

**WAC 197-11-960 Environmental checklist.**

ENVIRONMENTAL CHECKLIST

*Purpose of checklist:*

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

*Instructions for applicants:*

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

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

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

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

*Use of checklist for nonproject proposals:*

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

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

A. BACKGROUND

1. Name of proposed project, if applicable:

Stillwater Revetment Removal and Habitat Enhancement Project

2. Name of applicant:

Wild Fish Conservancy

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

Wild Fish Conservancy  
PO Box 402  
15629 Main Street NE.  
Duvall, WA 98019

Contact Person: Micah Wait  
(206) 953-9305  
micah@wildfishconservancy.org

4. Date checklist prepared:

February 27, 2013

5. Agency requesting checklist:

Washington State Department of Fish and Wildlife

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

Construction is anticipated to begin in July of 2013 and finish by August 30, 2013.

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

No.

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

Specific Project Information Form (SPIF-Section 7 ESA) and a JARPA form.

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

There are no known pending government approvals of other proposals.

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

King County Clearing and Grading Permit, King County Flood Certification Approval, Washington State Department of Ecology (WSDOE) Shoreline Exemption (administered by King County), WSDOE Aquatic Use Authorization, WDFW Hydraulic Project Approval, Army Corps of Engineers Section 404 Permit –NWP #27, ESA Section-7 Review by the U.S. Fish and Wildlife Service and NOAA, WSDOE 401 Water Quality Certification Exemption, Coastal Zone Management (CZM) Exemption, NPDES Permit, National Historic Preservation Act Section 106 Review, King County Parks - Special Use Permit (Trail)

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 proposed project involves the removal of approximately 2,100 lineal feet of revetment along the right bank reach of the Snoqualmie River. The purpose of the project is to improve habitat for fish and wildlife by restoring natural riverine processes and increasing edge habitat for juvenile salmonids. The revetment is made of imported fill material (gravel mined from the Snoqualmie River), riprap, and other material such as concrete slabs used to continually reinforce the facility over the years. Large-dimensioned pieces of riprap that have sloughed off of the revetment into the river will be removed from the toe. All riprap that is removed will be hauled off-site. A cap will be constructed on the upstream portion of the revetment to prevent undercutting of the terminated end. Vegetation along the same reach will need to be removed as well and approximately 5.5 acres will require clearing to construct the temporary access road, staging area, and revetment removal. All trees and vegetation cleared will be retained on-site with rootwads intact to provide habitat for fish and wildlife. Approximately 261 trees will be salvaged. A flood fence will be installed on the uppermost bench of the right bank to protect recent revegetation activities. The steep revetment banks will be re-contoured. A temporary road will be constructed to provide access to the revetment. The upper bench of the project will be re-vegetated.

An old culvert crossing on the gravel access road from SR-203 will need to be upgraded to accommodate continuous hauls by large dump trucks transporting revetment material to off-site locations. The culvert services a small agricultural ditch that supports coho salmon and cutthroat trout populations. There are no fish passage issues with the existing culvert. A temporary crossing will be put in place until all hauling is completed at which point a permanent replacement culvert will be installed.

Three modeling efforts have been completed to assess potential impacts to upstream and downstream properties. All three models have indicated the proposed project actions are not likely to adversely impact upstream and downstream properties. The project area of influence is contained within the properties owned by WDFW and the Gaisford/O'Hanley property. Agricultural lands are not expected to be impacted by project actions. Overall, the project can be expected to decrease

floodwater levels during the 100-year return interval flood by up to 0.4 feet upstream of the project.

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.

The Stillwater Wildlife Unit is located ~ 1.5 miles northwest of the City of Carnation. The site can be accessed from SR-203 driving north from Carnation for ~ 0.5 miles and taking a left onto the Carnation Farm Road. Drive west for 1 mile to the Stossel Bridge. The project site is 0.5 miles north of the bridge on the right bank of the Snoqualmie River.

Alternative Route: Take SR-520 East to Avondale Road. Continue east 1.0 mile on Avondale Road. Take a slight turn to the right onto NE Novelty Hill Road. Travel 4.7 miles and turn right at the bottom of hill onto West Snoqualmie Valley Road. Travel 2.4 miles and take a slight left onto NE 80<sup>th</sup> St. Go 0.8 miles and turn left onto Ames Lake-Carnation Road NE. Continue 0.4 miles to bridge. Destination will be on left.

