Pre-Operations Report

Operation Name: **Easter Bonner**
County: **Benton**
Management Basin: **Bonner Ridge**

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Net Acres
I	Moderate Partial Cut	43
II	Moderate Partial Cut	52
III	Heavy Partial Cut	10
IV	Moderate Partial Cut	41
V	Moderate Partial Cut	85
VI	Moderate Partial Cut	26
Total PC		257

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

The operation consists of six partial cut units. The units lie in the western hemlock vegetation zone. Average rainfall is 60 to 68 inches for Area I and 78 to 100 inches for Areas II - VI.

Soils are as follows: Areas I and V – Renhaven; Areas II and IV – Killam and Valino; Area III – Renhaven and Killam; Area VI – Valino. The soil information is derived from a soil survey completed in 1980.

The landforms for Areas I and IV are moderate to steep side-slopes near the upper portion of an un-named tributary of the Luckiamute River. The landforms of Areas II, III, & V are moderate to steep side-slopes in the headwaters of tributaries of Oleman Creek. The landform of Area VI is mostly moderate side-slope of the headwaters of the West Fork of Mary's River. There are bands of steep slopes in all (I – VI) areas of the sale. The underlying rocks are sedimentary origin of the Tyee Formation.

Aspect for the operation areas is as follows: Areas I, III, and IV – northeast; Area II – south; Area V – southeast; and Area VI – west.

II. CURRENT STAND CONDITION:

Areas I-VI support Douglas-fir plantations that range in age from 26-36 years old. Areas I, II, and IV-VI were pre-commercially thinned (PCT'd) about 11-13 years ago. Area III was PCT'd about 21 years ago and a small portion of it received a moderate intensity commercially thinned 6 years ago. In all operation areas, red alder and big leaf maple are present, mainly in the draws. A few snags and some down wood are present in these stands.

Brush species consisting of salmonberry, vine maple, sword fern, salal, and elderberry are present in the understory.

All six operation areas are classified as Understory (UDS) stand type. This was determined by Stand Level Inventory (SLI) for Areas I, II, IV, V, and VI. District information was used to determine that Area III is UDS.

Table 2. Stand Inventory Information

Area	Prescription	Stand ID [1]	Species	Age	DBH	BA	TPA	RD	Acres [2]
I	Partial Cut	18358	DF	30	12	170	216	49	43
		Target [3]			15	120	98	31	
II	Partial Cut	18725	DF	30	12	175	222	51	52
		Target [3]			16	120	86	30	
III	Partial Cut	18943	DF	36	14	185	173	49	10
		Target [3]			18	80	45	19	
IV	Partial Cut	18684	DF	26	12	175	222	51	41
		Target [3]			15	120	98	31	
V	Partial Cut	18733	DF	26	11	170	257	51	85
		Target [3]			14	120	112	32	
VI	Partial Cut	18055	DF	26	12	180	229	52	26
		Target [3]			16	120	86	30	

1 The source of stand inventory information is from SLI and district plot data from 2004 and 2005.
2 The acres are based on orthophotos and GIS and exclude roads, streams buffers, reserve areas, etc.
3 The Target identifies expected stand characteristics (DBH, BA, TPA and RD) after harvesting has been completed.

III. DESIRED STAND CONDITION:

According to the District's landscape design, Areas I, II and III are designated as Desired Future Condition Complex (DFCC) and targeted to become Layered

(LYR) stands. Areas IV – VI, are designated as DFC General and are targeted to become Understory (UDS) stands.

Area I and II Vision: The LYR condition will be attained by the time the stands are approximately age 65. At that time, the stands will consist of an overstory of Douglas-fir with a few scattered alder and bigleaf maple. Overstory trees will be both scattered and grouped in small clumps. A second layer consisting of patches of western hemlock, western redcedar, grand fir, Douglas-fir and red alder will be present. An understory of natural Douglas-fir, alder, bigleaf maple and brush species (vinemaple, elderberry and salal) will be present in gaps and low density areas. Hemlock and cedar will be starting to seed-in naturally. Snags and downed wood will be present throughout the stand.

Area III Vision: The LYR condition will be attained by the time the stand reaches approximately age 60. When it reaches the DFC, the stand will consist of an overstory of fairly even-spaced Douglas-fir with a few alder and bigleaf maple. Beneath the overstory will be a well-developed second layer of cedar, hemlock and grand fir. A lower layer of brush (salal, vinemaple, elderberry and hazel) and scattered mixed conifer and hardwood will exist in small openings located throughout the stand. Snags and downed wood will be present throughout the stand.

