Pre-Operations Report

Operation Name: Waterhouse (Alt)
Legal: Portions of Section 21, T3N, R9W, W.M., Tillamook County
Management Basin: Lower Nehalem

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres[1]
1	Partial Cut - Heavy	103	73
Total		103	73

1. The net acres are based on orthophotos and GIS and exclude roads and stream buffers.

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

Located in portions of Section 21, T3N, R9W, W. M. The slopes have a predominantly north and south aspects and range from 10% to 110%. Elevations range from 280 feet to 1120 feet. The major soil type is Killiam.

II. CURRENT STAND CONDITION:

Table 2. Stand Inventory Information[4]

Area	Prescription	Stand ID [1]	Species	Age	DBH	BA	TPA	SDI	Net Acres [2]
1	PC[5]	202	RA/DF/WH/ SS/RC	65	17	214	133	53	73
	Target [3]		DF/WH/SS/ RC		23	98	33	23	73

1. The source of stand inventory information is from cruise plots.
2. The net acres are based on GIS and exclude roads and stream buffers.
3. The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.
4. These numbers are based on plot data taken to this point and final numbers may differ significantly. The directive for minor and major modifications will be followed for further review.
5. Includes 13 big leaf maple trees with a basal area of 16 ft^2 per acre.

Area 1: Portions of the sale area burned in the1933 Tillamook burn. It was located along the northern edge of the fire so the fire did not completely burn the existing stand leaving legacy trees which includes Douglas-fir, western hemlock and Sitka spruce scattered through out the sale. These legacy trees contain defect from the fire. The stand naturally regenerated with a mixed, dense stand of red alder, Douglas-fir, western hemlock, big leaf maple and Sitka spruce. These species are arranged at various densities throughout the sale area. The

basal area per acre for the red alder is 100 ft^2, 64 ft^2 for the Douglas-fir and 22 ft^2 for the western hemlock, 20 ft^2 for the red Sitka spruce and 8 ft^2 for the western red cedar. Due to the lack of stocking control, the stands are approaching stem exclusion. The naturally regenerated conifer dominant and co-dominant trees have good live crown ratios (greater than 40%). The suppressed conifer trees are becoming overstocked resulting in the loss of live crown ratios and growth and have height to diameter ratios problems (>80%). Due to the age of the stands, the alder has poor height and diameter growth.

The brush component is comprised primarily of Oregon grape, salal, sword fern, salmonberry, vine maple and huckleberry.

III. DESIRED STAND CONDITION AND VISION:

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest	Desired Future	Net Acres
1	202	UDS	UDS	GEN	73

See Section IV: Proposed Management Prescription for more information on Green Tree, Down Wood, and Snag Strategies during operation. Also refer to Landscape Design in the Summary document for more information on strategies to move the district toward Desired Future Condition (DFC) goals.

Watershed Perspective
Area 1 is within the Lower Nehalem watershed. Much of the watershed is mixed species conifer stands and recent management has focused on partial cut of mixed conifer stands and regeneration harvest of stands severely impacted by Swiss needle cast.

Area 1- The desired future condition (DFC) for this area is general (GEN).

Short Term Vision:

The naturally regenerated conifer and hardwoods will be partial cut which will reduce stand densities to allow for continued growth of vigorous trees, reduction of natural mortality, development of healthier, more wind-firm and generally more valuable trees. The legacy trees will be left adding more complexity to the stand. Removing the portions of the red alder will create areas greater than 2 acres that will be planted with conifer.

Long Term Vision:

In the long term this operation allows the stand to continue growing. This prescription will allow for gaps and openings with the larger openings (>5 acres) being planted. This allows the residual trees to grow larger in diameter and crown depth. The smaller openings and gaps will also allow for a greater understory initiation of shrubs and tree species creating horizontal and vertical diversity. Because the larger gaps will be planted, this causes immediate initiation of young tree species creating vertical diversity sooner than natural processes. The expectation is future density management of the naturally regenerated and planted trees to continue the growth of over story trees as well as understory trees and shrubs species. It is also expected that the defect in the legacy trees will continue to increase causing mortality and/or wind throw to the legacy trees adding even more complexity to the stand.

