

# ENVIRONMENTAL CHECKLIST

Project number: RC 1622  
UPI #2010-10-0011-1

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## 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.

## A. BACKGROUND

1. Name of proposed project:  
**Replacement of Granite Falls Bridge #102  
Phase 1: Right-of-way Acquisition**
2. Name of applicant:  
**Snohomish County Public Works,  
Engineering Services Division**
3. Address and phone number of applicant and contact person:  
**Mary Auld, Senior Environmental Planner  
Snohomish County Public Works  
Transportation and Environmental Services Division  
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4. Date checklist prepared:  
**March 28, 2014**
5. Agency requesting checklist  
**Snohomish County Public Works**
6. Proposed timing or schedule (including phasing, if applicable):  
***Note: The bridge is oriented northeast to southwest. For the purpose of this document the downriver side of the bridge is referred to as "west" and the upriver side is referred***

*to as “east”. The end of the bridge closest to Granite Falls is referred to as “south” and the end of the bridge closest to Verlot is referred to as “north”.*

In 2012 a Type, Size, and Location (TS&L) Study was completed for Snohomish County Public Works by AECOM. This study analyzed four roadway alignments and three bridge types. The alternatives were evaluated for safety, structural and geotechnical performance, constructability, initial cost and life-cycle costs, including operations and maintenance.

The “West Alignment” was selected from the four alignments studied in the TS&L. Other alignments considered were on the east side of the bridge and on the existing alignment.

The preferred alignment is adjacent to the existing bridge on the west (downriver) side. This alignment was selected for several features considered favorable for construction. The geotechnical conditions on this alignment are considered good for supporting the bridge. Both the south and north approaches have relatively good construction access. The West Alignment also offers a better location to raise the roadway grade. Raising the grade will move the roadway low point off the bridge structure for improved drainage and safety. It will minimize the roadway cut into a potential slide area on the east side of the river. This alignment also utilizes fill side slopes that minimize the bridge and approach structures, especially on the north side of the river.

The bridge type selected is a three span, precast concrete girder bridge with a total length of 406 feet and 40 feet in width. Replacement of the bridge is expected to occur in three phases as outlined below. At this time, no timeline for construction has been determined.

*(Information in the above section is excerpted from the Granite Falls Bridge 102 Type, Size & Location Study, 2012, prepared by AECOM)*

#### **Phase 1:**

The first phase of this project is to secure the right-of-way needed for the preferred alignment of the new bridge. The preferred alignment for the replacement bridge is adjacent to the existing bridge, on the west (downriver) side.

The land on the west side of the Mountain Loop Highway, near Bridge #102, is owned by the Washington Department of Fish and Wildlife (WDFW). This area provides access to a fish ladder operated by that agency. A strip of land adjacent to the road will need to be purchased from the WDFW to accommodate the proposed alignment of the new bridge. To construct the bridge on this alignment, the access to the fish ladder would be modified and the parking area relocated.

#### **Phase 2**

The second phase of this project would be to secure construction funding, complete the design plans, specifications and contract documents, and obtain needed permits.

**Phase 3:**

**The third phase would be construction of the new bridge. The proposed plan is to keep the existing bridge open during construction to accommodate traffic. Minimal traffic delays would be expected. A detour around the bridge is not practicable. Construction of the new bridge is expected to take one or two seasons. Following construction, the existing bridge would be removed.**

**Additional study and environmental review may be required as the design of the bridge progresses.**

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

**No other future additions, expansions or further activities have been identified 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 Area Study, Snohomish County Public Works**
- **Biological Assessment (BA), Snohomish County Public Works**
- **Geotechnical Memorandum, Snohomish County Public Works**
- **Cultural Resource Inventory of the Granite Falls Bridge No. 102 Rehabilitation, Snohomish County, WA., Completed December, 2005**
- **Granite Fall Bridge No. 102, Snohomish County, WA, Historic American Engineering Record (HAER). Completed November 2008**
- **Granite Falls Bridge No. 102 Type, Size and Location Study. Prepared by AECOM, completed November 2012.**

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.

