

DWEL20-0033

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## **SEPA ENVIRONMENTAL CHECKLIST**

### ***Purpose of checklist:***

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

### ***Instructions for applicants:***

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

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.

### ***Instructions for Lead Agencies:***

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

### ***Use of checklist for nonproject proposals:***

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

## A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

*Smyth Residence*

2. Name of applicant:

*Joseph M. Smyth*

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

*Applicant: Joseph M. Smyth, 206-240-4715, 3832 134<sup>th</sup> Ave NE, Bellevue, WA 98005*

*Contact Person: Nicole Mecum, Encompass Engineering & Surveying, 425-392-0250. 165 NE Juiper ST, STE 201, Issaquah, WA, 98027*

4. Date checklist prepared:

*1/31/2020*

5. Agency requesting checklist:

*King County*

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

*Permitting during winter 2020, construction during Spring and Summer 2020*

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

*None known.*

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

*Critical Areas Designation, prepared by King County Department of Permitting and Environmental Review, dated May 3, 2018*

*USDA Soils Report, January 31, 2020*

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.

*We are not aware of any other pending governmental approval directly affecting the property other than those submitted with the proposal.*



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

*Building, clearing & grading, septic, and DOE NPDES stormwater permits as well as DNR Class IV Special Forest Practices Permit and SEPA review and determination will be required.*

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 project is located in unincorporated King County on a 285,792 SQ FT (6.56 Acres) lot that is zoned as residential RA-2.5, located near Snoqualmie, Washington. The property is divided diagonally by a stream that runs from the northeast corner of the property toward the southwest. The lot is currently undeveloped and moderately forested. Stormwater from the site flows at slopes between 0-12% toward the on-site stream. The proposed 3,094 SF single-family residence with 1,129 SF of concrete pads/walkways/patios is to be located along the northern property line, northwest of the on-site stream. A 2,484 SF driveway will provide access to the residence from SE 47<sup>th</sup> Street. The total proposed impervious surface is 6,707 SF.*

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.

*Please see attached Vicinity map. Site address 3XXXX SE 47th Street, Snoqualmie, WA 98065 and the parcel number is 182408-9048. An abbreviated legal description is: LOT 4 KCSP #480012 REC # 8103300567 SD SP DAF BEG S 1/4 COR SEC 18-24-08 TH S 88-05-18 W 400.43 FT ALG S LN SD SEC TH N 00-27-40 E 990.84 FT TH N 88-05-13 E 402.60 FT TO CENT OF SEC LN TH S 00-35-11 W .94 FT TH S 89-21-46 E 466.85 FT TH S 00-35-11 W 990.01 FT TO S LN SD SEC TH N 89-21-46 W 466.85 FT TO S 1/4 COR & POB TGW UND INT IN TR A KCSP 480011 REC #8103300566*

## **B. Environmental Elements** [\[HELP\]](#)

### **1. Earth** [\[help\]](#)

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)?

*Approximately 12%*

- 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.

*This site soil is predominantly characterized as Barneston gravelly ashy coarse sandy loam per the USDA Soil Survey (attached).*

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

*There are no known surface indications or history of unstable soils in the immediate vicinity according to King County iMaps, Lidar Swipe and observation.*

- 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.

*Purpose: A minimal amount of grading, filling and excavation is proposed for the new driveway and home.*

*Excavation: To be determined during design*

*Fill: To be determined during design*

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

*Erosion could occur as a result of the clearing and construction activities proposed for the site, but best management practices will be implemented to minimize erosion risk during clearing and construction. In addition, the relatively flat grades on-site will limit potential erosion problems.*

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

*Approximately 2.3% of the project site will be covered by impervious surface created by the described construction activities. Exact impervious coverage numbers will depend on the final house design, but will be no more than 25% per King County zoning for RA-2.5*

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

*Implementation of Temporary Erosion and Sediment Control (TESC) and other Best Management Practices (BMPs), as required by code, will be reviewed through the building permit review process.*



## 2. Air [\[help\]](#)

- 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 are expected to be consistent with the machinery typically used in single-family residence construction, and are regulated by the Puget Sound Clean Air Agency. Please see attached GHG Emissions Worksheet for estimated quantities. Final estimates will be based on final house and driveway designs.*

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

*None known.*

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

*No mitigation is planned at this time. The building permit will be reviewed for compliance with current regulations.*

## 3. Water [\[help\]](#)

- a. Surface Water: [\[help\]](#)

- 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 Type N unnamed stream on the site that requires a 65 foot buffer. The stream is tributary to Tokul Creek.*

- 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.