IV. PROPOSED MANAGEMENT PRESCRIPTION AND PATHWAY:

The prescriptions described below are based on the current stand condition such as overall tree and stand growth, species mix, stand density, and stand health.

Refer to Green Tree, Snag and Down Wood Strategies in the Summary document for strategies used on every sale.

Partial Cuts

Area 1

Prescription: A partial cut will remove a portion of the naturally regenerated conifer and all of the merchantable red alder reducing the stand basal area of to a range of 90 to 110 ft^2 and a SDI of 19 to 23%. Removing the red alder will create areas greater than 5 acres that will be planted with conifer.

All Areas

Snags and Down Wood: Down wood or snag creation in these areas will be done through standard harvesting practices. The legacy trees from the original stand will also be left. It is expected that there will be mortality and/or wind throw in these trees because of the defect. A component of hardwoods and conifers will also be retained in the stream buffers and high landslide hazard locations (HLHL). All hardwoods species other than red alder will be reserved.

Pathway: The vision for this stand is to manage it to maintain productivity to maximize revenues at final harvest so it will probably be clearcut at the next entrance.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	%	☐	☐
Planned Quarter:		(Alt)	

	Conifer	Hardwood	Total
Net Volume (MBF)	56	606	664
Stumpage Value ($/MBF)	$15.52*	$150	
Estimated Gross Value	$900	$90,900	$91,800
		Project Costs:	$10,098
		Estimated Net Value:	$81,702

Combined Douglas-fir and hemlock stumpage values based on harvest type.

VI. HARVESTING AND ACCESS CONSIDERATIONS:

Area 1 is accessed by the Waterhouse Road, a surfaced, all-weather road. See maps for specific road locations and conditions.

Approximately 0.8 miles of road will be constructed to provide access to cable harvest areas. Ground yarding roads will be closed and water-barred following harvest. See summary document for more information on this topic.

There will be no other project work included with this sale.

The operation will be 80% cable harvested and 20% ground harvested.

Activity	Mainline	Collector	Rocked Spur[1]	Dirt Spur[1]
Construct				0.8
Improve				
Maintain[2]		2.0		
Close/Block[3]				0.8
Vacate[3]				

1. *Additional roads may be built by the operator at the time of harvest and will be approved by the State through the Operations Plan. These will be short dead end spurs and closed or blocked after harvest*

2. *All roads accessing the sale area will be maintained during the life of the timber sale contract. Maintenance miles in the table are those roads not being constructed or improved.*

3. *Roads not closed/blocked or vacated at the end of the sale will be reviewed for closure after reforestation is established.*
4. *The numbers in this table reflect planned Project Work associated with the sale.*

VII. AQUATIC RESOURCES AND WATER QUALITY

Dubois Creek, a small, Type F stream creates the southern boundary of the sale area. Several of its tributaries which are unnamed, small, seasonal Type N streams, are within the sale area.
These streams will be reviewed and protected appropriately during sale layout based on flow, topography, and terrain.

Oregon Department of Fish and Wildlife (ODFW) will be requested to complete stream surveys before sale layout begins. Streams of unknown status will be treated as Type F until surveys are completed to verify fish use.

Other known aquatic habitat within the sale areas includes seeps, springs and waterfalls.

Stream buffers within or adjacent to harvest unit boundaries will be managed according to *Forest Management Plan* Riparian Strategies. The riparian areas will be reviewed during sale layout for current stand conditions and/or operational constraints for implementing FMP strategies.

Refer to the Aquatic Resource Protection Strategies in the Summary document for information on the "in stream work period' for road work and stream improvement projects.

VIII. T&E SPECIES CONSIDERATIONS:

The sale area has been reviewed with the ODF Northwest Oregon Area Biologist.

