

SEPA ENVIRONMENTAL CHECKLIST

WAC 197-11-960

PURPOSE OF CHECKLIST:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

INSTRUCTIONS FOR APPLICANTS:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

USE OF CHECKLIST FOR NONPROJECT PROPOSALS:

For nonproject proposals complete this checklist and the supplemental sheet for nonproject actions (Part D). The lead agency may exclude any question for the environmental elements (Part B) which they determine do not contribute meaningfully to the analysis of the proposal.

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Holub Residence

2. Name of applicant:

Richard and Linda Holub

3. Address and phone number of applicant and contact person:

Applicant

**Richard and Linda Holub
27933 East Main Street
Redmond, WA 98053
Richard: 425-503-5564**

Contact Person

**Encompass Engineering & Surveying
ATTN: Costa Philippides, PE
165 NE Juniper St. Suite 201
Issaquah, WA 98027
425-392-0250**

4. Date checklist prepared:

October 15th, 2021

5. Agency requesting checklist:

King County

6. Proposed timing or schedule (including phasing, if applicable):

**Permitting: Fall 2021-Spring 2022
Construction: Spring-Fall 2022**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no future additions, expansion, or further activity related to or connected with this proposal anticipated at this time.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- **Critical Areas Designation - CADS19-0177**
- **Geotechnical Engineering Report by South Fork Geosciences, PLLC**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no known applications pending for governmental approvals of other proposals directly affecting the property covered by this proposal at this time.

10. List any government approvals or permits that will be needed for your proposal, if known.

The required governmental approvals and permits include Building Permit, Clearing and Grading Permit, Construction Stormwater General Permit, as well as SEPA review and determination.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The Applicant is proposing to construct a detached accessory dwelling unit (DADU) and a barn. The subject site is approximately 522,269 square feet (11.99 acres) in size. The present use for the subject property is one (1) single-family residence, which is proposed to be removed.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

- **Address: 27933 E Main Street, Redmond, WA 98053**
- **Tax Parcel #: 312507-9010**
- **Section, Township, Range: SW 31-25-7**
- **Legal Description:**
NE ¼ of GOV LOT 3 IN SW ¼ TGW PORTION OF E ½ OF SE ¼ OF SAID GOV LOT 3 LY NLY OF ROAD EASEMENT TGW W 150 FT OF NW ¼ OF NE ¼ OF SW 1/4

***Site Plan and Vicinity Map found in Attachment A.**

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat, rolling, **hilly, steep slopes**, mountainous, other...

b. What is the steepest slope on the site (approximate percent slope)?

The site slopes from west to east at slopes ranging from 6 to 20%, with an isolated steeper slope near the northeast corner of the property that is approximately 40%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long term commercial significance and whether the proposal results in removing any of these soils.

According to the Geotechnical Engineering Report prepared by South Fork Geosciences, soils on the project site are underlain by Vashon stade recessional deposits.

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.
King County Interactive Mapping Tool (iMap) indicates the site/surrounding area is an erosion hazard area, potential steep slope hazard area, critical aquifer recharge area (Category 2), seismic hazard area and landslide hazard area. South Fork Geosciences did not observe any evidence of soil movement or significant erosion features.
- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.
Grading and clearing of the project site is proposed to accommodate the construction of the barn, DADU, and driveway in the upper/western portion of the lot, furthest away from the steep slope hazards.
Excavation: 5,073 CY
Fill: 709 CY
Net: 4,364 CY Export
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Minor erosion is always possible with construction such as sedimentation and channelization. Erosion control measures will be put in place prior to commencing construction to reduce these risks. A Temporary Erosion and Sediment Control (TESC) plan and a Construction Stormwater Pollution Prevention Plan (CSWPPP) providing Best Management Practices during construction have been prepared for the project.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
Up to 15% of the project site is allowed to be covered by impervious surface per zoning. Impervious coverage resulting from the implementation of this project will be 4.1%, which is well below the maximum allowed per zoning.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
A Temporary Erosion and Sediment Control (TESC) plan and a Construction Stormwater Pollution Prevention Plan (CSWPPP) providing Best Management Practices during construction have been prepared for the project. Implementation of these plans, as required by code, will be reviewed throughout permit review process.

2. AIR

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
Air emissions from construction vehicles are anticipated to be consistent with the machinery typically used in single-family residential construction and are regulated by the Puget Sound Clean Air Agency.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no known off-site sources of emissions or odor that may affect this proposal.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

There are no measures to reduce or control emissions or other impacts to air at this time. The building permit will be reviewed for compliance with current regulations.

3. WATER

- a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There is a small on-site Category III wetland (requiring a 60-foot wetland buffer) located centrally along the site's southern boundary line. In addition, there is a Category I wetland (requiring a 225-foot buffer) off-site to the east of the subject property, extending to the north and south along Patterson Creek. A portion of the off-site wetland's buffer extends onto the subject property.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, development is proposed to be within 200 feet of the on-site Category III wetland. However, the only work proposed within the wetland's 60-foot buffer is the removal of an existing structure and replanting/enhancement of the buffer area with native vegetation. All other work associated with this project will be conducted outside of the wetland's buffer and associated building setback line. Please see the attached site plan.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No filled or dredged material is planned to be placed or removed from the wetlands or surface water at this time.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water withdrawals or diversions are proposed at this time.

5) Does the proposal lie within a 100-year flood plain? If so, note location on the site plan.

The project site does not lie within a FEMA 100-year floodplain, per the FEMA Flood Map Service Center. The flood map for the project site is number 53033C0705G, effective 08/19/2020.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal does not involve any discharge of waste materials to surface waters.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well? Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

A new well is proposed centrally on the site to supply the DADU with potable water. No discharge to groundwater is proposed at this time.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

An on-site septic system located in the southwest corner of the site is proposed to serve the DADU.

c. Water Runoff (including stormwater):

1) Describe the source of runoff (including stormwater) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

A portion of the driveway will be fully dispersed using sheet flow dispersion over a 100-foot native vegetated flowpath. All remaining stormwater runoff from roofs, the remainder of the driveway, and other impervious surfaces will be collected using gutters, trench drains, and standard catch basins and conveyed to two (2) 50-foot-long full dispersion trenches. Each dispersion trench will have a 200-foot native vegetated flowpath over which the tributary stormwater will disperse. The trenches will direct stormwater over densely vegetated slopes toward the northeast corner of the site, which is the natural discharge location for the site.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste materials are anticipated to enter the ground or surface waters. Runoff from all pollution-generating surfaces (i.e., driveway) will be fully dispersed over dense native vegetation, which will adequately treat the stormwater for water quality prior to entering the on-site wetland or any other surface water body.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The project does not propose to alter or otherwise affect drainage patterns. The drainage patterns will match that of the existing condition.

d. Proposed measures to reduce or control surface, ground, runoff water, and drainage pattern impacts, if any:

Drainage will be designed to mitigate runoff from all new/replaced impervious surfaces associated with the proposal on-site. Please refer to Question 3.c.1 for a description of the proposed mitigation measures.

4. PLANTS

a. Check the types of vegetation found on the site:

Deciduous tree: Alder, maple, aspen, other

Evergreen tree: Fir, cedar, pine, other

Shrubs

Grass

Pasture

Crop or grain

Orchards, vineyards or other permanent crops.

Wet soil plants: Cattail, buttercup, bullrush, skunk cabbage, other

Water plants: Water lily, eelgrass, milfoil, other

Other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Vegetation removal will be the minimum necessary to construct the proposed buildings and utilities, as determined by the applicable development requirements found in the King County Code. The total project disturbance area is 86,775 SF (1.992 AC). Approximately 53,775 SF (1.235 AC) of the project disturbance area is already cleared of trees and is vegetated with lawn/pasture. The remaining 33,000 SF (0.757 AC) of land within the project disturbance limits is currently forested. All new pervious areas within the disturbance limits will be replanted as lawn over compost amended soils.

c. List threatened and endangered species known to be on or near the site.

