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NORTH CASCADE DISTRICT

2006 ANNUAL OPERATIONS PLAN

INTRODUCTION

This operations plan describes the activities planned for the Santiam State Forest during the 2006 fiscal year. The 2006 fiscal year runs from July 1, 2005 to June 30, 2006. This plan summarizes the activities and projects that will take place in FY 2006 to achieve the goals, strategies and objectives of the Northwest Oregon State Forest Management Plan, Cascade District Implementation Plan and the Santiam State Forest Recreation Management Plan as well as state and federal statutes and regulations, policies and voluntary measures.

The 2006 Annual Operations Plan is broken out into a Summary section that discusses commercial forest management operations, roads and engineering, non-commercial forest management operations, recreation, land exchange, planning, public information and education, and administration; Summary Tables, Pre-Operations Reports, Maps and a Public Involvement appendix that will be included in the final document.

A portion of this plan describes timber harvests and associated road work which will be designed and prepared for contract during FY 2006. The actual harvesting and associated road work described in these plans will not occur until one to three years after the end of FY 2006 due to the time required to set up the timber sales, write the timber sale contracts, advertise and auction the sales. The duration of a timber sale contract is generally two to three years.

The reforestation, young stand management, recreation management, road management, planning and information activities described within this plan are estimated objectives that will be met within FY 2006. The levels of these activities are based on current information and data. These management activity levels may be adjusted as new information becomes available during the fiscal year. For instance, initial tree planting levels are dependent upon harvest units being completed on a certain timeline. If those harvest units are not completed as estimated, the initial tree planting levels would be adjusted.

Acres in this plan are described as gross acres or net acres. Gross acres refer to the total area within the boundaries of an operational unit. Gross acres are the starting point for determining acreage. Acres reported in ArcView shapefiles for a unit are gross

acres. Net acres refer to the total area within the boundary of an operational unit minus the acres in roads, stream buffers, green tree retention buffers and other areas that will not be harvested. Net acres are used when determining harvest volumes.

As shown in Table 1 below, most annual operations plan objectives for fiscal year 2006 are within the ranges set in the 2003 North Cascade District Implementation Plan except for reforestation and pruning. The reforestation number is high due to some harvest units being prepared to plant ahead of schedule and a few harvest units that were not ready for planting in FY 2005. The pruning acres are above annual objective levels to keep on top of pruning white pine trees to prevent infection from white pine blister rust.

Table 1. Annual Operations Plan objectives compared to annual objectives identified in the 2003 North Cascade District Implementation Plan (Table A-1). All values are net acres.

Silvicultural Activity	IP Annual Objective		2006 AOP Objective
	Low	High	
Conifer Partial Cut	800	1200	1128
Conifer Clearcut	180	270	223
Hardwood Partial Cut	0	0	0
Hardwood Clearcut	0	0	0
Rehabilitation	0	0	0
Reforestation (Initial Planting)	115	345	416
Precommercial Thinning	150	250	250
Fertilization	1000	1400	1100
Pruning	0	50	92

INTEGRATED FOREST MANAGEMENT OPERATIONS

Timber Harvest Operations

Overview of Timber Harvest Operations

Definitions for proposed harvest types can be found on the “State Forest Annual Operations Planning” web page (http://www.odf.state.or.us/DIVISIONS/management/state_forests/aop.asp)

The FY 2006 timber harvest operations are in accordance with the objectives of the North Cascade District Implementation Plan. Summary tables and detailed pre-operation reports for the harvest operations are attached to this document.

Approximately 84% of the planned harvest operations are partial cuts while the remaining 16% are regeneration harvests. Of the partial harvests 85% are moderate, 13% are light

and 2% are heavy partial cuts. Approximately 60% of the planned partial harvests will occur in stands that are 60 years or older. The growing conditions of the residual stands will be improved by the partial cuts and the stands will continue along the trajectory of their desired future condition. These partial harvests will allow more light to reach the forest floor and allow the understory to develop. The heavy partial cut may create some openings as large as 1 acre. These openings will be planted with western red cedar and western hemlock. This will add to the species diversity within this unit as well as add a second cohort of trees.

All of the regeneration harvests will take place in overstocked, dense stands, stands that are not on a trajectory for complex stand structures, stands that are on a trajectory for complex stand structures but would not respond to thinning, or stands with root disease. Most of the regeneration harvests are modified clearcuts. Approximately 17% of the regeneration harvests are retention cuts. All of the retention cuts and an additional 5% of the modified clearcuts will take place in stands where complex stand structures are planned. These are stands with high height to diameter ratios and are overstocked and dense. These stands will not be able to grow the large trees needed for complex stand structures. Key structural elements will be retained within these stands to contribute towards large live trees, snags and down wood within the regenerated stand. All of the regeneration harvests will be reforested after harvest with either one or a mixture of the following tree species: Douglas-fir, western hemlock, western red cedar, noble fir and red alder. In some stands this will add to the species diversity.

The partial harvests and regeneration cuts proposed in this operations plan comprise 3% of the acres within the Santiam State Forest.

The guidelines for managing structural habitat components listed under Landscape Management Strategy 3 in the *NWO State Forests Management Plan* (pg. 4-52) will be followed for the FY 2006 Annual Operations Plan. In proposed commercial forest management operations, existing down wood and snags will be retained. The management goal is to have at least two snags per acre retained within an operation at the completion of harvest activities. Residual live trees retained in conjunction with regeneration harvests will serve as a source of future snags and down wood and provide legacy trees for the new stand being regenerated. The snags and down wood left in all operations also support future forest needs. The snags provide habitat for cavity-using species and provide a future source of down wood. The down wood provides habitat for wildlife species and enables other key functions such as nutrient cycling.

Additional information on the proposed operations can be found in Tables 1, A-1, and A-2 located in Appendix A and in the individual pre-operations reports located in Appendix B.

Table 2. Stand Structure Development – This table summarizes how the Timber Harvest Operations in this AOP will contribute to achieving the district’s desired future condition. All values are in net acres.

Stand Structure	REG	CSC	UDS	LYR	OFS	GEN¹
Current	0	222	1124	5	0	
Post Harvest²	223	16	1107	5	0	
Desired Future				488	374	489

1. General (GEN) is not a stand structure, but identifies those stands that are not targeted for Layered or Older Forest Structure in the district landscape design. These stands may develop into any of the five stand structures.
2. The Post Harvest stand structure is an estimate of how the stands will develop in five to ten years after the operations are completed.

