish County Drainage Manual will completely infiltrate (100 percent) the 25-year design storm within 24 hours (or 48 hours for the 100-year storm) from new impervious surfaces. Infiltration shall conform with drainage requirements contained in SCC 30.63A.210, the Snohomish County Drainage Manual, and section 5.14 of the Engineering Design and Development Standards (EDDS).
- For development activities occurring outside of buffers and within 300 feet of salmonid bearing streams, wetlands, lakes and marine waters, it has been demonstrated that the infiltration BMPs from the Snohomish County Drainage Manual will infiltrate 90 percent of the 25-year design storm within 24 hours (or 48 hours for the 100-year storm) from new impervious surfaces. Infiltration shall conform with drainage requirements contained in SCC 30.63A.210, the Snohomish County Drainage Manual, and section 5.14 of the EDDS.
- For development activities within buffers or within 300 feet of salmonid bearing streams, wetlands, lakes and marine waters that create less than 5,000 square feet of impervious surface, the design meets the Low Impact Development (LID) Guidance Manual standards adopted in SCC30.63C.010.
- The project creates 5,000 square feet or greater of new impervious surface within critical area buffers and it can be demonstrated that the infiltration BMP will completely (100 percent) percolate the design storm volume from the new impervious surface within 24 hours (or 48 hours for the 100-year storm).
- The site is unable to meet the above infiltration requirements, due to soils, proximity to unstable slopes, proximity to landslide areas or a high ground water table and innovative development design (IDD) has been proposed pursuant to SCC 30.62A.350(1).

ATTACHMENTS:

