

**Lewis River Hydroelectric Projects Settlement Agreement
Terrestrial Coordination Committee (TCC)
Meeting Agenda**

Date & Time: Wednesday, February 12, 2014
 9:00 a.m. – 12:45 p.m.

Place: **Merwin Hydro Control Center
105 Merwin Village Court
Ariel, WA 98603**

Contacts: **Kirk Naylor: (503) 813-6619; cell (503) 866-8750**

Time	Discussion Item
9:00 a.m.	Welcome <ul style="list-style-type: none">➤ Review Agenda & 12/11/13 Meeting Notes➤ Comment & accept Agenda & 12/11/13 Meeting Notes
9:15 a.m.	Preview Cowlitz PUD 2014 WHMP Plan
9:45 a.m.	Preview PacifiCorp 2014 WHMP Plan
10:30 a.m.	PacifiCorp 2013 Year-end Financial Reporting
10:45 a.m.	Break
11:00 a.m.	PacifiCorp: Yale Dam Rock Fall Project
11:30 a.m.	PacifiCorp: Transmission ROW inspection results
12:00 p.m.	PacifiCorp: Review Mink HEP (working lunch)
12:30 p.m.	<ul style="list-style-type: none">➤ Next Meeting's Agenda➤ Public Comment Opportunity Note: all meeting notes and the meeting schedule can be located at: http://www.pacificorp.com/es/hydro.html
12:45 p.m.	Adjourn

Join by Phone

+1 (503) 813-5252 [Portland, Ore.]

+1 (855) 499-5252 [Toll Free]

Conference ID: 8098350

FINAL Meeting Notes
Lewis River License Implementation
Terrestrial Coordination Committee (TCC) Meeting
February 12, 2014
Ariel, WA

TCC Participants Present: (10)

Ray Croswell, RMEF
Peggy Miller, WDFW
Eric Holman, WDFW
Kimberly McCune, PacifiCorp Energy
Kendel Emmerson, PacifiCorp Energy
Kirk Naylor, PacifiCorp Energy
Nathan Reynolds, Cowlitz Indian Tribe
Bob Nelson, RMEF
Diana Gritten-MacDonald, Cowlitz PUD
LouEllyn Jones, USFWS

Calendar:

March 12, 2014	TCC Meeting	HCC
April 9, 2014	TCC Meeting	HCC

Assignments from February 12, 2014	Status
Croswell: Provide the PUD with a contact name for professional horse logging.	Complete
Naylor: Extend invitation to Cherie Kearney (Columbia Land Trust) to an upcoming TCC meeting.	Complete – 3/12/14

Assignments from December 11, 2013	Status
Emmerson: Update the December 21, 2012 Old-Growth memorandum to include summary of results from the maps and spreadsheet and redistribute to the TCC for their records.	Complete – 3/12/14

Assignments from June 13, 2012	Status
Naylor: Review the SA/WHMP budget(s) as well as determine status and opportunity for coordination with John Cook (NCASI) and Lisa Shipley (Washington State University) doing the black-tail study and report back to the TCC.	In Progress

Review of Agenda and Finalize Meeting Notes

Kirk Naylor (PacifiCorp Energy) called the meeting to order at 9:05 a.m. Naylor reviewed the agenda and asked the TCC if there were any changes/additions. Additional discussion will be added regarding the recent Pope Resources Skamania County - Request for Swift Comprehensive Plan Amendment and Rezone.

Naylor reviewed the December 11, 2013 meeting notes and assignments. The meeting notes were approved at 9:12 am without change.

Preview Cowlitz PUD 2014 WHMP Plan

Diana Gritten-MacDonald (Cowlitz PUD) provided a copy of the *TCC Review Draft Wildlife Habitat Management Plan 2014 (Year 6) Annual Plan* (see [Attachment A](#) for greater detail) for the Swift No. 1 Wildlife Management Area. A hard copy was provided at the meeting today and the document was also emailed to the TCC for its 30-day review and comment period on February 6, 2014. TCC comments are due to the PUD on or before March 10, 2014.

Gritten-MacDonald informed the TCC that twelve (12) contractors were contacted relating to the Devils Backbone – Timber Management Alternatives and no bids were returned. The PUD 2014 WHMP Annual Plan does not include timber management in 2014. The 2014 proposed budget includes the following:

Table 2.1-1. Anticipated 2014 (Year 6) Annual Plan Budget (2014 dollars).

2014 Budget		
Dec 26, 2013 Annual Payment	\$ 17,715	
2013 Carry Forward	\$ 0	
Interest on 2013 Ending Balance	\$ 0	
Total 2014 Budget	\$ 17,715	
WHMP Activity	Estimated 2014 Cost	Assumptions
Administration	\$9,600	Includes general oversight and accounting, preparing Annual Report and Annual Plan, contracting, maintaining project files, participating in TCC meetings related to implementing Cowlitz PUD's WHMP.
Annual inspection to monitor and manage public access	\$0	Included in invasive plant surveys.
Invasive plant surveys at high priority sites	\$3,412	Includes labor and mileage.
Invasive plant species control	\$2,100	Includes \$1,300 for 2 herbicide applications in 2014, and \$800 for late-fall tree and shrub planting to re-establish cover where Himalayan blackberry has been removed (Appendix B).
Shrub enhancement in PWMU-REV	\$1,500	Assumes \$5.25/shrub, \$4/shrub guard x 100 shrubs, plus mulch and stakes, plus 1 day labor (\$15/hr x 10 hrs x 2 people) and travel (\$56 RT from Longview) (Appendix C) .
Installation, monitoring, and maintenance of 4 bluebird nest boxes	\$1,100	Assumes Cowlitz PUD labor. Assumes \$18/box, no cost for poles, 1 day labor (\$25/hr x 1 person x 8 hr) and travel to install, 3 days and travel to monitor and maintain, plus 8 hr for trip summaries (Appendix D).
Estimated cost of management activities	\$17,712	

Estimated amount remaining in 2014 budget at year end	\$3	Any funds not spent by year end, plus accrued interest, remain in the WHMP budget to be carried into the following year.
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Gritten-MacDonald also provided a cursory review of Appendix A & B, which includes photos illustrating weed survey and treatment area(s).

General discussion took place regarding other options, to include but not limited to, proceeding as planned in the draft, saving the funds for future forest management, reducing administrative costs, discuss more timber management options, and include the options to the FERC in the filing. The TCC also discussed the use of inmate work crews as an option to pursue logging in such a small space. Eric Holman (WDFW) has inquired with DNR regarding the use of inmate work crews and will report back to the TCC once he has heard back.

The TCC also discussed the level of meaningful work that an inmate crew can complete in 5 days assuming they have permission to cut trees as large as 12". Nathan Reynolds (Cowlitz Indian Tribe) expressed concerns about what the understory condition would be after thinning and if that is the TCC desired outcome. Gritten-MacDonald clarified that the PUD cannot gift public assets, so the downed wood cannot be given away.

The TCC agreed to continue with the existing 2014 plan as provided by the PUD and indicate that the TCC may defer certain projects depending on the outcome of inmate work crews or other options.

The TCC agreed to adaptive management of the Cowlitz PUD 2014 WHMP Annual Plan.

Naylor proposed the use of a professional horse logging outfit and to get out of the traditional commercial logging concept for such a small project. Ray Croswell (RMEF) provided the PUD with a contact name for professional horse logging.

PacifiCorp 2014 WHMP Budget

Kendel Emmerson (PacifiCorp) informed the TCC that PacifiCorp's 2014 WHMP 30-day review draft will be available on or before March 7, 2014.

Emmerson reviewed a draft of the *2014 Overall 2014 WHMP* as fully detailed in [Attachment B](#) to include a comparison to the 2013 proposed and actual budget. WHMP funds available for 2014 is \$496,692.24

Kim McCune (PacifiCorp) informed the TCC of the following year-end financial report (see [Attachment D](#) for more detail):

10.8.2 - WHMP Fee Simple Lands

12/31/2013 Balance \$496,692.24*

*includes 2014 contribution of \$437,392.62 and other additional funds as more fully detailed below:

License Year 6
Calendar Year 2014
Annual WHMP Budget

Total Available Funds		2013 Funds	2014 Funds
Fee Simple Lands	Acres	13,134	13,134
	Cost Per Acre	\$33.18	\$33.30
	SubTotal	\$435,792.62	\$437,392.41
Interests in Lands	Acres	16	16
	Cost Per Acre	\$16.59	\$16.85
	SubTotal	\$265.44	\$269.63
Other Additional Funds	Remaining Funds from Previous Year	\$1,724.60	\$14,216.11
	Additional HEP Funding	\$0.00	\$20,000.00
	RMEF	\$0.00	\$11,281.71
	Interest	\$12,323.19	\$13,532.38
	SubTotal	\$14,047.79	\$59,030.20
Total		\$450,105.85	\$496,692.24

10.8.2 - WHMP Conservation Easement Lands

12/31/2013 Balance \$269.93*

*includes 2014 contribution of \$269.93

10.2 - Swift No. 1 and Swift No. 2 Land and Habitat Protection

12/31/2013 Balance \$1,301,712.39

*includes 2014 contribution of \$ 624,846.60

10.1 - Lewis River Yale Land Fund

12/31/2013 Balance \$0

10.3 - Lewis River Land Acquisition and Habitat Funds

12/31/2013 Balance \$0

Next contribution of \$1,100,000.00 plus interest will take place on 12/26/2014

7.1.1 – Lewis River LWD Fund (transport of logs for fish habitat improvement projects)

12/31/2013 Balance \$2,000.00

<Break 10:50am>

<Reconvene 11:05am>

PacifiCorp 2014 WHMP overview

Emmerson and Naylor presented an overview of the 2014 Wildlife Habitat Management Plan by discussing a summary of each of the major chapters associated with the estimated budget for each task. Some of the most significant changes to the 2014 budget are the bullfrog management and monitoring, orchard tree expansion (which may be wholly or partially funded by transmission), and ROW forage area expansion. In addition, there are additional dollars added to the budget to complete the mink HEP analysis and some proposed savannah sparrow work. A little more detail was presented to the TCC concerning the proposed Forestland Management practices. Maps were handed out for each of the proposed actions.

2014 Forestland Management

Naylor informed the TCC that the forestry contractor PacifiCorp hired in June 2013, had discontinued their services as of January 1, 2014 with mutual consent by PacifiCorp. PacifiCorp has recently contracted with another forester that will start February 17, 2014. This contract is for one year only due to PacifiCorp's procurement policies but PacifiCorp will rebid the service again this Fall 2014 to solicit a 3-year contract.

Naylor provided detailed images of the proposed harvest in Unit 10 ([Attachment C](#)). This Management Unit that had been proposed for commercial thinning in previous years has been reevaluated due to small tree crowns, shallow root systems, root rot and mortality due to the high density of trees competing with each other for resources. PacifiCorp proposes two clear cuts for permanent meadows; a 3.5 and a 6.4 acre. The site consists of rolling terrain, mostly flat and devoid of understory and is well outside of the wetland buffers. Three other harvest areas are proposed that will establish a diversity of age classes while providing temporary foraging resources. Some thinning may be attempted adjacent to the clear cut harvest areas to create better understory conditions but only if site conditions and trees indicate they would benefit without residual trees blowing down. The TCC will have the opportunity to view this area prior to the harvest taking place. PacifiCorp plans to begin the harvest possibly as early as June 2014 pending TCC review.

PacifiCorp also proposes commercial thinning in Unit 35 (see [Attachment C](#) for detail). The unit is the same age as unit 10 (37 – 40 years old) however trees are in much better form due to the fact there are half as many trees per acre. Because of the stand age and density, Naylor believes it isn't likely to be suitable goshawk habitat but this will be confirmed. If so, PacifiCorp will conduct a 2-year goshawk survey prior to any action. The proposed area consists of 60% Douglas-fir; thinning will reduce the number of trees to 120-125 trees per acre. The TCC will have the opportunity to view this area prior to the thinning taking place. PacifiCorp plans to begin the harvest in August/September 2014; possibly as early as July 2014 if the area isn't suitable goshawk habitat.

Pope Resources Skamania County - Request for Swift Comprehensive Plan Amendment and Rezone

Naylor informed the TCC that PacifiCorp is writing a comment letter by the deadline date of February 19, 2014 in response to Pope Resources' application for rezoning portions of their land. It will address the Shoreline Management Plan, flowage easements, encumbrances and the potential of motorized vehicle trespass across PacifiCorp lands, to name a few. The Lewis River Shoreline Management Plan (SMP) was approved by the FERC on January 16, 2014, which will also be mentioned in the comment letter. The TCC reviewed the map ([Attachment E](#)) as provided by Jon Rose (Pope Resources). The USFWS expressed concern about the full build out of the project and its environmental impact. Discussion took place regarding impact on public roads to access private property yet to be developed.

All TCC agencies, Tribes and non-governmental organizations are encouraged to comment to Skamania County by the deadline date of February 19, 2014.

The TCC also suggested extending an invitation to Cherie Kearney (Columbia Land Trust) for an upcoming TCC meeting. Naylor will extend the invitation and keep the TCC informed.

PacifiCorp: Yale Dam Rock Fall Project

Emmerson provided an aerial image of the Yale Dam Powerhouse and engineered project design drawings ([Attachment F](#)) to illustrate where the Yale Dam Rock project is located in proximity to the Larch Mountain Salamander habitat. PacifiCorp discovered the extreme hazard the 80' x 90' x 20' rock pose to the Yale powerhouse, which is directly below the rock, so this project is on a fast track for permitting to remove the massive rock by the end of 2014. The pre-application meeting with Clark County is February 13, 2014, so all permitting and mitigation requirements have not been completely determined at this time.

The project will begin with vegetation clearing which is a mostly smaller diameter trees but may include some of the larger trees directly above the rock. Followed with clearing and grading the existing road bed to access the project area. The existing road bed has not been in use since 1996. The rock will be removed by hand scaling, not blasting. Drilling noise would start as early as June 2014 and potentially last to the early part of the November, which is the beginning of eagle roosting season (November). The project area is adjacent to the Canyon Creek Roost but outside of the buffer. The adjacent salamander habitat will be impacted, and although, mitigation requirement are to be determined one solution is to try to translocate the salamanders prior to constructions. Nathan Reynolds (Cowlitz Indian Tribe) prefers a translocation process to begin in April during the peak season for salamander. Eric Holman (WDFW) suggested making more than one attempt to maximize the number of salamanders moved prior to the start of the construction in June 2014.

PacifiCorp: Transmission ROW Inspection Results

Emmerson provided maps ([Attachment G](#)) of the following transmission right-of-way (ROW) inspection areas that identify potential forage areas, vegetation screens, clearance limits, and public crossings.

- Battleground/Kalama
- Cougar Line
- Lake Line
- Speelyai

The ROW clearance limits indicate red areas that will allow nothing higher than 5', orange indicates Clearance B and will allow nothing higher than 25', and yellow is where full grown vegetation can be located. This identifies areas where shrub enhancement activities may take place without posing a hazard. In addition the maps identify all potential forage areas, some areas are better suited as forage than others due to access and existing big game use. Two additional ROW forage areas will be created in 2014 by mowing and fertilizing one will be east of Speelyai 6/2-7/2 and Lake Line 3/10-4/10. The Speelyai 6/2-7/2 is within the Cougar Creek Conservation Covenant, but no fertilizer would be spread between the Cougar Creek and Tower 7/2 and would not be expected to translocate to the creek. Both of these areas have potential to have cultural resources so no soil will be turned, without doing a prior cultural resources survey. Kendel would like to revise the inspection documentation to be denoting the maps and filling in the spreadsheet that will be provided in the 2013 Annual Report. It considerable less paper works and makes prioritizing future ROW work much easier.

PacifiCorp: Review Mink HEP

Emmerson informed the TCC that the Mink was identified as HEP species for riparian habitats, but a Habitat Suitability Indices was never determined for riparian habitats. This was brought to the TCC attention in 2007 and it was determined the HSI model data for riverine vegetation cover type would be collected by license year 6 or if additional HEP data was collected on newly acquired lands, whichever came first. The data will be used as the baseline data for riparian habitat when the Lewis River license updates the HEP by year 17 (June 26, 2025). The only two variables required for the HSI model is water permanence and percent tree and/or canopy closure. Because only perennial streams will be measured, the only variable that is needed is the percent cover. Currently there are 42 streams on WHMP lands that are perennial and are ≥ 100 m in length in WHMP lands and 20 percent of these streams will be surveyed = 8.4 streams. PacifiCorp will survey 9 streams between Merwin (3), Swift (3) and Yale (3); 20 line intercept transects which will equal 50 m both sides of the streams and will be within 100m of wetted channel. Work will begin May, June or July. Emmerson will keep the TCC informed of PacifiCorp's progress. The original 2007 memo and TCC notes have been attached for a reference.

Public Comment Opportunity

No public comment was provided.

<12:50 p.m. meeting adjourned>

Agenda items for March 12, 2014

- Review February 12, 2014 Meeting Notes
- Review PacifiCorp 2014 WHMP Plan
- Cherie Kearney, Columbia Land Trust (tentative)

Next Scheduled Meetings

March 12, 2014	April 9, 2014
TCC Meeting	TCC Meeting
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00am – 3:00pm	9:00am – 3:00pm

Attachments:

- February 12, 2014 Meeting Agenda
- December 11, 2013 Meeting Notes
- **Attachment A** – TCC Review Draft Wildlife Habitat Management Plan 2014 (Year 6) Annual Plan, as provided by Cowlitz PUD
- **Attachment B** - 2014 Overall 2014 WHMP, as provided by PacifiCorp
- **Attachment C** – WHMP Unit 10 and 35 2014 Proposed Harvest Area, as provided by PacifiCorp
- **Attachment D** – 2013 Year-end Financial Reporting, as provided by PacifiCorp
- **Attachment E** – Pope Resources; Mt. St. Helens Conservation Project, Feb. 2014

- **Attachment F** – Yale Dam Rock Fall Project aerial photo and project design drawings, as provided by PacifiCorp (**CEII – not for public distribution**)
- **Attachment G** – Transmission ROW Inspection Results, as provided by PacifiCorp

Other Attachments

- June 13, 2007 - TCC Final Meeting Notes
- July 3, 2007 – Revised Mink HEP Memo

Swift No. 2 Hydroelectric Project
FERC No. 2213

, 2014

TCC Review DRAFT Wildlife Habitat Management Plan 2014 (Year 6) Annual Plan

For The

Swift No. 2 Wildlife Management Area



Prepared for
Public Utility District No. 1 of
Cowlitz County, Washington

Prepared by
Meridian Environmental, Inc.
Seattle, Washington



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Appendix B.	PW-C Weed Treatment Plan
Appendix C.	PWMU-REV Shrub Enhancement Plan
Appendix D.	Bluebird Nesting Habitat Enhancement Plan
Appendix E.	Annual Plan Consultation Record

Acronyms

BMPs	Best Management Practices
DB	Devil's Backbone
FERC	Federal Regulatory Energy Commission
HEP	Habitat Evaluation Species
HSI	Habitat Suitability Indexes
LWD	Large Woody Debris
MU	Management Unit
PUD	Public Utility District
PW	Project Works
SGD	Standards and Guidelines Document
SOPs	Standard Operating Procedures
TCC	Terrestrial Coordination Committee
WDFW	Washington Department of Fish and Wildlife
WHMP	Wildlife Habitat Management Plan
WMA	Wildlife Management Area

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**2014 (YEAR 6) Annual Plan
for the
Swift No. 2 Wildlife Management Area**

1.0 INTRODUCTION

Public Utility District No. 1 of Cowlitz County, Washington (Cowlitz PUD) owns the Swift No. 2 Hydroelectric Project (FERC No. 2213) on the Lewis River at River Mile 44 in Cowlitz and Skamania counties, Washington (Figure 1.0-1). The Swift No. 2 Project is one of four Lewis River Hydroelectric Projects. In 1999, Cowlitz PUD and PacifiCorp¹ began the Alternative Licensing Procedure (ALP) for the Lewis River Projects. In April of 2004 Cowlitz PUD filed with the Federal Energy Regulatory Commission (FERC) an Application for New License for Swift No. 2. In November 2004, Cowlitz PUD, PacifiCorp and 24 other Parties signed the Lewis River Settlement Agreement (SA) for the purpose of resolving all of the issues between the Licensees and the other Parties regarding the relicensing. The FERC issued a new 50-year License for Swift No. 2 on June 26, 2008 that incorporates without material modification Cowlitz PUD's obligations under the Settlement Agreement.

In accordance with License Article 403 of the new license, Cowlitz PUD filed a Wildlife Habitat Management Plan (WHMP) with the Commission on December 23, 2008. The WHMP provides long-term guidance for management of 525 acres of Cowlitz PUD lands within the Swift No. 2 Wildlife Management Area (WMA). The WHMP includes the following:

- Section 1 explains development of the WHMP through the relicensing process.
- Section 2 describes the Swift No. 2 WMA, which includes the Devil's Backbone and Project Works management units (MUs). It describes the vegetation cover types and baseline Habitat Suitability Indexes (HSI) for Habitat Evaluation Species (HEP) evaluation species, and provides maps and acreage tables for each MU.
- Section 3 summarizes the habitat-based and program-wide goals and objectives taken from the Standards and Guidelines Document (SGD) that apply to habitat types that occur in the Swift No. 2 WMA.
- Section 4 describes potential management activities designed to meet the SGD goals and objectives and provides a tentative timeframe for implementation.
- Section 5 includes Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) that explain how each of the management prescriptions will be implemented. Section 5 also contains references for specific methods.
- Section 6 contains general references used in development of the WHMP.

¹ PacifiCorp owns the Swift No. 1 (P-2111), Yale (P-2071) and Merwin (P-935) projects, also on the Lewis River. PacifiCorp filed the Application for New License for Yale in 1999 and filed Applications for Merwin and Swift No. 1 in April 2004.

Appendices attached to the WHMP include: A) License Articles 403 and 404; B) Standards and Guidelines Document; C) applicable HEP Models; D) Swift No. 2 Revegetation Plan; E) Devil's Backbone Conservation Covenant; and F) the WHMP Consultation Record.

License Article 403 specifies that Cowlitz PUD should file an annual plan for implementation of the WHMP. On March 31, 2009, the Commission issued an order modifying and approving the WHMP, which specifies that Cowlitz PUD should file annual reports and annual plans with the Commission by April 30 of each year. In accordance with that order, this Year 6 Annual Plan outlines proposed wildlife measures and anticipated costs for work to be completed in 2014. The annual report is being filed under separate cover.

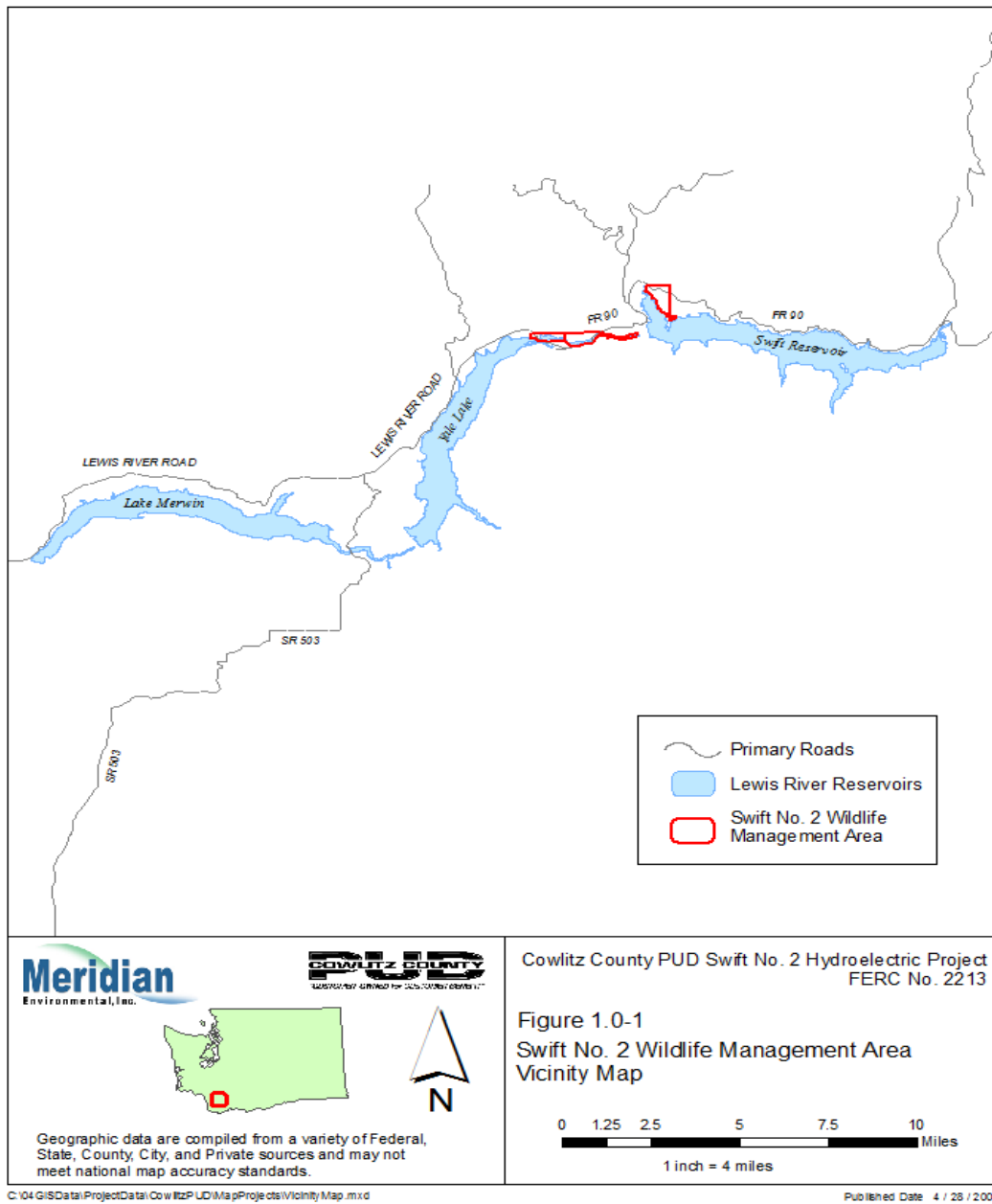


Figure 1.0-1 Project area map, project vicinity inset.

2.0 2014 (YEAR 6) MANAGEMENT ACTIVITIES

Management activities planned for 2014 (Year 6) include the following:

- *Conduct follow-up surveys at sites where weed control efforts have already been implemented.* Meridian Environmental will conduct the invasive plant surveys in conjunction with the public access surveys. The biological goal and objectives for Invasive Plant Species Management are described in Section 3.2.1 of the WHMP. Sections 4.2.8 and 4.3.6 of the WHMP explain their application to the Devil's Backbone and Project Works MUs, while Section 5.8 of the WHMP provides detail about how the activity is to be implemented. For additional background regarding invasive plants, please see Chapter 4.1 of the Standards and Guidelines Document (WHMP Appendix B).

Initial surveys have been completed in all high priority areas in the Devil's Backbone MU. Follow-up surveys in June 2014 will focus on evaluation of Canada thistle and tansy ragwort control efforts in DBMU-11 and coordination with the adjacent landowner regarding Scotch broom management.

