

## 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:

**Teanaway River Streambank Stabilization and Environmental Enhancement**

2. Name of applicant:

**Olin Nichols**

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

**PO Box 577, Cle Elum, WA. 98922 (mailing)**

**1290 Quail Drive, Cle Elum, WA. 98922 (physical)**

4. Date checklist prepared:

**August 11, 2011**

5. Agency requesting checklist:

**Washington Department of Fish and Wildlife**

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

**Start Date August 29 to September 26, 2011 (project length is approximately 10-14 days); if not then as soon as permits are received within work window.**

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.

The majority of the property is currently being cultivated and farmed (timothy hay). Because of this the majority of the property is devoid of trees and shrubs, except for a strip of vegetation along the shoreline of the river. The width and quality of vegetation along the shoreline vary greatly depending on the location. With the Project Area there is no riparian vegetation and habitat is minimal due to the active erosion of the shoreline. Downriver of the Project Area, the riparian vegetation is wide and provides quality riparian and terrestrial functions. There is also a large wetland on the downriver portion of the property, which is providing high quality habitat and functions. The proposed project would not impact the functions and values provided by the wetlands and riparian habitat on the downriver portion of the property. Within the Project Area, which is the portion of the shoreline that is currently eroding, there is little habitat. The Project Area is on an outside bend which should have some natural erosion taking place. The left bank, where the proposed project will occur, is high, approximately 4-6 ft above the OHWM. Prior to 2009, there was a strip of native riparian vegetation along the shoreline, which was installed and maintained by the landowner; however, all of the vegetation was washed away during the 2009 flood event.

Additionally, extensive environmental assessments have been done by the NRCS and others and are included in the attached Biological Assessment.

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.

None

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

HPA

Shoreline Permit from County – already granted

Army Corps of Engineers Permit

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 purpose and need of the proposed project is to stabilize the shoreline on the subject property, eliminating the potential for significant erosion of the shoreline and subsequent loss of agricultural lands. Based on a geomorphic analysis (See Sutherland Report; Attached) on the Project Area, the left stream bank has compound meanders with radius of curvature to width ratio of 0.5 ft/ft to 1.7 ft/ft, which is characteristic of an unstable actively eroding meander. This is supported by the active erosion that has been observed over the past 2 years, which has resulted in significant inputs of fine material into the river and a significant loss to adjacent agricultural lands. The proposed project would construct a new channel with a radius of curvature to width ratio between 2.9 ft/ft and 4.7 ft/ft, which is within the range for a stable natural channel. Without the proposed project, the unstable meander of the river will continue to erode the shoreline, mobilizing large quantities of sediment and destroying the existing agricultural lands. It is very important to complete the proposed project during the 2011 work window in order to avoid future loss of agricultural land during winter and spring high flows. The proposed project would not only stabilize the shoreline and protect the agricultural lands, but it is also required to resolve the existing USACE violations associated with the placement on fill in the river as part of emergency protection measures designed and coordinated by the WDFW.

#### Project Description

In January, 2009, the Teanaway River experienced a flood event that eroded streambanks in many areas. The proposed project will help restore the river channel and floodplain along a portion of the Teanaway River that was disrupted by the flooding. At the project site, the flood eroded an area measuring 750 feet in length and up to 200 feet in lateral extent. A diversion and emergency channel were constructed immediately following the flooding, to counteract further damage. Presently, the stream primarily follows the emergency channel, with some flow in a channel next to the left bank. Adjacent to the left bank, there is little riparian or in-stream habitat. The project establishes a stable geomorphic planform for the river and protects several acres of field from flood-induced erosion. The proposed project also enhances riparian and in-stream habitat.

The job consists of constructing approximately 750 feet of new channel and overflow bench. The project planform and dimensions design are based on a bankfull or channel forming flow of 2,500 ft<sup>3</sup>/s. To reestablish and maintain the planform and dimensions, rock vanes and wood structures will be constructed along the left bank. Riparian vegetation will be planted on 1.9 acres of the left bank overflow bench and portions of the landowner's hay field. In all, the overflow bench, structural components, and riparian vegetation will serve to promote riparian and in-stream habitat.