Areas IV – VI Vision: These stands will remain in the UDS stand structure following initial thinning and will stay in that condition until final regeneration harvest at around 70 years. At the time of final harvest, these areas will consist of well-stocked Douglas-fir in the overstory and brush (sword fern, hazel, vinemaple) and forbs in the understory. A few hemlock and hardwoods will be scattered throughout the stands, both in the overstory and understory. Snags and down wood will be present throughout the stands.

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest [1]	Desired Future	Acres
I	18358	CSC	UDS	LYR	43
II	18725	UDS	UDS	LYR	52
III	18943	CSC	UDS	LYR	10
IV	18684	UDS	UDS	UDS	41
V	18733	UDS	UDS	UDS	85
VI	18055	UDS	UDS	UDS	26

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:

Area I Anticipated Pathway: During this commercial entry, the area will be thinned to an RD of about 31, leaving about 98 TPA. The average DBH of residual trees will be approximately 15 inches.

- Most snags and downed wood will be left.
- All trees other than Douglas-fir will be reserved from cutting.
- Approximately 15% of the acreage will be patchcut. Patches will range from 1/2 to 2 acres in size. In patchcuts that are greater than one acre in size, a few trees will be marked for retention.
- Patchcut areas will be treated with site preparation herbicides in order to deter brush competition.
- The patches will be planted with western hemlock, western redcedar and grand fir in approximately equal amounts and at a rate of approximately 360 tpa. A few Douglas-fir will be planted in the larger patchcuts.
- Animal damage mitigation will consist of tubing all cedar to protect against deer and elk browse. Mountain beaver will likely need to be trapped to protect planted seedlings.

It is likely that at least one herbicide application will be needed within the first 3 years after planting in order to release planted seedlings from competing vegetation.

Five to ten years after thinning, Douglas-fir and hardwood will have seeded naturally into spots in the understory. Trees planted in the patchcuts will be free-to-grow and will be on their way to forming a second layer.

In 10 to 15 years after the initial thinning, the RD is expected to be 50-55 and the stands will be thinned again to an RD of about 30. The stands will be opened up enough to maintain stand vigor and to allow the natural regeneration to persist in the understory.

- At this time, the amount of natural snags and downed wood will be evaluated. If it is determined that additional amounts are needed, then snags and downed wood will be created.
- New patchcuts will be created on about 15% of the unit acreage. Patches will be replanted to cedar and hemlock and fir.
- Following this thinning, trees planted in the original patchcuts will be pre-commercially thinned (PCT) if needed.

In another 10 to 15 years, the stand RD will have again reached about 50 and a third commercial thinning will likely occur. This thinning will take the overstory trees down to approximately 30 TPA. It is possible that patchcut trees (those planted after the first harvest) could be commercially thinned at this time as well. The need for additional snags and downed wood will be evaluated and more will be created if needed.

Within 5 to 10 years after the third thinning (about age 65) the LYR condition will be attained. From this point on, the remaining overstory trees will be left as legacy trees. Over time, some will become snags and downed wood. The understory trees will gradually become the overstory component. Continued seed-in of conifer and hardwood will keep the stands in the LYR condition.

Density regulation (PCT of understory and commercial thinning of the overstory) will likely occur.

Area II Anticipated Pathway: During this commercial entry, Area II will be thinned to an RD of about 30, leaving approximately 86 TPA. The average DBH of residual trees is expected to be 16 inches.

- Most snags and downed wood will be left.
- All trees other than Douglas-fir will be reserved from cutting.
- Approximately 20% of the acreage will be put into either patchcuts or low relative density (LRD) areas. Patchcuts will range from 1/2 to 2 acre in size. In patchcuts that are at least one acre in size, a few trees will be marked for retention. LRD areas will be thinned to about an RD of 20 and will be about 3 acres each in size.
- Patchcuts and LRD areas will be treated with site preparation herbicides in order to deter brush competition.
- Patchcuts and LRD areas will be planted/underplanted with western hemlock, western redcedar and grand fir in approximately equal amounts and at a rate of approximately 360 tpa. A few Douglas-fir will be planted in the larger patchcuts.
- Animal damage mitigation will consist of tubing all cedar to protect against deer and elk browse. Mountain beaver control work may be necessary in portions of the area.

It is likely that at least one herbicide application will be needed in the patchcuts within the first 3 years after planting in order to release planted seedlings from competing vegetation.

Five to ten years after thinning, Douglas-fir and hardwood will have seeded naturally into spots in the understory. Trees planted in the patchcuts and LRD areas will be free-to-grow and will be on their way to forming a second layer.

In 10 to 15 years after the initial thinning, the RD is expected to be 50-55 and the stand will be thinned again to an RD of about 30.

