

STATE FOREST LAND
SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

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

Instructions for applicants:

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

Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov/state-environmental-policy-act-sepa>. These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

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

Instructions for Lead Agencies:

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

Use of checklist for nonproject proposals:

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

2615793

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **Willey Ridge VRH VDT**

Agreement # 30-098103

2. Name of applicant: **Washington Department of Natural Resources**

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

**Andrew Gorbett
Department of Natural Resources
411 Tillicum Lane
Forks, WA 98331
(360) 374-2800**

4. Date checklist prepared: **10/23/2018**

5. Agency requesting checklist: **Washington Department of Natural Resources**

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

- a. *Auction Date:* **04/24/2019**
- b. *Planned contract end date (but may be extended):* **04/30/2022**
- c. *Phasing:* **N/A**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. **No.**

Timber Sale:

a. *Site preparation:*

Site preparation needs will be assessed following harvest in Units 1, 3-7.

b. *Regeneration Method:*

**TSU NO :1 HAND PLANT 01/15/2023; 100 Acres
TSU NO :3 HAND PLANT 01/15/2023; 34 Acres
TSU NO :4 HAND PLANT 01/15/2023; 60 Acres
TSU NO :5 HAND PLANT 01/15/2023; 0.3 Acres
TSU NO :6 HAND PLANT 01/15/2023; 59 Acres
TSU NO :7 HAND PLANT 01/15/2023; 22 Acres**

c. *Vegetation Management:*

Continuing assessment of units to determine future vegetation management strategy will be required.

d. *Thinning:*

PCT needs will be assessed in 10 to 15 yrs. after planting in units 1 and 3-7.

Roads: Road maintenance, periodic ditching, and culvert and ditch cleanouts as needed.

Rock Pits and/or Sale: Mary Clark Pit, Baby Bear Pit, Littleton East Pit

Other:

Future forest management activities are anticipated to continue within the Sol Duc Valley WAU, and adjacent to the current proposal. Potential activities may include but are not limited to biomass salvage, firewood salvage, hardwood slashing, planting, pre-commercial thinning, commercial thinning, and variable retention harvest. All future activities will be consistent with the DNR's Habitat Conservation Plan (HCP), applicable policies and planning documents.

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

303 (d) – listed water body in WAU: temp sediment completed TMDL (total maximum daily load):

Landscape plan: **OESF Forest Land Plan (FLP) (2016)**

Watershed analysis: **Sol Duc Valley**

Interdisciplinary team (ID Team) report:

Road design plan: **11/05/2018**

Wildlife report:

Geotechnical report: **Geologic Risk Assessment Willey Ridge Timber Sale 12/21/2018**

Other specialist report(s): **WA DNR West Side Old Growth Assessment 12/18/2018**

Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

Rock pit plan: **Mary Clark Pit Plan 02/2018, Baby Bear Pit Plan 05/11/2018, Littleton East Pit Plan 11/2018**

Other:

Final Habitat Conservation Plan (September 1997), Forestry Handbook (August 1999), Sustainable Harvest Calculation (Sept 2004), Spotted Owl Habitat Mapping, Forest Practices board manual, WAU Map for Rain-On-Snow areas, Policy for Sustainable Forests (PSF 2006), HCP Checklist, Land Resource Manager (LRM) and data cubes, Road Maintenance and Abandonment Plan (RMAP) for the Upper Sol Duc administrative unit: #2610029. The following documents are all generated by Department GIS databases: OESF Habitat Marbled Murrelet Habitat Model, and Marbled Murrelet Proximity Map, Weighted Old Growth Habitat Index (WOGHI) and NSO Best-70 Map.

*All documents are available for review at the Olympic Region office during the SEPA review.

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

No.

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

FPA # 2615793 FHPA Burning permit Shoreline permit Incidental take permit

Existing HPA Other: **Board of Natural Resources Approval**

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

- a. *Complete proposal description:* **The Willey Ridge VRH VDT timber sale is a seven unit timber sale proposal encompassing approximately 490 gross acres. The proposal includes 275 acres of variable retention harvest, 48 acres of variable density thinning and 10 acres of right-of-way harvest with an approximate sale volume of 8,797 MBF. A total of 145 acres have been deferred as unstable slope protection and RMZ, 2 acre has been deferred as Wetland Management Zone (WMZ) and 10 acres have been left in leave tree area. All units are accessed from the FS-30 road system. Harvest units are in Township 30, Range 11 West, Sections 16, 9 and 17.**

**Estimated Sale Volume: 8,797 MBF
Total Proposed Acres: 490
RMZ and Unstable Slope Protection Acres: 145
WMZ Acres: 2
Skip Acres: 5
Leave Tree Area Acres: 10
Total Number of Leave Trees: 2,224
Net Harvest Acres: 328**

Approximately 12,547 feet of new construction, 6,900 feet of reconstruction and 51,230 feet of pre-haul maintenance are proposed to meet the needs of the sale. 617 feet of the proposed new road construction and the development of Littleton East Pit has already been permitted under Forest Practices Application #2614598. The Mary Clark Pit, located in Section 32, Township 30 North, Range 12 West and the Baby Bear Pit, located in section 26 of Township 30 North, Range 12 West and the Littleton East Pit, located in section 25 of Township 30 North, Range 11 West and section 30 of Township 30 Range 10 West are the designated rock sources for the sale.

- b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

Willey Ridge VRH VDT is a 7 unit variable retention harvest (VRH) and variable density thinning (VDT) timber sale. The units range in age between 53 and 75 years old. The area is dominated by western hemlock and pacific silver fir with components of Douglas-fir, red alder and western redcedar present throughout the units. The average DBH is 15 inches across the units. The elevation ranges from 830 to 2,120 feet. The sale utilizes ground based and cable harvest methods.

Unit 1 is 152 gross acres and consists of timber that is 61-75 years old. Western hemlock and pacific silver fir dominate the overstory with components of Douglas-fir, red alder and

western redcedar. Terrain in this unit is steep with slopes from 0-110%. The elevation ranges from 1,350 to 2,120 feet. Of the 153 gross acres, there are 100 acres of VRH, 5 acres of right-of-way harvest, 43 acres of unstable slope protection and RMZ and 4 acres of leave tree areas. The unit has 6 leave tree areas with 760 clumped leave trees and 48 individual leave trees scattered throughout the unit. The unit will utilize 10% ground based and 90% cable harvest methods.

Unit 2 is 62 gross acres and consists of timber that is 61-75 years old. Western hemlock and pacific silver fir dominate the overstory with components of Douglas-fir, red alder and western redcedar. Terrain in this unit is steep with slopes from 0-110%. The elevation ranges from 1,420 to 1,940 feet. Of the 62 gross acres, there are 43 harvest acres of VDT, 5 acres of skip and 14 acres of unstable slope protection and RMZ. The unit will utilize cable harvest methods.

Unit 3 is 57 gross acres and consists of timber that is 60 years old. Western hemlock dominates the overstory with components of Douglas-fir, pacific silver fir and red alder present. Terrain in this unit is steep with slopes from 0-120%. The elevation ranges from 1,440- to 1,970 feet. Of the 57 gross acres, there are 34 acres of VRH, 22 acres of unstable slope protection and RMZ and 1 acre of leave tree area. The unit has 2 leave tree areas with 253 clumped leave trees and 26 individual leave trees scattered throughout the unit. The unit will utilize cable harvest methods.

Unit 4 is 83 gross acres and consists of timber that is 58-64 years old. Douglas-fir and western hemlock dominate the overstory with components of red alder, pacific silver fir and western redcedar present. Terrain in this unit is steep with slopes from 0-110%. The elevation ranges from 940 to 1,690 feet. Of the 84 gross acres, there are 60 acres of VRH, and 21 acres of unstable slope protection and RMZ, and 2 acres of leave tree area. The unit has 2 leave tree area with 416 clumped leave trees and 64 individual leave trees scattered throughout the unit. The unit will utilize 32% ground based and 68% cable harvest methods.