## Project Description

1. Mobilize equipment – an excavator, dump truck and metal bridge (to be determined based on the amount of fill needed to be transported from west side of river) will be used throughout the project. All heavy equipment will be staged and fueled at least 150 feet away from the stream.
2. At the upstream end of the project area, reusable sand bags (super sacks) will be placed above the remaining portion of log/rock barb (that was installed previously to this project) in order to divert river to the right side (west) away from the construction site. The sacks can be placed in the river without heavy equipment needing to enter the water. The area the super sacks will occupy is approximately 1000 sq ft. at the upstream end and approximately 2,500 sq ft at the downstream end. The super sacks will be placed in a row; one sack width. On the upstream end, the dimensions would be 3 feet wide by 100 feet long into the stream. On the downstream end, the dimensions would be 3 feet wide by 250 feet long into the stream. Each super sack will contain 1 cubic yard amount of material; material will be taken from a dry gravel bar. The sacks will be placed in the channel without it being dewatered. And approximately 50% of the super sacks will be out of the water. Clean onsite material will be placed around the sacks to fill in the gaps. A fish net will also be installed on the upstream side of this diversion to prevent fish from moving into the construction area.
3. On the downstream end of the project area, super sacks will be installed in an offset (checker board) pattern and hay bales will be used to fill in between the sacks to trap any sediment that may be produced during construction of the vanes and log structures. Additionally, a fish net will be installed at the downstream side of this diversion to prevent fish from moving into the construction area.
4. Following the installation of the super sacks and prior to any inwater work, fish salvage will be conducted by WDFW personnel and equipment. WDFW staff will conduct multiple capture and removal electrofishing efforts to capture fishes within the impacted area. Data collected from captured fish will include identification, length and weight then place into a recovery tank. Once captured fish have recovered they will be released into the mainstem of the Teanaway River. Block nets will be placed above and below the proposed construction area to prevent fish from moving into the impacted area once removal has commenced. Because there is a possibility of contacting sensitive species shocking crews will adjust the GPP output settings accordingly to minimize detrimental effects of electrofishing (Dave Burgess, WDFW; see attached).
5. Stabilization of the shoreline and construction of a stable natural meander (curvation) will consist of reconstructing the channel with a bottom width of 30-feet and 3:1 slopes on both sides. With this alternative, the contractor will not fill the existing emergency channel. Over time, the movement of bedload is expected to reshape the reconstructed channel and emergency channel into a single channel. The channel reconstruction will require approximately 3,800 yd<sup>3</sup> excavation. To complement the reconstructed channel, NRCS designed an overflow bench that uses excavated material from reconstructed channel excavations. The overflow bench is 6 feet above the constructed channel bottom tying the adjacent field to the bench at 3:1 slopes. The bench width varies from 0 to 84 feet. The bench will have a slight slope to the stream. The bench will be composed of native materials (sands, gravels, some cobbles and fines). The bench is 2 to 3 feet below the adjacent field and approximately 1 foot above the OHW. Construction of the bankfull bench will require approximately 3,300 yd<sup>3</sup> fill material from the channel excavation. The overflow bench will be seeded with grasses, brome, and wildrye. Thirteen strips of willow cuttings will be placed on the overflow bench. The overflow bench and a designated part of the adjacent field (floodplain) is designated as the riparian planting area and will be managed accordingly (see item 8 below).
6. Rock and wood will be obtained from Thayer Contracting; trees will not be harvested from the riparian area or anywhere on the property. The contractor has them stockpiled. Large wood will be composed of pine and fir trees, not deciduous trees. All of the existing rock from previous work on the landowner's property will be relocated to the new vane locations. Four rock vane structures, each measuring 80 feet in length, for the left bank. The structures are spaced 150-feet apart and consist of 80 inch minus rock gradation. The vanes extend into the stream channel at a 25 degree angle from the overflow bench tangent and have a vertical slope of 4 degrees. They are keyed into the overflow bench and existing ground surface as shown on the drawings. The rock vanes create near-bank backwater pools and distribute channel velocity to reduce bank shear stresses. Excavated material taken from the vanes and keys are used on site. Construction of the rock vanes will require 1,876 cubic yards of rock; however, about 110 cubic yards will be salvaged for on-site sources. Approximately 4000 square feet of rock will be exposed above the channel bottom. Only 2000 square feet will be exposed above ordinary high water. Approximately 80 – 90% of the vanes will be embedded into the channel. The voids in the rock vanes will be filled with excess gravels. All backfill will be composed of native materials.

