

STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

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Purpose of Checklist:

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

Instructions for Applicants:

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

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

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

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

Use of checklist for nonproject proposals:

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

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

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **RIPPLE VDT and VRH**

Agreement #: **86671**

2. Name of applicant: Department of Natural Resources

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

**Northwest Region
919 N. Township St.
Sedro-Woolley, WA 98284**

**Laurie Bergvall
Telephone (360) 856-3500**

4. Date checklist prepared: **04/20/2011**

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

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

- a. **Auction Date: 10/26/2011**
b. **Planned contract end date (but may be extended): 09/30/2013**
c. **Phasing: Does not apply.**

#7 BIO MASS REMOVAL IS NOT INDICATED ON FPA 12/16/11

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:** Logging slash generated from this proposal may be piled, possibly burned, or removed to allow adequate planting spots upon completion of harvest. To be surveyed following harvest to assess need for chemical application.
- b. **Regeneration Method:** Hand plant Douglas-fir and western redcedar at approximately 360 stems/acre, tentatively scheduled for February 2015.
- c. **Vegetation Management:** To be surveyed 3-5 years following planting to assess need for treatment.
- d. **Thinning:** To be assessed 12-15 years following planting to verify need for PCT in Unit 1. Potential future Variable Density Thin in Unit 4, to be assessed in approximately 20 years from completion of harvest.

Roads:

The MF-ML (Middle Fork Nooksack River Mainline), MF-59, MF-5912 and MF-25 roads will continue to be used for future timber sales and forest management activities.

Rock Pits and/or Sale:

The Saint Stephen and Galbraith pits will continue to be used for future timber sale road construction and road maintenance activities. Onsite rock may be used for road construction, if rock sources are discovered along haul routes or within the sale area.

Other:

Potential firewood collection or other non timber commercial products.

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:
- Watershed analysis:
- Interdisciplinary team (ID Team) report:
- Road design plan: Available at the Northwest Region office
- Wildlife report:
- Geotechnical report:
- Other specialist report(s):
- Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):
- Rock pit plan: Available at the Northwest Region office
- Other: Policy for Sustainable Forests, dated June 2006; Final Habitat Conservation Plan and Environmental Impact Statement, dated September 1997; State Soil Survey, dated 1992, available at the Northwest Region office.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? No.

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

- HPA Burning permit Shoreline permit Incidental take permit FPA # _____ Other:

11. Give brief, complete description of our 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 specific information on project description.)

a. Complete proposal description:

The proposal area considered for this harvest activity is located on approximately 310 acres, located in sections 26, 27 and 28 of Township 38 North Range 6 East, W.M, approximately 9 miles southeast of Deming, WA. The Saint Stephen rock pit is located in Section 18, Township 38 North Range 6 East. The proposal is surrounded by DNR and large industrial ownerships. The sale area involves 4 units, approximately 180 net acres, 48 of Variable Retention Harvest (VRH) and 132 acres of Variable Density Thinning (VDT) of Douglas-fir, western hemlock, western redcedar, Pacific silver fir and red alder. Harvest area was determined by Garmin GPS systems. Streams have all been typed according to the DNR Trust Forestland HCP Water Typing Key, WAC 222-16-031.

The VRH unit boundaries are defined by Riparian Management Zones (RMZ's), harvest edges and topographic breaks. The difference in gross proposal area vs. net harvest area is due to areas excluded for green tree patches, riparian management zones and non-merchantable timber.

Gross harvest area: 310 acres
Estimated volume: 3,706 MBF
Net area Unit 1: 48.6 acres VRH
Net area of Unit(s) 2, 3 and 4: 131.8 acres VDT
Right-of-way areas: 8.8 acres (all within the unit boundaries)
RMZ area: 96.7 acres
Leave tree area: 1.9 acres
Non-Merch timber areas: 25.7 acres