Surveys have been conducted during the 2008 and 2009 survey season for marbled murrelets. All surveys for marbled murrelet were conducted in accordance with Pacific Seabird Group (PSG) protocol.

Surveys have been conducted during the 2008 and 2009 survey season for northern spotted owl. All northern spotted owl surveys were and will be conducted in accordance with USFWS endorsed protocol.

T & E Plant species: The sale areas were checked against the Oregon Natural Heritage Program (ONHP) database of known threatened or endangered listed plant locations as well as local records in the Land Management Classification System (LMCS).

Streams in this sale are in the Fall Creek drainage in the Nehalem basin. As of March 2008, coastal coho salmon are listed as threatened for the Oregon Coast. The riparian and aquatic strategies combined with road and harvest practices described in this Annual Operations Plan and our Northwest Oregon State Forests Management Plan (FMP) are designed to minimize impacts and or restore aquatic habitats that influence aquatic species.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

This assessment is based on USGS 1:24,000 topographic maps and available geologic maps. There are a lot of high landslide hazard locations in the sale area which drains into Fall Creek, a tributary to the Nehalem River. The risk of landslides delivering to Fall Creek from this area is high. The geotechnical specialist will conduct a field review of this sale.

X. RECREATION RESOURCES:

The sale area is not designated as non-motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). This sale has been reviewed by the District Recreation Coordinator. This area is accessed across private land that is gated. . This area is accessible by foot and is used for hunting and hiking.

XI. CULTURAL RESOURCES:

The *Tillamook State Cultural Assessment* does not list any cultural sites within or adjacent to the proposed sale boundary.

XII. SCENIC RESOURCES:

The sale areas have a visual classification of Level 3 – Low sensitivity.