There are no known threatened or endangered species on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

All new pervious areas within the disturbance limits will be replanted as lawn over compost amended soils. The exception to this is the new pervious areas created by the removal of the existing residence, which is located within the on-site wetland buffer and building setback.

Areas within the wetland buffer and setbacks will be replanted/enhanced with native vegetation.

- e. List all noxious weeds and invasive species known to be on or near the site.
Common invasives are suspected to be onsite.

5. ANIMALS

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:
 - Birds: Hawk, heron, eagle, **songbirds**, other
 - Mammals: **Deer**, bear, elk, beaver, other
 - Fish: Bass, salmon, trout, herring, shellfish, other
- b. List any threatened and endangered species known to be on or near the site.
There are no threatened or endangered species known to be on or near the site.
- c. Is the site part of a migration route? If so, explain.
There are no known migration routes on the site. Generally, Western Washington is part of the Pacific Flyaway.
- d. Proposed measures to preserve or enhance wildlife, if any:
The existing residence is currently located within the on-site wetland's 60-foot buffer and building setback. The project proposes to remove this existing structure and replant/enhance the buffer area with native vegetation. Enhancing the wetland buffer will enhance wildlife habitat on the property.
- e. List any invasive animal species known to be on or near the site.
There are no known invasive animal species on or near the site.

6. ENERGY AND NATURAL RESOURCES

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.
Energy use will be consistent with a typical single-family residence as well as the machinery used during construction.
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
It is not anticipated that this project would affect the potential use of solar energy by adjacent properties.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

There are no energy conservation features included in the plans of this proposal at this time.

7. ENVIRONMENTAL HEALTH

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There are no known environmental health hazards that could occur as a result of this proposal.

- 1) Describe any known or possible contamination at the site from present or past uses.

There is no known contamination at the site from present or past uses.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no known existing hazardous chemicals/conditions that might affect project development and design.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There are no known toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction at any time during the life of the project.

- 4) Describe special emergency services that might be required.

There are no special emergency services anticipated to be required at this time beyond what is consistent with those typical of a rural residential area.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

There are no proposed measures to reduce or control environmental health hazards at this time.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise is that which is typical to a rural residential area.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Typical noise from construction vehicles is anticipated on a short-term basis during project construction.

- 3) Proposed measures to reduce or control noise impacts, if any:

Construction hours will be limited to what is required by King County. There are no additional measures to reduce or control noise impacts proposed at this time.

8. LAND AND SHORELINE USE

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposal will remain consistent with the current and neighboring properties' land use. A single-family home currently exists on the subject site (proposed to be removed). The adjacent properties to the north, west and east are also zoned RA-10 and single-family residences exist on those sites as well. The two lots that abut the subject site to the south are single-family homes and are zoned RA-5.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

A review of King County's iMap aerial imagery shows no record of the project site being used as a working farmland or working forest land. Aerial images for this area begin in 1998.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversized equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No affect on or by surrounding working farm or forest land is anticipated. A single-family home already exists on the subject site and the proposal is consistent with the designated land use and existing use.

- c. Describe any structures on the site.

The present use for the subject properties is one (1) single-family residence and associated outbuildings. The existing home was constructed in 1948 and is 1,950 square feet. There are two (2) bedrooms and one (1) bath in the existing house as well as an attached garage. According to the Assessor's website, the house is graded '6 – Low Average' and is in 'Poor' condition.

- d. Will any structures be demolished? If so, what?

Yes, the existing residence is proposed to be demolished.

- e. What is the current zoning classification of the site?

The project site is zoned RA-10 (Rural Area-10), which allows a density of one (1) dwelling unit per ten (10) acres.

- f. What is the current comprehensive plan designation of the site?
Rural Area.
- g. If applicable, what is the current shoreline master program designation of the site?
Not applicable.
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
Yes, per the King County Critical Area Designation (CADS19-0177 attached), the parcel is within a Category II Critical Aquifer Recharge Area (CARA), but since the subject site is greater than one acre in size, no restrictions apply for normal residential development. There are Steep Slopes along the eastern portion of the site. A small, partially on-site Category III wetland is located along the southern boundary line and an off-site Category I wetland is located to the east. The CAD letter also states that Erosion and Seismic Hazard Areas are present on-site, but typical single-family construction projects are not impacted by the presence of erosion hazards and the development is not in or near the seismic hazard areas. As required for projects located within an erosion hazard area, no clearing or grading work will be conducted during the wet season (October 1-April 1).
- i. Approximately how many people would reside or work in the completed project?
According to Redmond's average household size, 2.47, approximately 2 to 3 people are expected to reside in the completed project (US Census Bureau, QuickFacts, 2015-2019).
- j. Approximately how many people would the completed project displace?
None.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
Not applicable.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The proposal will meet density, dimension and design requirements of the underlying zoning and comprehensive plan to be compatible with existing and projected land uses.
- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
Does not apply.

9. HOUSING

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The project seeks to construct a detached accessory dwelling unit. Consistent with neighboring properties, the fair market constructed dwelling unit would be middle-income housing.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

The existing single-family residence is proposed to be removed and is estimated to be low-to-middle income housing.

- c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Pursuant to King County Code, the maximum base height is 40-feet. Building materials are to be determined.

- b. What views in the immediate vicinity would be altered or obstructed?

There are no known views in the immediate vicinity that would be altered or obstructed.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

There are no measures to reduce or control aesthetic impacts proposed at this time.

11. LIGHT AND GLARE

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

There is a potential of glare from windows, which will be consistent with that of a single-family residence.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

It is not anticipated that the finished project could be a safety hazard or interfere with views.

- c. What existing offsite sources of light or glare may affect your proposal?

It is not anticipated that any existing offsite light or glare sources will affect the proposal.

- d. Proposed measures to reduce or control light and glare impacts, if any:

No measures are proposed to reduce or control light and glare aside from the requirements of the King County Code.

12. RECREATION

- a. What designated and informal recreational opportunities are in the immediate vicinity?
A number of parks and outdoor recreational opportunities are within the vicinity of the proposal including the Sunshine Park, Blackstone Park, Hamilton Park, Preswick Playground and Serenity Park, all of which are approximately 4.5 to 5.0 miles away.
- b. Would the proposed project displace any existing recreational uses? If so, describe.
No existing recreational use will be displaced with this proposal. No zoning or land use designation changes are proposed.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
There are no measures to reduce or control impacts on recreation proposed at this time.

13. HISTORIC AND CULTURAL PRESERVATION

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
There are no known buildings, structures or sites located on or near the site that are listed in or eligible for listing in national, state, or local preservation registers per the Department of Archaeology and Historical Preservation's WISAARD mapping tool.
- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
There are no known landmarks, features, evidence of Indian/historic use/occupation, material evidence, artifacts, or areas of cultural importance located at or near the site.
- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.
The Department of Archeology and Historical Preservation's WISAARD mapping tool does not have the project site mapped as including landmarks, features or other evidence of Indian or historic use or occupation. If any indications are discovered during construction, work will stop immediately, and the appropriate authorities will be notified.
- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
There are no additional measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources proposed at this time as no historical properties have been identified in the immediate vicinity of the proposal.

14. TRANSPORTATION

- a. Identify public streets and highways serving the site or affected geographic area, and describe proposed access to the existing street system. Show on site plans, if any.

The main public street serving the site is East Main Street. Access is proposed via the private road off of East Main Street, which runs along the eastern and southern boundaries of the property.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The site is not currently served by public transit. The closest transit stop is located approximately 5.5 miles away at Redmond-Fall City Road/337th Place SE.

- c. How many additional parking spaces would the completed project or nonproject proposal have? How many would the project or proposal eliminate?