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

The pre-harvest stands of natural second growth timber, consisting of Douglas-fir, western redcedar, and western hemlock, red alder, and Pacific silver fir with origin dates ranging from 1906-1952. The older stands vary from 270 to 300 trees per acre across the proposal. The average diameter of the Douglas fir in Unit 1 is 10-14 inches diameter at breast height (DBH) with an average height of 77-90 feet. The average DBH of western hemlock in Unit 1 is 7-11 inch DBH with an average height of 60-75 feet. Unit 1 has an origin date of 1952. Unit 1 is the only Variable Retention Harvest (VRH) unit. Units 2, 3 and 4 are Variable Density Thinning (VDT) units. The average diameter of the Douglas-fir in these stands (Units 2 and 3) is 22 inches diameter at breast height (DBH) with an average height of 120 feet. The average diameter of western hemlock in these stands is 16 inches DBH with an average height of 90 feet. Current basal area in Unit 3 is 331 square feet per acre and a relative density (Curtis) of 89.4. Current basal area is 322 square feet and the relative density (Curtis) is 84.1 in Unit 2. The current stand in Unit 4 is 39 years old (origin date of 1972). Stand composition is primarily western hemlock, with smaller components of silver fir, Douglas-fir and western redcedar. Average tree diameter in Unit 4 is 9.5 inches, with an average height of 60 feet. There are approximately 270 trees per acre greater than 8 inches DBH. Current basal area is 305 square feet and the relative density (Curtis) for Unit 4 is 98.7. Stand volumes range from approximately 15-40 mbf/acre. Snags, cedar stumps, and down woody debris are attributes of this stand. There is an under story of salmonberry, sword fern, huckleberry, elderberry, and moss. This information is taken from the DNR Forest Resource Inventory System and onsite data collection during presale layout.

Type of harvest: Variable Retention Harvest (VRH) and Variable Density Thin (VDT), implementation of the Riparian Forest Restoration Strategy (RFRS) The proposed thinning and implementation of the RFRS is part of the Ripple timber sale proposal, and is situated primarily on lands designated for spotted owl nesting, roosting and foraging (NRF) under the Department's Habitat Conservation Plan. The planned harvest area covers approximately 180 acres on gentle to steep slopes on the south side of the Middle Fork of the Nooksack River, sitting on the lowest slopes of the North Twin Sister. Elevations range between 1,300 and 2,700 feet. The sale consists of 3 Variable Density Thin (VDT) units and 1 Variable Retention Harvest (VRH) unit. We plan to conduct restoration treatments on the majority of the type 4 and type 3 streams. There will be approximately 28.3 acres of riparian thinning occurring. Of these 28.3 acres, 24.7 will be occurring in stands 70 years or older. 7.5 acres of the thinning will be treating riparian areas adjacent to type 3 streams, and 18.6 acres will be treating those areas adjacent to type 4 streams. Because the riparian stand composition is similar to that of the adjacent uplands, our restoration strategy would be considered a Type III Riparian Management Zone (RMZ) thinning in conjunction with upland thinning.

Logging System: Cable and ground-based harvesting systems

Objectives for this sale include generating revenue for the Common School trust (03); maintaining or improving the biological productivity of the site, retaining and enhancing short and long-term forest structural diversity and desired future conditions, minimizing soil and water quality impacts; protecting habitats and functions of typed waters; and meeting or exceeding requirements of the HCP, Policy for Sustainable Forests (June 2006), and Forest Practice Rules.

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) (Estimated)	Fish Barrier Removals (#)	Steepest Side Slope Road Crosses
Construction		1,202	0.4		40
Reconstruction		7,515		0	100
Abandonment		0	0	0	0
Temporary construction		5,367	1.6		60
Bridge Install/Replace	1	35			
Culvert Install/Replace (fish)	0				
Culvert Install/Replace (no fish)	29*				

*All culverts to be installed (this includes both typed stream crossings and relief culverts).

12. Location of 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 timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description:

The sale area is located in Sections 26, 27, and 28 of Township 38 North, Range 6 East. The St Stephen Rock pit is located in Section 18 of Township 38 North, Range 6 East.