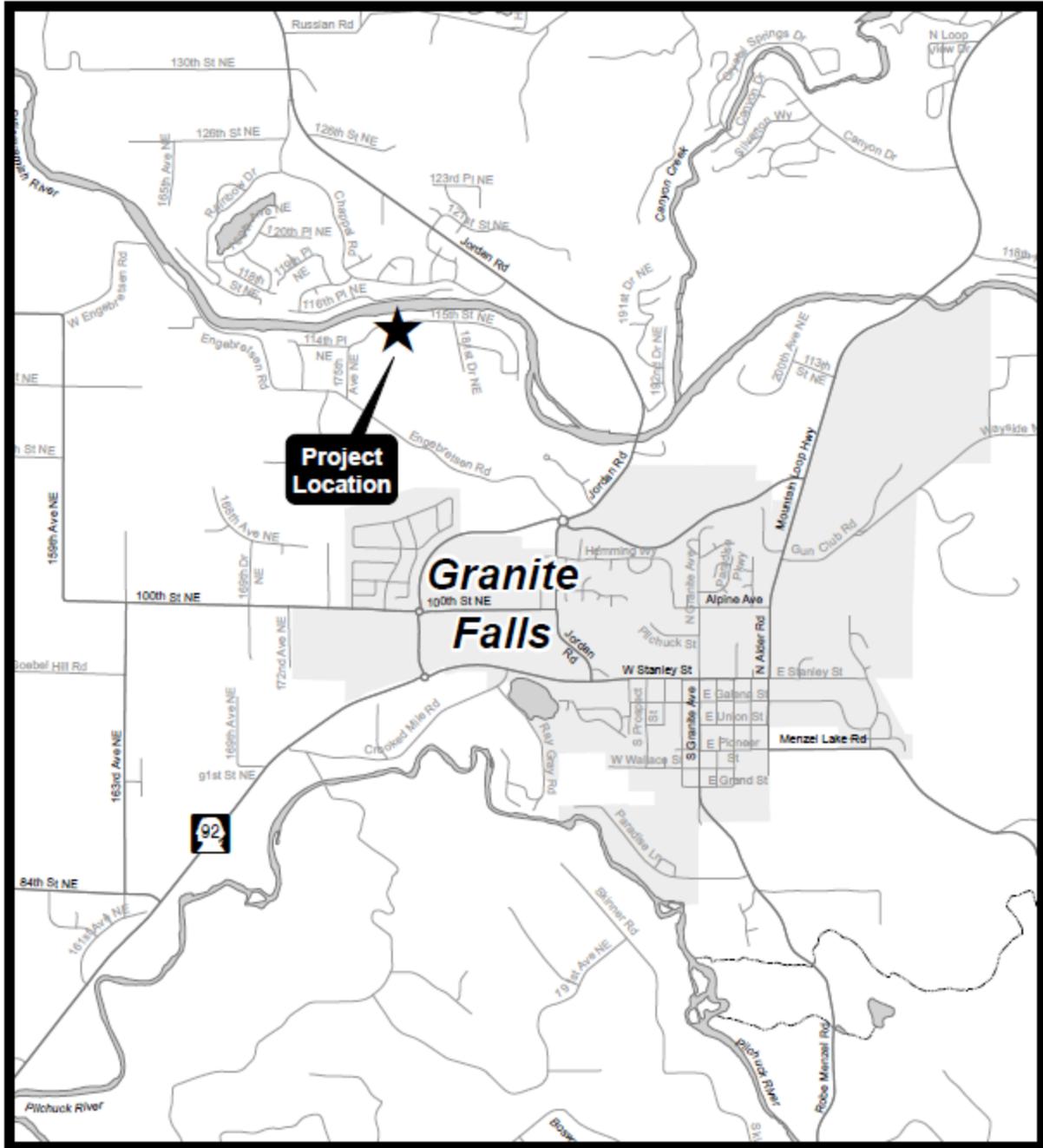
Vicinity Map

Aerial Map

Photos

Geologic Hazard Checklist

## Attachments

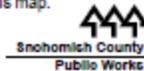


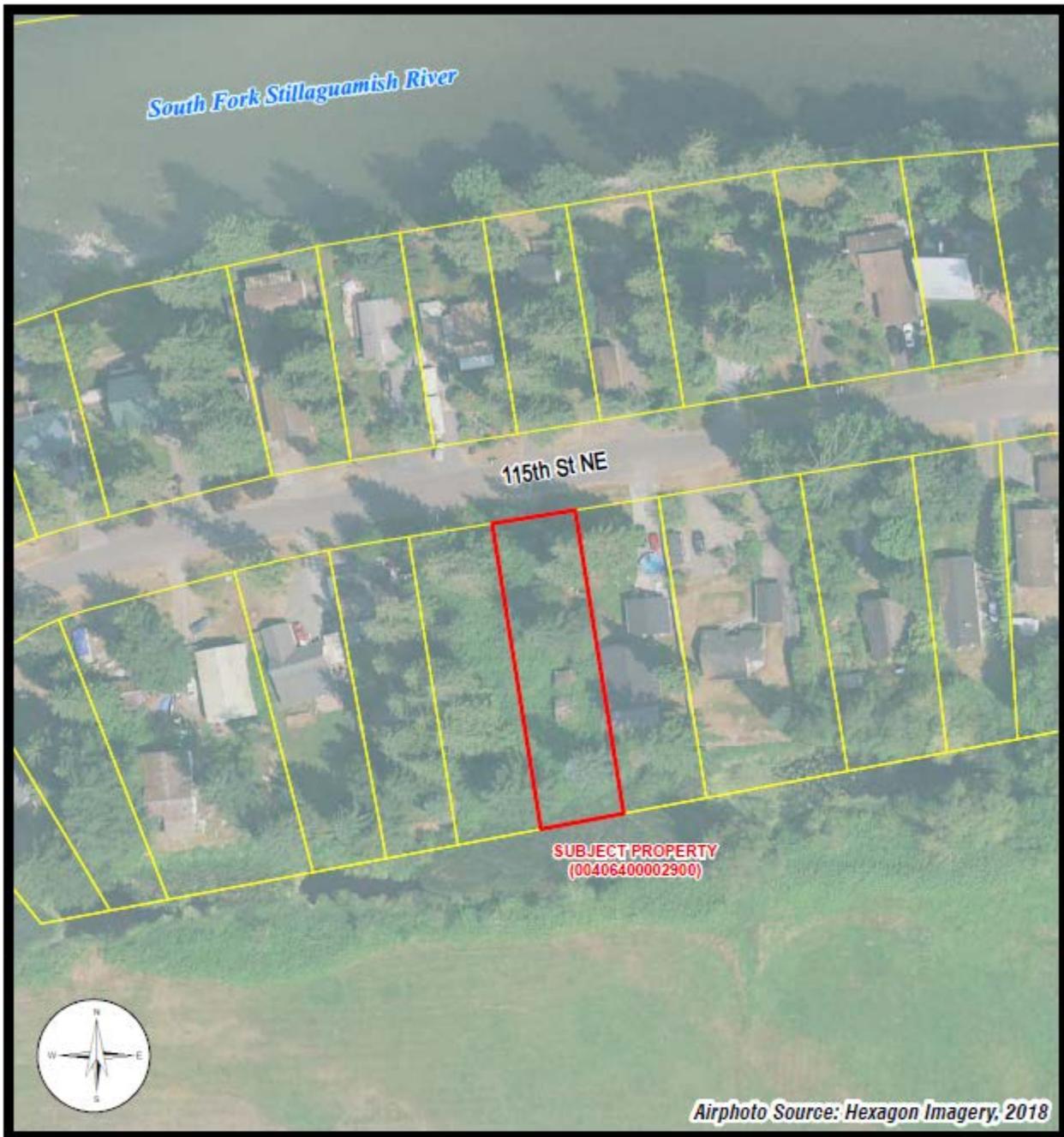
**Key to Features:**



Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

**Figure 1: Project Vicinity**





**Key to Features:**

 Subject Property     Parcels

0    50    100    200 Feet

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**Figure 2. Site Aerial**



## Photographs



Photograph 1. Deck and concrete slab to be removed.



Photograph 2. Mobile home and debris to be removed.



Photograph 3. Two outbuildings to be removed.



Photograph 4. Riparian Pond (Wetland A).



Photograph 5. Example of characteristic ornamental and invasive vegetation, including Himalayan blackberry, English holly, English laurel, and English ivy.