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 District follows the *Oregon Forest Practices Act* rules (629-24-542) for soil protection. These rules define the best management practices for protecting soil when conducting timber harvests, prescribed burning or road construction activities. The District uses the professional expertise of foresters and forest engineers to evaluate proposed activities. The District also uses geotechnical expertise in planning and carrying out management activities, especially when steep slopes and other high landslide hazard locations require this.

All management activities will avoid take of Northern Spotted Owls by applying *Procedures Leading to Endangered Species Act Compliance for the Northern Spotted Owl (USWS 1990)*, subsequently rescinded. These measures remain the best available information for avoiding take. These guidelines call for surveys of suitable habitat, protection of core areas, and maintaining suitable habitat within owl circles. Abiqua Basin Thin and Kilo Thin are located within Northern Spotted Owl sites. Biological assessments of the Northern Spotted Owl sites have been prepared by ODF staff biologists. These assessments will be reviewed by both the Oregon Department of Fish and Wildlife and the US Department of Fish and Wildlife. The biological assessments and comments from both agencies will be reviewed by the Program Director, Area Director and District Forester who will then determine how to proceed with the planned operations.

Summary of Operations by Basin

Table 3. Summary of Timber Harvest Operations in each basin. All values are in net acres.

Basin	2006 AOP		Cumulative Operations ¹ (FY 02—06)	
	Partial Cut	Clearcut	Partial Cut	Clearcut
Butte Creek	0	0	973	125
Cedar Creek	489	78	1202	132
Crabtree	0	0	0	255
Green	0	0	436	2
Mad Creek	271	49	969	119
Rock Creek	368	96	1053	328
Scattered	0	0	505	213

1. The Cumulative Operations include all Timber Harvest Operations, prepared and proposed, under the current implementation plan period (July 1, 2001 through June 30, 2011). Operations or units that were proposed, but have been subsequently dropped, are not included in the total.

Butte Creek Basin

There are no planned harvest operations within this basin for FY 2006.

Cedar Creek Basin

There are three planned harvests within this basin for FY 2006.

Cedar Forks Combo: this is a 229 acre combination sale broken out into seven areas. There are 151 acres of moderate partial cut and 78 acres of modified clearcut proposed. The stands within this operation range from 63 to 120-years-old. The majority of the operation is currently classified as Understory with 5 acres classified as Layered. This operation will change 78 acres from Understory to Regeneration.

Abiqua Basin Thin: this is a 206 acre moderate partial harvest. This 34-year-old stand is currently classified as Understory. This stand will remain classified as Understory following the harvest.

North Silver Creek Thin: this is a 132 acre partial harvest that is broken into three operational areas. Approximately 116 acres are currently classified as Understory with the remaining acreage classified as Closed Single Canopy. The stands within this operation range from 50 to 60-years-old. Area I will be treated with a moderate partial cut while Areas II and III will receive light partial cuts.

These operations will increase the levels of Regeneration stands by 2% and decrease the Understory stands by 2% within the Cedar Creek Basin.

Special Remarks: Abiqua Basin Thin is located within a Northern Spotted Owl Pair site. A draft biological assessment has been prepared by an ODF staff biologist. The draft biological assessment states that the Abiqua Basin sale will not impact "suitable" habitat.

Crabtree Basin

There is one planned alternate harvest within this basin for FY 2006.

Crabtree #6 Alt.: this is a 62-year-old stand currently classified as Closed Single Canopy. This operation will be a modified clearcut. This stand contains the root disease *Phellinus weirii*. The root disease areas will be replanted with a mixture of western hemlock and western red cedar trees. Douglas-fir trees will be planted outside of the root disease areas.

This operation will convert 111 acres of Closed Single Canopy stands to Regeneration stands. This would increase the number of Regeneration stands within the basin by 5% while reducing the number of Closed Single Canopy stands by the same number.

Green Basin

There are no planned harvest operations within this basin for FY 2006.

Mad Creek Basin

There is one planned harvest and one alternate harvest operation within this basin for FY 2006.

Mad Burbank Combo: this is a 320 acre combination sale broken into five different operational areas. There are 271 acres of moderate partial harvests, 38 acres of retention cuts and 11 acres of modified clearcut. The stands range in age from 74-years-old to 88-years-old. All of the stands are currently classified as Understory. Approximately 49 acres of those Understory stands will be converted into Regeneration stands.

Potato Hill Alt: this is a 85 acre partial harvest. This 95-year-old stand is currently classified as Understory. The operation is a heavy partial cut.

These operations will alter the basin amounts of Regeneration and Understory stands by less than 1%.

Rock Creek Basin

There are 3 planned harvest operations within this basin for FY 2006.

Lookout Below Combo: this is a 134 acre combination sale broken into three different operational areas. The majority of these 70-year-old stands are classified as Closed Single Canopy with approximately 10 acres classified as Understory. Approximately 96 acres of this operation will be a modified clearcut while the remaining 38 acres will be a moderate partial cut.

Snake Charmer Thin: this is a 170 acre partial harvest broken up into three different operational areas. The operation is made up of stands ranging in age from 74 to 96-years-old. Approximately 88 acres of the operation are currently classified as Understory with the remaining acres classified as Closed Single Canopy. Approximately 144 acres will be treated with a moderate partial cut while the remaining 26 acres will be treated with a heavy partial cut.

Kilo Thin: this is a 159 acre partial harvest broken up into two different operational areas. This operation is made up of stands ranging in age from 27 to 69-years-old. Both areas will receive moderate partial cuts.

Special Remarks: Kilo Thin is located within a Northern Spotted Owl pair site. A biological assessment is being prepared by the NWO area biologist.

Scattered Basin

There are no planned harvest operations within this basin for FY 2006.

Forest Roads Management

Overview

The primary transportation focus is to protect and secure access for forest management activities. Other resource management and other users are also considered. The transportation system provides access for timber removal, recreation, fire control and removal of other forest products to name a few of the uses. The District transportation system is managed to provide efficient and effective access that facilitates obtaining the greatest permanent value from the forest for the people of Oregon. This AOP represents Level III planning as described in the Forest Roads Manual, pg. 2-2.