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

From Deming, travel 4.4 miles east on Hwy 549 to Mosquito Lake Road. Turn right on to Mosquito Lake Road, travel south 4.8 miles to Forest Service Road 38, also known as Middle Fork Nooksack River Mainline (MF-ML). Turn left, travel east 2.5 miles, turn left (north) onto the MF-25 for the St. Stephen rock pit. Continue traveling east towards the harvest unit 2.2 miles and stay right on the MF-ML, travel 0.2 miles to the existing gate and bridge. Pass through the gate, travel 0.8 miles to the junction of the MF-ML and the MF-59. Both roads will access different portions of the sale. Continuing on the MF-ML for another 1.5 miles will take you through Units 1, 2 and 3. Taking a right at the junction onto the MF-59, travel 0.4 miles into Unit 1, and continue another 0.75 miles, through Unit 1, into portions of Unit 2 and Unit 4.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
MARMOT RIDGE	30,250	180
Sub 3	2,273	21
Sub 4	1,986	77.8
Sub 5	21,386	51.2

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.)

This proposal is located on the lower, north facing foothills of the North Twin Sister, below the Olivine pit. Approximately 16% of the ownership in the Marmot Ridge WAU is state DNR managed lands. Large industrial landowners own a minority of the adjacent private forest land within this WAU. The largest land owner in this WAU is the Federal government (76%). The information below refers to information taken from the State GIS, P&T, and FPARS database dated April 13, 2011.

SUEPAG, GROUND WATER PROTECTION FROM G.S. OPERATIONS DURING WET WEATHER
 IS NOT SPECIFICALLY PROTECTED BY PROPOSAL OR STPA DOC. LANDOWNER MAY LIMIT
 WET WEATHER OPERATIONS. MW 6/14/11

WAU Name	Total WAU Acres	DNR Managed Forested Acres	Percent DNR Managed Forestland	Private Managed Forest Acres	Percent Private Managed Forestland
Marmot Ridge WAU	30,250	4,963	16%	2,309	8%

The table below reports recent timber harvest activity on Department lands within the Marmot Ridge WAU during the last seven years, as well as future planned timber harvests on Department lands. The same chart also reports recent past harvesting on private lands, but no attempt was made to predict future timber harvests on private land. The attached WAU map, created in April 2011, shows the location of Department and private harvest activity.

NAME OF WAU	DNR ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	DNR ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS	DNR EXPECTED HARVEST ACRES WITHIN NEXT YEAR	PRIVATE ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	PRIVATE ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS
Marmot Ridge	0	0	180*	301	unknown

*referring to this proposal

The Department's Habitat Conservation Plan (HCP) outlines strategies to protect all 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 prescribed riparian buffers intended to protect salmon and trout habitat were applied to this proposal and will be applied to all future sales in the vicinity. Potentially significant adverse impacts to slope stability, streams, water quality, and wildlife habitat have been mitigated. The HCP identifies large, structurally unique trees and snags as uncommon habitats that need to be retained. Specific mitigation measures are generally discussed below and in more detail in the specific sections.

Earth: Areas exhibiting signs of instability were removed from the proposal area; harvest area and road construction will be located on stable areas only. Contract language will prevent activities or the use of equipment that may pose high risk to soil compaction and will restrict operations during periods of wet weather when rutting or erosion may occur. There will be no operations occurring in the northern portion of Unit 3 during the winter months. The combination of harvesting schedule and recommended yarding strategies will alleviate or minimize ground disturbance. The Unit 1 will be replanted within 2 years of harvest with Douglas-fir and western redcedar seedlings, thus minimizing potential soil erosion.

Surface and Ground Water: RMZ's will serve to reduce potential for mass wasting, preserve fish habitat, and maintain water quality. Temporary structures that protect stream bank integrity will be utilized when shovel/cable yarding over type 5 streams. Contract language may prevent activities or the use of equipment that may pose high risk to soil compaction and surface erosion, and will suspend operations during period of wet weather, reducing impacts to water quality. Roads will be surfaced with rock and will have adequate drainage structures to maintain natural drainage patterns.

Wildlife: A minimum of 8 trees per acre, including trees that are structurally unique and from the largest diameter and dominant crown classes will be left as wildlife and green trees in the variable retention harvest area (Unit 1). Clumped green trees are located in the southern portion of the sale area and scattered green trees are larger diameter Douglas-fir, western redcedar, red alder, and western hemlock. Harvested areas in Unit 1 will be planted within two planting seasons following harvest. RMZ's as well as areas removed for slope stability will also contribute to the structural diversity across the proposal area.