The rock vanes contain a small wood structure consisting of two harvested and limbed trees with the attached root wad boles. The trees are angled and buried inside the vanes except for the root wad boles located on the downstream side of the vane. Large wood structures are located upstream and downstream of the vanes and consist of five

harvested and limbed trees with the attached root wad boles. The large wood structures consist of three rootwad bole members and one anchor log members, each measuring from 30-34 feet in length. The diameter of each rootwad bole member and anchor log member will be from 22-26 inches measured at breast height. Each rootwad bole member will be pinned to each anchor log member, and the composite structure is anchored by placing 6-3.5 feet diameter ballast boulders on top. Additional anchorage is achieved by burial of most of the composite structure using large native channel bottom material as fill. Scour pools associated with the large wood structures auto-generate during flooding, nonetheless, excavations immediately downstream of each root wad bole will be carried out to initiate their formation. Willow cuttings and other suitable riparian vegetation will be planted between the wood structures, vanes and throughout the overflow bench. The wood structures and riparian vegetation provide habitat at the site. Wood will be composed of pines and firs, not deciduous species and are being placed into the project to improve habitat conditions in the project area.

Fill (from onsite; native material excavated from the channel) will be put around vanes and log structures from the dewatered area which will create the new primary channel.

7. Vegetation will be planted as the vanes and log structures are installed. The vegetation that will be planted in the wetted perimeter will be planted during construction using the heavy equipment on site (Aug/Sept) in order to get the roots down to the water and increase the survival rate; those species consist of willow, dogwood, cottonwood, water birch, and aspen. Willow cuttings will be placed around the rock vanes and the large wood structures at a spacing of two feet. A single cluster of willow cuttings will be placed between rock vanes and large wood structures, each consisting of two rows measuring three feet between rows and two foot spacing between cuttings. A single cluster of willow cuttings will also be placed between successive large wood structures. Thirteen strips of willow cuttings will be placed on the overflow bench. Each strip will have a single row of willows at a spacing of two feet. Three strips of willows will be placed between rock vanes, and two strips will be placed beyond the first and last rock vanes. The entire riparian planting area, at or above the elevation of the overflow bench, will be seeded with the grasses, brome, and wildrye.

The upland vegetation will be planted during a more suitable time to ensure survival (November or April) following construction; species consist of ponderosa pine, blue elderberry, chokecherry, and snowberry. Trees/shrubs will be intermixed within designated areas (blue – wetted perimeter, green – uplands) at 600 stems per acre (see attached NRCS Tree and Shrub Establishment planting specification).

8. The contractor will haul any excess channel excavation material (should there be any) from the site. The contractor will spread approximately 3,000 yd<sup>3</sup> of spoil piles on the right side of the emergency channel in the right floodplain area. No remnant channels on the right side of the river will be filled. The material will be spread within the floodplain in a manner that will minimize impacts downstream. All of the rock placed in violation on the applicants property will be placed within the proposed log/rock vanes.
9. Following this, the existing rock and log barb will be preserved to the extent possible, but the rock at end of the barb (to be determined by the onsite engineer) will be removed and used within the new vanes. Maintaining this structure will help minimize disturbance within the river.
10. When the construction of the vanes and log structures are complete, the upper and lower end diversions (super sacks) will be removed using the heavy equipment and water will be allowed to access the new main channel.
11. Planting of the riparian area will proceed as best determined by the current weather conditions with the intent to maximize the survival rate based on precipitation, temp, etc.
12. Equipment will be removed from the site using the same access route which will cross the landowner's field.

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.

1291 Quail Drive, Cle Elum, WA 98922  
Tax Parcels: 264836 and 704935  
N 47.21816 lat. / W 120.7887 Long  
Also see attached Biological Assessment

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

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

**Flat.**

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

**2%**

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.

**Top Soil and gravel/cobble.**

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

**The proposed project is a result of an eroding shoreline. Other than that there are no other sign of unstable soils.**

**However there will be further significant farmland erosion if the project is not completed in August and September of this year (2011).**

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

**Filling and grading will use materials located on site. The purpose of all of the actions contemplated in this project will serve to stabilize the shoreline and create a significant improvement in habitat for fish in the Teanaway.**