- At this time, the amount of natural snags and downed wood will be evaluated. If it is determined that additional amounts are needed, then snags and downed wood will be created.
- LRD areas will again be thinned to an RD 20.
- New patchcuts and/or LRD areas will be created on about 20% of the unit acreage. These areas will be planted/underplanted to cedar, hemlock and grand fir.
- Following this harvest entry, trees planted/underplanted after the original thinning will be pre-commercially thinned (PCT) if needed.

In another 10 to 15 years, the stand RD will have again reached about 50 and a third commercial thinning will likely occur. This thinning will take the overstory trees down to approximately 35 TPA (20 TPA in LRD areas). It is possible that

trees planted in patchcuts and LRD areas after the first harvest could be commercially thinned at this time as well. The need for additional snags and downed wood will be evaluated and more will be created if needed.

About 10 years after the third commercial thinning (about age 65), the stand will have reached the LYR condition. The stand will be evaluated at this point to determine if more overstory trees will be harvested or if the amount left will serve as legacy trees.

Over time, some legacy trees will become snags or downed wood. The understory trees will gradually become the overstory component. Continued seed-in of conifer and hardwood will keep the stands in the LYR condition. Density regulation (PCT of understory and commercial thinning of the overstory) will likely occur.

Area III Anticipated Pathway: During this harvest, the stand will be thinned to an RD of about 19, leaving approximately 45 TPA. Average DBH of residual trees will be approximately 18 inches.

- Most snags and downed wood will be left.
- All trees other than Douglas-fir will be reserved from cutting.
- Following harvest, the need for a site preparation herbicide application to deter brush competition will be evaluated.
- The stand will be underplanted with western hemlock, western redcedar and grand fir in approximately equal amounts, at a rate of about 360 tpa.
- Animal damage mitigation will consist of tubing all cedar to protect against deer and elk browse. Mountain beaver control work is not expected to be necessary.

Five to ten years after thinning, Douglas-fir and hardwood will have seeded naturally into spots in the understory as well. Trees planted in the understory will be free-to-grow and will be on their way to forming a second layer.

In 10 to 15 years, or when the RD approaches 30, the overstory will be thinned again to approximately an RD 18, leaving about 30 TPA. This will allow the underplanted trees to continue to grow.

- At this time, the amount of natural snags and downed wood will be evaluated. If it is determined that additional amounts are needed, then snags and downed wood will be created.
- Thinning of the overstory will result in loss of some of the understory trees. Therefore, PCT will likely not be needed in the understory.

By age 60 years the stand will have reached the LYR condition. The remaining overstory will be left as legacy trees. Over time, some will become snags and downed wood. The understory trees will gradually become the overstory component. Continued seed-in of conifer and hardwood will keep the stand in

the LYR condition. Density regulation in the form of commercial thinning of the overstory and PCT of the understory trees will likely occur.

Areas IV – VI Anticipated Pathway: These three areas will be thinned to an RD of 30-32 and 120 ft^2 basal area. This will leave 86-112 TPA with an average diameter of 14-16 inches. This thinning will capture harvest volume and maintain stand vigor. A second thinning will be conducted in 10 to 15 years, when stand RDs have reached about 50. The aim of this thinning will be to again capture volume and maintain stand vigor. In another 10-15 years, tree growth rates will be evaluated and a decision will be made to either conduct a third thinning or to wait a few years and conduct a regeneration harvest. If a third thinning is chosen, then final harvest will likely occur when the stands are around 70 years old.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%		X
Planned Quarter: 2			

	Conifer	Hardwood	Total
Net Volume (MBF)	1,400	0	1400
Stumpage Value ($/MBF)	$180		
Estimated Gross Value	$252,000		$252,000
		Project Costs:	$107,000
		Estimated Net Value:	$145,000

VI. TRANSPORTATION PLANNING AND HARVESTING:

Access to Area I is from Fathead Lake Road. The very bottom portion is across an Industrial forestland owner. The STATE has secured a permanent easement for this section of road. The remaining portion of the haul route is over State Lands. This unit is planned as a summer operation. The roads are in adequate condition to sustain dry weather hauling. One short unsurfaced spur will be re-opened, and two new unsurfaced spurs will be constructed.

Access to Areas II, III & IV will be along a portion of Bonner Ridge road and down Filched Gate road. These roads are in adequate condition to support wet weather hauling.

An unsurfaced road will be reopened for access to Area II. One stream crossing culvert will be removed after harvest operations are complete, and the streambed

returned to a natural condition. An existing unsurfaced road accessing the northwest portion will be reopened. New construction will be needed to extend this road to the southwest. Another short spur will also be added to this existing spur that will access a portion of the unit to the north. All construction is on gentle ridge top ground.

Area III will be harvested from Filched Gate road.

Accessing Area IV will require reopening an old unsurfaced spur and utilizing a portion of Tamewood Road. The re-opened spur will be surfaced with crushed rock for wet weather access. A maintenance lift of crushed rock will also be applied to the lower portion of Tamewood Road.