Initial surveys have been completed in all high priority areas in the Project Works MU. In June 2014, follow-up surveys will include monitoring of Scotch broom, Himalayan blackberry, and scattered occurrences of Canada thistle that were treated with herbicides or removed using hand tools in previous years.

Updated 2014 Washington State and Cowlitz County weed lists are attached to this Annual Plan as Appendix A. Skamania County follows Washington State, rather than maintaining a separate list.

- *Treat high priority weed infestations.* Cowlitz PUD plans to extend its interlocal agreement with Skamania County (signed in May 2013) to perform weed control in the WMA. Based on invasive plant surveys to date, most weed occurrences within the Swift No. 2 WMA are located within wetland and/or riparian buffers. Herbicides selected for application in these areas will be safe for wetland use. Herbicides will be applied in both summer and fall for maximum control. Hand-pulling and mechanical methods may also be implemented at sites where these approaches are likely to be effective. Targets for 2014 include retreatment of existing Canada thistle, tansy ragwort, and Scotch broom infestations; and planting of native tree and shrub seedlings where Himalayan blackberry cover has been reduced, in order to minimize colonization of exposed soils by other non-native invasive species. A planting plan for this site is provided in Appendix B. Cowlitz PUD will continue to coordinate with the adjacent landowner to evaluate options for treating weeds that occur along the 7902 Road at the east and south entrances to the Devil's Backbone MU outside Cowlitz PUD's property boundary, as needed.
- *Supplement shrub plantings in upland/wetland transition areas in PWMU-REV around PWMU-PUB.* Several upland shrub species that were planted in 2010 have survived and are growing well, but stands of red alder and soft rush are expanding rapidly in areas adjacent to the PWMU-PUB wetland. Supplementing the 2010 plantings with a variety

of native shrubs would increase structural and species diversity around the wetland, and over the long-term, may also provide habitat for yellow warbler, a species that will be evaluated in the Year 17 HEP. A planting plan for this site is provided in Appendix C. The biological goal and objectives for Wetlands are described in Section 3.1.2 of the WHMP. Sections 4.3.4 and 5.2 of the WHMP explain their application to PWMU-PUB.

- *Install four nest boxes for western bluebirds in the Project Works MU.* The western bluebird was identified as a “species of greatest conservation need” in the western Cascades ecoregion in 2005, due to the loss of grasslands and prairies (WDFW 2005). Western bluebirds were observed near PWMU-PUB during the breeding season in 2013, and installation of nest boxes in this area could support efforts by WDFW and several conservation groups to increase their populations in the region. Shrub plantings (described above) could also improve the forage base for western bluebirds. Appendix D provides a plan for constructing, installing, monitoring, and maintaining nest boxes.
- *Inspect all accessible lands in the Project Works and Devil’s Backbone MUs to evaluate public access activity and identify any habitat concerns or major changes in habitat conditions.* Meridian Environmental will conduct the public access surveys in conjunction with the invasive plant species surveys. The biological goal and objectives for Public Access Management are described in Section 3.2.3 of the WHMP. Sections 4.2.10 and 4.3.8 of the WHMP explain their application to the Devil’s Backbone and Project Works MUs. Section 5.10 provides details regarding how the activity is to be implemented. For additional background relating to public access management, please see Chapter 4.3 of the Standards and Guidelines Document (WHMP Appendix B).

2.1 2014 (YEAR 6) ANNUAL PLAN BUDGET

Consistent with the SA budget of \$27 per acre per year to manage 525.2 acres, the total WHMP budget is \$14,180 in 2003 dollars. Adjusting that base amount for inflation (using the formula specified in the Definitions section of the SA) yields a 2014 (Year 6) budget of \$17,715.

As provided in Section 10.8.2.3, WHMP funds shall accrue interest from the date the monies are due to be placed in the fund. Funds remaining from previous years (2013), if any, are also added to the fund. No funds were carried forward from 2013, and no interest accrued. For this reason, the total budget for 2014 is \$17,715.

Consistent with SA Section 10.8.3, the anticipated 2014 starting budget shown in Table 2.1-1 includes an estimate of the costs of Cowlitz PUD employees and contractors to implement all aspects of the WHMP in 2014, including overall management; administrative costs associated with specific management activities; and implementation costs for specific management activities. These budget numbers are very preliminary and the actual costs may be considerably lower or higher than those shown in Table 2.1-1. As mentioned above, monies not spent remain in the WHMP budget, and could be used to implement additional management activities during the current plan year or during following years.

If during the course of implementing this Annual Plan, to the extent known and at such time as Cowlitz PUD identifies significant cost savings or identifies cost overruns, Cowlitz PUD will notify the TCC.

Table 2.1-1. Anticipated 2014 (Year 6) Annual Plan Budget (2014 dollars).

2014 Budget		
Dec 26, 2013 Annual Payment	\$ 17,715	
2013 Carry Forward	\$ 0	
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WHMP Activity	Estimated 2014 Cost	Assumptions
Administration	\$9,600	Includes general oversight and accounting, preparing Annual Report and Annual Plan, contracting, maintaining project files, participating in TCC meetings related to implementing Cowlitz PUD's WHMP.
Annual inspection to monitor and manage public access	\$0	Included in invasive plant surveys.
Invasive plant surveys at high priority sites	\$3,412	Includes labor and mileage.
Invasive plant species control	\$2,100	Includes \$1,300 for 2 herbicide applications in 2014, and \$800 for late-fall tree and shrub planting to re-establish cover where Himalayan blackberry has been removed (Appendix B).
Shrub enhancement in PWMU-REV	\$1,500	Assumes \$5.25/shrub, \$4/shrub guard x 100 shrubs, plus mulch and stakes, plus 1 day labor (\$15/hr x 10 hrs x 2 people) and travel (\$56 RT from Longview) (Appendix C) .
Installation, monitoring, and maintenance of 4 bluebird nest boxes	\$1,100	Assumes Cowlitz PUD labor. Assumes \$18/box, no cost for poles, 1 day labor (\$25/hr x 1 person x 8 hr) and travel to install, 3 days and travel to monitor and maintain, plus 8 hr for trip summaries (Appendix D).
Estimated cost of management activities	\$17,712	
Estimated amount remaining in 2014 budget at year end	\$3	Any funds not spent by year end, plus accrued interest, remain in the WHMP budget to be carried into the following year.

3.0 SITE MANAGEMENT PLANS

As discussed in sections 4.2 and 4.3 of the WHMP, Cowlitz PUD delineated and mapped 12 management sites within the Devil's Backbone MU and four within the Project Works MU. The site boundaries are based on vegetation cover type mapping, review of aerial photographs and site visits, but also take into account factors such as slope, soils, understory composition, and access, that represent management opportunities and constraints.

Cowlitz PUD has developed a Site Management Plan for each site, as a means of identifying management opportunities and needs and tracking the implementation of management activities through the license period. Each Site Management Plan identifies the SGD goals and objectives, baseline HSI values, and analysis species associated with the cover type; summarizes baseline site conditions, including any apparent management constraints; identifies proposed management actions; and documents the actions that were implemented. The Site Management Plans will also serve as the basis for each Annual Report and the following year's Annual Plan.

Each Site Management Plan is part of a Site File in the Swift No. 2 WMA database. Site Files are the "home" for the documentation associated with each site's management. In addition to the Site Management Plan, each Site File includes a site map and all photos and field forms that record the results of inspections, treatments, and follow-up activities.

3.1 DEVIL'S BACKBONE MANAGEMENT UNIT

The following section provides an aerial photo of the Devil's Backbone MU (Figure 3.1-1), cover type map showing management sites (Figures 3.1-2), and Site Management Plans for sites 1 through 12. No management sites were delineated in the Devil's Backbone Conservation Covenant area, because no management activities are planned, other than protection of existing habitat values.



Figure 3.1-1. Devil's Backbone Management Unit (Google Earth, 2012).

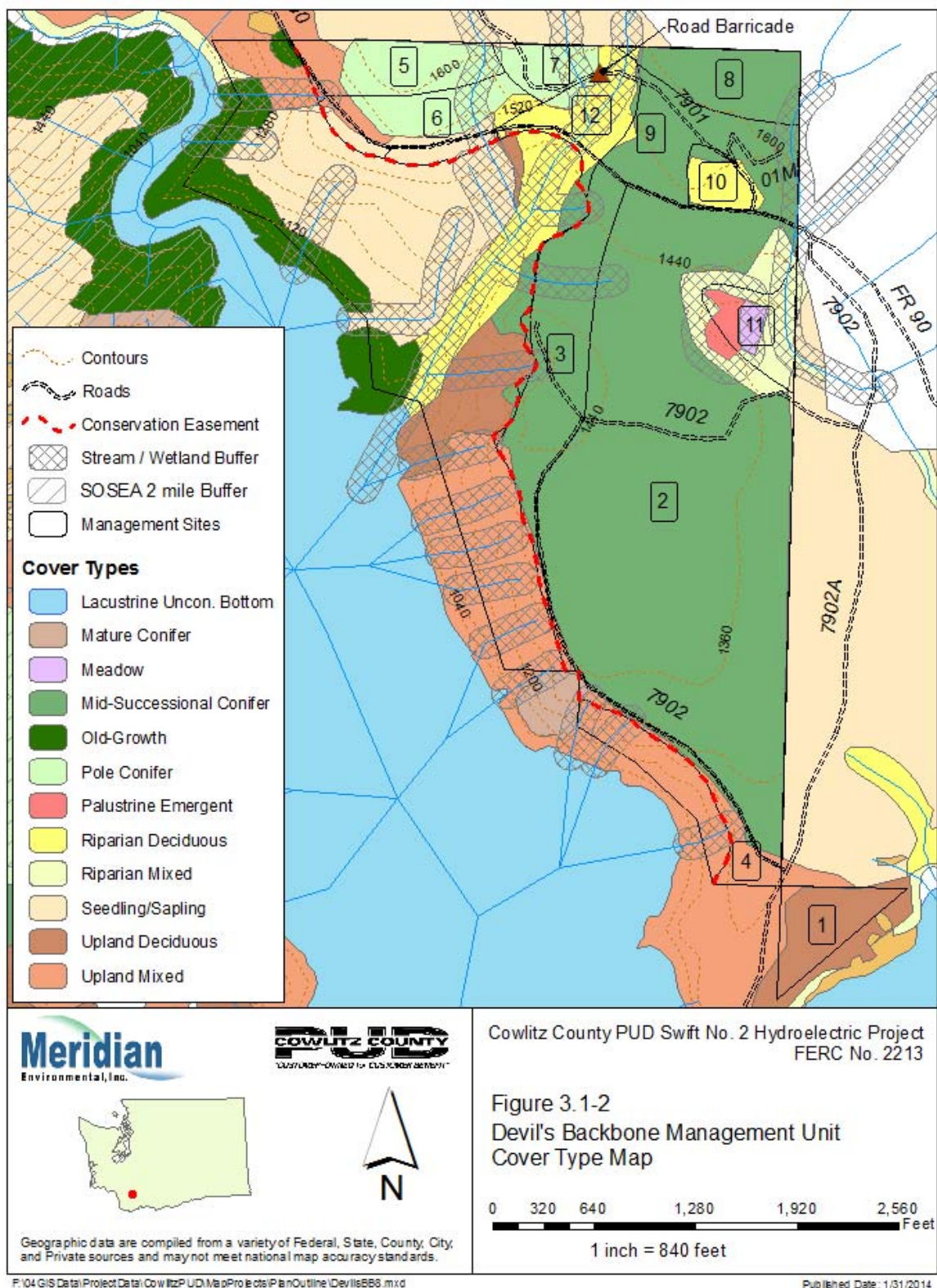


Figure 3.1-2. Devil's Backbone Management Unit cover type map.

Site Management Plan: DBMU-1		
Cover type	Upland deciduous forest	
Acres	6.6	
SGD Management Goals	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Pileated woodpecker: 0.28 Black-capped chickadee : 0.80 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Mix of deciduous trees and conifers, including some western red cedars > 24 in. dbh.	
Site Constraints	None	
Access	FR 90 to 7902 Rd (gated near FR 90); 7902A Rd. crosses corner of site. Cowlitz PUD has easement on 7902 Rd.	
Management Strategies	Maintain as mixed stand. Manage for species and habitat diversity. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted May 13. No access concerns identified.
2009	Conduct invasive plant survey at 7902 Rd./7902A Rd. in May and control invasive plants as needed.	Surveys conducted May 13. No invasive plants observed within the site, but invasive plants were documented along the 7902A Rd. on adjacent property near the entrance to the Devil's Backbone MU
2010	Monitor and manage public access.	Survey conducted May 28. No access concerns identified.
2010	Contact adjacent landowner to evaluate invasive plant treatment options	Survey conducted May 28. Scotch broom documented in 2009 has been effectively treated by adjacent landowner.
2011	Monitor and manage public access.	Survey conducted June 8. No access concerns identified.
2011	Monitor invasive plants on adjacent property in conjunction with public access surveys.	Survey conducted June 8. No re-growth of Scotch on adjacent ownership was noted.
2012	Monitor and manage public access.	Survey conducted on July 2, 2012. Vehicular access noted on the 7902 Road, likely related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd. No access concerns noted in DBMU-1.
2012	Monitor invasive plants on adjacent property in conjunction with public access surveys.	Not done, due to safety concerns related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd.
2013	Monitor and manage public access.	Survey conducted on June 28, 2013. No evidence of motorized access or other access concerns noted.
2013	Monitor invasive plants on adjacent property in conjunction with public access surveys.	Survey conducted on June 28, 2013. No re-growth of Scotch broom noted on property adjacent to DBMU-1.

Site Management Plan: DBMU-1		
2014	Monitor and manage public access.	
2014	Monitor invasive plants on adjacent property in conjunction with public access surveys.	



Swift No. 2 WMA wildlife tree, June 2013

Site Management Plan: DBMU-2		
Cover type	Mid-successional conifer forest	
Acres	104.5	
SGD Management Goals	Old-growth: Promote the development, maintenance, and connectivity of old-growth coniferous forest and/or associated habitat components for wildlife species that use old-growth habitat. Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Old-growth-c: Protect and manage forested buffers to promote development of large trees where appropriate. Old-growth-e: Within areas to be thinned to develop old-growth characteristics, leave LWD. Forestland-a: At the MU level, provide a range of alternatives for developing and maintaining a mix of forage and hiding cover for elk. Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSIs	Black-capped chickadee: 0.85 Pileated woodpecker: 0.47 Elk: 0.43 in Unit S-1	
Analysis Species	Old-growth: Northern flying squirrel, marten, Larch Mountain salamander, northern spotted owl, bald eagle Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Flat site dominated by Douglas-fir and western hemlock from 8 to 18 in. dbh, with a quadratic mean diameter of 11.6 in. Stand age = 35 yrs in 2006; crown closure = 100%; canopy height = 80 ft., trees per acre = 266. Few small-diameter snags, no large diameter snags, moderate LWD. Variable understory; dominated by Oregon grape and swordfern. Patchy herbaceous cover includes oxalis, inside-out-flower, bedstraw, vanilla-leaf.	
Site Constraints	None	
Access	Good: FR 90 to 7092 Rd. (gated near FR 90); 7092A Rd. crosses through stand. Cowlitz PUD has easement on 7092 Rd.	
Management Strategies	Consider patch cuts to mimic canopy gaps in old-growth stands and increase number of vegetation layers. Consider thinning to accelerate development of large-diameter live trees and potential snags, and increase shrub and herbaceous cover that will improve elk forage. Seed disturbed soils with elk forage mix. Consider establishing and maintaining elk forage plots. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted on May 13. No access concerns identified.
2009	Conduct invasive plant survey at 7902 Rd. in May and control invasive plants as needed.	Surveys conducted on May 13. Invasive plants documented within project boundary along 7902 Rd. were treated with herbicide in July and September. Invasive plants also observed on adjacent property along the MU boundary.

Site Management Plan: DBMU-2, cont.		
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified.
2010	Conduct follow-up invasive plant surveys in May and re-treat as necessary. Contact adjacent landowner to evaluate treatment options.	Survey conducted on May 28. Scattered Canada thistle and common cat's ear remain within previously treated areas. Scotch broom treatment 100 percent effective.
2011	Monitor and manage public access.	Survey conducted on June 8. No access concerns identified.
2011	Conduct follow-up invasive plant survey in May and re-treat as necessary.	Scattered common cat's ear remains; one large, well-established Scotch broom plant observed inside WMA boundary that was overlooked in 2010 survey. Scotch broom re-sprouting vigorously on adjacent ownership, outside WMA boundary.
2012	Monitor and manage public access.	Survey conducted on July 2, 2012. Vehicular access noted on the 7902 Road, likely related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd. No access concerns noted in DBMU-2.
2012	Conduct follow-up invasive plant survey in conjunction with public access survey; remove Scotch broom inside WMA boundary using hand tools; coordinate with adjacent landowner regarding re-treatment.	Not done, due to safety concerns related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd.
2013	Monitor and manage public access.	Survey conducted on June 28, 2013. No evidence of non-motorized access or other access concerns noted.
2013	Conduct follow-up invasive plant survey in conjunction with public access survey; remove Scotch broom inside WMA boundary using hand tools; coordinate with adjacent landowner regarding re-treatment.	Survey conducted on June 28, 2013. Scattered Scotch broom plants observed within the WMA boundary were sprayed in conjunction with herbicide application in DBMU-11 (DB-A) in July and September, 2013. Dense patches of Scotch broom and scattered individual plants were observed along the 7902 Road outside the WMA boundary; coordination with the adjacent landowner has been deferred until plans for forest management activities in DBMU-1 are finalized and needs for road improvements, if any, are identified..
2013	Complete planning for patch cuts, as described in Appendix B (Patch Cut Implementation Plan)	Patch cuts laid out as planned on June 20-21, 2013, and site visit with the TCC conducted on September 11, 2013. Based on TCC recommendations, the PUD requested non-binding quotes for three different forest management alternatives (patch cuts, thinning, and a combination of the two) from 12 logging firms. No firms provided quotes.
2014	Monitor and manage public access.	
2014	Conduct follow-up invasive plant survey in conjunction with public access survey; continue to treat Scotch broom inside WMA boundary; coordinate with adjacent landowner regarding Scotch broom treatment as forest management plans are finalized.	



DBMU-2 Patch 1, trees marked for clearing, June 2013.



Barred owl observed near Patch 1, June 2013

Site Management Plan: DBMU-3		
Cover type	Mid-successional conifer forest	
Acres	17.2	
SGD Management Goals	Old-growth: Promote the development, maintenance, and connectivity of old-growth coniferous forest and/or associated habitat components for wildlife species that use old-growth habitat. Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Old growth-c: Protect and manage forested buffers to promote development of large trees where appropriate. Old-growth-e: Within areas to be thinned to develop old-growth characteristics, leave LWD. Forestland-a: At the MU level, provide a range of alternatives for developing and maintaining a mix of forage and hiding cover for elk. Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.85 Pileated woodpecker: 0.47 Elk: 0.43 in Unit S-1	
Analysis Species	Old-growth: Northern flying squirrel, marten, Larch Mountain salamander, northern spotted owl, bald eagle Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Flat site dominated by Douglas-fir and western hemlock from 8 to 18 in. dbh.	
Site Constraints	None	
Access	Good: FR 90 to 7902 Rd. (gated near FR 90), which crosses through stand. Cowlitz PUD has easement on 7902 Rd.	
Management Strategies	Consider 1) patch cuts to mimic canopy gaps in old-growth stands and increase number of vegetation layers; 2) thinning to accelerate development of large-diameter live trees and potential snags, and increase shrub and herbaceous cover that will improve elk forage, and seed disturbed soils with elk forage mix; and 3) establishing and maintaining elk forage plots. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted on May 13. No access concerns identified.
2009	Conduct invasive plant survey at 7902 Rd. in May and control invasive plants as needed.	Surveys conducted on May 13. No invasive plants observed. Low priority for additional weed surveys.
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified.
2011	Monitor and manage public access.	Survey conducted on June 8. No access concerns identified.
2012	Monitor and manage public access.	Survey conducted on July 2, 2012. Vehicular access noted on the 7902 Road, likely related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd. No access concerns noted in DBMU-3.

Site Management Plan: DBMU-3, cont.		
2013	Monitor and manage public access.	Survey conducted on June 28, 2013. No evidence of non-motorized access or other access concerns noted.
2013	Complete planning for patch cuts, as described in Appendix B (Patch Cut Implementation Plan)	No patch cuts were sited in DBMU-3 (see above, DBMU-2).
2014	Monitor and manage public access.	

Site Management Plan: DBMU-4		
Cover type	Upland mixed forest	
Acres	4.3	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-a: At the MU level, provide a range of alternatives for developing and maintaining a mix of forage and hiding cover for elk. Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.71 Pileated woodpecker: 0.19 Elk: 0.43 in Unit S-1	
Analysis Species	Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and hemlock, 8 to 18" dbh, with some big-leaf maple and alder growing on western edge.	
Site Constraints	Narrow, linear configuration between project road and steep slope down to the Conservation Easement boundary. One intermittent stream/stream buffer.	
Access	Good: adjacent to 7902 Rd. (gated near FR 90). Cowlitz PUD has easement on 7902 Rd.	
Management Strategies	Maintain as buffer between road and Conservation Easement. Manage for species and habitat diversity. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted on May 13. No access concerns identified.
2009	Conduct invasive plant survey at 7902 Rd. in May and control invasive plants as needed.	Surveys conducted May 13. No invasive plants observed within the site boundary, but documented on adjacent property.
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified.
2010	Contact adjacent landowner to evaluate invasive plant treatment options.	Survey conducted on May 28 indicated Scotch broom effectively treated by adjacent landowner.
2011	Monitor and manage public access.	Survey conducted on June 8. No access concerns identified.
2011	Monitor Scotch broom in conjunction with public access surveys.	Survey conducted on June 8 indicated no re-growth of Scotch broom on adjacent land ownership.
2012	Monitor and manage public access.	Survey conducted on July 2, 2012. Vehicular access noted on the 7902 Road, likely related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd. No access concerns noted in DBMU-4.
2012	Monitor Scotch broom in conjunction with public access surveys.	Not noted during July access survey.
2013	Monitor and manage public access.	Survey conducted on June 28, 2013. No evidence of motorized access or other access concerns noted.

Site Management Plan: DBMU-4		
2013	Monitor Scotch broom in conjunction with public access surveys.	Survey conducted on June 28, 2013. No re-growth of Scotch broom noted on property adjacent to DBMU-4.
2014	Monitor and manage public access.	
2014	Monitor invasive plants in conjunction with public access surveys.	

Site Management Plan: DBMU-5		
Cover type	Pole conifer forest	
Acres	8.8	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.43 Pileated woodpecker: 0.18 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and western hemlock	
Site Constraints	Steep slopes, possible wet soils.	
Access	Bordered by FR 90 on the west. 7901 Rd. does not pass through site.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted on May 13. No access concerns identified.
2010	Monitor and manage public access.	No survey conducted; 7901 Rd. does not pass through site and access from FR 90 is difficult. Low priority for additional survey.
2011	No survey planned.	No survey conducted.
2012	No survey planned.	No survey conducted.
2013	No survey planned.	No survey conducted.
2014	Monitor and manage public access.	

Site Management Plan: DBMU-6		
Cover type	Pole conifer forest	
Acres	8.2	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.43 Pileated woodpecker: 0.18 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and western hemlock	
Site Constraints	Steep slopes, possible wet soils.	
Access	Bordered by FR 90 on the west and south. 7901 Rd. does not pass through site.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted on May 13. No access concerns identified.
2010	Monitor and manage public access.	No survey conducted; 7901 Rd. does not pass through site and access from FR 90 is difficult. Low priority for additional survey.
2011	No survey planned.	No survey conducted.
2012	No survey planned.	No survey conducted.
2013	No survey planned.	No survey conducted.
2014	Monitor and manage public access.	

Site Management Plan: DBMU-7		
Cover type	Pole conifer forest	
Acres	4.3	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.43 Pileated woodpecker: 0.18 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and western hemlock	
Site Constraints	Steep slopes, possible wet soils.	
Access	FR 90 to 7901 Rd.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants, public access, erosion along 7901 Rd.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted on May 13. No access concerns identified.
2009	Monitor and manage invasive plant species in conjunction with public access surveys.	No invasive plant species observed during survey along 7901 Rd. Low priority for additional survey.
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified. Low priority for additional survey.
2011	Monitor and manage public access.	Survey conducted on June 8. Kelly humps have been repaired, small-diameter trees removed from road margin, and unauthorized access is possible via 4-wheel drive.
2011	Monitor and manage invasive plant species in conjunction with public access surveys.	Survey conducted on June 8. Scattered Scotch broom along both road margins near Kelly hump repair site.
2012	Monitor effectiveness of gate or barricade planned for installation in spring of 2012.	Survey conducted on May 17, 2012. Unauthorized access, dispersed camping and littering continue to occur. Barricade completed in July, 2012.
2012	Monitor and manage invasive plant species in conjunction with public access surveys.	No survey done. Barricade completed in July, 2012.
2013	Monitor and manage public access, including evaluation of barricade effectiveness.	Survey conducted on June 28, 2013. Barricade and road closure signs in good repair; no evidence of attempts to bypass the barricade.
2013	Monitor and manage invasive plant species in conjunction with public access surveys.	Survey conducted on June 28, 2013. A few Scotch broom plants both north and south of the barricade.
2014	Monitor and manage public access, including evaluation of barricade effectiveness.	

Site Management Plan: DBMU-7		
2014	Monitor and manage invasive plant species in conjunction with public access surveys.	

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Site Management Plan: DBMU-8		
Cover type	Mid-successional conifer forest	
Acres	8.6	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSI	Black-capped chickadee: 0.85 Pileated woodpecker: 0.47 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and western hemlock, 8 to 18" dbh.	
Site Constraints	Possible wet soils.	
Access	FR 90 to 7901 Rd. 7901 Rd. does not pass through site.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants and public access.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Surveys conducted on May 13. No access concerns identified.
2009	Conduct invasive plant survey at 7901 Rd. in May and control invasive plants as needed.	7901 Rd. does not pass through DBMU-8, so invasive plant survey did not cover this site.
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified. Low priority for additional survey.
2011	No survey planned	No survey conducted.
2012	No survey planned.	No survey conducted.
2013	No survey planned.	No survey conducted.
2014	Monitor and manage public access.	