**No other proposals are known that would affect the proposed bridge alignment.**

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

**The following permits and approvals may be required:**

**Permit:**

**Land Disturbing Activity Permit**  
**Critical Area Regulations (CAR)**  
**Shoreline Substantial Development Permit and Flood Hazard Permit**  
**Hydraulic Project Approval (HPA)**

**Required from:**

**Snohomish County Public Works**  
**Snohomish County Public Works**  
**Snohomish County Planning and Development Services**  
**Washington Department of Fish and Wildlife (WDFW)**

**Endangered Species Act  
Section 7 Consultation  
(Biological Assessment)**

**National Oceanographic and Atmospheric  
Administration (NOAA) Fisheries  
and U.S. Fish and Wildlife Service**

**National Pollution Discharge  
Elimination System (NPDES)**

**Department of Ecology**

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site.

**Snohomish County Public Works proposes to replace the Granite Falls Bridge #102 with a new bridge over the South Fork Stillaguamish River when funding becomes available. This bridge is located on the Mountain Loop Highway approximately 1.5 miles north of the center of Granite Falls, Washington.**

**The existing bridge was constructed in 1934 and is considered functionally obsolete and structurally deficient. The narrow lanes on the bridge are a safety concern. The 20-foot wide bridge deck does not provide enough room for two large vehicles, such as dump trucks, to pass comfortably in opposing directions. Truck traffic has developed the practice of yielding to large loads already on the bridge.**

**The repeated and increasingly heavier loads that have been imposed on the bridge over time are also a major concern. Normal design life of this type of bridge is considered to be about 75 years. The bridge is also considered “fracture critical” due to its truss type design. A fracture critical bridge is defined by the Federal Highway Association as one with a “*steel member in tension or with a tension element whose failure would probably cause a portion of, or the entire bridge, to collapse.*”**

**If a failure occurs on this bridge, a total road closure would be required. The only available detour route is approximately 94 miles in length and would only be useable in non-winter months. Due to its age and design, refurbishing the existing structure is not an option.**

**The proposed bridge would be wider and longer than the existing bridge. The existing bridge is approximately 28 feet wide and 336 feet long. The bridge has two 10-foot wide lanes and two 4-foot wide sidewalks. The proposed bridge would be approximately 406 feet long and 40 feet wide. There would be two 15-foot wide travel lanes and two 5-foot wide sidewalks. Bicycles would share the 15-foot lanes. The deck of the proposed bridge would be about nine feet higher than the existing bridge deck.**

**The proposed bridge would be designed as a three span, concrete girder bridge. Span lengths would be 113 feet—180 feet—113 feet. Five girders would be required for each span. Utilities, such as a water line, would be installed below the bridge deck between the girders.**

**The existing bridge would be used for traffic during construction and then removed when the new bridge is complete.**

12. Location of proposal:

**The project site is located on the Mountain Loop Highway about 1.5 miles north of the center of Granite Falls in Snohomish County, Washington. The bridge spans the South Fork Stillaguamish River and is part of the 52-mile long Mountain Loop Scenic Byway between Granite Falls and Darrington. The Mountain Loop Highway is a primary access road to the Mount Baker-Snoqualmie National Forest.**

**This bridge provides access to a large geographic area including the communities of Verlot, Robe Valley and Silverton. The highway is an important economic and recreational corridor. It provides access to permanent residents, vacation properties, sand and gravel quarries, and timber, as well as many square miles of hiking, camping and other outdoor recreation.**

**The bridge is in the southwest quarter of Section 7, Township 30N, Range 7E, W.M.**

## **B. ENVIRONMENTAL ELEMENTS**

### **1. Earth**

a. General description of the site (shown in *bold* type): flat, rolling, hilly, steep slopes, mountainous, other.

**The project vicinity is characterized by rolling to hilly topography in the area around the bridge. The bridge crosses a deep gorge with steep, vertical walls incised in bedrock. On the north side of the river there are steep rock walls above the road.**

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

**The steepest slope in the project area exceeds 100 percent (1:1) and is associated with rock walls above and below the bridge and adjacent to the South Fork Stillaguamish River.**

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 prime farmland.