*Construction of the residence and a portion of the driveway is proposed approximately 200' from the stream, but no work will be required within the 65 foot stream buffer and appropriate setbacks will be observed.*

- 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.

*Does not apply. No work is proposed within the aquatic area.*

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

*Does not apply. No work is proposed within the aquatic area.*

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

*The parcel is not located within a 100-year floodplain per King County iMap and FEMA maps.*

- 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: [help](#)

- 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.

*Groundwater withdrawn from an existing well will continue to be utilized for the proposed single-family residence.*

- 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 onsite septic system is proposed to serve the proposed single-family residence.*

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) 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.

*The subject property is not currently connected to storm water infrastructure and stormwater currently sheetflows toward the on-site stream that flows in the southwesterly direction across the site where it discharges near the southwest property corner. The proposal would involve stormwater dispersion for all new impervious and new pervious surfaces following the natural drainage that currently exists onsite. Stormwater dispersion will meet current King County regulations via the use of sheet flow dispersion and two gravel filled full dispersion trenches with notched boards and appropriate native vegetated flowpaths.*

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

*Unlikely. The finished home and driveway will be connected to the proposed storm drainage system. During construction, TESC measures will be in place, or other Best Management*

*Practices, and the contractor will be required by the County to have a Stormwater Pollution Prevention Plan (SWPPP) in case of a problem with construction machinery.*

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

*The proposed stormwater drainage plan follows the natural drainage patterns of the property and the vicinity. The proposal is unlikely to affect or alter drainage patterns in the vicinity of the site.*

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

*Implementation of Temporary Erosion and Sediment Control (TESC) and/or other Best Management Practices (BMPs), as required by code, address runoff and drainage will be evaluated during the building permit application. The contractor is required to have a SWPPP to manage any spills during construction. The finished home will include a stormwater dispersion system.*

#### **4. Plants** [\[help\]](#)

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

\_x\_deciduous tree: alder, maple, aspen, other  
\_x\_evergreen tree: fir, cedar, pine, other  
\_x\_shrubs  
\_x\_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?

*Approximately 2.85 acres of existing vegetation (including deciduous trees, evergreen trees, shrubs, and grass) will be removed and replanted as lawn and pasture, as determined by the applicable development requirements found in the King County Code.*

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

*None known.*

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



*Slope disturbances will be revegetated per King County code. No other plantings are proposed at this time.*

- e. List all noxious weeds and invasive species known to be on or near the site.

*Common invasives are suspected.*

## **5. Animals** [\[help\]](#)

- 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.

*None known.*

- c. Is the site part of a migration route? If so, explain.

*No local migration routes are known to cross the project site. Generally, Western Washington is part of the Pacific Flyway.*

- d. Proposed measures to preserve or enhance wildlife, if any:

*None proposed.*

- e. List any invasive animal species known to be on or near the site.

*None known.*

## **6. Energy and Natural Resources** [\[help\]](#)

- 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, and the machines used during construction. Electrical utilities will be provided by Puget Sound Energy for the finished project. A backup power generator and a private propane tank for heat will also be installed on-site.*

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

*No. The proposed project will not likely overshadow adjacent properties to the point of limiting potential use of solar energy on those 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:

*No conservation features are proposed.*

## **7. Environmental Health** [\[help\]](#)

- 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.

*No environmental health hazards are anticipated as a result of this proposal.*

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

*There are no known present or past contaminations.*

- 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 or conditions which might affect the project development or 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.

*None anticipated.*

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

*EMS needs will be consistent with those typical of a single-family residence.*

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

*None needed.*

### **b. Noise**

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

*Generally existing noise is that which is typical to a rural residential neighborhood. However, the Snoqualmie Valley Rifle Club is located approximately approximately ¼-mile south of the property.*

- 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 construction related noise will occur during project construction. Long term noise created by the project would be consistent with a rural residential neighborhood.*

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

*During home construction, construction hours will be limited as required by King County code.*

## **8. Land and Shoreline Use** [\[help\]](#)

- 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 project site consists of an existing private well, but is otherwise undeveloped and moderately forested. The proposal includes the development of single-family residence. The proposal will not affect the land use on adjacent properties and is consistent with their existing use.*

- 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?