Both the DADU and the Barn include a 3-car garage, for a total of 6 covered parking spaces. Additional room for parking is available within the proposed driveway.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No road improvements are proposed at this time.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project is not in the immediate vicinity of water, rail or air transportation.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Approximately 1-3 weekday AM peak hour trips and 1-3 weekday PM peak hour trips are expected to be generated by the completion of one (1) detached accessory dwelling unit.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposal will not interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area.

- h. Proposed measures to reduce or control transportation impacts, if any:

There are no measures to reduce or control transportation impacts proposed or needed at this time. Transportation impact fees may apply and will be paid accordingly.

15. PUBLIC SERVICES

- a. Would the project result in an increased need for public services (for example: Fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The proposal will not result in an increased need for public services. The site currently includes 1 single-family residence which will be replaced by a single DADU.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

There are no measures to reduce or control direct impacts on public services proposed at this time. Impact fees may be applicable and will be paid accordingly.

16. UTILITIES


- a. Circle utilities currently available at the site: **Electricity, natural gas,** water, **refuse service,** **telephone,** sanitary sewer, **septic system,** other.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The project includes a new private on-site well and septic system. Electric power and natural gas will be supplied by Puget Sound Energy.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

COSTA PHILIPPIDES, PE
ENCOMPASS ENGINEERING & SURVEYING

Date Submitted: October 15th, 2021

[Statutory Authority: RCW 43.21C.110. WSR 16-13-012 (Order 15-09), § 197-11-960, filed 6/2/16, effective 7/3/16. Statutory Authority: RCW 43.21C.110 and 43.21C.100 [43.21C.170]. WSR 14-09-026 (Order 13-01), § 197-11-960, filed 4/9/14, effective 5/10/14. Statutory Authority: RCW 43.21C.110. WSR 13-02-065 (Order 12-01), § 197-11-960, filed 12/28/12, effective 1/28/13; WSR 84-05-020 (Order DE 83-39), § 197-11-960, filed 2/10/84, effective 4/4/84.]

ATTACHMENT A

SITE PLAN AND VICINITY MAP



King County
Department of Permitting
and Environmental Review

Residential Site Plan Template

Ref: KCC 21a.12.030
 Max. Impervious Surface Allowed _____
 Max. Bldg. Height Allowed _____
 Ref: KCC 21a.12.170
 Min. Blg. Setback From Street _____
 Min. Garage Setback From Street _____
 Min. Blg. Setback From Interior _____
 Permit Center validation:
 Zoning
 Site Review Not Applicable
 Validated Signature _____
 Login Initials _____ Date: _____

Engineering / Drainage Approval

Signature: _____
 Date: _____

Critical Areas Approval

Signature: _____
 Date: _____

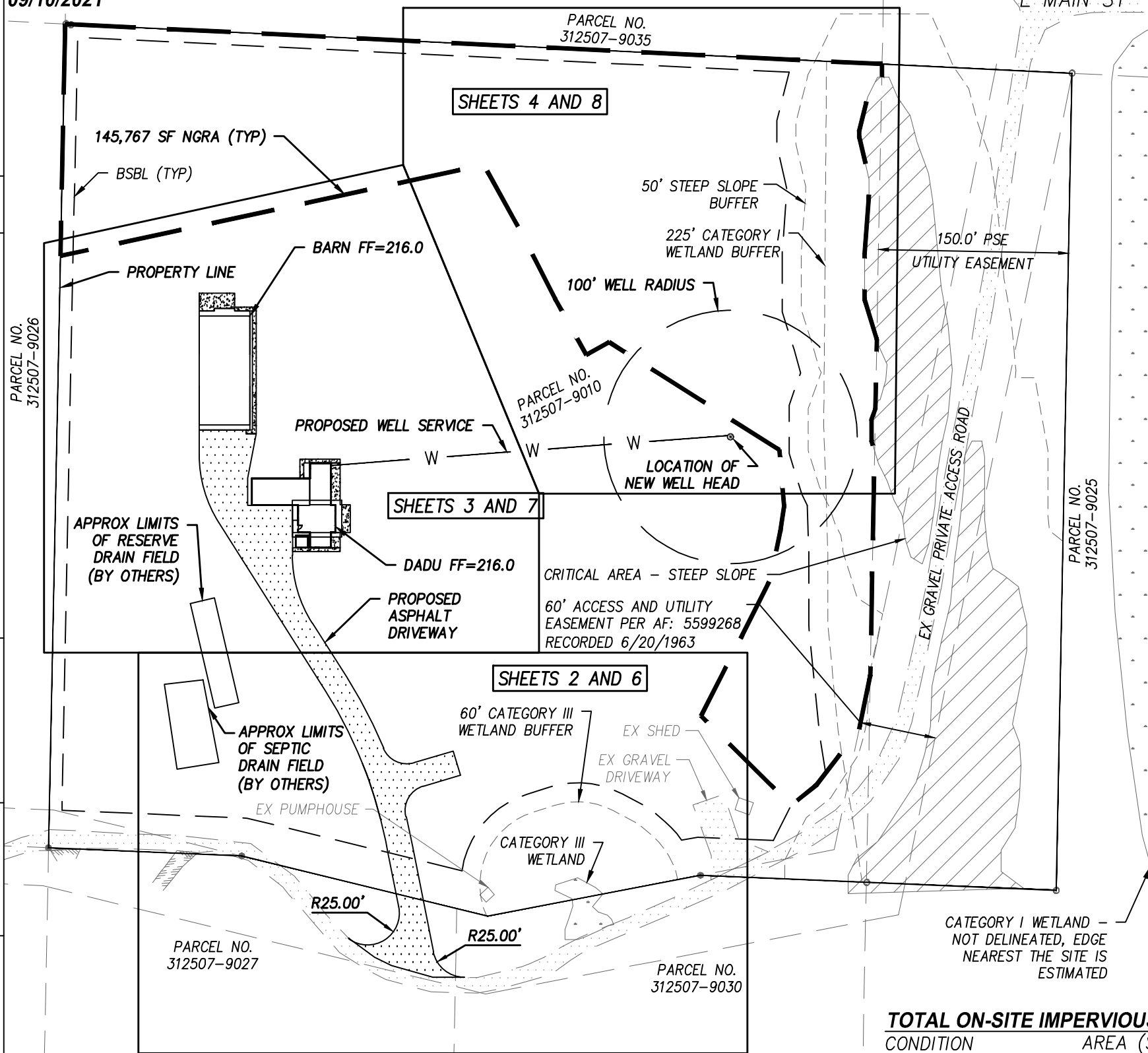
Clearing / Grading Approval

Signature: _____
 Date: _____

Fire Approval

Signature: _____
 Date: _____

09/10/2021



BSBL DISTANCES:

FRONT YARD	30'
SIDE YARD	10'
REAR YARD	10'
CRITICAL AREA	15'

EARTHWORK ESTIMATE:

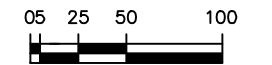
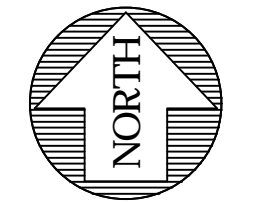
CUT (CY)	5,073
FILL (CY)	709
NET CUT EXPORT (CY)	4,364
(CONTRACTOR TO VERIFY)	
TOTAL OFF-SITE IMPERVIOUS:	
CONDITION	AREA (SF)
NEW DRIVEWAY	2,107

TOTAL ON-SITE IMPERVIOUS:

CONDITION	AREA (SF)
NEW DADU	2,709
NEW BARN	3,792
NEW WALKWAYS/PATIOS	1,374
NEW DRIVEWAY	11,835
EX DRIVEWAY	1,471
EX PUMPHOUSE	66
EX SHED	119
TOTAL IMPERVIOUS ONSITE	185
% IMPERVIOUS	4.1%

