Forest Practices Application/Notification
Office Checklist Page 1
Northwest Region

FPA/N #: 2816879
Received Date: 3-18-19
WDFW Concurrence Due Date: 
WDFW Concurrence Review Completed: 
Comments Due Date: 4-1-19
Decision Due Date: 4-17-19
FP Forester: SKY30
Shutdown Zone: 656
RMAP #: 

FPA/N CLASSIFICATION: [ ] II [ ] III [ ] IVG [ ] IVS
Biomass [ ] FFFPP [ ] 20-acre exempt [ ]

Landowner Name: Northwest Pipeline LLC et al
Project Name: North Seattle Lateral Upgrade

WRJA: Snohomish
WRIA: Cedar/Sammamish
WRIA: 
WRIA: 
WRIA: 
WRIA: 

Legal Description: 13,14,15,16-27N-5E 18-27N-6E
County: Snohomish

Activity Type: Harvest 30 ac Spray ac Road Crossing(s) 5
Road
Construction 2000 ft Abandonment 2000 ft Spoons cy

ALTERNATIVE PRESCRIPTIONS
[ ] Alternate Plan
[ ] Ten-Year Forest Management Plan
[ ] Columbia River Gorge National Scenic Area
[ ] Watershed Analysis:

RESOURCE REVIEW
[ ] Unstable Slopes (Risk: Highway, Water: 
  [ ] Sclls Map (Highly Erodible & Very Unstable)
  [ ] SLPSTAB
  [ ] Landslide Hazard Zonation
  [ ] Landslide Inventory Polygon
  [ ] Rain-on-Snow and Outside Approved WA
  [ ] Hydric Soils
  [ ] Wetland, [ ] Forested, [ ] A, [ ] B
  [ ] In WMZ of, [ ] A, [ ] B Wetland
  [ ] In RMZ/ELZ of Type [ ] S, [ ] F, [ ] N water
  [ ] Water Verification

ASSOCIATED NON-SCANNED DOCUMENTS – On file with the FPA/N at the Region office.
[ ] SEPA Checklist/Documents

ASSOCIATED SCANNED DOCUMENTS
[ ] Conversion Option Harvest Plan
[ ] FPHP Plans & Specifications
[ ] Qualified Expert Report; Type:
[ ] Natural Regeneration Plan
[ ] Shoreline Permit
[ ] Marbled Murrelet Form
[ ] FPBM Appendix(s)
[ ] Small Landowner RMAP Checklist
[ ] CMZ Assessment Form

EARR Tax Credit [ ] Yes [ ] No

ADDITIONAL COMMENTS:

Form completed by KT
October, 2016 Version
**Forest Practices Application/Notification**  
**Western Washington**

**PLEASE USE THE INSTRUCTIONS TO COMPLETE THIS APPLICATION.**

1. **Landowner, Timber Owner and Operator**

<table>
<thead>
<tr>
<th>Legal Name of LANDOWNER</th>
<th>Legal Name of TIMBER OWNER</th>
<th>Legal Name of OPERATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest Pipeline, LLC et al. (see attached landowner list for all ownerships)</td>
<td>☒ Same as Landowner</td>
<td>☒ Same as Landowner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mailing Address:</th>
<th>Mailing Address:</th>
<th>Mailing Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>16504 - 9th Avenue SE, Suite 101</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City, State, Zip:</th>
<th>City, State, Zip:</th>
<th>City, State, Zip:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mill Creek, WA 98012</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone:</th>
<th>Phone:</th>
<th>Phone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(425) 714-1300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email:</th>
<th>Email:</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:rodney.gregory@williamsa.com">rodney.gregory@williamsa.com</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Contact Person**

<table>
<thead>
<tr>
<th>Contact Person:</th>
<th>Phone:</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter C. Blansett, S. A. Newman, Forest Engineers, Inc.</td>
<td>(425) 259-4411</td>
<td><a href="mailto:pblansett@sanforest.com">pblansett@sanforest.com</a></td>
</tr>
</tbody>
</table>

3. **Are you converting the land to non-forestry use within 3 years of harvest?**

- ☒ No  ☐ Yes  If yes, include your SEPA checklist and SEPA determination (if applicable) and county clearing and grading permit (if applicable).

4. a. **If you are harvesting timber, enter the Forest Tax Number of the Timber Owner:**

   800 037 062

   *Contact the Department of Revenue at 1-800-548-8829 for tax reporting information or to obtain a number.*

   b. **Are you eligible for EARR Tax Credit?**  ☒ No  ☐ Yes

5. **Are you a small forest landowner per RCW 76.09.450?** See instructions

- ☐ No  ☒ Yes  If yes, Check all that apply. If no, skip to Question 6.
  - ☐ My entire proposed harvest area is on a single contiguous ownership consisting of one or more parcels.
My proposed forest practices activities are within an area covered by an approved Forest Stewardship Plan or Forest Management Plan developed in cooperation with DNR.

☐ I received technical assistance from a DNR small forest landowner Stewardship and Technical Assistance Forester in preparing this FPA/N.

☐ I have participated in a Washington State University Extension Service and/or DNR-sponsored Forest Stewardship Coached Planning course.

☐ I have attended a Washington State University Extension Service and/or DNR-sponsored Family Forest Owner Field Day.

6. Are you substituting prescriptions from an approved state or federal conservation agreement or Watershed Analysis?

☐ No ☐ Yes Write 'HCP' or 'Using Prescriptions' in tables that apply. Attach or reference prescriptions and/or crosswalks for approved state or federal conservation agreements or Watershed Analysis on file at the Region office.

7. What is the legal description of your forest practices?

<table>
<thead>
<tr>
<th>Section</th>
<th>Township</th>
<th>Range</th>
<th>E/W</th>
<th>Tax Parcel Number</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>27 N</td>
<td>6</td>
<td>E</td>
<td>(see attached complete landowner list)</td>
<td>Snohomish</td>
</tr>
<tr>
<td>13</td>
<td>27 N</td>
<td>5</td>
<td>E</td>
<td></td>
<td>Snohomish</td>
</tr>
<tr>
<td>14</td>
<td>27 N</td>
<td>5</td>
<td>E</td>
<td></td>
<td>Snohomish</td>
</tr>
<tr>
<td>15</td>
<td>27 N</td>
<td>5</td>
<td>E</td>
<td></td>
<td>Snohomish</td>
</tr>
<tr>
<td>16</td>
<td>27 N</td>
<td>5</td>
<td>E</td>
<td></td>
<td>Snohomish</td>
</tr>
</tbody>
</table>

8. Have you reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources? Read the instructions before answering this question.

☐ No ☐ Yes If you made any contacts, please provide information in Question 28.

9. Do you have a DNR approved Road Maintenance and Abandonment Plan (RMAP)?

a. ☐ No ☐ Yes If no, skip to c., if yes, enter your RMAP number: ____________________, continue to b.

b. ☐ No ☐ Yes Is this Forest Practices Application/Notification for work that is included in this approved RMAP?

c. ☐ No ☐ Yes Is a Checklist RMAP required (see instructions)?

10. Are there potentially unstable slopes or landforms in or around the area of your forest practices activity?

☐ No ☐ Yes If yes, attach Appendix D. Slope Stability Informational Form and map of areas reviewed for and locations of unstable slopes and landforms found. If applicable, attach a geotechnical letter, memo, or report, Watershed Analysis prescriptions, and/or a SEPA Environmental Checklist.

11. Is this Forest Practices Application/Notification (answer every question):

a. ☐ No ☐ Yes A request for a multi-year permit? If yes, length requested: ☐ 4 years or ☐ 5 years. Not everyone qualifies for a multi-year permit. See instructions for details.

b. ☐ No ☐ Yes An Alternate Plan? If yes, include a template or detailed plan. See instructions for details.
c. No ☐ Yes  For a funded Forest Family Fish Passage Program project?

d. No ☐ Yes Within an urban growth area? If yes, see instructions for additional required documents.

e. No ☐ Yes Within a public park? If yes, include SEPA Environmental Checklist or SEPA Determination, except for harvest/salvage of less than 5,000 board feet within a developed public park. Park name: ________________________________

f. No ☐ Yes Within 500 feet of a public park? Park name: ________________________________

g. ☐ Yes In an approved Conversion Option Harvest Plan (COHP) from the local government? If yes, include a copy. This only applies to proposals within urban growth areas.

h. ☐ No ☐ Yes Within 200 feet of the Ordinary High Water Mark (OHWM) or floodway of Type S Water? If yes, check with the county or city to determine whether a substantial development permit is required under the local shorelines master plan.

i. ☐ No ☐ Yes Within 50 miles of saltwater AND you own more than 500 acres of forest land in Washington State? If yes, include Marbled Murrelet Form or attach/reference HCP prescriptions.

j. No ☐ Yes In or directly adjacent to a potential Channel Migration Zone (CMZ)? If yes, include CMZ Assessment Form. Attach/reference applicable HCP and/or Watershed Analysis prescriptions.

You are required to verify all waters within 200 feet of your proposed forest practices activities prior to submitting a Forest Practices Application / Notification. Use the Water Type Classification Worksheet and/or a Water Type Modification form to explain how you verified water types. See Water Typing Requirements in the instructions.

***** If not working in or over typed Waters, skip to Question 16 *****

Prior to answering Questions 12-15 in this section please refer to the Forest Practices Application Instructions and Forest Practices Board Manual Section 5.

12. Are you proposing any of the following projects NOT permitted by current HPAs from WDFW?

a. ☐ No ☐ Yes Installing, replacing, or repairing a culvert at or below the bankfull width of Type S or F Water(s) that exceeds a five percent gradient?

b. ☐ No ☐ Yes Constructing, replacing, or repairing a bridge at or below the bankfull width of unconfined streams in Type S or F Water(s)?

c. ☐ No ☐ Yes Placing fill material within the 100-year flood level of unconfined streams in Type S or F Water(s)?

13. Have you consulted with DNR and/or WDFW about the proposed hydraulic project(s) in or over Type S or F Water? ☐ No ☐ Yes

14. If installing, replacing, removing, or maintaining structures in or over any typed Water, complete the table below. Provide crossing locations and identifiers on your Activity Map. Provide plan details in Question 28 or attach plan to the FPA/N. Type S and F Waters require detailed plan information. Complex hydraulic projects in Type N Waters may also be required per WAC 222-24-042(2). See instructions for detailed plan requirements.
**Existing HPAs issued by WDFW will be complied and enforced by WDFW until expiration. Plan details are not required for hydraulic projects permitted with an existing HPA (see instructions).**

**Fords and/or equipment crossings on Type S and F Waters may result in an unauthorized incidental take of certain threatened or endangered fish species. For more information, see 'Background for the State’s Incidental Take Permits for certain threatened and endangered fish species’ following Question 22 of the FPA/N Instructions.**

15. If conducting any of the following activities in or over typed Water(s), complete the table below. Some activities will require identifiers on the Activity Map and/or more information in Question 28. See instructions.

<table>
<thead>
<tr>
<th><em>Activity</em></th>
<th>Type S Water</th>
<th>Type F Water</th>
<th>Type Np Water</th>
<th>Type Ns Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Crossing**</td>
<td>PROVIDE DETAILS IN QUESTION 14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspending Cables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable Yarding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LWD Placement/Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver Dam Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felling and Bucking</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Other (describe in Question 28)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Existing HPAs issued by WDFW will be complied and enforced by WDFW until expiration. Plan details are not required for hydraulic projects permitted with an existing HPA (see instructions).**

**Fords and/or equipment crossings on Type S and F Waters must be identified in Question 14.**

16. If constructing or abandoning forest roads, complete the table below. Show the road locations and identifiers on the Activity Map. Include abandonment plans for all temporary roads and abandonment projects.

<table>
<thead>
<tr>
<th>Road Identifier (name, number)</th>
<th>Road Construction</th>
<th>Road Abandonment</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Length (feet)</td>
<td>Length (feet)</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Steepest Side-slope (%)</td>
<td></td>
</tr>
</tbody>
</table>
17. If depositing spoils and/or expanding or developing a rock pit for forestry use, complete the table below. Show locations and identifiers on the Activity Map.

<table>
<thead>
<tr>
<th>Spoil Area Identifier (letter, number)</th>
<th>Amount of Spoils Deposited (cubic yards)</th>
<th>Rock Pit Identifier (name, number or letter)</th>
<th>Acres of New Rock Pit Developed</th>
<th>Acres of Existing Rock Pit Expanded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. If operating within 200 feet of a wetland that is not associated with Type S or F Water, complete the table below. Wetlands associated with Type S or F water should be listed in Question 25. Show the boundaries of each wetland, along with its identifier, and Wetland Management Zones on the Activity Map. See instructions for information.

<table>
<thead>
<tr>
<th>Wetland Identifier (letter, number)</th>
<th>Wetland Type (A, B, Forested)</th>
<th>Planned Activities in Wetland</th>
<th>Planned Activities in Maximum Width WMZ</th>
<th>Total Wetland Acres</th>
<th>How many Acres will be drained?</th>
<th>How many Acres will be filled?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJ,Al,AA,Z</td>
<td>Forested</td>
<td>Harvest</td>
<td>n/a</td>
<td>1.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IJ,A,C,D,E</td>
<td>Forested</td>
<td>Harvest</td>
<td>n/a</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>F,G,H,AM,</td>
<td>Forested</td>
<td>Harvest</td>
<td>n/a</td>
<td>1.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AB,AC,AD</td>
<td>Forested</td>
<td>Harvest</td>
<td>n/a</td>
<td>0.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AE,AF,AG</td>
<td>Forested</td>
<td>Harvest</td>
<td>n/a</td>
<td>0.9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* * * * * If not harvesting or salvaging timber, skip to Question 27 * * * * *

19. If harvesting or salvaging timber, complete the table below. Show all harvest areas and unit numbers on the Activity Map. For even-aged harvest units, also show surrounding stand information on the Activity Map.