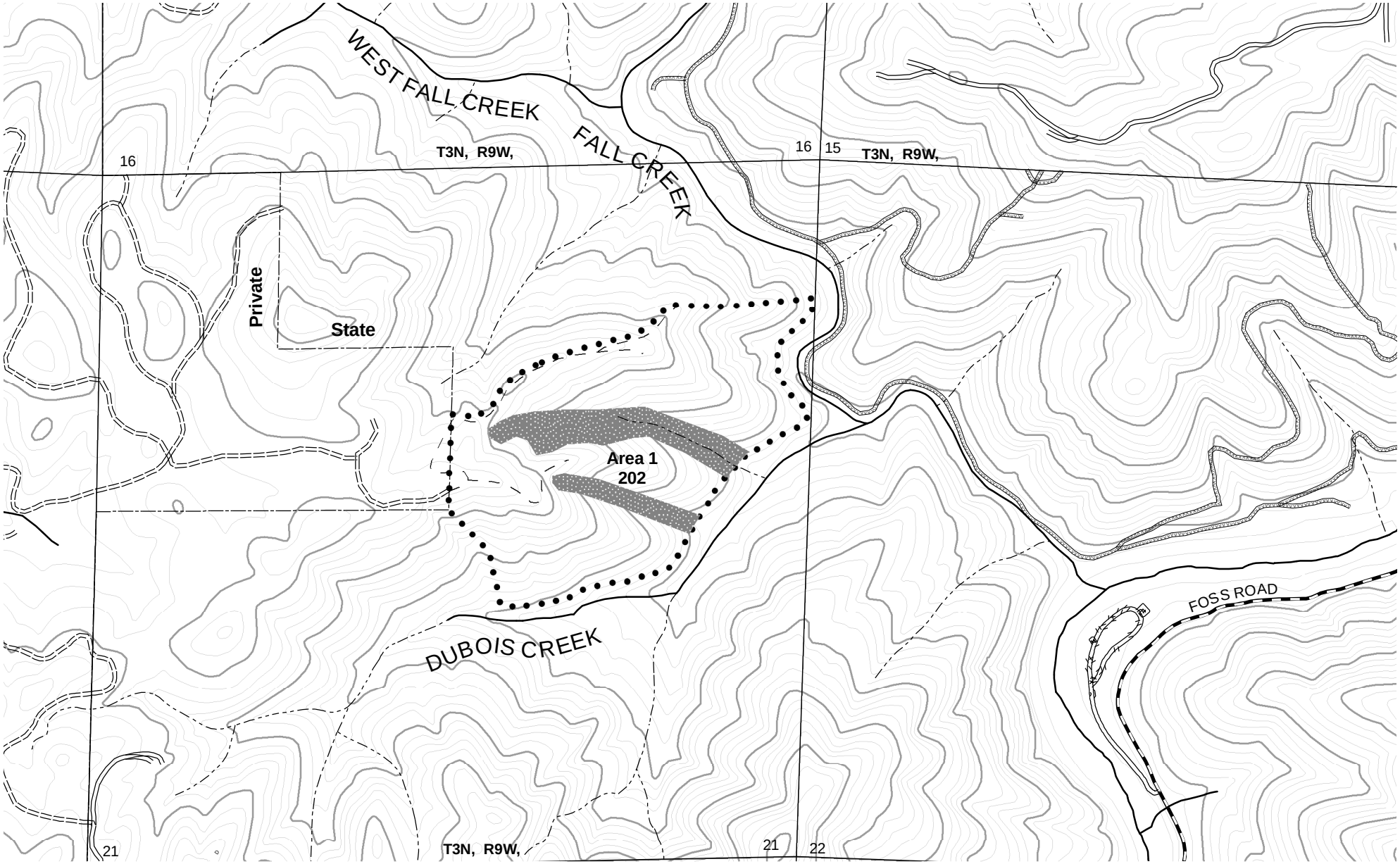
XIII. Other Resource Considerations

None known.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The sale area contains Focused and Special, Aquatic and Riparian Habitat (See section VII. Aquatic Resources and Water Quality, for the management guidelines to be utilized). This sale also includes Special Stewardship, Operationally Limited. This area will be evaluated further with the geotechnical specialist to determine if this classification shows in the correct location. See Section IX, Slope Stability and Geotechnical Issues, for additional information.

Boundary lines depicted on Attachment C are approximate; exact locations and site specific management activities will be determined during the sale preparation process.



Contour Interval 40'

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream*
- Perennial Type-N stream*
- Unsurfaced road
- Surfaced road
- State/Federal highway
- Abandoned road
- Blocked road
- Road construction
- County road
- Transmission line