Unit 5 is 3 gross acres and consists of timber that is 59-69 years old. Douglas-fir and western hemlock dominate the overstory with components of red alder and western redcedar present. Terrain in this unit is flat with slopes from 0-20%. The elevation ranges from 870 to 900 feet. Of the 3 gross acres, there are 0.3 acres of VRH and 3 acres of unstable slope protection and RMZ. The unit has 3 individual leave trees scattered throughout the unit. The unit will utilize cable harvest methods.

Unit 6 is 93 gross acres and consists of timber that is 53-75 years old. Western hemlock dominates the overstory with components of Douglas-fir, pacific silver fir, red alder and western redcedar present. Terrain in this unit is steep with slopes from 0-110%. The elevation range from 830 to 1,970 feet. Of the 93 gross acres, there are 59 acres of VRH, 30 acres of unstable slope protection and RMZ, 2 acres of Wetland Management Zone (WMZ)

and 2 acres of leave tree areas. The unit has 3 leave tree areas with 400 clumped leave trees and 72 individual leave trees scattered throughout the unit. The unit will utilize 12% ground based and 88% cable harvest methods.

Unit 7 is 40 gross acres and consists of timber that is 66 years old. Western hemlock dominates the overstory with components of Douglas-fir, Pacific silver fir, red alder and western redcedar present. Terrain in this unit is steep with slopes from 0-110%. The elevation range from 830 to 1,500 feet. Of the 40 gross acres, there are 22 acres of VRH, 5 acres of right-of-way harvest, 12 acres of unstable slope protection and RMZ and 1 acres of leave tree areas. The unit has 2 leave tree areas with 161 clumped leave trees and 21 individual leave trees scattered throughout the unit. The unit will utilize 26% ground based and 74% cable harvest methods.

Objectives are as follows:

The overall objectives for this sale includes the production of saw logs and pulp material revenue for trusts while expediting the development of a more diverse multi-storied canopy layer in the future stand. This will be accomplished through the retention of wildlife trees, legacy trees and riparian/ wetland management zones. Approximately 162 acres (approximately 33 percent of the proposal) have been set aside for unstable slope, RMZs, WMZ's, skip and leave tree areas. In addition, these stands will be managed to protect site productivity and maintain the integrity and water quality of adjacent streams.

Ecological- VRH to promote diverse forest structure across the landscape while preserving ecological integrity and function. VDT to promote diverse habitat throughout the landscape by integrating skips into the thinning design. This creates a variety of functioning habitats including a diverse canopy and downed wood debris for multiple species use.

Economic- Generate revenue for Common School (03), State Forest Board-Transfer (01) and Capitol Grant (07) Trusts.

Statute- Comply with the OESF FLP, Forest Practice rules, and implement the Policy for Sustainable Forests.

Social- Accommodate dispersed informal recreational activities on DNR managed lands.

Specific objectives are to provide riparian protection, protection of unstable slopes, protection of soils and habitat conservation for threatened and endangered species. Riparian protection measures were designed for all waters in and adjacent to this proposal in accordance with DNR's OESF Riparian strategy.

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		12,547	4	-
Reconstruction		6,900		-
Abandonment		-	-	-
Bridge Install/Replace	-			-
Culvert Install/Replace (fish)	-			-
Culvert Install/Replace (no fish)	4			

Approximately 51,230 feet of pre-haul maintenance is planned for this timber sale. Pre-haul maintenance will include grading, ditching, brushing, cleaning culverts, and installing cross-drains on existing forest roads.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See site plan and topographic maps on DNR website: <http://www.dnr.wa.gov/state-environmental-policy-act-sepa> Click on the DNR region under "Current SEPA Actions – Timber Sales.")

a. Legal description: :

- T30N R11W S16 (Units 1-6)
- T30N R11W S17 (Units 6, 7)
- T30N R11W S9 (Unit 4)
- T30N R10W S30 (Littleton East Pit)
- T30N R11W S25 (Littleton East Pit)
- T30N R12W S26 (Baby Bear Pit)
- T30N R12W S32 (Mary Clark Pit)

The harvest units and designated rock pits are in Clallam County.

b. Distance and direction from nearest town (include road names):

The Willey Ridge VRH VDT timber sale is approximately 26 miles northeast of Forks, WA on the FS-30 road system.

c. Identify the names of all watershed administrative units (WAU). (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov/state-environmental-policy-act-sepa> under the topic "Current SEPA Project Actions – Timber Sales" for a broader landscape perspective.)

WAU Name	WAU Acres	Proposal Acres
SOL DUC VALLEY	45,673	490

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos

for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov/state-environmental-policy-act-sepa> for a broader landscape perspective.)

Sol Duc Valley Land Manager	Acres	% of WAU
DNR	14288	31.3
Federal	18148	39.7
Other State (Non-DNR)	495	1.1
Other Land (Private & Other Public Land)	12742	27.9

Activities within the past seven years, and those proposed for the near future are summarized for the Sol Duc Valley WAU in the following tables. In the future, stands will be selected for regeneration, thinning, and partial cut harvests as they meet the Department's financial requirements, ecological policies, and mandates. It is unknown what future plans other landowners have within these WAU's.

Within the last 7 years the DNR harvested 531 acres of even-aged timber and 120 acres of uneven aged timber in the Sol Duc Valley watershed. The DNR has planned 1506 acres of even-aged harvests and 353 acres of uneven-aged harvest in the Sol Duc Valley watershed.

WAU	Ownership	Even-aged Harvest acres within last 7 years	Uneven-aged Harvest acres within last 7 years	Planned Even-aged Harvest	Planned Uneven-aged Harvest	Salvage
Sol Duc Valley	DNR Managed Land	531	120	1506	353	0
	Non-DNR Managed Land	265	21	Unknown	Unknown	0
	Total	796	141	1506	353	0

This proposal and all future management activities on DNR lands will be conducted in accordance with the State's Habitat Conservation Plan (HCP, 1997), Policy for Sustainable Forests (2006), and Forest Practices Rules. The HCP is an agreement with the federal government that requires the DNR to manage landscapes in accordance with its terms that include the following applicable strategies that were found to provide a conservation benefit for multiple species:

- Deferring harvest on slopes with a high or moderate risk of delivery to a public resource.
- Retaining Riparian Management Zones (RMZ's) on typed waters. This includes a variable width interior core buffer on type 2, 3, 4, unstable type 5 streams and exterior wind buffers on type 2, 3 and 4 streams with a high risk of severe endemic windthrow. Equipment limitation zones (ELZs) are required on all streams.

- Retaining a minimum of 8 leave trees per acre dispersed and clumped throughout VRH units.
- Designing, constructing, and maintaining a road system to minimize potential adverse effects on the environment;
- Implementing procedures pertaining to threatened and endangered species.

In concert, the HCP strategies for spotted owl, marbled murrelet, and riparian conservation will contribute to the retention and development of older forests, while the leave tree procedure will enhance the structural diversity of forests across the landscape. Road construction and maintenance standards will improve the quality of the existing road network and reduce potential impacts on the environment.

B. ENVIRONMENTAL ELEMENTS

1. Earth

- a. General description of the site (check one):

Flat, Rolling, Hilly, Steep Slopes, Mountainous, Other:

- 1) *General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).*

Sol Duc Valley:

Elevation Range: 266'-3,129' with a Mean elevation of 964'

Weighted average precipitation: 101 inches/year

Forest Vegetation Type: Western Hemlock and Douglas-fir

Peak Rain on Snow Zone: 16.2%

- 2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*

This proposal is located in the higher elevations of the Sol Duc Valley WAU's with an elevation of 830-2,120 ft. Approximately 60% (196 acres) of the timber sale is located within peak rain-on-snow zones.