Access to Areas V & VI will be along the south end of Bonner Ridge Road. This road is adequate for wet weather haul. The road on the west side of Area V will have a maintenance lift of rock added. This road will also be extended to the south and rocked for all weather access. An existing, unsurfaced spur will be reopened and surfaced. The surfaced road along the north boundary of Area V will also have a maintenance lift of rock added. Area VI is accessed by an existing rocked road. All of the roads to be constructed or reopened in Areas V and VI are on State Lands and will not require access agreements.

Wet weather access is planned for Areas III, IV, V, & VI. Portions of Area I also contain some wet weather access, but hauling should be limited to drier periods.

Two deteriorated stream crossing culverts (12” & 24”) are planned for replacement on a non-fish tributary of Bonner creek (E ½ of SW ¼ of sect. 24, T.10S. R.7W., W.M). Written plans for these crossings will be supplied by ODF.

Because existing roads provide access to 70% of the operation acreage, other alternatives were considered but not used.

Harvesting timber in the operation areas would require a combination of 90% cable yarding and 10% ground skidding.

About 1.2 miles of road improvement will be necessary. This will consist of re-opening 5 existing spurs. Two of the spurs will be surfaced.

All unsurfaced roads will be waterbarred and blocked to vehicular traffic after harvesting operations are completed and/or at the beginning of the wet season.

Table 5. Transportation Planning Summary (Miles).

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct			0.1	0.4
Improve			0.4	0.8
Maintain		7.3	4.3	
Close/Block				1.2
Vacate				

VII. AQUATIC RESOURCES AND WATER QUALITY:

Streams flowing from Areas I-III, V, and VI are part of the Mary's River system. Streams in Area IV drain into the Luckiamute River system.

Streams are present in all six operation areas.

Oleman creek, a type F stream, is located on the east side of Area V. The timber sale boundary will be posted at least 25' horizontal distance from this stream. No trees will be felled within the buffer except to facilitate cable yarding corridors. The partial cut thinning prescription will retain sufficient trees in the inner and outer Riparian Management Area (RMA) zones to comply with current FMP standards. The ODFW fish biologist expressed an interest in evaluating if the stream could benefit from improvement activities that could be implemented with the timber sale. ODF staff will meet with the fish biologist to explore this option.

Fish distribution surveys need to be conducted for streams in all six operation areas. For either type F or N streams, a 25' horizontal distance buffer will be established on either side of these streams. No harvesting will be allowed within the buffer except to facilitate cable yarding. The partial cut thinning prescription will retain sufficient trees in the RMA to comply with current FMP standards

Vegetation along Type F and N streams consists of Douglas-fir and red alder trees and brush species such as salmonberry, elderberry, sword fern, and vine maple.

There are two unregistered domestic water sources in close proximity to Area V. If the intakes are from streams located within Area V a no harvest buffer will be posted sufficient distance from the water intake that no degradation of water quality will be experienced. The land owner will be informed of the operation and measures taken to protect water quality. The landowner will be asked to register the water sources with the Water Resources Board.

Activities that will take place in proximity to the streams, listed above, include timber felling and yarding. The following measures will be employed to minimize

impacts to the stream: 1) no timber will be felled within the buffer except to facilitate cable yarding, 2) timber above the buffer will be felled away from or parallel to the stream, 3) timber will be yarded away from the stream, where possible, 4) if it is necessary to yard logs across the stream, logs will be fully suspended above the buffer vegetation, and 5) single end suspension of logs will be required elsewhere in the units.

Other requirements designed to minimize impacts to streams include seasonal restrictions for road construction and log hauling.

VIII. T&E SPECIES CONSIDERATIONS:

According to the area wildlife biologist, the operation area does not contain suitable habitat for northern spotted owls but there is suitable habitat for marbled murrelets adjacent to some of the operation areas. Surveys for murrelets were conducted in 2006 and 2007with no detections. No further surveys are scheduled.

The operation areas were checked against district knowledge for any listed plant locations. The operation areas were also checked against the Oregon Natural Heritage Program (ONHP) database of known listed plant locations. No listed plant records were identified within the operation areas.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

This assessment is based on analysis of USGS 1:24,000 topographic maps.

There are isolated high landslide hazard locations in Area I. Area I drains to an unnamed tributary of the Luckiamute River. The risk of landslides delivering directly to the Luckiamute River from Area I is low to moderate.

There are isolated high landslide hazard locations in Areas II, III, and V. All three areas drain to Oleman Creek or its tributaries. The risk of landslides delivering directly to the Oleman Creek or its tributaries from Areas II, III, and V is low to moderate.