SHEET INDEX:

- SHEET TITLE**
- CIVIL SITE PLAN
 - TESC PLAN A
 - TESC PLAN B
 - TESC PLAN C
 - TESC DETAILS
 - GRADING AND DRAINAGE PLAN A
 - GRADING AND DRAINAGE PLAN B
 - GRADING AND DRAINAGE PLAN C
 - GRADING ENLARGEMENTS
 - CONSTRUCTION DETAILS
 - CONSTRUCTION DETAILS
 - CONSTRUCTION DETAILS



SCALE 1" = 100'

PROJECT TEAM:

APPLICANT/OWNER: RICHARD AND LINDA HOLUB
27933 E MAIN STREET
REDMOND, WA 98053

ENGINEER: COSTA PHILIPPIDES, PE
ENCOMPASS ENGINEERING & SURVEYING
165 N.E. JUNIPER STREET, SUITE 201
ISSAQUAH, WA 98027
(425) 392-0250

CONTRACTOR: JASON HOLUB
DLH INC.
44201 SE TANNER RD, SUITE A
NORTH BEND, WA 98045
(425) 985-2862

SURVEYOR: THOMAS WOLDENDORP
SITE SURVEYING
21923 NE 11TH ST
SAMMAMISH, WA 98074
(425) 298-4412

SEPTIC DESIGNER: BRAD DAVIS
DAVIS SEPTIC DESIGN
11726 CLEARVIEW DR
EDMONDS, WA 98026
(425) 248-1140

UTILITY DISTRICT INFORMATION:

WATER: PRIVATE
SEWER: PRIVATE
FIRE DISTRICT: KING COUNTY FIRE PROTECTION DISTRICT 27
GAS/ELECTRIC: PUGET SOUND ENERGY

SITE DATA:

SITE ADDRESS: 27933 E MAIN STREET, REDMOND, WA 98053
ZONING: RA-10 (MAX IMPERVIOUS = 15%)
TAX PARCEL NO.: 312507-9010
PARCEL AREA: 522,269 SF (±11.990 AC)
LEGAL DESCRIPTION: NE 1/4 OF GOV LOT 3 IN SW 1/4 TGW PORTION OF E 1/2 OF SE 1/4 OF SAID GOV LOT 3 LY NLY OF ROAD EASEMENT TGW W 150 FT OF NW1/4 OF NE 1/4 OF SW1/4



Encompass
ENGINEERING & SURVEYING

CIVIL SITE PLAN
HOLUB RESIDENCE
PROJECT # 20637
WITHIN NW SEC. 31, TWN 25N, RGE 7E

Permit Number: **DWEL21-0084**

Parcel Number: **312507-9010**

Applicant Name: **RICHARD HOLUB**

Site Address: **27933 E MAIN STREET**

Engineering Scale: 1" = **#####**

Sheet **1** of **12**

King County iMap



King County, EagleView Technologies, Inc.

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Date: 10/15/2021

Notes:



King County

ATTACHMENT B

CRITICAL AREAS DESIGNATION



King County

Permitting Division

Department of Local Services
35030 SE Douglas St., Ste. 210
Snoqualmie, WA 98065-9266
206-296-6600 TTY Relay: 711
www.kingcounty.gov

October 28, 2019

Richard Holub
27932 East Main Street
Redmond, Washington 98053

RE: Critical Areas Designation CADS19-0177, Parcel 312507-9010
Status: Complete

Dear Mr. Holub:

Your property was recently reviewed for a Critical Areas Designation. Our review consisted of a site visit and an in-office review of existing background data. The result of our study is that we have determined that your parcel is host to the critical areas discussed separately below. Specific impacts to development on your parcel are also discussed.

The determinations reported in this letter as to the existence, location, and classification of critical areas and critical area buffers are effective for five years from the date of this letter if there has been no change in site conditions. The Department of Local Services, Permitting Division (Permitting) shall rely on these determinations of the existence, location and classification of critical areas and critical area buffers in its review of complete applications for permits or approvals filed for the subject development site or parcel within five years after the letter is issued. If you do not plan to develop your property soon after receiving this letter, it may be in your interest to contact us to see if any of the conclusions in this letter have changed or are no longer valid.

Critical Aquifer Recharge Area (21A.24.311 to 21A.24.316)

Your parcel is within a Category II Critical Aquifer Recharge Area (CARA). However, because your site is greater than one acre in size, no restrictions apply for normal residential development.

Steep Slope Hazard Area (21A.24.310)

Your parcel contains some steep slopes. Steep slopes are defined as those slopes that exceed forty percent inclination (about 21 degrees) and have a vertical elevation change of at least ten feet. The buffer required between the steep slope and any proposed development (which is to remain unaltered native vegetation), without providing a geotechnical study, is generally 50 feet. Structures must maintain an additional 15-foot building setback beyond the buffer. Where a geotechnical study confirms that the slope is stable and that development will not create a hazard, the buffer may be reduced. For slopes that are less than 20 feet high and for slopes that are manmade or have been altered through previously legal grading, the requirements for a buffer and setback may be eliminated completely if a geotechnical study by a licensed

geotechnical or geological engineer or engineering geologist finds that the slope is stable and that the development will not adversely affect (or be affected by) the slope.

The steep slopes are roughly as shown on the attached site plan. Please note that we do not have access to data that are sufficiently accurate to locate precisely the steep slopes and determine their height. For that reason, the attached map should be thought of as an approximation only. Depending upon the nature of a future building proposal, a detailed topographic survey by a licensed surveyor may be advisable or even required.

In your case, none of the slopes appear to be exceptionally unstable. It is possible if not likely that a study of the parcel and your development proposal by a consulting geotechnical/geological engineer or engineering geologist would result in a recommendation to reduce the steep slope buffer to less than 50 feet and/or eliminate completely the buffer and building setback for those slopes less than 20 feet high. Until such a study is received and approved, the 50-foot buffers are still in effect. However, for the above reasons, no steep slope buffers are shown on the attached map. Depending upon the nature of proposed development, simple avoidance may be the most cost-effective approach to dealing with the slopes.

Please note that new private access roads and driveways can cross steep slopes with proper engineering, and existing roadways can be regraded and widened, as part of your building permit or under a separate grading permit. We can provide further information on the geotechnical information required to support such grading at the time you apply for a permit.

Erosion Hazard Area (21A24.220)

Erosion Hazard Areas are those areas that are underlain by soils that may be conducive to severe erosion when exposed. For typical single-family residence construction projects, the presence of an erosion hazard poses little impact to development proposals. There is no buffer or building setback required, and there is no impact to the proposed locations of structures, water wells, on-site septic systems, or new pavement. There may be some extra attention given to controlling storm water runoff and erosion during construction, but this would be considered during building permit review. However, for projects that would propose clearing more than 7,000 square feet of land you should confirm compliance with Chapter 16.82 of the King County Code, and for projects that would propose clearing more than 15,000 square feet of land you should confirm compliance with KCC 21A24.220.

Seismic Hazard Area (21A.24.290)

The topographically lowest portions of your parcel (close to the east property line) may be within a seismic hazard area. Seismic hazards, as defined here, include areas that host foundation soils that might liquefy during an earthquake, leading to loss of bearing capacity and settling or collapse of part of the structure. It is possible to build within a seismic hazard area, but only if mitigation is incorporated into the design of the structure (usually in the form of a special foundation) that eliminates or minimizes the impact of the hazard.

In order to determine the nature of the hazard, and hence the type of mitigation, we usually require an evaluation of the development site by a geological engineer or engineering geologist. The report should be a complete assessment of soil susceptibility to seismically induced liquefaction or other seismically induced settlement. Subsurface sampling is usually done, sometimes including deep borings, and if problematic soils are encountered, the engineer recommends appropriate changes to the building plans.