0 500 1,000 Feet

3

Waterhouse
-- Topography --
2010 SALE PLAN
TILLAMOOK DISTRICT

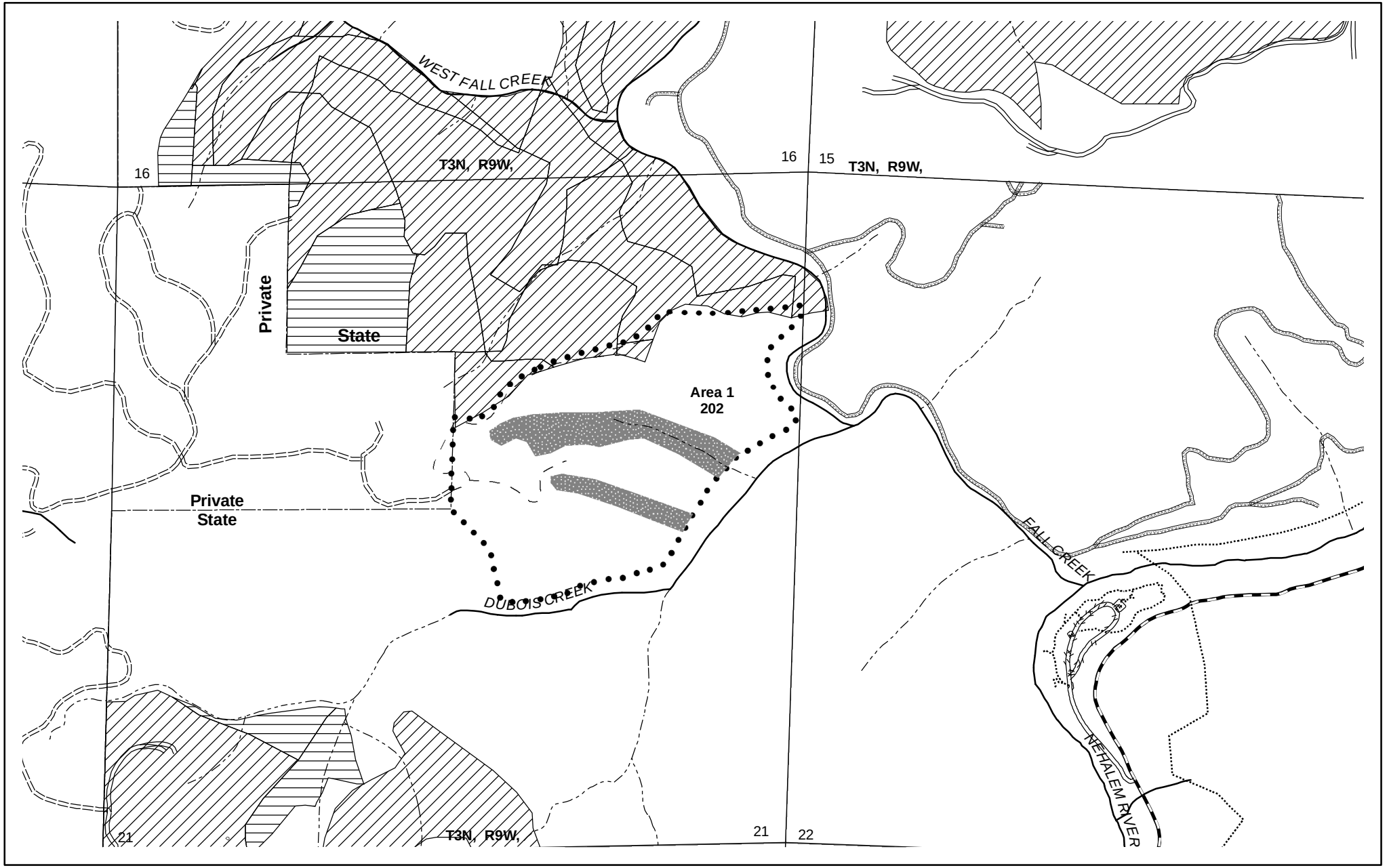
Section 21
T3N, R9W, W.M.,
Tillamook County, Oregon

*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Area	Type of Operation
1	Partial Cut

Tillamook District GIS
5/20/2009
This product is for informational use and may not have been prepared for, or suitable for legal, engineering, or surveying purposes.

Attachment A



Desired future condition
- Layered
- Older forest

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream*
- Perennial Type-N stream*
- Unsurfaced road
- Surfaced road
- State/Federal highway
- Abandoned road
- Blocked road
- Road construction
- County road
- Transmission line

0 500 1,000 Feet

3

Waterhouse
-- Current and Future Condition --
2010 SALE PLAN
TILLAMOOK DISTRICT

Section 21
T3N, R9W, W.M.,
Tillamook County, Oregon

*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Area	Type of Operation
1	Partial Cut