<table>
<thead>
<tr>
<th>Unit Number</th>
<th>Harvest Type (Even-aged, Uneven-aged, Salvage, Right-of-Way)</th>
<th>Biomass Harvest (Y or N)</th>
<th>Harvest Method (rubber tired skidder, tracked skidder, dozer, shovel, full suspension cable, leading end suspension cable, helicopter, cable assist/tethered logging, animal, chipper, forwarder, slash bundler)</th>
<th>Acres to be Harvested</th>
<th>Volume to be Harvested (mbf)</th>
<th>Biomass Volume to be Harvested (tonnage)</th>
<th>Volume to be Harvested (%)</th>
<th>Steepest Slope in Harvest Unit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Even-aged</td>
<td>N</td>
<td>Shovel, tracked skidder</td>
<td>30</td>
<td>154</td>
<td>0</td>
<td>90</td>
<td>35</td>
</tr>
</tbody>
</table>
20. Reforestation. Check all that apply:

☒ Planting. Tree Species: DF and other conifer
☐ Natural. Include a Natural Regeneration Plan
☐ Not required because of one or more of the following:
  ☐ I am converting some or all of this land to non-forest land in the next 3 years or lands are exempted under WAC 222-34-050.
  ☐ Individual dead, dying, down, or wind-thrown trees will be salvaged.
  ☐ Trees are removed under a thinning program reasonably expected to maximize the long-term productivity of commercial timber.
  ☐ I am leaving at least 100 vigorous, undamaged, and well-distributed saplings or merchantable trees per acre.
  ☐ An average of 190 tree seedlings per acre are established on the harvest area and my harvest will not damage them.
  ☐ Road right-of-way or rock pit development harvest only.

** Do you own MORE than 80 acres of forest land in Washington? If yes, skip to Question 25 **

21. Are you using the exempt 20-acre parcel riparian management zone (RMZ) rule (WAC 222-30-023) on Type S, F, or Np Waters?

☒ No_skip to Question 25.
☐ Yes_continue to Question 22. See instructions for qualifications and information.

22. Choose the answer below that best fits your situation. Show all RMZs on the Activity Map.

☐ a. ALL of the following apply to me and my land: (If no, answer b.)
  • Between June 5, 2006 and today's date I have always owned less than 80 acres of forest land in Washington.
  • Between June 5, 2006 and today's date this parcel has always been 20 acres or less of contiguous ownership. See RCW 76.09.020 for definition of 'contiguous'.
  • Between June 5, 2006 and today's date this parcel has always been owned by me or someone else that has owned less than 80 acres of forest land in Washington.

b. ONE OR MORE of the following apply to me and/or my land (check all that apply):
If any of the statements below apply AND you use the exempt 20-acre parcel RMZ rule, you are NOT authorized under the State's Incidental Take Permits (see explanation in FPA instructions under Question 22).

☐ Between June 5, 2006 and today's date I have owned more than 80 acres of forest land in Washington.
☐ Between June 5, 2006 and today's date this parcel has been a part of more than 20 acres of contiguous ownership. See RCW 76.09.020 for definition of 'contiguous'.
☐ Between June 5, 2006 and today's date this parcel has been owned by someone that has owned more than 80 forested acres in Washington.
23. If harvesting within 115 feet of a Type S or F Water on an exempt 20-acre parcel, complete the table below. Show RMZs and stream segment identifiers on the Activity Map. If you are harvesting within 75 feet or within the maximum RMZ (whichever is less), stream shade must be assessed and met following harvest. Describe in Question 28 how stream shade was determined to be met, using the 'Appendix F. Stream Shade Assessment Worksheet' if necessary.

<table>
<thead>
<tr>
<th>Stream Segment Identifier (letter)</th>
<th>Water Type (S, F)</th>
<th>Segment Length (feet)</th>
<th>Bankfull Width (feet)</th>
<th>RMZ Maximum Width (feet)</th>
<th>Are you harvesting within the maximum RMZ? (Y or N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

24. Are you harvesting within 29 feet of a Type Np Water on an exempt 20-acre parcel?

☐ No   Skip to Question 27.

☐ Yes   See instructions and describe leave tree strategy in Question 28. Then skip to Question 27.

25. If harvesting within 200 feet of any Type S or F Water or periodically inundated areas of their associated wetlands, complete the table below. Include Desired Future Condition (DFC) for all inner zone harvests unless you have an HCP prescription. Show RMZs, CMZs, and stream segment identifiers on the Activity Map. If you are harvesting within 75 feet or within the maximum RMZ, whichever is less, stream shade must be assessed and met following harvest. Describe in Question 28 how stream shade was determined to be met or use the 'Appendix F. Stream Shade Assessment Worksheet' if necessary.

<table>
<thead>
<tr>
<th>Stream Segment Identifier (letter)</th>
<th>Water Type (S, F)</th>
<th>Site Class (I - V)</th>
<th>Stream Width (feet)</th>
<th>Is there a CMZ? (Y or N)</th>
<th>RMZ Harvest Code(s) (see instructions)</th>
<th>DFC Run Number</th>
<th>Total width of RMZ (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>F</td>
<td>V</td>
<td>15</td>
<td>N</td>
<td>A</td>
<td>n/a</td>
<td>90</td>
</tr>
<tr>
<td>F2</td>
<td>F</td>
<td>V</td>
<td>5</td>
<td>N</td>
<td>B, K</td>
<td>n/a</td>
<td>90</td>
</tr>
<tr>
<td>P1</td>
<td>F</td>
<td>III</td>
<td>100</td>
<td>N</td>
<td>A</td>
<td>n/a</td>
<td>140</td>
</tr>
</tbody>
</table>

26. If harvesting within 50 feet of Type Np Water, complete the table(s) below. Show RMZs and stream segment identifiers on the Activity Map.

<table>
<thead>
<tr>
<th>Stream Segment Identifier (letter)</th>
<th>Total Stream Length in Harvest Unit (feet)</th>
<th>Length of No-Harvest, 50-foot Buffers in Harvest Unit (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stream Segment Identifier (letter)</th>
<th>Total Stream Length in Harvest Unit (feet)</th>
<th>Length of No-Harvest, 50-foot Buffers in Harvest Unit (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
27. **How are the following currently marked on the ground?** *(Flagging color, paint color, road, fence, etc.)*  
Harvest/Salvage Boundaries: Pipeline identified with pipeline markers/stakes/lathe. Construction work areas staked & flagged.  
Clumped Wildlife Reserve Trees/Green Recruitment Trees: n/a  
Right-of-Way Limits/Road Centerlines: Right-of-way for pipeline is a cleared swath marked with stakes.  
Stream Crossing Work: Lathe stakes with pink flagging and painted red dots on trees for RPs.  
Riparian Management Zone Boundaries and Leave/Take Trees: n/a  
Channel Migration Zone: n/a  
Wetland Management Zone Boundaries and Leave/Take Trees: n/a

28. **Additional Information (attach additional pages if necessary):** For hydraulic projects in or over Type S, F, or complex N Water(s) see instructions for required plan information. If applicable, include mitigation measures from a geotechnical memo, letter, or report.

This FPA is for the North Seattle Lateral Upgrade Project which involves removal of an existing 8" diameter pipeline which will be replaced with a proposed new 20" diameter pipeline. Tree removals concentrating mostly in temporary construction workspaces, but also occasionally in existing right-of-way, will be required in places to accommodate this work. Only those properties which meet the definition of "forest land" under WAC 222-16-010 and which occur outside of the Southwest Snohomish County Urban Growth Area (SSCUGA) are included in the FPA. The portion of this project occurring outside the SSCUGA spans over 3.7 linear miles, although not all properties along the route have tree cover or meet the definition of forest land and thus are excluded from this FPA. Some wetlands in the project area have been kept in a herbaceous condition through mowing or other vegetation management. Despite the lack of tree cover in places, many wetlands within the project area are presumed to be capable of supporting tree cover with a crown closure of 30% or greater at maturity, and thus are considered forested wetlands for purposes of Forest Practices review. As detailed in Question 18 the forest road constructed for this project will be abandoned following timber harvest and log hauling. In the majority of places no new road construction is shown and log haul will occur via existing pipeline access routes, existing driveways or bark/wood chip surfaced haul routes. Bridges will be used for crossing any streams where water is present in streambed at time of construction. Construction equipment will work on timber mats in any saturated wetlands. A man-made pond will be drained for construction at milepost 4.86 and bridge installed across type F Little Bear Creek at milepost 5.52 as detailed in the attached Alternate Plan. All areas that are graded as part of pipeline construction including wetlands and riparian areas will be will be regraded and contoured as needed to reestablish natural drainage patterns and wetland hydrology. At the time of re-contouring, erosion control fabric such as jute or excelsior will be installed on stream banks and anchored with staples or other appropriate devices. Interceptor dikes or swales might be installed in appropriate locations to intercept storm run-off from undisturbed areas above disturbed areas to convey the run-off to stable points away from exposed soils. Although not expected, if it becomes necessary to delay final cleanup including final re-grading, or construction or restoration activities are otherwise interrupted for extended periods, mulch will be applied on all disturbed areas before seeding or reforesting. In these areas mulch will be uniformly applied to cover the ground surface at a rate of two tons per acre with certified weed free straw, hay, wood fiber hydromulch or equivalent – or some combination thereof. Access to the project site has historically been restricted by sturdy locked gates where needed. These gates will continue to be maintained going forward to continue to prevent unauthorized vehicles from entering beyond points of road closure. Sheets 1 thru 4 out of 6 detailed "Construction/Environmental Alignment Sheets" covering the project are included. Excluded sheets 5 thru 6 cover lands in the SSCUGA. In regards to Question 8: Northwest Pipeline completed a cultural resource assessment in April 2017 and received concurrence to the determination of "no adverse impact" from DAHP in same month. This determination was received following consultation with the Muckleshoot Indian Tribe, Samish Indian Nation, Sauk-Sualiitete Tribe, Snoqualmie Tribe, Stillaguamish Tribe of Indians, Suquamish Tribe, Swinomish Indian Tribal Community, Tulalip Tribes, and Upper Skagit Indian Tribe. Snohomish County & Puget Sound Energy are the only two ownership entities known to have more than 500 acres of forestland in Washington State and a Marbled Murrelet Form is therefore attached hereto and is applicable to these two landowners only.
29. We acknowledge the following:

- The information on this application/notification is true.
- We understand this proposed forest practice is subject to:
  - The Forest Practices Act and Rules AND
  - All other federal, state or local regulations.
- Compliance with the Forest Practices Act and Rules does not ensure compliance with the Endangered Species Act or other federal, state or local laws.
- If we said that we would not convert the land to non-forestry use, the county or city may deny development permits on this parcel for the next 6 years.
- The following may result in an unauthorized incidental take of certain endangered or threatened fish species:
  - Conversion of land to non-forestry use.
  - Harvesting within the maximum RMZ on a 20-acre exempt parcel that was acquired after June 5, 2006.
  - Equipment Crossings/Fords in or over Type S and F Waters.
- Inadvertent Discovery – Chapters 27.44, 27.53, 68.50 and 68.60 RCW
  - If you find or suspect you have found an archaeological object or Native American cairn, grave, or glyptic record, immediately cease disturbance activity, protect the area and promptly contact the Department of Archaeology and Historic Preservation at 360 566-3077.
  - If you find or suspect you have found human skeletal remains, immediately cease disturbance activity, protect the area, and contact the County Coroner or Medical Examiner and local law enforcement as soon as possible. Failure to report human remains is a misdemeanor.

The landowner understands that by signing and submitting this FPA, he/she is authorizing the Department of Natural Resources to enter the property in order to review the proposal, inspect harvest operations, and monitor compliance for up to three years after its expiration date. RCW 78.09.150

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*NOTE: If you are a “Perpetual Timber Rights Owner,” and are submitting this without the Landowner’s Signature, provide written evidence the landowner has been notified.

Please make a copy of this FPA/N for your records. If this FPA/N contains a hydraulic project requiring WDFW concurrence review, it will not be available online for public review until after the WDFW concurrence review period.
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S. A. Newman Forest Engineers, Inc.
### Maximum Projected Harvest Volume

**North Seattle Lateral Upgrade Project 2017 - 2018**

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**Total Class IV-General Parcels**: 279 9.24 0.60 0.00 3.54 0.33 0.73 2.35 16.79

*Asterisk explainers appear on following page.*

S. A. Newman Forest Engineers, Inc.
LANDOWNER LIST

NORTH SEATTLE LATERAL UPGRADE PROJECT 2017 - 2018

Asterisks/Notes:

List excludes parcels where no forest practices application or notification is required for the following reasons: a) non-forest land - danger trees only within 1 1/2 tree lengths of structures, b) less than 2 acres of contiguous ownership with no environmentally sensitive areas, or c) ornamental or non-merchantable trees only.

1 Projected harvest volume based on Williams plan sheets dated March 1, 2017. While reasonable care has been exercised in compiling this information neither Williams nor the S. A. Newman Firm warrant its accuracy and expect users to rely solely on their own investigation.

2 Estimated net volume in thousand board feet (MBF); conifer export logs average 36 feet, conifer domestic logs average 32 feet, hardwoods by 30-foot logs. Minimum top diameter cruised: 5 inches. DF = Douglas fir, WH = western hemlock, SS = sitka spruce, RC = red cedar, RA = red alder, BM = bigleaf maple, BC = black cottonwood

3 Total number by species available in the S. A. Newman work files. Generally includes trees 6.0" diameter at breast height (dbh) and larger.

4 Timber potentially subject to export restriction under the Forest Resources Conservation and Shortage Relief Act of 1990 (16 U.S.C. 620).

5 Includes pines, true firs, and other 'white woods'

6 Includes yew, cypress, junipers and other 'red woods'

7 Includes birch and cherry.

8 Includes poplar, ash, oak, willow and other low value hardwoods.

9 Applicable on land outside designated Southwest Snohomish County Urban Growth Area.

10 Applicable on land in designated Southwest Snohomish County Urban Growth Area; parcels shown for disclosure only and not part of Class III w/COH

n/s = Not significant or less than 0.01 MBF

Prepared by: Peter C. Blansett, Principal Forester, ISA Certified Arborist No. PN0659A and ISA Qualified Tree Risk Assessor. Based on field work performed by representatives of the S. A. Newman Firm on various dates between April 2017 and May 2018.
Please use the legend from the FPA instruction or provide a list of symbols used.
Appendix A. Water Type Classification Worksheet
Western Washington

Stream/Segment ID: MP 3.87 (B1)  Stream/Segment ID: MP 3.92  Stream/Segment ID: MP 4.10
Date(s) Observed: 6-19-2018  Date(s) Observed: 6-19-2018  Date(s) Observed: 6-19-2018

1. Did you determine fish use as described in the Forest Practices Board Manual Section 13? Or, does the stream have waiver characteristics? [See WAC 222-16-031(3)(b)(ii)]
   - No. Continue
   - Yes. Attach documentation or approved WTMF number:
     - Fish found. Type F water. Stop.
     - No fish. Continue to 6.
     - Yes. Meets waiver criteria. Continue to 6.