Planned land management activities in fiscal year 2012 within the Marmot Ridge WAU include road construction, RMAP activities, and, potentially, silvicultural activities. The Marmot Ridge WAU has future planned activities consisting of several VDT's of approximately 700 acres over the next 10 years on DNR lands. These activities will continue to follow the Forest Practices Rules, Policy for Sustainable Forests, Implementation Agreement, Incidental Take Permits, and the HCP. This will ensure that all aspects of the environment are adequately protected and serve to minimize the chance of adverse cumulative environmental impacts.

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 Marmot Ridge WAU is mountainous. It consists of valley bottom and steep sided mountains ranging in elevation from 1,145 to 4,000 feet. Bowman mountain is the western boundary, the Marmot Ridge drainage is the eastern boundary, Stewart peak and Groat mountain are the northern boundary, and the North Twin Sister defines the southern boundary. Land forms are of glacial, glacial fluvial, and fluvial origin. Most of the WAU is forested. It is located in the West Cascade hemlock vegetation zone where the major timber types are second growth conifer/hardwood (Douglas-fir, western redcedar, western hemlock and red alder). There are many young Douglas-fir stands throughout the WAU. The Middle Fork Nooksack River is the major water body found in the central portion of the WAU. The climate is typical of the foothills of the north west Cascades.

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

The proposal is located from 1,300-2,700 feet in elevation on a primarily northern aspect. The proposal area contains many of the features listed above. Information based on local knowledge, aerial photos, and field verification.

b. What is the steepest slope on the site (approximate percent slope)? 95%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

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 or Soil Complex Name	% Slope	Acres	Mass Washing Potential	Erosion Potential
8189	V.GRAVELLY LOAM	30-60	42	MEDIUM	MEDIUM
7158	V.GRAVELLY SANDY LOAM	30-60	37	MEDIUM	HIGH
3600	GRAVELLY LOAM	30-60	31	MEDIUM	MEDIUM
7157	V.GRAVELLY SANDY LOAM	5-30	25	INSIGNIFIC'T	LOW
7315	SERPOD-ROCK OUTCROP-COMPLEX	60-80	22	No Data	No Data
1906	V.GRAVELLY SILT LOAM	30-60	15	MEDIUM	MEDIUM
3602	V.GRAVELLY SILT LOAM	3-15	7	INSIGNIFIC'T	LOW
6699	V.COBBLY LOAM	30-60	1	MEDIUM	MEDIUM

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

1) *Surface indications:*

Slight evidence of failures along inner gorges of type 4 streams.

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:

Shallow rapid slide activity occurs within the inner gorges, normally associated with storm events.

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:

Within the sub-basins of the Marmot Ridge WAU, shallow failures have been historically observed on orphaned road segments in the field and in aerial photos.

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 CABLE YARDING - LEAD IN SUSPENSION
 NOT INDICATED IN #13 OF FAA. NO
 TIMING RESTRICTION FOR G.B. YARDING.
 2/2/11/11

h. NO restriction for wet
 weather operation proposed.
 2/16/11

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

Boundary and road locations have been located on stable areas only and road construction has been minimized. Roads exceeding 50% side slopes will be full bench construction with end haul, designed to minimize stream crossings, keep ground-based yarding to acceptable limits, and to access landing locations for areas requiring cable yarding. Cable yarding will achieve lead end suspension. Ground-based harvesting and yarding will generally be permitted within 400-500 feet of roads and forwarding trails. Ground-based yarding will occur where slopes are less than or equal to 30%. Ground-based falling and yarding, and road construction, and hauling may be restricted to the drier times of the year.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 2.0 Approx. acreage new landings: 0.2 Fill source: All fill material will be obtained from the excavation activities during proposed road construction and reconstruction. This material will either be incorporated into sub grade development or side cast on slopes less than 50%, or end hauled to stable waste area locations.

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

Minor erosion may occur from freshly exposed soils along road cut slopes and embankment slopes.