**Four soils are mapped by the Natural Resources Conservation Service (formerly the Soil Conservation Service) at the project site. These soils are described below:**

**Elwell-Olomount-Rock Outcrop Complex 30-60 percent slopes**

**These soils are mapped immediately south of the Bridge #102 crossing of the river. This soil unit is typically found on mountainsides. This unit is about 50 percent Elwell silt loam, about 25 percent Olomount gravelly loam, and about 10 percent Rock outcrop. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used during soil mapping. Elwell soil is moderately deep and moderately well drained. It formed in glacial till and volcanic ash. Olomount soil is moderately deep and moderately well drained. It formed in glacial till, volcanic ash, and material derived from andesite, argillite, and basalt.**

**Nargar –Lynnwood Complex 30-65 percent slopes**

These soils are mapped north of the bridge crossing and are typically found on terrace escarpments. These soils are about 60 percent Nargar fine sandy loam and about 25 percent Lynnwood loamy sand. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used during soil mapping. The Nargar soil is very deep and well drained. It formed in sandy alluvium and volcanic ash. The Lynnwood soil is very deep and somewhat excessively drained. It formed in glacial outwash.

**Ragnar fine sandy loam 0-8 percent slopes**

Ragnar soils are mapped in areas northeast of the Bridge #102 crossing. This soil unit is typically found on outwash plains and formed in glacial outwash. Ragnar soils are very deep, and well drained.

**Skykomish gravelly loam 0-30 percent slopes**

Skykomish soils are mapped further south from the bridge crossing. Skykomish soils are very deep and somewhat excessively drained soils found on terraces, terrace escarpments, and outwash plains.

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

**A Geotechnical Type, Size and Location Report was prepared by Shannon Wilson for this project in 2012. This study included eight test pit excavations, two rock core borings, five geophysical seismic refraction surveys and rock mass mapping.**

**Evidence of previous slope movement is described north and west of the existing bridge and pistol-butted trees are seen on the slope in that area. However, the geotechnical report states that deep seated land sliding has probably not occurred at the site. The subsurface explorations indicate shallow bedrock and soil movement in this area is more likely related to soil creep. Evidence suggests that shallow landslides have occurred and that they are likely old.**

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

**To construct the proposed bridge, the area for the foundation would be cleared and grubbed. Hand excavation of some rock would also be required. The proposed structure is a three span, concrete girder, bridge. This proposed bridge width will require five girders. Bridge abutments would be set on shallow spread footings on bedrock. An alternative design could be short abutments set on top of Mechanically Stabilized Earth (MSE) walls. Piers 2 and 3 would be five foot diameter columns set on drilled shafts. Nine foot diameter drilled shafts were assumed in the preliminary design.**

The following cuts and fills are anticipated:

<b>Cuts</b>	
<b>Roadway excavation</b>	<b>1325 cubic yards</b>
<b>Structure excavation</b>	<b>574 cubic yards</b>
<b>Soil excavation for shafts</b>	<b>200 cubic yards</b>
<b>Structural excavation class A</b>	<b>817 cubic yards</b>

<b>Fill</b>	
<b>Gravel Borrow</b>	<b>11275 cubic yards</b>
<b>Backfill for MSE Walls</b>	<b>3125 cubic yards</b>
<b>Gravel backfill for walls</b>	<b>450 cubic yards</b>

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.  
**Clearing and grubbing of vegetation will occur during construction. Erosion could occur during grading, pavement removal, demolition of the existing bridge, and other onsite soil disturbance activities. There would be temporary stockpiling of excavation spoils during construction. However, these activities are not expected to result in significant adverse erosion related impacts with use of best management practices for temporary erosion control. No water would flow through areas under construction, and stormwater runoff generated would be directed to existing roadside drainage ditches or temporary sediment basins.**

g. About what percent of the site will be covered with impervious surfaces after project construction? For example asphalt or buildings.  
**Approximately 2.31 acres will be covered with impervious surfaces after the project. These impervious surfaces include crushed rock, concrete, and asphalt.**

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:  
**An erosion control plan will be developed and implemented during construction. Erosion control Best Management Practices (BMPs) would be used during construction to prevent erosion. These BMP's would be in place around disturbed soil areas, stockpiles of excavated material and would prevent sediments from entering surface water and storm drainage systems. All disturbed areas will be reseeded or planted following construction. No adverse impacts are anticipated.**

## 2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

**Some dust and equipment exhaust will be emitted during construction. No long term emissions will result from this project.**

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

**No.**

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

**Construction of this project will not exceed applicable state and federal air quality standards.**

### **3. Water**

#### **a. Surface Water**

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.