An important component of the transportation activities planned in FY 2006 will be to maintain and improve current access to a condition that minimizes resource impacts to water quality and meets ODF's access needs. A high priority and special concern for

road improvement is to protect or improve water quality. The activities below will accomplish this as well as meet the transportation goals. The District Implementation Plan defines our goals for surfacing. Higher use mainline roads and some collector roads are targeted to have a 2 to 3 inch minimum lift of crushed rock surfacing. This includes re-surfacing of roads to replace worn running surfaces and/or to upgrade pit-run roads by adding a more serviceable crushed rock running surface. Roads with crushed rock make it possible to create and maintain a road surface shape that will drain well and allow for efficient travel. Good surface drainage is critical to minimizing sedimentation from roads and for protecting the subgrade to allow winter hauling where appropriate. Along with good surface drainage, once the water is off the road and into a ditch it needs to be directed in a way to minimize impacts to water quality. Cross drainage will be reviewed on essential haul routes, tributary roads and will be upgraded where necessary, including disconnecting the ditches from live streams. The guidelines found in the ODF Roads Manual are followed to decide where additional culverts will be installed. Stream crossings will be analyzed on haul routes and the connecting spur roads to make sure they meet 50-year flow event minimums. Roadside brushing and roadside spraying will be conducted to control encroaching vegetation.

Several new roads will be constructed to provide access for commercial forest management operations planned within the 2006 fiscal year. All new road construction for this Annual Operations Plan falls into the spur road category and will be evaluated during sale prep for closure or vacation after the sale is completed. Spur roads needed for future management activities but not for immediate use may be put in a restricted status by partially vacating or simply closing the road. This will help to reduce the maintenance cost as well as water quality impacts from those roads. All new road construction will be designed, reviewed and administered by qualified forest engineers. Roads will be rocked if winter use is anticipated, typically during cable logging operations. Roads within some of the predominately ground harvestable operations will be restricted to summer use only and those roads will generally not be surfaced. There are exceptions when it may be desirable to rock roads primarily for reforestation access that must occur in the winter.

The transportation activities for the 2006 fiscal year will fall within fiscal year budget instructions. The high cost activities will be rock-crushing projects to improve or maintain higher use roads. These projects are achievable with the proposed sales for this plan and stay within current guidelines for project expenses.

Small quantities of noxious weeds such as Tansy ragwort, Scotch broom, and a variety of thistles are present around the District. If significant populations of noxious weeds are determined to be present in the future on the District, a formal plan will be created and implemented to address their control.

Additional information regarding roads and engineering can be found in Table A-3 located in Appendix A.

Table 4. Summary of Road Management Activities. All values are in miles.

	Mainline rd (High Use)		Collector rd (Medium Use)		Spur rd (Low Use)	
	AOP	IP ¹	AOP	IP ¹	AOP	IP ¹
Road Construction	0	0 - 0.4	0	0.2 - 0.3	1.9	4 - 5.2
Road Improvement Active	3.83	1.6 - 15	7.34	4.9 - 6.1	0.21	2.4 - 3.6
Road Closure/Vacation	0	0 - 0.5	0	0 - 0.5	1.06	4.6 - 5.8
Road Maintenance - District ²	60		30		20	

1. These are annual estimates derived from Table 6 Potential Road Activities FY 2001-2011 of the 2001 District Implementation Plan. The values here were derived by dividing the values in the Potential Road Activities table by 10.

2. The road maintenance estimates include only the work to be completed during Fiscal Year 2006 by the District road crew or service contract. Estimates of road maintenance were not made in the Implementation Plan.

3. This is a broad estimate of the road maintenance that may be accomplished during the fiscal year, through active commercial operations. However, the exact amount can not be predicted at this time.

Road Construction

All of the road construction described for the planned commercial forest management operations described within this Annual Operations Plan will be designed as a spur road. These will be short roads, generally less than ½ mile in length and will be built to standards to minimize the road footprint. Road subgrade widths will be 14 to 16 feet wide and either ditched or out-sloped. Since many of the proposed operations are partial harvests, there will be a need to use most of the roads again for future management activities. Some of the roads built will be closed (not vacated) when the operation has been completed. Closed roads will be put in a condition that will require minimal or no maintenance until needed again. This may involve grass seeding and the installation of water bars, tank traps or other road barriers to keep vehicles off the road. Spur roads into completed clear-cut operations will be vacated when it is determined that the road is no longer needed, say for approximately 15 years or more. Stream crossing structures will be removed to eliminate the possibility of a stream restriction or maintenance problem. In some cases the access in clear cuts will not be vacated to assist with the reforestation effort. The net effect of road building and road vacating will be a gain of 0.84 miles of spur roads on the District.

Road Improvement

Approximately 15.67 miles of mainline & collector roads will be resurfaced with crushed rock. The roads scheduled for resurfacing have been determined to need additional surfacing for several reasons. Most often the road has been judged to be unsuitable or undesirable for wet weather use. In some cases the base rock is close to being exposed or anticipated use of the next timber sale warrants additional surfacing. The primary goals

for resurfacing are to improve surface drainage of the road, provide a smooth running surface and provide enough surfacing rock for future maintenance gradings.

The North Block of the Santiam State Forest will have a roadside spray project consisting of approximately 20 miles of road. The South Block was done in the 2004 plan year, and will be included where necessary with this roadside spray project.

Road Access Management

Generally speaking all Oregon Department of Forestry roads are open to the public without restriction. Roads that are not needed for future forest management or for extended periods of time (more than 15 years) are candidates for some form of closure to take the road out of active use. Roads that pose a high risk of damage to water quality are candidates for closure. Closing and vacating roads saves on the District's maintenance cost and helps to minimize impacts to the environment from roads. Not only do these roads cause a maintenance liability; some of these roads become opportunities or locations for dumping of trash. Many of the short spurs constructed for timber sale use will be reviewed for closure. Before any road is scheduled for closure a "Road Proposed for Vacating" sheet is routed to all known interested management sections within the District to make sure roads are not closed that are needed. In addition to reviewing the roads constructed for this year's operating plan, other roads outside a commercial forest management operation area have been considered. Road vacation projects have been identified on three of the 2006 timber sales.