# Snohomish County Public Works

## Geologically Hazardous Areas Checklist – SCC 30.62B As of August 3, 2009

Project Name: Shaw Property Acquisition Project #: RR49325

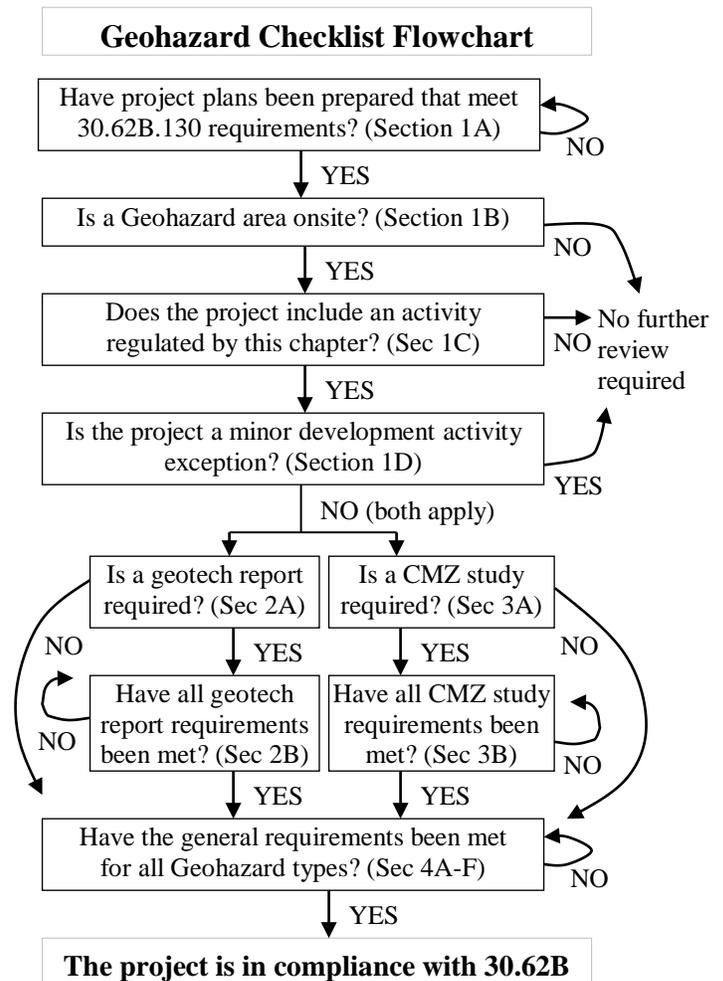
Completed by ENVS Staff: Erin Harker Date: March 27, 2020

Completed by ES/Geotechnical Staff: \_\_\_\_\_ Date: \_\_\_\_\_

### Checklist Directions

Use the checklist, starting on page 2, to determine if a Geologically Hazardous Area (Geohazard area) review is required. Fill out the Geohazard Review Summary below by following the directions in each section of the checklist. If it is determined that no further review is required, the project may still require the use of BMPs and AKART measures as well as compliance with SCC 30.62A&C.