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%*

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

To control road related erosion, road pioneering will generally not extend more than 500 feet beyond completed construction, culverts will be installed concurrently with construction of the road sub grade, and culvert outlets will not terminate on unprotected soils. Road will be crowned to prevent water accumulation on road surface. Ditches will be excavated along roads to collect surface runoff, which will be discharged onto stable areas of the forest floor, or natural drainages through ditch outs and cross drain culverts. Exposed soils resulting from road construction will be revegetated. Roads will be crowned, ditched, and cross-drained, surfaced with rock, and constructed according to Forest Practice standards. The combination of harvesting schedule and recommended yarding strategies will alleviate or minimize erosion. Ground-based yarding, mechanized falling, road construction, and hauling of forest products may be restricted to the drier times of the year. Contract and road plan provisions restrict operations during periods of unfavorable weather during any time of the year.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of emissions are anticipated. Equipment exhaust and road dust created by truck traffic, and potential burning of landings or slash piles, in compliance with state laws.

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

No.

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

None.

3. Water

a. Surface:

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

stream or river it flows into. (See timber sale map available at DNR region office, or forest practice application base maps.)

a) Downstream water bodies:

All streams within in this proposal area are potential tributaries, via surface water or subsurface flow to the middle 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)
Galbraith creek	T1	1	200 feet
Seymour creek	T3	1	100-140 feet
Seymour creek	T4	1	100 feet
Un-named creek	T3	7	140 feet
Un-named creek	T4	14	100 feet
Un-named creek	T5	45	N/A

Total= 8 segments of T3 streams, 15 segments of T4 streams and 45 segments of T5 streams. 1 T1 stream.

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

Galbraith creek received a 200-foot no entry RMZ. Portions of Seymour Creek received a 100-foot no entry RMZ and other portions of Seymour Creek received 140-foot no entry RMZ. A portion of Seymour Creek will be receiving a VDT treatment, thinning from below within its 140-foot RMZ. Other type 4 streams received a minimum of a 25-foot no entry buffer and 75 feet of buffer that is to be thinned from below. Entries within the RMZ's are compliant with the RFRS Type III treatment objectives. The stand will be thinned from below (VDT) and approximately 135-229 trees per acre will remain after treatment. The type 4 streams in the VRH portion of the proposal will have 100-foot no entry RMZ's. There will be an equipment limitation zone of 30 feet adjacent to the type 5 streams within the harvest units. Temporary log crossings that protect streambank integrity are required for type 5 water crossings during yarding operations. Trees will be felled to avoid streambank disturbance on all typed streams. Logs will have lead end suspension during cable yarding. All existing roads through RMZ's will be monitored during hauling to ensure ditchwater and road runoff will not enter or otherwise adversely affect water quality. Corrective action such as straw bales, silt fencing, rock-lined ditches and sediment traps will be installed/constructed if necessary.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to 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):

See B.3.a.1.c.

6 type-5 stream crossings and 4 type-4 stream crossings (including a log stringer bridge) will be constructed as a part of this proposal. The work will be done per contract specifications. There may be a corridor required to facilitate successful yarding over stream Q2 and its RMZ in Unit 1. Full suspension of logs will be required if the corridor is deemed necessary.

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.

Does not apply.

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:

All streamflow may be temporarily diverted through bypass culverts or retained behind (or pumped around) coffer dams during culvert installations on typed streams.

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

No Yes, describe location:

C FPA DOCUMENT DOES NOT SPECIFY LEADING END SUSPENSION FOR CABLE YARDING BR 6/16/11

- 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, there are steep slopes and incised channels in the sub-basin in the WAU that may be susceptible to mass wasting. However, there is only a minimal chance that eroded materials could enter surface waters, due to the current road construction and current harvest procedures.

- 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 show minor changes to the channels of some streams within the WAU, most likely 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 roads and railroad grades and most likely associated with 10-year storm events and peak flows. Changes in channel dimensions along the courses of type 4 un-named streams indicate increased flows in the past. Type 4 streams in adjacent harvests show evidence of bank erosion and channel down cutting during seasonal storm events.

- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
 No Yes, explain: See B.1.h.