- b. What is the steepest slope on the site (approximate percent slope)?
120%

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
4622	GRAVELLY LOAM	50-80%	21	MEDIUM	HIGH
5733	SILT LOAM	5-35%	29	LOW	LOW
6000	LOAM	65-90%	100	HIGH	HIGH
6002	LOAM	65-90%	170	HIGH	HIGH
7437	V. GRAVELLY LOAM	65-90%	8	HIGH	HIGH

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

Yes

1) *Surface indications:*

This proposal is located on moderate to steep slopes ranging from 0-120%. It is immediately adjacent to incised stream channels with actively slumping banks evidenced by over-steepened slopes and exposed bare soil. All areas with moderate or high risk of slope failure and delivery to a public resource have been excluded from harvest.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*

No Yes, *type of failures (shallow vs. deep-seated) and failure site characteristics:*

Within the WAU there are areas of shallow and deep-seated landslides and mass wasting. These are mainly associated with incised streams and headwall areas. All areas with moderate or high risk of slope failure or delivery to a public resource have been excluded from harvest.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*

No Yes, *type of failures (shallow vs. deep-seated) and failure site characteristics:*

Associated management activity:

There are areas within the sub-basins of the WAU where slope failures have occurred, mainly associated with past road construction practices. All areas with moderate or high risk of slope failure or delivery to a public resource have been excluded from harvest.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*

No Yes, describe similarities between the conditions and activities on these sites:

5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

All areas with moderate or high risk of slope failure and delivery to a public resource have been excluded from harvest.

A review of the statewide landslide inventory (LSI) screening tool indicates that there are no mapped polygons within or immediately adjacent to the harvest units. This landslide database is maintained by the Washington Department of Natural Resources, Forest Practices Division. The LSI includes landslides mapped during many different projects including large-scale geologic mapping, watershed analyses, landscape planning.

Cable yarding over rule-identified inner gorges is necessary to access timber in units 2, 3 and 7. Yarding corridors and landings will be located to ensure minimal damage to trees within these features. Full suspension of logs yarded over these features will be required to minimize soil disturbance within unstable slopes. Yarding operations may require corridors to be cut through inner gorges. If required, these corridors will be no greater than 30' in width. These corridors will be placed no less than 100 feet apart. All trees cut in yarding corridors will be left on the ground and, to the extent possible, will be felled sidehill.

Additionally, road construction will occur within a rule-identified bedrock hollow and a rule-identified inner gorge. This road will be designed to not increase the risk of slope failure or delivery to a public resource within these features. A relict bedrock deep-seated landslide was also identified by a State Lands Geologist in training within Unit 3. A geotechnical report was prepared to for this proposal includes an investigation on possible effects of the harvest, yarding and road construction activities associated with this proposal.

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Approx. acreage new roads: 4 Approx. acreage new landings: <1
Fill Source: Mary Clark Pit, Baby Bear Pit, Littleton East Pit

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Yes. A small amount of incidental surface erosion could occur during the course of road construction and harvest activities. However, prudent road location, construction, and maintenance, as well as the mitigating measures outlined in question (h). below will minimize and control any possible erosion.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*
Less than 1% in gravel roads and landings.

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

Harvesting and road construction will be restricted during periods of heavy rainfall when rutting and surface erosion may occur. Roads will be constructed with properly located ditches, ditch outs and cross drains to divert water onto stable forest floor and/or into stable natural drainages. Ground based operations will be suspended during periods of wet weather or wet soil conditions when rutting of skid or shovel roads begins.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Engine exhaust from logging equipment and dust from passage of log trucks is the only foreseeable emissions to the air. Logging slash, if burned, will be burned adhering to the State's smoke management plan.

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

N/A

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

None

3. Water

- a. Surface Water:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (see timber sale map available at DNR region office, or forest practice application base maps.)

- a. Downstream water bodies:

Unnamed perennial streams, Bear Creek, South Fork Bear Creek, Sol Duc River, Pacific Ocean

- b. Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in feet (per side for streams)
Stream	2	2	Variable width interior core buffer of 150' from CMZ edge (0-30'), 0-80' exterior wind buffer, and a 30' equipment limitation zone
Stream	3	19	Variable width interior core buffer of 100'-120', 0-80' exterior wind buffer, and a 30' equipment limitation zone
Stream	4	46	Variable width interior core buffer of 100'-120', 0-80' exterior wind buffer, and a 30' equipment limitation zone
Stream	5	68	Variable width interior core buffer of 0-110', 30' equipment limitation zone
Forested Wetland	>5 ac.	1	No harvest buffer of full site index, 155 ft.

c. List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

In accordance with the Habitat Conservation Plan and OESF Forest Land Plan, on typed waters, all floodplains were protected with variable width interior core buffers based on site specific conditions. Type 2 streams are protected with a variable width interior core buffer of 150' measured from the greater of the floodplain or Channel Migration Zone (CMZ) edge (0-30' wide). Type 3 and 4 streams are protected with a variable width interior core buffer of 100' measured from the floodplain. These interior core buffers were then adjusted to include all stream associated unstable slopes (0'-20' wide). Type 5 streams are protected with variable width interior core buffers encompassing stream associated unstable slopes (0'-110'). A forested wetland greater than 5 acres was given a no harvest buffer of full site index (155'). In unit 2, stable interior core buffers on all streams will be thinned from below to the same prescription as the surrounding unit (RD 50).

Yarding activities in unit 1, 2, 3, 5 and 7 will require trees to be felled within interior core buffers. These yarding corridors will be a maximum of 30' wide and be spaced no less than 100' apart. Trees cut within RMZ's will be left on the ground and, when possible, felled sidehill to reduce the likelihood of erosion.

No harvest will occur in areas with moderate or high risk of slope failure or delivery to a public resource. Additionally, all typed waters have a 30-foot equipment limitation zone. The OESF Windthrow Probability Model identified high risk of severe endemic windthrow in specific areas of Units 1-4, 6 and 7. These areas were protected with a no harvest exterior wind buffer of 80' in units 1, 3, 4, 6 and 7. In unit 2, the exterior wind buffers will be thinned to the same prescription as the surrounding unit (RD 50). The thinning prescription in unit 2 is designed to leave a resilient, wind-firm residual stand.

The work detailed in the road plan has been designed to improve surfacing on the haul roads, and provide for better drainage by installing additional, and replacing inadequate culverts that will divert storm water onto stable forest floor. These actions will minimize the potential for delivery of sediment to streams.

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

No Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)

Description (include culverts):

Timber felling, bucking, yarding, and road maintenance and construction will occur within 200 feet of all the described waters above. All activities will be done in accordance with the HCP and Forest Practice rules. Proposed road construction and reconstruction activities will cross four type 4 streams. Permanent culverts will be installed on these streams. Right-of-Way harvest (60' wide) will occur within riparian management zones of five type 4 streams. Timber harvest, timber haul, rock haul, and road maintenance and construction activities will be restricted during periods of heavy rainfall when rutting and surface erosion are more likely to occur. Roads will be maintained with properly located ditches, ditch outs, and cross drains to divert water flow onto stable forest floor and/or into stable natural drainages. Ground based operations will be suspended during periods of wet weather or wet soil conditions when rutting of skid or shovel roads begins. No rubber tired skidders will be allowed unless authorized by the contract administrator. VRH units will be reforested within 3 years after the completion of harvest

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. **None**

4) Will the proposal require surface water withdrawals or diversions? Give general

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description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation).

No Yes, description:

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

No Yes, describe location:

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No Yes, type and volume:

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Yes. The potential for eroded material entering surface water is low. The possibility for eroded material entering surface water has been minimized due to the fact that unstable slopes with a moderate or high probability of delivery to a public resource within, or directly adjacent to the sale area have been excluded from harvest with boundary placement and the measures listed in B.1.h.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?