**Granite Falls Bridge #102 crosses the South Fork Stillaguamish River, a Type "S" (Shoreline of the State) stream. Its headwaters are located 36 river miles upstream near Monte Cristo. The South Fork Stillaguamish River flows to its confluence with the North Fork Stillaguamish River about 17 miles downstream in Arlington and then flows as the main stem Stillaguamish River, entering Puget Sound near Stanwood.**

**At the project site, the South Fork Stillaguamish River is approximately 40 feet wide. The river flows through a steep rocky canyon at the project site. The river depth fluctuates significantly, however the depth at the thalweg never appears to be less than five feet deep. The streambed substrate is comprised of bedrock and boulders, with few cobbles and no gravels.**

**Two wetlands (Wetlands A and B) were delineated on the south end of the existing bridge in the project area. Wetland A is located on the west side and Wetland B is located on the east side of Mountain Loop Highway.**

**Wetland A would be considered a Category I wetland based on special characteristics (presence of mature forest) and Wetland B would be considered Category III based on functions. Both wetlands will require a standard buffer of 130 feet.**

**Two streams were also identified within 300 feet of the project area. Stream A is located on the south end of the existing bridge. The stream flows northwesterly from Wetland B, under Mountain Loop Highway in a culvert and along the west side of Wetland A. It then sheet flows down a slope to a ditch that runs along the**



**maintenance road leading to the fish ladder. The stream crosses under the maintenance road and discharges into the South Fork Stillaguamish River near the fish ladder.**

**Stream B is located on the north end of the existing bridge. The stream flows in a culvert under the Mountain Loop Highway into a large pond located on the east side of the highway. The stream discharges from the pond to the South Fork Stillaguamish River on the upstream side of the bridge.**

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.

**The project will occur within the 150-foot buffer of the river. However, all work will be above the South Fork Stillaguamish River. Due to the steep canyon walls in this section of the river, the piers will be constructed above the Ordinary High Water Mark. No in-water work is anticipated to construct this bridge.**

**At this time, it appears that the project will have minor impact to the two wetlands within the project area and their associated buffers. A critical area study that meets the requirements of Snohomish County Code (SCC) 30.62A.140 and a mitigation plan that meets SCC 30.62A.150 will be required for permitting.**

**Given the presence of a primary association area for Chinook salmon, bull trout and steelhead salmon within the project area, this project will also need a Habitat Management Plan that meets the requirements of SCC 30.62A.460.**

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.

**The project would require approximately 200 cubic yards of fill to be placed in the wetlands to accommodate the approach on the south end of the bridge. Fill would be obtained from an approved gravel borrow site meeting Washington Department of Transportation (WSDOT) specifications.**

**Measures to reduce wetland fill impacts will be evaluated during the design process. The project will provide compensatory mitigation for unavoidable wetland fill impacts in accordance with local, state, and federal regulations.**

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 would be needed for this project.**

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

**This project site is mapped by Snohomish County as being within the 100-year floodplain area. However, the bridge is located high above the base flood elevation at 380 feet. The bridge deck is approximately 92 feet above the surface of the river. This reach of the river is in a deep, rock lined gorge that restricts the flow to the canyon below the bridge.**

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.

**No. The project proposes no discharges of waste materials to surface waters. Best Management Practices will be used during construction to prevent waste material from entering surface waters.**

#### **b. Groundwater**

1) Will ground water be withdrawn, or will water be discharged to groundwater? If so, describe the type of waste and anticipated volume of discharge.

**No.**

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.