The precise location of the site is in King County, in the SW ¼ of Section 4, Township 25 North, Range 7 East. The latitude and longitude of the project location is: 47.67405 North latitude and -121.91789 West longitude. The physical street address for the private property is: 8519 Carnation-Duvall Road NE, Carnation, WA 98104-6705.

**B. ENVIRONMENTAL ELEMENTS**

**1. Earth**

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

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

50%

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.

Oridia silt loam, riverwash. Farmland is adjacent to the project area.

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

No. There is some right bank erosion on the downstream end of the existing revetment where it ends. The reveted bank transitions to a natural bank and naturally erodes as a result of abrupt hydraulic energy losses. This condition is very typical.

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

Construction activities will result in a net cut of approximately 26,420 CY of riprap material. The cut material is the result of deconstructing a 2100-foot long revetment along the right bank of the Snoqualmie River. A total of 383 CY of excavated material (riprap) from the revetment will be reused and placed at the upstream termination point to cap the lower end of the remaining upstream revetment. The rest of the material will be disposed of off-site.

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

Yes. The removal of the revetment will allow the river to naturally migrate and interact with an erodible riverbank.

g. About what percent of the site will be covered with impervious surfaces after project

construction (for example, asphalt or buildings)?

None.

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

Best Management Practices (BMPs) will be employed to address any potential erosion that may occur. BMPs will be used to control erosion from any construction related runoff impacts. Silt fences will be installed on the perimeter of the work footprint area as it progressively enlarges and also around the entire work area. There will be at least two layers of silt fencing at all times. A silt fence will also be placed around the perimeter of the clearing limits. Project construction will be completed in the driest months of the year to minimize the likelihood of heavy rain events.

## 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.

Minor dust and vehicle exhaust from construction activities are expected. There will be no long-term changes to background emission levels 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:

None.

## 3. Water

a. Surface:

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

Yes. The Snoqualmie River. The river is a large Puget Sound lowland stream. The Snoqualmie River merges with the Skykomish River to form the Snohomish River. There are some remnant oxbow lakes located in the vicinity of the site.

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

Yes. In-water work will be performed in the Snoqualmie River.

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.

Approximately 14,358 CY of riprap will be removed from the revetment and within the OHWM of the right bank of the Snoqualmie River.

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

Yes, portions of the Snoqualmie River may be diverted away from the right bank if flow conditions allow.

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

Yes. The entire project area is located within the 100-year floodplain of the Snoqualmie River.

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.

There will be no waste material discharged to surface waters.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn.

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.

There will be no waste material discharged.

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.

Precipitation would be the source of runoff at the project site. There is no stormwater generated from impervious surfaces currently or as a result of the project. Surface water will drain to the Snoqualmie River.

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

With the implementation of Best Management Practices (BMPs), erosion control measures, and the natural filtration characteristics associated with the surrounding vegetation, no waste materials are anticipated to enter any ground or surface waters.

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

*General Measures to Reduce Runoff Impacts*

1. BMPs will be used to control erosion from any construction related runoff impacts. Silt fences will be installed on the perimeter of the work footprint area where soils are exposed or spoils are staged. There will be at least two layers of silt fencing at all times.

2. Hog fuel will be used to maintain access road integrity if the access road is failing due to heavy loads.

3. Excavators will use vegetable oil in place of hydraulic fluid to minimize potential impacts to surface or ground waters in the case of an accidental spill. Spill prevention kits will be available on site for each machine in use.

4. Heavy equipment will be cleaned and inspected daily for fuel or lubricant leaks prior to entering the job site.

**4. Plants**

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

deciduous tree:  alder,  maple,  cottonwood

evergreen tree:  fir,  cedar,  hemlock, pine, other

shrubs

grass

pasture

crop or grain

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?

The approximate number of trees to be salvaged from the revetment removal is:

	Conifers	Deciduous	Total
<b>Small (&lt;6")</b>	21	28	<b>49</b>
<b>Medium (6"-18")</b>	15	144	<b>159</b>
<b>Large (&gt;18")</b>	5	48	<b>53</b>
<b>Total</b>	<b>41</b>	<b>220</b>	<b>261</b>

Approximately 5.5 acres of understory vegetation will be removed as a result of the revetment removal, and construction of the temporary road and equipment staging area.