The presence of a seismic hazard area does not, however, affect the location of a septic system or water well. For this reason, we do not require a geological study until the building permit application review phase, although it is prudent to be aware of this issue prior to finalizing your building plans. If no structures are planned in the area that might be affected by the presence of this hazard, no further geological investigation would be necessary.

Wetlands (21A.24.318 to 21A.24.345)

Your parcel contains buffer areas from a Category I wetland and a Category III wetland. The buffer width for the Category I wetland (which on an undeveloped lot is to remain unaltered native vegetation) is 225 feet. The buffer for the Category III wetland is 60 feet. Structures must honor an additional 15-foot building setback beyond the buffer. Within a currently undeveloped buffer, no development of any kind is usually allowed, including clearing, grading, or any other alteration of the existing vegetation. Within legally developed buffers, maintenance of existing structures and landscaping is allowed as well as limited expansions of some structures.

In your particular case, the wetlands were described in report (dated September 19, 2019) by *Ed Sewall Wetland Consulting, Incorporated*. The parcel is located outside of the Urban Growth Area and a moderate impact project is assumed. The Category I wetland is located in the valley east of the parcel and extends to the north and south along Patterson Creek: it has a habitat score of 31 points. In this setting, Category I wetlands with habitat scores above 30 points are assigned 225-foot buffers. The Category III wetland is small and located just beyond the south property line. This wetland has a habitat score below 20 points. In this setting, wetlands such as these are assigned 60-foot buffers.

Water Service

New development in the rural area must be served by Group A water systems, Group B water systems or individual private wells as provided for in King County Code (KCC) 13.24.138. If potable water is required for development, a Certificate of Water Availability or approval of an alternative water source consistent with the priority order provided in KCC 13.24.138 will be required under KCC 21A.21A.28.040. Attached is a flow chart summarizing water service requirements and links to additional information. Read the chart by starting in the upper left corner, "Unincorporated King County, Property Location". It appears this property is not in a water service area, which should be confirmed by the applicant. It is the applicant's responsibility to verify water availability, in priority order, preceding submittal of an application. If you have questions about these requirements please contact Permit Review Coordinator at the Permitting Division.

CADS19-0177

Critical Areas located within the parcel:

- Category II CARA (not shown)
- Erosion Hazard Area (not shown)
- Seismic Hazard Area (on east end within wetland buffer)
- Steep Slope Hazard Areas
- Buffer from a Category III Wetland
- Buffer from a Category I Wetland

Steep Slope Hazard Areas
-Standard 50' buffer not shown



Category III Wetland

60' Wetland Buffer

15' BSBL

225' Wetland Buffer

Category I Wetland
-not delineated
-edge nearest the site is estimated



King County

DLS, Permitting Division; Critical Areas Review

APPROVED

Chris Holcomb

10/28/2019



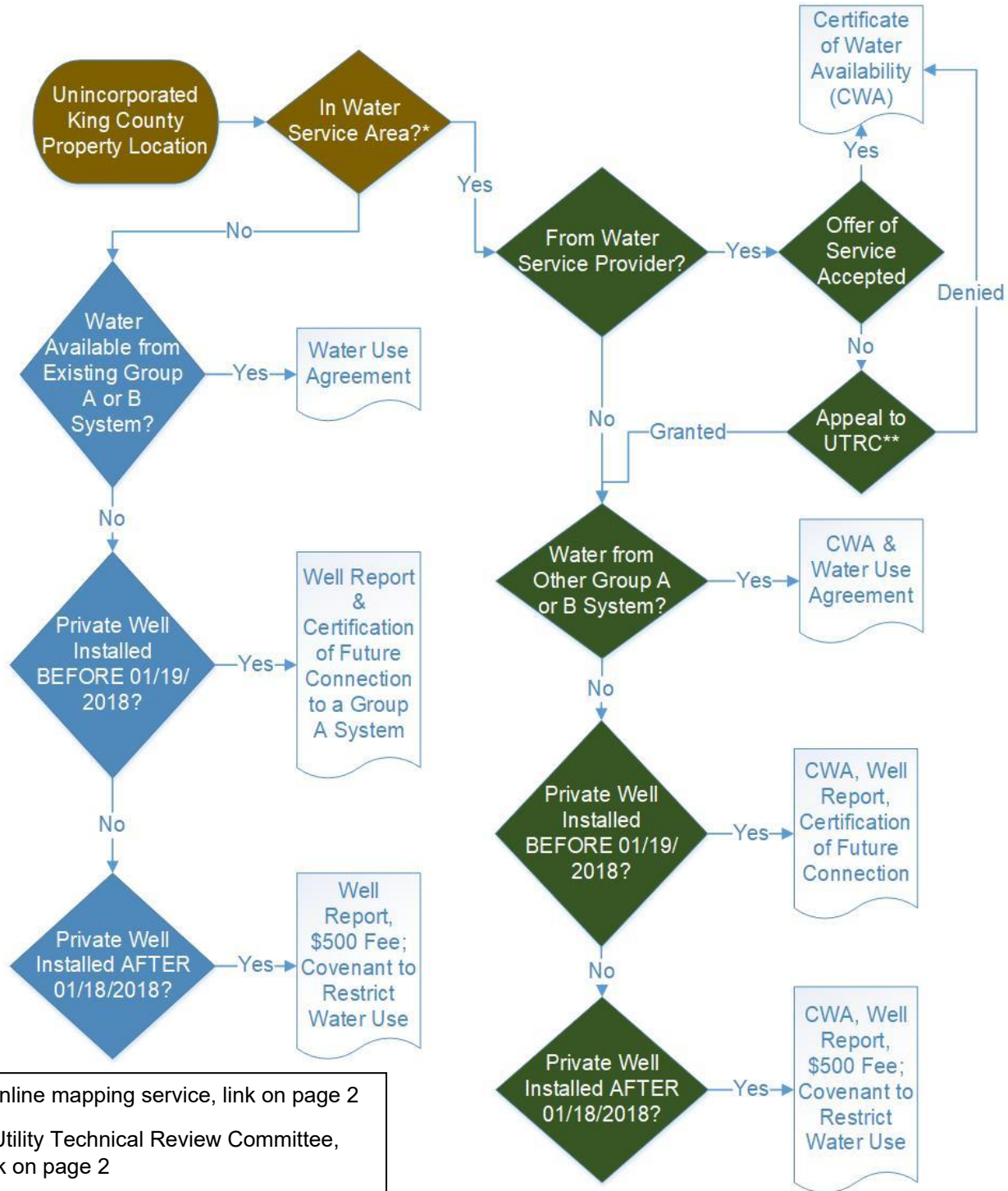
King County

The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

Date: 10/28/2019

Notes: Map not to scale.

Water Service Requirements



*Online mapping service, link on page 2

**Utility Technical Review Committee, link on page 2

Water Service Requirements, continued

Water Service Area Provider Notes:

If the water service area provider is not willing or able to provide a Certificate of Water Availability (CWA) that indicates water is not presently available at a property, a letter or email to that effect from the water service area provider will be sufficient in lieu of the CWA.

If the water service area provider is not willing to sign the Certification of Future Water Connection, an email or letter to that effect from the water service area provider will be sufficient and the applicant can record the certification with the email or letter as an attachment, in lieu of the water district signature.

The certification of future connection for properties not located in a water service area need only to be signed by the owner.

If you feel the offer of water availability from the water service provider is not timely and/or reasonable, you can appeal their determination of water availability to the Utility Technical Review Committee (UTRC), King County Department of Natural Resources and Parks. The link to their appeal procedures and application requirements are included below.