**The project proposes no withdrawals of ground water.**

#### **c. Water Runoff (including storm water)**

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.

**The replacement bridge and approaches would create impervious surfaces that will generate stormwater runoff. During construction, site runoff would be conveyed to temporary sediment basins prior to discharge.**

**This site is below the confluence of Cranberry Creek and the South Fork Stillaguamish River. Based on the Snohomish County Drainage Manual this location is exempt from flow control. Therefore, stormwater detention is not required.**

**However, water quality treatment is required for stormwater runoff generated by the project. Drainage for the project will include both open ditches and enclosed drainage. Open ditches will be the primary conveyance system. On the south end of the bridge, stormwater will be collected, treated and discharged to the river via a rock spreader. On the north end of the bridge stormwater will be collected, treated and discharged to an existing ditch located below the bridge. A detailed stormwater plan will be developed during the design process.**

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

**Best management practices will be used to prevent erosion during construction. There would be no waste materials on the site to enter ground or surface waters.**

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

Construction would occur during the dry season. A Temporary Erosion and Sedimentation Control plan will be developed for this project and included in construction contract documents. During construction, surface water runoff would be controlled by erosion-control best management practices (BMPs). Temporary measures will be employed to control runoff and water quality. Limits of clearing and grading will be staked prior to any site disturbance. All cleared areas will be seeded or planted.

BMPs including, but not limited to, silt fences, mulching, check dams, filter berms and other methods would be used to control and minimize adverse impacts in the event that there is a precipitation event that results in surface runoff. Bare soil areas exposed by construction activities would be reseeded, covered with mulch and/or planted to control erosion. The project would apply for a National Pollutant Discharge Elimination System (NPDES) Construction Permit, if required. A Stormwater Pollution Prevention Plan would be developed as required for NPDES permit coverage.

#### 4. Plants

a. Check types of vegetation found on the site:

- Deciduous trees: Big leaf maple, Red alder.
- Evergreen trees: Douglas Fir, Western Red Cedar, Western hemlock.
- Shrubs: Sword fern, Indian plum, salmonberry, vine maple, stink currant, piggy-back plant.
- Grasses:
- Pasture: None
- Crop or grain: None
- Wet soil plants: lady fern, skunk cabbage
- Water plants: None
- Other types of vegetation:

Tree cover in the area of Bridge #102 is primarily Douglas Fir. In the immediate vicinity of the project, there are upland forest and riparian forest communities. These are comprised of mature, second-growth conifer forest with over story species of Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*), interspersed with big leaf maple (*Acer macrophyllum*). The understory consists of salmonberry (*Rubus spectabilis*), vine maple (*Acer circinatum*), sword fern (*Polystichum munitum*), lady-fern (*Athyrium filix-femina*), and piggy-back plant (*Tolmiea menziesii*).

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

Some large trees, primarily Douglas Fir, and understory vegetation, including salmonberry, will be removed to construct the new bridge. Herbaceous vegetation within the right-of-way will also be removed for road widening.

- c. List threatened or endangered plant species known to be on or near the site.  
**None are known.**

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

**Temporary and permanent impacts will be restored using native plant species.**

## 5. Animals

- a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

**birds:** owls, hawks, woodpeckers, flickers, Steller's jay, nuthatch, wrens, sparrows, chickadees, songbirds, bald eagles  
**mammals:** small mammals such as opossum, skunk, raccoon, small rodents, bats, and larger mammals such as bear, bobcat, coyote, deer  
**fish:** Chinook salmon, bull trout and Puget Sound steelhead

Common forest-dwelling birds such as varied thrush (*Ixoreus naevius*), red breasted nuthatch (*Sitta canadensis*), black capped chickadees (*Poecile atricapilla*), dark eyed juncos (*Junco hyemalis*), and Swainson's thrush (*Catharus ustulatus*) are the most abundant avian species in the area. However, spotted towhees (*Pipilo maculatus*), yellow warblers (*Dendroica petechia*), and northern flickers (*Colaptes auratus*) are likely to nest and forage in the area. The nearest known bald eagle (*Haliaeetus leucocephalus*) nest is approximately 1.3 miles west of the study area. The activity area for this pair of eagles extends to within 0.9 miles of the study area (WDFW 2003).