There are isolated high landslide hazard locations in Area IV. Area IV drains to Hull Creek and to an unnamed tributary of the Luckiamute River. The risk of landslides delivering directly to Hull Creek or the Luckiamute River from Area IV is low.

There are isolated high landslide hazard locations in Area VI. Area VI drains to two unnamed tributaries of the West Fork of the Marys River. The risk of landslides delivering directly to the West Fork of the Marys River from Area VI is low.

The geotechnical specialist will be consulted if evidence of recent landslide activity is identified during sale layout.

X. RECREATION RESOURCES:

Recreation in the vicinity of the operation areas is mostly hunting.

XI. CULTURAL RESOURCES:

The operation area was checked for cultural resources with the district's GIS inventory. No cultural resources are located in the vicinity of the operation area.

XII. SCENIC RESOURCES:

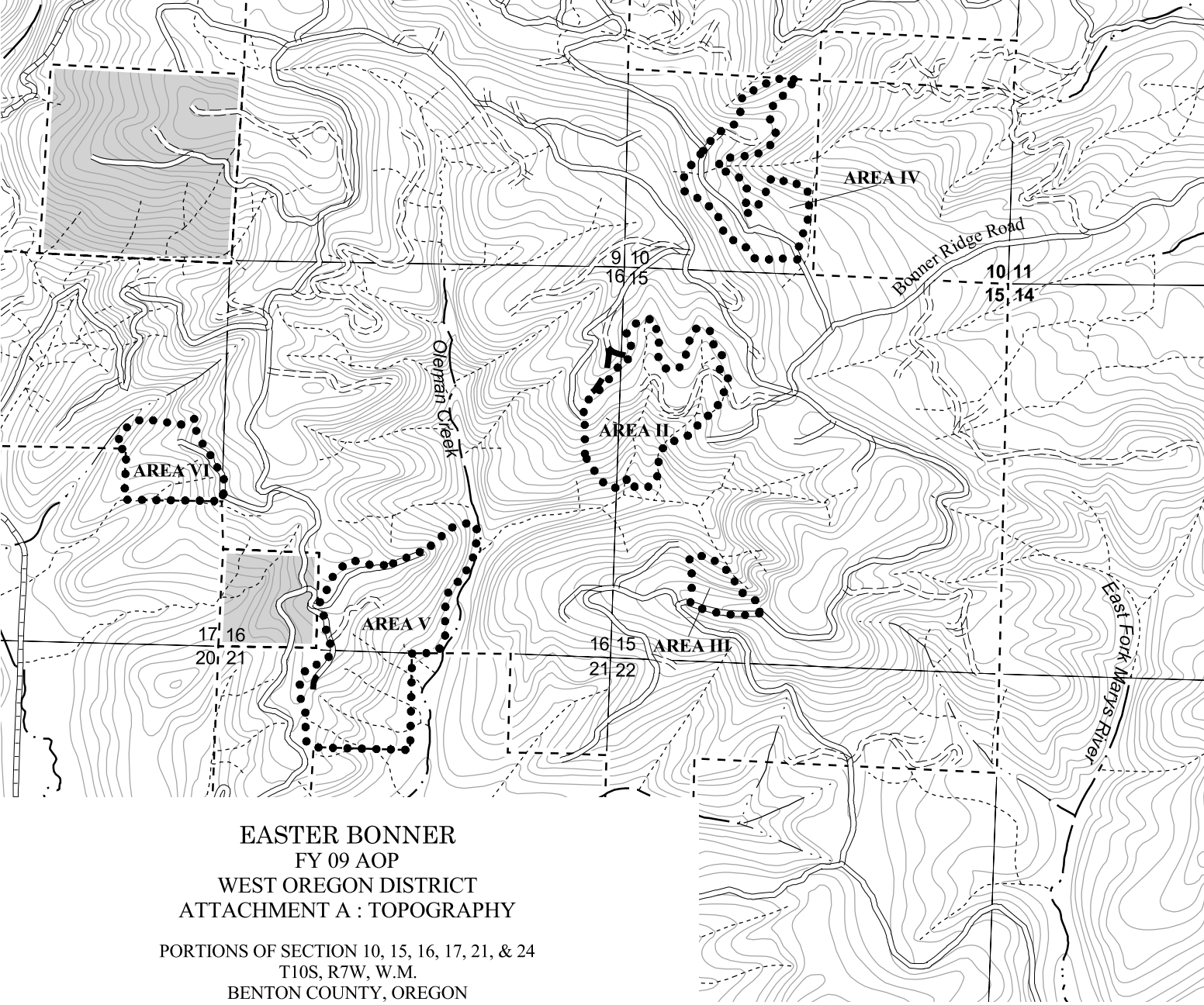
None of the operation areas are visible from paved roads.