*The project site consists of forested land cover. A review of King County's iMap aerial imagery shows canopy coverage over the entire site in the oldest aerial photograph record available from 1998. Subsequent aerial photography shows no disturbance to the forested land coverage. There is no record of the subject property being used as working farmlands or working forest lands. No areas with farmland or forest land tax status will be converted to nonfarm or nonforest use.*

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

*The proposal will not affect nor be affected by working farms as the surrounding area is rural residential. Additionally while some agricultural activities may take place in the surrounding rural residential area, commercial farming is limited and controlled in this zone. These agricultural uses will not impact the proposal nor be impacted by the proposed residence. The proposal is not replacing any existing agricultural activities.*

- c. Describe any structures on the site.



*There are no existing structures located on the site.*

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

*No structures are proposed to be demolished at this time.*

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

*RA-2.5*

f. What is the current comprehensive plan designation of the site?

*RA*

g. If applicable, what is the current shoreline master program designation of the site?

*Not applicable. The site is not designated by any shoreline master programs.*

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

*Per the Critical Areas Designation prepared by King County Department of Permitting and Environmental Review and dated May 3, 2018, a Type N aquatic stream is present on the site as defined by the King County code. A 65 foot buffer with additional 15 foot building setback will be adhered to by the project.*

i. Approximately how many people would reside or work in the completed project?

*If built, a single family residence would be constructed on the lot. It is estimated that approximately 3 people may reside in the completed project.*

i. Approximately how many people would the completed project displace?

*None.*

j. 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 is similar and compatible with existing surrounding land uses. This project proposes a single-family residence at a density that is allowed and supported by the surrounding area's existing use and zoning.*

- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

*There are no known agricultural and/or forest lands of long-term commercial significance nearby. Most of the agricultural activity within the surrounding area is accessory to residential use.*

## **9. Housing** [\[help\]](#)

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

*The project seeks to construct one middle-high income single family residence.*

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

*None.*

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

*Not applicable.*

## **10. Aesthetics** [\[help\]](#)

- 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 the King County Zoning Code Title 21A, the proposed structure shall not exceed 40 feet in height.*

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

*No territorial views will be obstructed as existing trees in the vicinity are taller than the proposed home and the required setbacks in this zone pursuant to King County Title 21A buffer surrounding properties from impacts to their views.*

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

*No measures are proposed to reduce or control aesthetics impacts other than those dimensional requirements of the King County Zoning Code Title 21A for zone RA-2.5.*

## **11. Light and Glare** [\[help\]](#)

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

*Anticipated light or glare 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 unlikely that light or glare will be a safety hazard or interfere with views as the existing lot is within a rural residential neighborhood.*

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

*Existing off-site sources of light or glare would be consistent with a rural residential neighborhood.*

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

*No measures are proposed to reduce or control light and glare at this time.*

## **12. Recreation** [\[help\]](#)

- 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 Tokul Creek Forest Park (immediately adjacent to the southern property line), Snoqualmie Falls Park (2.8 miles), Gateway Park (2.9 miles), Snoqualmie Valley Rifle Club (4.6 miles), Plum Boat Launch (4.6 miles), Snoqualmie Casino (5.4 miles), Snoqualmie Valley Trailhead (5.6 miles), Denny Peak Park (5.7 miles), and Snoqualmie Falls Golf Course (6.1 miles).*

- b. Would the proposed project displace any existing recreational uses? If so, describe.

*No, the project site is currently undeveloped and zoned RA-2.5 with no zoning or land use designation change proposed.*

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

*None needed. There are no recreational impacts. Impact fees, if applicable, will be paid accordingly.*

## **13. Historic and cultural preservation** [\[help\]](#)

- 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.

*None known. No structures currently exist on the site that are over 50 years old and there are no sites listed on the property or in the vicinity that are listed or identified by national, state or local preservation registers per the Department of Archeology 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.

*None known at or immediately adjacent to the project site per the Department of Archeology and Historical Preservation's WISAARD mapping tool.*

- 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.

*No additional investigation regarding impacts to cultural and historical resources was undertaken as there's been no change in the single family residence status of the lot since 1998.*

*According to the Washington Information System for Architectural and Archeological Records Data (WISAARD), the online Department of Archeology and Historic Preservation GIS tool, a Historic Property Resource Inventory the current single family residential dwelling is not older than 50 years, no historical properties have been identified within the immediate vicinity.*

- 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.