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

No threatened or endangered species of plants are known to be on site.

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

The uppermost bench of the project area not susceptible to annual flows will be replanted with native trees and shrubs. The lower benches are expected to naturally recruit pioneering species of deciduous trees.

**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:  hawk,  heron,  eagle,  songbirds, other:

mammals:  deer, bear, elk,  beaver, other:

fish: bass,  salmon,  trout, herring, shellfish, other:

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

Juvenile and adult Puget Sound Chinook salmon and Steelhead trout have been observed in the Snoqualmie River.

Foraging Bull trout have been observed in the Snoqualmie River.

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

Waterfowl species use this site as part of their migration routes. Several species of native fish also migrate within and through the Stillwater Unit.

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

The primary objective of this project is to preserve and enhance fish and wildlife habitat on the site. Wild Fish Conservancy will perform work on this project during periods where there will be minimal impacts to waterfowl and aquatic species due to limited presence. The project in itself is intended to improve habitat for fish and wildlife.

**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.

No.

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:

None.

**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.

Materials that are likely to be present on site include gasoline, diesel fuel, hydraulic fluid, and lubricants. An accidental spill of any of these fluids could occur during construction operations.

1) Describe special emergency services that might be required.

None anticipated.

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

A spill prevention and pollution control plan will be prepared to reduce the risk for spills and to outline necessary

procedures to be taken in case of a spill.

**b. Noise**

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

None.

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.

There will be short-term increases in noise levels during construction activities between the hours of 7AM to 6PM. No long-term changes in noise levels are expected once the project has been completed.

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

None.

**8. Land and shoreline use**

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

The Stillwater Unit (Washington Department of Fish and Wildlife) provides public access to and protection for critical wildlife habitat. Recreational uses include hunting pheasant and waterfowl, recreational and organized dog training and trials, fishing, nature observation, wildlife viewing, jogging, bicycling, picnicking, and picking berries and mushrooms. The other property is a private residence and is currently used for farming/agricultural production.

The adjacent properties include parcels that are part of the Stillwater Unit. Other adjacent properties are used for agricultural. Properties across the river include the recreationally used King County Chinook Bend Natural Area and Camp Korey, a camp that serves children with serious and life-altering medical conditions. The other adjacent property is owned and managed by the SAMIS foundation for agriculture.

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

The private property is part of the King County Farmland Preservation Program and parts of the property are currently being used for agriculture. The proposed work will occur riverward of a tree planting project installed by King County. The portions of the property that are still used for active farming are approximately 450 feet distance from the proposed project action.

c. Describe any structures on the site.

The private property parcel has a single-family residence and some old farm buildings. The structures on the Stillwater Unit are limited to remnants of fences. The Stillwater Unit is an unimproved site with no buildings.

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

Some of the property fence between the Stillwater Wildlife Unit and the private parcel will be rebuilt following construction.

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

A-35

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

Agriculture.

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

Rural / resource.

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

The Snoqualmie River has been designated as critical habitat for ESA species.

- 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.

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

The proposed project action is specifically discussed in the 2012 update of the Snoqualmie Wildlife Area Management Plan ([www.wdfw.wa.gov](http://www.wdfw.wa.gov)). There will be no long-term impacts to existing recreational uses including access, and wildlife protection. No changes in land use are proposed. In the short-term during construction the project area will be closed off to public use for public safety purposes.

## 9. Housing

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

None.

- 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:

None.

#### 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?

The proposed revetment cap is at the existing ground level.

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

Views from the Chinook Bend Natural Area will change as a result of revetment and vegetation removal.

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

None.

#### 11. **Light and glare**

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

None.

- 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.

#### 12. **Recreation**

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

Recreational uses include hunting pheasant and waterfowl, recreational and organized dog training and trials, fishing, nature observation, wildlife viewing, jogging, bicycling, picnicking, and picking berries and mushrooms.

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

The project will temporarily close off certain areas to public access during construction for safety purposes. Recreationists will likely be temporarily excluded from the construction site for the duration of the project (~ 5-weeks). There may be other areas of the wildlife unit open to recreational use.