XIII. OTHER RESOURCE CONSIDERATIONS:

No other resource considerations have been identified.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The operation area contains 14 acres of Special Stewardship (Aquatic and Riparian Habitat) associated with assumed Type F streams in Areas I and II and adjacent to Area V, and there are 70 acres of Focused Stewardship (Aquatic and Riparian Habitat) associated with these and the assumed Type N streams present in or adjacent to all of the units. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized.



EASTER BONNER
FY 09 AOP
WEST OREGON DISTRICT
ATTACHMENT A : TOPOGRAPHY

PORTIONS OF SECTION 10, 15, 16, 17, 21, & 24
T10S, R7W, W.M.
BENTON COUNTY, OREGON

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Legend
- Sale Area

Roads
- County Road
- Surfaced Road
- Unsurfaced Road
- New Construction

Streams
- Fish
- Nonfish
- Unknown

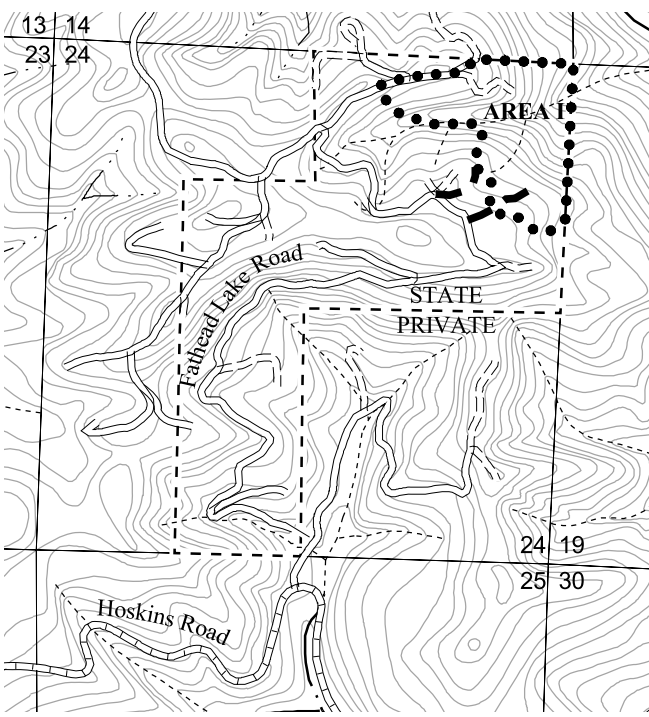
- State Forest Property Boundary
- Common School Land
- Forty Foot Contour Lines