Road Maintenance

The road maintenance for roads being used for timber sale access becomes the responsibility of the timber sale purchaser once sale activity has begun. Timber sale purchasers during this operating plan will maintain approximately 58.8 miles of road. This primarily involves grading roads due to purchaser's use and maintaining drainage systems. Road grading, ditch cleaning, culvert inlet and outlet cleaning and spreading patch rock as needed during timber haul will all be done by purchasers.

The District roads not under timber sale contracts are maintained by the District Equipment Operator using a grader, loader, lowboy and a dump truck. Road grading over the entire District is covered at least once during the year with some roads graded twice. Small rock projects will also take place to reinforce weak subgrades or cover road surfaces producing sediment. The District road crew also responds to emergencies such as unplugging culverts, removing small slides, clearing slough from ditch lines and blocking roads when necessary. A backhoe or excavator will be rented for approximately a 1/2 month to clean out culvert catch basins over most of the District as well as any miscellaneous projects that come up.

By combining the timber sale road activities and District road crew activities together the following road maintenance work estimates are expected:

- 168.8 miles of road will be graded
- 15.7 miles of road will be resurfaced with crushed rock
- 20,000 cubic yards of crushed rock will be spread on roads
- 3,000 cubic yards of crushed rock will go into stockpiles
- 7.7 miles of road will be brushed
- 20 miles of road side will be sprayed
- 30 miles of culvert catch basins will be cleaned
- additional cross drains will be installed
- Slough and slide removal will take place as needed
- Road surface patching will be done as needed

Land Surveying

Approximately 4.25 miles of property line will be posted and blazed using contract crews and District personnel for this sale plan.

Young Stand Management

Young stand management operations occur in forest stands between the ages of 0 to 20 years. These operations tend not to produce revenue, but are essential in establishing a healthy forest. The objectives of young stand management are to achieve the goals for reforestation, stand structure development, and future revenue generation. The 2006 fiscal year budget provides the necessary funding to help meet the desired future conditions for each stand.

Planned operations necessary to meet landscape and stand structure targets include site preparation, planting, vegetation management, tree protection, pre-commercial thinning and fertilization.

Several smaller and short-term reforestation projects are well suited to using inmate crews from South Fork, a correctional facility that is a cooperative effort between the Department of Corrections and ODF. These reforestation projects tend to be one-day projects such as planting one to two acres or pruning small acres of white pine to protect them from blister rust. South Fork Crews work well in filling the niche left open when projects are too small to contract out. Prior planning is needed to schedule South Fork crews for these projects; although some emergency situations can be accommodated.

The following is a brief summary of each individual activity. Additional information on young stand management can be found in Tables 1 and A-4.

Rehabilitation

No rehabilitation projects are planned for fiscal year 2006.

Site Preparation

Site preparation is an important tool used in establishing a stand. Site preparation can effect seedling establishment and survival. Site preparation will help with reforestation efforts to move a stand into a Regeneration classification. Prescribed fire (burning of logging slash), mechanical (piling of slash) and use of chemicals are just a few tools used in site preparation. The goal of burning or piling logging slash is to eliminate or manipulate logging debris in order to create plantable areas, treat competing vegetation and reduce animal damage. Chemical site preparation is used to manage unwanted vegetation that would compete with newly planted seedlings. Planting spot development is used when burning is not a preferred method due to shallow soils or flat slopes. All site preparation activities are tools to contribute to moving a stand towards its desired future condition.

Basins:

Butte Creek:

None planned

Cedar Creek:

Underburn – 198 acres

Planting spot development – 73 acres

Pile burns on landings – 313 acres.

Crabtree:

Planting spots – 43 acres

Landing pile burning – 157 acres

Chemical – 157 acres

Mad Creek:

Planting spots – 66 acres

Slash pile in unit – 13 acres

Landing pile burning – 53 acres

Chemical – 66 acres

Rock Creek:

Broadcast burning - 73 acres

Planting spots – 74 acres

Slash piles in unit – 27 acres

Chemical treatment - 158 acres

Landing pile burning - 439 acres

Scattered:

Broadcast burn – 37 acres

Slash pile in unit – 79 acres

Landing pile burning – 116 acres

Chemical – 33 acres

Special Concerns: To protect air quality, all burning will be done in accordance 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.

When using herbicides on State Forests for site preparation needs, EPA approved herbicide product labels and the Forest Practices Act will be strictly adhered to. Chapter 629 of the FPA has been written to ensure the protection of water quality and site productivity. Mechanical site preparation will also be monitored during use to ensure that the Forest Practices Act requirements are met for soil protection. Soil protection is needed to ensure site productivity is maintained.

Planting

Reforestation is the establishment of seedlings following regeneration harvests, patch cuts, root disease removal, severe blow down events, and, in certain cases, partial harvests. Planting helps meet the goals of reforestation through planting a variety of tree species in stands. The mixing of tree species helps achieve the desired future conditions within each management basin. The various activities of initial planting, interplanting, and underplanting provide different outcomes to achieve these future conditions.

Initial planting activities establish the seedlings needed to begin a regeneration stand. The species of seedlings planted and the density at which they are planted will influence future management activities within the stand. The initial planting sets the path for the stand. Various mixes of tree species are used depending upon the condition of the site. For example, Douglas-fir and noble fir are planted at higher elevations in units that do not contain root disease. Hardwoods and root disease resistant conifers are planted in units which contain root disease.

Interplanting is used when initial reforestation has been less successful than desired. Interplanting is sometimes needed to ensure that the reforestation requirements of the FPA are met. Planting additional trees within an area will continue the stand along its desired management path as well.

Underplanting involves planting seedlings beneath a canopy of taller trees. Most species used in underplanting are shade tolerant and are used to help achieve a desirable understory needed for Layered or Older Forest Structure stands. This activity can likewise introduce a desired native species into a stand to increase stand diversity.

Basins:

Butte Creek:

Inter-planting – as needed
Underplanting – 100 acres

Cedar Creek:

Underplanting – 195 acres

Crabtree:

Initial planting – 159 acres

Mad Creek:

Initial planting – 66 acres

Rock Creek:

Initial planting – 158 acres
Inter-planting – as needed

Scattered:

Initial planting – 33 acres
Inter-planting – as needed
Underplanting – 71 acres

Vegetation Management

Vegetation management activities include the use of aerial, backpack and hand applications of chemicals to control brush, as well as the removal of brush using chainsaws, mechanized equipment or hand tools. The various tools used control the growth of unwanted vegetation within stands classified as Regeneration. However, the same tools are used in stands of other classifications. The objective of vegetation management is to favor the survival and development of desired species or to remove invasive plant species.