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

Signage and fencing will be installed to inform the public that the project site will be off limits to recreational use for certain periods of time for public safety. Access to other parts of the wildlife unit will remain largely unaffected. An objective in the Adaptive Management Plan will include a strategy to improve access in the event it becomes more difficult as a result of the project.

### 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 the site? If so, generally describe.

The Washington State Department of Archaeology and Historic Preservation records database was checked to ensure that no currently listed objects or places occur at this site.

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

None known.

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

A federal archaeological review and tribal consultation will be performed which will evaluate this site and determine what measures will be necessary to protect potential archaeological resources. The project site will be pre-screened with an archaeologist from the Army Corps of Engineers to determine whether any additional archaeological assessment study will be required.

### 14. **Transportation**

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

State Highway 203 provides direct access to the site.

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

The site is not serviced by public transit. The nearest public transit is located 1.5-miles away in Carnation.

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

None.

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

A private gravel access road will require upgrading to accommodate fully loaded dumptrucks.

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

No.

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

None.

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

A flagger will be posted at the junction of State Highway 203 and the farm access road.

**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.

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

None.

**16. Utilities**

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

There are no utilities currently available at the work site.

- 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.

None.

**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.

A handwritten signature in blue ink, appearing to read "M. J. West", is written over a dotted line.

Signature: .....

Date Submitted: 4-2-13.....

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not 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?

The proposed project may increase discharge to water due to clearing activities associated with revetment removal and vegetation clearing. There will be temporary increases in emissions and noise production from construction activities. Release of toxic or hazardous substances is highly unlikely.

Proposed measures to avoid or reduce such increases are:

Vegetable oil is being substituted for hydraulic fluid in all equipment doing in-water work.

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

There will be temporal displacement of fish from along the riverbank. Vegetation will be removed from the revetment removal area and the temporary road footprint.

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

Plants will be salvaged wherever possible. There is ample opportunity for displaced fish to occupy habitats in other places in the river.

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

The proposed project will remove riparian vegetation in the process of removing the revetment. No energy resources will be depleted.

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

Every effort will be made to preserve vegetation along the riverbanks and in general.

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?

The project itself is a restoration action that will ultimately restore historical natural function to the wetlands and floodplain and is intended to aid in the recovery of threatened species of salmonids. Removing the revetment will restore the natural processes of cut and fill alluviation and channel migration, the processes that historically drove the formation of wetlands in this portion of the valley. Stillwater has three oxbow lakes; two that are connected to Harris Creek during high flow events and one that is a separate drainage. Harris Creek runs through the center of the property for approximately 10,500 feet before emptying into the Snoqualmie River.

The proposed SRFB-funded project will enhance habitat for fish and wildlife by increasing connectivity to off-channel salmonid rearing and refuge areas and increasing the physical and structural complexity along the shoreline for riparian dependent wildlife. Restoring floodplain functions such as connectivity during flood flows will allow specific backwatered habitats to be used by fish and wildlife. The existing riprap revetment currently restricts channel migration and limits habitat suitability and potential for fish and wildlife along the right bank of the Snoqualmie River.

The proposed approach relies on both active and passive restoration techniques to enhance habitat for fish and other aquatic and riparian-based wildlife. Active restoration of riparian habitat and enhanced shoreline habitat complexity will reduce near-bank high-flow velocities and create suitable rearing and refuge habitat for salmonids along the edge of the outer restored right bank of the Snoqualmie River.

Over time the river is expected to change bank form along the removed revetment reach. The proposed project will not negatively affect current land uses such as farming or recreation. There are no known historic or cultural sites that will be affected by the project.

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

The project will involve working in the water for a period of up to 20 days while toe rock is being removed from the toe of the revetments using heavy equipment. This work will inevitably produce some turbidity and displace fish from the immediate work areas. To minimize impacts, flows will be diverted around the work area or velocities reduced by placing supersacks or other temporary diversion structures in the Snoqualmie River. There are gravel bars at the upstream ends of the work areas that may allow a diversion around the work area possible. The work areas will be in water, but there will be no or very low velocity in the work area. Clean water diverted around the work areas will mix slowly with any turbid water released at the downstream end of the work areas where there will be an eddy formed by slow/fast water interface. The rate of discharge of turbid water into this clean stream of water will be managed to maintain WA State Water Quality standards (WQS) by controlling the rate of rock removal and slowing discharge of turbid water at the downstream end of the work areas with silt booms and/or pumps as necessary. These structures and the rate of in-water work will be managed to minimize turbidity and maintain state water quality standards throughout the in-water work window. All work will be done in late summer, when flows in the Snoqualmie River are at their lowest.

