

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> under "SEPA Center." 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.

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **NORTH ZENDER**

Agreement # **91633**

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

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

DNR Northwest Region

919 North Township Street

Sedro-Woolley, WA 98284

(360) 856-3500

Contact person: Laurie Bergvall

4. Date checklist prepared: **05/01/2015**

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

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

a. Auction Date: **10/28/2015**

b. Planned contract end date (but may be extended): **03/31/2018**

c. Phasing: **Does not apply.**

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

Timber Sale:

a. Site preparation:

Harvest units may be treated with herbicides prior to planting. Assessment for treatment will occur after completion of harvest.

b. Regeneration Method:

Hand plant conifer seedlings within two years after completion of harvest.

c. Vegetation Management:

Treatment to be assessed in 3-5 years. Competing vegetation may be treated by manual cutting and/or herbicide.

d. Thinning:

Treatment to be assessed in 10 to 15 years for pre-commercial thinning. A commercial thinning is possible in 25 to 45 years.

Roads: The KD-ML, SU-ML, RM-ML, KD-10, KD-16, RM-23, SU-41, SU-4124, SU-4124-01 roads will be used for future management activities.

Rock Pits and/or Sale: The Red Mountain Pit and Paradise Pit will be used for future management activities. Onsite rock may be used for road construction, if rock sources are discovered along haul routes or within the sale area.

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: Kendall Creek temp sediment completed TMDL (total maximum daily load):
- Landscape plan:
- Watershed analysis:
- Interdisciplinary team (ID Team) report:
- Road design plan: **Available at Northwest Region office.**
- Wildlife report: **Available at Northwest Region office.**
- Geotechnical report:
- Other specialist report(s):
- Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):
- Rock pit plan: **Available at Northwest Region office.**
- Other: **Policy for Sustainable Forests, dated December 2006; Final Habitat Conservation Plan (HCP) and Environmental Impact Statement, dated September 1997; State Soil Survey, dated 1992; Forest Practices Informal Conference Note - ICN 15-13956, available at Northwest Region office; Memorandum – Engineering Geologic Reconnaissance – Deep Seated Landslides - North Zender Timber Sale, dated May 15, 2015.**

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 # FHPA Burning permit Shoreline permit Incidental take permit
- Existing HPA Other:

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 proposal is a variable retention harvest (VRH), with an estimated harvest volume of 1,949 MBF of timber, on State managed trust lands. The total area considered for this harvest activity was approximately 132.2 acres. Of this total area, 23.5 acres were deducted

in riparian areas, leaving a gross proposal area of 108.7 acres. From this gross acreage, 2.9 acres were deducted to account for active roads, 7.2 acres were left un-harvested as leave tree areas and an additional 1.6 acres will be harvested as right of way for roads resulting in a net harvest area of 100.2 (100) acres. All streams have been typed according to the DNR Trust Forestland HCP Water Typing Key.

Logging Systems:	Most likely ground-based but possibly using cable systems
Landings:	12 (approximately)
Existing rock pits:	2
New rock pits:	0

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

Pre-harvest stand description:

The proposed sale area is comprised of second-growth conifer and hardwoods. The eastern portion of Unit 1 is plantation Douglas-fir with a western redcedar and western hemlock component. The western portion of Unit 1 and all of Unit 2 are dominated by red alder and bigleaf maple, but have a secondary component of mixed conifer. The origin dates of stands within the proposal area vary from 1931-1968.

Overall objectives:

Generate revenue for the Trusts while minimizing soil and water quality impacts, providing access for forest management activities, retaining and enhancing long and short-term forest structures diversity, protecting habitats and functions of typed streams, and meeting or exceeding requirements of the Habitat Conservation Plan, Policy for Sustainable Forests, and the Forest Practices Rules.

Type of Harvest:

Variable retention harvest. Most likely ground-based but possibly using cable systems will be utilized.