Basins:

150 acres - The units will be identified at a later date and will be in various management basins.

Tree Protection

Tree protection is used in areas where animal damage is expected to reduce the number of seedlings below desired levels. An initial means of protection is placing a vexar tube over a newly planted seedling and supporting the tube with a pin. Vexar tubes are reserved for tree species ravaged by browsing animals.

Basins:

Butte Creek: 34 acres

Crabtree: 43 acres

Mad Creek: 12 acres

Rock Creek: 6 acres

Scattered: 20 acres

Precommercial Thinning (density management)

Due to successful reforestation efforts and to an influx of natural seedlings, forested stands can become crowded. Tree removal is needed to reduce the crowding. A pre-commercial thinning project removes some of the weaker, slower growing trees making room for the stronger, larger trees to grow. Species selections are based upon the desired future condition for each particular stand. The timing of the pre-commercial thinning and the residual number of trees to remain are influenced by the desired future condition as well. The trees in these stands have not reached commercial size. Those trees cut are left on site for nutrient cycling.

Basins:

Cedar Creek: 250 acres

Special Concerns: Leaving the cut trees within the stand creates a potential fire hazard. The slash resulting from the cut trees decomposes quickly so that the hazard is short term.

Fertilization

Sustainable tree growth can only happen when trees have enough sunlight, water and available nutrients. When one of these three components is missing, the growth of the tree slows or stops altogether. Since sunlight and water are a part of Nature and can not be controlled, not much can be done to ensure their availability. Nutrients, on the other hand, can be controlled through the broadcast aerial application of fertilizer. This is the quickest, most efficient, and accurate method to use in dispersing fertilizers on forestlands. Currently the stands are selected based upon past silvicultural prescriptions. The stands selected for fertilization have been previously thinned and are planned to be thinned again in 8 to 10 years. Fertilizing stands will allow units to reach their desired future condition sooner by increasing the tree growth within those units.

Basins:

Rock Creek: 1,100 acres

Special Concerns: The aerial application of fertilizer is carefully monitored to ensure the fertilizer is placed where it was intended to go. Streams are identified and buffers noted where no fertilizer application will take place. All stands are examined to determine if portions of a stand need to be removed from the fertilization project since not all species respond to the addition of nitrogen. Red alder, as an example, produces nitrogen through nodules on the roots and has no need for additional nitrogen. Therefore, alder patches would be removed from a fertilization project.

Pruning

White pine trees need to be pruned to help prevent the trees from being infected by white pine blister rust. All of the units are on the second rotation for pruning and will be pruned to a height between 2-6 feet. Pruning of the white pine will continue until a height of at least 8 feet pruned is achieved. Some trees in the unit have the white pine blister rust in them. These trees will be severed at ground level to limit the spread of the blister rust. The units are small in acres and will be expensive to put under a service contract. Therefore, South Fork Inmate crews will prune the pine stands.

Basins:

Butte Creek: 1 acre

Cedar Creek: 27 acres

Green Basin: 24 acres

Mad Creek: 31 acres

Scattered: 9 acres

Recreation Management

Overview of Recreation Management

The activities described under this Recreation Management section are designed to meet the current demand for recreation on the Santiam State Forest. This will increase the recreation capacity of the District. Funding for the described activities will be from the 2006 fiscal budget, however we expect volunteers to contribute labor and expertise to our program. We will also utilize inmate crews from the Oregon Department of Forestry's South Fork Camp. Additional information regarding recreation can be found in Table A-5.

Currently recreational use on the Santiam State Forest varies greatly by location. The two most visited areas are Butte Creek Falls and the High Lakes area, which consists of Rhody and Butte Lakes. The third most visited location is the Shellburg Falls area. Recreation visits at the High Lakes area and Butte Creek Falls is based on observation and estimated at 60 groups per weekend during the summer months. (A group is

considered one vehicle.) This number constantly rises as awareness of the area increases.

Recreational use has also increased within the Shellburg Fall Recreation area. Recreation staff has observed 30 to 60 visitors per weekend during the summer months. The Shellburg Falls Campground has been completed and the Shellburg /Silver Falls Trail will open in the spring of 2005. Use at this site is expected to increase during the upcoming year.

The three recreation sites mentioned above see the most recreational use. However, other attractions such as the Natural Rock Arch and Rocky Top see limited visitation currently due to the limited access to these areas. The Rock Creek and Mad Creek Basins receive moderate levels of dispersed recreation and rogue trail use. However upgrades to access roads leading to Natural Rock Arch and Rocky Top, and the development of a new Equestrian Camping Facility and multi-use trails in the Rock Creek Basin will increase visitations to these areas in 2005.

The primary recreational activities on the Santiam State Forest include hiking, equestrian use, biking, OHV use, hunting, camping, fishing, and sight seeing.

The Recreation Management Plan was finalized during the summer of 2000. The short-term goals and directives are being implemented as time and staffing allows. The focus during the upcoming year is to upgrade and enhance existing facilities, and to complete existing projects. This upcoming year the South Block area will see the most activity as camping facilities are completed and non-motorized trails developed. As determined in the Recreation Management Plan, camping facilities, multi-use trails and day use areas are being developed to ODF standards. Our law enforcement contract with the Oregon State Police will continue to ensure visitor safety and protect forest and recreational resources. An increase in District Recreation personnel presence and public education efforts has been an influence in reducing visitor conflicts and environmental degradation.

As called for in the Recreation Management Plan, environmental interpretation and volunteer programs have been established. Interpretive programs were given to an estimated 200 participants during the summer of 2004. The Santiam State Forest volunteer program has expanded in the last year and will continue to grow. The previous year the District had 7 volunteers. Currently there are 22 volunteers signed up with the District. Our continued partnership with the Silver Falls Chapter of the Oregon Equestrian Trails club (OET) has been important in the development of equestrian and other non-motorized trails and facilities. OET donated nearly 200 hours of volunteer service during 2004.

Most recently ODF has formed a partnership with the Mountain Street Dirt Crew (MSDC) free-ride mountain biking club. MSDC is working with ODF to create new mountain biking opportunities near the Shellburg Falls Recreation area.