Yarding strategies, riparian buffers, road design, and leave tree strategies will minimize any potential deliverability to typed waters. Steeper slopes with and without the potential for delivery have been evaluated for stability on a case by case basis, with slopes considered moderate or high risk removed from the proposed harvest area. Road construction, hauling, and ground-based harvesting operations may be restricted from November 1 to March 31 and may not be permitted during unfavorable weather conditions at any time of the year. Mitigation measures described here should minimize the potential affects to water quality.

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

**Marmot Ridge WAU: 0.8 /mi²
Sub-basin information is unknown (DNR/ GIS report 4/13/2011-General Report)**

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:

The percentage of roads carrying water is unknown.

The information below was taken from the DNR corporate WAU GIS data layer as of April 13, 2011

- 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 WAU in significant ROS zone.

WAU : 47%

- 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?

Sub-basin 3:88.7%

Sub-basin 4:78.9%

Sub-basin 5:70.6%

Hydrologic Maturity in SROS zone is only known for DNR managed lands

- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
 No Yes, describe observations:

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.

The proposal is not expected to add significantly to peak flow. Surface runoff may peak sooner than in adjacent stands of timber due to the removal of the over story because precipitation that normally dissipated in the tree canopy will come in contact with the under story brush and litter.

- 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:

The Diversion Dam Water Intake is approximately 3 miles downstream in the Middle Fork of the Nooksack, from the proposed sale area.

- 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.

This proposal will reduce the DNR owned percentage of the sub basin that is hydrologically mature. Forest lands that are hydrologically mature minimize impacts of rain on snow events. As directed by Procedure 14-004-060, "Assessing Hydrologic Maturity", hydrologic maturity will be managed for in sub-basin 3 only. If DNR state ownership is less than 50% of total rain on snow, the procedure does not apply. Sub-basins 4 and 5 meet that criteria, and therefore, hydrologic maturity will not be managed for in these two sub-basins. See chart below.

1. SUB-BASIN NAME	2. TOTAL ROS ACRES (DNR) WITHIN SUB-BASIN	3. HYDRO MATURE TARGET ACRES (2/3 of Column 2)	4. CURRENT DNR SUB-BASIN ACRES IN HYDRO MATURE FOREST IN ROS	5. ACRES OF HYDRO MATURE FOREST TO BE REMOVED	6. SUPRPLUS (+) OR DEFICIT (-) ACRES AFTER ACTIVITY
Marmot Ridge- sub-basin 3	959 (57.9%)	639	851	21	+830
Marmot Ridge- sub-basin 4	662 (43.6%)	----	----	----	----
Marmot Ridge- sub-basin 5	917 (10%)	----	----	----	----

The potential for stream flow increases are tempered by the design of the proposed sale. The type 4 streams have been excluded from the timber sale. Type 5 streams are not expected to contribute to stream water quality degradation during or after harvest operations. Road construction, harvesting operations, and haul may be restricted during unfavorable precipitation conditions further reducing impact to water quality.

Road construction standards emphasize maintaining current drainage patterns without moving water into different drainages. All newly constructed roads will be abandoned before contract expiration. The Department will continue to space harvests spatially and temporally allowing vegetative green up to absorb precipitation impacts.

b. Ground Water:

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

Road cross drains capturing shallow surface water and rain and snow melt may increase ground water recharge directly below culvert outlets. This will increase surface saturation in localized areas, but it is not expected to significantly increase or decrease ground water.

- 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 lubricates could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed 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: See B-3-a-15.

a) *Note protection measures, if any.*

Road locations were selected to minimize ground water interception. Number and spacing of culverts are designed to minimize quantity of water discharged in any one location.

c. Water Runoff (including storm water):

- 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 water will be discharged onto stable area of the forest floor or into natural drainages via road ditches, cross drains or ditch-outs. See also B-3-a-1-a.

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

See B-3-b-2.

Erosion and mass wasting are unlikely, provided appropriate forest practices outlined in the timber sale contract are used during road construction and timber harvesting near all waters.

a) *Note protection measures, if any.*

Road building, hauling, and ground-based operations may be restricted during the wet season. Crowned and rock surfacing on all roads will reduce sediments from entering natural waters. Installation and maintenance of roadside ditches and cross-drain culverts will conform to the timber sale contract road plan specifications. Timber will be felled to avoid stream bank disturbance on all typed streams. Temporary log crossings that protect stream bank integrity are required for type 5 water crossings during yarding operations. There will be an equipment limitation zone of 30 feet to the type 5 streams within the harvest units. The northern portion of Unit 3 will be restricted to the dry season.