**The proposed project will not only stabilize the eroding shoreline, but it will also resolve the existing violation associated with the excavation and placement of fill as part of emergency actions in 2009. As part of these actions, a large amount of native gravel and cobble was removed from the river (as part of opening up the emergency channel). This material was placed across the river above the OHWM but above the OHWM. The proposed project would also resolve the violation associated with the emergency installation of several rock barbs, log jam and a gravel berm. In total, the emergency work resulted in the placement of approximately 440 sq ft of material (gravel, cobble, and rip rap) to try and stabilize the shoreline. The rip rap was purchased from a local excavation company and the gravel/cobble was from on-site. An additional 100 cubic yards of material was excavated from the river and then placed within the OHWM of the river. All of this material was placed along the shoreline of the subject property. Portions of this material have been washed away.**

**The proposed stabilization of shoreline will require the placement of approximately 4,876 cubic yards of material. The majority of this material (~3,300 cubic yards) will be used as fill to construct a stable curvature in the river. The source material for this fill will consist of the material to be excavated from the river to construct a new main channel and potentially form the stockpiled material from the right bank of the river. The excavation for the main channel and placement of that material will occur using an excavator. Material from the right bank would be obtained by placing a temporary bridge across the river for the excavator to cross the river without entering the wetted portion of the river (temporary bridge described above). Rock for the vanes will be angular riprap to quarry spall (80 inch minus rock gradation) and will be purchased for a local quarry and delivered to the site or the existing rock placed as part of the emergency actions will be used. The installation of the rock vanes will require the placement of 1,876 cubic yards of rock using an excavator.**

**All excavation will occur using an excavator either operated from the uplands or within the dewatered riverbed. Approximately 187 cubic yards of material (rip rap and boulder) will be removed as part of the resolution of the existing USACE violation. This material was placed in the river as part of the emergency actions, as designed and coordinated with WDFW. This material may be used for the construction of the proposed vanes. A total of approximately 3,800 cubic yards of native material will be excavated from the river to construct the new channel. The majority of this material will be used as fill (described above). Any material not used as fill will be loaded into trucks and disposed of at an appropriate disposal location outside of the 200 ft shoreline zone and outside of the 100 year floodplain. All this will occur using an excavator operated from the top of bank or within the dewatered channel.**

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

**The construction detailed in the project will serve to reduce future erosion. The proposed project could result in increased erosion following the placement of material within the OHWM as well as during construction prior to the placemtn of the select material.**

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

**No impervious surfaces are called for with this project and the amount of impervious surfaces will not be affected.**

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

No erosion is contemplated with the construction of the project and future erosion will be avoided. As part of the project construction, a cofferdam will be installed to reduce the potential for any increase in turbidity as a result of the project.

## 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.  
**Limited exhaust from construction equipment for 10 to 14 days. No long term sources of emission.**
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.  
**None.**
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:  
**None required.**

## 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.  
**The Teanaway River is on site and it flows into the Yakima River.**
- 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 entire project will occur within 200 ft of the river. See Section 11 for details.**
- 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.  
**See Section 1e above for a full description of all dredging and filling activity**

Material that is dredged or moved in the project site is all present at the project location. Stabilization of the shoreline and construction of a stable natural meander (curvation) will consist of reconstructing the channel with a bottom width of 30-feet and 3:1 slopes on both sides. With this alternative, the contractor will not fill the existing emergency channel. Over time, the movement of bedload is expected to reshape the reconstructed channel and emergency channel into a single channel. The channel reconstruction will require approximately 3,800 yd<sup>3</sup> excavation. To complement the reconstructed channel, NRCS designed an overflow bench that uses excavated material from reconstructed channel excavations. The overflow bench is 6 feet above the constructed channel bottom tying the adjacent field to the bench at 3:1 slopes. The bench width varies from 0 to 84 feet. The bench will have a slight slope to the stream. The bench will be composed of native materials (sands, gravels, some cobbles and fines). The bench is 2 to 3 feet below the adjacent field and approximately 1 foot above the OHW. Construction of the bankfull bench will require approximately 3,300 yd<sup>3</sup> fill material from the channel excavation. The overflow bench will be seeded with grasses, brome, and wildrye. Thirteen strips of willow cuttings will be placed on the overflow bench. The overflow bench and a designated part of the adjacent field (floodplain) is designated as the riparian planting area and will be managed accordingly (see item 8 below).