Site Management Plan: DBMU-9		
Cover type	Mid-successional conifer forest	
Acres	13.2	
Site Review Type	Vegetation cover typing, aerial photo review	
SGD Management Goal	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Forestland-b: Maintain or create at least 8 snags, green retention trees, or wildlife reserve trees per acre, if available; retain larger trees and snags, and retain or create 4 logs/acre if possible. Forestland-c: At the MU level, promote habitat diversity by increasing or maintaining minor native tree species composition.	
HEP Evaluation Species and Baseline HSIs	Black-capped chickadee: 0.85 Pileated woodpecker: 0.47 Elk: 0.43 in Unit S-1	
Analysis Species	Forestland: Northern flying squirrel, northern spotted owl	
Site Description	Primarily Douglas-fir and western hemlock, 8 to 18" dbh.	
Site Constraints	Possible wet soils.	
Access	Bordered by FR 90 on the south; 7901 Rd. and 01M Rd. pass through site.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage snags/LWD to meet target densities as trees mature. Monitor and manage invasive plants, public access, and erosion.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted on May 13. No access concerns identified. Erosion in the road cut at intersection of 7901 Rd. and 01M roads, but no soil disturbance or loss of vegetation within the site itself. Erosion within 7901 Rd. roadbed between 01M Rd. and FR 90.
2009	Monitor and manage invasive plant species.	Survey conducted on May 13. No invasive plant species observed. Low priority for future surveys.
2010	Monitor and manage public access; monitor erosion.	Survey conducted on May 28. A few signs of unauthorized (motorized) access (dishwasher dumped over the side of the road, and some litter observed). No change in erosion, no soil disturbance or loss of vegetation within DBMU-9.
2011	Monitor and manage public access; monitor erosion.	Survey conducted on June 8. Kelly humps have been repaired, small-diameter trees removed from road margin, and unauthorized access is possible via 4-wheel drive. No change in erosion noted at broken culvert upslope of the 7901 Rd. near the junction with the 01M Rd.; no soil disturbance or loss of vegetation within DBMU-9.
2011	Monitor and manage invasive plant species in conjunction with public access surveys.	No invasive plant species observed inside WMA boundary. Scotch broom along both road margins near Kelly hump repair site.

Site Management Plan: DBMU-9		
2012	Monitor effectiveness of gate or barricade planned for installation in spring of 2012. Continue to monitor erosion.	Survey conducted on May 17, 2012. Unauthorized access, dispersed camping and littering continue to occur. Barricade completed in July, 2012.
2012	Monitor and manage invasive plant species in conjunction with public access surveys.	No survey done. Barricade completed in July, 2012.
2013	Monitor and manage public access, including evaluation of barricade effectiveness.	Survey conducted on June 28, 2013. Barricade and road closure signs in good repair; no evidence of attempts to bypass the barricade.
2013	Monitor and manage invasive plant species in conjunction with public access surveys.	Survey conducted on June 28, 2013. A few Scotch broom plants both north and south of the barricade.
2014	Monitor and public access, including evaluation of barricade effectiveness.	
2014	Monitor and manage invasive plant species.	

Site Management Plan: DBMU-10		
Cover type	Riparian Deciduous Forest	
Acres	3.1	
Site Review Type	Vegetation cover typing, aerial photo review, visual walk-through 9/1/05 and 6/14/06	
SGD Management Goal	Riparian: Protect, maintain, and/or enhance riparian areas to include a diversity of native plant species and vegetation structures to benefit wildlife species that use riparian habitats.	
SGD Management Objectives	Riparian-a: Identify and establish buffers. Riparian d: Protect existing large snags. Riparian-e: As part of implementation of WHMP, identify riparian sites damaged by anthropogenic processes and prepare restoration plans within 5 yrs., if feasible.	
HEP Evaluation Species and Baseline HSIs	Black-capped chickadee: 0.19 Pileated woodpecker: 0.32 Yellow warbler: 0.65 Elk: 0.43 in Unit S-1	
Analysis Species	Cascade torrent salamander, papillose tail-dropper	
Site Description	Red alder overstory, sparse mid-story shrub and understory forb component, bisected by an unnamed stream. Western Hemlock/Coolwort Foamflower PA, with several old, large-diameter hemlock stumps, but no snags and little LWD.	
Site Constraints	Seasonal flooding, wet soils, stream buffer.	
Access	Bordered by FR 90 on the south; 7901 on the east.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage invasive plants, public access and erosion along 7901/01M Rd.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted May 13, 2009. No access concerns identified. Erosion within 7901 Rd. roadbed between intersection with 01M Rd. and FR 90.
2009	Conduct invasive plant survey at 7901 Rd. in May and control invasive plants as needed.	Survey conducted May 13, 2009. Invasive plant species documented at intersection of 7901 Rd. and FR 90.
2010	Monitor and manage public access; monitor erosion.	Survey conducted May 28. A few signs of unauthorized (motorized) access (dishwasher dumped over the side of the road, and some litter observed). No change in erosion, no soil disturbance or loss of vegetation within DBMU-10.
2010	Treat invasive plant species, as needed.	Weeds growing at the intersection of the 7901 Rd. and FR 90 are within the FR 90 right-of-way. Weeds at this site appear to have been sprayed in 2009.
2011	Monitor and manage public access.	Survey conducted on June 8. Kelly humps have been repaired, small-diameter trees removed from road margin, and unauthorized access is possible via 4-wheel drive. No change in road-bed erosion near junction with FR 90.
2011	Monitor invasive plants adjacent to project boundary.	No invasive plant species observed inside WMA boundary. Scotch broom along both road margins near Kelly hump repair site, outside WMA boundary.

Site Management Plan: DBMU-10		
2012	Monitor effectiveness of gate or barricade planned for installation in spring of 2012. Continue to monitor erosion.	Survey conducted on May 17, 2012. Unauthorized access, dispersed camping and littering continue to occur. Barricade completed in July, 2012. An increase in public access and littering south of the barricade was observed during fall 2012 site visits.
2012	Monitor and manage invasive plant species in conjunction with public access surveys.	No survey done. Barricade completed in July, 2012.
2013	Monitor and public access, including evaluation of barricade effectiveness.	Survey conducted on June 28, 2013. Barricade and road closure signs in good repair; no evidence of attempts to bypass the barricade.
2013	Monitor and manage invasive plant species.	Survey conducted on June 28, 2013. A few Scotch broom plants both north and south of the barricade.
2014	Monitor and public access.	
2014	Monitor and manage invasive plant species.	
2014	Evaluate habitat conditions, including riparian habitat and conifer regeneration within alder-dominated stand, and wildlife use.	

Site Management Plan: DBMU-11		
Cover type	Palustrine Emergent Marsh/Meadow/Riparian Mixed Forest	
Acres	PEM 1.8 ac.; MD 1.0 ac.; RM 3.4 ac.	
Review Type	Vegetation cover typing, aerial photo review, walk-throughs 9/1/05, 6/14/06, 9/9/08, and 4/16/09	
SGD Management Goals	Wetland: Protect, maintain, and/or enhance wetlands to provide a diversity of habitat types for native amphibians, waterfowl, and other wildlife species. Meadow: Perpetuate and enhance to benefit elk and other species that use open habitats. Forestland: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage.	
SGD Management Objectives	Wetland-e: Identify and establish buffers to maintain and protect wetland habitat and functions. Meadow-c: Manage select meadows and old fields over the license periods to prevent shrub/tree encroachment, and maintain a diverse composition and structure of desirable grasses and forbs for birds and mammals. Forestland-c: At the MU level, promote forest habitat diversity for wildlife by increasing or maintaining minor native tree species composition where appropriate site conditions exist over the life of the licenses.	
HEP Evaluation Species and Baseline HSIs	Black-capped chickadee: 0.58 Pileated woodpecker: 0.46 Elk: 0.43 in Unit S-1 No suitable habitat for yellow warbler (wetland, riparian mixed forest) or Savannah sparrow (meadow)	
Analysis Species	Wetland: No suitable habitat for wetland associated analysis species (beaver, great blue heron (rookeries), wood duck). Meadow: elk (no suitable habitat for Savannah sparrow). Forestland: Northern flying squirrel, northern spotted owl.	
Site Description	Sedge and grass wetland/meadow with 100% herbaceous cover within narrow band of mixed riparian forest. Scattered snowberry and vine maple shrub in meadow shows signs of heavy browsing. Several small-diameter standing snags and small-diameter woody debris. Non-native invasive plants observed, that may provide elk forage (e.g., clovers), but Canada thistle also abundant in 2008.	
Site Constraints	Wetland buffer.	
Access	Good. FR 90 to 7902 (gated) to 7902A. Cowlitz PUD has easement on 7902 Rd.	
Management Strategies	Control conifer encroachment to maintain wetland/meadow characteristics over time. Thin forest edges to promote shrub development to improve elk forage. Monitor and manage invasive plants and public access. Consider establishing elk forage plot(s) near meadow.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted on May 13. No access concerns identified.
2009	Flag wetland buffer boundary in May.	Weed treatment areas flagged; all were considered within wetland or riparian boundary, so wetland buffers not flagged.
2009	Conduct invasive plant survey in wetland and meadow in May and control invasive plants as needed.	Survey conducted on May 13. Weed treatments applied in July and September.

Site Management Plan: DBMU-11		
2010	Monitor and manage public access.	Survey conducted on May 28. No public access concerns identified.
2010	Conduct follow-up invasive plant survey of treated areas in May.	Survey conducted on May 28. Canada thistle abundance somewhat reduced.
2010	Mark the perimeter of the meadow.	Perimeter marked with 20 steel tent pegs, points GPS'd and mapped in GIS.
2011	Monitor and manage public access.	Survey conducted on June 8. No public access concerns identified.
2011	Re-treat Canada thistle and conduct follow-up survey.	Survey conducted on June 8. Canada thistle abundance similar to 2010. Herbicide applied on June 15.
2012	Monitor and manage public access.	Survey conducted on July 2, 2012. Vehicular access noted on the 7902 Road, likely related to the illegal squatter's cabin on BLM land at the south end of the 7902 Rd. No access concerns noted in DBMU-11.
2012	Conduct follow-up invasive plant survey in June; consider re-treatment in both summer and fall as budget allows.	No survey done due to safety issues. Solicited bids for weed control twice; first call resulted in 0 bidders, second call resulted in 1 bid that was deemed too costly. In August, Cowlitz PUD employees clipped seed heads off Canada thistle and tansy ragwort.
2013	Monitor and manage public access.	Survey conducted on June 28, 2013. No evidence of unauthorized access.
2013	Conduct follow-up invasive plant survey in June; consider re-treatment in both summer and fall as budget allows.	Survey conducted on June 28, 2013 indicated increasing cover of Canada thistle and tansy ragwort. Herbicide applications completed in July and September, 2013.
2014	Monitor and manage public access.	
2014	Conduct follow-up invasive plant survey in June; evaluate success of 2013 treatments and continue to treat invasive plant species.	

Site Management Plan: DBMU-12		
Cover type	Riparian deciduous forest	
Acres	6.1	
Review Type	Vegetation cover typing, aerial photo review	
SGD Management Goals	Riparian: Protect, maintain, and/or enhance riparian areas to include a diversity of native plant species and vegetation structures to benefit wildlife species that use riparian habitats.	
SGD Management Objectives	Riparian-a: Identify and establish buffers. Riparian d: Protect existing large snags. Riparian-e: As part of implementation of WHMP, identify riparian sites damaged by anthropogenic processes and prepare restoration plans within 5 yrs., if feasible.	
HEP Evaluation Species and Baseline HSIs	Black-capped chickadee: 0.19 Pileated woodpecker: 0.32 Yellow warbler. 0.65 Elk: 0.43 in Unit S-1	
Analysis Species	Cascade torrent salamander, papillose tail-dropper	
Site Description	Red alder overstory. Permanent stream/stream buffer in steep canyon.	
Site Constraints	Steep slopes, stream/stream buffer.	
Access	Bordered by FR 90 on the south; 7901 Rd. crosses north edge.	
Management Strategies	Maintain cover on steep slopes. Manage for species and habitat diversity. Monitor and manage public access, invasive plants, and erosion.	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access.	Survey conducted on May 13. No access concerns identified.
2010	Monitor and manage public access.	Survey conducted on May 28. No access concerns identified.
2011	Monitor and manage public access.	Survey conducted on June 8. Kelly humps have been repaired, small-diameter trees removed from road margin, and unauthorized access is possible via 4-wheel drive.
2011	Monitor and manage invasive plant species in conjunction with public access surveys.	No invasive plant species observed inside WMA boundary. Scotch broom along both road margins near Kelly hump repair site.
2012	Monitor effectiveness of gate or barricade planned for installation in spring of 2012.	Survey conducted on May 17, 2012. Unauthorized access, dispersed camping and littering continue to occur. Barricade completed in July, 2012.
2012	Monitor and manage invasive plant species in conjunction with public access surveys.	No survey done. Barricade completed in July, 2012.
2013	Monitor and manage invasive plant species in conjunction with public access surveys, including evaluation of barrier effectiveness.	Survey conducted on June 28, 2013. Barricade and road closure signs in good repair; no evidence of unauthorized access. A few Scotch broom plants both north and south of the barricade.
2014	Monitor and manage invasive plant species in conjunction with public access surveys, including evaluation of barrier effectiveness	

3.2 PROJECT WORKS MANAGEMENT UNIT

The following section provides an aerial photo of the Project Works MU (Figure 3.2-1), a cover type map of the Project Works MU (Figure 3.2-2) and Site Management Plans for four management classifications. These include areas that were revegetated following reconstruction of the canal in 2002 (PWMU-REV); a constructed wetland within the revegetated area (PWMU-PUB); forested areas that were not disturbed during reconstruction activities (PWMU-FOR); and the transmission line right-of-way (PWMU-ROW).



Figure 3.2-1 Project Works Management Unit (Google Earth, August, 2012).

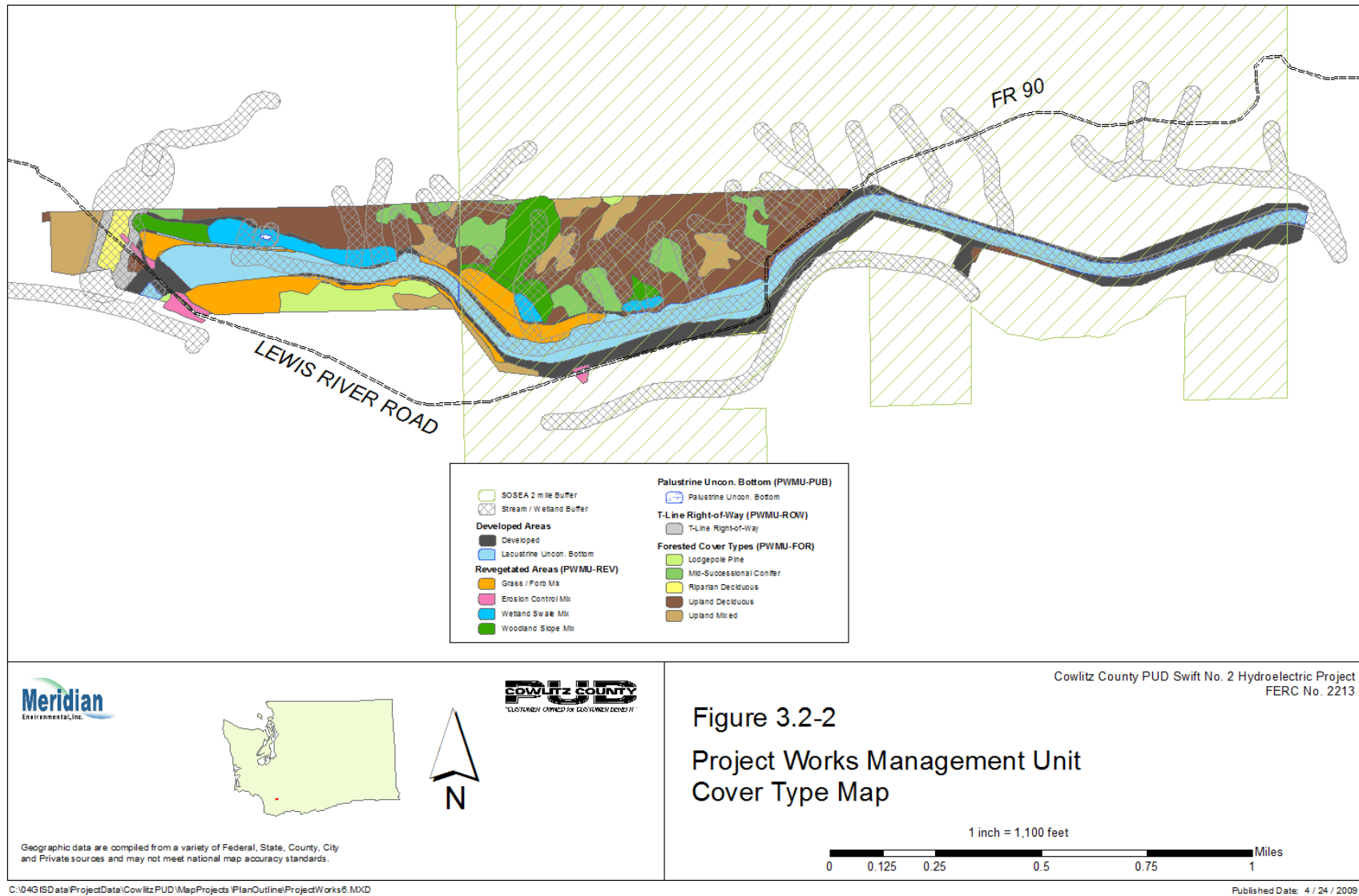


Figure 3.2-2. Project Works Management Unit cover type map.

Site Management Plan: PWMU-REV		
Cover type	Revegetated: wetland swale, woodland, forage, roadside areas	
Acres	61.82 (seeded with following mixes:14.65 wetland; 10.54 woodland; 33.34 forage; 3.29 roadside)	
SGD Management Goals	NA	
SGD Management Objectives	NA	
HEP Evaluation Species and Baseline HSIs	NA	
Analysis Species	NA	
Site Description	Areas cleared or exposed during Swift No. 2 reconstruction, revegetated and stabilized. Areas around the wetland (PWMU-PUB) were covered with soil and large woody debris from natural slides on January 8, 2009. As a result, Cowlitz PUD reconfigured site drainage (ditches and culverts) during the summer of 2009 to minimize the risk that future landslides would interfere with project operation.	
Site Constraints	Some accessible flat areas, some very steep inaccessible areas with unstable slopes.	
Access	Good: Gated project maintenance roads.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage invasive plants. <i>Note: public access is not allowed.</i>	
Implementation		
Year	Management Activity Planned	Management Activity Implemented/Documentation
2009	Flag wetland and riparian buffer boundaries in May.	Weed treatment areas flagged; all were considered within wetland or riparian boundary, so buffers not flagged.
2009	Conduct invasive plant survey in May and control invasive plants as needed.	Survey conducted May 13. Some Scotch broom hand-cut in June. Weed treatment applied (herbicides and hand-pulling) in August and September.
2009	Seed exposed soils with pasture mix in April; evaluate management needs and opportunities in May.	Exposed soils seeded in April.
2010		Planted 370 Douglas fir seedlings randomly between the transmission line and the west debris basin. Low survival due to frost damage to the seedlings in the nursery prior to planting.
2010	In May, conduct follow-up invasive plant survey of treated areas and high priority areas not yet surveyed. Control invasive plants as needed.	Follow-up survey on May 28 indicated effective Scotch broom treatment with 2009 herbicide applications. Mixed results where hand tools used for removal in February 2010; these areas re-treated by hand-pulling and digging in November, 2010. Three new areas surveyed, mapped and treated by hand-pulling and digging Himalayan blackberry, Scotch broom, and a few Canada thistle plants in November 2010.

Site Management Plan: PWMU-REV		
2011	Conduct initial invasive plant survey of borrow areas and follow-up invasive plant survey of treated areas in May and control invasive plants as needed.	Survey on June 8 indicated varying levels of success in the five Weed Treatment Areas mapped and surveyed to date, i.e., good control of Scotch broom in PW-A and PW-B; incomplete treatment of Himalayan blackberry in PW-C, with new invasive species appearing; incomplete treatment of Scotch broom in PW-D, and scattered Canada thistle remaining in PW-E. Herbicide applied to Himalayan blackberry and Scotch broom on June 14.
2012	Conduct follow-up invasive plant surveys of all treated areas in June. Re-evaluate treatment approach to manage Himalayan blackberry in PW-C; re-treat Scotch broom in PW-D; use hand tools to remove Canada thistle in PW-E.	Survey not done.
2013	Conduct follow-up invasive plant surveys of all treated areas in June. Re-evaluate treatment approach to manage Himalayan blackberry in PW-C; re-treat Scotch broom in PW-D; use hand tools to remove Canada thistle in PW-E.	Herbicides were applied to weeds in PW-A, PW-B, PW-C, PW-D, and the lower section of PW-E on June 11 and 12, 2013. Weed survey conducted on June 27, 2013. Mix of natives and non-natives, including tansy ragwort and Canada thistle, growing in PW-C where Himalayan blackberry cover has been reduced, and no change observed in broom cover in PW-D.
2014	Conduct follow-up invasive plant surveys of all treated areas in June. In late fall, plant Douglas fir seedlings where Himalayan blackberry cover has been reduced in PW-C. Re-treat Scotch broom in PW-A, PW-B, and PW-D. Use hand tools or spot-spray to control weeds (primarily Canada thistle and tansy ragwort) in PW-E and PW-F.	
2014	Install four bluebird boxes.	



Rose species filling in on PW-F borrow slope, June 2013.

Site Management Plan: PWMU-PUB		
Cover type	Palustrine unconsolidated bottom (may develop PEM and/or PSS characteristics)	
Acres	0.1 (may be expanding)	
SGD Management Goals	NA	
SGD Management Objectives	NA	
HEP Evaluation Species and Baseline HSIs	NA. In the future, pond-breeding amphibians, yellow warbler, and black-capped chickadee may apply.	
Analysis Species	NA	
Site Description	New open-water wetland developing in regraded, revegetated soils on the north side of the canal. Hydrology supplied by upslope surface flows and subsurface drainage. Wetland was partially covered with soil and large woody debris from slides that occurred following a severe rainstorm on January 8, 2009. As a result, Cowlitz PUD re-configured site drainage (ditches and culverts) during the summer of 2009 to minimize the risk that any future landslides would interfere with project operation.	
Site Constraints	None	
Access	Good: Lewis River Rd., gated project maintenance roads.	
Management Strategies	Manage for species and habitat diversity. Monitor and manage and invasive plants. <i>Note: Public access is not allowed.</i>	
Implementation		
Year	Management Activity Planned	Management Activity Implemented/Documentation
2009	Conduct invasive plant survey in May and control invasive plants as needed.	Survey conducted on May 13. Some Scotch broom removed by hand-cutting in June. Herbicide applied in August and September.
2009	Evaluate enhancement opportunities in May.	TCC developed site design in June. Berm constructed in September, soils re-seeded using a wetland mix and willow stakes planted around the margin of the pond.
2010		Site Inspection in April evaluated survival of willow stakes and effectiveness of Scotch broom removal.
2010	Conduct follow-up survey of weed treatment areas. Control invasive plants as needed.	Survey conducted on May 28 to evaluate the results of Scotch broom removal using hand tools in February 2010. Results were mixed, and WCC crews re-treated Scotch broom around the wetland in November 2010, again by hand-pulling or digging.
2010	Plant approximately 200 shrubs or cuttings.	WCC crews planted 450 shrubs (mix of cuttings and rooted stock of willow, Nootka rose, snowberry, ninebark and dogwood) around the wetland in November.
2011	Conduct invasive plant survey in May.	Survey conducted on June 8. Good control of Scotch broom.
2011	Concurrent with invasive plant survey, evaluate survival of shrubs planted in 2010.	Survey conducted on June 8. Results are described in the Annual Report. Overall survival was about 56 percent, but surviving shrubs appeared healthy, with little browse damage.

Site Management Plan: PWMU-PUB		
2012	Evaluate shrub status in conjunction with invasive plant survey.	No survey conducted.
2013	Evaluate shrub status in conjunction with invasive plant survey.	Survey conducted on June 27, 2013. Several live willows observed. Scattered occurrences of invasive plants and one small pocket of Scotch broom remaining.
2014	Conduct invasive plant survey in June and treat weed occurrences in July and September.	
2014	Plant shrubs in wetland/upland transition areas in late October/November (See Appendix C).	



Well-established willowing planting adjacent to PWMU-PUB, June 2013.

Site Management Plan: PWMU-FOR						
Cover types	Mid-successional conifer (MS), lodgepole pine (LP), riparian deciduous (RD), upland deciduous (UD) , upland mixed (UM)					
Acres	177.7 (MS 24.5; LP 11.9; RD 4.0; UD105.0; UM 32.3)					
SGD Management Goals	Forestlands: Promote forestland species composition and structures that benefit wildlife and provide an appropriate mosaic of big game hiding cover and forage. Unique Habitats/Areas: Protect unique habitats, including, lava flow, and areas of culturally sensitive plant species identified as important to the Tribes.					
SGD Management Objectives	Forestland-a: At the MU level, provide a range of alternatives for developing and maintaining a mix of forage and hiding cover for elk. Forestland-c: At the MU level, promote forest habitat diversity for wildlife by increasing or maintaining minor native tree species composition where appropriate site conditions exist over the life of the licenses. Unique Habitat-d: Identify and implement appropriate measures to protect and maintain important areas of ethnobotanically significant plants, as identified by the Tribes, over the life of the licenses.					
HEP Evaluation Species and Baseline HSIs		<u>MS</u>	<u>LP</u>	<u>RD</u>	<u>UD</u>	<u>UM</u>
	Black-capped chickadee:	0.60	0.92	0.68	0.27	0.89
	Pileated woodpecker:	0.62	0.00	0.29	0.27	0.71
	Elk:	0.43 in Unit S-1.				
Analysis Species	Forestlands: Northern flying squirrel, northern spotted owl Lodgepole: Pacific western big-eared bat, Larch Mountain salamander, Van Dyke’s salamander. Riparian: Cascade torrent salamander, papillose tail-dropper					
Site Description	Very steep with potentially unstable slopes north of the canal; flat between canal and Lewis River Rd.					
Site Constraints	Proximity to project facilities					
Access	Good: Lewis River Rd.; gated project roads. <i>No public access allowed.</i>					
Management Strategies	Manage for species and habitat diversity. Monitor and manage invasive plants.					
Implementation						
Year	Planned Management Activity			Implemented Management Activity/Documentation		
2009	Monitor and manage invasive plants.			Low-priority (no public access, good ground cover without soil disturbance); not included in invasive plant survey area.		
2010	Monitor and manage invasive plants as budget allows.			No survey conducted.		
2011	Monitor and manage invasive plants as budget allows.			No survey conducted.		
2012	Monitor and manage invasive plants as budget allows.			No survey conducted.		
2013	Monitor and manage invasive plants as budget allows.			No survey conducted.		
2014	Monitor and manage invasive plants as budget allows.					

Site Management Plan: PWMU-ROW		
Cover type	Transmission line right-of-way	
Acres	3.6	
SGD Management Goals	While allowing for safe and reliable transmission, promote establishment and maintenance of desirable vegetation to provide habitat for wintering deer and elk and a diverse mix of shrub and other early-successional vegetation.	
SGD Management Objectives	ROW-c: Identify and provide screening cover for deer and elk, where needed, where public roads cross ROW.	
HEP Evaluation Species and Baseline HSIs	Elk: 0.43 in Unit S-1. No suitable habitat for Savannah sparrow.	
Analysis Species	None identified.	
Site Description	Tall, dense shrub cover.	
Site Constraints	Proximity to traffic on Lewis River Rd. and project facilities	
Access	Good: Lewis River Rd. <i>Note: Public access not allowed.</i>	
Management Strategies	Monitor and manage invasive plants; evaluate need for visual screening. <i>Public access not allowed</i>	
Implementation		
Year	Planned Management Activity	Implemented Management Activity/Documentation
2009	Monitor and manage public access; evaluate need for visual screening.	Public access not allowed. Visual screening at Lewis River Rd. assessed; no concerns identified.
2010	Monitor invasive plant species.	Monitoring deferred to higher priority sites.
2011	Monitor invasive plant species as budget allows.	No survey conducted.
2012	Monitor invasive plant species as budget allows.	No survey conducted.
2013	Monitor and manage invasive plants as budget allows.	No survey conducted.
2014	Monitor and manage invasive plants as budget allows.	