Tillamook District GIS
6/20/2009
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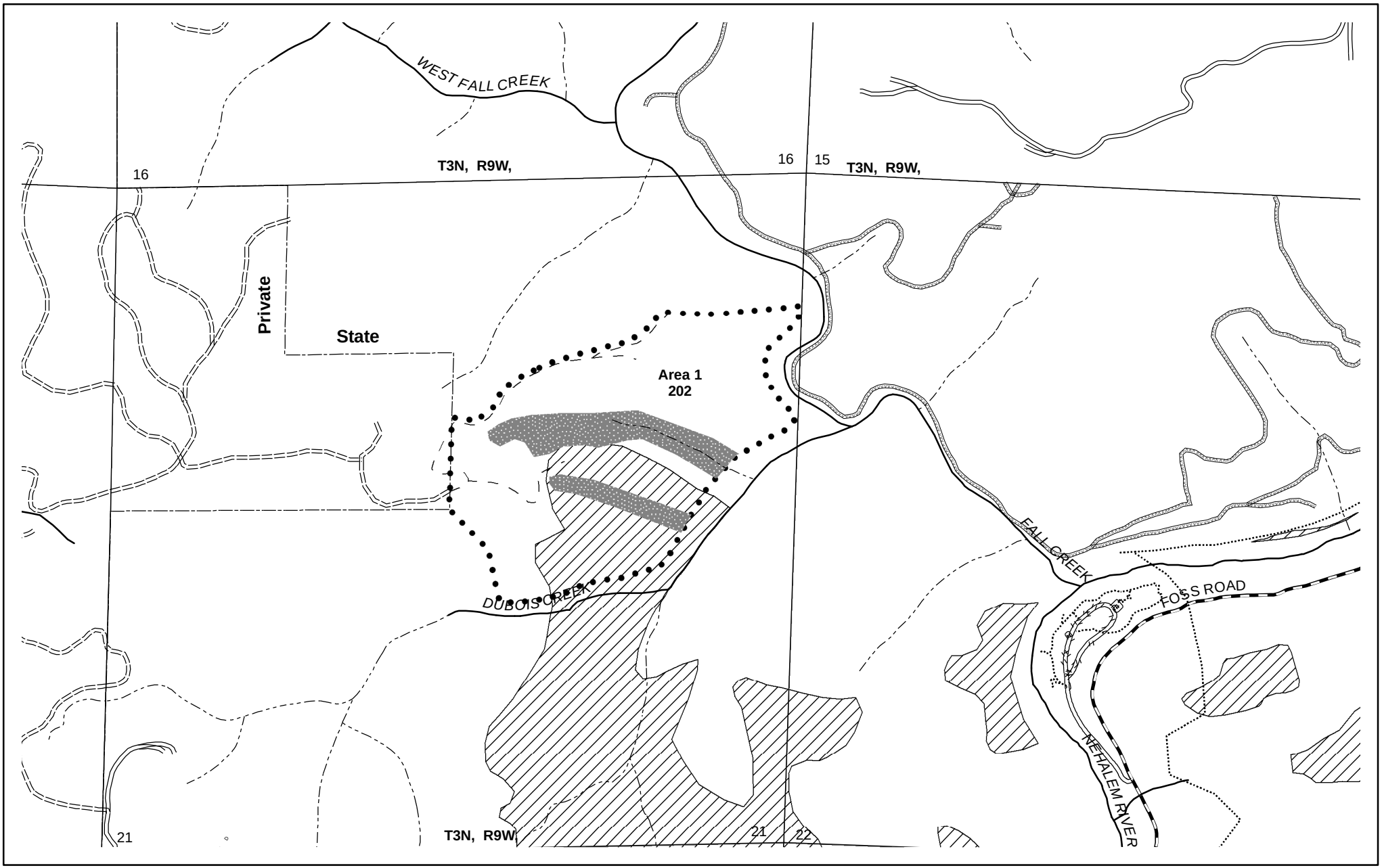
Attachment B



Buffer
Special

Area boundary
Sale boundary
Ownership boundary
Perennial Type-F stream*
Perennial Type-N stream*
Unsurfaced road
Surfaced road
State/Federal highway

Abandoned road
Blocked road
Road construction
County road
Transmission line

0 500 1,000 Feet

3

Waterhouse
-- Key Resources/Operationally Limited --
2010 SALE PLAN
TILLAMOOK DISTRICT

Section 21
T3N, R9W, W.M.,
Tillamook County, Oregon

*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Area	Type of Operation
1	Partial Cut

Tillamook District GIS
6/20/2009
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Attachment C