*No additional measures regarding avoiding impacts to cultural and historical resources are proposed as the existing dwelling is not older than 50 years and no historical properties have been identified within the immediate vicinity of the proposal.*

#### **14. Transportation [\[help\]](#)**

- 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.

*Access to the proposed single-family residence will be provided via SE 47<sup>th</sup> Street.*

- 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 nearest transit stop is located approximately 2.6 miles from the property which is on route 629 of King County Metro.*

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

*Two (2) additional parking spaces are included with the proposed single-family residence. No parking spaces would be eliminated.*

- b. 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 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.

*No, the project site is located in an existing rural residential neighborhood.*

- 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?

*One single-family residence is proposed that might generate approximately 1-2 additional vehicular trips during AM and PM peak hours. This minimal trip generation is not expected to significantly impact traffic in the surrounding area.*

- 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.

*No, no interference is anticipated.*

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

*Transportation impact fees may apply and will be paid accordingly.*

### **15. Public Services** [\[help\]](#)

- 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.

*An additional need for public services results from this projects as one (1) single-family residence will be added to a site that has not been developed.*

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

*Impact fees may be applicable and will be paid accordingly.*

### **16. Utilities** [\[help\]](#)

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

- c. 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.

*Electrical utility connection will be supplied by Puget Sound Energy to the proposed single-family residence. A backup generator and private propane tank will be installed on-site for additional power supply. A private septic system is proposed as part of the project. The dwelling will be served by an existing private well.*

### **C. Signature** [\[HELP\]](#)

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: Nicole Mecum

Name of signee Nicole Mecum

Position and Agency/Organization Professional Engineer, Encompass Engineering & Surveying

Date Submitted: 1/31/2020

### **D. Supplemental sheet for nonproject actions** [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?



Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

# Attachment A

## Vicinity Map



# Vicinity Map



Pictometry, King County, King County

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Date: 2/3/2020

Notes:



**King County**





**King County**  
**Department of Permitting**  
**and Environmental Review**  
35030 SE Douglas St., Ste. 210  
Snoqualmie, WA 98065-9266  
**206-296-6600** TTY Relay: 711  
www.kingcounty.gov

May 3, 2018

Kurt Vick  
36233 Southeast 47<sup>th</sup> Court  
Fall City, Washington 98024

**RE: Critical Areas Designation CADS18-0097, Parcel 182408-9048**  
**Status: Complete**

Dear Kurt:

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 Permitting and Environmental Review 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 Category I and Category II Critical Aquifer Recharge Areas (CARA). However, because your site is greater than one acre in size, no restrictions apply for normal residential development.

**Aquatic Areas (21A.24.355 to 21A.24.380)**

Your parcel contains a Type N aquatic area. The standard buffer width for this type of aquatic area (which on an undeveloped lot is to remain unaltered native vegetation) is 65 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 type N aquatic area is a stream that enters the northeast part of the parcel, flows diagonally through it, and flows over the southwest portion of the parcel. Beyond the parcel this stream

CADS18-0097

May 3, 2018

Page 2 of 2

flows through a gradient that is clearly over 16% so it is considered a Type N aquatic area upstream of this gradient. The stream is not clearly mapped on various online sources so its location on the attached site map is estimated, based on the field visit and topography layers. Type N aquatic areas that are located outside of the Urban Growth Area are assigned 65-foot buffers.

In the middle-southwest portion of the parcel and on the south side of the stream, there is a small wetland area associated with the stream. This wetland is likely a Category IV wetland and its 40-foot buffer would not extend past the aquatic area buffer.

**Unmapped Floodplain (21A.24.230)**

There is an unmapped flood plain associated with this aquatic area. The elevation change between the ordinary high water mark of the aquatic area and the proposed development site is less than 10 feet based upon iMap. A minor flood study may be required to demonstrate the proposed development is not located within the flood hazard area.

**Closure**

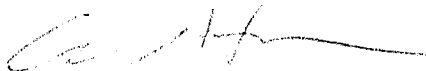
When you are applying to the Health Department for septic system design approval or water well site approval, please include a copy of this letter and any attachments with your application to them. Similarly, a copy should be included with any building permit application. For the site plan attached to this letter, note that the critical areas have not been surveyed. Therefore, their location is not precise and a detailed survey may be required in the future depending upon the nature of your development proposal.