The closest spotted owl (*Strix occidentalis*) management circle and marbled murrelet (*Brachyramphus marmoratus*) detection point are 5 miles to the east (WDFW 2003). Mammals such as deer (*Odocoileus hemionus*), raccoons (*Procyon lotor*), opossum (*Didelphis virginiana*), mountain beaver (*Aplodontia rufa*), mice (*Peromyscus sp.*), and shrews are also likely to occur in the area. Although much less common, black bear (*Ursus americanus*) and cougar (*Felis concolor*) are frequently sighted in the Granite Falls area and may infrequently occur in the vicinity of the project site.

Red-legged frogs (*Rana aurora*) are the most likely candidate herpetological species to use the area. In addition, some species of salamanders (e.g. Ensatina and red-backed salamander) may utilize forested areas in the project vicinity. A garter snake (*Thamnophis sp.*) was observed during a field investigation and the species may be common along the ditches of the Mountain Loop Highway.

- b. List any threatened or endangered wildlife species known to be on or near the site.

**Chinook salmon, bull trout and Puget Sound steelhead are identified in the South Fork Stillaguamish River within the project area. The nearest known marbled murrelet nest is approximately 1.8 miles to the north east of the project.**

**Although not on the Federal List of Threatened or Endangered Species, bald eagles remains classified by WDFW as a State Sensitive species. The nearest known nest is approximately 1.3 miles to the west of the project site.**

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

**The site is within the Pacific Flyway used by several species of migratory birds.**

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

**All temporary and permanent impacts to the vegetated areas will be replanted with native species. Work is planned to begin two hours after sunrise and end two hours before sunset to minimize impacts to marbled Murrelets.**

## **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.

**N/A**

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

**N/A**

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:

**N/A**

## **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.

**No.**

1) Describe special emergency services that might be required.

**None proposed.**

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

**Servicing and refueling of vehicles will not occur within 150 feet of the river and wetlands to reduce potential spills of petroleum and hydraulic fluids in sensitive areas. Additionally, drip pans will be fitted with absorbent pads and placed under all equipment being fueled. Construction staging will be located in areas that will**

prevent potential contamination of any wetland or water body. Staging areas will be outside of critical areas or buffers.

All vehicles operated within 100 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation. When not in use, all vehicles will be stored in the vehicle staging area as practicable. Other vehicles that may be stored in place, such as cranes, will be inspected daily for fluid leaks.

Spill control and emergency response plans will be implemented for fueling, concrete activity, and staging areas. The spill control/prevention plan will include the following items: notification procedures; specific cleanup and disposal instructions for different products; quick response containment and cleanup measures that will be available on site; and employee training for spill containment. These plans will satisfy all pertinent requirements set forth by federal, state, and local laws and regulations.

No wet or curing concrete, including washout of equipment, will enter project waters. A containment tarp will be used to isolate any runoff from activities involving wet or curing concrete activities. A temporary erosion and sedimentation control plan will be used to minimize sediments. All mechanized machinery will remain on the road surface. No material will be placed or discharged into the South Fork Stillaguamish River.

b. Noise

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

**Noise is generated by traffic on the bridge.**

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.

**Construction noises will be generated, increasing noise in the project vicinity on a short-term basis. Construction generally occurs between 7:00 a.m. and 5:00 p.m., Monday through Friday.**

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

**Construction will normally be limited to the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Equipment will meet Occupational Safety and Health Administration (OSHA) noise standards. Construction noise levels will not exceed applicable state and national standards.**

## 8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

**The project site is the existing bridge, road, and road shoulders. On the west side of the road is a small, unpaved parking area and access to the fish ladder, constructed in 1954. The fish ladder is owned and operated by the Washington Department of Fish and Wildlife.**

**Land use in the immediate vicinity includes low density residential and undeveloped land. Parcel sizes generally range from 10 to 40 acres. A rural residential cluster one quarter mile northeast of the site contains approximately 60 parcels along the north side of the river. The Washington Department of Fish and Wildlife owns the undeveloped property on the west side of Mountain Loop Highway, on both the north and south ends of the bridge. Property east of the road, on the north end of the bridge, is privately owned and has one residence. Land east of the road, on the south end of the bridge, is privately owned and undeveloped.**

b. Has the site been used for agriculture? If so, describe.