Wildlife Objectives:

VRH Harvest: The general wildlife objective is to minimize immediate impact to current wildlife populations while retaining some unique characteristics for future wildlife habitat needs. Leave tree areas were designed to contain trees resistant to wind throw, while protecting relatively unique features such as snags, large down woody debris, large and structurally unique trees, riparian and wet areas. Many leave trees were selected for their future snag retention potential. Leave trees are representative of the proposed sale timber type, which consists predominately of conifer species. Snags will be left where possible and if they meet the Washington State Department of Labor and Industry Safety Guidelines.

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

Type of Activity	How many	Length (feet) (Estimated)	Acres (Subgrade) (Estimate d)	Fish Barrier Removals (#)	Steepest Side Slope Road Crosses
Construction		3449	0.5		35
Reconstruction		8618		0	45
Abandonment		—	—	0	—
Temporary construction		4988**	1.8		45
Bridge Install/Replace	1	28			
Culvert Install/Replace (fish)	-				
Culvert Install/Replace (no fish)	33*				

*This refers to both typed stream crossings and includes relief culverts.

**Of the length listed for Temporary Construction in the above table, zero feet up to the entire length listed may be built.

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.

- a. *Legal description:*
- Township 39 North, Range 5 East, Section 4**
 - Township 40 North, Range 5 East, Section 33**
 - Township 40 North, Range 5 East, Section 34**
 - Township 40 North, Range 5 East, Section 20**
(PARADISE PIT)
 - Township 40 North, Range 5 East, Section 23**
(RED MOUNTAIN PIT)

- b. *Distance and direction from nearest town (include road names):* **The nearest town to the proposal area is Maple Falls, WA, which is located approximately 3.5 miles from Unit 1.**

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

WAU Name	WAU Acres
DEMING	28017

The following data was reported in the Department's geographic information systems (GIS) database on April 20, 2015.

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> under "SEPA Center for a broader landscape perspective.")

The following data was derived from the Department's GIS database on April 16, 2015.

Deming WAU

<u>Land Manager</u>	<u>Acres</u>	<u>% of WAU</u>
DNR	10,303	36.8
Other State (Non-DNR)	41	0.1
Other Land (Private & Other Public Land)	17,673	63.1

No cumulative change in the environment is expected from the combination of past and future activities with this proposal. This proposal as well as past and future activities either meet or surpass Forest Practices Rules by complying with the commitments of the HCP and as such protect water quality and mitigate environmental impacts.

The Department's Habitat Conservation Plan (HCP) outlines strategies to protect Federally listed threatened and endangered species, and species that are in danger of being listed in the future, as well as uncommon habitat types found on forest lands in western Washington. HCP riparian buffers were applied to this proposal with the intent of protecting salmon and trout habitat, and will be applied to all future sales in the vicinity. The HCP identifies large, structurally unique trees and snags as uncommon habitats that need to be protected. An average of 8 trees per acre will be left in the proposed harvest area. These trees will function for future snag and large structurally unique tree recruitment.

Under the Interim Strategy for the Marbled Murrelet in the North Puget Planning Unit, under the Department's HCP, several stands in this WAU have been deferred from timber harvest to provide habitat. The Interim Strategy also requires Department field staff to search for and delineate any "newly identified" marbled murrelet habitat in the vicinity of any proposed timber sales. These stands may be deferred from timber harvest throughout the remainder of the Interim Strategy (with occasional exceptions made to allow road and/or yarding access into non-habitat areas), and may be considered to be removed from harvest rotation for a longer period of time under the

Department's yet-to-be-developed Long-Term Strategy for marbled murrelets. Field staff have determined that no “newly identified” marbled murrelet habitat was found in this proposal area and this proposal meets all requirements of the Interim Strategy. This has been verified by a Region biologist.

The table below reports Forest Practices approved applications for harvest activities during the last seven years of proposed harvest areas on Department lands and private lands within the WAU. The following data was derived from the Department’s GIS database on April 16, 2015. No attempt was made to predict future timber harvests on private land.