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, floodplain, 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 [Chris.Holcomb@kingcounty.gov](mailto:Chris.Holcomb@kingcounty.gov) if you have any questions.

Sincerely,



Chris Holcomb, Environmental Scientist II-Ecologist

Attachment: Site Map



# CADS18-0097



Critical Areas located within the parcel:  
-Type N Aquatic Area  
-Category I and Category II CARA (extends over the entire parcel, not shown)

Type N Aquatic Area

15' BSBL

65' Aquatic Area Buffer

APPROVED  
By: *[Signature]*  
KC Critical Area Review  
DATE: 5/1/18

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CAD

No. 208200

**King County**

Date: 3-23-18

**Department of Permitting  
and Environmental Review**

35030 SE Douglas Street, Suite 210  
Snoqualmie, WA 98065-9266

Received from Kurt Vick

\$ 1,379.00

		How Paid	
Amount	\$ <u>1,379.00</u>	Cash	<u>1,379.00</u>
Tendered	\$	Check #	
Change	\$	Money Order	

Project #: \_\_\_\_\_

Parcel #: 1824089048

By: TF



# Attachment C

## USDA Soils Report





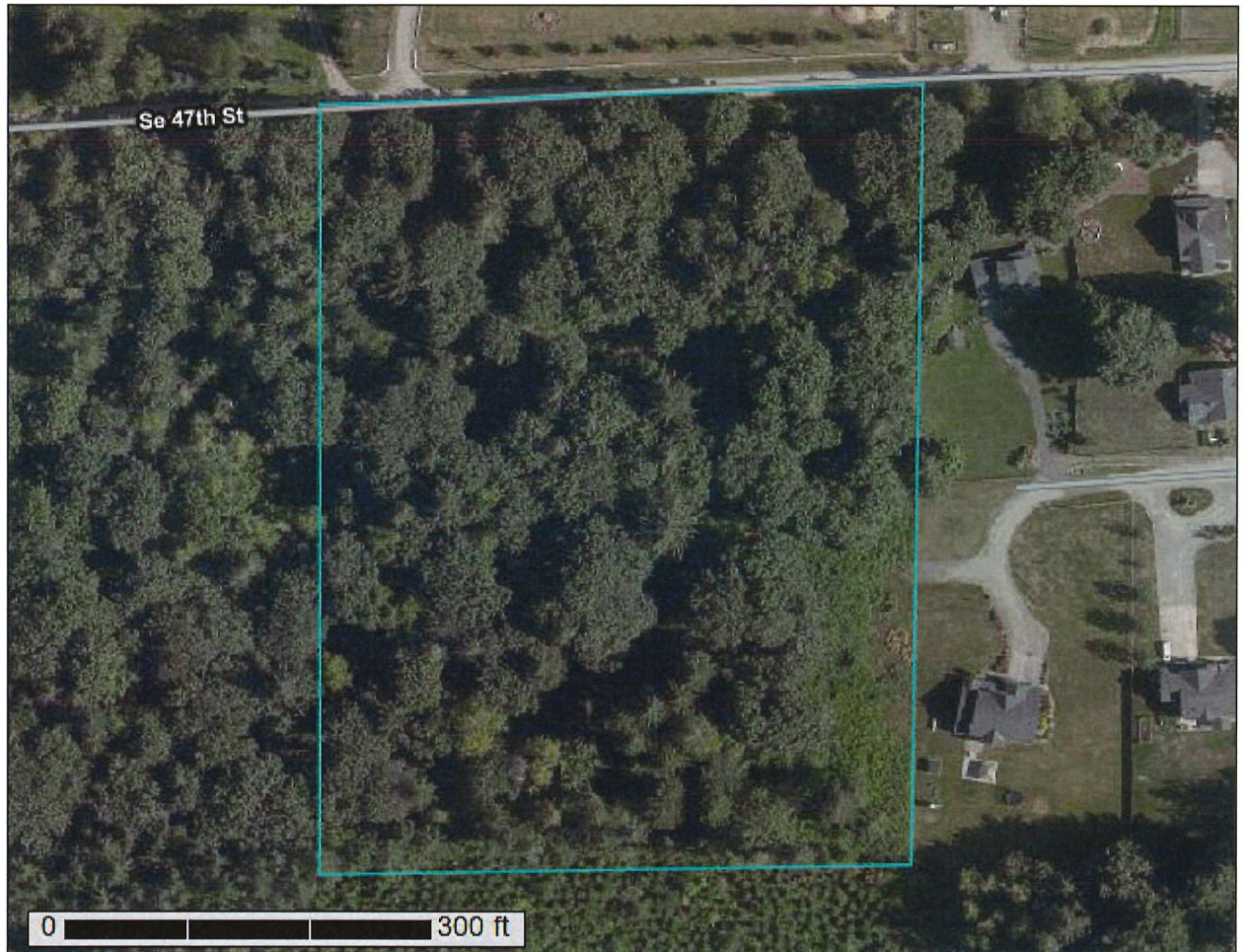
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)