**No.**

c. Describe any structures on the site.

**The Snohomish County Bridge #102 is the only structure located on the site. The site has no residential or other building structures.**

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

**The existing bridge structure will be demolished and removed following completion of the new bridge.**

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

**The land areas on the west and north side of the bridge are zoned Rural-5 Acres. The area east and south of the bridge is within the City of Granite Falls. This area is zoned Low Density Residential/4 Dwelling Units per Acre.**

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

**This area is within the Rural/Urban Transition Zone. The current comprehensive plan designation adjacent to the bridge site is Rural Residential/1 Dwelling Unit per 5-Acres.**

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

**This section of the South Fork Stillaguamish River is designated under the Shoreline Master Program as "Rural Conservancy".**

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

**The bridge crosses the South Fork Stillaguamish River. There are two wetlands and two small streams in the project area.**

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

**None**

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

**None.**

k. Proposed measures to avoid or reduce displacement impacts, if any:

**None proposed.**

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

**Acquisition of needed right-of-way will be in accordance with applicable federal, state, and county regulations.**

## **9. Housing**

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

**N/A**

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:

**N/A**

## **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?

**N/A**

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

**Most of the existing bridge structure is below the road and is not visible to drivers or the public in general. The arch truss construction of the existing bridge is only visible from below the bridge. Similarly, most of the proposed bridge will only be visible from below the road. The railings and sidewalks will be visible to pedestrians and drivers. The existing bridge will be removed following construction of the new bridge.**

**Several large trees and other vegetation will be removed to widen the road for the new bridge and associated improvements.**

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

**All cleared areas will be seeded or planted following construction.**

## **11. Light and Glare**



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

**None. No new luminaires are proposed for the bridge.**

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

**No.**

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

**None.**

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

**None proposed.**

## **12. Recreation**

**Informal passive recreation opportunities for viewing the river are available from the pedestrian sidewalks on the bridge deck and adjacent land areas.**

**The nearest recreation opportunity is located at the Granite Falls fish ladder maintained by the Washington Department of Fish and Wildlife. A maintained trail leads down to the fish ladder and the river from a small parking area located on the west side of the Mountain Loop Highway. The parking area is approximately 200 feet south of the bridge and is partially within Snohomish County right-of-way.**

**The bridge also provides access to multiple recreation opportunities including hiking, climbing, camping, fishing and sightseeing that are available in the Mt. Baker/Snoqualmie National Forest located several miles east of the bridge site. The Mountain Loop Highway is a designated National Forest Scenic Byway.**

a. What designated and informal recreational opportunities are in the immediate vicinity?

**The fish ladder, falls and river are accessible to the public from the parking lot just south of the bridge. A trail leads down to the river. This site attracts tourists as well as swimmers, picnickers and fishermen. The town of Granite Falls was named for the picturesque falls at this location.**

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

**No. The parking lot and access to river will be resituated to accommodate the new bridge and a portion of the maintenance road to the fish ladder will be relocated accordingly.**

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

**Access to the fish ladder will be maintained. Due to the location of the proposed bridge the existing access road will be modified.**

## **13. Historic and Cultural Preservation**

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to this site? If so, generally describe.

**The WSDOT Cultural Resources program maintains an inventory of historic Washington State bridges. All bridges built before 1971 have been evaluated for eligibility for listing on the National Register of Historic Places. Granite Falls Bridge #102 has been determined eligible for the National Registry of Historic Places.**

**Two studies have been completed to review the historic resources of the project site as part of proposed bridge improvements. BOAS, Inc. completed a cultural resource survey of the site in 2005 in preparation for a proposed bridge rehabilitation project.**

**BOAS concluded that the bridge, constructed in 1934, may be eligible to be on the National Register of Historic Place or the Washington Heritage Register and recommended an evaluation of the bridge according to Historic American Engineering Record (HAER) standards. A HAER documentation was completed by SHKS Architects in 2008.**