<b>Geohazard Review Summary</b>	
<b>Section 1: Is a GeoHazard Review Required</b>	
<input type="checkbox"/> <b>Box 1-1</b> - OR -	<input checked="" type="checkbox"/> <b>Box 1-2</b>
NO Geohazard areas present. OR No further review is required	The project is a minor development activity. No further review is required
<input type="checkbox"/> <b>Box 1-3</b> Geohazard areas present and are not minor development activities. Geohazard review required	<b>Section 4: General Requirements</b> <input checked="" type="checkbox"/> <b>Box 4</b> The project meets all general requirements
<b>Section 2: Geotechnical Report</b>	
<input type="checkbox"/> <b>Box 2-1</b> - OR -	<input type="checkbox"/> <b>Box 2-2</b>
NO geotechnical report required.	A geotechnical report IS required and has been completed.
<b>Section 3: CMZ Study</b>	
<input type="checkbox"/> <b>Box 3-1</b> - OR -	<input type="checkbox"/> <b>Box 3-2</b>
NO CMZ study required.	A CMZ study IS required and has been completed.



## SITE & PROJECT DESCRIPTION

Discuss the site and Geohazard areas if present within 200 ft of the site (the site is that portion of the subject property within 200 feet of the development activity<sup>2</sup>). Attach figure if necessary.

Section 1, 2A, and 3A are to be filled out by ENVIS staff with the assistance of ES, if necessary.

- If applicable, section 2B, 3B and 4 are to be filled out by ES with the assistance of ENVIS, if necessary.

## SECTION 1. IS A GEOHAZARD REVIEW REQUIRED?

Use the checklists below to determine if a Geohazard area review is required.

### Section 1A. Preliminary submittal requirements: project plans. (30.62B.130)

*Have plans and supplemental information been prepared that meet the following requirements? This information will help to facilitate an accurate and thorough review of potential Geohazard impacts.*

- 1  Yes  NA A site plan drawn to a standard engineering scale
- 2  Yes  NA Boundary lines and dimensions of the ROW or subject property, and site;
- 3  Yes  NA Topography at contour intervals of 5' or less;
- 4  Yes  NA Location, size, & type of any existing structures and other existing developed areas;
- 5  Yes  NA Location, size, & type of all proposed structures and development activity on the site;
- 6  Yes  NA Location of all Geohazard areas on and within 200 feet of the site;
- 7  Yes  NA Location of all other critical areas regulated pursuant to chapters 30.62A, 30.62C and 30.65 SCC on and within 200 feet of the site;
- 8  Yes  NA Location of structure setbacks as required in SCC 30.62A.320(1)(d), SCC 30.62B.340(2) and chapter 30.23 SCC;

- Once all boxes in Section 1A are checked, proceed to Section 1B.

### Section 1B. Are the following Geohazard areas on or within 200' of the project site? (30.62B.210)

- 1  Yes  No Erosion hazard area (not including CMZs)<sup>1,2</sup>
- 2  Yes  No Channel Migration Zone
- 3  Yes  No Landslide hazard area<sup>2</sup>
- 4  Yes  No Seismic, Mine, Volcanic, or Tsunami hazard areas

- If all boxes are checked no, the project is not subject to Geohazard area review and no further action is required. Check Box 1-1 on page 1.
- If any box is checked yes, proceed to Section 1C.

1. Those erosion hazard areas that either (1) contain soils which are at high risk from water erosion according to the mapped description units of the USDA NRCS National Soil Classification System, or (2) the shorelines of water bodies subject to wind and wave erosion.
2. Definitions can be found in the Appendix.

### Section 1C. Does the project include an activity or use regulated by this chapter? (30.62B.010)

- 1  Yes  No Does the project include a development activity, clearing, or require a project permit<sup>3</sup>?
- 2  Yes  No Does the project include an agricultural activity<sup>4</sup>?

- If both boxes are checked no, the project is not subject to Geohazard area review and no further action is required. Check Box 1-1 on page 1.
- If either box is checked yes, proceed to Section 1D.

3. Exceptions include (i) Non-ground disturbing interior or exterior building improvements; (ii) Routine landscape maintenance of established, ornamental landscaping; (iii) Exterior structure maintenance; (iv) Noxious weed removal conducted in accordance with WAC16-750; (v) Maintenance or replacement that does not expand the affected area of the septic tanks, drainfields, wells, and individual utility service connections; (vi) Data collection and research by non-mechanical means if performed in accordance with state and federal regs; (vii) Non-mechanical survey and monument placement; (viii) Soils testing or topographic surveying of slopes for purposes of scientific investigation, site feasibility analysis, and data acquisition for geotech report preparation (without road construction).

4. This question is only applicable to activities subject to Part 500 of 30.62B. Certain agricultural activities as defined in SCC 30.64.010 occurring on rural and agricultural resource lands are subject only to chapter 30.64 SCC.