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Appendix A

2014 Washington State and County Weed Lists

(Lists to be included in final pdf version of the Annual Plan)

Appendix B

*Weed Survey and Treatment Area PW-C
2014 Invasive Plant Control Plan*

Weed Survey and Treatment Area PW-C 2014 Weed Treatment Plan	
Management Goal	The goal for invasive plant species is to work to prevent the establishment and spread of weeds currently listed by the Washington state and Cowlitz County weed control boards, and other undesirable or invasive plant species identified by the TCC (WHMP Section 3.2.1).
Objectives	The objective of this planting plan is to establish native species to provide shade where Himalayan blackberry has been removed in PW-C in order to prevent further spread of other invasive plants.
Estimated area to be planted	1,200 square feet
Species to be planted	Douglas fir, vine maple
Stock to be planted	1-gallon containers
Soil preparation	None
Spacing	Douglas fir on 10-foot centers; vine maple on 6-foot centers
Number of plants	Approximately 25
Planting schedule	October 30 – November 30, 2014
Potential sources of plant material	http://www.soundnativeplants.com http://www.windyridgetreefarm.com Natural Recovery, Vancouver, WA (360-695-4632)
Labor cost	\$356; assumes \$15/hr x 2-person crew x 1 10-hr day, plus RT mileage from Longview.
Material cost	\$225 (assumes \$4.90/shrub plus mulch, stakes, and flagging)
Documentation	WHMP Exhibit 5.8-3
Monitoring	WHMP Section 5.8 (Invasive Plant Management SOPs)
Maintenance	Annual weed control, as needed
Task Description	Below
<p>Himalayan blackberry growing along the edge of the tree line at the east end of PW-C has been treated manually (in 2010) and with herbicides (in 2011 and 2013) with good results. However, a mix of native and non-native herbaceous species, including tansy ragwort, Canada thistle, bull thistle, and Scotch broom, are establishing on bare soils as Himalayan blackberry cover has been reduced. Planting Douglas fir and vine maple in the area shown in the air photo below is intended to provide cover that will, over time, shade out invasive weeds. This treatment plan includes the following steps:</p> <ol style="list-style-type: none"> 1. Use manual methods to remove existing invasive plants at the east end of PW-C. 2. Plant approximately 12 Douglas fir and 23 vine maple, with trees on 10-foot centers and shrubs on 6-foot centers. 3. Apply mulch 4. Monitor annual survival in conjunction with invasive plant surveys in 2014, 2015, and 2016. 	

**Weed Survey and Treatment Area PW-C
2014 Weed Treatment Plan**



Planting area, east end of PW-C (GoogleEarth 2012)

Appendix C

PWMU-REV 2014 Shrub Enhancement Plan

PWMU-PUB/PWMU-REV 2014 Shrub Enhancement Plan	
WHMP Management Goal	The goal for wetlands is to protect, maintain, and/or enhance wetlands to provide a diversity of habitat types for native amphibians, waterfowl, and other wildlife species (WHMP Section 3.1.2). No specific goals were identified for revegetated areas in the Project Works MU.
Objectives	The overall objectives for this project are to increase species and structural diversity of habitat in the vicinity of PWMU-PUB, including areas of PWMU-REV near the wetland. Increasing the cover of deciduous shrubs may improve HSIs for yellow warbler in the future, and could also provide forage opportunities for western bluebirds.
Estimated area to be planted	Up to 3,200 square feet (approximately 800 square feet in each of four plots)
Species to be planted	Serviceberry, mock orange, Scouler willow, snowberry
Stock to be planted	1-gallon container stock
Soil preparation	None
Spacing	Approximately 6-foot centers
Number of plants	100
Planting schedule	October 30 – November 30, 2014
Potential sources of plant material	http://www.soundnativeplants.com http://www.windyridgetreefarm.com Natural Recovery, Vancouver, WA (360-695-4632)
Labor cost	\$356; assumes \$15/hr x 2-person crew x 1 10-hr day, plus RT mileage from Longview.
Material cost	\$1,144 (assumes \$5.25/shrub, \$4/shrub guard, plus mulch, stakes, and flagging)
Documentation	WHMP Exhibit 5.2-1, Wetland Initial Inspection Form
Monitoring	WHMP Exhibit 5.2-1, Wetland Annual Inspection Form
Maintenance	None
Task Description	Below
<p>Several species of deciduous shrubs (willows, red-osier dogwood, Nootka rose, snowberry, Pacific ninebark) were planted near the PWMU-PUB wetland in 2010. In 2011, overall survival was estimated at about 56 percent. Many shrubs were likely missed owing to the variable-density planting pattern, but subsequent observations during the 2013 invasive plant survey indicate that very few species other than willow have survived.</p> <p>Since 2010, red alder and soft rush have continued to colonize the area around the pond and along small drainageways to the east and west of the pond (GoogleEarth 2012). Both species are nitrogen-fixers, and the aerial view shown below suggests that soils may be improving. Both species are likely to continue to spread wherever soils are moist enough to support them. While alder and soft rush provide cover and forage for a variety of birds and small mammals, planting other shrubs that tolerate poor, droughty soils could further increase species and structural diversity and provide broader benefits for wildlife.</p>	

PWMU-PUB/PWMU-REV 2014 Shrub Enhancement Plan

The 2014 shrub enhancement plan includes the following steps:

1. Plant 25 shrubs in each of the four planting areas show below
 - Plot 1: Serviceberry (*Amelanchier alnifolia*)
 - Plot 2: Mock orange (*Philadelphus lewisii*)
 - Plot 3: Scouler willow (*Salix scouleriana*)
 - Plot 4: Snowberry (*Symphoricarpos albus*)
2. Plant shrubs on approximately 6-foot centers, following moisture line indicated by colonizing alder and soft rush
3. Apply mulch
4. Install shrub guards
5. Mark each shrub with numbered stakes and/or flagging.
6. Monitor annual survival in conjunction with invasive plant surveys in 2014, 2015, and 2016.



Planting areas 1 through 4 in PWMU-REV (GoogleEarth, 2012)

Appendix D

*Western Bluebird Nesting Habitat
2014 Enhancement Plan*

Western Bluebird Nesting Habitat Enhancement Plan	
WHMP Management Goal	The WHMP does not identify specific management goals for revegetated areas in the Project Works MU. Goals for farmland/idle fields/meadows (WHMP Section 3.1.4) are to perpetuate and enhance these habitats to benefit elk and other species that use open habitats.
Objectives	The objective of this project is to provide nesting opportunities for western bluebirds. This project would be consistent with objectives b and d of the WHMP Section 3.1.4, which are to manage and develop hedgerows and shrub patches in fields and meadows, and to maintain fruit or soft mast bearing species in these areas, respectively.
Number of nest boxes	4
Locations	Forest edge, at least 50 feet from tree line
Aspect	Entrance hole facing north
Height	Entrance hole approximately 5 feet above ground level
Spacing	Boxes 1 and 2 - 250 yards apart; Boxes 3 and 4 – 270 yards apart
Schedule	Install boxes in late summer or fall 2014 (may be installed in conjunction with planting projects in October-November 2014)
Labor cost	\$1,000 (\$25/hr x 1 person x 8 hrs x 1 trip for installation, 2 trips for monitoring, and 1 trip for maintenance, plus travel RT from Longview).
Material cost	\$75 for purchase or construction of boxes; Cowlitz PUD maintenance staff to provide poles.
Documentation	Monitoring results to be included in Annual Report
Monitoring	At a minimum, monitor twice (last week of April, last week of May) in 2014 to determine nest use; adjust as needed to monitor breeding attempts and success.
Maintenance	Clean annually after the breeding season and repair as needed
Task Description	Below
<p>Western bluebirds typically nest in tree cavities, but readily make use of artificial nest boxes. Numerous bluebird trails have been established throughout the state, with varying levels of occupancy by bluebirds, since the boxes are often subject to competition from swallows, house wrens, and house sparrows. Few swallows (of any species) have been observed in the Project Works MU to date, and no house wrens or house sparrows are likely to be present. Three western bluebirds were observed in the Project Works MU in August 2013, and it is possible that providing new nesting opportunities would attract nesting pairs.</p> <p>Forest edges and revegetated areas of the Project Works MU (as shown in the air photo below) may provide suitable habitat for this species. Although western bluebirds are primarily insectivorous, additional plantings of shrubs that would provide fruits and berries (including those described in Appendix C, above) may also prove beneficial.</p>	

Western Bluebird Nesting Habitat Enhancement Plan



PWMU-REV Bluebird nest box locations (GoogleEarth 2012)

Appendix E

Annual Plan Consultation Record

(Comments and response to be added to the final version of the Annual Plan)

2014 ANNUAL PLAN CONSULTATION RECORD

As required by License Article 403, this section documents Cowlitz PUD's consultation with the TCC regarding the development of the Annual Plan for the Swift No. 2 Wildlife Management Area. The 30-day Review Draft of the Annual Plan was emailed to the TCC on _____, 2014 and discussed at the _____, 2014 TCC meeting. Comments were due on _____, 2014. _____ written comments were received by _____, 2014. The table below summarizes the comments the TCC provided at the _____, 2014 meeting, and provides Cowlitz PUD's responses.

Cowlitz PUD's Response to TCC Comments on the Draft 2014 WHMP Annual Plan

Comment	Cowlitz PUD Response

Draft
Overall 2014 Budget

License Year 6
Calendar Year 2014
Annual WHMP Budget

Total Available Funds		2013 Funds	2014 Funds
Fee Simple Lands	Acres	13,134	13,134
	Cost Per Acre	\$33.18	\$33.30
	SubTotal	\$435,792.62	\$437,392.41
Interests in Lands	Acres	16	16
	Cost Per Acre	\$16.59	\$16.85
	SubTotal	\$265.44	\$269.63
Other Additional Funds	Remaining Funds from Previous Year	\$1,724.60	\$14,216.11
	Additional HEP Funding	\$0.00	\$20,000.00
	RMEF	\$0.00	\$11,281.71
	Interest	\$12,323.19	\$13,532.38
	SubTotal	\$14,047.79	\$59,030.20
Total		\$450,105.85	\$496,692.24

Budget				
WHMP Management Area or Plan-Wide Goal		2013 Budget		2014 Proposed Budget
		Proposed	Actual	
Administration	Cost	\$33,980.00	\$39,031.27	\$39,600.00
	Percent of Budget	7.55%	8.67%	7.97%
Old-Growth	Cost	\$9,300.00	\$16,905.92	\$850.00
	Percent of Budget	2.07%	3.76%	0.17%
Wetlands	Cost	\$24,273.00	\$20,960.34	\$30,580.00
	Percent of Budget	5.39%	4.66%	6.16%
Riparian	Cost	\$18,278.00	\$2,401.70	\$8,500.00
	Percent of Budget	4.06%	0.53%	1.71%
Shrubland	Cost	\$3,348.00	\$5,771.63	\$6,970.00
	Percent of Budget	0.74%	1.28%	1.40%
Farmland, Meadow, Idle Areas	Cost	\$60,707.00	\$70,803.51	\$67,670.00
	Percent of Budget	13.49%	15.73%	13.62%
Orchard	Cost	\$14,643.00	\$16,163.00	\$29,935.00
	Percent of Budget	3.25%	3.59%	6.03%
Transmission Line Right-of-Way	Cost	\$22,820.00	\$28,832.39	\$21,770.00
	Percent of Budget	5.07%	6.41%	4.38%
Unique Area/Habitat	Cost	\$4,836.00	\$2,395.91	\$4,080.00
	Percent of Budget	1.07%	0.53%	0.82%
Forestland	Cost	\$190,540.00	\$185,257.66	\$187,600.00
	Percent of Budget	42.33%	41.16%	37.77%
Invasive Plant Species	Cost	\$19,486.00	\$10,005.36	\$17,485.00
	Percent of Budget	4.33%	2.22%	3.52%
Raptor	Cost	\$28,996.00	\$29,817.90	\$25,370.00
	Percent of Budget	6.44%	6.62%	5.11%
Public Access Management	Cost	\$15,146.00	\$7,543.15	\$16,910.00
	Percent of Budget	3.36%	1.68%	3.40%
Monitoring	Cost	\$3,720.00	\$0.00	\$39,325.00
	Percent of Budget	0.83%	0.00%	7.92%
Total Cost		\$450,073.00	\$435,889.74	\$496,645.00
Total Percent of Budget Spent		99.99%	96.84%	99.99%
Remaining Funds		\$32.85	\$14,216.11	\$47.24

Administration Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	WHMP Estimated Hours	Budgeted Hours	Cost
Annual Report	Annually	70 hours	230	\$19,550.00
Annual Plan	Optional	70 hours	230	\$19,550.00
Labor rate per hour				\$85.00
Total Labor			460	\$39,100.00
Materials				
Annual Report and Plan Reproduction				\$500.00
Other				\$0.00
Total Materials				\$500.00
Total Labor and Materials				\$39,600.00

Old-Growth Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	WHMP Estimated Hours	Budgeted Hours	Cost
Initial Evaluation	Within 5 years of WHMP Implementation	140 hours	0	\$0.00
Aerial Surveys	Annually	0 hours	0	\$0.00
Ground Surveys	Optional	4 hours per inspection	0	\$0.00
Snag Development	Optional	4 hours per tree	0	\$0.00
Thinning	Optional	Unknown	0	\$0.00
Large Woody Debris Placement	Optional	Unknown	0	\$0.00
Mature Stand Connectivity	Within 5 years of WHMP Implementation	225 hours	10	\$850.00
Labor rate per hour			\$85.00	
Total Labor			10	\$850.00
Materials				
Other			\$0.00	
Total Materials			\$0.00	
Total Labor and Materials			\$850.00	

Wetland Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluation	Within 5 years of WHMP Implementation	180 hours	0	\$0.00
Initial Evaluation Final Report	Within 5 years of WHMP Implementation	80 hours	0	\$0.00
Annual Inspection	Annually	80 hours	80	\$6,800.00
Annual Inspection with unmanaged wetlands	Every 5 years	140 hours	0	\$0.00
Post-Treatment Inspection	Optional	4 hours per inspection	0	\$0.00
Diversion Draw Down	Optional	3 hours per draw down	0	\$0.00
Remove 1 to 2 stop logs for high winter flows	Annually	16 hours	8	\$680.00
Replace 1 to 2 stop logs for high winter flows	Annually	16 hours	8	\$680.00
Dike Maintenance	Optional	Unknown	0	\$0.00
Surrounding wetland vegetation	Optional	4 hour per site	0	\$0.00
Tree topping or pruning to enhance existing shrubs	Target Year 17	3 hours per tree	0	\$0.00
Shrub Planting	Target Year 17	1 hour per planting	0	\$0.00
Loafing log	Within 5 years of completing the initial evaluation	3 hours per tree	0	\$0.00
Snag Creation	Within 5 years of completing the initial evaluation	3 hours per tree	0	\$0.00
Aquatic Vegetation Control	Optional	0.5 hour per acre	0	\$0.00
Implement Bullfrog Management Methods Identified in the Initial Evaluation	Within 5 years of completing the initial evaluation	40 hours	250	\$21,250.00
Remove Stoplogs	Annually	16 hours	8	\$500.00
Replace Stoplogs	Annually	16 hours	8	\$500.00
Review WDNR Heritage Database	Annually	2 hours	2	\$170.00
Great Blue Heron Colony Site Management Report	Optional	15 hours	0	\$0.00
Labor rate per hour				\$85.00
Total Labor			364	\$30,580.00
Materials				
Shrub Planting \$50 per planting				\$0.00
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$30,580.00

Riparian Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Riparian Mixed Forest Stand Evaluations	Within 5 years of receiving the license	200 hours	0	\$0.00
Other Inspections	Optional	4 hours per site	0	\$0.00
Establish Buffers	Optional	1 hour per 100 ft (30 m) of stream	20	\$1,700.00
Water Type Modification form	Optional	18 hours per form	80	\$6,800.00
Snag Development Schedule	Within 1 year of completing the Riparian Mixed Forest Stand	50 hours	0	\$0.00
Snag Removal	Optional	3 hours per 1-20 in (50 cm) diameter at breast height Douglas-fir	0	\$0.00
Riparian Area Restoration	Within 5 years of identifying a damaged riparian area	To be determined	0	\$0.00
Labor rate per hour				\$85.00
Total Labor			100	\$8,500.00
Materials				
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$8,500.00

Shrubland Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluation	Within 4 years of WHMP Implementation	80 hours	0	\$0.00
Initial Evaluation Final Report	Within 1 year of completing the initial evaluation	30 hours	0	\$0.00
Periodic Inspection	Annually	50 hours	16	\$1,360.00
Success of Action	Annually	15 hours	16	\$1,360.00
Topping a Tree and Hand Piling Debris	Optional	4 hour per tree	0	\$0.00
Falling a tree and hand piling debris	Optional	3 hour per tree	0	\$0.00
Herbicide Injection	Optional	1.5 hours per tree	0	\$0.00
Heavy Pruning Circle	Optional	5.5 hours per planting circle	25	\$2,125.00
Vegetation Control - Clear Competing Brush	Optional	1.75 hour per 10 foot radius of vegetation	25	\$2,125.00
Revised Management Actions	Within 8 years of WHMP Implementation	100 hours	0	\$0.00
Labor rate per hour				\$85.00
Total Labor			82	\$6,970.00
Materials				
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$6,970.00

Farmland, Idle Fields, and Meadows Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Inspection	Within 4 years of WHMP Implementation	60 hours	0	\$0.00
Initial Inspection Final Report	Within 1 year of completing the initial	60 hours	60	\$5,100.00
Annual Spring Inspections	Annually	40 hours	30	\$2,550.00
5-year Passively Managed Area Inspections	Every 5 years	80 hours	0	\$0.00
Annual Fall Inspection	Annually	40 hours	30	\$2,550.00
Spring Mowing/ Hay Harvest	Annually	2 hours per acre	60	\$5,100.00
Fall Mowing/ Hay Harvest	Annually	2 hours per acre	200	\$17,000.00
Soil Test	Annually	2 hours per site	50	\$4,250.00
Fall Fertilization	Annually	2 hours per acre	150	\$12,750.00
Spring Fertilization	Optional	2 hours per acre	0	\$0.00
Lime Application	Optional	2 hours per acre	0	\$0.00
Soil Test (Field Restoration)	Optional	2 hours per site	30	\$2,550.00
Lime Application (Field Restoration)	Optional	2 hours per acre	0	\$0.00
Herbicide Application Treatment	Optional	2 hours per acre	10	\$850.00
Cultivation	Optional	4 hours per acre	0	\$0.00
Fertilization	Optional	2 hours per acre	0	\$0.00
Seeding/planting	Optional	2 hours per acre	0	\$0.00
Invasive Plant Control	Optional	2 hours per acre	30	\$2,550.00
Top Seeding	Optional	4 hours per acre	30	\$2,550.00
Fertilizing Vegetation Screening	Optional	2 hours per screen	0	\$0.00
Planting	Optional	4 hours per planting	0	\$0.00
Supplemental Watering	Optional	1 hour per enclosure	0	\$0.00
Animal Damage Control	Optional	1 hour per enclosure	0	\$0.00
Labor rate per hour				\$85.00
Total Labor			680	\$57,800.00
Materials				
Soil Testing (Assume \$40 per test with 10 test per year)				\$520.00
Fertilizer (Assume \$100 per acre in materials)				\$9,250.00
Herbicide for Field Restoration (\$30 per acre treated)				\$0.00
Grass Seed				\$100.00
Exclosures for new plantings (\$100 per enclosure)				\$0.00
New plantings (\$10 per seedling)				\$0.00
Other				\$0.00
Total Materials				\$9,870.00
Total Labor and Materials				\$67,670.00

Orchard Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Winter Inspection	Annually	16 hours	12	\$1,020.00
Summer Inspection	Annually	16 hours	12	\$1,020.00
Optional Inspection	Optional	8 hours	0	\$0.00
5-year Inspection	Within 5 years of WHMP Implementation	40 hours	0	\$0.00
Dormant Pruning	Optional	1 hour per tree	55	\$4,675.00
Summer Pruning	Optional	1 hour per tree	0	\$0.00
Shade Tree Control	Optional	\$0 to \$500	0	\$0.00
Invasive Plant Species Control	Optional	2 hours per acre	6	\$510.00
Mowing	Annually	2 hours per acre	8	\$680.00
Replacement Plantings	Optional	2 hours per planting	0	\$0.00
New Plantings Inspection	Optional	2 hours per planting	16	\$1,360.00
Orchard Expansion Plantings	2014	4 hours per planting	156	\$13,260.00
Soil Testing	Optional	2 hours per orchard	0	\$0.00
Fertilizing	Optional	2 hours per acre	0	\$0.00
Grass Seeding	Optional	2 hours per acre	0	\$0.00
Orchard Tree Fertilizing	Optional	1 hour per tree	0	\$0.00
Pest Control	Optional	1 hour per tree	0	\$0.00
Animal Damage Control	Optional	1 hour per tree	10	\$850.00
Supplemental Watering	Optional	1 hour per tree	16	\$1,360.00
Labor rate per hour				\$85.00
Total Labor			291	\$24,735.00
Materials				
Exclosures (\$100 per exclosure)				\$4,000.00
New seedlings (\$30 per tree)				\$1,200.00
Fertilizer (Assume \$100 per acre in materials)				\$0.00
Grass Seed (Assume \$4 per pound)				\$0.00
Other				\$0.00
Total Materials				\$5,200.00
Total Labor and Materials				\$29,935.00

Transmission Line Right-of-Way Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluations with Photo Documentation	Within 5 years of WHMP Implementation	130 hours	0	\$0.00
Initial Inspections Final Report	Within 1 year of completing the initial evaluation	40 hours	20	\$1,700.00
Revise Transmission Line Rights-of-Way Habitat Management Chapter	Within 5 years of WHMP Implementation	20 hours	20	\$1,700.00
Annual Inspections	Annually	50 hours	60	\$5,100.00
Annual Inspections with Photo Documentation	Every 5 years beginning with initial inspection year	100 hours	0	\$0.00
Post hazard tree and invasive species management inspection	Within 2 months of a management actions being completed	2 hours per site	10	\$850.00
Shrub Management	Optional	4 hours	0	\$0.00
Plantings	Optional	4 hours per planting	0	\$0.00
Vegetation Management	Optional	2 hours per tree	0	\$0.00
Invasive Plant Species Control	Optional	4 hours per acre	60	\$5,100.00
Aquatic Area Management	Optional	Unknown	0	\$0.00
Soil Testing	Every 2 years	2 hours per site	4	\$340.00
Annual Mowing	Annual	2 hours per acre	24	\$2,040.00
Fertilization	Optional	2 hours per acre	24	\$2,040.00
Access/Disturbance Reduction	Optional	2 hours per site	16	\$1,360.00
Closing Open Roads	Within 5 years of WHMP Implementation	4 hours per site	16	\$1,360.00
Labor rate per hour			\$85.00	
Total Labor			254	\$21,590.00
Materials				
Soil Testing (Assume \$40 per test)			\$80.00	
Fertilizer (Assume \$100 per acre in materials)			\$0.00	
Exclosures (\$200 per exclosure)			\$0.00	
Plantings (\$50 per planting)			\$0.00	
Grass mix seed			\$100.00	
Ecology blocks/boulders			\$0.00	
Total Materials			\$180.00	
Total Labor and Materials			\$21,770.00	

Unique Area/ Habitat Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Annual Oak Stand	Annual	16 hours	16	\$1,360.00
Additional Oak Stands	Optional	4 hours per area	0	\$0.00
Other Unique Areas	Optional	4 hours per area	0	\$0.00
Topping a Competing Tree and Hand Piling Debris	Optional	2 men x 1.5 hour per 1 20-in dbh Douglas-fir tree 1 hour for reporting	15	\$1,275.00
Falling a Competing Tree and Hand Piling Debris	Optional	2 men x 1 hour per 1-20 in dbh Douglas-fir tree 1 hour for reporting	15	\$1,275.00
Invasive Plant Species Control	Optional	1 hour per acre	0	\$0.00
Develop Cave Management Strategy	Optional	10 hours	0	\$0.00
Create a Unique Area Database	Within 1 year of Implementation	8 hours	0	\$0.00
Update Unique Area Database	Optional	2 hours	2	\$170.00
Develop Ethnobotanically Significant Plant Management Strategy	Optional	10 hours	0	\$0.00
Labor rate per hour				\$85.00
Total Labor			48	\$4,080.00
Materials				
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$4,080.00

Forestland Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Spring Timber Harvest Area Survey	Annually	50 hours	50	\$4,250.00
Fall Timber Harvest Area Survey	Annually	140 hours	140	\$11,900.00
Harvest Planning	Optional	80 hours	80	\$6,800.00
Harvest Scheduling	Optional	8 hours	35	\$2,975.00
First Precut Survey	Optional	1 hour per acre	50	\$4,250.00
Timber Harvest Area Traverse and GIS Update	Optional	24 hours	24	\$2,040.00
Second Precut Survey	Optional	2.5 hours per acre	80	\$6,800.00
Terrestrial Coordination Committee On-Site Meeting	Optional	16 hours	16	\$1,360.00
Timber Harvest Area Logging Inspections	Optional	80 hours	80	\$6,800.00
Snag Development	Optional	2 hours per tree	0	\$0.00
Site Preparation	Optional	12 hours per 10 acres plus 10 hours	175	\$15,000.00
Forage Seeding	Optional	50 hours	50	\$4,250.00
Invasive Plant Species - grasses	Optional	0.5 hour per acre	70	\$5,950.00
Invasive Plant Species - competing vegetation	Optional	2.8 hours per acre	435	\$36,975.00
Pre-commercial thinning	Optional	1.25 hour per acre	420	\$35,700.00
Labor rate per hour				\$85.00
Total Labor			1705	\$145,050.00
Materials				
Forage seed mix				\$10,000.00
Chemicals (\$50.00 per acre)				\$10,000.00
Seedlings				\$1,550.00
Seedling Protection (vexar tubes, stakes, garlic sticks etc)				\$1,000.00
Other				\$0.00
Total Materials				\$22,550.00
Additional 2012 Cost				
Habitat restoration (scarify, burn slash) to the new property acquired in 2010 and 2012, to grass seed, burn piles, invasive plant species control, and/or public access control.				\$20,000.00
Total Labor and Materials				\$187,600.00

Invasive Plant Species Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Pre-Ground Disturbance Evaluation	Optional	5.0 hours per site	0	\$0.00
Post-Ground Disturbance Evaluation	Optional	2.0 hours per site	0	\$0.00
Detection	Optional	0.5 hour per site	0	\$0.00
Update State and County Noxious Weed lists	Annual	2 hours per year	2	\$170.00
Control Treatments	Optional	0.5 hour per acre	50	\$4,250.00
Control treatments within the ordinary high water mark	Optional	2.0 hours per acre	15	\$1,275.00
Monitoring	Optional	0.5 hour per site	20	\$1,700.00
Labor rate per hour				\$85.00
Total Labor			87	\$7,395.00
Materials				
Chemicals				\$10,000.00
Columbia Noxious Weed Workshop				\$90.00
Total Materials				\$10,090.00
Total Labor and Materials				\$17,485.00