Harvest Type	Acres on DNR Lands	Acres on Non-DNR Land	Acres on All Lands
Even-age	686	1,428	2,114
Uneven-age	244	417	661
Salvage	2	23	25

Note: This information is derived from activity locations collected by varying methods ranging from hand drawn maps to precise GPS collection. No verification of map accuracy or activity completion is conducted. Totals may not be the sum of all harvest types due to overlapping activities. The same land may be counted more than once if, in the past seven years, more than one Forest Practices application has been approved for different harvests (salvage and even-age for example).

Note: All acreages are approximate. Rounding to the nearest 10 or even to the nearest 50 acres may be appropriate. Totals may not be the sum of all harvest types due to overlapping activities.

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).*

The Deming WAU ranges in elevation from 127 to 3,408 feet in elevation. Predominant land forms include valley flatlands and terraces along the north side of the North Fork Nooksack River, the southeast and east flanks of Sumas Mountain, and the southwest flank of Red Mountain. The mountain slope soils are generally formed from volcanic ash, colluvium, and glacial till overlying Chuckanut sandstone and Phyllite bedrock. The Nooksack River meanders across the wide glacial valley. The climate is typical of North Temperate Zone forests, located in the westside western hemlock vegetation zone, and influenced by Puget Sound marine flow, the Fraser River valley outflows, and Mt. Baker. The valley lowlands are mostly hardwoods while the hill slopes range in cover from red alder, bigleaf maple, black cottonwood, to mixed hardwood/conifer stands, to Douglas-fir, western redcedar, western hemlock, to Pacific silver fir, hemlock, and redcedar stands at upper ridge and mountaintops.

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

This proposal is located at 565 to 1,405 feet elevation on a northern aspect. The proposal area exhibits many of the attributes listed in the general description of the WAU.

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

60%

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	Mass Wasting Potential	Erosion Potential
0694	V.GRAVELLY LOAM	15-30	INSIGNIFIC'T	MEDIUM

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

1) *Surface indications:*

The statewide landslide inventory (LSI) screening tool indicates the presence of polygons mapped as landslides within the proposed harvest unit boundaries. 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, and landslide hazard zonation, in addition to other case studies and mapping efforts. A large majority of landslides identified by these projects are mapped by remote review with minimal field verification. In addition, dormant and ancient deep-seated landslides are mapped in many projects included in the LSI. A large number of the remotely identified landslides and deep-seated features have been mapped with a questionable, probable, or unknown certainty. As a result, the LSI database is meant to be used as a screening tool and field verification is a necessary step in confirming the absence, presence, and extent of mapped features, as well as their actual level of activity/instability.

The two units of the proposed North Zender Timber Sale are located on very large

deep-seated landslides, LSI ID's 1237 and 1233, mapped in 1943 and 1947 respectively as a part of the landslide inventory conducted for the Nooksack Indian Nation. (See B.1.a.d.5 below)

- 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: **Inner gorges and bedrock hollows are present along steep gradient, type 4 streams throughout the sub-basin. Within some of these features, there is evidence that shallow, rapid landslides and debris flows have occurred. Within the WAU there are also identified relic deep-seated landslides.**
- 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: **There are shallow failures in some of the inner gorges of streams of the sub basin due to inadequate drainage of old grades and most likely associated with 100-year storm events and peak flows. See B.3.a.8. However, there are none within the proposal area.**
Associated management activity: **Past road construction**
- 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.*
A licensed engineering geologist (Forest Practices “qualified expert”) has reviewed the site boundaries at locations judged to be critical for this proposal and any areas of potential concern have been excluded from the sale. Part of the office screening process included a review of the Forest Practices Landslide Inventory via GIS. Inventoried deep-seated landslides were included in field reviews conducted by Forest Practices “qualified expert’s” on 3/12/2015, 3/19/2015 and 4/24/2015. No evidence of historic, recent or ongoing movement was observed during this field review.