### Section 1D. Is the project a minor development activity exception? (30.62B.410)

- 1  Yes  No Do all proposed project activities occurring within a Geohazard area or setback meet one of the following exceptions? Check applicable boxes.
- 2  Normal maintenance and repair that does not expand the footprint of existing (i) improved public and private road rights-of-way, (ii) utility corridors, (iii) trails, (iv) utility facilities, (v) flood protection and bank stabilization structures, (vi) stormwater facilities; and (vii) structures.
  - 3  Minor replacement, modification, extension, installation, or construction by a utility purveyor in an improved public road right-of-way;
  - 4  Survey or monument placement;
  - 5  Minor replacement or modification of existing facilities by a utility purveyor in an improved utility corridor;
  - 6  Minor replacement or modification by a utility purveyor of individual utility service lines connecting to a utility distribution system;
  - 7  Minor replacement, modification, minor installation or construction in an improved road right-of-way by the county or by the holder of a current right-of-way use permit;
  - 8  Removal of invasive weeds;
  - 9  Felling or topping of hazardous trees based on review by a qualified arborist;
  - 10  Minor replacement, modification or installation of drainage, water quality or habitat enhancement projects;
  - 11  All other on-going development activities not specifically addressed in this chapter.
- If yes, the project is a minor development activity and no further review is required. Check Box 1-2 on page 1.
  - If no (the project is not a minor development activity), check Box 1-3 on page 1 and proceed to Section 2.

## SECTION 2. GEOTECHNICAL REPORT REQUIREMENTS

Use the checklist in Section 2A to determine if a geotechnical report is required. If a report is required, use the checklist in Section 2B to determine that all report requirements are met.

### Section 2A. Is a geotechnical report required? (30.62B.140)

- 1  Yes  No Site disturbance occurs within (1) an erosion hazard area, including CMZs, (2) a landslide hazard area or its setback, or (3) within 200' of a mine hazard area or any faults.
- If NO, a geotechnical report is not required. Check Box 2-1 on page 1.  
The project must still comply with the general requirements of 30.62B. Proceed to Section 3.
  - If YES, a geotech report is required. Continue reviewing Section 2.

**The geotechnical report has been prepared, stamped, and signed by the following licensed engineer or geologist:**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Section 2B. Has the geotechnical report addressed each of the following requirements? (30.62C.140)

- 1  Yes  NA Topographic contour intervals of 5' (unless the project permit requires a lesser interval)
- 2  Yes  NA Significant geologic contacts, landslides, or downslope soil movement on/within 200'
- 3  Yes  NA A channel migration zone study when required pursuant to SCC 30.62B.330(2)
- 4  Yes  NA Impervious surfaces, wells, drain fields, reserve areas, roads, easements, and utilities on site
- 5  Yes  NA The location or evidence of any springs, seeps, or other surface expressions of groundwater
- 6  Yes  NA The location or evidence of any surface waters
- 7  Yes  NA Identification of all existing fill areas
- 8  Yes  NA The location and extent of all proposed development activity
- 9  Yes  NA A description of the soils indicating the potential for erosion (in accordance with the NRCS)
- 10  Yes  NA Engineering properties of the soils, sediments, and rocks on the subject property and adjacent properties and their effect on the stability of the slope
- 11  Yes  NA A description of the slope in percent gradient

- 12  Yes  NA Location/evidence of seismic faults or soil conditions with potential for liquefaction
- 13  Yes  NA The proposed method of drainage, locations of existing and proposed surface and subsurface drainage facilities and patterns, the locations & methods for erosion control;
- 14  Yes  NA The extent and type of existing vegetative cover;
- 15  Yes  NA A vegetation management and restoration plan prepared by persons experienced in vegetation management and restoration plans such as botanists, landscape architects and certified arborist, or other means for maintaining long-term stability of slopes
- 16  Yes  NA Analysis of erosion rates, slope recession rates and potential impacts to existing or proposed development from wave cutting, stream meandering, or other erosional forces to determine the recommended solution for bank or shoreline stabilization or flood protection in conformance with SCC 30.62B.320(2)
- 17  Yes  NA Any other information necessary to determine compliance with this chapter.

• Once all boxes in Section 2B are checked, check Box 2-2 on page 1 and proceed to Section 3.

### SECTION 3. CHANNEL MIGRATION ZONE (CMZ) STUDY REQUIREMENTS

Use the checklist in Section 3A to determine if a CMZ study is required. If a study is required, use the checklist in Section 3B to determine that all study requirements are met.