No Yes, describe changes and possible causes:

Areas within the Sol Duc Valley WAU show evidence of changes to stream channels. Some steep drainages show evidence of debris torrent events which have increased the dimensions of affected drainage channels, exposed native bedrock which now forms the floor along segments of channels, and decreased the overall amount of large woody debris in the streams. These events may be attributed to past road construction techniques, inherently unstable slopes, soil composition or significant amounts of precipitation in short time periods.

9) Could this proposal affect water quality based on the answers to the questions 1-8 above?

No Yes, explain:

This proposal will have minimal effects on water quality. Measures described in B 1-h, wet weather restrictions on road work and logging operations will all contribute to reducing the potential of affecting water quality.

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?

Sol Duc Valley WAU Land Owner	Miles of Road	Miles per Square Mile
Non-DNR	201.6	2.8
DNR	88.2	1.2
Total	289.7	4.1

Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?

No Yes, describe:

It is likely some roads or road ditches within the WAU intercept sub-surface flow and deliver surface water to streams, however current standards for road construction address this issue by installing cross drains to deliver ditch water to stable forest floors.

11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.

No Yes, approximate percent of sub-basin(s) in significant ROS zone:

Or, approximate percent of WAU:

Sol Duc Valley WAU: 16.2%

12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone? (all ownerships) that is (are) rated as hydrologically mature?

There are two sub-basins within the proposed sale area that include ROS areas.

Sub-Basin Name	Hydrologically Mature Area in Sub-basin that is within significant ROS Zone (%)
309	00%
308	00%

13) Is there evidence of changes to channels associated with peak flows in the WAU and sub-basin(s)?

No

Yes, describe observations in the WAU and in the sub-basin(s):

There is evidence of slope failures that caused shift(s) in stream channel(s). Also, some stream segments show cutting and scouring which can be attributed to the natural erosion of the soil type, and peak flow events; Refer to B. 3. a. 8.

14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

Harvest of Unit 1, 3, and 4 may change the magnitude of the 1 year and smaller peak flow in headwater tributaries to the mainstem of the WAU, but that effect will diminish 15 to 25 years post harvest. The harvest prescription, unit size, buffering and road drainage design will minimize the impact of this harvest to peak flow.

15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?

No

Yes, possible impacts:

16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

Restricting timber harvest and road maintenance activities during peak rain events will allow for increased resource protection. Road development and maintenance standards will minimize impacts by using cross drains to release ditch water onto stable forest floors where flow energy can dissipate prior to reaching stream channels. Maintaining RMZ's on streams will aid bank stability, hydrologic functions and provides recruitment of LWD. See B.1.d.5, B.1.h, B.3.a.1, and A.13 for additional protection measures.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. **No**

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following

chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. N/A

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?

No Yes, describe:

a. Note protection measures, if any.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff from roads will be collected using roadside ditches. Ditch-outs and cross-drains will divert this water away from roads and streams onto stable forest floor. This will allow flow energy to dissipate and will help to filter suspended sediment before these waters reach stream channels as subsurface flow.

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

No Yes, describe:

a. Note protection measures, if any.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. **No**

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

(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

4. Plants

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

deciduous tree:

- evergreen tree: alder, maple, aspen, cottonwood, western larch, birch,
 other:
- shrubs: Douglas fir, grand fir, Pacific silver fir, ponderosa pine,
lodgepole pine, western hemlock, mountain hemlock, Englemann
spruce, Sitka spruce, red cedar, yellow cedar, other:
- grass
 pasture
 crop or grain
 wet soil plants: cattail, buttercup, bullrush, skunk cabbage, devil's club,
 other:
- water plants: water lily, eelgrass, milfoil, other:
- other types of vegetation:
 plant communities of concern:

Portions of Unit 1 and 6 are located within areas that Weighted Old Growth Habitat Index (WOGHI) signifies a moderate old growth potential. A field review by State Lands Foresters and the State Lands Scientist was conducted of the area. It was concluded that all areas of moderate old growth potential within and adjacent to the proposal were comprised of second growth timber. The results can be found in the "West Side Old Growth Assessment" by Dan Donato for the Willey Ridge VRH VDT Timber Sale.

- b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.) **Approximately 10,120 of 53-75 year old timber will be harvested with this proposal.**

- 1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See color landscape/WAU and adjacency maps on the DNR website: <http://www.dnr.wa.gov/state-environmental-policy-act-sepa> (Click on the DNR region under the Topic "Current SEPA Project Actions - Timber Sales."))

Unit 1 is bordered to the north, south and west by 61-75 year old State timber and to the east by Forest Service timber

Unit 2 is bordered to the north, south and west by 61-75 year old State timber and to the east by Forest Service timber

Unit 3 is bordered to the north, west and east by 60 year old State timber and to the south by Forest Service timber.

Unit 4 is bordered on all sides by 57-74 year old State timber.

Unit 5 is bordered on all sides by 59-69 year old State timber

Unit 6 is bordered on all sides by 53 to 75 year old State timber.

Unit 7 is bordered to the south and west by Forest Service timber and to the north and east by 66 year old State timber.

2) *Retention tree plan:*

Unit 1 has a total of 808 trees with 760 clumped leave trees in 6 leave tree areas and 48 scattered leave trees.

Unit 2 is a variable density thinning from below. The residual stand will have approximately 115 trees per acre, 240 sq. ft of Basal area and a relative density of 50.

Unit 3 has a total of 279 trees with 253 clumped leave trees in 2 leave tree area and 26 scattered leave trees.

Unit 4 has a total of 480 trees with 416 clumped leave trees in 2 leave tree area and 64 scattered leave trees.

Unit 5 has a total of 3 scattered leave trees.

Unit 6 has a total of 472 leave trees, with 400 clumped leave trees in 3 leave tree areas and 72 scattered leave trees.

Unit 7 has a total of 182 leave trees, with 161 clumped leave trees in 2 leave tree areas and 21 scattered leave trees.

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

None found in database search.

*FPRAM Search verifies
No T&E Species*

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

Native conifer species will be planted following variable retention harvest. Other native conifer and deciduous species may regenerate naturally on the site. See A.7 (a.b.c.d.) and B.4.b.(2), above.

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

Scotch broom, Himalayan blackberry

5. **Animals**

- a. List any birds and other animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: hawk, heron, eagle, songbirds, pigeon, other:

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

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

unique habitats: talus slopes, caves, cliffs, oak woodlands, balds,
mineral springs

Eagles were observed in flight, no nests are known within 660' of the sale area.

- b. List any threatened and endangered species known to be on or near the site *include federal- and state-listed species*.

FPRAM Search verifies
No T+E species conflict ca

None found in Database Search

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

Pacific flyway Other migration route: Explain if any boxes checked:

This site is part of the Pacific flyway but is not used extensively for resting or feeding by water fowl.

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

- 1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*

Species/Habitat: Spotted Owl – The DNR mitigates for the potential of significant adverse environmental impacts to northern spotted owls in the OESF by implementing the HCP strategy. This strategy established threshold percentages for spotted owl habitat on DNR-managed lands for Landscape Planning Units (LPU). Each LPU is managed to achieve and maintain at least 20% Old Forest Habitat and at least 40% of Old and Young Forest (or Structural) Habitat types taken together according to a schedule of habitat enhancement and harvest activities developed within the Forest Land Plan (FLP). Currently 34.02% of the Upper Sol Duc LPU is habitat. Unit 2 is considered Young Forest Habitat according to the OESF NSO Habitat Model. Variable-density thinning of Young Forest Habitat will maintain and improve the habitats structural component such as down wood, snags and large diameter trees. Unit 2 will be thinned to an RD of 50. The prescription for this unit was developed to ensure the stand will meet the structural definitions of young forest habitat following harvest. Additionally, 1,300 feet of new road construction is proposed in Young Forest Habitat to access timber in Unit 7. All other units are not considered habitat in accordance to the OESF NSO Habitat Model.