Roads were primarily located above significant slope breaks and were designed to limit ground-based yarding distances to less than 600 feet. All new roads and stream crossings associated with this sale were designed to provide adequate drainage for peak flow events and will be built in accordance to specific guidelines identified in the road plan by a state lands roads engineer.

- 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: **2.3** *Approx. acreage new landings:* **2.0**
Fill Source: **Native fill or rock**

Road construction will utilize standard cut and fill methodology. Native soil and rock will be excavated from the road prism and used for fill in the sub-grade and over cross drains and

stream crossings. End haul material will be placed in designated waste areas in accordance with the engineer's road plan.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. **Road construction will expose bare soil. Road plan requirements include the use of grass seed or other revegetation methods to protect exposed soils from 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 5 percent of the site will be covered with permanent new rock covered (gravel) roads.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: *(Include protection measures for minimizing compaction or rutting.)*
All roads will be constructed to meet or exceed Forest Practices standards and the Habitat Conservation Plan guidelines. Appropriate drainage devices including proper culvert size and placement, drain dips, water bars and ditching, will be used as necessary to reduce surface erosion. In areas adjacent to constructed roads where soil disturbances have occurred, straw mulch, grass seed or some other appropriate measure will be used to prevent sediments from being transported. See also engineer's road plan.

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.

Minor emissions are anticipated from equipment exhaust and road dust created by truck traffic. Slash piles may be burned. If slash piles are burned, it will be done in compliance with the State of Washington, Department of Natural Resources Smoke Management Plan.

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

None.

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

If slash burning occurs, it will be in adherence to the Washington State Smoke Management Act.

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:

All streams associated with this proposal are tributaries to Kendall Creek, which is a tributary to the North Fork of the Nooksack River.

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)
Unnamed Streams	5	4*	30' Equipment Limitation Zone
Unnamed Streams	4	4	100' buffer
Unnamed Streams	3	1	189' buffer

*One stream is located outside the harvest area adjacent to, and draining away from, the KD-ML road work area.

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

Ditchwater will be diverted through relief culverts prior to stream crossings to keep sediment out of streams. Exposed soils will be revegetated.

RMZs listed in B.3.b. are no-harvest buffers. No wind buffer was applied to the type 3 stream, as it was deemed unnecessary.

- 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 harvest will occur adjacent to the no-harvest riparian buffers. Three road stream crossing structures will be installed; one type 3 stream, one type 4 stream and one type 5 stream. Ditchwater will be diverted through relief culverts prior to stream crossings to keep sediment out of streams. Where possible, trees will be felled to avoid stream bank disturbance on type 5 streams. Streambeds and banks shall be protected by the use of log puncheon or other approved structures and removed upon the completion of yarding. Exposed soils will be revegetated.

- 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

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

No Yes, description:

Yes, the proposal will require surface water to be temporarily diverted to reduce sediment delivery during culvert installations and a log stringer bridge installation. Also, typed waters may be temporarily diverted, if culvert replacement is deemed necessary, through the course of operations, on existing road typed-water crossings.

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. This information is not available at the sub-basin level. Data in the following table was reported in the Department's GIS database on April 20, 2015.

Deming WAU: soil data may not be available of 100% of the WAU

Erosion Potential	Acres	% in WAU	Mass Wasting Potential	Acres	% in WAU
High	5274.8	18.8	High	3,509.5	12.5
Medium	7440.0	26.6	Medium	6,509.9	23.2
Low	14244.6	50.8	Low	1,510.3	5.4
Variable	569.9	2.0	Insignificant	15,452.1	55.2
No Data	0.0	0.0	No Data	0.0	0.0
N/A	24.1	0.1			

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:

There is evidence from state GIS data and aerial photos that shows minor changes to the channels of some streams within the WAU, during peak flow events. There are shallow failures in some of the inner gorges of streams of the sub basin due to inadequate drainage of old grades and most likely associated with 100-year storm events and peak flows.