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.  
**There is very limited flow in the project area during August, September and into October. Diversion of the flow is as follows:**  
**At the upstream end of the project area, reusable sand bags (super sacks) will be placed above the remaining portion of log/rock barb (that was installed previously to this project) in order to divert river to the right side (west) away from the construction site. The sacks can be placed in the river without heavy equipment needing to enter the water. The area the super sacks will occupy is approximately 1000 sq ft. at the upstream end and approximately 2,500 sq ft at the downstream end. The super sacks will be placed in a row; one sack width. On the upstream end, the dimensions would be 3 feet wide by 100 feet long into the stream. On the downstream end, the dimensions would be 3 feet wide by 250 feet long into the stream. Each super sack will contain 1 cubic yard amount of material; material will be taken from a dry gravel bar. The sacks will be placed in the channel without it being dewatered. And approximately 50% of**

**the super sacks will be out of the water. Clean onsite material will be placed around the sacks to fill in the gaps. A fish net will also be installed on the upstream side of this diversion to prevent fish from moving into the construction area.**

**On the downstream end of the project area, super sacks will be installed in an offset (checker board) pattern and hay bales will be used to fill in between the sacks to trap any sediment that may be produced during construction of the vanes and log structures. Additionally, a fish net will be installed at the downstream side of this diversion to prevent fish from moving into the construction area.**

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

**Yes. See attached Biological Assessment**

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.

**None.**

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.

**Does not apply.**

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.

**Does not apply.**

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.

**Does not apply.**

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

**No, does not apply.**

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

**Does not apply.**

#### 4. Plants

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

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

grass

pasture

crop or grain

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?

**None removed**

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

**No threatened or endangered species are known to be on or near the site.**

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

**The proposed project will result in impacts to the aquatic and riparian areas; however, the project will also result in the installation of several habitat elements that will minimize the impacts and provide mitigation for the potential impacts of the project. Impacts associated with the project will primarily be due to the placement of fill within the OHWM of the**

river. The placement of fill will consist of the installation of four rock vanes and the placement of ~30,000 sq ft of fill below the OHWM. This fill will be placed within an area that was uplands prior to the significant erosion events within the past few years. This fill is required to provide a stable bend in the river that would not require a more significant armorment of the shoreline to disperse the energy from the high flows. Habitat elements of the project entail the placement of logs and willow at the terminal end of the vanes, the installation of woody debris structures between the vanes and the installation of native riparian trees and shrubs within 100 ft of the OHW.

The rock vanes contain a small wood structure consisting of two harvested and limbed trees with the attached root wad boles. The trees are angled and buried inside the vanes except for the root wad boles located on the downstream side of the vane. Large wood structures are located upstream and downstream of the vanes and consist of five harvested and limbed trees with the attached root wad boles. The large wood structures consist of three rootwad bole members and one anchor log members, each measuring from 30-34 feet in length. The diameter of each rootwad bole member and anchor log member will be from 22-26 inches measured at breast height. Each rootwad bole member will be pinned to each anchor log member, and the composite structure is anchored by placing 6-3.5 feet diameter ballast boulders on top. Additional anchorage is achieved by burial of most of the composite structure using large native channel bottom material as fill. Scour pools associated with the large wood structures auto-generate during flooding, nonetheless, excavations immediately downstream of each root wad bole will be carried out to initiate their formation. Willow cuttings and other suitable riparian vegetation will be planted between the wood structures, vanes and throughout the overflow bench. The wood structures and riparian vegetation provide habitat at the site. Wood will be composed of pines and firs, not deciduous species and are being placed into the project to improve habitat conditions in the project area. Fill (from onsite; native material excavated from the channel) will be put around vanes and log structures from the dewatered area which will create the new primary channel.

Vegetation will be planted as the vanes and log structures are installed. The 1.9 acres of vegetation that will be planted in the wetted perimeter will be planted during construction using the heavy equipment on site (Aug/Sept) in order to get the roots down to the water and increase the survival rate; those species consist of willow, dogwood, cottonwood, water birch, and aspen. Willow cuttings will be placed around the rock vanes and the large wood structures at a spacing of two feet. A single cluster of willow cuttings will be placed between rock vanes and large wood structures, each consisting of two rows measuring three feet between rows and two foot spacing between cuttings. A single cluster of willow cuttings will also be placed between successive large wood structures. Thirteen strips of willow cuttings will be placed on the overflow bench. Each strip will have a single row of willows at a spacing of two feet. Three strips of willows will be placed between rock vanes, and two strips will be placed beyond the first and last rock vanes. The entire riparian planting area, at or above the elevation of the overflow bench, will be seeded with the grasses, brome, and wildrye. The upland vegetation will be planted during a more suitable time to ensure survival (November or April) following construction; species consist of ponderosa pine, blue elderberry, chokecherry, and snowberry. Trees/shrubs will be intermixed within designated areas (blue – wetted perimeter, green – uplands) at 600 stems per acre (see attached NRCS Tree and Shrub Establishment planting specification).