- d. Proposed measures to reduce or control surface, ground, and runoff water 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 or circle 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: Pacific Yew
 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.)*

As described in A.11., second-growth conifer and hardwoods will be removed from Unit 1. In Addition, second-growth western hemlock, up to a maximum of 20 inches DBH, removed from them, in a thinning from below, but the overstory will remain, in Units 2, 3 and 4. Some immature trees and snags may be left unless they need to be felled for safety or operational reasons. Associated under story vegetation will be disturbed by logging or road building activities within the sale boundary. The current stand in Unit 1 will be replaced with a managed Douglas-fir and

western redcedar stand (hand planted) along with naturally regenerated western hemlock, and red alder. This managed regenerated stand will retain snags, dominant, co dominant and/or structurally unique trees from the current stand, increasing 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 landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")

The unit is surrounded by both Private and DNR ownership. The unit is bordered by sub-mature (approximately 15 years old) mixed conifer forests to the east. To the west, the unit is bordered by mature mixed conifer forests. The units are bordered by mature forest to the north, and recently logged ground, on private lands, to the south. Please refer to the WAU and adjacency maps.

- 2) Retention tree plan:

Retention trees, including trees from the dominant crown class and largest diameter class will be left as wildlife and green trees in Unit 1, the Variable Retention Harvest. Retention trees will be clumped (50%) and scattered (50%), averaging of 8 trees per acre, throughout the harvest area in order to ensure desired spatial distribution. Green trees will be retained to preserve structural diversity for wildlife habitat and include structurally unique, wind firm trees from diameter classes averaging between 14-20 inches DBH. Trees from dominant and co-dominant crown classes provide some components of multi-layered canopy. A larger green tree clump has been utilized in order to retain trees adjacent to a high number of deformed trees, and windfirmness of the area. All snags (unless they need to be felled due to L&I safety considerations) are to be left.

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

TSU Number	FMU ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

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:

(See above B.4.b.2). Native conifer species of similar site stock planted at 360-400 trees per acre will be planted throughout the proposal area upon completion of the harvest. Naturally regenerated western hemlock and red alder will also be managed with planted conifers in Unit 1.

5. Animal

- a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:

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

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

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

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

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

TSU Number	FMU ID	Common Name	Federal Listing Status	WA State Listing Status
1	30680	MARbled MURRELET: Reference No: 51336	THREATENED	THREATENED
2	30681	SPOTTED OWL: Site:878-SISTER CREEK-M FK NOOKSACK	THREATENED	ENDANGERED
2	80994	SPOTTED OWL: Site:878-SISTER CREEK-M FK NOOKSACK	THREATENED	ENDANGERED

3	30682	SPOTTED OWL: Site:878-SISTER CREEK-M FK NOOKSACK	THREATENED	ENDANGERED
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Site 878 (Spotted Owl nest) is approximately 6270 feet (1.2 miles) east of all proposed activities. The biotic detection of the Marbled Murrelet listed above is not located within 2 miles of any of the proposed activities.

- c. Is the site part of a migration route? If so, explain.
 Pacific flyway Other migration route: Explain if any boxes checked:
Washington State is considered part of the Pacific Flyway. No impacts are expected.
- d. Proposed measures to preserve or enhance wildlife, if any:

See B.3.a.2.

Riparian Management Zones and native conifer trees will serve as habitat for several bird and wildlife species.

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

See B.4.b.2 Above.