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

No Yes, explain:

This proposal includes both the harvest of timber and road work. The removal of overstory vegetation will temporarily reduce interception of water and increase infiltration and saturation of water into the forest floor which could temporarily increase overland flow.

The protection measures identified in B.1.d.5 keep harvest activities away from potentially unstable slopes. RMZ buffers (see B.3.a.1.b) and other operations system control measures (see B.1.h) ensure that any overland flow from disturbed soil areas will filter through substantial amounts of forest-floor vegetation before entering any perennial stream channels.

Road work disturbs surface soils where some temporary surface erosion is likely to occur, especially with the first winter rains following road work at culvert installation locations and road abandonment related culvert removal locations. These installations and removals will follow Forest Practices rule and Road Maintenance and Abandonment Plans (RMAP) requirements to minimize any erosion-related water quality impacts. See question B.1.h, B.3.a.1.c, and B.3.d. for a partial listing of some of the specific erosion protection measures.

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

Deming WAU: 5.2 miles of road per square miles. This information is not available by sub-basin. As reported in the Departments GIS database on April, 20 2015.

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: Based on a GIS report generated in April 2014: A small portion of Unit 1 is located in a ROS zone. See B.3.a.12 below for percentage of sub-basin in significant ROS zone.

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?

Based on a GIS report generated in April 2014:

WAU <u>or</u> sub-basin(s)	ROS acres :	% sub-basin in significant ROS zone	DNR hcp-managed forest land acres in ROS:	% DNR hcp-managed forest lands in ROS:	% DNR managed lands rated hydrologically mature
Deming Sub-basin 4	1517	32.5%	1030	67.9%	63.6%

*** Deming Sub-basin 4 contains less than 1/3 of its area in the ROS zone, so it is not managed for hydrologic maturity by the Department.**

It is not readily known what the hydrologic maturity is on other ownerships.

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):

See 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.*

This proposal is not expected to contribute to a peak flow impact.

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: **Public resources in the area appear to be confined to unnamed creeks that are tributaries to Kendall Creek and the North Fork of the Nooksack River.**

A domestic surface water intake is located on adjacent private land. See B.3.b.3 below.

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.*

The potential for stream flow increases are tempered by design of the proposed sale. Type 4 streams have been excluded from the timber sale by 100-foot no-harvest buffers. Type 5 streams are not expected to contribute to peak flow/flooding impacts during or after harvest operations.

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.

Road cross drains capturing surface water, snow melt and ground water from road cut banks from newly reconstructed roads may increase ground water directly below culvert outlets. This may cause saturation directly below the culvert outlets.

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.

Minor amounts of oil and other lubricants could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed of on site.

- 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: **Domestic surface water intake on adjacent private land.**

- a. *Note protection measures, if any.* **Areas adjacent to the water intake were bound out of the timber sale. Leave trees within the timber sale were allocated to protect areas of seasonal overland flow, even where they did not connect to any typed waters. All adjacent landowners utilizing this intake have been informed of this proposal and have participated in onsite visits with a DNR foresters to discuss possible impacts and met with a DNR hydro-geologist to discuss any concerns (4/24/2015). No objections to this area adjacent to the water intake have been offered at the time of this submission.**

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.

The source of water runoff is rain and snow melt which results in overland, stream, and groundwater flow (intercepted from road cut banks). This runoff will be discharged onto stable areas of the forest floor or into natural drainages via road ditches, cross drains or ditch outs.

This water runoff flows via unnamed streams and underground flow and is tributary to Kendall Creek and the North Fork Nooksack River.

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

No Yes, describe:

Erosion and mass wasting are unlikely, provided appropriate forest practices outlined in the timber sale contract are used during road reconstruction and timber harvesting near all waters. Some logging slash may enter type 5 streams. Minor spills of petroleum products resulting from logging operations may occur on roads or landings.

