

Pre-Operations Report

Operation Name: Gates Hill
County: Marion
Management Basin: Scattered

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres
I	MC	166	155 ¹
II	PC-H	34	28
III	PC-M	26	24
IV	PC-M	33	32
Total		259	239

1. This net acreage is totaled from 3 non-contiguous modified clearcut areas (the largest of which is 93 net acres). These modified clearcuts are separated by a 300 foot buffer that contains both thinning and no harvest acres. Please see attached prescription map for clarification.

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

The operation is located within a temperate climate area. Typically the fall and winter seasons are wet. This area receives approximately 70 to 90 inches of rainfall per year. The operation is located within the *Tsuga heterophylla* Zone (Natural Vegetation of Oregon and Washington, Franklin & Dyrness, 1973).

The landforms are gentle headwaters of tributaries to the North Santiam River above Mill City. The underlying rocks are sedimentary & igneous origin mapped as "Undifferentiated tuffaceous sedimentary rocks." Areas 1 & 2 are in a large scale landslide deposit on the geology map.

Approximately 50% of Areas I and II consist of Kinney soils. Kinney soils are a cobbly loam soil that is deep and well drained. The soil in the rest of Areas I and II and all of Areas III and IV is a McCully clay loam. McCully soils are well drained and deep. The elevation of Areas I and II ranges from 1,160 to 1,600 feet; the slopes range from 0 to 65%. The slopes for Areas III and IV range from 10 to 70%; the elevation ranges from 1,520 to 2,280 feet. The average 50 year site index for Douglas-fir is 112 for the operation areas.

II. CURRENT STAND CONDITION:

Areas I and II are made up of stands that range in age from 50 to 60 years. The stands are currently classified as Understory. The overstory of Areas I and II consist mainly of Douglas-fir with minor amounts of western hemlock, red alder and big leaf maple. The understory consists of salal, vine maple, Oregon grape and ferns. There is an average of 5 snags per acre; 45 cubic feet per acre of sound down wood; and 1,100 cubic feet per acre of down wood in all decay classes. (SLI 2005) A root disease survey completed in 1999 for Areas I and II shows pockets of *Phellinus weirri* scattered throughout the stand. (see attached Map C)

Area III is a 70 year-old Douglas-fir stand currently classified as Understory. This stand was commercially thinned approximately 15 to 20 years ago. The overstory consists mainly of Douglas-fir with an occasional large bigleaf maple. The understory contains bigleaf maple, red alder, western hemlock, salal, dwarf Oregon grape, and ferns. There are two snags per acre within the stand; there is very little fresh down wood and approximately 1,300 cubic feet per acre of down wood in all decay classes. (SLI 2005)

Area IV is a 38-year old stand currently classified as Understory. The overstory is a mix of Douglas-fir, western hemlock and bigleaf maple. The understory contains bigleaf maple, western hemlock, vine maple, salal, dwarf Oregon grape and ferns. There are approximately 2 snags per acre; 160 cubic feet per acre of sound down wood; and 2,570 cubic feet per acre of down wood in all decay classes. (SLI 2005)

Table 2. Stand Inventory Information

Area	Prescription	Stand ID ¹	Species	Age	DBH	BA	TPA	SDI	Acres ²
I	MC	12033	DFCX	50	15	158	124	41	146
I	MC	12035	DF	60	19	220	108	52	20
II	PC-H	12033	DFCX	50	15	158	124	41	34
		Target ³			21	98	44	25	
III	PC-M	12365	DF	70	19	248	128	59	26
		Target ³			21	147	59	34	
IV	PC-M	12363	DFCX	38	13	183	203	51	33
		Target ³			15	116	90	30	

1 The source of stand inventory information is SLI from 2005 (for trees with a DBH of 8 inches or larger).

2 The acres are based on GIS and include roads, streams buffers, reserve areas, etc.

3 The Target identifies expected stand characteristics (DBH, BA, TPA and SDI for all trees within the stand) after harvesting has been completed.

III. DESIRED STAND CONDITION:

This operation is located in the Scattered Basin. This basin is a diverse mixture of ownership, stand ages, species mixtures, and site quality. As indicated by its name, the Scattered Basin is a conglomeration of scattered ODF ownership parcels that range in size from 40 acres to 1000 acres. These parcels within the operation range from 40 to approximately 200 acres in size. Most of the smaller parcels within the basin are viewed as land exchange candidates due to the intermingled nature of the ownership. The Gates Hill operation is on the land exchange candidate list.