#### Section 3A. Is a channel migration zone (CMZ) study required? (30.62B.330)

- 1  Yes  No Will any site disturbance occur within a regulated CMZ (def in appendix)? Note: Currently, only CMZs identified in the table in 30.62B.330(1) are regulated by this section. Activities included in 30.62B.330(3)(a) may be excluded from CMZ study requirements.

If all project activities within CMZs are exempted by 30.62B.330(3)(a), list those activities below:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- If No, the project does not require a CMZ study. Check Box 3-1 on page 1 and proceed to Section 4.
- If Yes, a CMZ study is required. Continue reviewing Section 3B

***The CMZ study has been prepared by the following engineer or geologist, experienced in fluvial geomorphology or river hydraulics:***

Name: \_\_\_\_\_ Date: \_\_\_\_\_

#### Section 3B. Has the CMZ study addressed each of the following requirements? (30.62B.330)

- 1  Yes  NA A study has been conducted in accordance with Section 2 of the Forest Practices Board Manual, *Standard Methods for Identifying Bankfull Channel Features and CMZs*
- 2  Yes  NA The study has been performed under the direction of a qualified professional with experience in fluvial geomorphology or river hydraulics;
- 3  Yes  NA The study has been completed and contains the following:
  - (i) a determination of the presence of the CMZ, and if present, the delineation of the CMZ;
  - (ii) analysis of the impacts of potential channel migration on the proposed development activity
  - (iii) an analysis of the impacts of the proposed development activity on the CMZ

• Once all boxes in Section 3B are checked, check Box 3-2 on page 1 and proceed to Section 4.

### SECTION 4. GENERAL CODE COMPLIANCE

Use the following checklists to determine if all general requirements of 30.62B have been satisfied.

**Section 4A. General requirements for work within Erosion and landslide hazard areas. (30.62B.320)**

1  Yes  No Will any site disturbance occur within an erosion or landslide hazard area?

• If yes, continue with this checklist; if no, proceed to Section 4B.

*All of the following applicable requirements must be met for activities proposed in an erosion or landslide hazard area.*

2  Yes  NA Has a geotechnical report been completed that meets the requirements of Section 2?

3  Yes  NA Have BMPs have been incorporated into the project to ensure compliance with 30.62B

4  Yes  NA The project has been designed to prevent the collection, concentration or discharge of stormwater or groundwater within the erosion or landslide hazard area

5  Yes  NA The project has been designed to minimize impervious surfaces and retain vegetation to minimize risk of erosion or landslide hazards

6  Yes  NA The project has been designed to minimize the risk of property damage, death or injury

7  Yes  NA The project has been designed to minimize the erosion or landslide hazard risk

8  Yes  NA The project has been designed to minimize surface water discharge, sedimentation, slope instability, erosion or landslide potential to adjacent or downstream and down-drift properties beyond pre-development conditions

9  Yes  NA The project has been designed to minimize impact to wetlands, FWHCAs, and buffers.

10  Yes  No Does the project include shoreline/bank stabilization or flood protection measures proposed within an erosion or landslide hazard area:

• If yes to question 10 above, continue with this checklist; if no, proceed to Section 4B.

11  Yes  NA All reasonable efforts have been made to avoid and minimize impacts to wetlands, FWHCAs and buffers pursuant to the requirements of chapter 30.62A SCC, in the following sequential order of preference:

- (a) Utilize setbacks sufficient to ensure that shoreline stabilization or flood hazard reduction measures will not be necessary to protect development for its projected design life, or;
- (b) When sufficient setbacks are not possible, utilize other non-structural measures unless it can be demonstrated through a geotechnical report that new or enlarged structural stabilization or flood protection is necessary to protect: existing primary structures, utilities, roads and bridges, new utilities or public bridges and transportation structures (that meet CMZ regulations), agricultural land, or restoration projects.

• Once all boxes in Section 4A have been checked either yes or NA, proceed to section 4B.

**Section 4B. Landslide hazard areas. (30.62B.340)**

1  Yes  No Will any site disturbance occur within a landslide hazard area or its required setback?

• If yes, continue with this checklist; if no, proceed to Section 4C.

*All of the following must be met if activities are proposed in a landslide hazard area.*

1  Yes  NA The project complies with the general requirements for erosion and landslide hazard areas listed in Section 4A of this checklist.

2  Yes  NA Activities in the landslide hazard area were only proposed after it was demonstrated that there was no alternate location on the subject property.