2. Were fish observed or are fish known to use the stream any time of the year?
   - Yes. Type F water. Stop.
   - No. Continue.
   - No. Continue.
   - No. Continue.

3. Is there an impoundment (ponded water) upstream of the assessed segment that is greater than 0.5 acres?
   - Yes. Type F water. Stop.
   - No. Continue.
   - No. Continue.
   - No. Continue.

4. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient less than or equal to 16%?
   - Yes. Type F water. Stop.
   - No. Continue.
   - No. Continue.
   - No. Continue.

5. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient between 16% and 20%? AND, is the contributing basin to the stream greater than 50 acres?
   - Yes. Type F water. Stop.
   - No. Continue.
   - No. Continue.
   - No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?
   - Yes. Type Np water. Go to 9.
   - No. Continue.
   - No. Continue.
   - No. Continue.

7. Is the stream segment downstream of a perennial source of water?
   - Yes. Type Np water. Go to 9
   - No. Continue.
   - No. Continue.
   - No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?
   - Yes, Type Ns water.
   - No, non-typed water.
   - No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).

Stream/Segment ID: ___________  Stream/Segment ID: ___________  Stream/Segment ID: ___________
Appendix A. Water Type Classification Worksheet
Western Washington

Stream/Segment ID: MP 4.28 (B2)  Stream/Segment ID: MP 4.65 (B3)  Stream/Segment ID: MP 4.73 (B4)
Date(s) Observed: 6-20-2018  Date(s) Observed: 6-20-2018  Date(s) Observed: 6-20-2018

1. Did you determine fish use as described in the Forest Practices Board Manual Section 13? Or, does the stream have waiver characteristics? [See WAC 222-16-031(3)(b)(iii)]
   - No. Continue
   - Yes. Attach documentation or approved WTMF number:

   - Fish found. Type F water. Stop.
   - No fish. Continue to 6.
   - Yes. Meets waiver criteria. Continue to 6.

2. Were fish observed or are fish known to use the stream any time of the year?
   - Yes. Type F water. Stop.
   - No. Continue.

3. Is there an impoundment (ponded water) upstream of the assessed segment that is greater than 0.5 acres?
   - Yes. Type F water. Stop.
   - No. Continue.

4. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient less than or equal to 16%?
   - Yes. Type F water. Stop.
   - No. Continue.

5. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient between 16% and 20%? AND, is the contributing basin to the stream greater than 50 acres?
   - Yes. Type F water. Stop.
   - No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?
   - Yes. Type Np water. Go to 9.
   - No. Continue.

7. Is the stream segment downstream of a perennial source of water?
   - Yes. Type Np water. Go to 9
   - No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?
   - Yes, Type Ns water.
   - No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).
   Stream/Segment ID: ____________  Stream/Segment ID: ____________  Stream/Segment ID: ____________
Appendix A. Water Type Classification Worksheet
Western Washington

Stream/Segment ID: (P1)MP 4.86
Date(s) Observed: 6-20-2018

Stream/Segment ID: (P1) MP 5.62 (B5)
Date(s) Observed: 6-21-2018

Stream/Segment ID: MP 5.62
Date(s) Observed: 6-21-2018

1. Did you determine fish use as described in the Forest Practices Board Manual Section 13? Or, does the stream have waiver characteristics? [See WAC 222-16-031(3)(b)(iii)]

☐ No. Continue
☐ Yes. Attach documentation or approved WTMF number:

☐ Fish found.
Type F water. Stop.
☐ No fish. Continue to 6.
☐ Yes. Meets waiver criteria. Continue to 6.

2. Were fish observed or are fish known to use the stream any time of the year?

☐ Yes. Type F water. Stop.
☐ No. Continue.

3. Is there an impoundment (ponded water) upstream of the assessed segment that is greater than 0.5 acres?

☐ Yes. Type F water. Stop.
☐ No. Continue.

4. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient less than or equal to 16%?

☐ Yes. Type F water. Stop.
☐ No. Continue.

5. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient between 16% and 20%? AND, is the contributing basin to the stream greater than 50 acres?

☐ Yes. Type F water. Stop.
☐ No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?

☐ Yes. Type Np water. Go to 9.
☐ No. Continue.

7. Is the stream segment downstream of a perennial source of water?

☐ Yes. Type Np water. Go to 9.
☐ No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?

☐ Yes, Type Ns water.
☑ No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).

Stream/Segment ID: _____________ Stream/Segment ID: _____________ Stream/Segment ID: _____________

- 2816879
Appendix A. Water Type Classification Worksheet
Western Washington

Stream/Segment ID: (F2) MP 5.72
Date(s) Observed: 6-21-2018

1. Did you determine fish use as described in the Forest Practices Board Manual Section 13? Or, does the stream have waiver characteristics? [See WAC 222-16-031(3)(b)(ii)]
   - [ ] No. Continue
   - [ ] Yes. Attach documentation or approved WTMF number:
     - [ ] Fish found.
       - Type F water. Stop.
     - [ ] No fish. Continue to 6.
     - [ ] Yes. Meets waiver criteria. Continue to 6.

2. Were fish observed or are fish known to use the stream any time of the year?
   - [ ] Yes. Type F water. Stop.
   - [X] No. Continue.

3. Is there an impoundment (ponded water) upstream of the assessed segment that is greater than 0.5 acres?
   - [ ] Yes. Type F water. Stop.
   - [X] No. Continue.

4. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient less than or equal to 16%?
   - [X] Yes. Type F water. Stop.
   - [ ] No. Continue.

5. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient between 16% and 20%? AND, is the contributing basin to the stream greater than 50 acres?
   - [ ] Yes. Type F water. Stop.
   - [ ] No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?
   - [ ] Yes. Type Np water. Go to 9.
   - [ ] No. Continue.

7. Is the stream segment downstream of a perennial source of water?
   - [ ] Yes. Type Np water. Go to 9.
   - [ ] No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?
   - [ ] Yes, Type Ns water.
   - [ ] No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).
   - Stream/Segment ID: ___________
Forest Practices Application/Notification
Alternate Plan Form

This form provides an outline for preparing an Alternate Plan. Although not required, it will help you prepare your Alternate Plan. Include the completed form with your Forest Practices Application. Refer to Board Manual Section 21 for help in developing your alternate plan, or contact your DNR region office for assistance.

**TYPE OR PRINT IN INK:**

**Landowner information**

<table>
<thead>
<tr>
<th>Name of LANDOWNER</th>
<th>Phone: 425-741-1300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest Pipeline, LLC</td>
<td>Email: <a href="mailto:rodney.gregory@williams.com">rodney.gregory@williams.com</a></td>
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</table>

**Contact person information.**

<table>
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<tr>
<th>Contact Person</th>
<th>Phone: 425-259-4411</th>
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<tr>
<td>Peter C. Blansett</td>
<td>Email: <a href="mailto:pblansett@sanforest.com">pblansett@sanforest.com</a></td>
</tr>
</tbody>
</table>

1. **Current conditions and management goals:**
   a) List the predominante tree species, average tree height and age; note excessive blowdown, fire damage, root rot or other forest health issues; describe topography.
   b) Describe the resource management goals you wish to achieve through this alternate plan.

The pipeline traverses a wide range of timber types including uplands, wetlands and riparian associated forests. All common lowland Puget Sound area species are present including Douglas fir, Western hemlock, Sitka spruce, Red cedar, Red alder, Bigleaf maple, Bitter cherry, Black cottonwood and Willows. Douglas fir accounts for 70% of the timber proposed for removal by board foot volume. A typical Douglas fir for this project is 20' DBH, 120 feet high and 55 years old. No areas of significant blowdown, disease or mortality observed. Terrain varies but is generally gently rolling with slopes mostly less than 10% gradient.

Goal is to maintain and improve forest habitat to the extent possible while increasing the incremental capacity of the existing natural gas pipeline. As part of this proposal the applicant has submitted a Wetland Mitigation Bank Use Plan in August 2018 proposing use of the Snohomish Basin Bank for impacts from activities in WRIA-7 and the Keller Farm Bank for impacts from activities in WRIA-8.

Note: Attached hereto is the body of an “Erosion Control and Revegetation Plan” prepared in part to comply with regulations of the Federal Energy Regulatory Comission. Although this document includes significant information unrelated to forest practices, there are many portions of the plan relevant to the FPA and Alternate Plan.
2. **Proposed Management Activities:** Describe what activities will be conducted (example; harvest, tree planting, road construction, etc). Describe where, how, and when each activity will be conducted.

NOTE: A representative sample of the proposed alternate plan area must be flagged on the ground for interdisciplinary team review.

Timber harvest will occur in core, inner and outer zones of a segment of Little Bear Creek—a type "F" stream labeled "F1" at milepost 5.52. At mile post 4.86 a manmade pond labeled "P1" will be drained to remove the existing 8-inch pipeline and install the new 20-inch pipeline. The WDFW recommended in-water work period for Little Bear Creek and tributaries spans from July 1 to September 15 although temporary bridge across Little Bear Creek will be needed from initial construction right-of-way clearing (ROW) through final restoration, so the bridges will likely need to be in place outside of the recommended in-water work window periods. Timber harvest associated with these Alternate Plan areas will occur in Summer 2019 and no logs or slash will be yarded across the type F waters and will use "fall away/yard away" techniques. Machinery will operate on timber mats as needed in non-channelized wet areas identified as forested wetlands "AF" & "AG" occurring westerly and easterly of Little Bear Creek crossing. Trees and other vegetation will be installed the first planting season after project completion which is anticipated to be late fall 2019. Trees/shrubs will be monitored as detailed in #5 of this form.

3. **Describe how your proposed management activity would affect the alternate plan area**

For activities in a riparian area:

a) Describe the current level of large woody debris, shade, bank stability, sediment filtering and nutrient input.

b) Explain the short and long term changes in the amount of large woody debris, shade, bank stability, sediment filtering and nutrient input from the current level. Be as specific as possible. See Board Manual Section 21

There is little LWD in F1 stream where it crosses pipeline ROW. Stream is currently dominated by hardwood forest (alder, willow & cottonwood) with varying degrees of understory vegetation. Timber removals would decrease shade in short-term, but replanting with conifers will contribute to increased shade in the long-term. Stream banks are currently stabilized with a hardwood dominated tree roots and understory vegetation. Pulling of stumps will be limited to directly over the trench. Stumps and root systems will not be removed from the rest of the construction ROW or temporary extra work areas in riparian areas and wetlands unless it is determined that safety-related construction constraints require removal of stumps from under the working side of the construction ROW. Minimizing stump and root system removal will accelerate restoration efforts by allowing sprouting species to reestablish from existing root systems. With root systems intact erosion should be minimized and short-term bank stability is expected to remain largely unchanged along and stability will increase long-term as young predominantly conifer stands replace overmature and declining hardwood stands. Current forest stand conditions provide on-site sediment filtering. Short-term negative effects of timber harvesting, road and temporary bridge construction on sediment filtering will be mitigated by installing temporary erosion and sediment controls: silt fence along harvest boundaries, straw wattles, mulch and erosion control fabric along stream crossings/recontouring areas. These features will be maintained until disturbed areas are stabilized. Long-term sediment filtering will improve from current conditions as conifer seedlings mature. Current nutrient and leaf litter influence is moderate only with existing small deciduous tree cover. Short-term nutrient/leaf litter will increase as habitat logs and slash are redistributed in logged areas following harvest. Long-term nutrient/leaf litter should slowly increase due to planned understory and tree revegetation plantings as described in #2 above. See attached excerpts from Erosion Control and Revegetation Plan for details of diverse vegetation to be replanted within areas of influence from nutrient leaf and woody debris litter.
4. If you are planning activities in the riparian area, fill in the table below.

<table>
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<th>Stream Segment Identifier</th>
<th>Watertype (S,F,Np)</th>
<th>Affected Stream Segment Length (feet)</th>
<th>Average Bankfull Width (feet)</th>
<th>Average width of no cut buffer (feet)</th>
<th>Harvest one side or both sides</th>
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<td>F</td>
<td>230</td>
<td>100</td>
<td>0</td>
<td>Both</td>
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5. Does this plan propose to remove hardwood trees within a riparian area in order to plant conifers?

☐ No ☒ Yes  If yes, describe the species to be planted. Include a schedule of brush control activities to ensure the planted trees will be vigorous and free to grow after three growing seasons.

Revegetation of harvested areas with wet site tree species including Western red cedar, Sitka spruce, Western hemlock, black cottonwood and red alder; also installing shrub species including red-osier dogwood, Indian plum and willows. See attached "Erosion Control and Revegetation Plan" for details on replanting, monitoring & brush control.

6. List the specific parts of the Forest Practices Board Rules that the proposal departs from:

See Washington Forest Practices Board Rules at:
http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesRules

<table>
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<th>WAC Section</th>
<th>Sub-section</th>
<th>WAC Section/Sub-section Title</th>
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<td>021(1)(a)</td>
<td>Timber Harvesting: Western Washington RMZs - Core Zones</td>
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<tr>
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<td>021(1)(b)(ii)(A)</td>
<td>Timber Harvesting: Western Washington RMZs - Inner Zones</td>
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<tr>
<td>222-30</td>
<td>021(1)(c)</td>
<td>Timber Harvesting: Western Washington RMZs - Outer Zones</td>
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<tr>
<td>222-30</td>
<td>040(2)</td>
<td>Timber Harvesting: Shade requirements to maintain water temperature</td>
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7. Attach map(s) (preferably 1" = 400' scale) with updated stream locations, wetlands, unstable slopes and roads. Clearly designate proposed alternate plan area. The alternate plan area must also be shown on the forest practices activity map.