Note protection measures, if any.

Forestry Operations: Road associated work, hauling, and any ground-based operations, if applicable, may be restricted during the wet season. Crowned rock surfacing on all roads will reduce sediments from entering natural waters.

Logging slash: Where possible, timber will be felled to avoid stream bank disturbance on type 5 streams. There is a 30-foot equipment limitation zone on type 5 streams.

Waste materials:

Enforce contract clauses and applicable State regulations controlling the use of toxic substances.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

It is not likely to alter drainage patterns of the forested landscape.

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

Existing roads will be maintained to minimize erosion. Constructed or reconstructed road surfaces will be crowned. Straw, grass seed, or some other appropriate method may be used on any soils exposed by road work or yarding in order to prevent sediment movement.

(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:

alder, maple, aspen, cottonwood, western larch, birch,
other:

evergreen tree:

Douglas fir, grand fir, Pacific silver fir, ponderosa pine,
lodgepole pine, western hemlock, mountain hemlock, Englemann
spruce, Sitka spruce, red cedar, yellow cedar, other:

shrubs:

huckleberry, salmonberry, salal, 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:

- 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.)*

Second-growth conifer and some hardwoods will be removed via variable retention harvest. Understory vegetation will be disturbed by logging or road work activities. The current stand will be replaced with Douglas-fir and western redcedar seedlings (hand planted), as well as naturally regenerated with tree species such as western

hemlock and red alder. This managed stand will retain snags, dominant and co-dominant and/or structurally unique trees via clumps and scattered trees to increase horizontal and vertical diversity over the landscape.

- 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/ResearchScience/sepa/Pages/Home.aspx>

(Click on the DNR region under the Topic "Current SEPA Project Actions - Timber Sales.")

The proposal is surrounded by other DNR managed land and private property. Adjacent DNR and state managed lands consist of similar timber in age, structure, and diversity, to the removal area.

- 2) *Retention tree plan:*

An average of 8 trees per acre have been left in the proposal area, for a total of 856 leave trees. Of these, 130 are scattered and 726 are grouped in leave tree clumps. Leave trees were selected to protect species and structural diversity for wildlife habitat and include structurally unique trees.

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

The DNR TRAX indicates no known threatened or endangered plant species.

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

Riparian leave areas will protect native plants. Conifer species of similar site will be planted throughout the proposal area upon completion of the harvest. Naturally regenerated trees, such as western hemlock, western redcedar, and red alder will also be managed with planted conifers.

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

None known

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

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

The DNR TRAX indicates no known threatened or endangered animal species.

- c. Is the site part of a migration route? If so, explain.
 Pacific flyway *Other migration route:* *Explain if any boxes checked:*
All of Washington State is considered part of the Pacific flyway. No impacts are anticipated.
- d. Proposed measures to preserve or enhance wildlife, if any: **See B.4.b.2. above.**
- 1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*
Species /Habitat: **Mature Forest Components**
Protection Measures: **Retention tree plan described in B.4.b.2**
- 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.
Does not apply.
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
Does not apply.
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
Does not apply

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.
The timber sale contract contains language that addresses hazardous materials spill prevention; hazardous material spill containment, control and cleanup; hazardous material release reporting.
There is minimal hazard due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer.
- 1) Describe any known or possible contamination at the site from present or past uses.
None known.
- 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.
Petroleum products such as gasoline, diesel, grease, and hydraulic fluid may be used and stored during the operating life of this project. In addition, various pesticides may be used on the site for vegetation management.
- 4) Describe special emergency services that might be required.
 - **Firefighting by the Department of Natural Resources, possibly supported by local fire districts.**
 - **Emergency medical and/or ambulance service for personal injuries.**
 - **Responses by the Department of Ecology if a spill were to occur.**
- 5) Proposed measures to reduce or control environmental health hazards, if any:
 - **Safe operation of equipment will be encouraged.**
 - **Industrial restrictions and precaution levels regarding forest fire protection will be enforced.**
 - **The timber purchaser will be required to have fire suppression equipment on site during the restricted fire season while harvest activity is ongoing.**
 - **Compliance with state laws.**
 - **Public access may be restricted during times of high fire danger.**