3  Yes  NA The following prescriptive landside hazard setbacks for structures have been used:

3a  Yes  NA Min. top of slope setback = (50') or (slope height / 3), whichever is greater

3b  Yes  NA Min. toe of slope setback = (50') or (slope height / 2), whichever is greater

3c  Yes  NA Slope setbacks shall be no less than the minimum necessary to ensure that structural shoreline stabilization measures will not be necessary to protect the development.

3d  Yes  NA If deviation from the prescriptive setback is necessary, it was first demonstrated that:

- (i) There is no alternate location for the structure on the subject property; and
- (ii) the geotechnical report demonstrates that the alternative setbacks provide protection which is equal to that provided by the standard min. setbacks, and meets the requirements of 30.62B.320.

- 4  Yes  NA The factor of safety for landslide occurrences was not decreased below the limits of 1.5 for static conditions or 1.1 for dynamic conditions. Analysis of dynamic conditions are based on horizontal acceleration as established by the current version of the IBC;
- 5  Yes  NA Tiered piles or piers will be used for structural foundations where possible to conform to existing topography in landslide hazard areas
- 6  Yes  NA Retaining walls that allow for the maintenance of existing natural slope area will be used wherever possible instead of graded artificial slopes
- 7  Yes  NA Construction of utility lines and pipes within landslide hazard areas has been proposed since there is no practical alternative. However, the following conditions will be met:
- (i) the line or pipe will be located above ground and properly anchored or designed so that it will continue to function in the event of an underlying slide; and
  - (ii) stormwater conveyance systems will be designed with high-density polyethylene pipe with fuse-welded joints, or similar product that are technically equivalent; or
  - (iii) alternatively, utilities may be bored below landslide hazard areas provided they are located beneath the depth of potential slope failure.
- 8  Yes  NA A continuous pipe will convey stormwater down-slope to a point where it does not increase risk to landslide hazard areas or other properties downstream of the discharge
- 9  Yes  NA Stormwater will be discharged at flow durations matching pre-developed conditions with adequate energy dissipation into existing channels;
- 10  Yes  NA Discharge upslope of the landslide hazard area will only occur if it is dispersed onto a low-gradient undisturbed setback adequate to infiltrate all surface and stormwater runoff; and the discharge will not decrease the stability of the slope.
- 11  Yes  NA No vegetation will be removed from the landslide hazard area, except for hazardous trees based on review by a qualified arborist or as otherwise provided for in a vegetation management and restoration plan (attach copy of plan).
- Date of vegetation management and restoration plan: \_\_\_\_\_
  - Once all boxes in Section 4B have been checked either yes or NA, proceed to section 4C.

**Section 4C. Seismic hazard areas. (30.62B.350)**

- 1  Yes  No Will any site disturbance occur on or within 200' of any seismic hazard areas<sup>2</sup>?
- If yes, continue with this checklist; if no, proceed to Section 4D.
- 2  Yes  NA A geotechnical report has been completed that meets the requirements of Section 3 above and demonstrates that the site is suitable for the proposed project.
- 3  Yes  NA The project meets applicable standards of the IBC and chapter 30.51A SCC.
- Once all boxes in Section 4C have been checked either yes or NA, proceed to section 4D.

**Section 4D. Mine hazard areas. (30.62B.360)**

- 1  Yes  No Will any site disturbance occur on or within 200' of a mine hazard area<sup>2</sup>?
- If yes, continue with this checklist; if no, proceed to Section 4E.
- 2  Yes  NA A geotechnical report has been completed that meets the requirements of Section 3 above and demonstrates that the site is suitable for the proposed project.
- 3  Yes  NA For any reclamation activity under the jurisdiction of the county pursuant to SCC 30.63B.360, as-built drawings must be submitted that reflect the final grades on-site, proper site stabilization and vegetative cover.
- Once all boxes in Section 4D have been checked either yes or NA, proceed to section 4E.

**Section 4E. Volcanic hazard areas. (30.62B.370)**

- 1  Yes  No Will any site disturbance occur on or within 200' of a volcanic hazard area<sup>2</sup>?
- If yes, continue with this checklist; if no, proceed to Section 4F.

- 1  Yes  NA The project has complied with the identification, disclosure, and recording requirements of SCC 30.62B.160.

- *Once all boxes in Section 4E have been checked either yes or NA, proceed to section 4F.*

**Section 4F. Tsunami hazard areas. (30.62B.380)**

- 1  Yes  No Will any site disturbance occur on or within 200' of a tsunami hazard area<sup>2</sup>?