Water diversion will not only minimize turbidity during construction, but will also reduce the need to remove fish and the potential of harm. Diversion or reducing velocities was chosen as the preferred construction method because impacts to salmonids are likely to be less than with the dewatering method and it is more feasible in this large river setting. It is likely that work associated with toe rock removal will quickly displace fish holding around the bank to other areas up and downstream of the immediate work area where there is less activity and turbidity. This movement by fish will not involve direct handling or harming of fish. While there may be temporary displacement from the immediate work area, this impact is considerably less than that of capturing, handling and releasing fish upstream of the site during a large scale dewatering of the mainstem river.

As a result of this project, substantial erosion and deposition throughout the riverbanks and floodplain within the project reach are expected and desirable. Revetment removal will allow more frequent and higher-velocity flows to leave the main channel of the Snoqualmie River and flow across the Snoqualmie River floodplain. Such flows will likely initiate and maintain secondary flow paths through the floodplain. These channels will enhance rearing and refuge habitat for juvenile Chinook salmon and other salmonids. Sediment mobilized and transported from the site is not expected to result in measurable differences in turbidity levels downstream because this erosion will occur during high flow events and cannot be differentiated from background levels.

Since erosion and deposition in the floodplain are desirable outcomes of this project, standard erosion control methods are not appropriate at this site. The following practices and rationale will be used to assure that water quality is maintained:

- As outlined above, high velocity flows will be diverted from the in-water work areas to minimize turbidity and maintain State Water Quality Standards during construction.
- Some of the site will be left untreated (bare ground) after grading is completed until late winter or early spring of 2014. Bare ground and depositional areas are likely to recruit naturally regenerating early successional tree and shrub species like alder, cottonwood and willow.
- Smaller rain events may release sediment from disturbed areas immediately adjacent to the project site. This release is unlikely to cause downstream water quality to fall below state water quality standards due to the magnitude of flows in the Snoqualmie River at this time.
- Although substantial fine sediment could be generated from the site during flood events, the site's contribution of turbidity to the mainstem river is unlikely to be significant or measurable during these larger floods.

Some wetland areas will be affected by project activities due to increases in hydraulic connectivity to the river and floodplain. In the long term, impacts to wetlands will be primarily positive and will restore and enhance wetland function. The mitigation measures listed below are intended to prevent any loss or degradation of wetlands that might occur from the revetment removal.

1. Removal of invasive species is expected to help restore open-water wetland functions and habitats.
2. Revetment removal and increases in hydraulic connectivity to the river and adjoining floodplain is expected to increase open-water wetland areas. These actions will improve the quality of existing wetlands by decreasing the residence time of water and allowing water to flow through more rapidly, contributing to an increase in dissolved oxygen levels and water quality in general. This action will also restore an historical and natural hydrologic connection between the wetlands and the Snoqualmie River.
3. Planting native vegetation within the riparian corridor and floodplain will reduce the rate of invasive species re-growth.
4. BMPs will be in place to ensure that no sediment can enter the wetlands from the project. The footprint of the project has been designed to stay away from the wetlands for a minimum distance of 150 feet.
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?

The proposed project is intended to initiate change along the river's edge that is currently occupied by the revetment. The cumulative effect on current land and shoreline use activities over time will be defined by the way the river interacts with its historical floodplain. The change to land and shoreline uses is not expected to be dramatic or incompatible with existing uses, rather it is expected to be a slow process that gradually restores historical functions to the riverine environment. This restoration process is expected to take place over decades and will result in a dynamic shoreline edge that more closely resembles the historic shoreform in this reach.

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

None proposed.

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

The proposed project will not have any impacts on transportation or public services and utilities.

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

None proposed.

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

The project will comply with all local, state, and federal laws or requirements to protect the environment.