8. Attach information, such as a timber cruise, water type modification forms, technical field notes, literature references, etc., that support the alternate plan.

9. Small Forest Landowner Office Monitoring

The Small Forest Landowner Office (SFLO) is required to monitor small forest landowner alternate plans for cumulative effects.

a) Does this alternate plan contain a monitoring strategy

☐ Yes ☐ No  If yes, please attach.

b) May SFLO staff access the alternate plan site to conduct monitoring?

☐ Yes ☐ No
Site Indices are based on the WA-DNR State Soil Survey. If the site index does not exist or indicates red alder, noncommercial, or marginally commercial species, the following apply:

a) If red alder is indicated and the whole RMZ width is within that site index, then use site class V. If red alder is indicated for only a portion of the RMZ width, or there is on-site evidence that the site has historically supported conifer, then use the site class for conifer in the most physiographically similar adjacent soil polygon.

b) If Western Washington, if there is no site index information, use the site class for conifer in the most physiographically similar adjacent soil polygon.

c) In Eastern Washington, if there is no site index information, assume site class III, unless site specific information indicates otherwise.

d) If the soil polygon indicates noncommercial or marginally commercial, then use site class V.

See WA Forest Practice Rules (WAC 222): Chapter 222-15 for a more complete definition of site class.
1. Periodically check installation and remove build-up of sediment or debris.
2. Materials placed in wetlands/ditches shall be completely removed during final clean-up. Removal of this structure is not contingent upon establishment of permanent vegetation.
3. Extend timber mats into upland beyond wetland/ditch boundary.
4. Use additional timber mat layers to raise crossing above grade where wet or saturated soil conditions exist.
5. Only timber mats are to be used in wetlands unless otherwise approved by a Williams representative.
6. Refer to wetland and water body crossing typicals for additional detail on placement and BMPs.

REFERENCE DRAWINGS

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<th>DRAWING NO.</th>
<th>TITLE</th>
</tr>
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TIMBER MAT CROSSING - WETLAND/DITCH

"TYPICAL"

FIGURE 8

REVISIONS

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<th>BY</th>
<th>DESCRIPTION</th>
<th>W.O. NO.</th>
<th>CHK</th>
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DRAWN BY: EB DATE: 4-3-2017 ISSUED FOR BID: SCALE: NONE
CHECKED BY: DATE: ISSUED FOR CONSTRUCTION:
APPROVED BY: DATE: DRAWING NUMBER: STD-A-2-3045-S3 SHEET 3 OF 4
Marbled Murrelet Form
Western Washington Forest Practices Application/Notification

**Applicable To Snohomish County & Puget Sound Energy**

Complete this form only if you are harvesting timber (including salvage) or constructing roads. Do not complete this form if you have an HCP for marbled murrelets.

**Answer every question.**

1. **X** No ☐ Yes  For this FPA/N, has a protocol survey(s) been completed that includes:
   - Harvest units (and within 300 ft on your ownership), or
   - Salvage units (and within 300 ft on your ownership), or
   - Any area of proposed road construction (and within 300 ft on your ownership)?

   *If 'Yes', fill out the table and check the appropriate findings below.*

<table>
<thead>
<tr>
<th>Survey ID (Name or Unit #)</th>
<th>Township, Range, &amp; Section</th>
<th>Survey was approved by WDFW (Attach approval letter from WDFW)</th>
<th>Survey was disapproved by WDFW and is being resubmitted with this FPA/N (Explain below)</th>
<th>Survey has been submitted to WDFW and survey approval is unknown (Explain below)</th>
<th>Survey is complete but has not yet been submitted to WDFW (Submit survey with FPA/N)</th>
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**Explanation:**

2. **X** No ☐ Yes ☐ Unknown  Will you harvest, salvage, or construct roads within 0.25 miles of an occupied site?

3. **X** No ☐ Yes ☐ Unknown  Will you fly helicopter(s) over or within 0.25 miles of an occupied site?

4. **X** No ☐ Yes  Will you harvest live trees in a buffer of an occupied site?

   If Yes, describe the leave trees and buffer widths you will leave.  
   **NOTE:** If you leave less than required in WAC 222-16-080(1) (h) (v) this is a Class IV-Special and an Environmental Checklist is required

**Description of managed buffers:**

---

Appendix J - 6/1/2016  1 of 2  2816879
5. □ No □ Yes  Are there nesting platforms within any harvest unit (including salvage and road construction) that are within 300 feet that:

- Are not located within a surveyed area, and;
- Have a minimum of 2 platforms per acre, and;
- Are located within 7 or more acres of contiguous habitat, and;
- Have a least 40% (number not volume) of the dominant and co-dominant trees made up of Douglas-fir, western hemlock, western red cedar, or Sitka spruce?

If "Yes", complete the table below for those areas.

<table>
<thead>
<tr>
<th>Name or # (as shown on map) of delineated stands of contiguous habitat</th>
<th>Delineated stand acres</th>
<th>Nesting platforms per acre</th>
<th>Number of trees 32 inches dbh or greater with platforms</th>
<th>Platform Assessment Method</th>
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<td>Field Sampling Method, Sample Plot Method, 100% Cruise Method, Inventory Model Method, or Other</td>
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6. □ No □ Yes  Are there areas within this forest practice or within 300 feet that:

- Are not surveyed, and;
- Are not listed in question 5, and;
- Have trees that are at least 32 inches dbh

If "Yes", list the forest practice unit numbers from your activity map. Provide brief description of current stand conditions. Such as tree species composition, stand age (if known), and maximum tree size (dbh).

Harvest Unit #(#s) 010.500CR  X Within the Unit □ Within 300 feet of the Unit

Description:
One 32" Douglas fir next to a public road.

Harvest Unit #(#s) 051.500CL  X Within the Unit □ Within 300 feet of the Unit

Description:
Six red cedar ranging from 32" to 44"; one 38" Douglas fir; and one 42" bigleaf maple -- next to active sawmill.

Harvest Unit #(#s) 056.500CR  □ Within the Unit □ Within 300 feet of the Unit

Description:
One 39" Douglas fir next to public road.

7. If you answered yes to question 1, 4, or 5, include a map (separate from your map that shows your harvest units and/or road construction) See the instructions for the information required on each map.

SEE ATTACHED SUPPLEMENTAL SHEET.
Northwest Pipeline, LLC: Marbled Murrelet Form Supplement

Except for Tract Nos. 072.000CL & 061.000CL -- Northwest Pipeline doesn’t own any of the land along this project route but maintains permanent easements from the landowners for operation of the North Seattle Lateral natural gas pipeline. A desktop habitat assessment was conducted by Northwest, along with field site visits, to conclude that marbled murrelet habitat does not exist within the Project area. In either case, FERC is the lead federal action agency that entered into formal consultation with the USFWS for Project effects to ESA listed species. Regarding marbled murrelets, FERC concluded the following in their biological assessment issued concurrent with the EA on February 12, 2018 (Pg. 25):

“There are no mature coniferous forests with old-growth characteristics in the Project area that might provide suitable nesting habitat. No marbled murrelets occur within the Terrestrial Action Area; no suitable habitat would be affected; and there is no critical habitat present. The Project would have no effect on marbled murrelets or on designated critical habitat.”

The USFWS does not formally consult on no effect determinations but they did provide their concurrence to the Project’s “may affect, not likely to adversely affect” determination on Bull trout, while acknowledging they received the BA from FERC that included the marbled murrelet “no effect” determination.
Erosion Control and Revegetation Plan (ECRP)

North Seattle Lateral Upgrade Project

Updated
February 2018
August 2018
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Attachment B  FERC’s Wetland and Waterbody Construction and Mitigation Procedures
Attachment C  BMP Typicals

List of Abbreviations

BMP  best management practice
CWF  certified weed free
DOT  U.S. Department of Transportation
ECRP  Erosion Control and Revegetation Plan
EI  Environmental Inspector
FERC  Federal Energy Regulatory Commission
HPA  Hydraulic Project Approval
MP  milepost
Northwest  Northwest Pipeline LLC
NRCS  Natural Resource Conservation Service
OHWM  ordinary high water mark
PLS  pure live seed
Project  North Seattle Lateral Upgrade Project
SCS  Soil Conservation Service
Spill Plan  Spill Plan for Oil and Hazardous Materials
TEWA  temporary extra work area
WDFW  Washington Department of Fish and Wildlife
WDNR  Washington Department of Natural Resources

* Note: Attachments not included with FPA submittal. (pb) 1/18/2019
1.0 INTRODUCTION

This Erosion Control and Revegetation Plan (ECRP or Plan) outlines the erosion control and revegetation procedures that Northwest Pipeline LLC (Northwest) will utilize during construction of the North Seattle Lateral Upgrade Project (Project) in Snohomish County, Washington to minimize erosion and sedimentation and enhance revegetation success on all lands affected by the Project. The revegetation measures outlined in this ECRP have been prescribed to stabilize disturbed areas and to revegetate the construction right-of-way and temporary extra work areas (TEWAs) to a condition which supports the preconstruction land uses as quickly as possible following construction.

This Plan was developed using the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan (Upland Plan) and FERC's Wetland and Waterbody Construction and Mitigation Procedures (Wetland and Waterbody Procedures) (see Attachments A and B). FERC's Upland Plan and Wetland and Waterbody Procedures have been developed specifically for linear pipeline projects with the intent to minimize the extent and duration of project-related disturbance and to minimize erosion and enhance revegetation success. The Upland Plan and Wetland and Waterbody Procedures were developed through a public process which included input from state, federal, and local agencies, industry, and the general public. In addition, the ECRP incorporates recommendations provided by the Natural Resource Conservation Service (NRCS) to prevent, to the maximum extent practical, the transport of sediment from the Project site to drainage facilities, water resources, and adjacent properties.

1.1 Project Summary

The Project will involve construction activities associated with the removal and replacement of up to 5.82 miles of 8-inch diameter pipeline with 20-inch diameter pipeline. The Project will occur primarily within Northwest's existing right-of-way established for the North Seattle 8-inch mainline and 16-inch loop pipeline lateral. The Project will require a new appurtenance and existing appurtenance modifications to tie the proposed 20-inch diameter replacement pipeline into the existing 20-inch pipeline. The new appurtenance and existing appurtenance modifications will be installed within the construction right-of-way and will be permanently stabilized with gravel; therefore, these aboveground facilities are not discussed further in this Plan. The measures outlined in this plan will be used to restore/revegetate all areas disturbed by construction of the Project.

1.2 Schedule

Northwest proposes to commence construction of the Project in summer 2019 to take advantage of the dry construction season and place the new facilities in service by November 2019. The proposed schedule will minimize potential landowner and environmental effects and facilitate safe and efficient construction.

2.0 SITE DESCRIPTION

2.1 Existing Site Conditions

The Project is located within the Puget Sound Basin portion of the Puget Trough Province, a glaciated depression. The Project generally traverses gentle to moderately sloping glacial terrain, with elevations ranging from about 195 to 610 feet. Generally, the Project traverses a
mix of forested and rural residential terrain from MPs 1.94 to 5.8 and densely populated residential areas from MP 5.8 to the west end at MP 7.76.

The climate of the Project area is greatly tempered by winds from the Pacific Ocean. Summers are fairly warm, but hot days are rare. Winters are cool; snow and freezing temperatures are not common. During summer, rainfall is extremely light, averaging 1-2 inches. Several weeks in summer often pass without precipitation. During the rest of the year rains are frequent, especially late in fall and in winter.

In the winter, the average temperature is approximately 40°F and the average monthly minimum temperature is about 34°F for the cities of Everett and Monroe, Washington. In the summer, the average temperature is about 60-63°F, and the average monthly maximum temperature is approximately 72-75°F. Total annual precipitation ranges from 36 inches in Everett to 47 inches in Monroe. Of the total annual precipitation, about 30 percent usually falls during April through September, which includes the growing season for most crops. The average snowfall is approximately 8 inches (Western Regional Climate Center, 2017a and 2017b and Soil Conservation Service [SCS], 1983). In most winters one or two storms in the Project area bring strong and sometimes damaging winds, and in some years the accompanying heavy rains cause serious flooding (SCS, 1983).

The Project will affect 14 waterbodies (and one manmade, freshwater pond). Six waterbodies are assumed to be perennial, although flows are very limited during the summer when construction is scheduled. Construction activities will also affect 5.65 acres of wetlands in 21 systems.

2.2 Proposed Construction Activities

The Project will be designed, constructed, operated and maintained in accordance with the U.S. Department of Transportation (DOT) regulations in 49 CFR Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards," FERC regulations in 18 CFR Part 380.15, "Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities," and other applicable federal, state and local regulations. Northwest will also construct and reclaim the pipeline and aboveground facilities in accordance with FERC's Upland Plan (see Attachment A) and FERC's Wetland and Waterbody Procedures (see Attachment B). Where exceptions to FERC's Upland Plan and Wetland and Waterbody Procedures have been identified, modifications have been requested (see Attachment 2 to JARPA).

Pipeline construction will primarily occur between late spring and early fall in 2019. Northwest will prepare to receive materials and pipe at a contractor and pipe yard in the spring of 2019. Reclamation will occur during the late summer or early fall of 2019. The construction sequence is as follows with each sequence described in more detail in the following sections:

- Pre-Construction Survey;
- Clearing and Grading;
- Installation of Erosion Control Best Management Practices (BMPs);
- Topsoil Segregation;
- Trenching and 8-inch Mainline Lateral Removal/Backfilling;
- Retrenching and 20-inch Mainline Lateral Replacement/Backfilling;
- Hydrostatic Testing; and
- Restoration.
2.2.1 Pre-Construction Survey

The limits of disturbance will be clearly marked/staked prior to construction including the construction right-of-way, TEWAs, access roads, and staging/stockpile areas. Utility lines or other foreign lines and drain lines will be located and marked to prevent accidental damage during pipeline construction. Sensitive areas to be protected from disturbance will be marked with t-post and brightly colored flagging or construction fence so as to be clear to equipment operators. These areas will also be shown on the Environmental Alignment Sheets and presented during pre-construction environmental training. Equipment will only be allowed to enter and operate within the delineated limits of disturbance and access roads. Flagging, signs, and other markings identifying the limits of disturbance will be maintained through all phases of construction and routinely checked by the Environmental Inspector (EI). Construction will generally use a 100-foot wide construction right-of-way, with additional TEWAs required at designated locations such as at road or waterbody crossings and other areas where additional staging areas are required. However, a number of areas will require the construction right-of-way to be reduced to 75-feet in width, such as through wetland and waterbody crossings and in residential areas to minimize disturbance. Where feasible, based on site-specific conditions and engineering constraints, TEWAs have been located at least 50 feet away from wetland and waterbody boundaries to minimize impacts to wetland buffers and riparian areas consistent with FERC's Wetland and Waterbody Procedures.