- *If yes, continue with this checklist; if no, proceed to Final Directions below.*

- 2  Yes  NA The project has complied with the identification, disclosure, and recording requirements of SCC 30.62B.160 as evidence becomes available. In Tsunami Hazard Areas, project proponents are encouraged to follow the recommendations from "Designing for Tsunamis: Seven Principles for Planning and Designing for Tsunami Hazards".

- *Once all boxes in Section 4F have been checked either yes or NA, you have completed Section 4.*

- *Final Directions: This project is in compliance of all general requirements of 30.62B. Check Box 4 on page 1*

## APPENDIX

### Definitions

**30.91C.067 "Channel migration zones (CMZ)"** means the land adjacent to the current river channel that is at high risk of occupation by the channel within the next 100 years. The CMZ shall not include areas landward of natural or man-made features which limit channel migration. Such features may include, but are not limited to: bedrock outcroppings, bank armoring structures, or roads, railroads or flood control structures which receive regular maintenance sufficient to maintain structural integrity. Areas behind natural or manmade features which limit channel migration that allow fish passage shall not be included in the channel migration zone.

**30.91E.160 "Erosion hazard areas" means:**

- (1) Areas containing soils which are at high risk from water erosion according to the mapped description units of the United States Department of Agriculture Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, National Soil Classification System,
- (2) Channel migration zones; and
- (3) The shorelines of water bodies subject to wind and wave erosion.

**NRCS soils of Snohomish County with high risk from water erosion:**

Type 4:	Alderwood-Everett sandy loam	25% to 70%	Type 43:	Olomount-Elwell-Rock outcrop	65% to 90%
Type 11:	Cathcart loam	25% to 50%	Type 46:	Oso-Getchell-Rock outcrop complex	65% to 90%
Type 15:	Elwell-Olomount complex	15% to 30%	Type 49:	Pastik silt loam	25% to 50%
Type 16:	Elwell-Olomount-Rock outcrop	30% to 60%	Type 62:	Rober silt loam	30% to 65%
Type 29:	Kitsap silt loam	25% to 50%	Type 76:	Tokul-Ogarty-Rock outcrop complex	25% to 65%
Type 37:	Nargar-Lynnwood complex	30% to 65%	Type 77:	Tokul-Winston gravelly loam	25% to 65%
Type 41:	Ogarty-Tokul-Rock outcrop	65% to 90%			

**30.91L.040 "Landslide hazard areas"** means areas potentially subject to mass earth movement based on a combination of geologic, topographic, and hydrologic factors, with a vertical height of 10 feet or more. These include the following:

- (1) Areas of historic landslides as evidenced by landslide deposits, avalanche tracks, and areas susceptible to basal undercutting by streams, rivers or waves;
- (2) Areas with slopes steeper than 33 percent which intersect geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock, and which contain springs or ground water seeps; or
- (3) Areas located in a canyon or an active alluvial fan, susceptible to inundation by debris flows or catastrophic flooding.

**30.91S.121 "Seismic hazard areas"** means areas that have been determined by the building official to have known or inferred faults, ground rupture potential, liquefaction potential, or seismically induced slope instability, where such information is provided to Snohomish County through any of the following means: geotechnical studies and reports prepared by licensed professionals pursuant to chapter 19.27 RCW, SCC 30.62B.140 or 30.62B350; geotechnical studies and reports prepared by federal, state or local agencies; and geotechnical studies, reports or environmental impact statements prepared through the requirements of the State Environmental Policy Act (SEPA) chapter 43.21C RCW.

**30.91M.090 "Mine hazard areas"** means areas underlain by or affected by underground mine workings such as tunnels, air shafts and those areas adjacent to steep slopes produced by open pit mining or quarrying, but excluding any areas where the mine workings have been properly stabilized and closed and made safe consistent with all applicable federal, state and local laws.

**30.91S.350 "Site"** means that portion of the subject property within 200 feet of the development activity provided, however, that for subdivisions, short subdivisions, planned residential developments, and projects with binding site plans, the "site" shall include the entire subject property. *This definition applies only to CAR regulations in chapters 30.62A, B, and C.*

**30.91V.030 "Volcanic hazard areas"** means those areas subject to pyroclastic flows, lava flows, debris flows, mud flows, or related flooding resulting from volcanic activity originating on Glacier Peak, as indicated on maps produced by the United States Geological Survey.

**Tsunami hazard area:** This geologic hazard area has been identified, but not defined.

### Map of Seismic, Mine, Volcanic, and Tsunami Hazard Areas

*A link to map of these geologic hazard areas to be included in final product*