Recreation staff will coordinate with our current volunteer partners and strive to form new relationships with a wide array of interests groups, local citizens and recreationists to our forest. During the upcoming year ODF will organize and administer several volunteer workdays, new adopt-a-trail programs and recreation site stewardship programs.

Organized events will be held on the Santiam State Forest. Recreation staff will work closely with event organizers to determine the compatibility of desired events. The staff will ensure that forest resources are protected by enforcing permit requirements. A pre and post event inspection of the event area will be completed by the District. Staff will also ensure that event participants have an enjoyable experience.

Law enforcement will continue to be an important part of recreation management. Two officers will patrol the forest for a total of 2,000 hours. Most of these hours will occur during the summer months. Law enforcement will focus mainly on the most heavily used recreation areas. The presence of law enforcement will increase visitor safety, reduce visitor conflicts and reduce negative impacts from vandalism to facilities and forest resources.

During 2005 the Oregon Department of Forestry will work with the Santiam State Forest Recreation Citizen Advisory Committee who will assist with the development of a 10-year recreation plan. We will also review the progress made on our current recreation management plan as we chart our path for the next ten years. We hope to start the planning process during the spring of 2005 and finish the plan in the winter of 2005.

The South Fork inmate labor crews will be used when possible for trail construction, campground maintenance, garbage clean-up and facility construction.

Facilities (Campgrounds, View Points, Trail Heads, etc.)

Campsites:

The Oregon Department of Forestry will design and construct a maximum of two new campsites at Rhody Lake within the High Lakes Recreation area. These primitive campsites will have walk-in access with picnic tables and fire rings. Currently the single campsite at Rhody Lake does not meet the recreation demand. The two new sites will allow more visitors to enjoy camping at the lake without altering the primitive, secluded atmosphere found at Rhody Lake.

Day Use Areas:

One new day use area will be developed at the Butte Lakes which visitors may access from the High Lakes Trail. This site will include two benches, an informational kiosk, and picnic area near the lakes.

Trailheads:

One new trailhead will be developed to compliment our High Lakes Trail. This trailhead/day-use area will include a bench installed on a viewpoint over looking the recreation area. An interpretive kiosk and picnic area will also be installed.

Interpretive Sites:

Two interpretive sites will be developed. One will be located along the Shellburg Creek Trail on the Snag Loop. Interpretive signs will be designed and installed discussing fire within a forest, decomposition, and information about the wildlife habitat provided by these large dead snags.

The other site will be at the Butte Creek Falls Trail. Interpretive signs will be placed along the trail to educate the public about such things as forest flora and fauna and the geology that formed the waterfalls.

Other Sites:

Two other projects will take place in the Shellburg Falls Recreation area. A guardrail will be installed at the lower Shellburg Falls Trailhead. And beneath the upper Shellburg Falls a retaining wall and terraces will be installed to protect the current trail and minimize erosion.

The campgrounds and trailheads located at Butte Creek Falls, Shellburg Falls, Rock Creek, the Natural Rock Arch and Rocky Top will be maintained to ODF standards. District Recreation staff will remove litter and debris. Informational signs will be updated regularly and damage from vandalism repaired. The vault toilets will be cleaned weekly by District staff and pumped seasonally by private contractors.

Trails

Currently five miles of new trail construction, and improvement to existing trails in the Rock Creek area is planned. This construction will be part of a 10-mile non-motorized multi-use trail loop for horses, hikers and bikers. Historically local equestrian riders have utilized trails within the Rock Creek and Mad Creek Basin. ODF has recognized the current and growing need for new multi-use non-motorized trails within the Santiam Canyon. The Oregon Department of Forestry working with the Bureau of Land Management, Oregon Equestrian Trails, mountain bikers and hikers will develop a safe, maintained trail system in this area in order to provide a quality trail for an array of diverse non-motorized user groups. This trail will coincide with the completion of our Santiam Horse Camp equestrian camping and day-use facility. ODF will utilize secondary roads and single track trail to create a 10-mile loop. Development and construction of this trail will be made possible with the assistance of volunteers, inmate crews and contract labor. A sign plan will also be implemented to direct trail users and inform and caution motorist and other forest visitors to the area.

Two miles of trail survey and design in the Natural Rock Arch and Rocky Top area will be completed in order to find a safer more sustainable trail to Natural Rock Arch and if

feasible to locate and provide a connection from Natural Arch to the Rocky Top trail. Not only do these trails provide access to two unique and beautiful geological features, we also hope these trails within the Green Basin will one-day provide a starting point for future link to the nearby USFS trail. Oregon Department of Forestry will continue to investigate this possibility during the upcoming year.

The current trail system in the District will be monitored and maintained by the recreation staff. Trails will be inspected by staff weekly during the summer and monthly during the winter months.

Land Exchange

There are no on going land exchanges on the District currently. There are no land exchanges planned to begin during the FY 2006.

Other Integrated Forest Management Operations

Firewood

The North Cascade District has a firewood program that is tied to the completion of timber sales. Timber sale contracts require any non-merchantable wood or cull material that has been yarded to the landing and is suitable for firewood to be placed in a pile. This wood is then made available to the public by issuing a permit for two cords of firewood. There is a great demand by the public for firewood. Some years there is an abundant supply of firewood. Other years there is very little firewood available.

Offering firewood permits to the public involves the timber sale administrator, clerical staff, and management. The time spent on each timber sale area opened up for firewood is approximately eight hours a week by the sale administrator, sixteen hours a week by the clerical staff, and four hours a week by managers. Law enforcement also spends time checking permits out in the firewood areas. In a typical year, the firewood season lasts for approximately three months. Areas with limited public access are set aside for commercial firewood cutting or special interest groups such as church organizations or community assistance groups. Overall, the firewood program on the Santiam State Forest is highly visible and provides an important face-to-face interaction with the public.