Raptor Budget

License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Dawn Acoustical Survey for Northern Goshawk	Optional	5 hours per survey station (18 ac [7 ha])	0	\$0.00
Intensive Search Survey for Northern Goshawk	Optional	20 hours per 25 ac (10 ha)	0	\$0.00
Broadcast Acoustical Survey for Northern Goshawk	Optional	8 hours per 494 acres (200 ha)	80	\$6,800.00
Northern Spotted Owl Surveys	Optional	4 hours per 10 survey stations	0	\$0.00
Peregrine Falcon Monitoring Protocol	Optional	15 hours per potential nest site	0	\$0.00
Aerial Survey for Bald Eagle Nest Occupancy	Annually	24 hours	20	\$1,700.00
Aerial Survey for Osprey Nest Occupancy and Bald Eagle Nest Productivity	Annually	24 hours labor	20	\$1,700.00
Known Communal Roost Monitoring	Optional	5 hours per survey per observer	0	\$0.00
Potential Communal Roost Monitoring	Optional	6 hours per survey per observer	0	\$0.00
Evaluate Mature and Old-growth Stands for Raptor Habitat Quality and Potential Enhancement	Within 5 years of WHMP Implementation	2 hours per ac (0.4 ha) time is accounted for in Old-growth	0	\$0.00
Develop a Schedule for Implementing Habitat Enhancement Actions in Old-growth Stands and Mature Stands	Within 1 year of Completing Mature and Old-growth Stands Evaluations	20 hours	0	\$0.00
Complete Bald Eagle Management Plan	Within 3 years of WHMP Implementation	80 hours	0	\$0.00
Revise Bald Eagle Management Plan to include new nest and roost sites	As Needed Within 1 Year of Discovery	10 hours	0	\$0.00
Review and Update Industry Standards for Avian Protection from Power lines	Annually	2 hours	2	\$170.00
Labor rate per hour			\$85.00	
Total Labor			122	\$10,370.00
Materials				
Helicopter flight \$7,500 per flight 2 flights per year			\$15,000.00	
Other			\$0.00	
Total Materials			\$15,000.00	
Total Labor and Materials			\$25,370.00	

Public Access Budget

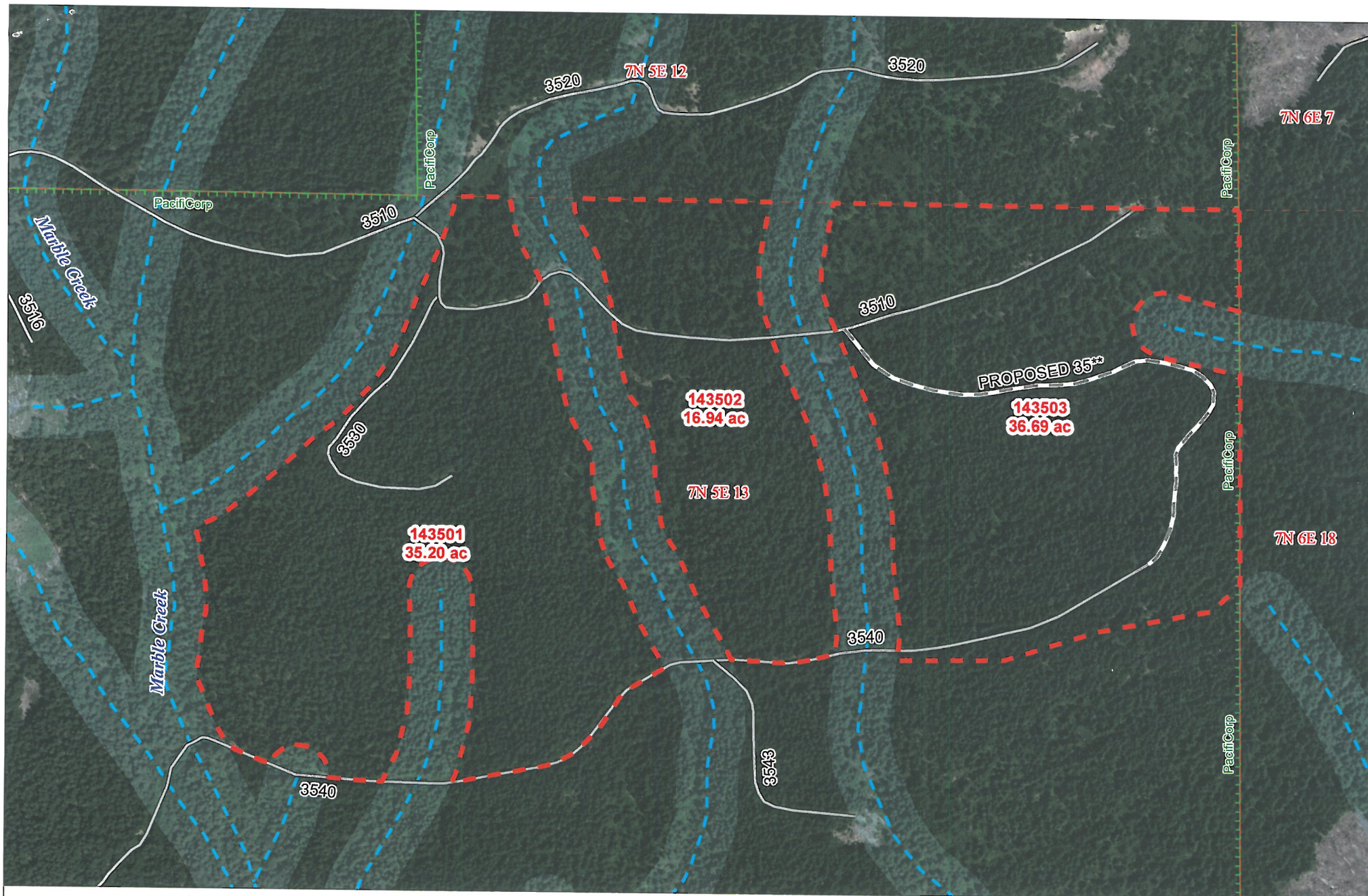
License Year 6
Calendar Year 2014

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Road Evaluation	Within 5 years of Wildlife Habitat Management Plan Implementation	2.0 hour per mile of road	0	\$0.00
Initial Road Evaluation on Newly Acquired Lands	Within 1 year of acquiring lands	2.0 hour per mile of road	0	\$0.00
Road Closure Inspection	Annually	60 hours	40	\$3,400.00
Initial Trail Evaluation	Within 5 years of Wildlife Habitat Management Plan Implementation	16 hours	0	\$0.00
Trail Inspection	Annually	12 hours	12	\$1,020.00
Initial evaluations of Dispersed Shoreline Campsites	Within 1 year of receiving a new license	50 hours	0	\$0.00
Site Pioneering Monitoring	Annually	10 hours	16	\$1,360.00
Site Creep Evaluation	Every 4 years	40 hours	0	\$0.00
Controlling unauthorized motorized vehicle use	Optional	5 hours per site	30	\$2,550.00
Visual Screen	Optional	4 hours per site	0	\$0.00
Road Construction	Optional	8 hours per site	8	\$680.00
Labor rate per hour				\$85.00
Total Labor			106	\$9,010.00
Materials				
Exclosures (\$200 per exclosure)				\$0.00
Plantings (\$50 per planting)				\$0.00
Signs (\$300 per 100 vinyl purchase every 3 years)				\$0.00
Heavy Equipment Rate (\$200 per hour)				\$6,000.00
Road Barriers (blocks, rocks, etc)				\$1,900.00
Other				\$0.00
Total Materials				\$7,900.00
Total Labor and Materials				\$16,910.00

Monitoring Budget

License Year 6
Calendar Year 2014

Management Action	Frequency	Estimated Effort	Hours	Cost
Year 17 Habitat Evaluation Procedure	Target Year 17	estimated 4 hours per plot plus a total 100 hours for analysis	0	\$0.00
Newly Acquired Lands	Estimated to be completed by year 6	estimated 4 hours per plot plus a total 25 hours for analysis	0	\$0.00
Modify the Goal and Objectives	Optional	10 hours	0	\$0.00
Revise the Wildlife Habitat Management Plan	Optional	10 hours	0	\$0.00
RMEF exclosure installation and monitoring	Optional	65 hours	65	\$5,525.00
Mink Habitat Evaluation	Optional	200 hours	220	\$18,700.00
Savannah Sparrow	Optional	100 hours	140	\$11,900.00
Labor rate per hour				\$85.00
Total Labor			0	\$36,125.00
Materials				
Exclosures				\$3,200.00
Total Materials				\$3,200.00
Total Labor and Materials				\$39,325.00

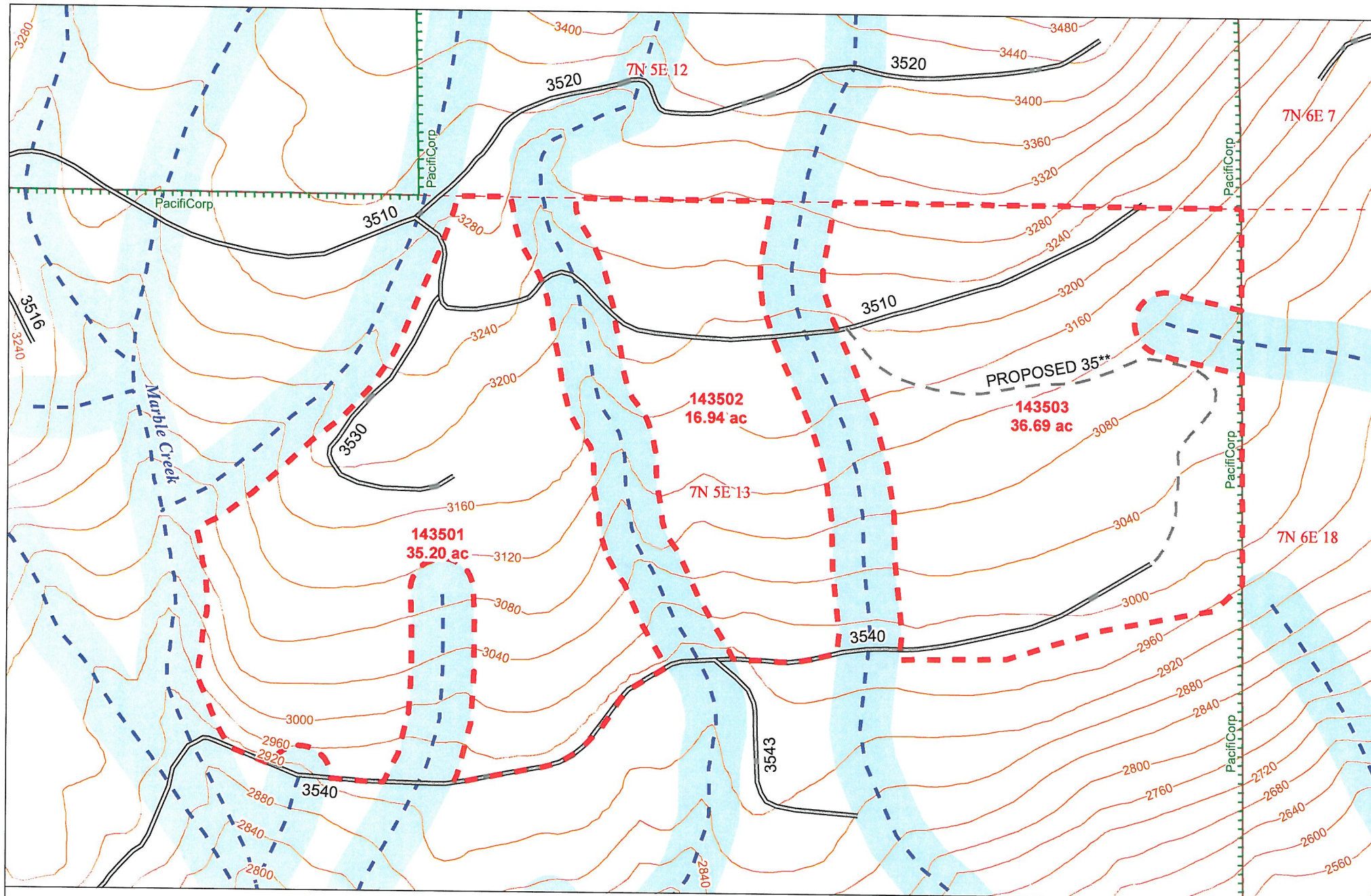


WHMP - Unit 35
2014 Proposed Harvest Area

- Proposed Harvest
- Proposed Road
- Existing Road
- Section
- Stream
- Stream Buffer
- PacifiCorp Ownership



1:5,000
0 250 500
Feet



WHMP - Unit 35
2014 Proposed Harvest Area

- Proposed Harvest
- Proposed Road
- Existing Road
- Section

- Contour (40')
- Stream
- Stream Buffer
- PacifiCorp Ownership





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 0 250 500
 Feet

WHMP - Unit 10

2014 Proposed Harvest Area



   Proposed Harvest



Gate



Road



Section



Stream

Stream Buffer



PacifiCorp Ownership



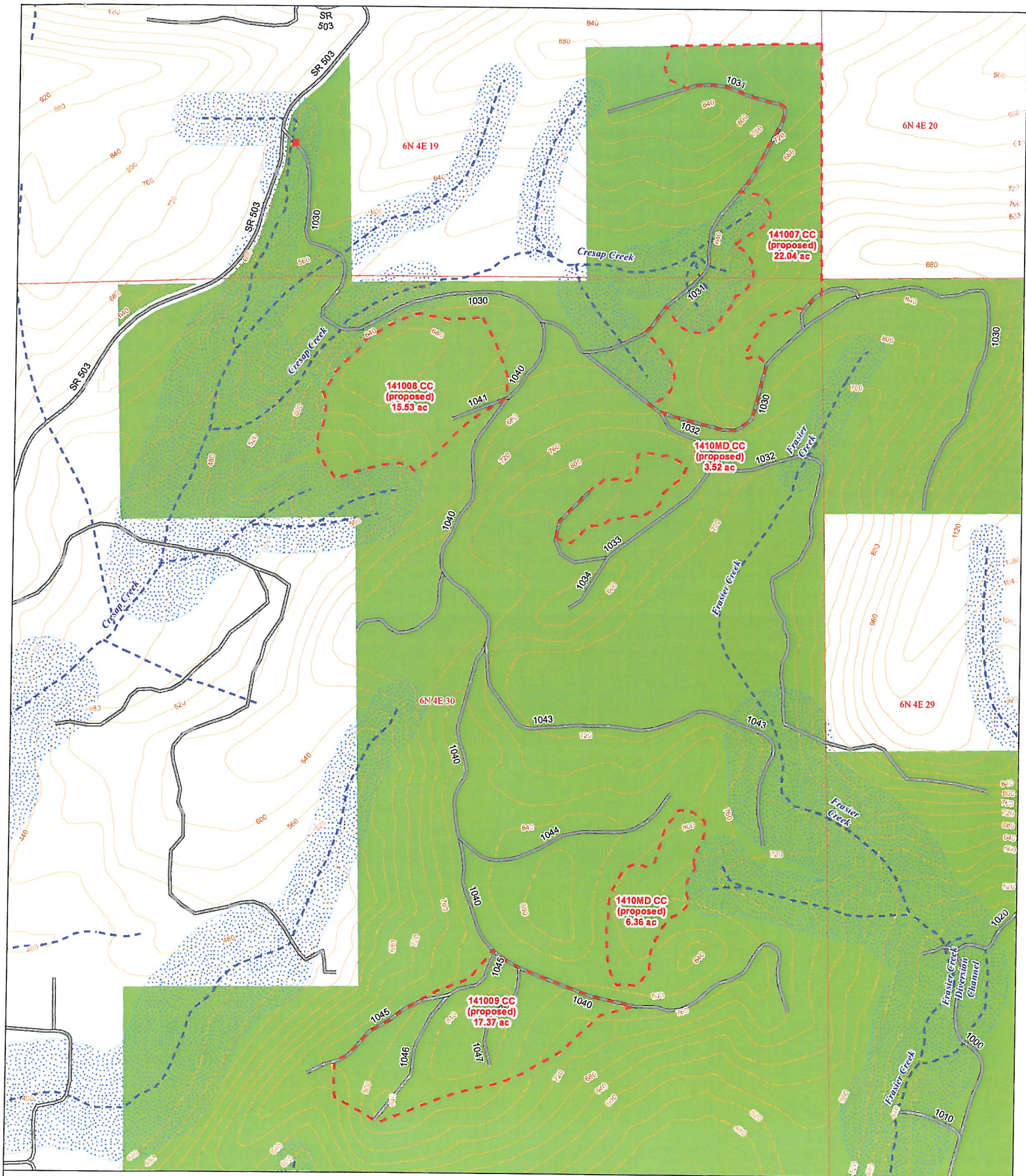
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0 250 500

Feet



PACIFICORP ENERGY
A DIVISION OF PACIFICORP



WHMP - Unit 10

2014 Proposed
Harvest Area



Proposed Harvest



Gate



Road



Section



Contour (40')



Stream



Stream Buffer



PacifiCorp Ownership



1:8,500

0 250 500

Feet

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

Lewis River License Implementation

Lewis River WHMP Fund (Fee Simple Lands)

Section 10.8.2

Release Date	Funds Received	Expense	Interest	Balance	Notes
Contributions in 2003 dollars, Adjusted for Inflation					
12/26/08	\$317,725.16			\$ 317,725.16	10.8.2 WHMP Fund established: 10,085 acres funded at \$27.00 / acre, adjusted for inflation
3/31/09			\$ 4,386.48	\$ 322,111.64	Compound interest added
12/14/09		\$ (320,315.17)		\$ 1,796.47	2009 expenses
12/26/09	\$321,888.52			\$ 323,684.99	10,137 acres, including additional 52 acres for the Jackman Parcel
3/31/10			\$ 10,139.86	\$ 333,824.85	Compound interest added
12/31/10		\$ (325,852.59)		\$ 7,972.26	2010 expenses
12/31/10	\$354,219.00			\$ 362,191.26	11,105 acres, included purchase of 968 acres ; Saddle Dam & Swift Creek properties
3/31/11			\$ 11,079.15	\$ 373,270.41	Compound interest added
12/31/11		\$ (340,176.89)		\$ 33,093.52	2011 expenses
12/31/11	\$360,610.79			\$ 393,704.31	
12/31/12		\$ (391,979.71)		\$ 1,724.60	2012 expenses
12/31/12	\$435,792.62		\$ 12,323.19	\$ 449,840.41	13,134 acres, included purchase of 2,111 acres ; Marble Mtn II property
12/31/13		\$ -			2013 expenses
12/31/13		\$ (441,799.04)	\$ 13,523.70	\$ 21,565.07	Compound interest added
1/1/14	\$437,392.62			\$ 458,957.69	13,134 acres
Total Spent to Date: \$				(1,820,123.40)	
Balance Remaining: \$				458,957.69	

Funding Start Date: 12/26/08

Note: In August 2009, the Bureau of Economic Analysis (BEA) restated the index numbers in Table 1.1.9 (Implicit Price Deflators for Gross Domestic Product). The index numbers are now based on 2005 = 100. This changes the beginning adjustment number for year 2000, quarter 3.

Lewis River License Implementation

Lewis River WHMP Fund (Conservation Easement Lands)

Section 10.8.2

Funding Start Date: 12/26/08

Release Date	Funds Received	Funds Expended	Balance	Notes
				Contributions in 2003 dollars, Adjusted for Inflation
12/26/08			\$ -	10.8.2 WHMP Fund established: 10,085 acres funded at \$13.50 / acre, adjusted for inflation
1/1/10	\$ 254.03		\$ 254.03	10.8.2 WHMP Fund: 16 acres owned in conservation easment, adjusted for inflation
12/31/10		\$ (254.03)	\$ -	Expenditure for 2010
1/1/11	\$ 255.18		\$ 255.18	10.8.2 WHMP Fund: 16 acres owned in conservation easment, adjusted for inflation
12/31/11		\$ (255.18)	\$ -	Expenditure for 2011
1/1/12	\$ 259.78		\$ 259.78	10.8.2 WHMP Fund: 16 acres owned in conservation easment, adjusted for inflation
12/31/12		\$ (259.78)	\$ -	Expenditure for 2012
1/1/13	\$ 265.44		\$ 265.44	10.8.2 WHMP Fund: 16 acres owned in conservation easment, adjusted for inflation
12/31/13		\$ (265.44)		Expenditure for 2013
1/1/14	\$ 269.93		\$ 269.93	10.8.2 WHMP Fund: 16 acres owned in conservation easment, adjusted for inflation
Total Spent to Date:		\$	(1,034.43)	
Balance Remaining:		\$	269.93	

Note: In August 2009, the Bureau of Economic Analysis (BEA) restated the index numbers in Table 1.1.9 (Implicit Price Deflators for Gross Domestic Product). The index numbers are now based on 2005 = 100. This changes the beginning adjustment number for year 2000, quarter 3.

Lewis River License Implementation

Swift No. 1 & Swift No. 2 Land and Habitat Protection Fund
Section 10.2, 10.2.1

Release Date	Funds Received	Expense	Balance	Notes
3/26/09			\$ 3,781,881.67	Contributions in 2003 dollars, adjusted for inflation Fixed prime rate nearest April 1 of each year
12/26/09	\$917,332.70		\$ 4,699,220.37	Settlement Agreement contribution, adjusted for inflation
12/31/09		\$ (88,505.88)	\$ 4,610,714.49	Columbia Land Trust 2009 contract (total \$110,000)
3/3/11				Compound interest accrued
5/11/10		\$ (21,494.12)	\$ 4,722,619.62	Columbia Land Trust 2009 contract
7/13/10		\$ (20,609.63)	\$ 4,702,009.99	Columbia Land Trust 2010 contract (total \$75,000)
11/22/10		\$ (15,313.22)	\$ 4,686,696.77	Columbia Land Trust 2010 contract
12/23/10		\$ (667,563.00)	\$ 4,060,941.05	Swift Creek property purchase
1/4/11		\$ (19,200.00)	\$ 4,041,741.05	Rocky Mountain Elk Foundation - Swift land purchase surveys & appraisals
3/3/11			\$ 4,188,868.44	Compound interest accrued
4/11/11		\$ (25,040.00)	\$ 4,163,828.44	Columbia Land Trust 2010 contract
12/13/11		\$ (51,464.50)	\$ 4,112,363.94	Timber Appraisal Forest Resource Management (\$5663) + Rocky Mountain Elk Foundation land acquisition (\$45882.50) for property appraisal, survey, & Phase I environmental report
12/26/11	\$601,348.73		\$ 4,713,631.67	Settlement Agreement contribution, adjusted for inflation
3/30/12			\$ 4,853,933.80	Compound interest accrued
6/4/12		\$ (4,820,190.06)	\$ 33,743.74	Rocky Mountain Elk Foundation - Marble Mtn II purchase (2,111 acres)
12/15/12		\$ 5,009.76	\$ 28,733.98	Columbia Land Trust 2010 contract (March/April 2011 expenses)
12/26/12	\$614,453.61		\$ 643,187.59	Settlement Agreement contribution, adjusted for inflation
12/26/13	\$624,846.60		\$ 1,301,712.39	Settlement Agreement contribution, adjusted for inflation
Total Spent to Date:			\$ (5,724,370.65)	Funding Start Date: 3/26/09
Running Total:			\$ 1,301,712.39	

Note: In August 2009, the Bureau of Economic Analysis (BEA) restated the index numbers in Table 1.1.9 (Implicit Price Deflators for Gross : 100. This changes the beginning adjustment number for year 2000, quarter 3.

Lewis River License Implementation

Lewis River Yale Land Fund

Section 10.1 - 10.1.1

Funding Start Date: 4/1/05

Release Date	Funds Received	Expense	Balance	Notes
12/31/05			\$ 1,573,922.62	Contributions in 2003 dollars, adjusted for inflation
4/30/06	\$ 1,081,853.45			Fixed prime rate nearest April 1 of each year
12/31/06			\$ 2,746,276.63	
12/31/07			\$ 2,959,113.09	
12/31/08			\$ 3,203,742.47	
12/14/09		\$ (486,142.13)		Jackman parcel
12/31/09			\$ 2,885,450.59	
4/30/10			\$ 2,990,352.39	
12/1/10	\$ 5,256.44		\$ 2,995,608.83	Interest accrued
12/21/10		\$ (2,995,608.83)	\$ -	Purchased Saddle Dam Property & exhausted fund.
Total Spent to Date: \$ 3,481,750.96				
Running Total: \$ -				

Note: In August 2009, the Bureau of Economic Analysis (BEA) restated the index numbers in Table 1.1.9 (Implicit Price Deflators for Gross Domestic Product). The index numbers are now based on 2005 = 100. This changes the beginning adjustment number for year 2000, quarter 3.

Lewis River License Implementation
Lewis River Land Acquisition and Habitat Funds
Section 10.3, 10.3.1, 10.3.3

Funding Start Date: 12/26/12

Release Date	Expense	Interest	Balance	Notes
				Contributions in 2003 dollars, adjusted for inflation
12/21/10	\$ 1,645,398.12		\$ (1,645,398.12)	Purchased Saddle Dam Property.*
Total Spent to Date: \$ (1,645,398.12)				
Running Total: \$ -				

* Per TCC agreement, funds were expended early for purchase of Yale Saddle Mountain Parcel. Per SA, PacifiCorp was to fund Lewis River Land fund at \$1.1 million by six months after the fourth anniversary of the license; and another \$1.1 million six months after the sixth anniversary of the license.

The remaining funds will be available six months after the sixth anniversary (2014).