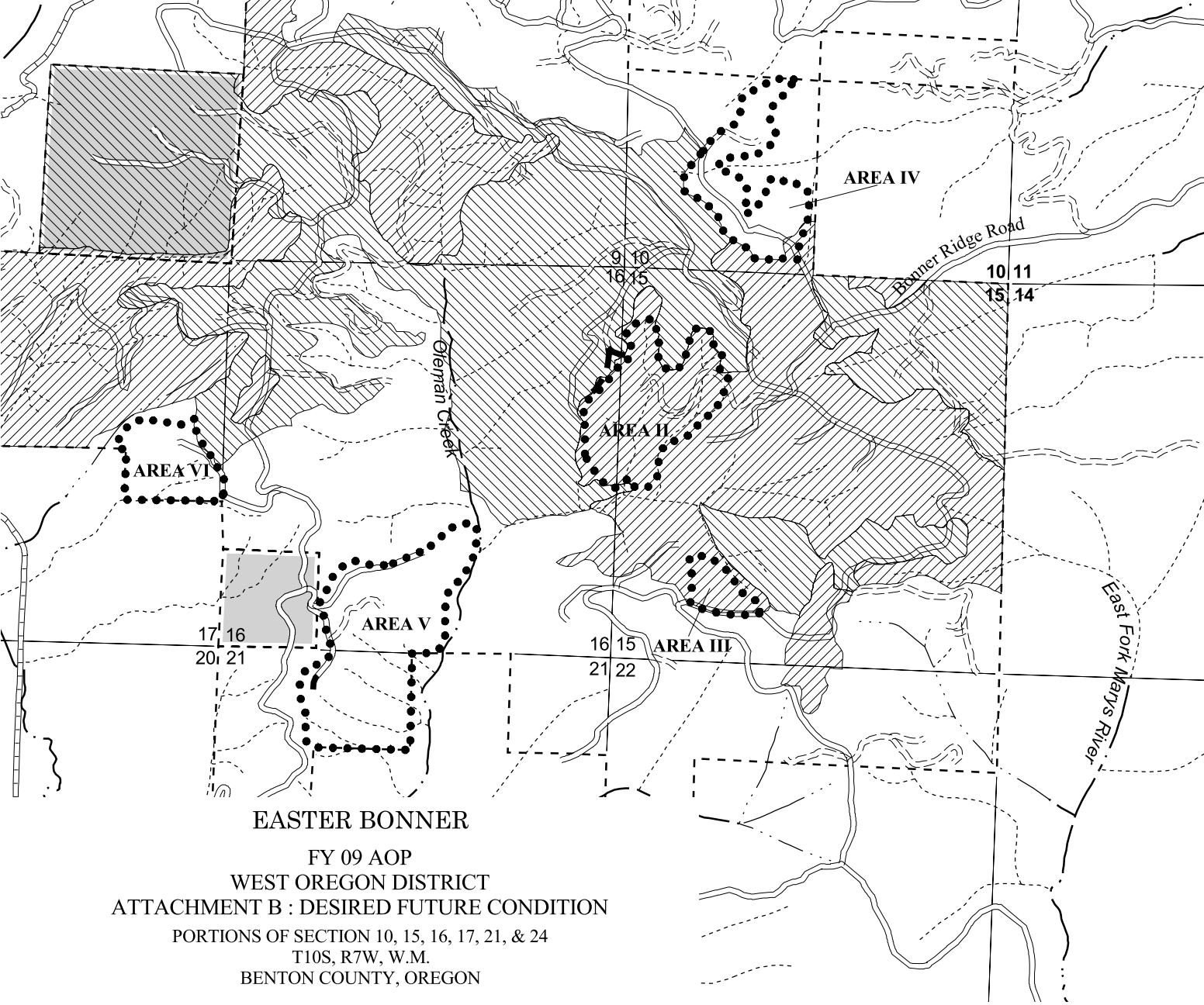
N

APPROXIMATE NET ACRES		
AREA I	43	ACRES (PC)
AREA II	52	ACRES (PC)
AREA III	10	ACRES (PC)
AREA IV	41	ACRES (PC)
AREA V	85	ACRES (PC)
AREA VI	26	ACRES (PC)
TOTAL	257	ACRES (PC)

Scale
1 : 24,000
1 inch = 2000 feet

2000 0 2000 4000 Feet





EASTER BONNER

FY 09 AOP
WEST OREGON DISTRICT
ATTACHMENT B : DESIRED FUTURE CONDITION

PORTIONS OF SECTION 10, 15, 16, 17, 21, & 24
T10S, R7W, W.M.
BENTON COUNTY, OREGON

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Legend
- Sale Area

Roads
- County Road
- Surfaced Road
- Unsurfaced Road
- New Construction

Streams
- Fish
- Nonfish
- Unknown
- State Forest Property Boundary
- Common School Land