In summation, the project would result in fill being placed over approximately 30,000 sq of the river below the OHW, which was not part of the river 2 years ago. This area has recently eroded and is evidence that this portion of the river needs to have a more stable curvature based on its position in the river and the existing flow and sediments. The project would also result in the installation of 4 large vanes that will result in the presence of approximately 4,000 sq ft of exposed angular rock above the riverbed. Mitigation for these aspects of the project would entail the installation of gravels and cobbles over the angular rock and the installation of logs and woody debris structures within the OHW. The project would also result in the construction of a bench that together with the adjacent uplands will be heavily planted with native riparian vegetation. In total the project would result in the installation of 1.9 acres of riparian vegetation.

## 5. Animals

- a. Circle (underline) 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 endangered fish species which have been observed on or near the site:  
**None have been seen on site. Species listed under the ESA that may be present in the vicinity of the Project site include Middle Columbia River Steelhead trout (Oncorhynchus mykiss – threatened) and Columbia River bull trout (Salvelinus confluentus – threatened).**
- c. Is the site part of a migration route? If so, explain.  
**Yes, the river is used by anadromous salmon and bull trout.**
- d. Proposed measures to preserve or enhance wildlife, if any:  
**See Section 4d for mitigation actions for the project.**

**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.  
**Does not apply**
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.  
**Does not apply.**
- 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:  
**Does not apply**

**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.  
**Does not apply.**
  - 1) Describe special emergency services that might be required.  
**None**
  - 2) 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)?  
**There are no sources of noise that will affect the project.**
- 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.  
**Short term there will be an increase in noise associated with the operation of construction equipment. The duration will be between 10-14 days and will be limited to the project site. Noise is not expect to impact the surrounding properties and will be limited to daylight hours.**
- 3) Proposed measures to reduce or control noise impacts, if any:  
**Does not apply.**

**8. Land and shoreline use**

- a. What is the current use of the site and adjacent properties?  
**Farming of timothy hay for export.**
- b. Has the site been used for agriculture? If so, describe.  
**Yes, hay farming.**
- c. Describe any structures on the site.  
**None.**
- d. Will any structures be demolished? If so, what?  
**None.**
- e. What is the current zoning classification of the site?  
**Agriculture.**
- 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?

**Does not apply.**

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

**Do not know.**

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

**The completed project will not result in an increase of people working or residing at the site.**

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

**None.**

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

**Does not apply.**

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

**The proposed project would eliminate the erosion of the existing riverbank and protect the agricultural lands waterward of the OHWM of the river. The use of the property for agriculture is consistent with the zoning and the existing and projected land uses and plans. The surrounding properties are used for agriculture and this project would allow for the continued farming of the property.**

## 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:

**Does not apply.**

## 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?

**Does not apply.**

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

**Does not apply.**

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

**Does not apply**

## 11. Light and glare

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

**Does not apply.**

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?

**Does not apply.**

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

**Does not apply.**

## 12. Recreation

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

**River rafting, fishing and hiking.**

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

**No**

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

**Does not apply.**

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.  
**None.**
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.  
**None.**
- c. Proposed measures to reduce or control impacts, if any:  
**Does not apply.**

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.  
**The Teanaway road will be used to access the farm and equipment will cross the farm to the site.**
- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?  
**No, the nearest transit stop is in Cle Elum.**
- c. How many parking spaces would the completed project have? How many would the project eliminate?  
**Does not apply.**
- 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).  
**None needed.**
- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.  
**Does not apply.**
- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.  
**Approximately three per day.**
- g. Proposed measures to reduce or control transportation impacts, if any:  
**Limited transportation impact.**

15. Public services

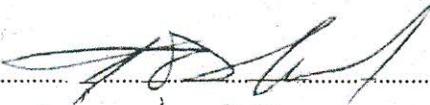
- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.  
**Does not apply.**
- b. Proposed measures to reduce or control direct impacts on public services, if any.  
**Does not apply.**

16. Utilities

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

Signature:  .....

Date Submitted: August 15, 2011 .....