Species/Habitat: Marbled Murrelet – The proposal area was evaluated for habitat protection or other marbled murrelet conservation opportunities. Updated information from the US Fish and Wildlife Service (USFWS Ref # 13410-F-0388) indicated 100 meters as the threshold distance for significant murrelet behavior responses. New road construction and right-of-way harvest is proposed within 100 meters of unsurveyed old forest murrelet habitat. Timber harvest and heavy equipment operations will be restricted within 100 meters of murrelet habitat during the murrelet's daily peak activity periods (one hour before to two hours after official sunrise, and one hour before to one hour after official sunset) within their critical nesting season (April 1st through September 23rd). Variable Retention Harvest harvest and new road construction is proposed within ¼ mile of unsurveyed old forest murrelet habitat. All other units within the proposal are non-habitat.

Species /Habitat: Riparian– Interior core buffers have been applied to all Type 2, 3, 4 and unstable 5 waters, as well as equipment limitation zones on all typed waters, as described in B.3.a.1)b). Exterior wind buffers have been applied to Type 2, 3 and Type 4 waters which are modeled to have a high potential for severe endemic windthrow. Buffers are designed to protect the unstable portions of the stream banks, protect waters from siltation, and decrease water temperatures by providing shade and cover. Buffers also allow the natural occurrence of woody debris that provides pools and eddies for fish habitat along stream banks.

Furthermore, these buffers will develop old-forest characteristics that, in combination with the owl and murrelet strategies, will help support old-forest dependent wildlife.

Species /Habitat: Upland – Harvest will not occur in areas with moderate or high risk of slope failure or delivery to a public resource. Wind-firm, dominant, and structurally unique trees were targeted for retention. A minimum of eight trees per acre were retained individually and in clumps to provide habitat structures for wildlife species within VRH units. Timber removal will temporarily create open environments that provide valuable foraging and potential habitat for a variety of wildlife species associated with early-stage forest environments. Additionally, field reconnaissance work for the Willey Ridge VRH VDT timber sale by foresters revealed a feature within the proposed boundary of Unit 3 that has potential characteristics of a cave according to the HCP definitions for uncommon habitat types (PR 14-004-180). While this feature may only marginally meet the procedural definition of a cave with openings on each side, and is questionable for suggested protections under that guidance, the deep fissures may provide some unique habitat value for bats or other species in the area. In the spirit of the intent of the HCP guidance, some protection of this feature would be ideal. The proposed harvest unit fully contains this feature in a leave tree area, excluding it from harvest.

- e. List any invasive animal species known to be on or near the site.
None

6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. N/A
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. N/A
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: N/A

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.
- 1) Describe any known or possible contamination at the site from present or past uses.
None
 - 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
None
 - 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the

operating life of the project.

None

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

Fire suppression, hazardous waste cleanup, emergency medical services.

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

This timber sale contract requires purchaser to minimize risk of fire, spills, and does not allow for disposal of any kind of waste on State Lands. Pump trucks and/or pump trailers will be required on site during fire season. Spill cleanup kits for hazardous materials will be required on site. If any toxic chemical spills occur, or if past contamination is discovered the Department of Ecology will be notified.

b. Noise

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

None

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise from chainsaws, heavy equipment, and log truck traffic will be perceptible while the sale is active.

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

See 5d above for marbled murrelet timing restrictions.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. (*Site includes the complete proposal, e.g. rock pits and access roads.*)

State and Federal forest lands are adjacent to the sale. The proposal will not impact any current land uses nearby or on adjacent properties.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The current use of the project site is working forest. No portion of this proposal will be converted to non-forest use.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: **No**

- c. Describe any structures on the site.

None

- d. Will any structures be demolished? If so, what?
No
- e. What is the current zoning classification of the site?
Commercial Forest Land
- f. What is the current comprehensive plan designation of the site?
Commercial Forest Land
- g. If applicable, what is the current shoreline master program designation of the site?
N/A
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
N/A
- i. Approximately how many people would reside or work in the completed project?
N/A
- j. Approximately how many people would the completed project displace?
N/A
- k. Proposed measures to avoid or reduce displacement impacts, if any:
N/A
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The DNR's long-term strategy for State Lands within and adjacent to this sale is to maintain it as commercial forest land. The design of this project is consistent with current comprehensive plans and procedures pertaining to DNR's Habitat Conservation Plan, OESF Forest Land Plan and the State Forest Practices Act.
- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
See 8.l above.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. N/A
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. N/A
- c. Proposed measures to reduce or control housing impacts, if any: N/A

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? N/A
- b. What views in the immediate vicinity would be altered or obstructed?
1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*

No Yes, viewing location:

- 2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?

No Yes, scenic corridor name:

- 3) How will this proposal affect any views described in 1) or 2) above?

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

The VRH portions of the sale will be reforested within 3 years following the completion of harvest

11. Light and glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
None
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
None
- c. What existing off-site sources of light or glare may affect your proposal?
None
- d. Proposed measures to reduce or control light and glare impacts, if any:
None

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
Dispersed informal recreation in the form of hunting, hiking, fishing, berry picking, sightseeing, etc.
- b. Would the proposed project displace any existing recreational uses? If so, describe.
None
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.
No.
- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material

evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

A check of the Department of Archaeology and Historic Preservation (DAHP) database and Land Resource Manager Special Concerns report shows no known cultural resources on or near the site. A check of the cultural resources layer on the State Upland viewing tool shows no cultural resources on or near the site. During timber sale preparation, trained foresters found no evidence on or near the site to indicate any potential cultural resource.

*DNR FPRAM review
verified No Conflict ca*

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. **See 13b above.**
- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. **If a presently-unknown cultural resource is discovered during project operations, DNR will comply with the March 2010 Cultural Resources Inadvertent Discovery Guidance.**

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.
US HWY 101, Mary Clark Road
 - 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?* **No**
- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? **N/A**
- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? **N/A**
- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Yes, this proposal includes 12,543 feet of construction, 6,900 feet of reconstruction and 51,230 feet of pre-haul maintenance.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?* **This proposal will have no additional impacts on the overall transportation system in the area.**
- e. Will the project or proposal use (or occur in the immediate vicinity of water, rail, or air transportation? If so, generally describe. **No**

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Approximately 5-15 trips per day during peak harvest times. Peak harvest times are morning until early afternoon. Estimates are based on harvest traffic of similar sales.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No

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

None

15. Public services

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

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

N/A

16. Utilities

a. Check utilities currently available at the site:

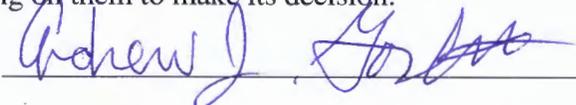
- electricity natural gas water refuse service telephone sanitary sewer
- septic system other:

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. **None**

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:



Name of signee Andrew Gorbett

Position and Agency/Organization

NR53

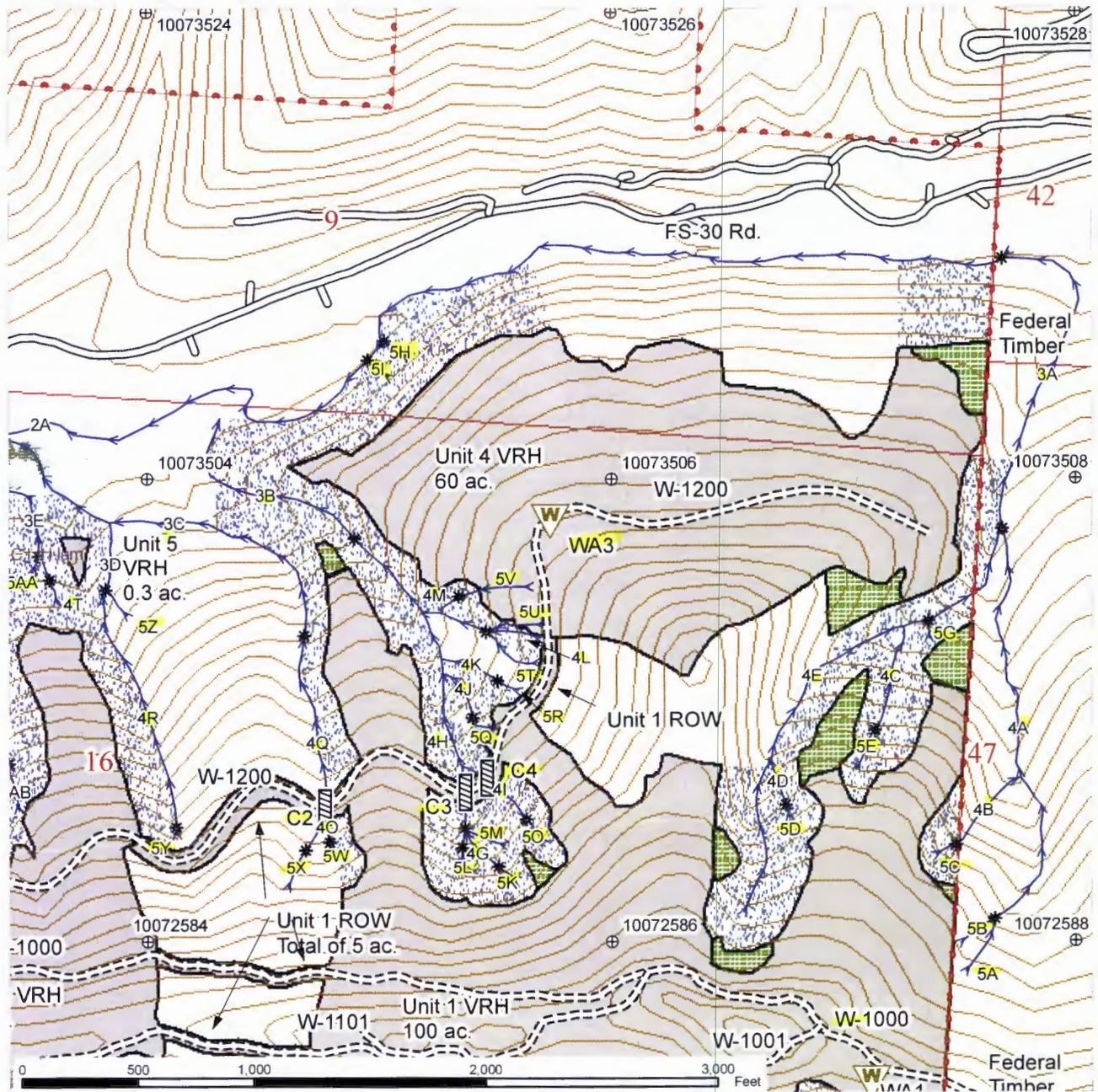
Date Submitted:

12/24/18

FOREST PRACTICES ACTIVITY MAP

SALE NAME: WILLEY RIDGE VRH VDT
APPLICATION #:
TOWNSHIP(S): T30R11W

COUNTY(S): Clallam



Harvest Unit	Streams	Contours 40-foot
Leave Tree Area	3A Stream Type Label	Public Land Survey Sections
Skip; Riparian Mgt Zone	* Stream Type Break	DNR Managed Lands
Wetland Mgt Zone	Stream Culvert Installation	⊕ Tics - 2000' Interval
Forested Wetland	C1 Crossing Identifier	Waste Area
Existing Roads	W1 Wetland Identifier	
New Construction	WA1 Waste Area Identifier	

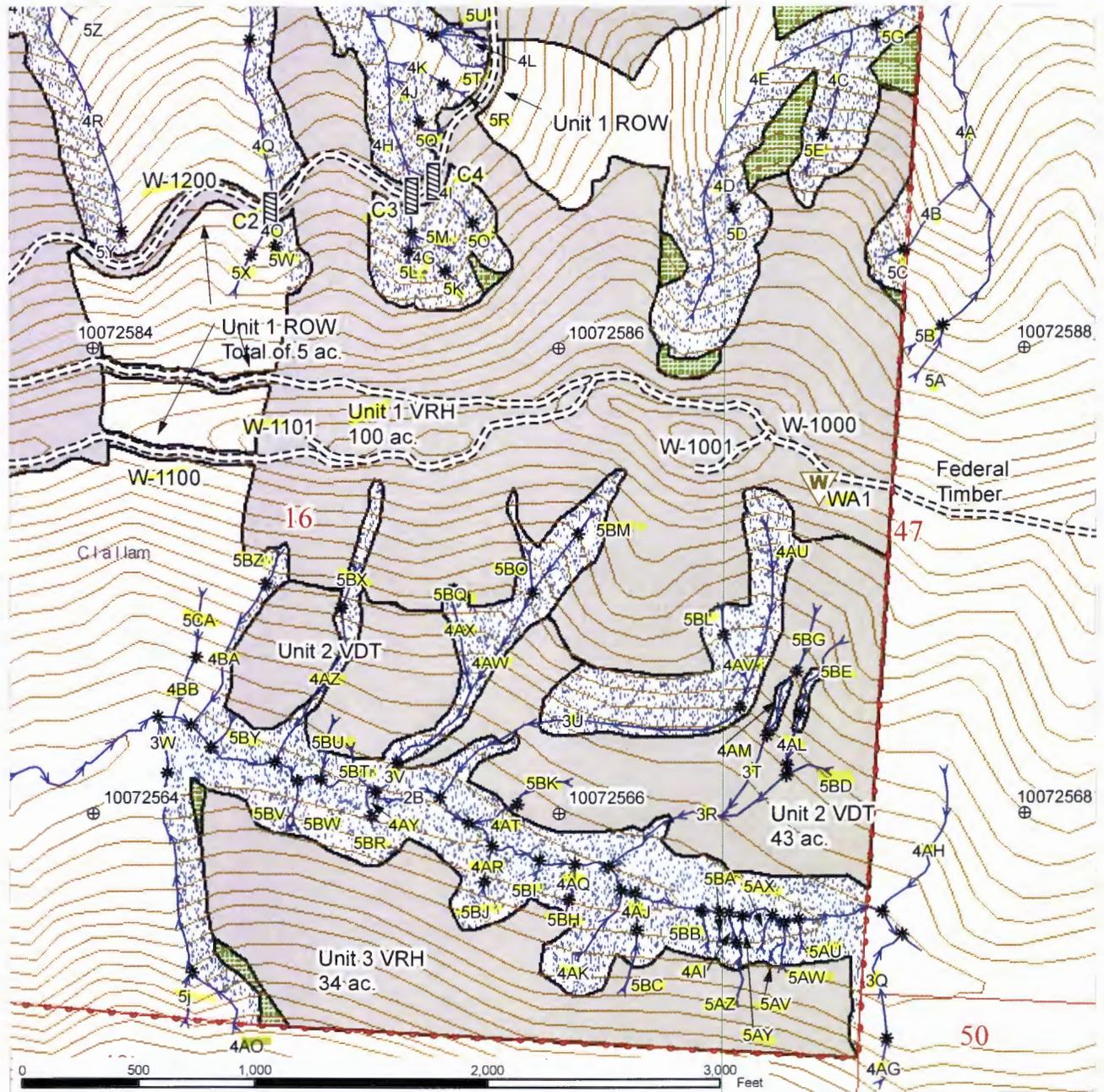
** All timber surrounding all harvest units is >50 years old**