# Preface

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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](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.

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# How Soil Surveys Are Made

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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

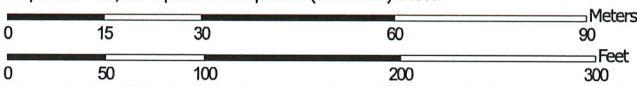
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce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

# Custom Soil Resource Report Soil Map





































Map Scale: 1:1,170 if printed on A portrait (8.5" x 11") sheet.



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



## MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
<b>Soils</b>			Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
<b>Special Point Features</b>		<b>Water Features</b>	
	Blowout		Streams and Canals
	Borrow Pit	<b>Transportation</b>	
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Aerial Photography
	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		

## 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: Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)  
 Survey Area Data: Version 21, Sep 16, 2019

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



**MAP LEGEND**

**MAP INFORMATION**

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
10	Barneston gravelly ashy coarse sandy loam, 0 to 8 percent slopes	7.2	100.0%
<b>Totals for Area of Interest</b>		<b>7.2</b>	<b>100.0%</b>

## 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 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,

## Custom Soil Resource Report

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.



## Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)

### 10—Barneston gravelly ashy coarse sandy loam, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2w173

*Elevation:* 80 to 1,800 feet

*Mean annual precipitation:* 47 to 87 inches

*Mean annual air temperature:* 46 to 50 degrees F

*Frost-free period:* 180 to 220 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Barneston, coarse sandy loam, and similar soils:* 85 percent

*Minor components:* 15 percent

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

#### Description of Barneston, Coarse Sandy Loam

##### Setting

*Landform:* Eskers, moraines, kames

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Volcanic ash mixed with loess over sandy and gravelly glacial outwash

##### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 3 inches:* gravelly ashy coarse sandy loam

*Bw1 - 3 to 6 inches:* very gravelly ashy coarse sandy loam

*Bw2 - 6 to 19 inches:* very gravelly ashy coarse sandy loam

*2C - 19 to 60 inches:* extremely gravelly sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (3.54 to 21.26 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 1.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* A

*Forage suitability group:* Droughty Soils (G003XF403WA), Droughty Soils (G002XF403WA)

*Hydric soil rating:* No

## Minor Components

### Norma

*Percent of map unit:* 5 percent  
*Landform:* Depressions, drainageways  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Nargar

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

### Birdsview

*Percent of map unit:* 5 percent  
*Landform:* Terraces  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Base slope, tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

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- 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=stelpdb1043084>



## Custom Soil Resource Report

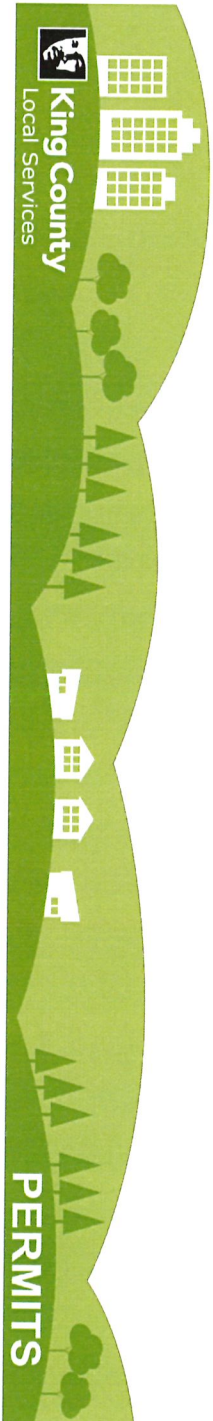
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

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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](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.....		2,484.00				124200
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Data entry fields

**Total Project Emissions:**

**125762**