2.2.2 Clearing and Grading

The flagged limits of disturbance will be maintained throughout all construction phases and will be monitored by Northwest's EI so activities are restricted to the certificated limits. Brush and trees within the construction right-of-way and TEWAs will be felled or sheared so as to prevent damage to adjacent trees and structures and will be felled away from wetlands and waterbodies. Any debris entering a waterbody as a result of felling and yarding of timber will be removed as soon as practical after entry into the waterbody. Any logs firmly embedded in the bed or bank of waterbodies that are in place prior to felling and yarding of timber will not be disturbed, unless they prevent trenching and fluming operations. Any existing logs that are removed from waterbodies to construct the pipeline crossing will be returned to the waterbody during bank restoration after the pipeline has been installed and backfilling is complete.

Logs and slash will not be yarded across Washington Department of Natural Resources (WDNR) Type F streams and, where possible, across WDNR Type N streams. Where temporary crossing of Type N streams is necessary, the direction of log movement between stream banks will be designed to minimize sediment delivery to streams. Logs and slash will not be stored in wetlands and, where feasible, logs yarded out of wetlands or riparian areas will be skidded with at least one end suspended from the ground so as to minimize soil disturbance. The logs will be transported to minimize damage to adjacent trees and vegetation, where possible. All clearing operations near waterbodies will follow conditions specified in the Project's Hydraulic Project Approval (HPA) issued by the Washington Department of Fish and Wildlife (WDFW) and the Forest Practices approvals issued by WDNR.

No vegetation will be cleared outside the certificated construction right-of-way and TEWAs. Grading of the construction right-of-way in upland areas will be limited to the minimum required to provide a safe working area necessary to construct the pipeline. Vegetation in wetlands will be cut off at ground level, leaving existing root systems in place. Pulling of tree stumps and grading activities will be limited to directly over the trench. Northwest will not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless it is determined that safety-related construction constraints require removal of tree stumps from under the working side of the construction right-of-way. Minimizing stump and root system
removal will accelerate restoration efforts by allowing sprouting species to reestablish from existing root systems.

2.2.3 Installation of Erosion Control BMPs

On recent Northwest projects, temporary erosion control measures have been installed immediately after clearing and prior to grading (initial soil disturbance). Installation of temporary erosion control measures prior to clearing is ineffective because the brush must be cleared to allow installation and because the BMPs are frequently damaged or removed by the clearing activities and must be re-installed. All erosion control devices will be routinely inspected and any damaged or temporarily removed structures will be replaced at the end of each working day. Temporary erosion control measures will be maintained until successful revegetation has been achieved. Section 3.1 describes in detail the temporary erosion control procedures that will be implemented during Project construction to minimize potential impacts from erosion and sedimentation.

2.2.4 Topsoil Segregation

The potential mixing of topsoil with subsoil from construction activities could result in a loss of fertility of the soil. To prevent mixing of the soil horizons or incorporation of excess rock into the topsoil, topsoil segregation will be performed. FERC's Upland Plan requires topsoil segregation in 1) all residential areas, 2) actively cultivated or rotated agricultural lands, 3) pastures and hayfields, and 4) other areas at the landowner's request. In these areas, FERC's Upland Plan requires either full right-of-way or trench and subsoil storage area stripping. Segregated topsoil will be stockpiled separately from subsoil in accordance with FERC's Upland Plan. FERC's Upland Plan (Section IV.B.2) allows importing topsoil as an acceptable alternative to topsoil segregation in residential areas. Because of limited workspace through many of the residential areas crossed by the Project, Northwest will import topsoil as an alternative to topsoil segregation.

In wetland areas, FERC's Wetland and Waterbody Procedures generally require the top 12 inches of topsoil over the trench to be salvaged, except in areas where standing water or saturated soils are present. Areas where topsoil segregation will occur are shown on the Environmental Alignment Sheets.

2.2.5 Trenching and 8-inch Mainline Lateral Removal/Backfilling

To remove the 8-inch mainline, the trench will be excavated with track-hoes or similar equipment. Once the 8-inch pipeline has been sufficiently exposed, at strategic locations the trench will be excavated wider to allow welders to safely enter the trench to cut the pipe for removal. After the pipe is cut, the 8-inch pipeline sections will be removed from the trench with side booms, track-hoes or similar equipment and carried to load out areas where the pipe will be stored prior to hauling to an approved scrap or recycling facility. After the 8-inch pipeline has been removed, the trench will be temporarily backfilled with the trench spoil materials until re-excavation activities commence for installation of the 20-inch pipe.

Prior to removing the 5.82-mile section of the 8-inch mainline, the 8-inch will be cleaned by running foam/swab pigs through it from MPs 2.2 to 11.14. The pigs will be received at the existing pig launcher/receiver facility located at MP 11.14. Any waste material generated during the cleaning operations will be captured and disposed of according to federal and state requirements. Northwest does not expect there to be much waste material to capture from cleaning the 8-inch since it was hydrotested to meet Pipeline and Hazardous Materials Safety Administration requirements in the summer of 2017. The cleaning pig will remove any remaining waste material that may be in the 8-inch pipeline prior to removal and abandonment.
2.2.6 Retrenching and 20-inch Mainline Lateral Replacement/Backfilling

After the 8-inch mainline has been removed, the trench will be re-excavated in preparation for installation of the 20-inch replacement pipeline. After trenching is complete, the 20-inch pipeline sections will be strung along the trench, bent to fit the contour of the trench bottom, aligned, welded together and placed on temporary supports. All welds will be visually and radiographically inspected and repaired, if necessary. Line pipe, normally mill-coated prior to stringing, will require field-applied coating at the welded joints prior to final inspection. The entire pipeline coating will be inspected and tested to locate and repair any faults or voids. The pipe assembly will then be lowered into the trench by side-boom tractors, and the trench will be backfilled using a backfilling machine or bladed equipment. No foreign substance, including skids, welding rods, containers, brush, trees or refuse of any kind, will be permitted in the backfill.

After installation of the 20-inch pipeline and prior to backfilling, Northwest will install trench plugs (see Figure 13 Attachment C), consistent with the requirements of FERC’s Upland Plan (see Section V.B.1). Trench plugs will be installed at the base of slopes adjacent to wetlands and waterbodies and where needed to avoid draining of wetlands. Trench plugs may be constructed from sandbags, foam or bentonite. Topsoil will not be used to fill the bags. Trench plugs will be installed on slopes to minimize water flow down the trench to prevent potential subsurface erosion and to maximize stability.

2.2.7 Hydrostatic Testing

The pipeline will be hydrostatically tested in accordance with DOT regulations to ensure that the system is capable of operating at the design pressure. Should a leak occur, the line would be repaired and retested until the pressure test specifications are achieved. Hydrostatic test water will be discharged in a manner to prevent erosion from scour and to prevent sedimentation of adjacent wetlands or waterbodies. The test water will be discharged into a structure to dissipate energy and to allow sheet flow (see Figure 15 Attachment C). Northwest will discharge all hydrostatic test water in an upland field in TEWA 2.17-N which is at an appropriate distance to ensure that all water infiltrates and does not flow into a wetland or waterbody.

2.2.8 Restoration

After the pipeline is backfilled and tested, disturbed areas will be restored, as closely as possible, to their original contours. Permanent erosion control measures will be installed as discussed in Section 3.2 of this Plan and revegetation will be performed as outlined in Section 7.0.

3.0 BEST MANAGEMENT PRACTICES

This Plan will be used by contractors as a primary construction reference for the Project. It provides site-specific directions for installing temporary and permanent erosion control measures (e.g., BMPs) to prevent or minimize erosion. Attachment C provides drawings of typical BMPs that may be used during construction. BMP materials will be stored onsite or at a contractor yard.

Northwest will employ at least one EI for the Project. The EI will be onsite during active construction and will have peer status with all other activity inspectors. The EI will have authority to stop activities that violate the measures set forth in this Plan or that fail to comply with conditions of other authorizations and will have the authority to order corrective action. At a minimum, the EI will be responsible for:
Ensuring compliance with the measures set forth in this Plan, the requirements of FERC's Upland Plan, FERC's Wetland and Waterbody Procedures, and all other environmental permits and approvals, as well as environmental requirements in landowner agreements;

- Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
- Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing;
- Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction right-of-way and TEWAs;
- Identifying erosion/sediment control and stabilization needs in all areas;
- Locating dewatering structures and slope breakers to ensure they will not cause erosion or direct water into sensitive resource areas;
- Verifying that trench dewatering activities are located such that water is allowed to infiltrate whenever possible, turbid water does not reach waters of the state, and dewatering does not result in the deposition of sand, silt, and/or sediment. If such deposition is occurring, the dewatering activity will be stopped and corrective action taken to prevent reoccurrence;
- Testing subsoil and topsoil in pastures and residential areas to measure compaction and determine the need for corrective action;
- Advising the Chief Inspector when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting or soil mixing;
- Ensuring restoration of contours and topsoil;
- Approving imported soils for use in residential areas and verifying that the soil is certified free of noxious weeds and soil pests;
- Determine the need for and ensuring that erosion controls are properly installed, as necessary, to prevent sediment flow into wetlands, waterbodies, sensitive areas and onto roads. This would include evaluating controls prior to a predicted storm event whenever possible and installing additional measures as needed to control storm water and sediment;
- Inspecting and ensuring the maintenance of temporary erosion control measures at least daily in areas of active construction or equipment operation, on a weekly basis in areas with no construction or equipment operation and within 24 hours of each 0.5 inch or greater of rainfall. Inspections will be recorded and records maintained for review upon request.
- Ensuring the repair of all ineffective temporary erosion control measures as soon as possible but not longer than 24 hours of identification;
- Keeping records of compliance with conditions of all environmental permits and approvals (including the measures set forth in this Plan) during active construction and restoration;
- Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and
- Verify the locations of disposal of excess construction materials for beneficial reuse to ensure disposal does not result in environmental impact and is in compliance with applicable surveys, landowner approval and permit requirements.
3.1 Temporary Erosion Control Procedures

Temporary erosion controls will be installed immediately after initial disturbance (clearing) and will be properly maintained throughout construction and reinstalled as necessary until replaced by permanent erosion controls or until restoration is complete. Near waterbodies and wetlands, it will be determined in the field by the EI if it is necessary to install temporary erosion control measures (i.e., sediment barriers) prior to initial disturbance to minimize the potential for sediment to enter a wetland or waterbody.

3.1.1 Construction Ingress and Egress

Northwest has identified general locations of ingress/egress points to the construction right-of-way using existing public and private roads that are crossed by the right-of-way. These ingress/egress points are shown on the Environmental Alignment Sheets as "Access Roads." Traffic will move along the construction right-of-way within the construction right-of-way and TEWAs.

Locations of the construction entrance pads from main public roads and thoroughfares are shown on the Environmental Alignment Sheets. However, because it is difficult to determine the exact locations of construction entrance pads until the time of construction due to the construction contractors use (ingress/egress) of the construction right-of-way and TEWAs, adjustments and additions to the locations shown on the Environmental Alignment Sheets will likely be required. Ultimately, as determined by the EI, Northwest will install construction entrance pads at all construction right-of-way access points that intersect paved roads to reduce sediment transport onto the roadway. A typical drawing of a construction entrance access pad is provided as Figure 1 in Attachment C.

3.1.2 Sediment Barriers

Sediment barriers will be used to confine sediment to the construction right-of-way and TEWAs and will be constructed of either silt fence, certified weed free (CWF) straw wattles (see Figures 2 and 7 in Attachment C), or other equivalent Ecology approved BMPs, as identified by the EI. Generally, silt fence will be used where sediment barriers are required parallel to the construction right-of-way and/or TEWAs. Drivable berms or other equivalent (non-straw bale) BMPs will generally be used in locations where sediment barriers are required to cross the construction right-of-way along the travel lane such as at waterbody and wetland crossings. Straw wattles may be used in appropriate areas as determined by the EI to reduce run-off velocity and confine sediment to the construction right-of-way and TEWAs. These structures will generally be placed as follows:

- at the base of slopes adjacent to road, wetland and waterbody crossings where sediment could flow from the construction right-of-way and/or TEWAs onto the road surface or into the wetland or waterbody;
- adjacent to wetland and waterbody crossings, as necessary, to prevent sediment flow in the wetland consistent with the requirements of FERC's Wetland and Waterbody Procedures; and
- on the down slope side of the right-of-way and TEWAs where they traverses steep side slopes.

Figure 3 in Attachment C shows the placement of temporary sediment barriers adjacent to road crossings, including the use of drivable berms. Figures 4 and 5 in Attachment C also detail typical temporary erosion control installations at open cut and bored road crossings. An example of sediment control in ditches and swales is shown on Figure 6 in Attachment C. Straw
wattles/logs (see Figure 7) may also be utilized along the construction right-of-way in appropriate applications, as determined by the EI. Examples of sediment barrier installations during construction at wetlands and streams are shown on Figure 8.

The EI will inspect temporary erosion control structures at least on a daily basis in areas of active construction and equipment operation. In areas where active construction and equipment operation are not occurring, inspections will be made at least weekly. All structures will be inspected by the EI within 24 hours of 0.5 inch or greater of rainfall, however, state and other local jurisdictions may require more frequent inspection of erosion control structures. The EI will be responsible for ensuring that ineffective temporary erosion control measures are repaired within 24 hours of discovery, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts. Whenever possible, the EI will inspect erosion control measures in advance of predicted storm events and take preventative measures to minimize the potential for off right-of-way sedimentation.

Temporary sediment barriers will be maintained in place until permanent revegetation measures are successful or until the upland areas adjacent to wetlands, waterbodies or roads are stabilized. The structures will be removed once the area has been successfully restored.