FOREST PRACTICES ACTIVITY MAP

SALE NAME: WILLEY RIDGE VRH VDT
APPLICATION #:
TOWNSHIP(S): T30R11W

COUNTY(S): Clallam



Harvest Unit	Streams	Contours 40-foot
Leave Tree Area	3A Stream Type Label	Public Land Survey Sections
Skip; Riparian Mgt Zone	* Stream Type Break	DNR Managed Lands
Wetland Mgt Zone	Stream Culvert Installation	Tics - 2000' Interval
Forested Wetland	C 1 Crossing Identifier	Waste Area
Existing Roads	W 1 Wetland Identifier	
New Construction	WA 1 Waste Area Identifier	

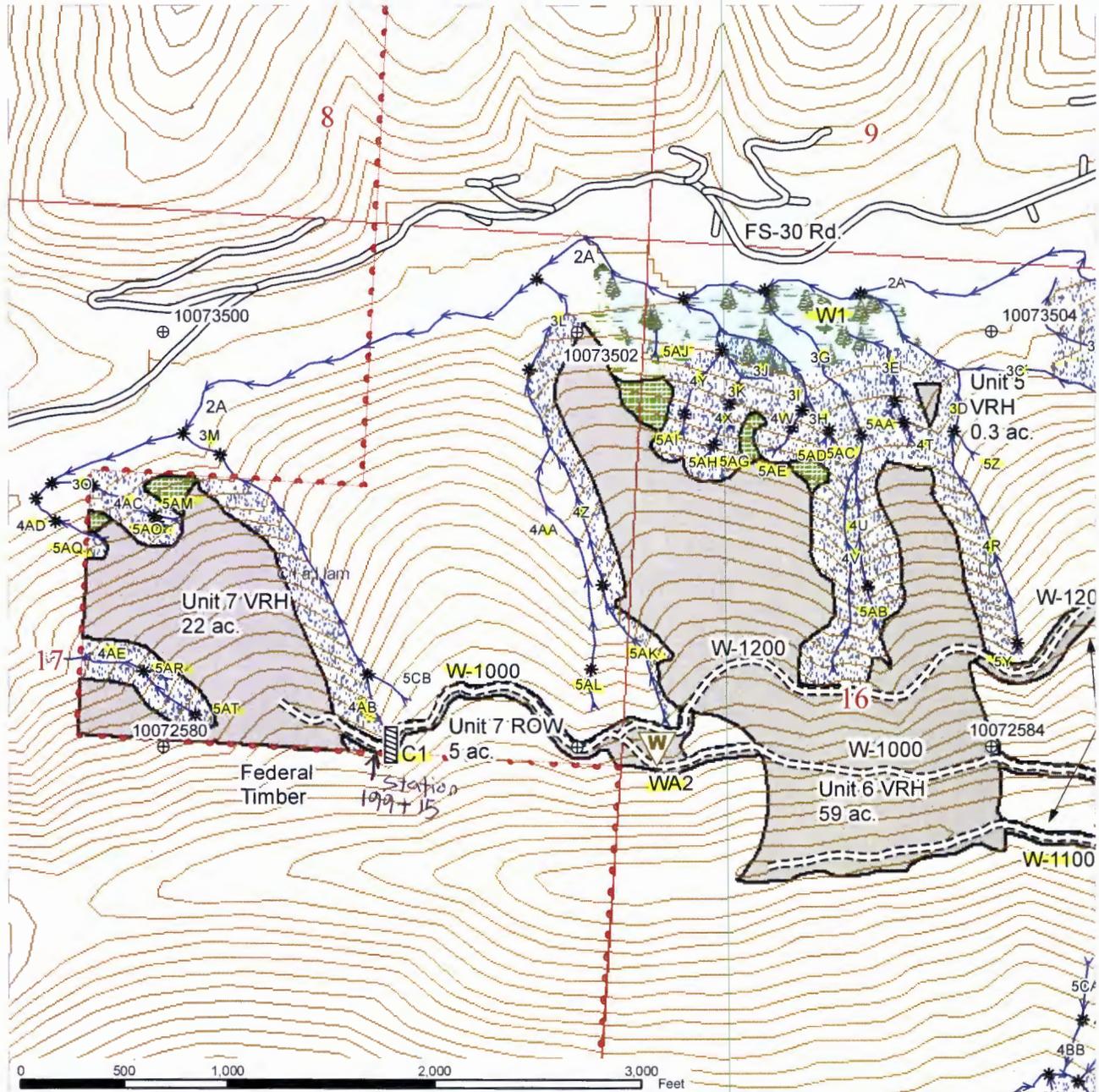
** All timber surrounding all harvest units is >50 years old**



FOREST PRACTICES ACTIVITY MAP

SALE NAME: WILLEY RIDGE VRH VDT
 APPLICATION #:
 TOWNSHIP(S): T30R11W

COUNTY(S): Clallam



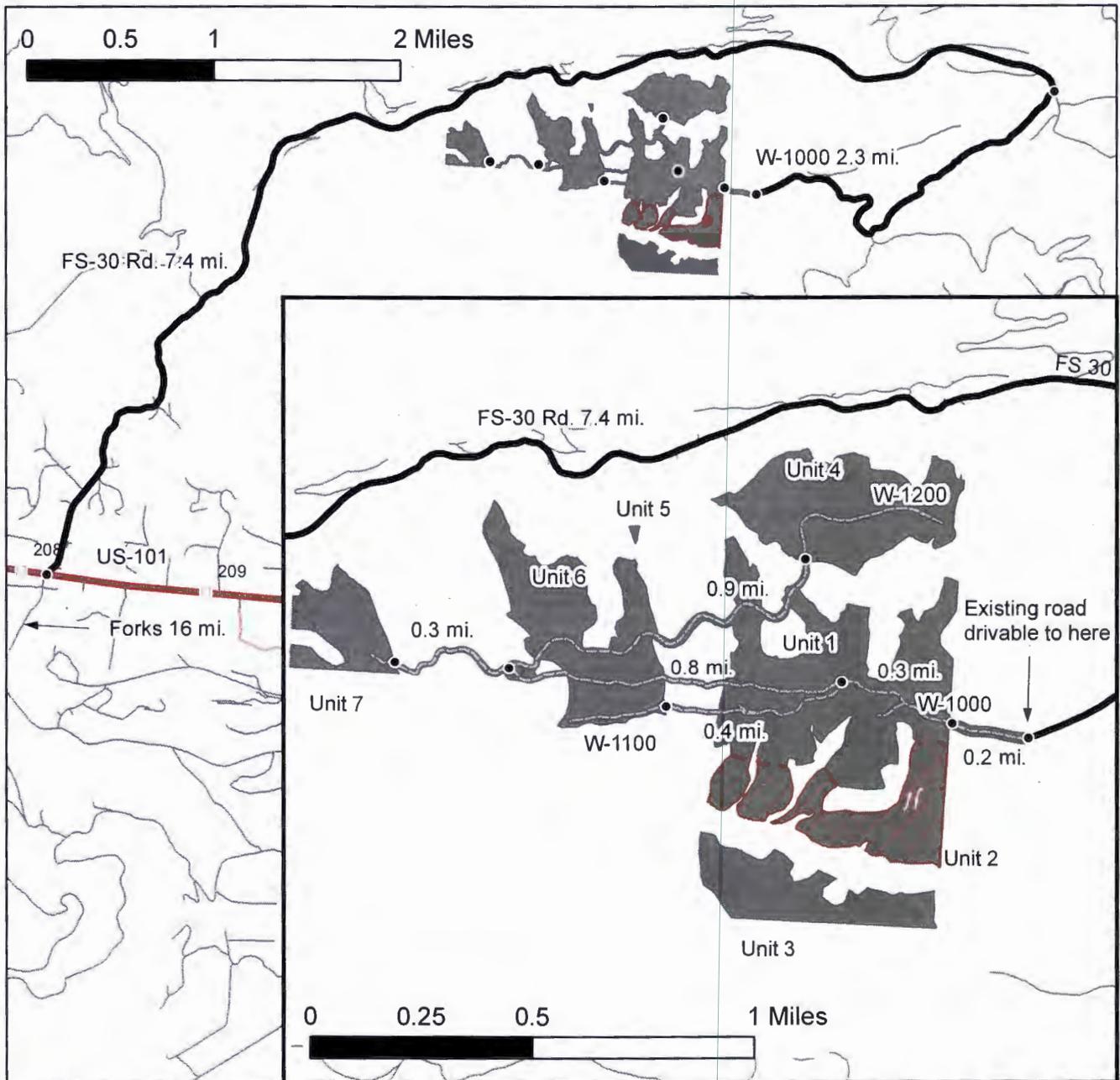
Harvest Unit	Streams	Contours 40-foot
Leave Tree Area	3A Stream Type Label	Public Land Survey Sections
Skip; Riparian Mgt Zone	* Stream Type Break	DNR Managed Lands
Wetland Mgt Zone	Stream Culvert Installation	Tics - 2000' Interval
Forested Wetland	C1 Crossing Identifier	Waste Area
Existing Roads	W1 Wetland Identifier	
New Construction	WA1 Waste Area Identifier	