Resources:

Parcel Located in King County, [Check Jurisdiction and Zoning](#)

* Interactive [Water Service Area Maps](#)

[Water Availability; Certificate of Availability](#)

Dept. of Ecology, [Well Construction & Licensing](#) and [Well Notice of Intent](#)

Water Connection; [Certification of Future Water Connection](#)

Water Connection; [Certification of Future Water Connection to a Group A System](#)

Water Usage, Recording Document; [Covenant Form](#)

[Groundwater Maps and Reports](#)

Public Health, [Private Wells, Plumbing, Gas Piping and Onsite-Sewage Systems](#)

** Utility Technical Review Committee (UTRC) - [Water Service Appeal Procedures and Forms](#)

Closure

When you are applying to the Health Department for septic system design approval or water well site approval, please include a copy of this letter and any attachments with your application to them. Similarly, a copy should be included with any building permit application. This critical area determination is not based on a professional survey of the site. As a result, this CAD may be relied on for the type and general location of critical areas, but does not represent a confirmation of the precise boundaries of identified critical areas. Depending on the scope and type of development proposed on the site, a survey may be required with a permit application. If additional critical areas that are not reflected in the CAD become known during permit review, the development would still need to comply with applicable critical areas regulations.

The purpose of this review is to determine the location and classification of critical areas on your site that might affect your proposed development activities, and is not an approval of existing or proposed development. Additional reviews, including but not limited to drainage, clearing, grading, compliance with critical area codes, and fire flow may occur during the building permit review process.

A clearing and grading permit would be required in order to clear land for access to a well site within critical areas prior to obtaining a building permit.

Please feel free to contact me at 206-263-6950 or CHolcomb@kingcounty.gov if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Holcomb", with a long horizontal flourish extending to the right.

Chris Holcomb, MES
Environmental Scientist II-Ecologist

Attachments: Site Map
Water Service Requirements Flow Chart

ATTACHMENT C

USDA Soils Report

Custom Soil Resource Report for King County Area, Washington



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

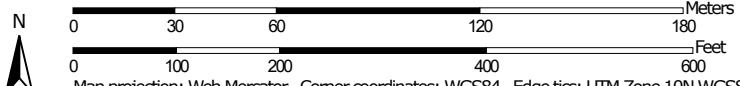
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map







































Map Scale: 1:2,230 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
- Soils**
 -  Soil Map Unit Polygons
 -  Soil Map Unit Lines
 -  Soil Map Unit Points
- Special Point Features**
 -  Blowout
 -  Borrow Pit
 -  Clay Spot
 -  Closed Depression
 -  Gravel Pit
 -  Gravelly Spot
 -  Landfill
 -  Lava Flow
 -  Marsh or swamp
 -  Mine or Quarry
 -  Miscellaneous Water
 -  Perennial Water
 -  Rock Outcrop
 -  Saline Spot
 -  Sandy Spot
 -  Severely Eroded Spot
 -  Sinkhole
 -  Slide or Slip
 -  Sodic Spot
- Water Features**
 -  Streams and Canals
- Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
 -  Aerial Photography
- Other Features**
 -  Spoil Area
 -  Stony Spot
 -  Very Stony Spot
 -  Wet Spot
 -  Other
 -  Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
 Survey Area Data: Version 16, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 22, 2019—Jul 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes	18.0	86.3%
EvC	Everett very gravelly sandy loam, 8 to 15 percent slopes	2.8	13.6%
Sk	Seattle muck	0.0	0.0%
Totals for Area of Interest		20.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

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delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

King County Area, Washington

AgD—Alderwood gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t627

Elevation: 0 to 1,000 feet

Mean annual precipitation: 25 to 60 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 160 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Alderwood and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, nose slope, talf

Down-slope shape: Linear, convex

Across-slope shape: Convex

Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam

Bw1 - 7 to 21 inches: very gravelly sandy loam

Bw2 - 21 to 30 inches: very gravelly sandy loam

Bg - 30 to 35 inches: very gravelly sandy loam

2Cd1 - 35 to 43 inches: very gravelly sandy loam

2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: 20 to 39 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 18 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Forage suitability group: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

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Hydric soil rating: No

Minor Components

Indianola

Percent of map unit: 5 percent
Landform: Eskers, kames, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Everett

Percent of map unit: 5 percent
Landform: Kames, eskers, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

EvC—Everett very gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t62b
Elevation: 30 to 900 feet
Mean annual precipitation: 35 to 91 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Everett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Everett

Setting

Landform: Kames, eskers, moraines
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glacial outwash

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: very gravelly sandy loam
B_w - 3 to 24 inches: very gravelly sandy loam
C₁ - 24 to 35 inches: very gravelly loamy sand
C₂ - 35 to 60 inches: extremely cobbly coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (K_{sat}): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Forage suitability group: Droughty Soils (G002XS401WA), Droughty Soils (G002XF403WA), Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XS401WA), Droughty Soils (G002XF403WA), Droughty Soils (G002XN402WA)
Hydric soil rating: No

Minor Components

Indianola

Percent of map unit: 10 percent
Landform: Kames, terraces, eskers
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Alderwood

Percent of map unit: 10 percent
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talus
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Sk—Seattle muck

Map Unit Setting

National map unit symbol: 1hmv4
Elevation: 0 to 1,000 feet
Mean annual precipitation: 25 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Seattle and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Seattle

Setting

Landform: Depressions
Parent material: Grassy organic material

Typical profile

Oa1 - 0 to 11 inches: muck
Oa2 - 11 to 60 inches: stratified mucky peat to muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Very high (about 23.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Forage suitability group: Wet Soils (G002XN102WA)
Other vegetative classification: Wet Soils (G002XN102WA)
Hydric soil rating: Yes

Minor Components

Shalcar

Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

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Tukwila

Percent of map unit: 10 percent

Landform: Depressions

Hydric soil rating: Yes

Bellingham

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Norma

Percent of map unit: 2 percent

Landform: Depressions

Hydric soil rating: Yes

References

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- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ATTACHMENT D

EMISSIONS WORKSHEET



Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home.....	1		98	672	792	1562
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home.....	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other Than Mall).....		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0

Section II: Pavement.....

Pavement.....		11,835.00				591750
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Total Project Emissions:

593312

Data entry fields

ATTACHMENT E

South Fork Geosciences, PLLC Geotech Report

Richard Holub
dick@dlhinc.com

**Subject: Geologic Hazards Assessment, Preliminary Soil Design Information,
and Conceptual Drainage Plan Review**
Holub Property, Parcel #3125079010, Redmond, Washington

Mr. Holub:

The purpose of this letter is to provide some preliminary soils information about the subject property, our opinion on the conceptual drainage plan, and some general commentary on the geologic hazard area on the subject property. Based on the recent design team correspondence, clarification with respect to some of the mapped geologic hazard areas (critical areas) is needed from King County staff. Our intention is to provide some preliminary soil design information and our assessment of the design approach in consideration of the soil and geologic conditions.

Proposed Project

Based on our correspondence and review of the referenced plan (Encompass Engineering, DATE), it is our understanding that you intend to build a barn and a detached accessory dwelling unit (DADU) on the subject property.

Site Conditions

The subject property (Parcel #3125079010) was located at 27933 East Main Street in Redmond, Washington. The subject property was irregularly shaped but was generally rectangular with the property lines in north-south/east-west orientation. The King County Department of Assessments information indicated that the property was 12.50 acres (544,500 square feet) in size. The bulk of the property gently sloping from the west down to the east, at slopes ranging from approximately 6 to 20 percent. There is an isolated steeper slope near the northeast corner of the property that is on the order of 40 percent. This slope is not near the areas associated with the planned development. Based on the grading plan, the total relief on the subject property is on the order of 160 feet. A gravel road from East Main Street serves the property, entering near the northeast property corner, running along the east edge of the property and then to the west along and near the south property line. This gravel road also services adjacent properties to the south and west. The subject property is bordered on all sides by other residential properties.

There is an existing home on the property that is in disrepair and is to be demolished as a part of this development. There were also a shed and a pumphouse associated with the existing home. The middle of the property had been cleared and consisted of grass yard/pasture-type area. There had also been some drainage improvements associated with the driveway and other site features.