Miscellaneous Forest Products

The North Cascade District has an active miscellaneous forest products program on State Forest lands, and recently revised most of the policies and procedures related to harvest of these products. Part of the District's landscape management objectives is to provide for diverse stand types that over time can produce a sustainable source of a

wide variety of forest products. Some forest products are available on a seasonal basis, such as mushrooms and boughs, while others like vine maple, moss, and salal are available year-round. Harvest is always dependent upon markets and commercial demand. Many of these products are available throughout the forest landscape, and can be found in the different stand structures on the forest. Other products (i.e. mushrooms, moss, etc.) require specific stand types and growing conditions to be most productive. The most popular products requested on this District are salal, mushrooms, moss, and flat rock. Moss and salal can be found over most of the District, while mushrooms grow best at lower elevations and in younger, dense stands of timber, usually in the under 40-year old closed single canopy stands. State lands foresters and office staff on average spends approximately 2 hours per week answering questions and issuing permits for this program. During fiscal year 2004, non-timber forest products generated \$3,400 from 68 commercial permits. The District also issued 114 Free Use Permits that allow harvest or collection of lesser volumes of the same non-timber forest products.

Planning (and Information Systems)

Stand Level Inventory and Other Vegetation Inventories

Some stands within the District will be inventoried during the FY 2006 using the Stand Level Inventory procedures. This information will replace the current inventory system with new information that is better suited to structure based management planning and decision making. Approximately 84 stands totaling approximately 6,900 acres will be inventoried using contractors. Another 16 stands totaling approximately 1,100 acres may be inventoried during this time frame by District employees. The stands inventoried by the District are potential harvest units for the Fiscal Year 2007 AOP. All of the stands within the FY 2006 AOP were inventoried in previous years.

The Reforestation Forester will be conducting stocking surveys on stands that were planted 1, 3, 6 and 9 years ago. These surveys are done to measure tree seedling survival rates and vigor, assess any animal damage, determine if trees or vegetation are competing with the seedlings, and locate areas where more seedlings may need to be planted. Information gathered from these surveys will be incorporated into the FY 2007 planting plans and vegetation management plans.

Fish and Wildlife Surveys

Almost all of the streams located within operations proposed in the FY 2006 Annual Operations Plan have been surveyed to determine beneficial use (i.e. fish bearing or not). The only exceptions to this will follow the Oregon Forest Practices *Revised Guidance on Interim Water Classifications (1995)* to determine beneficial use on these streams or be

surveyed by an ODF co-op fish survey crew during the survey season in the spring of 2005 prior to sale layout.

Surveys for the Northern Spotted Owl (*Strix occidentalis*) will be conducted by a contractor during the 2005 field season. The information gathered from these surveys is used during planning activities to determine how to proceed with forest activities without adversely affecting the owls and their habitat. Surveys will be specifically done on a portion of commercial management operations identified for the fiscal year 2005, and all commercial management operations identified for the fiscal years 2006 and 2007 as well as known owl sites.

Table 5. Summary of status of T&E surveys.

Operation	Species (NSO/MM)	Status
Abiqua Basin Thin	NSO	Surveyed in 2004; will be surveyed again in 2005
Cedar Forks Combo	NSO	Surveyed in 2003, 2004; will be surveyed again in 2005
Kilo Thin	NSO	Surveyed in 2004 with one response; will be surveyed again in 2005
Lookout Below Combo	NSO	Surveyed in 2002 , 2003, 2004 with one response; will be surveyed again in 2005
Mad Burbank Combo	NSO	Surveyed in 2004; will be surveyed again in 2005
N. Silver Creek Thin	NSO	Surveyed in 2004; will be surveyed again in 2005
Snake Charmer Thin	NSO	Surveyed in 2004 with one response; will be surveyed again in 2005
Crabtree #6 Alt.	NSO	Surveyed in 2004; will be surveyed again in 2005
Potato Hill Alt.	NSO	Surveyed in 2004; will be surveyed again in 2005

Watershed Assessments

ODF is committed to perform watershed analysis on key watersheds on state forest lands. Watershed analysis will be used to gain insights into the interaction between ecological resources and forest management. This, in turn, will provide information for future Implementation Plans and Annual Operation Plans.

The Northwest Oregon FMP provides that watershed analyses shall be performed on all priority watersheds “within the ten-year period following plan adoption”. No watershed assessments are scheduled for fiscal year 2006 within the North Cascade District. No priority watersheds have been identified within the North Cascade District. No watershed assessments have been completed to date.

Research and Monitoring

OSU is continuing a study on Swiss Needle Cast. The study is looking into growth trends following thinning in stands with varying levels of Swiss Needle Cast damage, the interactive effect of Swiss Needle Cast with the intensity of thinning and the interaction between thinning, Swiss Needle Cast and the seed source for the stand involved. Four

of the study and control plots are located on the Santiam State Forest. The study is scheduled to last until 2011.

A portion of the City of Salem's watershed falls within State Forest ownership in northern Linn and southern Marion counties. The District has cooperated with the City's Public Works Department on water quality monitoring projects in the recent past. The City and the District have pursued a cooperative effort to establish a United States Geological Survey (USGS) Gauging Station in Rock Creek for purposes of collecting multi-parameter water quality information about water flowing from the Rock Creek basin. This gauging station would also complement the existing network of gauging stations that the USGS already has in place in the western Cascades.

In December 2004 the City of Salem, Public Works Department, Water Operations Section signed the Rock Creek Multi-Parameter Water Quality Monitoring Agreement. This agreement authorizes the District to locate the monitoring station on the Santiam State Forest and to split the cost of purchase, installation and maintenance of the equipment with the City of Salem.

The City and District will work with the USGS, Portland office to install and maintain the equipment to their standards. The USGS will also provide an annual summary of data from this station that will be included in an annual report they provide through a separate agreement with the City. The City will provide a copy of the report to the District.

Cost estimates are that the initial cost of the equipment will range from \$35,000 - \$40,000, and that annual maintenance costs could approach \$35,000. There is now some certainty that the operation of the existing USGS stations will be continued. This supports going ahead with the Rock Creek site. The District intends to continue discussions with representatives from the City of Salem Water Operations Section, USGS and State Forest Monitoring Section about how to use the station in ways that will benefit the forest and water management communities and to make this a win-win situation for everyone involved with it.

The cost for purchasing and installing the equipment was included in the FY05 Santiam State Forest Budget. If installation will not be complete by June 30, 2005 we will provide for the carry-over of the necessary budgeted funds to complete it in FY06. We expect to start collecting data by October 1, 2005.

Other Planning Operations

Reforestation planning that will occur during the 2006 fiscal year include the following: vegetation management plans, density management plans, reforestation plan for the 2006 planting season, seed sowing plans, and seed collection plans. These plans will be developed at different times throughout the fiscal year.