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
Does not apply.
- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
There will be localized noise from approximately 4 a.m. to 5 p.m. on a short-term basis from logging equipment (yarders, loaders, dozers, trucks, and chain saws) during road work and logging.
- 3) Proposed measures to reduce or control noise impacts, if any:
None.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? 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.)*
Forest land and residential. Harvested timber will be moved by ground-based methods over a private, residential access road on DNR land. This will require temporary periods of limited access over this road. Land use for adjacent forest land owners will not be effected by this proposal.

- 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?

Site has previously been used as working forest land, and it will continue to be working forest land throughout and following this proposal.

- 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:
Yes. The proposal is a forest land management operation. This is typical for the area and has been so historically. See also A.7.a, A.11.a, A.11.c, B.1.h, B.3.a.1.c, and B.3.d.
- c. Describe any structures on the site.
There are no structures on this site.
- d. Will any structures be demolished? If so, what?
There are no structures on this site.
- e. What is the current zoning classification of the site?
Commercial Forestry.
- f. What is the current comprehensive plan designation of the site?
Commercial Forestry.
- g. If applicable, what is the current shoreline master program designation of the site?
Does not apply.
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
No.
- i. Approximately how many people would reside or work in the completed project?
Does not apply.
- j. Approximately how many people would the completed project displace?
Does not apply.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
Does not apply.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The design of this project is consistent with current comprehensive plans and zoning regulations.
- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
The proposal lands are managed by DNR for long-term commercial forestry. The Department developed a long-term Habitat Conservation Plan. See also A.8.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Does not apply.

- c. Proposed measures to reduce or control housing impacts, if any:
Does not apply.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Does not apply.

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

- 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: **Mt. Baker HWY (HWY 542)**

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

This proposal will not substantially affect any views described in 1) or 2), above.

Although this proposal will be visible to the public, the majority of the landscape where this proposal will occur is managed as commercial forest land, and as such consists of forest stands with a wide range of age classes, including recently harvested areas.

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

Potential aesthetic impacts from timber harvesting are reduced by topography, scattered leave trees, and leave tree areas located throughout the sale area. Prompt reforestation of the units after harvest will reduce aesthetic impacts.

11. Light and glare

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

Does not apply.

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

Does not apply.

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

Does not apply.

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

Does not apply.

12. Recreation

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

Dispersed recreational use, including hiking, biking, horseback riding, birding, berry, mushroom and moss picking.

- b. Would the proposed project displace any existing recreational uses? If so, describe.
No.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
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.
DNR's TRAX database indicated no such places or objects on or near the site.
- 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.
None Known. See B.13.c.
- 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.
Forest Practices and DNR TRAX runs as well as review of historic GLO and quadrangle maps have indicated no known historical or archeological sites on or near the proposal. The Nooksack Nation and Lummi Tribes were notified of the proposal on 4/28/2015. No objections to this proposal have been offered at the time of this submission. Any cultural resources identified during operations will be protected. Should archaeological materials or cultural items be discovered during the course of operations, all work in the vicinity will be stopped and associated tribes and Department of Archaeological and Historic Preservation (DAHP) will be contacted.
- 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.
See B.13.c.

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.
See A.12.b.
 - 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?
Does not apply.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Does not apply.

- 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).

See A.11.c.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

There will be increased truck traffic for rock hauling during road construction and reconstruction and timber hauling during the timber harvest period of approximately four months.

- 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?

None.

- 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.

Does not apply.

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

Does not apply.

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.

Does not apply.

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 Zachary Boston

Position and Agency/Organization Unit Forester / WADNR

Date Submitted: 6/15/15