3.1.3 Temporary Slope Breakers

Northwest will install temporary slope breakers to reduce runoff velocity and concentrated flow and to divert water off the construction right-of-way to avoid excessive erosion (see Figure 9 in Attachment C). Temporary slope breakers may be constructed of materials such as soil, silt fence, staked straw bales or sand bags. The outfall of each temporary slope breaker will be to a stable, well-vegetated area or to an energy-dissipating device at the end of the slope breaker and off the construction right-of-way. The outfall of the slope breakers will be positioned to avoid sedimentation of wetlands, waterbodies and other sensitive areas. Northwest consulted with the Natural Resources Conservation Service (NRCS, 2017) regarding spacing of temporary and permanent slope breakers; however, the NRCS did not provide spacing recommendations. Therefore, Northwest will install temporary slope breakers on all slopes greater than 5 percent based on the typical spacing provided on Figure 11 (see Attachment C) unless the EI determines that a closer spacing is necessary. On slopes between 5 and 15 percent, straw wattles/logs (Figure 7) may be utilized, as determined by the EI.

3.1.4 Mulch

Although not expected, if it becomes necessary to delay final cleanup, including final grading and installation of permanent erosion control measures, beyond 20 days (10 days in residential areas) after the trench is backfilled in a specific area, Northwest will apply mulch on all disturbed slopes before seeding. Mulch will also be applied if construction and restoration activities are interrupted for extended periods. In these areas mulch will be applied uniformly over the area to cover the ground surface at a rate of two tons/acre of CWF straw. In addition, the mulch application rate will also be increased to 3 tons/acre on steep slopes and all slopes within 100 feet of waterbodies and wetlands. The mulch will consist of CWF straw or wood fiber hydromulch.

3.1.5 Erosion Control Fabric

Northwest will install erosion control fabric (such as jute or excelsior) on stream banks at the time of recontouring (see Figure 10 in Attachment C). The fabric will be anchored using staples or other appropriate devices. The erosion control fabric to be used on stream banks and steep slopes will be designed for the proposed use and will be approved by the EI.
3.1.6 Dust Control

During the summer, fugitive dust may be a potential impact along the construction right-of-way, especially in residential areas. In general to control dust, the EI will control traffic speeds and direct watering, if necessary. Watering trucks will spray only enough water to control the dust or to reach the optimum moisture content of the soil for compaction. Run-off will not be generated during this operation. Dust will be controlled on paved roadways by sweeping (either by machine or hand). During sweeping the EI will determine if water needs to be sprayed to better control dust. Any sediment generated from sweeping will be disposed of properly. Water for dust control will be obtained from a municipal source.

To minimize wind erosion and fugitive dust emissions during construction, Northwest will, where necessary, implement the following reasonably available control measures:

- Disturb no more earth than required for construction to occur;
- Depending on climate conditions during construction, Northwest will suppress dust on disturbed sites by spraying water from trucks. The amount of water required for dust suppression will depend on factors such as rainfall, wind, soil type and amount of exposed disturbance. The construction right-of-way, laydown areas and temporary roads may require water at least daily in areas of active construction, as determined by the EI. In areas of excessively dust-prone soils or road surfaces, the frequency of watering will be increased to prevent off-property transport of visible fugitive particulate emissions;
- Control Project-related traffic speeds on dirt access roads to no more than 20 mph;
- Speeds on the construction right-of-way will be reasonable and prudent. The speed limit will be 15 mph;
- Speed limits will decrease when excessive winds prevail and where sensitive areas such as public roads may be adjacent to access roads or the construction right-of-way;
- Speed limit signs will be maintained for the duration of the construction activities and will be placed where access roads intersect with the construction right-of-way. Signs will be designed to endure weather conditions and will be posted in a non-obscured, visible manner;
- Temporarily stockpiled soils will be watered to create a semi-hard protective layer to minimize wind erosion, if necessary and as determined by the EI. This treatment would occur once after the trench has been excavated;
- No earthwork activities will be performed when the wind speed exceeds 30 miles per hour if it results in off-property transport of visible fugitive particulate emissions; and
- Gravel access pads will be utilized to prevent mud and dirt carryout on to paved surfaces.

Northwest will ensure that wind erosion best management practices will be in place during forecasted high wind (greater than 25 mph) weather advisories.

3.1.7 Waterbody Crossings

Waterbody crossings will be completed using dry open cut procedures (dam and pump or flume) (see Figure 11 in Attachment C) consistent with the requirements of federal, state and local agencies with specific authority to regulate Project impacts. Attachment 3 to JARPA also provides detailed procedures for these crossing methods (see Appendices 2B and 2C).

Waterbody crossings will be made within the previously disturbed right-of-way and trench which was excavated to install the original 8-inch mainline; crossings are generally perpendicular to the axis of the waterbody channel. Where feasible, based on site-specific conditions (topography, engineering constraints), Northwest has designed each crossing such that TEWAs are not closer than 50 feet from waterbody boundaries, except where the adjacent upland
consists of other disturbed land consistent with FERC's Wetland and Waterbody Procedures (V.B.2.a.&b) and where site-specific conditions necessitate a closer placement. Table 1.7-1 in Attachment 2 to JARPA provides the rationales for TEWAs that have been located closer than 50 feet from waterbody boundaries. During dry open cut waterbody crossings, the 20-inch pipeline will be fabricated and installed immediately after the 8-inch pipeline has been removed.

Northwest will utilize temporary construction bridges during all phases of construction to cross waterbodies. These structures will be designed according to FERC's Wetland and Waterbody Procedures as well as according to conditions required by the U.S. Army Corps of Engineers and WDFW's HPA. The temporary equipment bridges will be constructed to maintain unrestricted flow and to prevent soil from entering the waterbody. Soil will not be used to stabilize equipment bridges. Bridges will be designed to withstand and pass the highest flow expected to occur while the bridge is in place, and, where feasible, bridges will be designed to span the entire ordinary high water mark (OHWM) of the waterbody. If it is not possible to span the OHWM with the bridge, a temporary pier may be required. The temporary bridges may include:

- equipment mats and culvert(s);
- equipment mats or railroad car bridges without culverts;
- clean rock fill and culvert(s); and
- flexi-float or portable bridges.

Northwest may utilize other alternatives for equipment bridges that achieve the same performance and objective. Figure 12 in Attachment C provides a typical drawing of a temporary crossing bridge. The bridge will be removed as soon as possible after permanent seeding. If there will be more than one month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, equipment bridges will be removed as soon as possible after final cleanup.

Sediment barriers will be installed immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete and revegetation has stabilized the disturbed areas.

3.1.8 Wetland Crossings

All wetlands will be crossed in accordance with FERC's Wetland and Waterbody Procedures. Figure 8 in Attachment C shows the typical wetland crossing methods that will be utilized. Wetlands crossed by or in close proximity to the Project are shown on the Environmental Alignment Sheets.

Sediment barriers will be installed immediately after initial disturbance (clearing) of the wetland or adjacent upland. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Where necessary, sediment barriers will be installed across the entire construction right-of-way immediately upslope of the wetland boundary to prevent sediment flow into the wetland. Where wetlands are adjacent to the construction right-of-way, sediment barriers will be installed along the edge of the construction–right-of-way and/or TEWAs, as necessary, to prevent sediment flow into the wetland. These sediment barriers will be removed after restoration is complete and revegetation has stabilized the disturbed areas.
As stated above, where feasible, based on site-specific conditions (topography, engineering constraints), Northwest has designed each crossing such that TEWAs are not closer than 50 feet from wetland boundaries, except where the adjacent upland consists of other disturbed land consistent with FERC’s Wetland and Waterbody Procedures (VI.B.1.a.&b.), or where site-specific conditions/engineering constraints require a closer placement.

In wetlands, where standing water or saturated soils are present, or if construction equipment would cause ruts or mixing of the topsoil and subsoil in wetlands, Northwest will use low-ground-weight construction equipment or will operate normal equipment on timber riprap or standard prefabricated equipment mats. Equipment mats are comprised of wood and serve to distribute the weight of equipment. Rocks, soil imported from outside the wetland, tree stumps, or brush riprap will not be used to support equipment on the construction right-of-way. If trees are utilized as timber riprap or equipment mats to support equipment in saturated areas on the construction right-of-way, they will be obtained from clearing operations and will not be cut outside of the approved construction work areas. Where timber riprap is used, Northwest will attempt to use no more than two layers of riprap to support equipment on the construction right-of-way. All materials utilized to support equipment on the construction right-of-way will be removed after construction.

The duration of construction-related disturbance within wetlands will be minimized and construction equipment operating in wetland areas limited to the extent practical to that needed to clear the right-of-way, dig the trench, remove the 8-inch pipeline, fabricate and install the 20-inch pipe, backfill the trench and restore the right-of-way. All other construction equipment will use access roads located in upland areas to the maximum extent practicable. Where access roads in upland areas do not provide reasonable access, Northwest will limit all other construction equipment to one pass through the wetland using the right-of-way in wetlands that cannot be appropriately stabilized.

3.1.9 Spill Prevention and Equipment Fueling and Maintenance

Northwest has developed a Spill Plan for Oil and Hazardous Materials (Spill Plan) that describes measures to prevent and control any inadvertent spill of hazardous materials such as fuels, lubricants and solvents that could contaminate soils and affect water quality. The Spill Plan will be updated with site-specific information prior to construction. All Project field employees will receive Spill Plan training.

Equipment fueling and storage of oil, fuel, or other materials near waterbodies or wetlands could create a soil contamination and water quality impact if a spill were to occur. Leaks from equipment and vehicles could also cause impacts to surface waters. Vehicle fueling and maintenance and equipment storage will take place along the entire construction right-of-way and TEWAs. However, certain areas are restricted from these activities. Hazardous materials, chemicals, fuels and lubricating oils will be stored in upland areas at least 100 feet from waterbodies and wetlands or in accordance with FERC’s Wetland and Waterbody Procedures. Restricted areas for storage of these materials will be clearly marked in the field. Concrete coating, concrete truck washing, refueling and equipment maintenance activities will also be conducted according to FERC’s Wetland and Waterbody Procedures. All hazardous materials will be handled in accordance with the Spill Plan. If an unanticipated spill occurs during construction, Northwest would implement the procedures outlined in the Spill Plan.
3.1.10 Material Delivery and Storage
Northwest will use a contractor yard for material delivery and storage. Materials will be brought onto the construction right-of-way and TEWAs as they are needed and will be located away from waterbodies and wetlands. Secondary containment will be provided for liquids.

3.2 Permanent Erosion Control Measures
Permanent erosion control measures that will be used to reduce pollutants in stormwater discharges will be implemented after construction is completed. Post-construction BMPs consist of permanent features and operational practices designed to minimize pollutant discharges, including sediment, from the site.

3.2.1 Trench Breakers
Where the pipeline trench may drain a wetland, trench breakers will be installed and/or the trench bottom sealed as necessary to maintain the original wetland hydrology. A permanent slope breaker and a trench breaker will be installed at the base of slopes near the boundary between the wetland and adjacent upland area. The trench breaker will be installed immediately upslope of the slope breaker (see Figure 13 in Attachment C).

Trench breakers will generally be spaced according to the following, unless directed by the EI or authorized company representative:

<table>
<thead>
<tr>
<th>Slope Percent</th>
<th>Spacing (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15</td>
<td>500</td>
</tr>
<tr>
<td>15-20</td>
<td>300</td>
</tr>
<tr>
<td>20-30</td>
<td>150</td>
</tr>
<tr>
<td>&gt;30</td>
<td>100</td>
</tr>
</tbody>
</table>

Trench breakers will consist of foam or approved sacks filled with a minimum 0.6 cubic feet of sand. They will be keyed into the trench sidewall where determined necessary by the EI or authorized company representative.

3.2.2 Permanent Slope Breakers
As required by FERC's Upland Plan, slope breakers (water bars) will be installed with a two to eight percent outslope, and flow will be diverted to a stable area. If a stable area is not present, a temporary energy-dissipating device will be installed at the end of the breaker. A typical design of a slope breaker is provided as Figure 9 in Attachment C.

The frequency of permanent slope breakers will be as specified on Figure 9 in Attachment C because the NRCS did not provide a spacing recommendation. The EI or Northwest's authorized representative may modify the spacing based on site-specific characteristics such as slope, surface materials, elevation, expected waterfall, and opportunity to install the slope breakers based on the construction right-of-way configuration and topography, as well as experience. The permanent slope breakers will be installed in all areas except agricultural fields, hayfields, pastures, and lawns.

3.2.3 Soil Compaction
Northwest will test for soil compaction in agricultural (e.g., pastures) and residential areas. Tests will be conducted on the same soil type under similar moisture conditions as specified in Section V.C.1 of FERC's Upland Plan. Pursuant to Section II.B.8 of FERC's Upland Plan, the EI will be responsible for conducting subsoil and topsoil compaction testing and determining corrective measures. Compaction will be relieved in residential areas based on site-specific conditions.
3.2.4 Revegetation

Revegetation will be performed as outlined in Section 7.0 of this Plan.

4.0 MAINTENANCE AND EVALUATION

Erosion control structures will be maintained in accordance with FERC’s Upland Plan. The EI will inspect temporary erosion control structures at least daily in areas of active construction. In areas where active construction is not occurring, inspections will be made at least weekly. All structures will be inspected by the EI within 24 hours of 0.5 inch or greater of rainfall or as required by state and local jurisdictions. Whenever possible, the EI will evaluate erosion control measures prior to a predicted storm event and implement measures needed to prevent off right-of-way sedimentation. Inspections will be documented and available for agency review upon request.

The EI will be responsible for ensuring that ineffective temporary erosion control measures are repaired within 24 hours of discovery, or as soon as conditions allow if compliance with this timeframe would result in greater environmental impact. The EI will notify Project construction crews when poor weather conditions prevail and when to initiate adequate precautionary measures. The EI will ensure that the contractor has adequate equipment, materials and crews available to respond rapidly to storm events. It is the responsibility of the EI to advise the Chief Inspector when wet weather or other conditions make it advisable to restrict construction activities to avoid excessive rutting in sensitive areas.