We did not observe any evidence of soil movement or significant erosion features during our site reconnaissance. There were some wetland areas near the southern portion of the



property. The wetland area (Category III) is delineated and will have a 60-foot buffer. It is our opinion that this wetland will not adversely affect, or be adversely affected by, the proposed development.

Geologic Mapping

Our review of the referenced geologic map (Dragovich et al, 2007) indicates that the subject property is underlain by Vashon stade recessional deposits consisting of outwash gravels and glaciolacustrine deposits. Based on our observations of minor existing excavations, road cut slopes, and the ground surface, it is our opinion that the geologic mapping is correct.

These type of Vashon recessional deposits were deposited in fluvial and lacustrine environments as the Vashon glacial ice sheet receded. As such, these sediments were not overconsolidated by the glacial ice. While not as dense as lodgement till or advance outwash sediments, recessional outwash deposits have been normally consolidated since their deposition and are generally suitable for support of lighter structural loads typical of residential construction.

Geologic Hazards Assessment

The following discussion of potential geologic hazards is based on the visual reconnaissance of the site, reviews of aerial photographs and regional topographic and geologic maps of the area, and review of the information available on the King County Interactive Mapping Tool (iMap). The iMap information indicates the following geologic hazards: Erosion Hazard Area, Potential Steep Slope Hazard Area, Critical Aquifer Recharge Area (Category 2), Seismic Hazard Area and a Landslide Hazard Area that was within the "Stormwater Services" map layer tree, which is not a typical GIS layer for determining geologic hazards. We will address these items in the following subsections:

Erosion Hazard Area (21A.24.220) Temporary Erosion and Sediment Control (TESC)

A significant portion of the subject property and the area to be developed is mapped as an erosion hazard area. However, erosion hazard areas are not buffered geologic hazards and it is our opinion that erosion and runoff can be controlled during construction by implementing TESC measures consistent with the standard of practice for the Puget Sound region. The following is a partial list of best management practices (BMPs) that should be implemented:

- Prevention and maintenance of vehicle sediment track-out
- Temporary soil cover, as appropriate
- Perimeter controls, as appropriate
- Establish permanent vegetation soon after grading is complete

Implementation of TESC measures will likely be a requirement of the clearing and grading permit or the building permit. South Fork Geosciences is available to assist in the design of the TESC plan and to provide any required inspections during construction.

Potential Steep Slope Hazard Area

There are some potential steep slope areas upslope of the gravel road in the northeast portion



of the property. Though on the order of 40 percent in places, we did not observe any signs of recent slope movement or accelerated erosion. These slopes are not near the proposed development and it is our opinion that any slope related hazard areas are mitigated through avoidance.

Critical Aquifer Recharge Area (Category 2) (21A.24.316)

Portions of the subject property are mapped as Category II Critical Aquifer Recharge Areas. However, due to the size of the property, there are no restrictions with respect to CARAs for the proposed development.

Seismic Hazard Area (21A.24.290)

The eastern portion of the property is mapped as a seismic hazard area. This is due to the presence of Quaternary peat deposits in the bog to the east of the property. These soils do not underlie the area to be developed and as such the proposed development should not be encumbered by seismic hazard areas. Liquefaction is a condition where loose, saturated, fine sands lose their shear strength due to rapid pore pressure build-up when subjected to high intensity cyclic loads that can occur during earthquakes. Based on the native, moderately to well-graded sediments underlying the area to be developed and the lack of adverse groundwater conditions (minor perched water rather than a static groundwater table), it is our opinion the liquefaction potential of this site is low, and no mitigations are necessary.

Landslide Hazard Area (Stormwater Services mapping layer)

Based upon our site reconnaissance, the topographic and geologic conditions present, and the lack of geomorphic evidence of past landslide activity, it is our opinion that the site conditions do not fulfill the codified definition/criteria of a landslide hazard area (KCC 21A.06.680). However, King County staff brought the Stormwater Services landslide hazard area mapping layer to Mr. Holub's attention. It appears that this mapping layer was designed to flag sensitive drainage basins and natural slopes with respect to stormwater drainage design, but we could not determine from the iMap layer source information what data or interpretation this mapping was based on. We have attached images of the landslide hazard area related iMap layers, the typical layer from the "Environmentally Critical Areas" map tree, which does not indicate the presence of landslide hazard areas, and the "Stormwater Services" map tree mapping layer that shows landslide hazard areas. South Fork Geosciences has reached out to King County staff for clarification with respect to this mapping layer discrepancy, but we have not received a response at the time this letter was prepared.

We presume that the code definition/criteria for a landslide hazard area would dictate the development standards for the property, and the property clearly does not constitute a landslide hazard area per KCC 21A.06.680. Upon clarification of the implications of this "Stormwater Services" mapping layer by King County staff, South Fork Geosciences will provide additional assessment or supplemental information, as required.



Preliminary Soil Design Information

Full architectural and civil engineering plans were not available for review at the time this report was prepared. The design recommendations in this report should be considered preliminary, and upon completion of additional site work, South Fork Geosciences will provide additional information with respect to soils design elements. We anticipate working with the architect and civil engineer to ensure that our recommendations will be properly incorporated into the design of the structures and site work.

Feasibility of General Site Development

Based on our site reconnaissance and geologic research, the subject property is suitable for the proposed development, provided there are not additional requirements from the mapped landslide hazard areas that are not based on the codified landslide hazard area definition. As evidenced by our observations of the soil and nearby homes, structures may be designed to bear on conventional spread footing foundations on the native soils or structural fill placed upon native soils. South Fork Geosciences will provide soil design values and additional design recommendations upon completion of subsurface exploration within or near future building pads.

Stormwater Infiltration Feasibility

Based on the surface exposures of relatively fine-grained recessional glaciolacustrine deposits, and the presence of wetlands and surface water on portions of the property, it is our opinion that stormwater infiltration is not feasible for the proposed development. However, due to the gently sloping site conditions, the weathered soil horizon, and the native vegetation, the site conditions are well suited for stormwater dispersion.

Conceptual Drainage Plan Review

We have reviewed the referenced drainage plan (Encompass Engineering, provided January 12, 2021) and agree that full dispersion of stormwater is the best design approach for the proposed development. It is our opinion that the placement of the dispersion flow paths in native vegetated areas is consistent with the natural site drainage patterns. Due to the soil and vegetation conditions present, it is our opinion that stormwater dispersion flow paths on slopes up to 20 percent are allowable.



Closure

We have enjoyed working with you on this project and are confident that the information provided in this letter will aid in the design of your project. If there are any questions about this letter, please feel free to contact us.