Although 54 percent of the Scattered Basin is planned for Complex DFC, most of this is associated with larger ownership parcels, recreation sites, and threatened and endangered species sites. The remainder of the basin is planned for General Forest Structure. (Cascade District Implementation Plan, 2003) Approximately 4% of the basin is considered in a Complex Stand Condition. While portions of the planned operation could be managed to provide complex structure in the short term (i.e. 60-80 years), the acreage involved is comparatively small and isolated. The strategy for this operation is to follow a pathway toward General Forest Structure.

Area I

The DFC for Area I (SLI Types 12033 and 12035) is REG, CSC, or UDS. This stand lends itself well toward a regeneration harvest. The planned operation is an isolated ownership parcel with areas of difficult logging. Lack of previous management has resulted in the haphazard tree spacing, poor tree crowns, and low quality species mixture characteristic of unmanaged stands in this area. In addition, the understory is thick with brush species that would quickly monopolize growth resources if the stand were partial cut. Following regeneration harvest, the site will be given an intense site preparation and planted with Douglas-fir. Improved Douglas-fir will grow quickly on the high site soils. Due to the higher than normal populations of elk and deer in the area, other tree species will not be considered for planting due to their susceptibility to animal browse.

The **Anticipated Pathway for Area I** begins with removal of the overstory.

- Modified clearcut of the current stand.
- At age 10-15, a Pre-commercial thin is anticipated given the planting density and natural seed-in.
- A first entry commercial thinning is planned around age 40.
- A final harvest will be considered around age 75-80.

Area II

The DFC for Area II is General Forest Structure (i.e. REG, CSC, UDS). Area II is essentially the Inner Zone of the RMA along the unnamed fish streams that traverses the ownership. Area II begins 25 feet away from the streams and extends outward for another 125 feet. Area II occurs on both sides of the streams (see map). The planned management will take place within those

boundaries. Hardwoods and larger conifers will be the preferred species to leave in this area.

The **Anticipated Pathway for Area II** will begin with a thinning of the current stand.

- This will be a heavy thinning with the intent to remove all but the largest diameter trees within the area.
- Little if any future management is expected to occur in Area II. The planned operation should put the area on a firm pathway to Mature Forest Condition. After an RMA reaches Mature Forest Condition, no additional operations are planned in alignment with the NWO State Forests Management Plan. Recruitment of future down wood and snags may be a possibility.

Area III

The DFC for Area III (SLI type 12365) is REG, UDS, or CSC. An overstory of 70 year old Douglas-fir has grown quite well following the commercial thinning done approximately 15-20 years ago. Very few other species exist in the overstory. The stand is currently UDS. Western hemlock seeded into the understory following the initial thinning and is noticeably present. A variety of herbaceous species also thrive in portions of the understory.

The anticipated pathway for Area III begins with medium thinning the Douglas-fir overstory. The prescription will favor leaving the dominant Douglas-fir over the other species.

This will be the second commercial thin of the stand.

- The stand will be evaluated in 15-20 years for a possible regeneration harvest.
- Down wood and snags will be recruited during the future regeneration harvest.
- Following the future regeneration harvest, the unit will be planted with Douglas-fir seedlings.

Area IV

The DFC for Area IV (SLI type 12363) is REG, UDS, or CSC. The 30-40 year old stand is in need of a thinning. A thinning of the stand, favoring Douglas-fir, will provide the leave trees room to continue to grow.

The anticipated pathway for Area IV begins with a moderate thinning of the overstory which currently supports various tree species. The prescription will favor leaving the dominant Douglas-fir in the stand

- This will be the initial entry for this stand.
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- A second commercial thinning will occur in about 15-20 years.

- A regeneration harvest will follow when the stand reaches 70-80 years of age.
- An alternative to the pathway above would be to exchange the land for other forest land.

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest ¹	Desired Future	Acres
I	12033	UDS	REG	GEN	146
I	12035	UDS	REG	GEN	20
II	12033	UDS	UDS	GEN	34
III	12365	UDS	UDS	GEN	26
IV	12363	UDS	UDS	GEN	33

¹ The stand is expected to develop into this condition in the five to ten years after this operation is completed.