** All timber surrounding all harvest units is >50 years old**

DRIVING MAP

SALE NAME: WILLEY RIDGE VRH VDT
AGREEMENT#: 30-098103
TOWNSHIP(S): T30R11W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1), Capitol Grant (07)

REGION: Olympic Region
COUNTY(S): Clallam



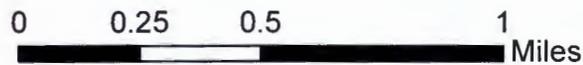
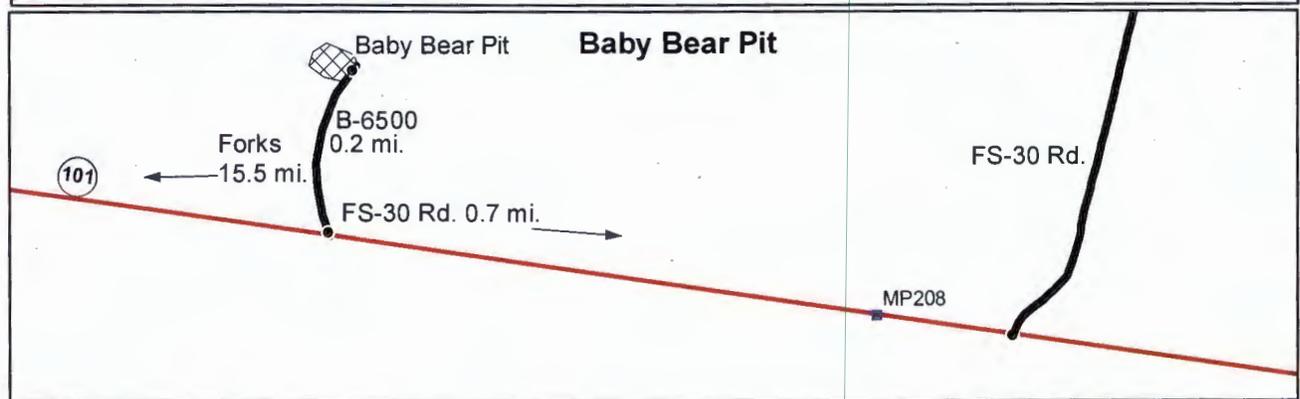
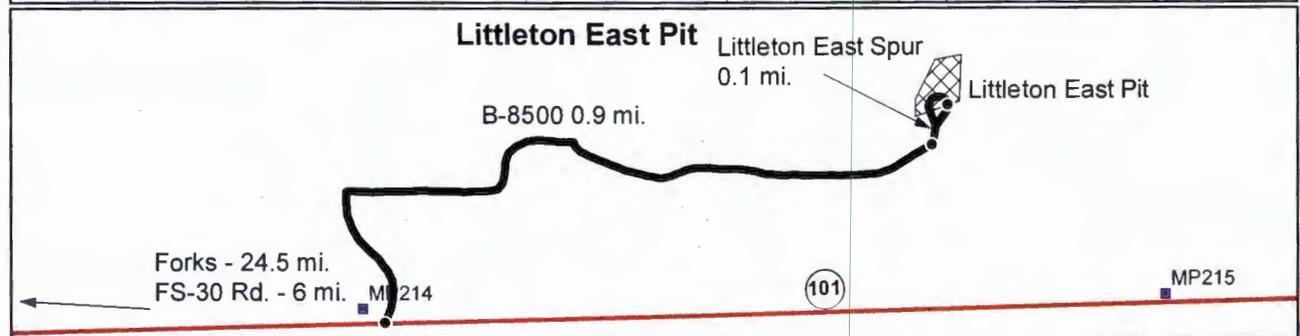
- Variable Retention Harvest
- Variable Density Thinning
- Milepost Markers
- Distance Indicator
- Haul Route
- Haul Route To Be Constructed
- Other Roads

Driving Directions:
 Unit 1: From Forks, drive north on US 101 for 16 mi. and turn left on the FS-30 Rd. Continue 7.4 mi. and turn right onto W-1000 Rd. Continue 2.3 mi. to end of drivable road. Continue 0.2 mi. on W-1000 (to be constructed) to Unit 1.
 Unit 2: Unit 2 is located immediately south of Unit 1 (no road access).
 Unit 3: Unit 3 is located immediately south across S.F. Bear Cr. from Unit 2 (no road access).
 Unit 4: Continue 1.1 mi. on the W-1000 (to be constructed) to the jct. with the W-1200 (to be constructed). Continue east on the W-1200 0.9 mi. to Unit 4
 Unit 6: From the beginning of Unit 1, continue 0.3 mi. on the W-1000 (to be constructed) to the jct. with the W-1100 (to be constructed). Continue 0.4 mi. on the W-1100 to Unit 4
 Unit 5: Unit 5 is located immediately north of Unit 6 (no road access)
 Unit 7: Continue 0.3 mi. past the W-1200 / W-1000 jct. on the W-1000 (to be constructed) to Unit 7.

DRIVING MAP

SALE NAME: Willey Ridge VRH VDT
AGREEMENT#: 30-098103
TOWNSHIP(S): T30R11W
TRUST(S): State Forest Transfer(1), Common School, Indemnity(3), Capitol Grant (07)

REGION: Olympic Region
COUNTY(S): CLALLAM



<ul style="list-style-type: none"> Haul Route Other Route Milepost Markers Distance Indicator Gate (AA1) Rock Pit 	<p>DRIVING DIRECTIONS:</p> <p>Mary Clark Pit: From Forks, WA, travel north on US 101 10.5 mi. and turn right on Mary Clark Rd. Continue for 0.5 mi., then turn right on LTSP Main road. After 0.1 mi., turn left on the Mary Clark Pit Access Road and continue for 0.3 mi. to the Mary Clark Pit.</p> <p>Littleton East Pit: From Forks, drive 24.5 mi. north on US 101 and turn left on the B-8500. Continue 0.9 mi. to Littleton East Pit Spur (to be constructed). Littleton East Pit (to be developed) is located 0.1 mi. north of the B-8500 on the Littleton East Spur.</p> <p>Baby Bear Pit: From Forks, drive 15.5 mi. north on US 101 and turn left on the B-6500 Rd. Drive 0.2 mi. to Baby Bear Pit, on left.</p>
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