Lewis River License Implementation

Lewis River LWD Fund

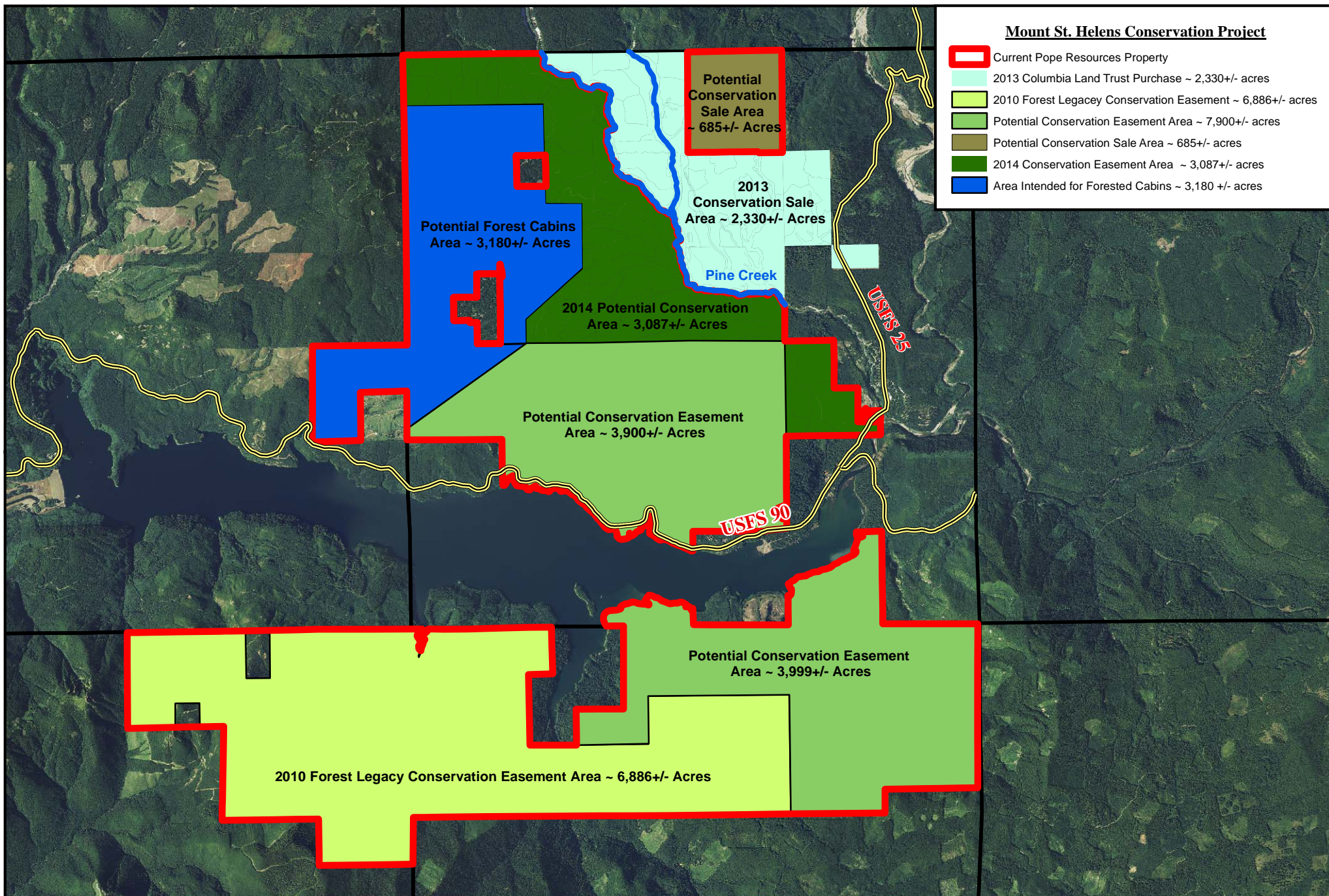
Section 7.1.1

Funding Start Date: 12/26/08

Release Date	Funds Received	Funds Dispersed	Balance	Notes
				Unspent balance in any year shall be carried forward
11/25/08	\$ 2,000.00		\$ 2,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
12/25/08	\$ 10,000.00		\$ 12,000.00	7.1.1 LWD projects in the mainstem below Merwin Dam
12/3/08		\$ (2,000.00)	\$ 10,000.00	Chilton Logging - move LWD from Swift boat launch to muddy river access road
4/1/09	\$ 2,000.00		\$ 12,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
4/10/09		\$ (2,000.00)	\$ 10,000.00	Chilton Logging - move LWD for delivery to LCFEG
12/25/09	\$ 10,000.00		\$ 20,000.00	7.1.1 LWD projects in the mainstem below Merwin Dam
4/1/10	\$ 2,000.00		\$ 22,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
7/1/10		\$ (2,000.00)	\$ 20,000.00	Chilton Logging - move LWD for delivery to USFS
12/21/10	\$ 10,000.00		\$ 30,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
4/1/11	\$ 2,000.00		\$ 32,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
12/25/11	\$ 10,000.00		\$ 42,000.00	7.1.1 Large Woody Debris Program, ILR-LWD
4/1/12	\$ 2,000.00	\$ (4,000.00)	\$ 40,000.00	7.1.1 LWD projects in the Yale Reservoir
4/1/12		\$ (8,500.00)	\$ 30,000.00	Chilton Logging - move LWD for delivery to Cowlitz Tribe
12/25/12	\$ 10,000.00		\$ 41,500.00	7.1.1 Large Woody Debris Program, ILR-LWD
6/2/13		\$ (2,000.00)	\$ 39,500.00	Chilton Logging - move LWD for delivery to USFS
10/10/13		\$ (10,000.00)	\$ 29,500.00	2013 Cedar Creek Reach 1A - LCFEG
12/26/13	\$ 10,000.00		\$ 39,500.00	7.1.1 Large Woody Debris Program, ILR-LWD
Total Spent to Date:		\$ 30,500.00		
Balance Remaining:		\$ 39,500.00		

Within 180 days after Issuance of the New License for the Merwin Project and annually thereafter, PacifiCorp shall make available in a Tracking Account up to \$2,000, which may be disbursed to qualified entities to defray the costs of LWD transportation and placement in the Lewis River Basin (the "LWD Fund").

In addition, within 180 days after Issuance of the New License for the Merwin Project and annually thereafter, PacifiCorp shall contribute \$10,000 to the Aquatics Fund (Section 7.5) that will be earmarked for LWD projects in the mainstem of the Lewis River below Merwin Dam that benefit anadromous fish.



Mount St. Helens Conservation Project - February 2014





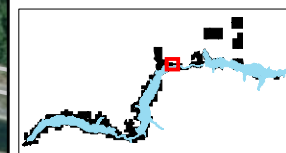
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

Sheet 1 of 15

Legend

- ▲ Gate
 - Speelyai Transmission Tower
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 - Highway
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- ### ROW Clearance Limits
- Region A
 - Region B
 - Region C



0 250 500
Feet

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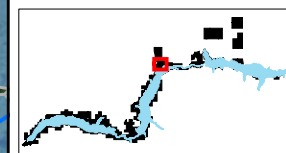
Sheet 2 of 15

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ROW Clearance Limits

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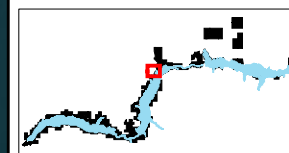
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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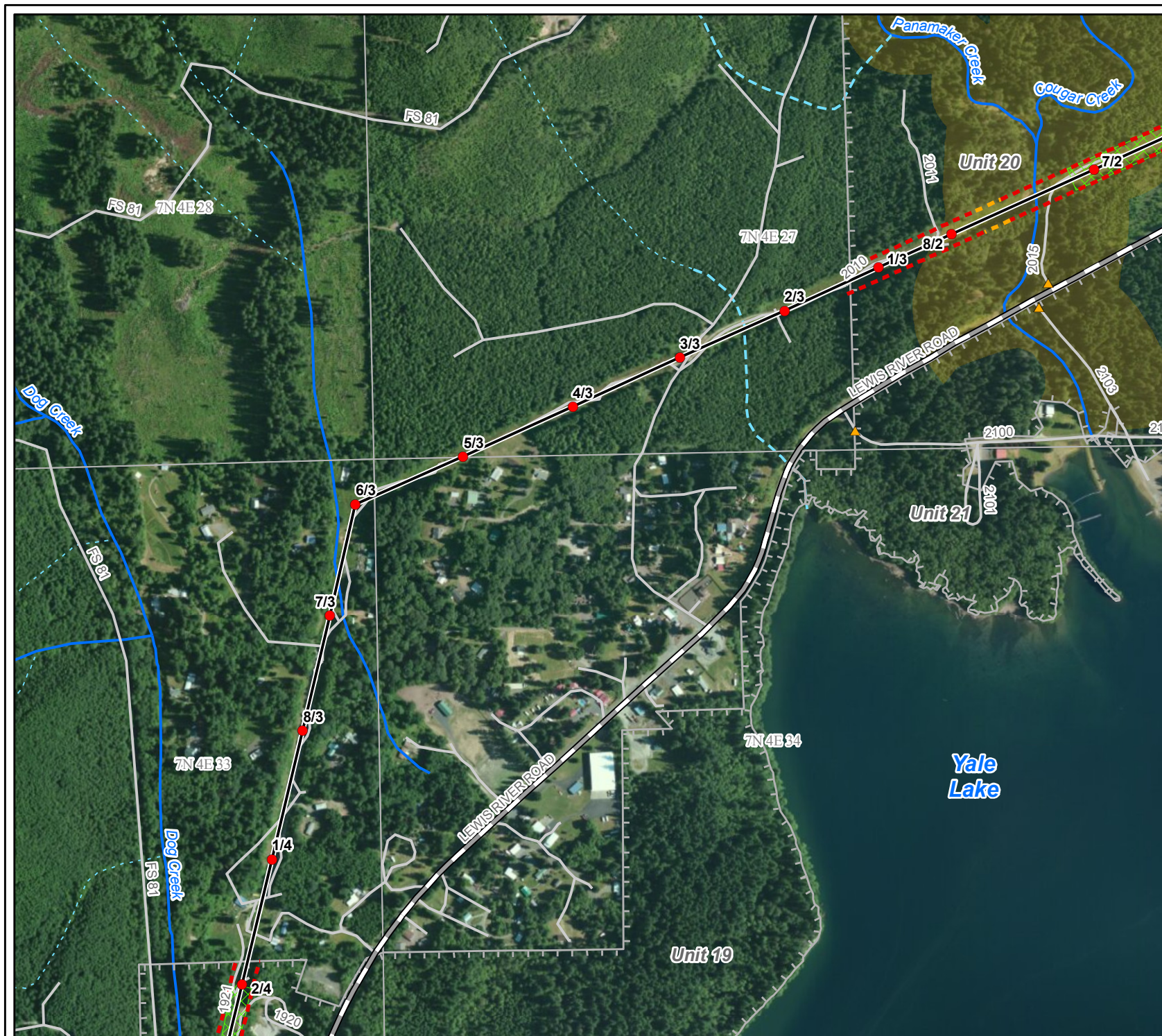
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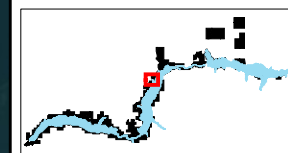
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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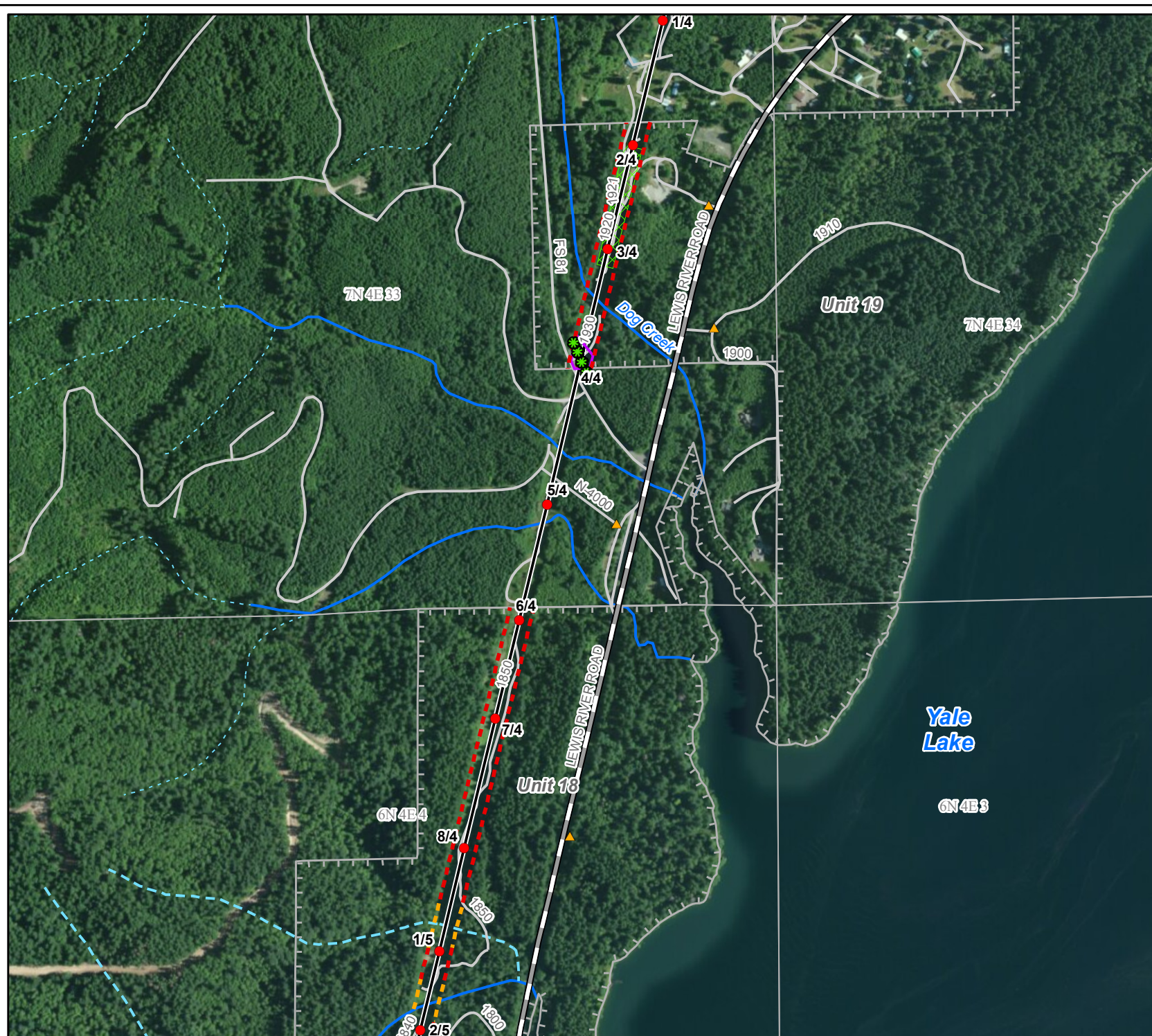
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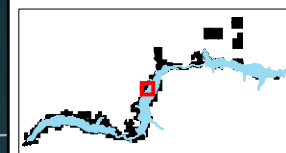
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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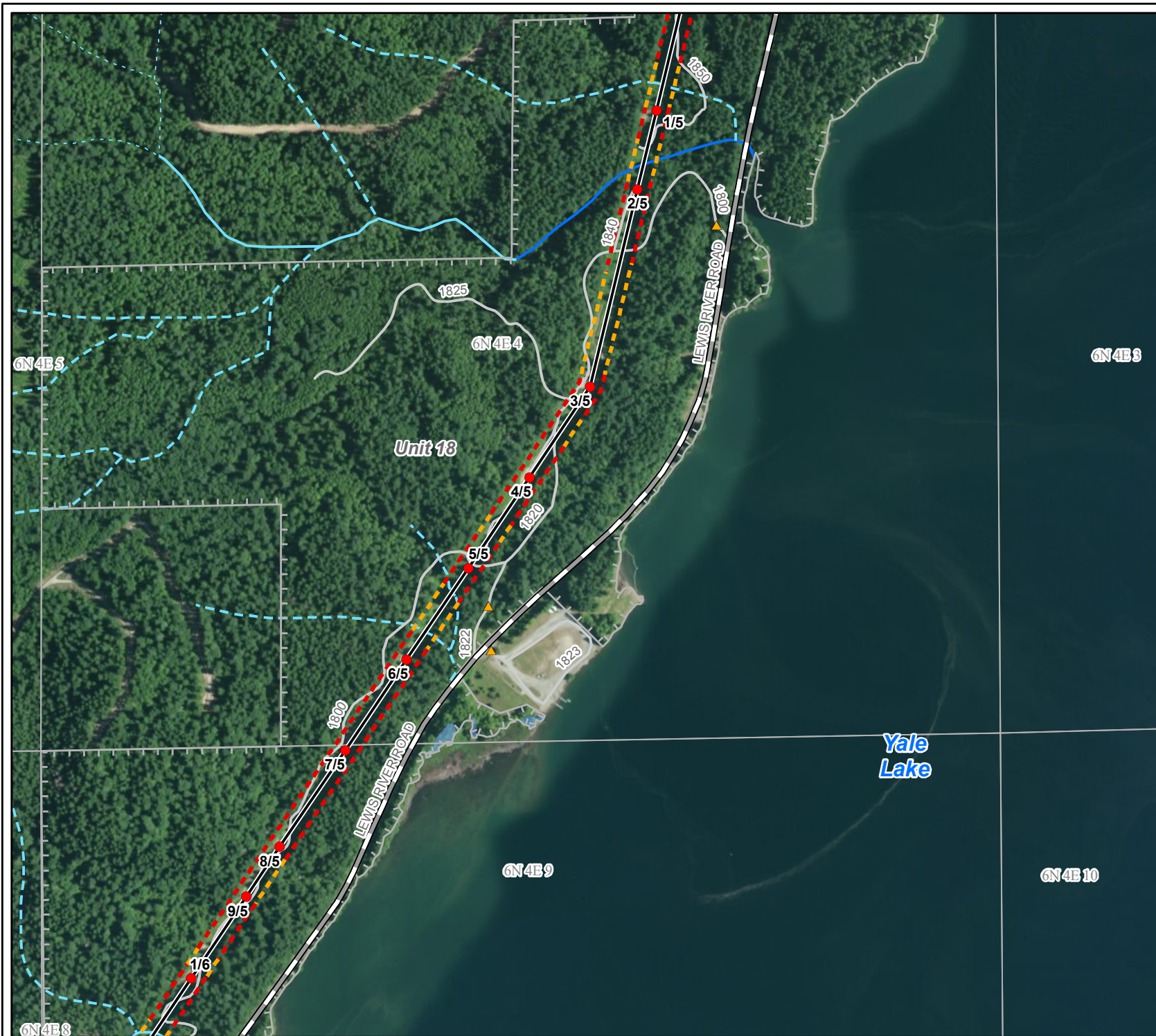
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Swift 2 - BPA Tap

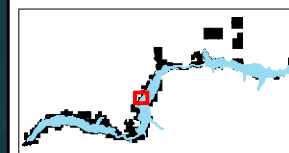
Sheet 6 of 15

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ROW Clearance Limits

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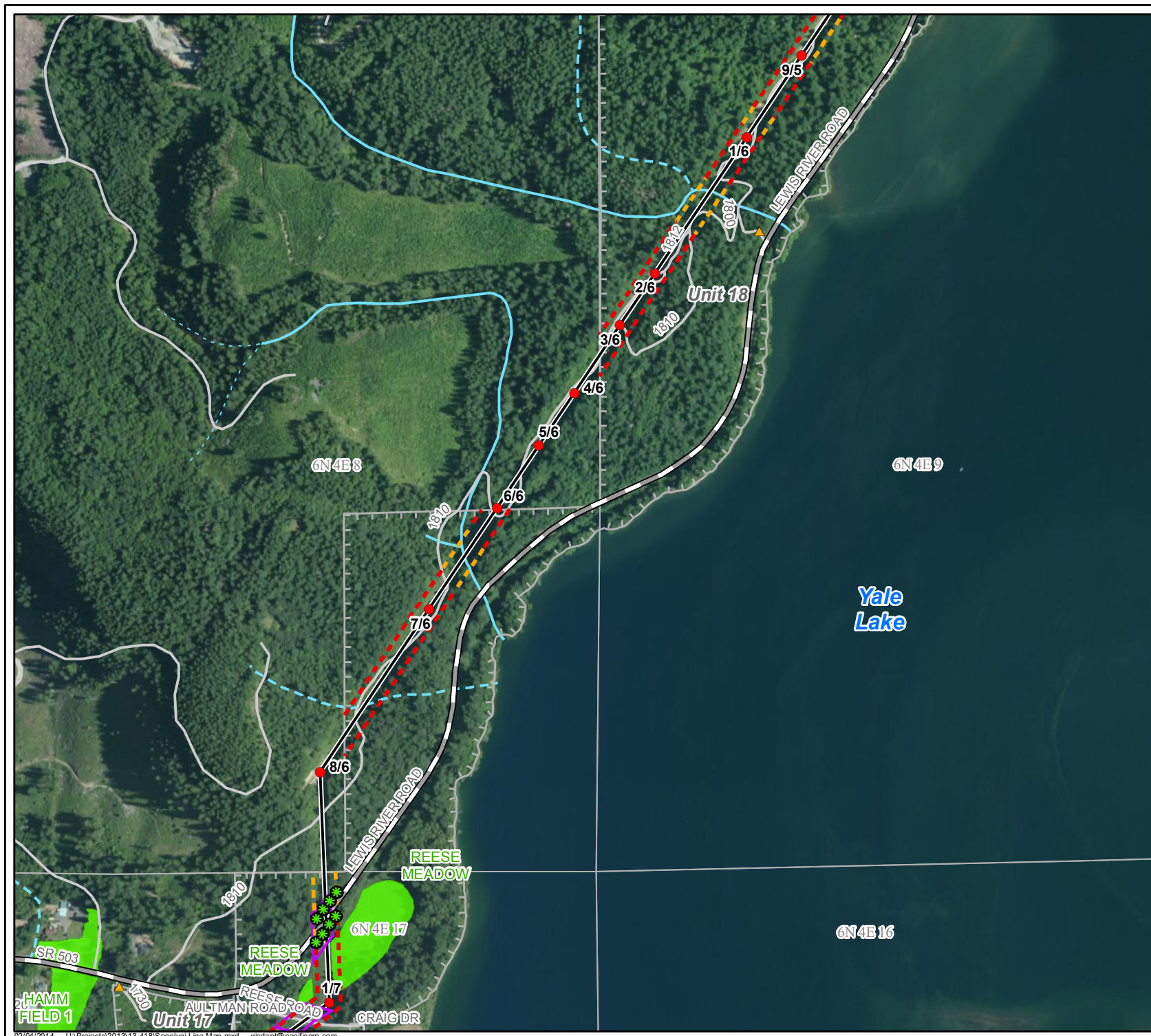
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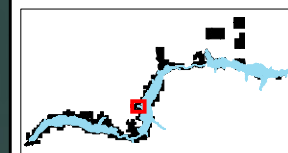
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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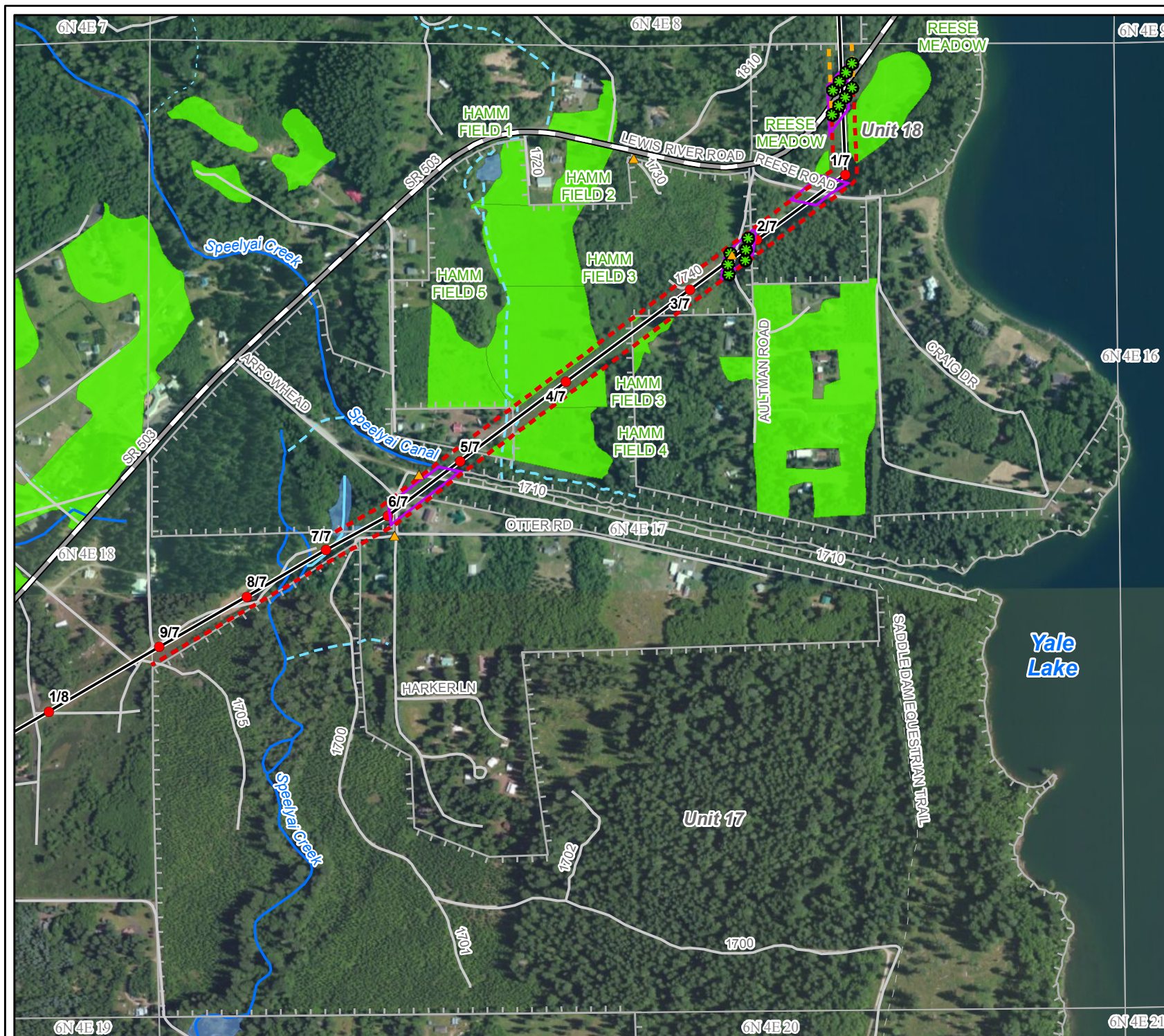
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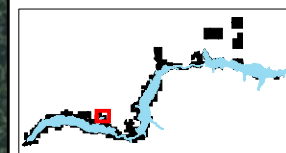
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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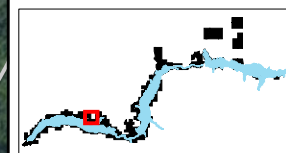
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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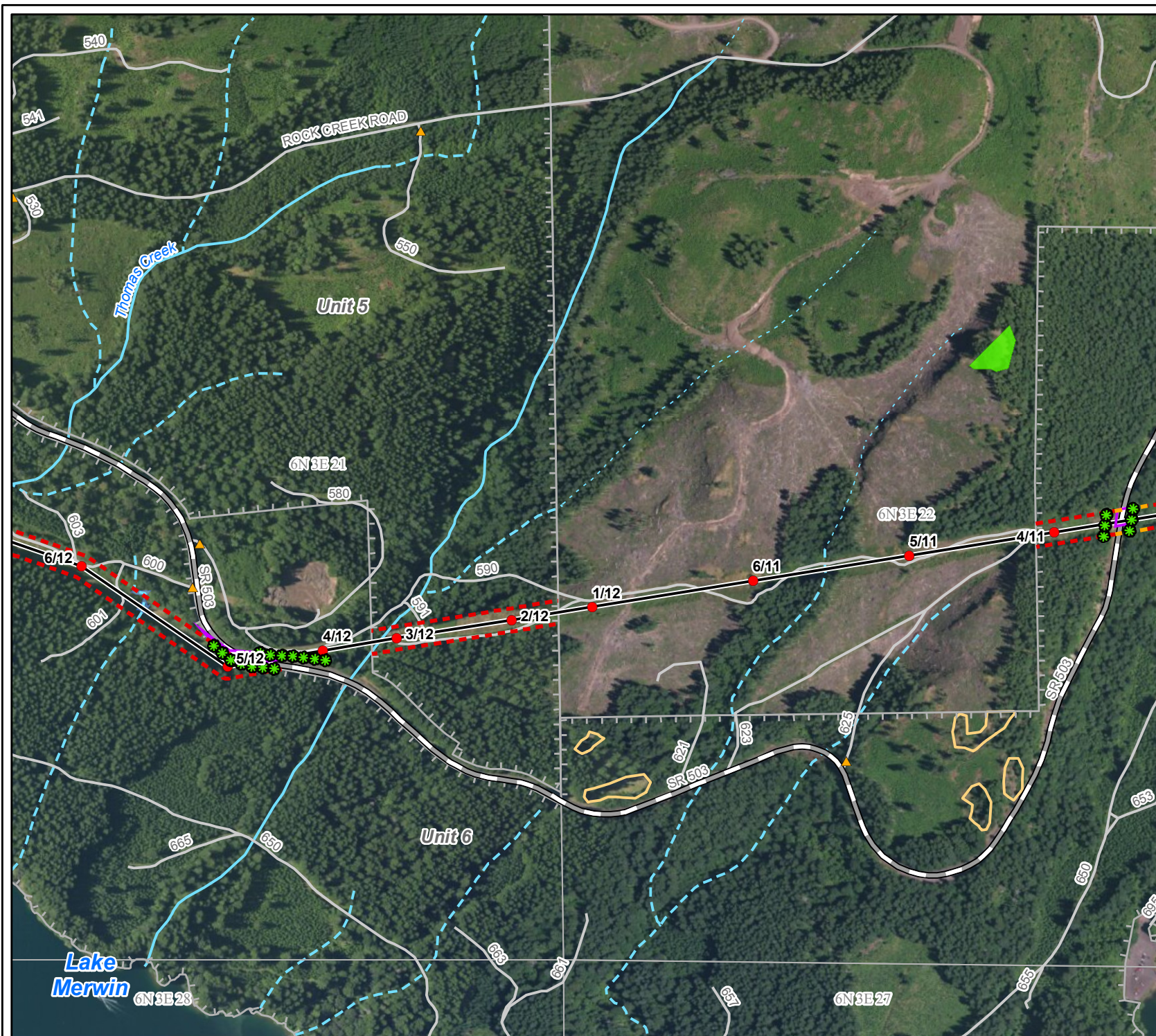
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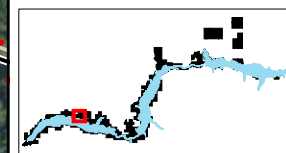
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