IV. PROPOSED MANAGEMENT PRESCRIPTION:

The **proposed management prescription for Area I** will be:

- Harvest all trees greater than 8 inches DBH.
- Reserve all cottonwood trees in Area I.
- All defective, diseased, and undesirable trees less than 8 inches DBH will be felled within Area I. This does not apply to stream buffers and leave tree areas.
- Site preparation will include piling and burning the slash on the ground operable areas. All cable areas will have planting spots developed. A broadcast spray will be applied to the entire unit to control competing vegetation.
- The unit will be planted with approximately 430 TPA of Douglas-fir.
- Five green trees per acre will be retained as part of the modified clearcut. Green trees and snags for the unit will be retained in Area II, “no-harvest” areas, stream RMA’s, boggy areas, and upland in clumps with a minimum of 10 trees per clump. No more than 50% of the green trees needed will be located within Area II.
- All existing snags will be retained where possible. At the completion of harvesting there will be 2 snags per acre within Area I.
- The down wood requirements of 2700 board feet per acre will be met with logging debris, designated trees within the RMA’s and leave tree areas. If necessary, trees within Area I will be felled to meet the down wood requirement.

The **proposed management prescription for Area II** begins with removing some of the conifer within 25-150 feet on each side of the stream.

- Thinning from 25 feet to 150 feet on each side of the stream.

- All trees greater than 8" DBH thin to: basal area of 98, TPA 44, AVE DBH of 21 inches, and an SDI of 25%.
- Preference for the leave trees will be hardwoods and larger conifers. All non-merchantable understory trees will be protected from cutting.
- Snags which do not propose a safety hazard and downwood will be retained within the area. Two snags per acre will remain in Area II following the completion of harvest.
- **The Total Residual Stand (overstory and understory) in Area II will be:** basal area of 111, TPA of 109, ave DBH of 13 inches, and an SDI of 28%.

The proposed management prescription for Area III is:

- All trees greater than 8 inches DBH thin to: BA of 147, TPA of 58-60, average DBH of 21 inches, and an SDI of 34%.
- Maintain the existing snags which do not pose a safety hazard and downwood. At least 2 snags per acre will remain within the unit following the completion of harvest.
- **The total residual stand (overstory and understory) in Area III will be:** BA of 145-150, TPA of 1,920, average DBH of 1 inch and an SDI of 35%.

The proposed management prescription for Area IV is:

- All trees greater than 8 inches DBH thin to: BA of 116, TPA of 90, an average DBH of 15 inches, and an SDI of 30%.
- Maintain the existing down wood and snags which do not pose a safety hazard. At least 2 snags per acre will remain within the unit following the completion of harvest.
- **The total residual stand (overstory and understory) in Area IV will be:** BA of 133, TPA of 232, an average DBH of 8 inches and an SDI of 37%.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
90%	10%	<input type="checkbox"/>	x
Planned Quarter:			

	Conifer	Hardwood	Total
Net Volume (MBF)	2,970	400	3,370
Stumpage Value (\$/MBF)	\$350	\$150	
Estimated Gross Value	\$1,039,500	\$60,000	\$1,099,500
		Project Costs:	\$73,700
		Estimated Net Value:	\$1,025,800

VI. TRANSPORTATION PLANNING AND HARVESTING:

Areas I and II

Road easements for hauling will need to be obtained from Longview Fiber (LVF), Frank Lumber Company, Freres Lumber Company, and Lewis Hampton. Existing roads are surfaced and useable but will need maintenance before and after hauling. New roads will need to be constructed across LVF, Frank, and Hampton.

Areas I and II are mostly ground logging with several small cable settings in the North area. Ground slopes range from 0 – 70%. There are numerous creeks, bogs, and wet areas in the unit.

- Construct 12,100 feet of dirt spur roads.
- Construct 1,915 feet of pit run rocked spur roads.
- Close 12,100 feet of spur roads.

Areas III and IV

Three spurs will be constructed that total 24+30 sta. (~ 0.5 miles). Two of the spurs will have a 14 foot out sloped, natural surface. One spur will have a 16 foot subgrade with a ditch and will be surfaced with pit run rock.