5.0 HYDROSTATIC TEST WATER AND DEWATERING

5.1 Hydrostatic Testing

The pipeline will be hydrostatically tested in accordance with DOT regulations to ensure that the pipeline is capable of operating at design pressure. Should a leak occur, the pipeline would be repaired and retested until the pressure test specifications are achieved. Hydrostatic test water will be obtained from municipal sources and will not be withdrawn from surface waters, unless approvals are obtained from the Washington Department of Ecology and WDFW.

5.2 Dewatering

During construction there is the potential, in areas of high groundwater, that trench dewatering may be required. Generally, these locations are associated with low lying areas near wetland and waterbody crossings. Figure 14 in Attachment C provides typical measures to minimize potential sedimentation during trench dewatering activities. However, the construction schedule will generally coincide with the period when the soils in these areas are expected to be at their driest.

5.3 Hydrostatic and Trench Water Discharge

No hydrostatic test water or water from trench dewatering will be discharged directly to waterbodies. Water will be directed to an energy dissipation structure to prevent erosion and avoid sedimentation (see Figures 14 and 15 in Attachment C). The discharge will occur to an appropriately sized dewatering structure based on the expected quantity of water. The proposed hydrostatic test water discharge location is in the open field in TEWA 2.21-N and it is shown on the Environmental Alignment Sheets. The discharge location is located in an upland area and at an appropriate distance from wetlands and waterbodies to promote infiltration and to ensure that
sedimentation of wetlands, waterbodies or other sensitive areas does not occur. Northwest's EI will visually monitor the release of hydrostatic test water and trench dewatering activities to ensure that no erosion or sedimentation occurs. In addition, the EI will ensure that turbid water is not discharged to waters of the State. If the EI determines that a discharge is occurring, the receiving water will be visually monitored for turbidity. If turbidity is observed, the dewatering operations would be immediately adjusted/reinstalled/maintained to ensure that the discharge to surface water is stopped and water quality standards are not exceeded.

6.0 NON-STORMWATER DISCHARGES

The main non-stormwater discharges associated with construction of the pipeline are trench dewatering and hydrostatic test water discharge. Water associated with trench dewatering will be pumped to a discharge structure similar to Figures 14 and 15 in Attachment C but will be appropriately sized for the discharge volume. Water associated with trench dewatering and hydrostatic testing will not be directly discharged to waterbodies.

7.0 RESTORATION AND REVEGETATION

Initial reclamation of the disturbed areas will begin as soon as possible after construction. Affected waterbodies will be stabilized and temporary sediment barriers will be installed within 24 hours in accordance with FERC's Wetland and Waterbody Procedures (Section V.C.2). Final grading and permanent erosion control measures will be completed within 20 days (10 days in residential areas) after the trench is backfilled, weather and soil conditions permitting. During final clean-up and initial reclamation, permanent repairs of fences, gates, drainage ditches, and other structures removed or damaged during construction will be completed. Drain tiles will be repaired before backfilling. All drain tiles crossed by the Project will be probed to check for damage. Cut or damaged drain tiles will be repaired to their original or better condition. Northwest will use a qualified specialist to test tiles for damage and to conduct any necessary repairs. Filter-covered drain tiles will not be used during repairs unless the local soil conservation authorities and the landowner approve their use.

Northwest will work with individual landowners to address restoration of pastures and residential lawns, ornamental shrubs, trees, and other landscaping features. In residential areas, Northwest will utilize contractors familiar with local horticultural and lawn establishment procedures for reclamation work or will compensate the landowner to restore these areas. Northwest has developed residential construction plans, which describe the construction procedures that will be used near residences and in neighborhoods.

7.1 Recontouring

All graded areas associated with pipeline construction will be regraded and contoured to blend into the surrounding landscape and to reestablish natural drainage patterns. Emphasis during recontouring will be to return the construction right-of-way to its approximate original contours, to stabilize slopes, control surface drainage, and to provide an aesthetic appearance. Ruts and other scars will be filled and all drainage ditches will be returned to their preconstruction conditions. Recontouring to the original grade in disturbed wetlands is especially critical so that the wetland hydrology is not altered. Existing culverts that are damaged or removed during construction will be replaced to their original or better condition. No other culverts will be installed except those used as temporary waterbody/ditch crossings as described in Section 3.1.7 or as shown on Figure 4 in Attachment C.
7.2 Construction Debris Disposal

During final cleanup, all construction debris (e.g., timber, slash, mats, garbage, drilling fluids, excess rock, etc.) will be cleared from the construction right-of-way and TEWAs and disposed of in accordance with state and local regulations.

7.3 Soil Compaction

Northwest will test for soil compaction in residential areas and pastures. Tests will be conducted on the same soil type under similar moisture conditions as specified in Section V.C.1. in FERC’s Upland Plan. Pursuant to FERC’s Upland Plan, the EI will be responsible for conducting subsoil and topsoil compaction testing and determining corrective measures. Compaction will be relieved in residential areas based on site-specific conditions.

7.4 Scarification

Prior to respreading the topsoil, the construction right-of-way and TEWAs will be scarified (where necessary as determined by the EI) by ripping or chiseling to loosen compacted areas from equipment traffic. Scarifying the subsoil will also promote water infiltration and improve soil aeration, root penetration and revegetation success.

Where compaction is evident and if deemed necessary, scarification will occur in disturbed areas, including the passing lane or TEWAs, even if these areas were only scalped of vegetation or driven over. Scarification will be at least 12 inches deep with rippers spaced not more than 16 inches apart. Ripping and chisel plowing will also occur when materials are dry to promote the shattering of compacted layers.

In wetlands, scarification is not anticipated because traffic will be limited to that needed to clear the construction right-of-way, dig the trench, remove the 8-inch pipeline, fabricate and install the 20-inch pipeline, backfill the trench, and restore the right-of-way. Equipment mats will be utilized in wetlands where soils are saturated, or where standing water is present, to stabilize these areas and minimize compaction. Therefore, the need for scarification in wetland areas will be determined by the EI. Scarification will not be conducted in wetlands where it may adversely affect the wetland hydrology.

7.5 Soil Replacement

All salvaged topsoil will be uniformly spread over the portions of the construction right-of-way from where the soil was salvaged. If compaction occurs during this operation that might not be relieved during seedbed preparation, all compacted areas will be scarified. Topsoil spreading will not occur during wet periods when soils are easily compacted and all travel over retopsoiled areas will be restricted. The EI will be responsible for ensuring that topsoil imported into residential areas for replacement is free of noxious weeds or other deleterious materials.

7.6 Rock Removal

FERC’s Upland Plan requires the removal of excess rock from the top 12 inches of soil to the extent practicable in all rotated and permanent croplands, hayfields, pastures, residential areas, and other areas at the landowner’s request. In these areas, Northwest will clean up excess rock to a condition similar to adjacent portions of the construction right-of-way (e.g., size, density, and distribution of rock) unless the landowner and Northwest negotiate other requirements. The rock collected from these operations will either be hauled to an approved landfill or commercial quarry or will be disposed of in upland areas within the certified construction limits, with approval
of the landowner. Approval for the use of alternate disposal locations would be requested from FERC.

7.7 Seedbed Preparation

Seedbed preparation will be conducted immediately prior to seeding to prepare a firm seedbed conducive to proper seed placement and moisture retention. Seedbed preparation will also be performed to break up surface crusts and to eliminate weeds which may have developed between initial reclamation and seeding.

A seedbed will be prepared in disturbed areas, where necessary, to a depth of three to four inches using appropriate equipment to provide a seedbed that is firm, yet rough. A rough seedbed is conducive to capturing or lodging seed when broadcasted or hydroseeded, and it reduces runoff and erosion potential. The rough seedbed will retain soil moisture for seedling germination and establishment.

In most areas, final construction right-of-way and TEWA cleanup procedures should be sufficient because it leaves a surface smooth enough to accommodate a drill seeder pulled by a farm tractor and rough enough to catch broadcasted seed and trap moisture and runoff. However, additional preparation, if determined necessary by the EI, such as chisel plowing or diskining may be necessary to prepare an adequate seedbed. Where residential lawns or landscaped areas are disturbed, more intensive ground and seedbed preparations may be required, including rock collection, grading and soil preparation/amending.

7.8 Fertilization

Northwest will use a standard fertilization rate of 200 pounds per acre bulk triple-16 fertilizer (16:16:16 - nitrogen, potassium, and phosphorus) on all disturbed areas to be reseeded, except in wetlands. This fertilization rate will apply 32 pounds per acre of elemental nitrogen, potassium, and phosphorus. The NRCS (2017) agreed with the proposed fertilization rate, which has been used on previous Northwest projects in western Washington, including the Project area. Where fertilizer is applied by broadcast methods, the fertilizer will be incorporated into the top 2 inches of soil. Where the fertilizer is applied by hydroseeding, the fertilizer will be applied with the hydroseeding slurry. The NRCS did not recommend the addition of lime or other soil pH modifiers.

7.9 Seed Mixtures and Supplemental Plantings

As required by FERC's Upland Plan, Northwest has consulted with the NRCS (2017) regarding recommended seed mixtures for the Project area. The NRCS reviewed the proposed seed mixtures and provided recommendations which have been incorporated into Table 7.9-1. The NRCS indicated that the seeding rates should be based on a targeted number of seeds per square foot for critical area plantings and provided an Excel Seeding Rate Calculator, which assumes a 90 percent PLS (seed germination x seed purity). The applications rates for the seed mixtures in Table 7.9-1 are based on the NRCS recommendations. All seed will be tested within 12 months of use. The seed will be free of noxious weeds and the quantity of total weed seed will be low. The EI will review all seed tags prior to use to ensure that these procedures are implemented. The seeding rates specified in Seed Mixtures 1, 2 and 3 are based on drill seeding methods. If hydroseeding occurs, the seeding rate will be used plus any adjustment the hydroseeding company recommends based on their equipment specifications. If broadcast seeding is conducted, the seeding rate will be doubled. Individual landowners may also specify specific seed mixtures for their properties. Residential landscaping is discussed in Section 7.14.
Table 7.9-1
Recommended Seed Mixtures

| Seed Mixture 1 – Upland Right-of-Way Areas, Wet Pastures and Disturbed Emergent Wetlands |
|---------------------------------------------|----------------------------------|----------|
| **Common Name**                            | **Scientific Name**              | **lbs/ac** |
| **Perennial Grasses**                      |                                  |           |
| Redtop or Colonial bentgrass               | Agrostis alba or Agrostis capillaris | 4.0      |
| Fescue, Fine or Creeping Red               | Festuca rubra                    | 5        |
| Fescue, Tall                               | Festuca arundinacea              | 15       |
| Orchardgrass                              | Dactylis glomerata               | 6        |
| Ryegrass, Annual or Italian                | Lolium multiflorum               | 12       |
| Timothy                                   | Phleum pratense                  | 2        |
| **Legumes**                                |                                  |           |
| Clover, Red                                | Trifolium pratense               | 4        |
| Clover, White                              | Trifolium repens                 | 4        |
| Trefol, Big                                | Lotus uliginosus                 | 1        |
| **Annual Cereal Grains**                   |                                  |           |
| Oats                                       | Avena sativa                     |           |
| **Seed Mixture 2 - Pasture Mix – Upland Sites** |                                  | 73²    |
| **Common Name**                            | **Scientific Name**              | **lbs/ac** |
| **Perennial Grasses**                      |                                  |           |
| Fescue, Tall                               | Festuca arundinacea              | 10       |
| Orchardgrass                              | Dactylis glomerate               | 13       |
| Ryegrass, Perennial or English             | Lolium perenne                   | 22       |
| **Legumes**                                |                                  |           |
| Clover, Red                                | Trifolium pratense               | 5        |
| Clover, White                              | Trifolium repens                 | 3        |
| **Seed Mixture 3 – Wetland Seed Mixture**  |                                  | 53³      |
| **Grasses**                                |                                  |           |
| Ryegrass, Annual                           | Lolium multiflorum               | 25       |
| Quick Guard                               |                                  | 45       |
| Red Fescue                                | Festuca rubra                    | 8        |
| Hairgrass, Tufted                          | Deschampsia caespitosa           | 3        |
| Bluejoint reedgrass                        | Calamagrostis canadensis         | 3        |
| Western Mannagrass                         | Glyceria occidentalis            | 3        |
| Barley, Meadow                             | Hordeum Brachyantherum           | 10       |
| **Legumes**                                |                                  |           |
| Clover, Crimson                            | Trifolium incarnatum             | 8        |
| **lbs/ac**                                 |                                  | 105⁴     |

1. Specified seed mixtures application rates are based on a targeted 300 to 600 seeds per square foot for critical area plantings depending on seed size, as recommended by the NRCS for critical area plantings. The rate assumes a PLS of 90 percent (seed germination x seed purity) for each species. If pure live seed (PLS) is less than 90%, either increase seeding rate by difference or use a different seed lot.

2. The seeding rate calculates to ~500 seeds/sq ft/acre. The mixture includes both small to large seed sizes.

3. The seeding rate calculates to ~500 seeds/sq ft/acre. The mixture includes both small to large seed sizes.

4. Quick Guard is a sterile hybrid of wheat and rye.

5. These species will be included in the seed mixture if they are readily available from a commercial seed supplier. The Native Seed Network (http://www.nativeseednetwork.org/index) provides a source to search for seed availability and vendors. Native seed will be from west of Cascades sources where available. Northwest will approve final seed mixture and substitutes.
7.10 Seeding Timing

Disturbed areas will be seeded within six working days of final grading, weather and soil conditions permitting. It is expected that seeding of disturbed areas may begin as early as mid-August and will proceed until all areas have been reseeded. Seeding past October 10th will require mulching and may not germinate to provide an effective cover, unless the weather is unseasonably warm.

7.11 Seeding Methods

Seeding will be conducted using either a seed drill, broadcast or hydoseeding according to the guidelines in FERC's Upland Plan. Where broadcast seeding occurs, other than hydoseeding, the seeded area will be lightly dragged with chains or other appropriate harrows to lightly cover the seed. Fertilizer and mulch will not be used in wetlands.