Sheet 10 of 15

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0 250 500
Feet

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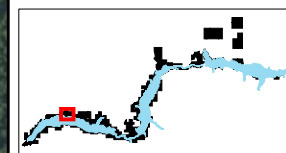
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

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Legend

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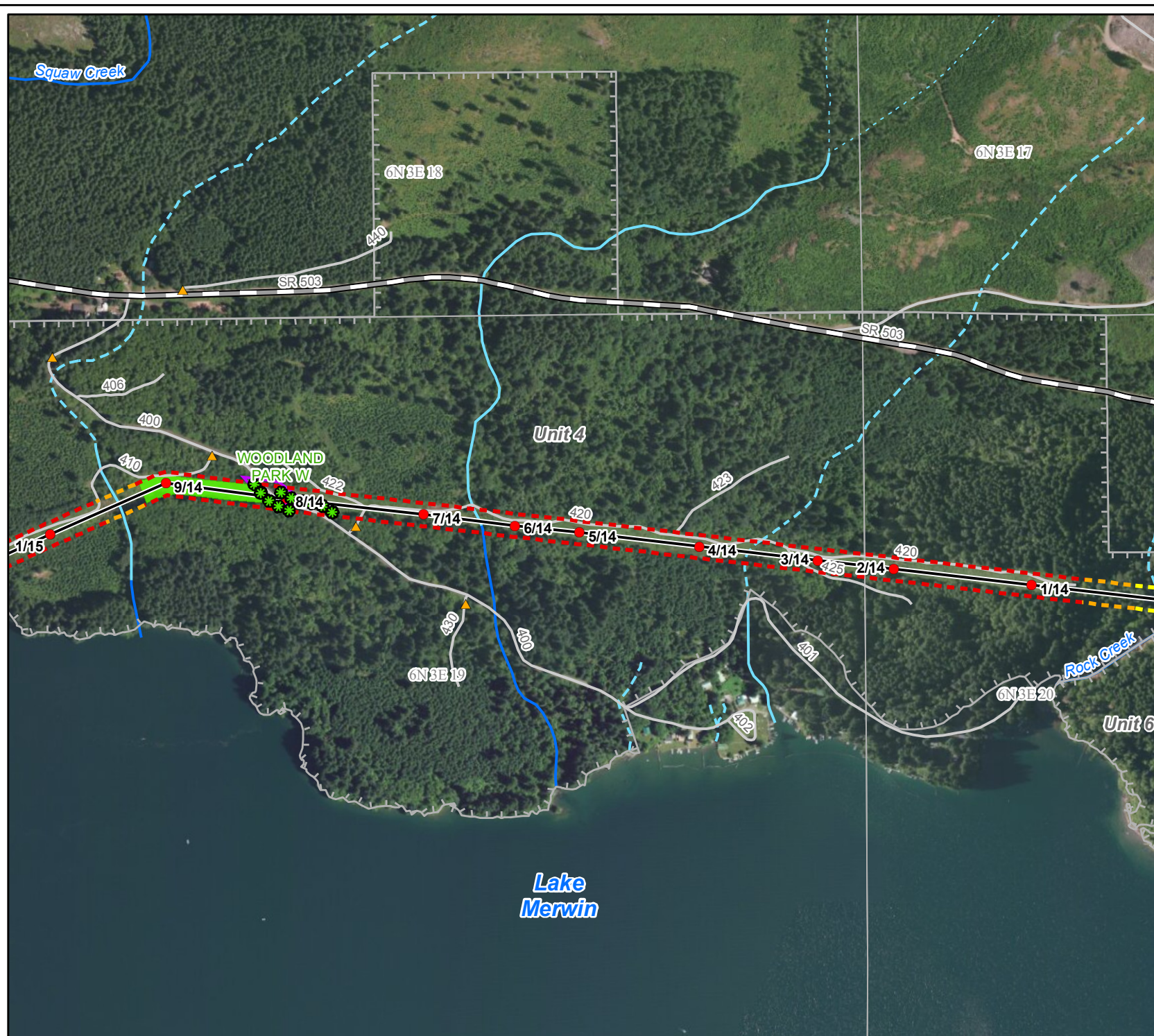
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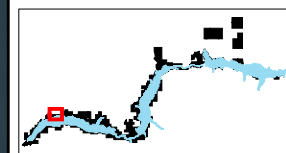
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

Sheet 12 of 15

Legend

- ▲ Gate
 - Speelyai Transmission Tower
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 - Substation
 - Speelyai Line
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 - ROW Screen
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- Region A
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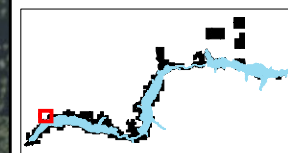
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

Sheet 13 of 15

Legend

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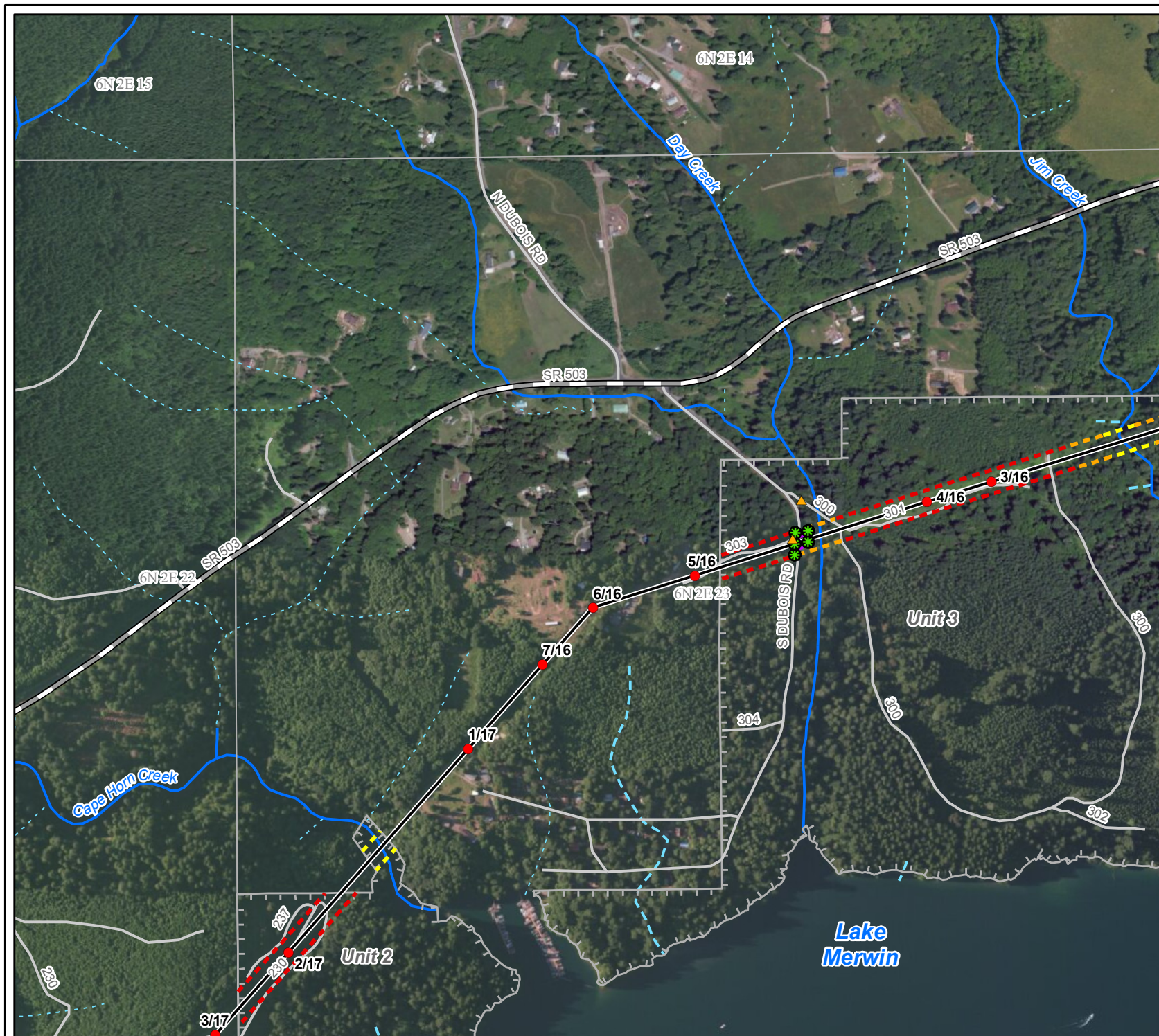
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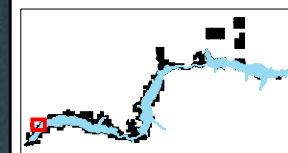


Sheet 14 of 15



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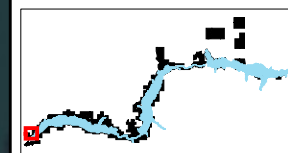
Initial Inspection Speelyai 230 KV Transmission Line

Swift 2 - BPA Tap

Sheet 15 of 15

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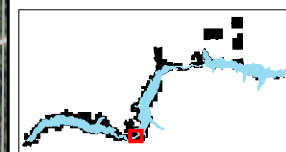
Initial Inspection Lake 115 KV Transmission Line

Merwin - Yale

Sheet 1 of 4

Legend

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 - Other Transmission Tower
 - Substation
 - Lake Line
 - - - Other Transmission Line
 - *** ROW Screen
 - Public Road-ROW Crossing
 - Existing Forage Area
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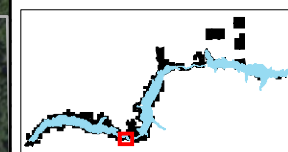
Initial Inspection Lake 115 KV Transmission Line

Merwin - Yale

Sheet 2 of 4

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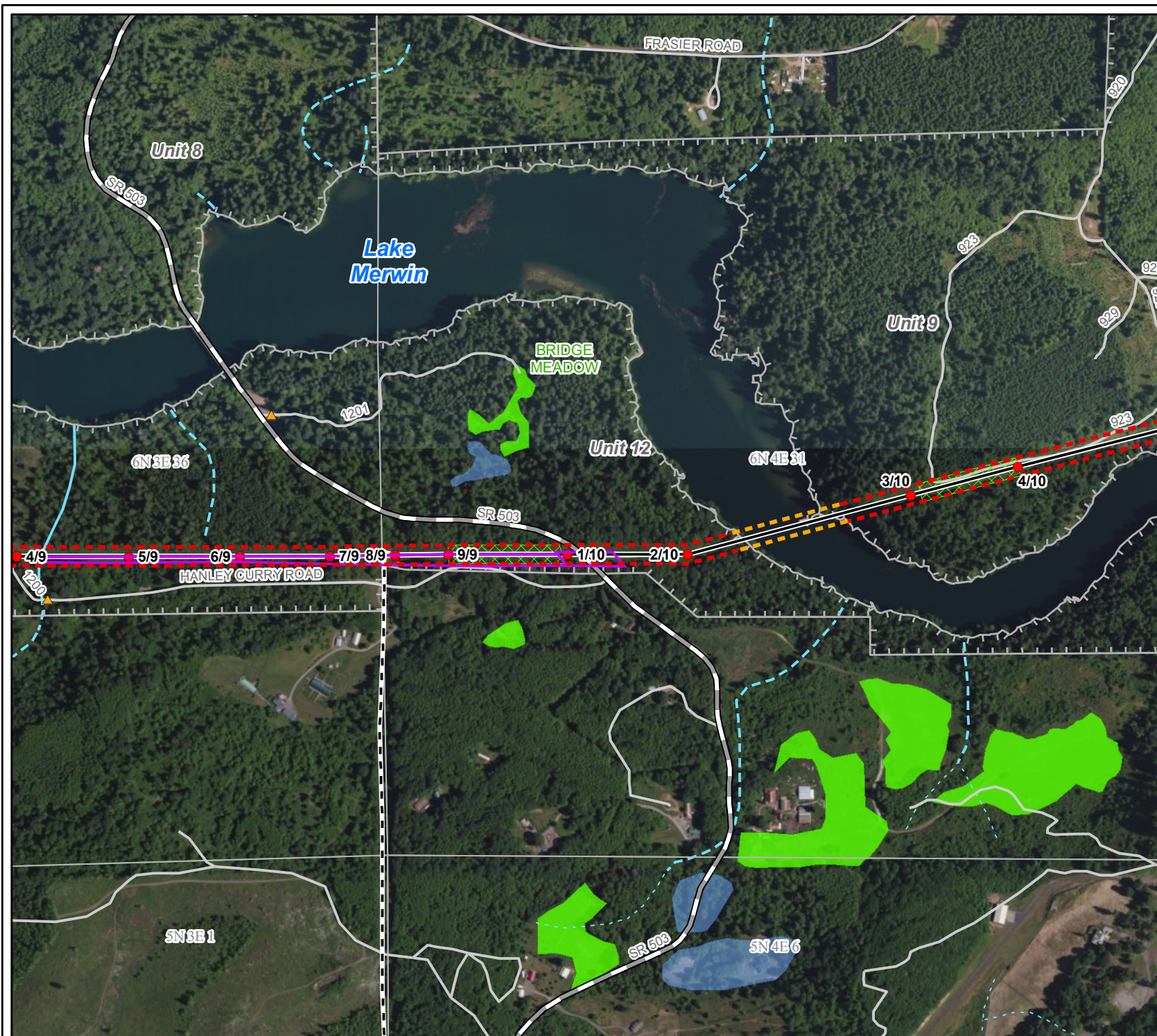
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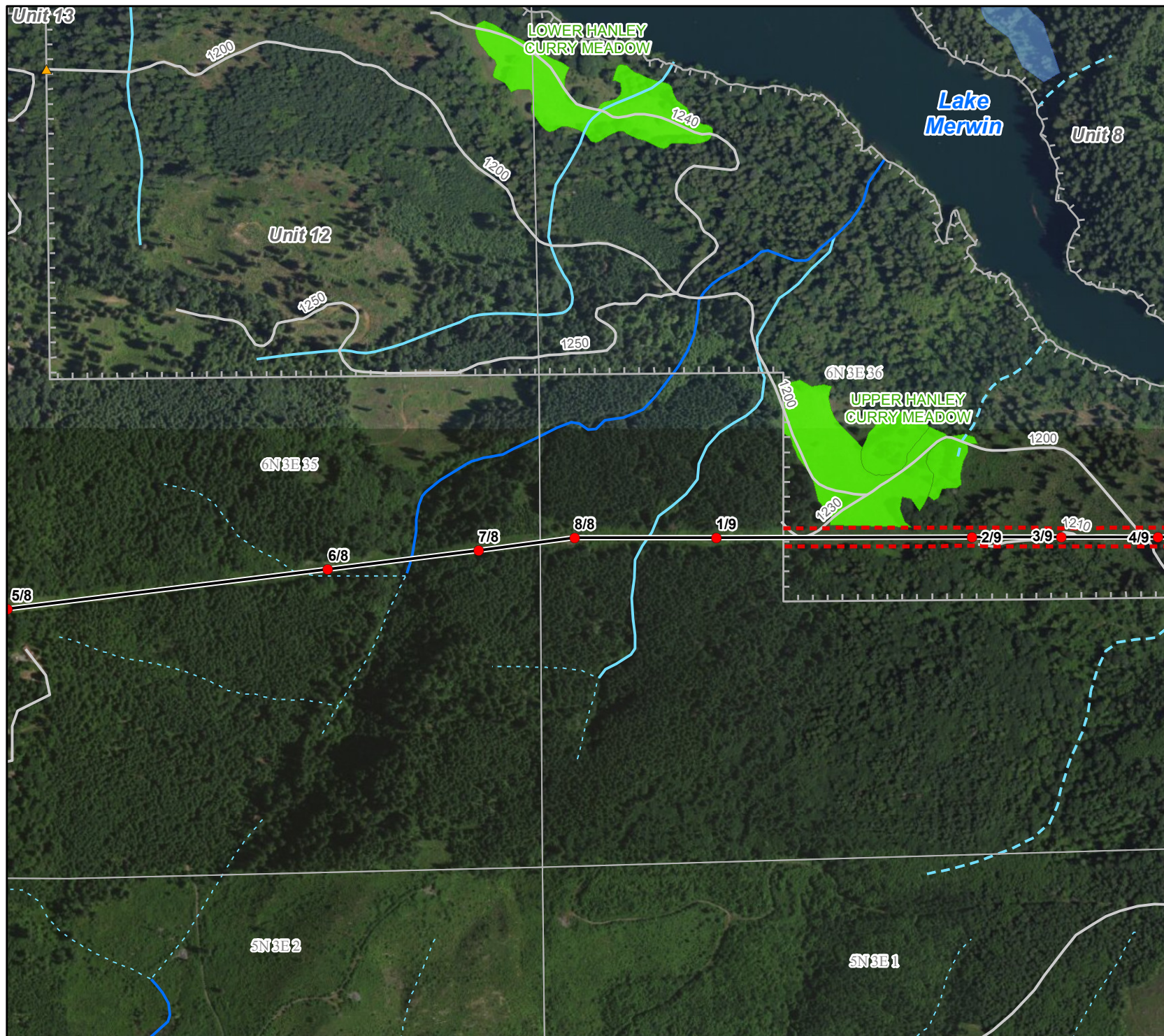


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Initial Inspection Lake 115 KV Transmission Line

Merwin - Yale

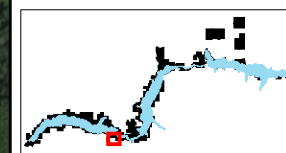
Sheet 3 of 4

Legend

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ROW Clearance Limits

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Feet

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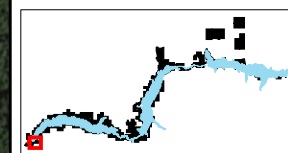
Initial Inspection Lake 115 KV Transmission Line

Merwin - Yale

Sheet 4 of 4

Legend

- Gate
 - Lake Transmission Tower
 - Other Transmission Tower
 - Substation
 - Lake Line
 - Other Transmission Line
 - ROW Screen
 - Public Road-ROW Crossing
 - Existing Forage Area
 - Potential Forage Area
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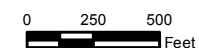
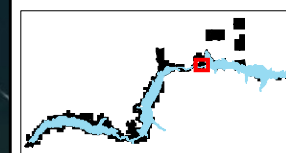
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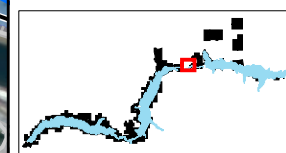
Initial Inspection Cougar 230 KV Transmission Line

Swift 1 - Swift 2

Sheet 2 of 3

Legend

- ▲ Gate
 - Cougar Transmission Tower
 - Other Transmission Tower
 - Substation
 - Cougar Line
 - - - Other Transmission Line
 - *** ROW Screen
 - Public Road-ROW Crossing
 - Existing Forage Area
 - Potential Forage Area
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 - Highway
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- ROW Clearance Limits**
- Region A
 - Region B
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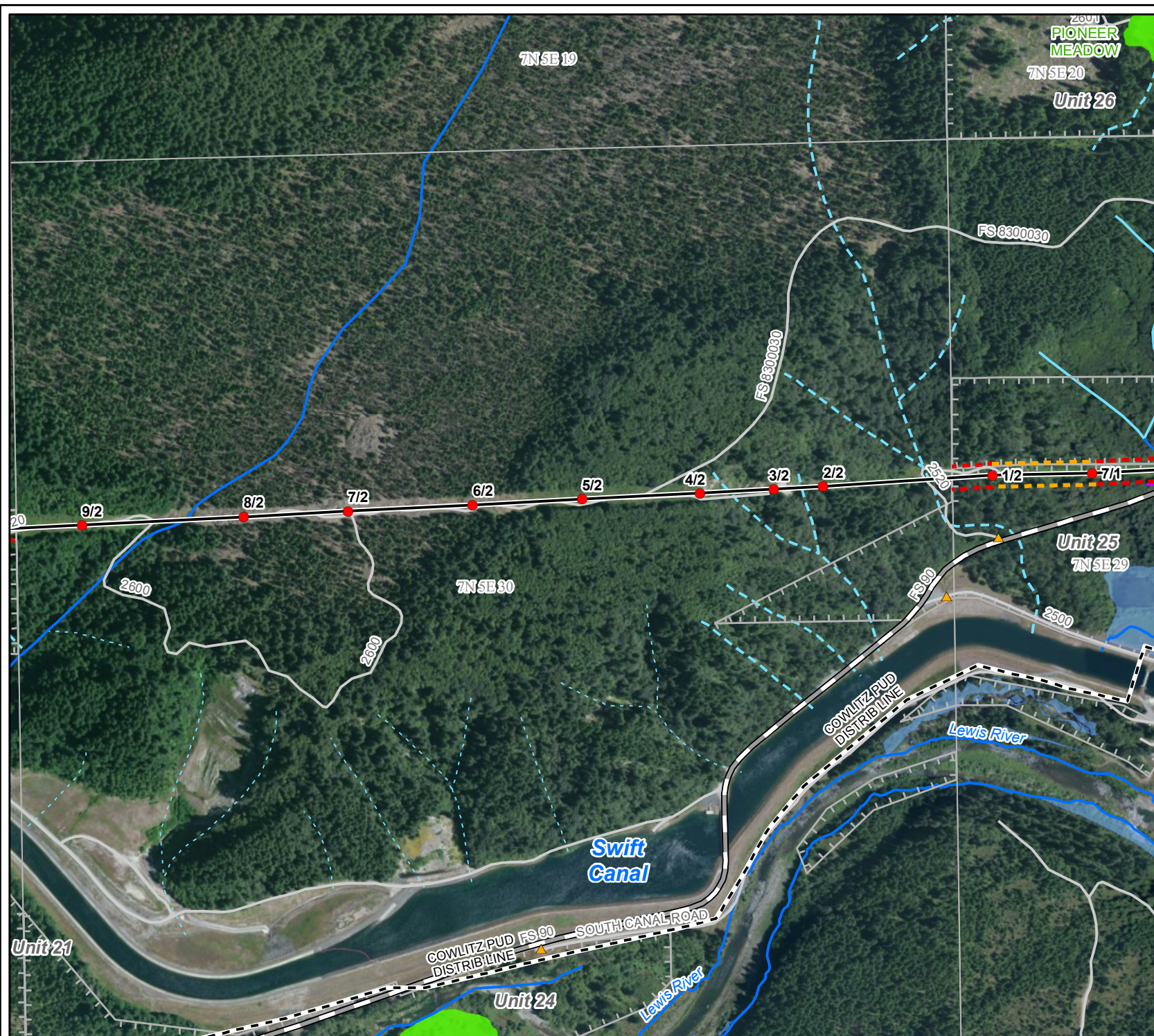
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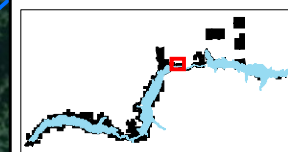
Initial Inspection Cougar 230 KV Transmission Line

Swift 1 - Swift 2

Sheet 3 of 3

Legend

- ▲ Gate
 - Cougar Transmission Tower
 - Other Transmission Tower
 - Substation
 - Cougar Line
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 - Public Road-ROW Crossing
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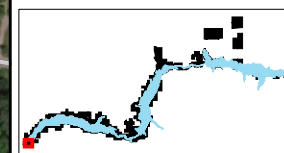
Initial Inspection Battleground/Kalama 115 KV Transmission Lines