The proposal area does not contain any suitable murrelet habitat. The objective of the proposed thinning is to accelerate development of the existing stand towards NRF habitat primarily through the development of larger trees and a multi-level canopy. The stand is presently in between the pole exclusion and large tree exclusion development stages. If left unmanaged, the stands are not expected to release and take on old growth characteristics for many decades. Opening of the canopy is expected to increase light levels, which will encourage the development of the shrub and herb layers, as well as releasing dominant trees, accelerating their diameter growth. Recognizing that the Desired Future Conditions (DFC) for both NRF and the RFRS are exceptionally similar, if not the same for many targets, it is clear that these objectives and targets will be met, more quickly, through active management of these stands. The objective to create larger trees and more snags per acre is accelerated by the proposed treatment in these stands. Down woody debris in these stands is in abundance, and is not a deficiency that will be managed for in this entry. Numerous old-growth logs are present throughout these stands and in stream channels. Existing snags will be retained, and numerous new snags will be created in each unit. Accelerated diameter growth of residual trees is anticipated. Vertical stand structure and species diversity within the unit will be maintained. Opening of the canopy will increase the development of the shrub and herb layers. NRF targets of relative density (RD), trees per acre (TPA) and average tree height will be met by the proposed stand enhancements for these forest management units

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.

There is minimal hazard for all of the above due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer until slash has broken down. The timber sale contract contains language that addresses hazardous materials spill prevention; hazardous material spill containment, control and cleanup; hazardous material release reporting.

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

During harvest operations there may be a short term need for: Department of Ecology approved contract Haz-Mat cleanup crews, rural fire district crews, DNR forest fire response crews and Rural Fire District EMT's and Paramedics for responding to accidents or forest fires.

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

See: Contract enforcement of forest fire protection rules.

b. Noise

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

Noise from trucks and logging equipment will be present while operating during daylight hours.

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

There will be noise during daylight hours on a short-term basis from heavy equipment, log trucks, and chain saws during road construction 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? (*Site includes the complete proposal, e.g. rock pits and access roads.*)

State owned commercial forestry land and private forestry lands surround the proposal area.

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

- f. What is the current comprehensive plan designation of the site?
Commercial forestry and resource protection.

- g. If applicable, what is the current shoreline master program designation of the site?
Does not apply.

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
Does not apply.

- 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.

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 principle 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:**
 - 3) *How will this proposal affect any views described in 1) or 2) above?*
Does not apply.
- c. Proposed measures to reduce or control aesthetic impacts, if any:

Potential aesthetic impacts from timber harvesting are blended by RMZ's, scattered leave trees, and leave tree areas located throughout the sale area. Replanting with Douglas-fir and western redcedar at 360-400 stems/acre within two years after harvest will also help to reduce negative 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:
None.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
Hunting, hiking, mushroom gathering, berry picking.
- b. Would the proposed project displace any existing recreational uses? If so, describe:
Road access will be temporarily blocked during some yarding operations.
- 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 places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

The Nooksack Tribe has identified the Middle Fork Nooksack River drainage as an area of traditional cultural use. It is identified on the state historic register (Office of Historic and Archaeological Preservation) as a traditional cultural property.

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

None known.

- c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

DNR representatives have met with the Nooksack Tribe with the objective of agreeing to a plan for mitigating cultural values. This proposal has been reviewed for cultural resources. An annual meeting was held (Jan. 18, 2011) at which maps of the proposal were distributed to tribal members from the Lummi Nation and the Nooksack tribe for review. A follow up letter and map were sent to both tribes. As of the date of this document, no specific information that can be addressed within or near the proposal area has been observed on the ground or provided by either tribe. A precursory review of DNR's TRAX (Total Resource Access System) identified previous surveys or other cultural or historic information within one-mile radius of the proposal area. Any additional cultural resources identified during operations will be protected. Should archaeological materials or human remains be discovered during the course of operations, all work in the vicinity will be stopped and associated tribes and Office of Archaeological and Historic Preservation OAHP will be contacted.

14. Transportation

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

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 site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
Does not apply.

- c. How many parking spaces would the completed project have? How many would the project eliminate?
Does not apply.

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

- 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 timber hauling during the timber harvest period.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

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

An average of 10-15 roundtrip truck loads each day during road construction and harvest operation. Peak volumes will be during logging activities.

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

Safe operation of vehicles will be encouraged.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
See B.7.a.1.

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

Restrict access during periods of extreme fire hazard. Operations will cease during periods of extremely low humidity (less than 30%).

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
Does not apply.

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.

Completed by:  FORESTER Date: 06/09/2011
Title