*According to the HAER study: “The Granite Falls Bridge is an example of a steel deck truss bridge, a select type of which few remain in Washington. Further, the Mountain Loop Highway, of which the bridge is a key component, has been closely associated with the development of transportation, recreation, logging, mining, and commerce in the North Cascades region for more than a century.”*

**Due to its age, type, rarity, and association with the development of the region, the HAER authors stated that in their opinion the bridge meets two of the National Register Evaluation Criteria and thus would be eligible for placement on the National Register of Historic Places. Under state law, properties that possess historical, architectural, or archaeological significance are eligible for inclusion on the Washington Heritage Register maintained by the Department of Archaeology and Historic Preservation (DAHP).**

**Additional review of the historic status of the bridge would be required prior to construction of the proposed new bridge. If the bridge is listed as a Historic Bridge DAHP considers the effects of a proposed project on significant resources, and suggests appropriate treatments or action.**

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

**Other than the potential for the bridge to be eligible for state listing, no landmarks or evidence of historic, archaeological, scientific, or cultural importance exist at the site. Work that would occur on the site would affect areas that have been repeatedly disturbed for roadway and bridge construction and ongoing maintenance. The likelihood of discovering items of archaeological, scientific or cultural significance is low.**

c. Proposed measure to reduce or control impacts, if any:

Although no known archaeological sites are in close proximity to the project, there is still a possibility that cultural resources could be present. If, during construction, cultural resources are found, a systematic collection of artifacts will be made before proceeding with the work and the Department of Archaeology and Historic Preservation will be contacted. If artifacts are uncovered within the project area, work in that area will be stopped and a professional archaeologist will be brought in to examine them. Construction work would conform to applicable regulations.

## 14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system.

**Access to the site is provided by the Mountain Loop Highway, a Snohomish County maintained Rural Major Collector.**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

**No. The site is not served by public transit. The closest transit service is provided in downtown Granite Falls, one mile southwest of the site.**

c. How many parking spaces would the completed project have? How many would the project eliminate?

**To construct the new bridge on the proposed alignment, the existing gravel parking area will be reconfigured to provide a similar size parking lot adjacent to the road on the west side.**

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways?

**The road will be widened at the bridge approaches to match the new wider bridge.**

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation?

**The site does not lie in proximity to railroad tracks, airports or commercial boat traffic. The South Fork Stillaguamish, near the bridge crossing, is not a navigable waterway.**

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

**The project would not generate additional vehicular trips. The Mountain Loop Highway at Bridge #102 currently conveys up to 4,735 Average Daily Trips (ADTs). The ADTs are estimated to increase to 8,120 by the year 2020.**

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

**The existing bridge and roadway will remain in use to serve all transportation needs during construction of the new bridge. The bridge and roadway design would be consistent with adopted Snohomish County Engineering Design and Development Standards. Certified flaggers would be used during construction to direct roadway**

**traffic. A traffic control plan will be developed to safely convey traffic during construction.**

**The project would coordinate its notification with emergency service providers, the Granite Falls School District, quarry operators, and area residents to inform them of construction scheduling, roadway closures and other project-related activities that could potentially affect their ability to travel in the project area.**

## **15. Public Services**

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

**No additional or increased need for public services would result from this project. This project will replace an existing deficient bridge structure with a wider, longer bridge structure that meets present design standards. The replacement bridge would improve the bridge crossing for fire, police services and school buses operating in the project area.**

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

**None proposed.**

## **16. Utilities**

a. Utilities currently available at the site:

**The utilities currently at the site are: electricity, water, and communication cables. Electricity is on overhead wires downstream of the bridge, a water supply line is attached to the bridge and communication cables are on overhead wires upstream of the bridge.**

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 proposes no new utilities, however, the power poles would be relocated due to the new bridge alignment. The Public Utility District (PUD) water line that is located on the existing bridge will be relocated to the new bridge.**

## **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: Mary Auld, Senior Planner

Date Submitted: **March 28, 2014**