Merwin - St. John's
Merwin - Kalama

Sheet 1 of 1

Legend

- ▲ Gate
 - Battleground Transmission Tower
 - Kalama Transmission Tower
 - Other Transmission Tower
 - Substation
 - Battleground Line
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 - *** ROW Screen
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- ## ROW Clearance Limits
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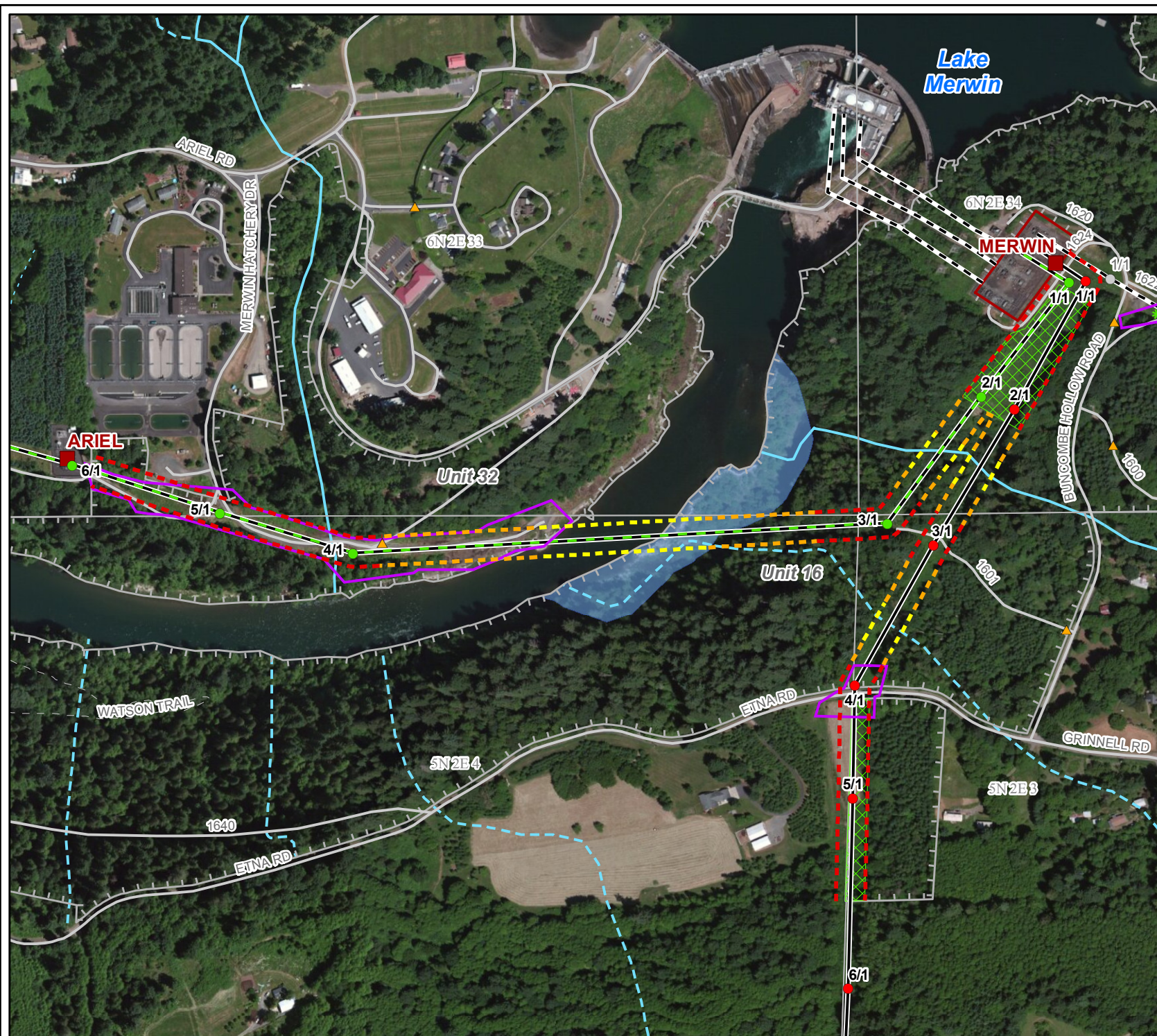
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FINAL Meeting Notes
Lewis River License Implementation
Terrestrial Coordination Committee (TCC) Meeting
June 13, 2007
Lacey, WA

TCC Participants Present: (19)

Brock Applegate, WDFW
 John Clapp, Lewis River Citizens at-large (via teleconference 9:00am – 10:00am)
 Kendel Emmerson, PacifiCorp Energy
 Eric Holman, WDFW
 Mike Iyall, Cowlitz Indian Tribe
 Curt Leigh, WDFW (via teleconference)
 Kimberly McCune, PacifiCorp Energy
 Kirk Naylor, PacifiCorp Energy
 Bob Nelson, RMEF
 Todd Olson, PacifiCorp Energy
 Tim Romanski, USFWS
 Mitch Wainwright, USDA Forest Service

Cherie Kearney, Columbia Land Trust
 Mike Hayden, Cougar Area Trail Seekers (CATS) (9:00am – 10:00am)
 Brenda Hayden, CATS (9:00am – 10:00am)
 Rocky Hendricks, CATS (9:00am – 10:00am)
 Tom Vertz, CATS (9:00am – 10:00am)
 Barbara Vertz, CATS (9:00am – 10:00am)
 Sandi Hendricks, CATS (9:00am – 10:00am)

Calendar:

July 11, 2007	TCC Meeting	Merwin Hydro
August 8, 2007	TCC Meeting	Merwin Hydro
August 9, 2007	ACC Meeting	Merwin Hydro

Assignments from June 13th Meeting:	
McCune: Make copies of the Piute County DVD for WDFW and PacifiCorp and mail the DVD back to Mike Hayden (CATS).	Complete – 6/21/07
McCune: Request CATS provide written documentation of land owner approval of ATV use.	Complete – 6/25/07
Emmerson: Request a set of original data sheets from EDAW and copy WDFW relating to the Mink HSI and SI values.	Pending
Emmerson: Revise the Mink memorandum to include clarification of tributary riparian.	Complete – 7/3/07
McCune/Emmerson: Provide details to the TCC for 6/25 & 6/26 Goshawk survey.	Complete – 6/15/07

USFWS: Review BiOp and confirm if construction related to timber management activities are covered by the ITP (incidental take permit).	Complete – 6/15/07 (see Attachment C)
McCune: Email the USFWS BiOp to Romanski	Complete – 6/14/07

Assignments from May 9th Meeting:	
Naylor: Mail copies of the wildlife signs to Ray Croswell, RMEF.	Complete – 5/15/07
Emmerson: Review the protocol data to determine the best survey method for Goshawks and inform the TCC.	Complete – 6/26/07
Naylor: Send email to the TCC suggesting a few dates in late June 2007 for the TCC to join in an intensive raptor nest survey following the protocol from the “Northern Goshawk Inventory and Monitoring Technical Guide.”	Complete – 6/15/07
Naylor: Distribute maps to TCC with illustration of where roads are/will be located relating to the Unit 26 proposed forestry actions.	Complete – 5/10/07
Naylor/Olson: Provide Eric Holman (WDFW) with a clear picture from DNR regarding what is permissible on their lands relating to ATV use.	Complete – 6/13/07

Assignments from September 13th Meeting:	
McCune: Email the TCC and Columbia Land Trust with potential dates for a tour of certain lands of interest.	Pending

Parking lot items from February 10th Meeting:	
PacifiCorp Wildlife Habitat Management Plan (WHMP) Budget (annual)	
Conservation Agreement – what is wanted?	Ongoing – 4/28/06

Review of Agenda, Finalize Meeting Notes

Kirk Naylor (PacifiCorp Energy) called the meeting to order at 9:05am. Naylor conducted a review of the agenda for the day and requested a round-table introduction for the benefit of those participating via teleconference and for the guest speakers.

Naylor requested any additions to the agenda. No changes to the agenda were requested. Naylor requested comments and/or changes to the Draft TCC May 9, 2007, meeting notes. No changes were requested and meeting notes were approved at 9:15am.

Cougar Area Trail Seekers (CATS) Proposal

Mike Hayden (CATS) provided the following handouts (**Attachment A**) for TCC attendees review:

- Proposal for Multi-Purpose Trails near Cougar, Washington, dated June 13, 2007
- Charter/Constitution, last revision October 28, 2006
- Washington Department of Natural Resources (DNR) letter to Mike Hayden, date of letter unknown
- Cougar Area Trail Seekers Clean-up Ride, dated May 6, 2007
- Photo of clean-up ride
- Map illustrating Proposal #1 – Cougar Power Line Trail
- Map illustrating Proposal #2 – PacifiCorp Wildlife Trail

Hayden communicated the CATS initial proposal for two (2) designated multi-use trails capable of accommodating hiking, mountain biking, and ATV use (see **Attachment A** for further detail). Hayden expressed that the CATS intend to make similar proposals to other land owners and managers as well and that it is important they work closely with WDFW, PacifiCorp and their wildlife representatives to seek additional, better recreational access in their neighborhoods by forming an ATV trail network to expand the existing recreational opportunities and allow for the increasing tourism and population growth in the area surrounding the town of Cougar, Yale Reservoir, and the general vicinity of the North Fork of the Lewis River.

John Clapp (Lewis River Citizens at-large) expressed that the Lewis River watersheds, critical wetlands and wildlife habitat protection was a key focus during the relicensing negotiations with the Settlement Agreement Parties and anticipation of expected development was a major consideration. Clapp also expressed that should ATV use be allowed on PacifiCorp lands that a time frame should be considered relative to elk foraging and winter range areas.

Naylor informed the CATS representatives that no decisions would be made today by the TCC. Today's discussion was to allow CATS to present the trails proposal and answer any questions.

CATS communicated to the TCC attendees that they would like designated areas to deter ATV users from illegal areas. One of their goals is to perhaps convert bad users to responsible ATV users.

Mike Iyall (Cowlitz Indian Tribe) expressed that there is frustration on both sides. The TCC has a finite budget to manage and we don't want to use it all on enforcement. Iyall said that responsible ATV use can be a reasonable source of entertainment and controlled ATV use is a good argument yet on the other hand we could be creating an attractive nuisance.

Naylor said that PacifiCorp will look at the CATS proposal and review it as a group with the TCC, to include detailed maps identifying proposed roads to make available for ATV use. Naylor also expressed that PacifiCorp has already experienced \$30 - \$35k in resource damage contributing to erosion areas and damage to fish bearing streams at Merwin all on closed roads with signs just in the last 2 years.

Todd Olson (PacifiCorp) proposed that as neighbors the CATS could help remediate sites, volunteer back-hoe time and continue to pioneer trail clean-up runs.

General discussion took place regarding explosive population growth in the area, destruction of habitat, areas of permitted and illegal ATV use, protection of wildlife habitat is the top priority and the need for approval of ACC, TCC and SA Parties would be required for an ATV proposal.

Hayden described a successful ATV project in Piute County, Utah and gave PacifiCorp a copy of a DVD. Kimberly McCune (PacifiCorp) will make copies of the DVD for WDFW and PacifiCorp and return the DVD to Mike Hayden (CATS). Hayden asked that if any of the TCC participants have questions to contact him directly at mbhayden@tds.net.

<Break 10:05am>

<Reconvene 10:15am>

Discussion on CATS proposal was concluded following a request to have CATS provide written documentation showing that the club has land owner approval to ride on local private, state, or federal lands. PacifiCorp will make request on behalf of TCC.

WHMP Updates - Discussion of Corrections for Mink Habitat Suitability Index and Mink Riparian Habitat Evaluation Procedures Evaluation Species

Kendel Emmerson (PacifiCorp) communicated that she discovered inconsistencies in the Habitat Suitability Index (HSI) values, which is detailed in a memorandum to the TCC dated May 29, 2007 and revised per TCC request on July 3, 2007 ([Attachment B](#)).

The purpose of the memorandum is to provide corrections to the mink HSI and suitability index (SI) values reported in the Habitat Evaluation Procedure (HEP) Study and to request changing the mink from a HEP Evaluation Species to an Analysis Species in the Standards and Guidelines Riparian Habitat chapter. The requested corrections will allow the Utilities to more accurately measure changes in year 17 of the license.

Upon TCC review of the Table in the memorandum titled, *Reported Versus Correct Mink HSI and SI Values*, Curt Leigh (WDFW) requested Emmerson obtain a set of original data sheets from EDAW and copy WDFW. No data gathering appears to have taken place for Mink HSI values in the tributary riparian areas. Emmerson recommended mink be designated as an Analysis Species for Riparian Habitat, instead of a HEP Evaluation Species.

Emmerson read the following email she received from Colleen McShane at EDAW regarding mink HSI values for Swift and Yale reservoirs (see email below) for TCC consideration:

*From: Colleen McShane [Colleen.McShane@edaw.com]
Sent: Friday, February 23, 2007 5:33 PM
To: Emmerson, Kendel
Subject: Mink Model*

Hi Kendel

I spoke with Ron about why Table 5.2-6 did not include mink HSI values for Swift and Yale reservoirs. It was not an omission. He reminded me that we only used mink as an evaluation species for lacustrine habitat at Merwin because the other 2 reservoirs fluctuate too much for the shoreline to provide habitat for mink (see page 2-8 of the report--Table 5.2-2). The Swift bypass reach and the Lewis River near Eagle Island were included as riverine habitat for mink and these 2 values are missing from the table. The HSI for Eagle Island RUB is 0.63; the HSI for the Swift Bypass Reach RUB is 0.59. I'm not sure why no one noticed these values were missing, maybe because the focus for mink has always seemed to be mostly for wetlands.

Hope this helps!

The question to the TCC is should we go out and collect tributary riparian data in 3-5 years to do a baseline collection of data for tributary riparian areas that are perennial fish bearing streams?

The TCC agreed that PacifiCorp should proceed with the HEP analysis for perennial fish bearing streams that are on WHMP lands. That this analysis may occur when HEP analysis are conducted for newly acquired lands. The corrected HSI data will be used as the original baseline data.

Emmerson will revise the memorandum to include clarification of tributary riparian.

<Lunch 12:00m>

<Reconvene 12:30pm>

WHMP Updates - Discussion of WDFW possible concerns on NSO for proposed management in Unit 26

Naylor reviewed a map with the TCC attendees, which illustrated proposed road development for Units 1 through 3 and suitable Northern Spotted Owl (NSO) habitat in Unit 26. The maps indicated that the road construction indicated about 500 feet of suitable NSO habitat could be affected. However, the area identified as mid-successional habitat does not meet those criteria based on three plots used to determine average stand diameter. It should actually be typed as "conifer pole" per the vegetation definitions used in relicensing. In other words, there appears to be minimal NSO habitat loss associated with the road and it would occur in non critical nesting habitat. However, the area would meet the young marginal definition of NSO suitable habitat based on Forest Practices Act. He asked the TCC what the impact is to habitat relating to road construction in order to gain access to alder areas for long-term owl habitat management. The snags that will be taken down will be left on the ground as downed wood. The TCC requested PacifiCorp make every attempt to retain snags where safety allows.

Tim Romanski (USFWS) communicated that the USFWS could amend the BiOp if it comes to that. However, since the proposed road is the only loss of habitat Romanski will review the BiOp and confirm if this request falls under the incidental take permit (ITP) language. McCune will email the BiOp to Romanski.

Naylor informed Romanski that he would like an answer within the week in order to proceed with other permitting for a harvest to occur this year.

Brock Applegate (WDFW) informed the TCC that a Southwest Region Habitat Biologist from WDFW will be coming during the Goshawk surveys scheduled for June 25 & 26 and will conduct a walk-through to complete a northern spotted owl assessment of the subject area.

Naylor also provided a copy of a map for TCC review illustrating other potential permanent forage plots. As indicated at the previous TCC meeting, about 10% of this management unit would be proposed for permanent forage. Naylor proposes that the currently proposed alder harvest areas will provide about 30 acres of forage for at least the next 10-15 years and these other permanent forage areas could be developed at future entries. During this year PacifiCorp is proposing to only include permanent forage areas of about 1 acre at Timber Harvest Area #3 and to expand the foot

print of the existing meadow (remove a few alder). Olson proposed that we focus on the original concept of cutting the three alder units and existing meadow to address the creation of permanent forage and address the additional forage areas later.

Lands Update Discussion

Cherie Kearney (Columbia Lands Trust) provided a detailed update relating to interests in certain lands, however, this discussion is considered confidential and proprietary and not for public viewing.

New Topics

Emmerson communicated to the TCC attendees that Goshawk survey experts are coming down to the Lewis River on 6/25 and 6/26/07 to conduct the survey and discuss goshawk habitat impacts from timber harvests on WHMP lands. All TCC members are invited to participate. McCune will obtain the details and email to the TCC.

Next Meeting's Agenda

- Goshawk Survey Update
- Lands Update Discussion
- Wetlands Objective Discussion
- Mink Memorandum, Corrections for Mink Habitat Suitability Index Approval (time permitting)
- Unit 5 Tour (12:00pm – 3:00pm)

Meeting adjourned at 2:34pm.

Next Scheduled Meetings

July 11, 2007	August 8, 2007
Merwin Hydro Facility	Merwin Hydro Facility
Ariel, WA	Ariel, WA
9:00am – 3:00pm	9:00am – 3:00pm

Handouts

1. Agenda
2. Draft meeting notes from 5/9/07
3. Proposal for Multi-Purpose Trails near Cougar, WA, dated June 13, 2007 (**Attachment A**)
4. Charter/Constitution, last revision October 28, 2006 (**Attachment A**)
5. Washington Department of Natural Resources (DNR) letter to Mike Hayden, date of letter unknown (**Attachment A**)
6. Cougar Area Trail Seekers Clean-up Ride, dated May 6, 2007 (**Attachment A**)
7. Photo of clean-up ride (**Attachment A**)
8. Map illustrating Proposal #1 – Cougar Power Line Trail (**Attachment A**)
9. Map illustrating Proposal #2 – PacifiCorp Wildlife Trail (**Attachment A**)

10. Corrections for Mink Habitat Suitability Index and Suitability Index Corrections and Mink Riparian Habitat Evaluation Procedures Evaluation Species Memorandum, dated May 29, 2007 as revised July 3, 2007 (Attachment B)
11. Email from Tim Romanski, USFWS dated June 15, 2007 regarding review of the BiOp and confirmation if construction related to timber management activities are covered by the ITP (Attachment C)

MEMORANDUM

DATE: July 3, 2007

TO: Terrestrial Coordination Committee

FROM: Kendel Emmerson

SUBJECT: Corrected Mink Habitat Suitability Index and Suitability Index Data and
Mink Riparian Habitat Evaluation Procedures

The purpose of this memo is to provide corrections to the mink habitat suitability index (HSI) and suitability index (SI) values reported in the Habitat Evaluation Procedure (HEP) Study (PacifiCorp and Cowlitz PUD 2004) and to provide methods for assessing the mink HSI values for riparian vegetation cover types on Lewis River Wildlife Habitat Management Plan lands (WHMP lands).

Habitat Evaluation Procedures (HEP) is the standardized and collaborative process that was used to assess baseline wildlife habitat conditions on WHMP lands and to provide a framework for habitat management planning, implementation, and effectiveness monitoring. The Settlement Agreement (SA) Section 10.8.4.2 directs PacifiCorp and Cowlitz PUD to repeat the HEP for all WHMP lands in year 17 of the license using the same sampling density and methods as the original HEP to measure any changes in habitat (PacifiCorp and Cowlitz PUD 2004). If the original HEP predictions are not met, the Lewis River Wildlife Habitat Management Plan (WHMP) will be modified to meet the habitat goals and objectives (PacifiCorp and Cowlitz PUD 2006).

To complete the HEP process habitat suitability index (HSI) models developed by the United States Fish and Wildlife and Washington Department of Fish and Wildlife were used to estimate habitat quality for the selected HEP species. These models determine the HSI for each species by mathematically combining the quality of each habitat variable measured in the field. The quality of a habitat variable is called the suitability index (SI).

Habitat Suitability Index and Suitability Index Values

In PacifiCorp's development of the WHMP, it was discovered that Table 5.2-6 in the Lewis River Hydroelectric Projects Technical Report 5.2 TER 2 HEP Study (Report 5.2) incorrectly reported tree cover SI and did not include the emergent vegetation cover SI values for Palustrine Forested (PFO) and Palustrine Shrub-Scrub (PSS) vegetation cover types (PacifiCorp and Cowlitz PUD 2004). This resulted in significant changes in the

overall HSI values for PFO, PSS, and Palustrine Emergent (PEM) vegetation cover types. The table below shows the values reported in Report 5.2 and the corrected values. Because the objective is to compare the original HSI values reported in Table 5.2-6 in the Report 5.2 to the HSI values obtained in year 17 of the license, the corrected values reported in the table below will be used as the mink HSI and SI values (PacifiCorp and Cowlitz PUD 2004).

Table 1. Reported Versus Corrected Mink HSI and SI Values							
HSI and SI Values		Reported Overall	Correct Overall	Reported Emergent	Correct Emergent	Reported Tree Cover	Correct Tree Cover
Palustrine Forested (PFO)	Eagle Island	0.47	0.85	Not reported	0.80	1.00	No change
	Merwin	0.51	0.81	Not reported	0.68	0.75	0.80
	Yale	0.46	0.81	Not reported	0.76	0.78	0.85
	Swift	0.52	0.84	Not reported	0.60	0.81	0.76
	Swift Canal	0.38	0.75	Not reported	0.58	0.84	0.87
Palustrine Scrub Shrub (PSS)	Eagle Island	0.40	0.85	Not reported	1.0	0.50	0.10
	Merwin	0.36	0.81	Not reported	1.0	0.71	0.10
	Yale	0.36	0.81	Not reported	0.97	0.32	0.10
	Swift	0.40	0.85	Not reported	1.0	0.71	0.10
	Swift Canal	0.30	0.75	Not reported	0.57	0.50	0.10
Palustrine Emergent (PEM)	Merwin	0.66	0.92	1.0	1.0	0.13	0.13
	Yale	0.69	0.93	1.0	1.0	0.42	0.40
	Swift	0.63	0.94	1.0	1.0	0.30	0.27
	Swift Canal	0.45	0.67	0.71	0.71	0.12	0.10

Mink Riparian Habitat Evaluation Procedures

Due to the minks association with aquatic habitat, it is considered to be an indicator of aquatic habitat quality for the WHMP lands. As a result, the mink HSI model was applied to the following vegetation cover types: PFO, PSS, PEM, Palustrine Unconsolidated Bottom (PUB), Lacustrine Unconsolidated Bottom (LUB) and Riverine Unconsolidated

Bottom (RUB). The LUB and RUB HSI data was assessed at limited areas on the WHMP lands and only evaluated the canopy cover within 100 m (328 ft) of the river and reservoir shorelines. LUB vegetation cover type was assessed only at Merwin Reservoir, because Swift and Yale reservoir water levels fluctuate too much for the shoreline to provide adequate and consistent mink habitat. The RUB vegetation cover type was assessed at Swift Bypass area, which is the only RUB vegetation cover type on WHMP lands.

The Lewis River Wildlife Habitat Management Plan Standards and Guidelines designate the mink as a HEP evaluation species for Riparian Habitat (PacifiCorp and Cowlitz PUD 2006). However the mink HSI values were not assessed at streams, therefore there is no baseline mink HSI data for the riparian vegetation cover types (riparian deciduous [RD], riparian mixed [RM], riparian deciduous shrubland [RS], riparian grassland [RG], and young riparian mixed [YRM]).

To determine baseline information for riparian vegetation cover types, the mink HSI model will be applied to perennial fish bearing streams on WHMP lands (Allen 1986). The HSI values will only be assessed at perennial fish bearing streams that extend greater than 100 m (328 ft) onto WHMP lands. This is to avoid assessing streams that are only fish bearing at the mouth of the stream or that have such a small portion on WHMP lands that mink habitat benefits would be negligible. The table below identifies all of the perennial fish bearing streams on WHMP lands and which streams the HSI model will be applied too. Only five streams on WHMP lands are less than 100 m (328 ft), which would remove a total of 301 m (988 ft) from the HEP study.

The streams will be assessed using the same habitat variables that apply to riverine cover type (i.e. percent of year with surface water present, percent shoreline cover within 1 m [3 ft] of water's edge, and percent canopy cover of trees and shrubs within 100 m [328 ft] of the stream's edge) in the mink HSI model (Allen 1986 [Figure 6]). The Settlement Agreement Section 10.8.4.1 directs PacifiCorp to determine HSI values for newly acquired lands whose habitats are new or different from other WHMP lands (PacifiCorp et al. 2004). Because PacifiCorp may acquire new WHMP lands that may have additional perennial fish bearing streams, the mink HSI model will applied to all WHMP lands when the HEP study is applied to the newly acquired lands.

Table 2. Perennial Fish Bearing Streams on WHMP Lands			
Stream Identification	WHMP Land Management Unit(s)	Total Length (meters [feet]) on WHMP lands	Apply HSI model
Marble Creek	1 and 2	124 (406)	Yes
Cape Horn Creek	2	208 (684)	Yes
Unnamed Stream	2	405 (1329)	Yes
Unnamed Stream	2	303 (993)	Yes
Day Creek	3	625 (2050)	Yes
Indian George Creek	3	655 (2149)	Yes
Jim Creek	3	556 (1823)	Yes

Table 2. Perennial Fish Bearing Streams on WHMP Lands (continued)			
Stream Identification	WHMP Land Management Unit(s)	Total Length (meters [feet]) on WHMP lands	Apply HSI model
Unnamed Stream	3	186 (610)	Yes
Unnamed Stream	4	76 (249)	No
Rock Creek	6	362 (1188)	Yes
Brooks Creek	7	75 (246)	No
Speelyai Creek	7	443 (1452)	Yes
Unnamed Stream	7	396 (1300)	Yes
Cresap Creek	8	509 (1671)	Yes
Unnamed Stream	8	140 (460)	Yes
Frasier Creek	9 and 10	1819 (5967)	Yes
Unnamed Stream	12	541 (1776)	Yes
Unnamed Stream	13	61 (201)	No
Buncombe Hollow Creek	15	503 (1650)	Yes
Speelyai Canal	17	1097 (3598)	Yes
Speelyai Creek	17	188 (618)	Yes
Speelyai Creek	17	1070 (3511)	Yes
Unnamed Stream	18	504 (1652)	Yes
Dog Creek	18 and 19	226 (740)	Yes
Cougar Creek	20	2355 (7726)	Yes
Panamaker Creek	20	4365 (14323)	Yes
Lost Creek	21	220 (723)	Yes
Unnamed Stream	22	499 (1636)	Yes
Unnamed Stream	22	265 (869)	Yes
Unnamed Stream	22	280 (920)	Yes
Unnamed Stream	22	62 (204)	No
Unnamed Stream	23	173 (569)	Yes
Unnamed Stream	25	377 (1238)	Yes
Unnamed Stream	25	300 (984)	Yes
Unnamed Stream	29	431 (1414)	Yes
Unnamed Stream	31	27 (90)	No
Unnamed Stream	31	36 (118)	Yes
Total		20, 462 (67, 136)	

References

- Allen, A.W. 1986. Habitat suitability index models: mink, revised. U.S.Fish Wildl. Serv. Biol. Rep. 82 (10.127). 23 PP. [First printed as: FWS/OBS-82/10.61, October 1983.]
- PacifiCorp and Cowlitz PUD. 2004. Lewis River Hydroelectric Projects Technical Report 5.2 TER 2 Habitat Evaluation Procedures (HEP) Study. FERC Project Nos. 935, 2071, 2111, and 2213
- PacifiCorp and Cowlitz PUD 2006. Lewis River Wildlife Habitat Management Plan Standards and Guidelines Document Version 4/28/06 – 06/14/06. Seattle, Washington. 67 pp.
- PacifiCorp, Public Utility District No. 1 of Cowlitz County, National Marine Fisheries Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, USDA Forest Service, Confederated Tribes and Bands of the Yakama Nation, Washington Department of Fish and Wildlife, Washington Interagency Committee for Outdoor Recreation, Cowlitz County, Cowlitz-Skamania Fire District No. 7, North Country Emergency Medical Service, City of Woodland, Woodland Chamber of Commerce, Lewis River Community Council, Lewis River Citizens At-Large, American Rivers, Fish First, Rocky Mountain Elk Foundation, Trout Unlimited, and the Native Fish Society. 2004. Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz, Clark, and Skamania Counties, Washington. November 30, 2004.