Planning will begin in the spring of 2005 for the FY 2007 Annual Operations Plan. These plans will be completed in the spring of 2006. The annual operations plan will provide specific details on the harvest operations that will be set up and auctioned in the 2007 fiscal year. The plan will also provide an overview of the roads and engineering projects, non-commercial forest management operations, recreation management, planning, public information and education and administrative activities that will take place during FY 2007. This plan is developed according to guidance and standards found in the *NWO State Forests Management Plan*, *North Cascade District Implementation Plans*, *Santiam State Forest Recreation Plan* and the *Oregon Forest Practices Act*.

Public Information and Education

This Annual Operations Plan will undergo a public review. Following that review, a public involvement summary will be added as an Appendix to this document.

The District often receives requests for job shadowing opportunities. Job shadowing usually involves a high school student or occasionally a college student who is interested in natural resources. The District arranges for these students to spend a work day with either a State Lands Forester, Stewardship Forester, Road Specialist or other job position they may be interested in. The initial contact is made by the student, so it is impossible to pin down when this activity will occur. The District has also conducted school to work tours in conjunction with Personnel. Additional tours may possibly occur on the Santiam State Forest during the 2006 fiscal year.

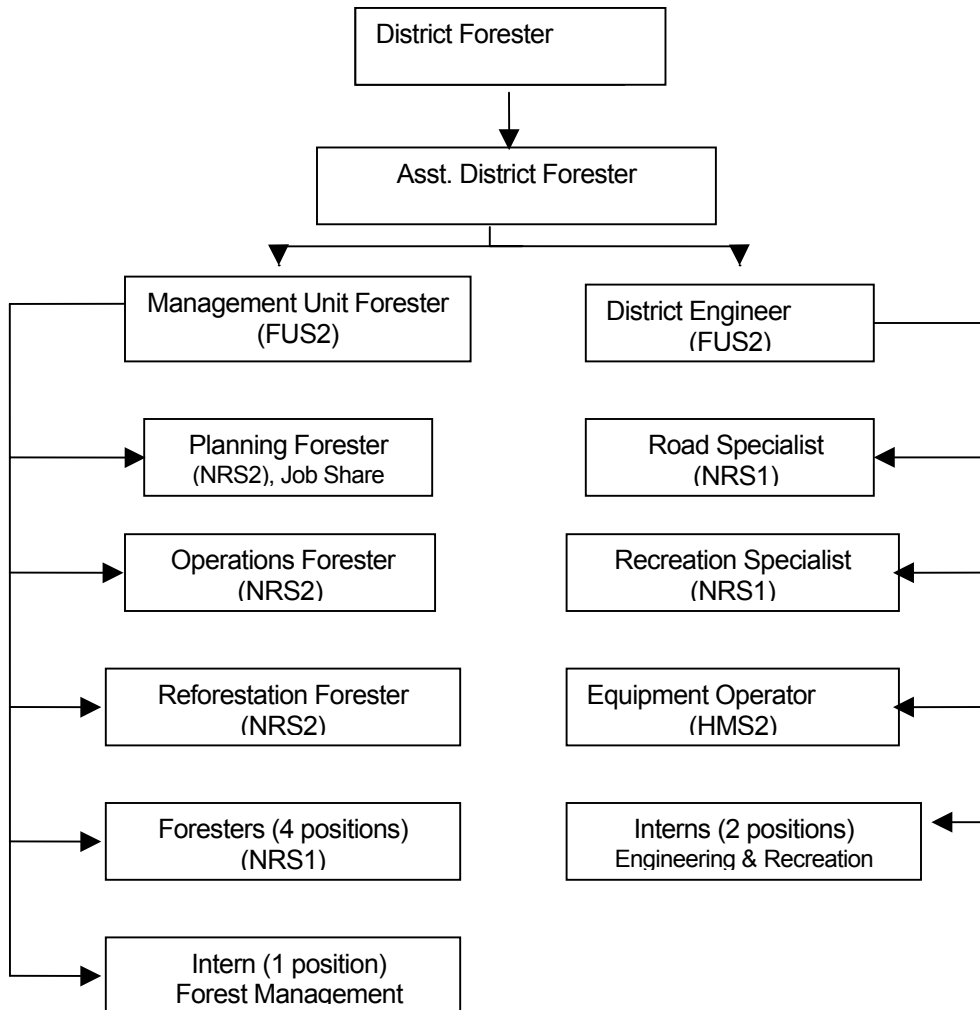
The recreation department continues to expand its outdoor education and interpretation program. During 2004 nearly 250 participants attended forest education programs sponsored by the District. Recreation staff presented interpretive nature hikes within the forest. And partnered with the Lyons and Stayton summer reading programs to bring forest education programs to local communities.

Currently a new forest education outreach program is being implemented within Clackamas County. This program has been made possible by a Title III grant awarded to ODF from Clackamas County. This grant begins in the winter of 2004 and will continue until fall of 2005. As with all of our education programs our mission is to give children a greater knowledge and understanding of forest ecosystems, forest management, forest resources, and how these resources are part of and important to their everyday lives. The programs also teach children ethical behavior within a forest environment.

During 2005 ODF will expand the education program in both Linn and Marion County as well. ODF will strive to reach more nearby communities, including libraries, schools, youth organizations and the general public by bringing programs into communities and also offering activities within the forest.

Administration

There are a total of 12 permanent positions that comprise the State Forest Team at the Santiam Unit. In addition, the District Forester and Assistant District Forester provide key leadership and support to the program. The organization is structured as follows:



The organization consists of 2 functional units: Forest Management and Forest Engineering. The Forest Management unit is responsible for forest-level Planning, Stand Level Inventory, and for Commercial and Noncommercial Forest Management Operations. This group produces the AOP, timber sale contracts, reforestation and young growth management contracts, conducts stand level inventories, and administers the miscellaneous forest products and firewood programs.

The Forest Engineering unit is responsible for Roads and Recreation. This group produces the different plans and projects associated with roads including the AOP road

information, transportation plans, road maintenance plans and schedules, and other engineering related plans. The recreation program is also housed within this unit. As such, this group produces plans and contracts needed to develop campgrounds, trails, and associated facilities. In addition, Recreation program personnel coordinate most of the Public information and education done on the District.

APPENDICES

A. Summary Tables

B. Pre-Operations Reports

C. Public Involvement

D. Additional Maps