The units are approximately 75% ground logging and 25% cable logging. Ground slopes in the area range from 0 – 70%.

- New construction – 1,905 feet of dirt spur roads
- New construction – 525 feet of pit run rocked spur roads
- Improvement – 2,950 feet of spur roads
- Close – 1,905 feet of spur roads

Table 5. Transportation Planning Summary (Miles).

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct	0	0	0.46	2.65
Improve	0	0	0.56	0
Maintain	0	0	1.3	0
Close/Block	0	0	0	2.65
Vacate	0	0	0	0

For determination of road class either use results of the Harvest and Habitat roads classifications, or if this information is not available then low use roads are spurs, medium use roads are collectors and high use roads are mainlines. Use these same criteria when comparing the total for all AOP sales to the IP plans.

VII. AQUATIC RESOURCES AND WATER QUALITY:

There are no listed fish present within any of the streams within the operation. There are 2 small, fish bearing streams and 6 small, non-fish bearing streams located within the operation. The overstory along these streams contains Douglas-fir, alder and a small amount of western hemlock. The understory vegetation consists of vine maple, Oregon grape, salal and sword ferns.

Management activities within riparian areas of streams will focus on achieving properly functioning aquatic and riparian habitat conditions over time. Riparian Management Areas (RMAs) will be established immediately adjacent to streams for the purpose of protecting aquatic and riparian resources and maintaining the functions and ecological processes of the streams. The Management Standards for Aquatic and Riparian Areas found in the *NWO State Forests Management Plan* (pg. J-1 – J-16) will be followed within these RMAs.

The following measures will be used to minimize impacts to streams: 1. No ground based equipment will be allowed within 25 feet of the non-fish streams or within 50 feet of the fish bearing streams, 2. There will be seasonal restrictions as to when ground yarding and road construction will be allowed (i.e. during dry seasons), 3. Erosion control measures will be used on areas of soils exposed during road construction or improvement, 4. Road ditches will be disconnected from streams, 5. Road maintenance will be required during log hauling.

VIII. T&E SPECIES CONSIDERATIONS:

This operation was surveyed for Northern Spotted owls during the 2005 survey season with no responses. It will be surveyed again in 2006.

The operation area was checked against District knowledge for any listed plant location. The operation area was also checked against the Oregon Natural Heritage Program's database of known listed plant locations. No listed plant records were identified within the operation area.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

There is one area of steep slopes in the southeast portion of Area IV. The timber sale operation in Areas 1 & 2 where the geology map shows a large scale landslide deposit is not anticipated to be a concern. The initial hazard and risk assessment from the geotechnical specialist is low. If during field work high landslide hazard locations are identified or if any tension cracks or other signs of slope movement are encountered in Areas 1 or 2 the geotechnical specialist will be consulted.

X. RECREATION RESOURCES:

There are no developed recreation areas within or in close proximity to the operation area. Hunting, horse back riding and ATV riding occur within the operation. There are no plans to develop any recreation areas within this operation.

XI. CULTURAL RESOURCES:

Pre-operation reconnaissance revealed no visible cultural resource features or artifacts. If discovery is made, the cultural resource will be protected and field staff will consult with the Cultural Resource Specialist in Salem.

XII. SCENIC RESOURCES:

Approximately 36 acres of Area I and 2 acres of Area II can be seen from Highway 22. This parcel is surrounded by private land which has recently been clearcut. Thought was given to thinning the visual area or placing additional green trees in this area in consideration of the scenic resources. However, taking these measures would cause this operation to be more visible as it would not blend in with surrounding landscape. If the green trees are retained in the stream buffers, and wet areas as planned, this operation will blend in more with the landscape surrounding it.

XIII. OTHER RESOURCE CONSIDERATIONS:

To protect air quality, the pile burning will comply with the Oregon Smoke Management Plan. The Smoke Management Plan is designed to reduce emissions from prescribed burning in western Oregon and to minimize smoke intrusions into designated population areas.

XIV. LMCS:

Area 1 contains Focused Stewardship, Aquatic and Riparian Habitat for three perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area 2 contains Special Stewardship, Aquatic and Riparian Habitat for two small Type F stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.

Area 2 contains Focused Stewardship, Aquatic and Riparian Habitat for three perennial Type N stream. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.