Sincerely,



Andrew L. Glandon

Andrew L. Glandon, LEG
Engineering Geologist / Owner
South Fork Geosciences, PLLC

Attachments: Typical Mapped Geologic Hazard Layers
Surface Water Design Manual Mapped Landslide Hazard Layers

References:

King County Department of Assessments,
<https://blue.kingcounty.com/Assessor/eRealProperty/Detail.aspx?ParcelNbr=3125079010>

"Grading and Drainage Plan, Holub Residence, Project#20637", Encompass Engineering and Surveying, provided via e-mail on January 12, 2021

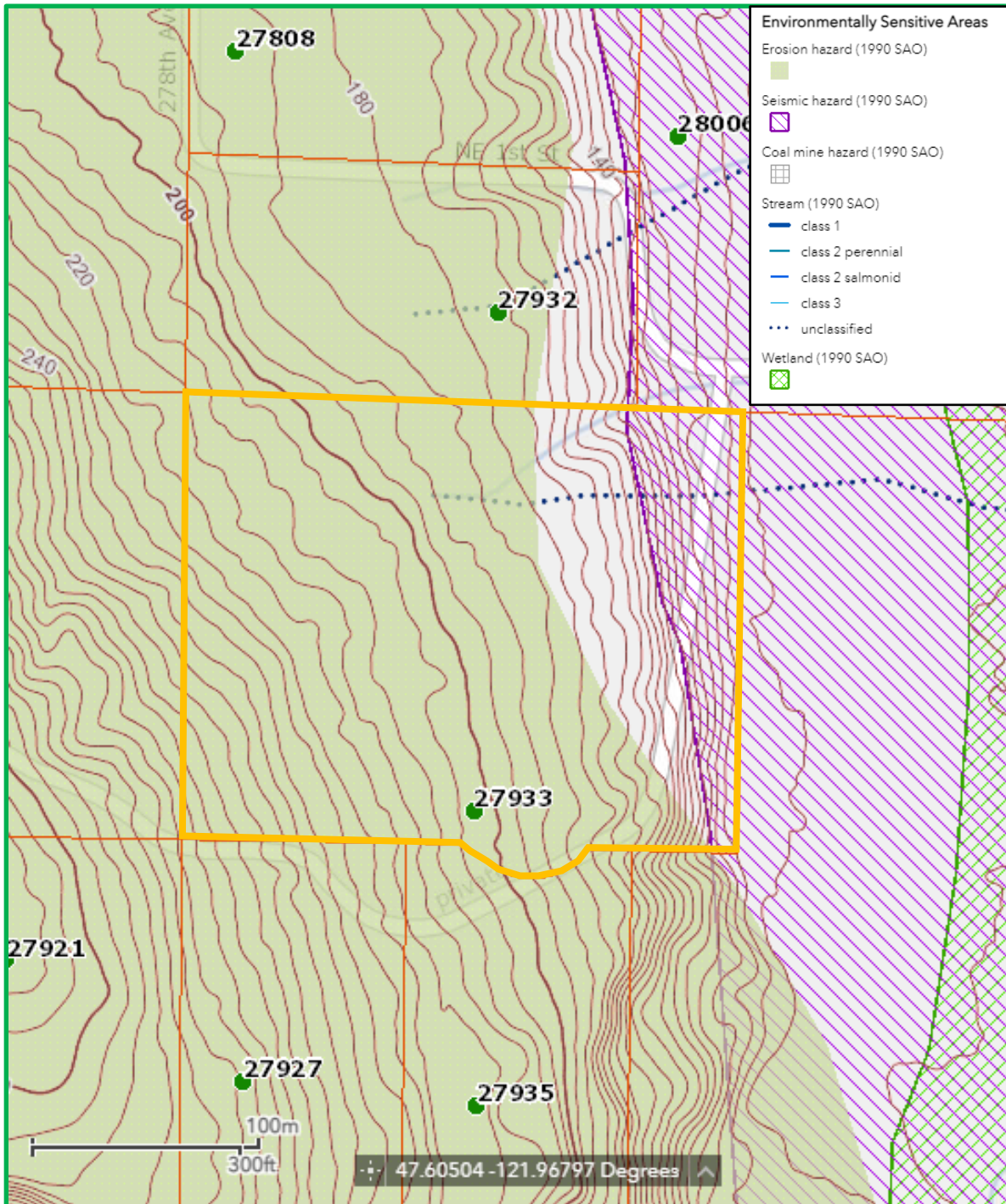
"Geologic Map of the Fall City 7.5-minute Quadrangle, King County, Washington" by Joe D. Dragovich, Megan L. Anderson, Timothy J. Walsh, Brendon L. Johnson, and Tamara L. Adams, WA Division of Geology and Earth Resources, Geologic Map GM-67, November 2007

Washington State Geologic Information Portal, <https://geologyportal.dnr.wa.gov/>

King County Code, http://www.kingcounty.gov/council/legislation/kc_code.aspx

King County Interactive Mapping Tool (iMap), <https://gismaps.kingcounty.gov/iMap/>

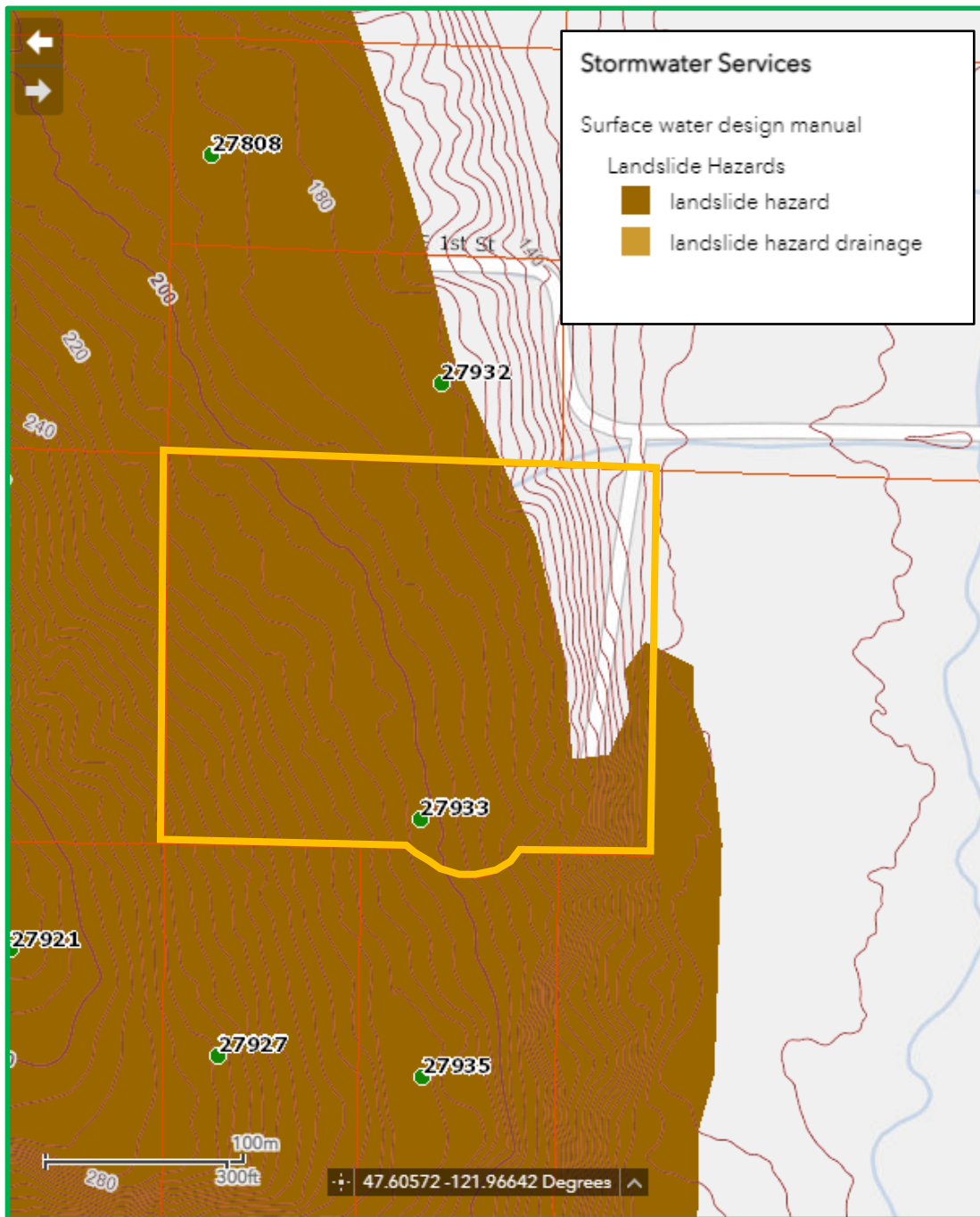




Source: King County iMap

Typical Mapped Geologic Hazard Layers





Source: King County iMap

Surface Water Design Manual Mapped Landslide Hazard Layers