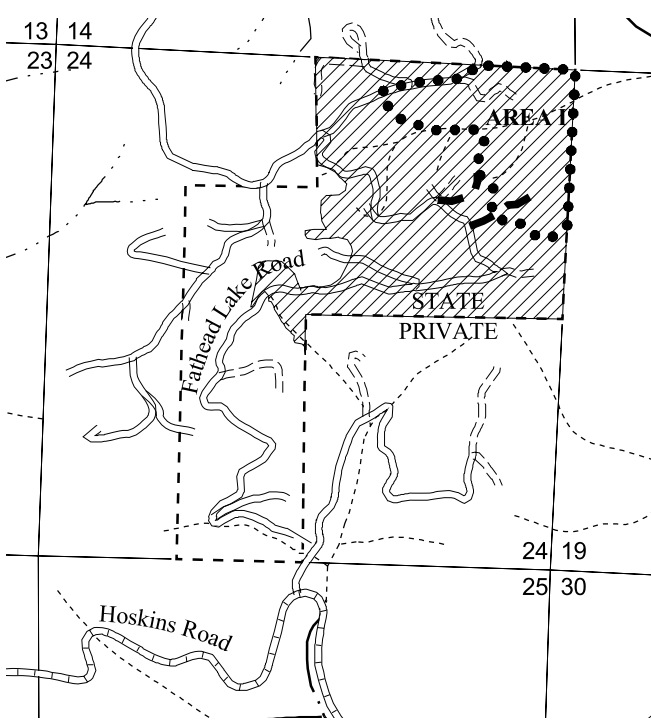
Desired Future Condition
- LYR
- OFS

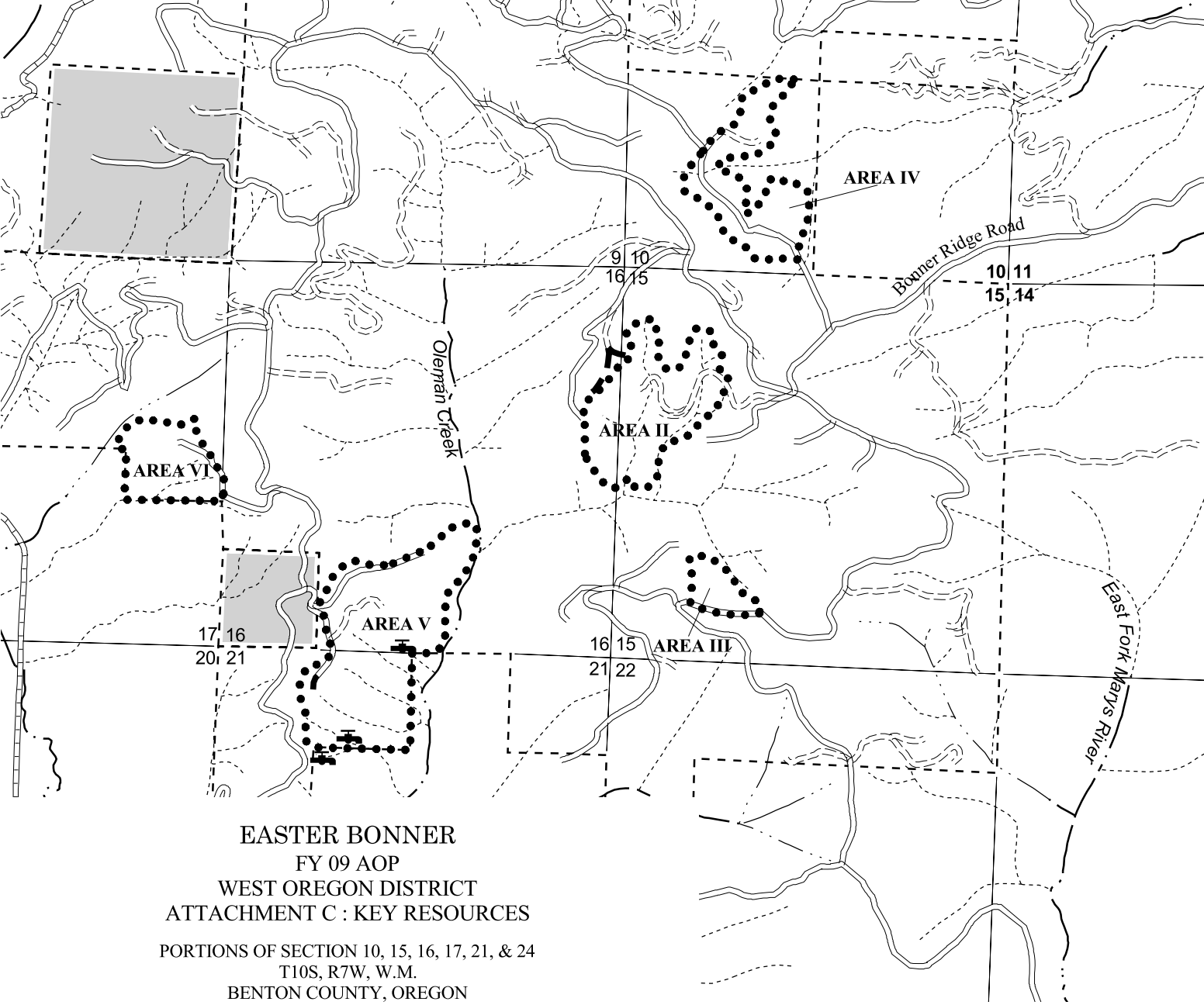
N

APPROXIMATE NET ACRES		
AREA I	43	ACRES (PC)
AREA II	52	ACRES (PC)
AREA III	10	ACRES (PC)
AREA IV	41	ACRES (PC)
AREA V	85	ACRES (PC)
AREA VI	26	ACRES (PC)
TOTAL	257	ACRES (PC)

Scale
1 : 24,000
1 inch = 2000 feet

2000 0 2000 4000 Feet





EASTER BONNER

FY 09 AOP
WEST OREGON DISTRICT
ATTACHMENT C : KEY RESOURCES

PORTIONS OF SECTION 10, 15, 16, 17, 21, & 24
T10S, R7W, W.M.
BENTON COUNTY, OREGON

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Legend

- Sale Area

Roads

- County Road
- Surfaced Road
- Unsurfaced Road
- New Construction

Streams

- Fish
- Nonfish
- Unknown

- State Forest Property Boundary
- Common School Land
- Domestic Intake

N

APPROXIMATE NET ACRES		
AREA I	43	ACRES (PC)
AREA II	52	ACRES (PC)
AREA III	10	ACRES (PC)
AREA IV	41	ACRES (PC)
AREA V	85	ACRES (PC)
AREA VI	26	ACRES (PC)
TOTAL	257	ACRES (PC)

Scale
1 : 24,000
1 inch = 2000 feet

2000 0 2000 4000 Feet