7.12 Supplemental Wetland and Riparian Plantings

To mitigate impacts to riparian areas, Northwest will plant native shrubs and trees in areas where these species existed prior to construction or to enhance existing conditions where landowners allow. Table 7.12-1 provides a list of suggested native trees and shrubs that are common in the Project area in these habitats and which will be planted after final restoration and cleanup during appropriate planting periods (during the winter and early spring). To complete the restoration plantings, Northwest will select a local restoration contractor who is knowledgeable about wetland and riparian ecosystems as well as with the species' characteristics and site growth requirements (see Table 7.12-1). The shrubs and trees planted at each site will be determined at the time of planting based on the moisture regimes (wet, moist or dry) and site-specific conditions and based on the plant spacing provided in Table 7.12-1. Disturbed riparian areas will be replanted with tree and shrubs according to FERC's Wetland and Waterbody Procedures (Section V.C.6. and V.D.1). Shrubbs will be planted and allowed to grow within 5 feet of the pipeline centerline and trees will not be planted within 15 feet of either side of the pipeline centerline to facilitate corrosion and leak surveys and to prevent roots from damaging pipe coatings. In riparian areas, shrubs and trees will be planted across the right-of-way for a width of 25 feet from the waterbody banks subject to the existing landuses and landowner approval.

7.13 Mulch

Mulch will be applied where necessary to stabilize the soil. The mulch will be uniformly applied at a rate of 2 tons/acre to cover at least 75 percent of the ground surface. If seeding occurs shortly before the beginning of the wet season (after mid-September), all disturbed areas will be mulched. Mulching will occur during seeding (where hydoseeded) or immediately after seeding where broadcast or drill seeding occurs. All straw utilized for mulch will be CWF. Anchoring straw mulch by crimping the mulch in is not expected to be necessary because strong winds, which could dislodge the mulch, typically occur during the winter rainy season when the moist conditions will bind the straw to the soils; however, the E1 will determine if straw crimping is appropriate. Liquid mulch binders are not expected to be utilized unless hydromulch is applied. Liquid binders will not be used within 100 feet of wetlands or waterbodies, except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
Table 7.12-1
Native Shrub and Tree Plantings for Restoring Riparian Areas

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Planting Size</th>
<th>Plant Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHRUBS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wet Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red-osier dogwood</td>
<td>Cornus stolonifera</td>
<td>36&quot; cuttings</td>
<td>3'</td>
</tr>
<tr>
<td>Willow spp.</td>
<td>Salix spp.</td>
<td>36&quot; cuttings</td>
<td>3'</td>
</tr>
<tr>
<td><strong>Moist Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian Plum</td>
<td>Oemleria cerasiformis</td>
<td>1 gal or bare root</td>
<td>6'</td>
</tr>
<tr>
<td>Red elderberry</td>
<td>Sambucus racemosa</td>
<td>1 gal</td>
<td>8'</td>
</tr>
<tr>
<td>Vine maple</td>
<td>Acer circinatum</td>
<td>1 gal</td>
<td>8'</td>
</tr>
<tr>
<td>Salmonberry</td>
<td>Rubus spectabilis</td>
<td>1 gal</td>
<td>4'</td>
</tr>
<tr>
<td>Nootka rose</td>
<td>Rosa nutkana/</td>
<td></td>
<td>4'</td>
</tr>
<tr>
<td><strong>Dry Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowberry</td>
<td>Symphoricarpus albus</td>
<td>1 gal</td>
<td>4'</td>
</tr>
<tr>
<td>Vine maple</td>
<td>Acer circinatum</td>
<td>1 gal</td>
<td>8'</td>
</tr>
<tr>
<td>Beaked hazelnut</td>
<td>Corylus cornuta</td>
<td>1 gal</td>
<td>8'</td>
</tr>
<tr>
<td><strong>TREES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wet Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red alder</td>
<td>Alnus rubra</td>
<td>1 gal</td>
<td>10'</td>
</tr>
<tr>
<td>Sitka spruce</td>
<td>Picea sitchensis</td>
<td>2 gal or bare root</td>
<td>15'</td>
</tr>
<tr>
<td>Western red cedar</td>
<td>Thuja plicata</td>
<td>2 gal or bare root</td>
<td>12'</td>
</tr>
<tr>
<td><strong>Moist Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black cottonwood</td>
<td>Populus balsamifera ssp. trichocarpa</td>
<td>36&quot; cuttings or poles</td>
<td>10'</td>
</tr>
<tr>
<td>Cascara buckthorn</td>
<td>Frangula purshiana</td>
<td>1 gal</td>
<td>8'</td>
</tr>
<tr>
<td>Western hemlock</td>
<td>Tsuga heterophylla</td>
<td>1 gal</td>
<td>12'</td>
</tr>
<tr>
<td><strong>Dry Sites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Douglas' fir</td>
<td>Pseudotsuga menziesii</td>
<td>1 gal or bare root</td>
<td>12'</td>
</tr>
<tr>
<td>Big-leaf maple</td>
<td>Acer macrophyllum</td>
<td>2 gal</td>
<td>15'</td>
</tr>
</tbody>
</table>

1 Planting stock sizes may include bare root equivalents.
2 Shrubs will be installed in clusters of 5 to 10, while trees will be individual specimens.
3 The NRCS (2017) noted in areas of reed canarygrass infestations longer whips can be used, up to 8-feet in length, to outcompete the grass. Willow stakes will be planted/driven in to be in contact with groundwater. The NRCS also noted if the cuttings are from older planting stock, the thicker bark of this planting stock will aid in minimizing rodent damage/girdling.

7.14 Residential Landscaping

In residential areas, Northwest will initiate cleanup operations immediately following backfill operations in all lawn and landscaped areas within 10 days after backfilling the trench, weather permitting consistent with FERC’s Upland Plan (Section V.A.1). This includes final grading, topsoil replacement and installation of permanent erosion control structures. Residential landscaping will be restored by a local landscaping contractor familiar with local conditions. Landscaping may include lawns, shrubs, trees, fences, irrigation systems, and other landscape features as negotiated during Northwest’s easement acquisition process.

7.15 Grazing Deferments

Northwest will develop grazing deferment plans, where necessary, based on negotiations with individual landowners. Grazing deferment plans may include temporary fencing to keep horses or livestock off of the restored construction right-of-way and TEWAs, boarding animals at alternate locations, purchasing supplemental feed, or other similar methods to minimize potential livestock disturbance to construction right-of-way and TEWA revegetation efforts.
7.16 Noxious Weeds

The NRCS (2017) was consulted for recommendations to prevent the introduction or spread of noxious weeds and soil pests. The NRCS recommended that the best way to control the establishment of invasive species is to plant desirable vegetation at relatively high rates so they provide vigorous completion. In addition, Northwest will include the following measures to ensure that the potential spread of noxious weeds is minimized.

- Prior to transporting to the construction right-of-way and TEWAs, all equipment will be inspected to ensure it is clean and free of potential weed seed or sources (i.e., soil roots, or rhizomes). All equipment hauled into Snohomish County will be cleaned before entering the County. Inspection of all equipment and trucks used on the Project to ensure they are clean will be the responsibility of the EI or Northwest’s authorized representative.

- CWF straw will be used for mulch, dewatering structures, or other uses along the construction right-of-way or TEWAs. The EI will be responsible to ensure that all straw hauled to authorized work areas is CWF. The State of Washington Noxious Weed Control Board \(^1\) has a Weed Free Hay and Mulch Program, which is run by the Washington State Department of Agriculture Plant Services Program; producers of certified hay and mulch are listed at the following web site: http://www.nwcb.wa.gov/washington-weed-free-hay-and-mulch-program or http://agr.wa.gov/PlantsInsects/WWHAM/WWHAM.aspx.

- Prior to clearing, the Project will be surveyed for areas that may be infested with priority noxious weeds that are listed on the County’s priority noxious weed list. These are weeds listed on the County’s current noxious weed list as Class A weeds\(^2\). Class A weeds are non-native species that have limited distribution in Washington. Preventing new infestations and eradicating existing infestations are the highest priority for the state and eradication is required by law (17.10 RCW). Class B Weeds are those noxious weeds not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region and require control in the county.

- Surveys will be conducted by Northwest’s EI or authorized representative prior to construction. Infested areas will be cleared in a manner to minimize transport of weed seed, roots and rhizomes, or other vegetative materials and soil from the site down the construction right-of-way or within TEWAs.

- In areas where infestations have been identified or noted in the field, the Contractor will stockpile cleared vegetation and salvage topsoil adjacent to the area from which they are stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. During reclamation, the Contractor will return topsoil and vegetative material from infestation sites to the areas from which they were stripped. Any clearing equipment used in areas of Class A and B weeds will be cleaned by hand or blown down with air prior to leaving the site. Infested areas will be mapped to ensure that these areas would be monitored during operations so that the weeds would be controlled and would not spread.

- During restoration, where weed control is necessary, Northwest will employ mechanical methods (mowing, etc.) to prevent flowering and the spread of weeds or will employ a licensed contractor to ensure that the appropriate herbicides are utilized for the targeted weed species during the proper phenological period at the specified rate. The contractor will ensure that the herbicides are used according to the labeling restrictions and according to all

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\(^1\) http://www.nwcb.wa.gov/washington-weed-free-hay-and-mulch-program
\(^2\) http://snohomishcountywa.gov/750/Noxious-Weeds-List
applicable laws and restrictions. The contractor will confirm that the herbicides are used under the proper seasonal and weather conditions to ensure effectiveness and to minimize drift to non-targeted areas. Herbicides will not be applied during precipitation events or when precipitation is expected within 24 hours or as specified on the label. Herbicides will not be used within 100 feet of a wetland or waterbody, unless allowed by the appropriate agency. Prior to herbicide application, Northwest and/or their contractor will obtain all required permits from the local jurisdictions/authorities.

7.17 Monitoring and Maintenance

Northwest will conduct follow-up inspections of all disturbed areas after the first and second growing seasons, or as required by Project permits, to determine the success of revegetation. Revegetation will be considered successful in upland areas if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. If vegetative cover and density are not similar or there are excessive weeds after two full growing seasons, Northwest will continue revegetation efforts until revegetation is successful. Repair of erosion control structures will occur until the construction right-of-way and TEWAs have successfully revegetated and has stabilized. Once the site is stabilized, temporary erosion control measures will be removed.

In wetland areas, revegetation will be considered successful if the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation); vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction; and invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction. If revegetation is not successful at the end of 3 years, Northwest will develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate the wetland and will continue revegetation efforts until wetland revegetation is successful.

Routine vegetation maintenance clearing will not be done more frequently than every 3 years. Vegetation maintenance adjacent to waterbodies will allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way (if the landowner is in agreement). However, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipelines (20-inch mainline and 16-inch loop line) may be maintained annually in an herbaceous state. Routine vegetation maintenance mowing or clearing will not occur during the migratory bird nesting season between April 15 and August 1 of any year.

Northwest will test, operate and maintain the proposed Project facilities in accordance with 49 CFR Part 192 and other applicable federal and state regulations. The pipeline right-of-way will be clearly marked where it crosses public roads, railroads, rivers, fenced property lines, and other locations as necessary in accordance with applicable regulations to avoid accidental excavation.

8.0 REFERENCES


Forest Practices Application/Notification
Notice of Decision

Decision
[ ] Notification
[ ] Approved
[ ] Disapproved
[ ] Closed

Operations shall not begin before the effective date.
This Forest Practices Application is subject to the conditions listed below.
This Forest Practices Application is disapproved for the reasons listed below.
Applicant has withdrawn FPA/N.

FPA/N Classification
[ ] Class II [x] Class III [ ] Class IVG [ ] Class IVS

Number of Years Granted on Multi-Year Request
[ ] 4 years [ ] 5 years

Conditions on Approval / Reasons for Disapproval
This application has been withdrawn. See attached e-mail dated April 3, 2019.

Issued By: Steven Huang
Title: Skykomish Forest Practice Forester
Copies to: [x] Landowner, Timber Owner and Operator.
Issued in person: [ ] Landowner [ ] Timber Owner [ ] Operator By:

Region: Northwest
Date: 4/4/2019
Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:

Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501
Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903

Information regarding the Pollution Control Hearings Board can be found at: http://www.emuho.wa.gov/

At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

Office of the Attorney General
Natural Resources Division
1125 Washington Street SE
PO Box 40100
Olympia, WA 98504-0100

And

Department Of Natural Resources
Northwest Region
919 N Township Street
Sedro-Woolley, WA 98284

Other Applicable Laws

Operating as described in this application/notification does not ensure compliance with the Endangered Species Act, or other federal, state, or local laws.

Transfer of Forest Practices Application/Notification (WAC 222-20-010)

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website: http://www.dnr.wa.gov/businesspermits/forestpractices.

Notify DNR of new Operators within 48 hours.

Continuing Forest Land Obligations (RCW 76.09.060, RCW 76.09.070, RCW 76.09.390, and WAC 222-20-055)

Obligations include reforestation, road maintenance and abandonment plans, conversions of forest land to non-forestry use and/or harvest strategies on perennial non-fish habitat (Type Np) waters in Eastern Washington.

Before the sale or transfer of land or perpetual timber rights subject to continuing forest land obligations, the seller must notify the buyer of such an obligation on a form titled "Notice of Continuing Forest Land Obligation". The seller and buyer must both sign the "Notice of Continuing Forest Land Obligation" form and send it to the DNR Region Office for retention. This form is available at DNR region offices.

If the seller fails to notify the buyer about the continuing forest land obligation, the seller must pay the buyer's costs related to continuing forest land obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forest land obligation against the seller.

Failure by the seller to send the required notice to the DNR at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forest land obligation prior to sale.

DNR affidavit of mailing:

On this day 4/4/2019, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of this document, Notice of Decision FPA # 2816879

Braelyn Hamilton

(Signature)

Washington State Department of Natural Resources • Notice of Decision • August 5, 2013
On behalf of Landowner: Northwest Pipeline, LLC, et al. please accept my request to withdraw FPA # 2816879. We intend to promptly re-submit this proposal with an accompanying COHP letter from Snohomish County and apply the original application fee to this new application.

Thank you,

Peter C. Blansett
Principal Forester/Certified Arborist
S. A. NEWMAN FIRM
P. O. Box 156
Everett, WA 98206-0156
Phone: 425-259-4411
www.sanforest.com